Korean Society of Adult Nursing

VIRTUAL

International Conference for
50th Anniversary of the Korean Society of Adult Nursing

Shaping the future : Pivoting for priority

August 20, 2021 12:00~16:00 (KST)

한국성인간호학회
Korean Society of Adult Nursing

Welcome message

Dear colleagues,

On behalf of the Korean Society of Adult Nursing, I would like to welcome you all to the 50th Anniversary International Conference! The theme of our conference today is “Shaping the future: pivoting for priority”. With this conference, I wish we will gain better ideas on mapping out where we are standing now and heading for future.
The Korean Society of Adult Nursing was established June 25th of 1971 with its early name of “Korean Society of Medical-Surgical Nursing”. While I was preparing today’s conference, I had a valuable yet unexpected opportunity to go through the history of our society. I was deeply moved by the great passion and devotion that the members of this society have waged over the last five decades.

The Korean Society of Nursing, which is an umbrella association for all nursing researchers in Korea, has many area-specific member associations under its governance. The Korean Society for Adult Nursing is not only the largest one of the kind, but has been actively leading the development of the nursing profession and research in Korea for the past 50 years. In our half century history, we have achieved remarkable growth in both quantity and quality. Our membership has increased up to 1,500 and our flagship journal, the Korean Journal of Adult Nursing provides access to nursing researchers around the world through the CINAHL and SCOPUS databases.

While we are celebrating our 50th anniversary, the global society is suffering from the unprecedented Covid-19 pandemic. Different from our hope, it is creating so-called a ‘new normal’ in which we have no choice but to live together with the threat of unknown virus. But I believe our scientific capability is strong enough to fight back the virus and its’ variants. In our fight against any threat posed to human healthcare, I think two processes are particularly attract our attention: they are digitalization and industrialization in healthcare service based on fast developing information and communication technologies. In addition, megatrends in global healthcare system have diversified the demand for nursing profession, and increased the need for trans-disciplinary collaboration to improve the quality and safety of healthcare services.

In order to turn a crisis and challenges into an opportunity, it is time to design the future of nursing profession through innovative strategies. Setting priorities, finding right directions, and drawing specific roadmaps are to be done.

At the turning point of the half-century milestone, we will reflect the past half century and envision the next half. We will do this in great excitement. Once again, I would like to express my sincere gratitude to all the members who have led the Society for the past half century. I also would like thank to board of trustees and committee members preparing this wonderful event. Let's enjoy the conference!
Thank you.

Eui Geum Oh, PhD, RN, FAAN
President, Korean Society of Adult Nursing
Dean & Professor, College of Nursing, Yonsei University, Korea

International Conference for
50th Anniversary of the Korean Society of Adult Nursing
VIRTUAL
Shaping the future : Pivoting for priority
August 20, 2021 12:00~16:00 (KST)

Organizing Committee

President	Eui Geum Oh, PhD, RN, FAAN	Yonsei University
Organizing Committee Chair	Yeon-Hwan Park, PhD, RN	Seoul National University
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	Ji Sun Choi, PhD, RN	Kyung Hee University
	Yeonsoo Jang, PhD, RN	Yonsei University
	Sun Ju Chang, PhD, RN	Seoul National University

Time		Program	Moderator
Session 1. Pre-conference workshop "Road Map to Success of Graduate Students in Nursing"			
12:00-13:00	12:00-12:05	Introduction	Yeon-Hwan Park (Seoul National University)
	12:05-13:00	Ji Yea Lee (PhD Student, Yonsei University, South Korea) Jun Yeong Byun (PhD Student, Univ of Alabama at Birmingham, US) Kayo Kawahara (PhD Student, St. Luke's International University, Japan) Zeng Dejian (PhD Student, The Chinese University of Hong Kong)	Sun Ju Chang (Seoul National University)
Session 2. Ceremony of 50th Anniversary of Korean Society of Adult Nursing			
13:00-13:40	13:00-13:05	Welcome	Jiyeon Lee (Yonsei University)
	13:05-13:10	Opening address - Eui Geum Oh, PhD, RN, FAAN President, Korean Society of Adult Nursing	
	13:10-13:20	Congratulatory message - Cho Ja Kim, PhD, RN 7th President, Korean Society of Adult Nursing - Kyung-Sook Cho, PhD, RN President, Korean Society of Nursing Science - Woo Il Lee, PhD President, Korean Federation of Science and Technology Societies	
	13:20-13:25	50th Anniversary historical video presentation	
	13:25-13:30	Mission&Vision declaration ceremony	
	13:30-13:40	Breaktime	
Session3. Keynote session			
13:40-15:55	13:40-14:25	**Keynote 1** The Future of Nursing Profession: Policy, Education, Administration, and Clinical practice - Dr. Beverly Malone, PhD, RN, FAAN (President of NLN, US)	Yeon-Hwan Park (Seoul National University)
	14:25-15:15	**Keynote 2** Nursing Education in Global Pandemic Era: The Way Forward - Professor, Tener Goodwin Veenema, PhD, MPH, FAAN (Johns Hopkins University, US)	
	15:15-15:55	**Keynote 3** Innovation Nursing Research and Practice: Leading Change, Advancing Health - Professor, Dawn Dowding, PhD, RN, FAAN (University of Manchester, UK)	
15:55-16:10	15:55-16:10	**Panel discussion**	Sookyung Park (Korea University) Kisook Kim (Chung-Ang University) Yeonsoo Jang (Yonsei University)
Closing			Sun-Kyung Hwang (Pusan National University)

- **Keynote session**

  Keynote 1
  The Future of Nursing Profession:
  Policy, Education, Administration, and Clinical practice 09

  Keynote 2
  Nursing Education in Global Pandemic Era:
  The Way Forward 21

  Keynote 3
  Innovation Nursing Research and Practice:
  Leading Change, Advancing Health 41

- **Pre-conference workshop**
  "Road Map to Success of Graduate Students in Nursing" 55

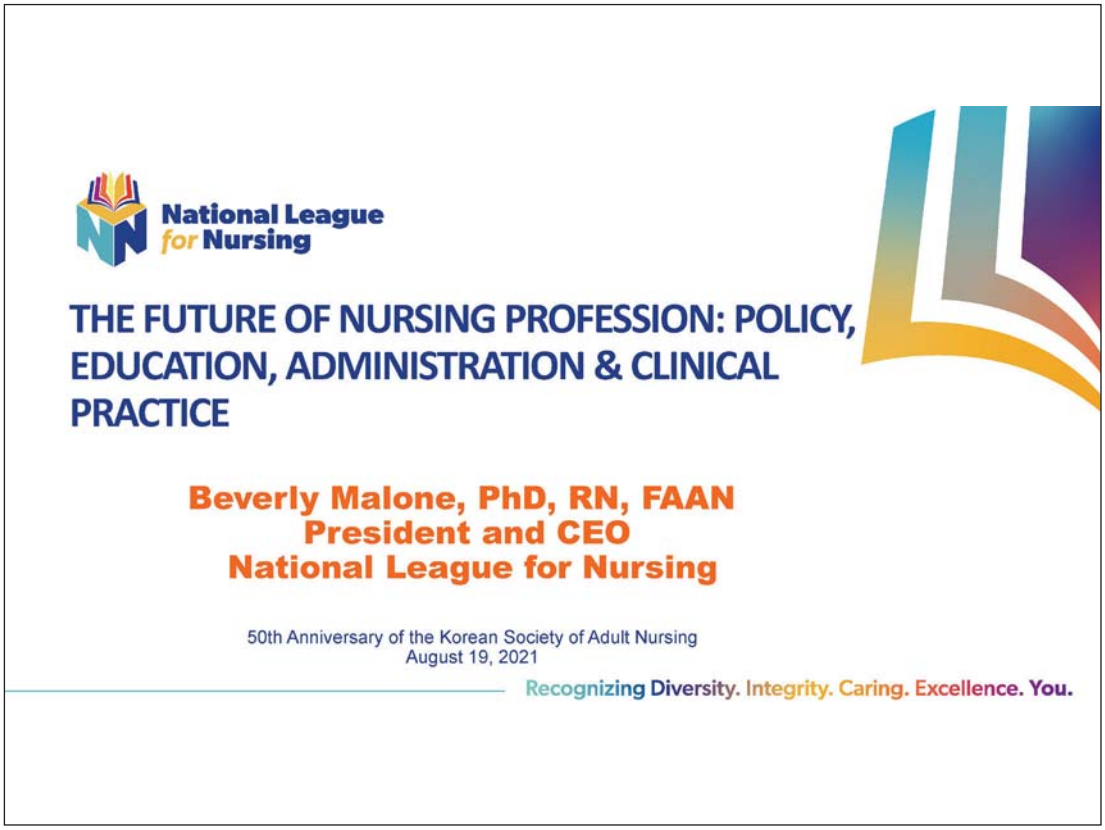
- **Oral presentation** 97

- **Poster presentation** 109

Keynote 1

The Future of Nursing Profession: Policy, Education, Administration, and Clinical practice

Dr. Beverly Malone, PhD, RN, FAAN (President of NLN, US)


National League for Nursing
THE FUTURE OF NURSING PROFESSION: POLICY, EDUCATION, ADMINISTRATION & CLINICAL PRACTICE
Beverly Malone, PhD, RN, FAAN
President and CEO
National League for Nursing
50th Anniversary of the Korean Society of Adult Nursing
August 19, 2021
Recognizing Diversity. Integrity. Caring. Excellence. You.

NLN MISSION STATEMENT
The National League for Nursing promotes excellence in nursing education to build a strong and diverse nursing workforce to advance the health of our nation and the global community.
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NLN MISSION STATEMENT

Four dynamic and integrated core values permeate the NLN and are reflected in our work:

- Caring
- Integrity
- Diversity
- Excellence

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NLN CORE VALUES

The National League for Nursing implements its mission guided by four dynamic and integrated core values that permeate the organization and are reflected in our work:

Promoting health, healing, and hope in response to the human condition

Caring

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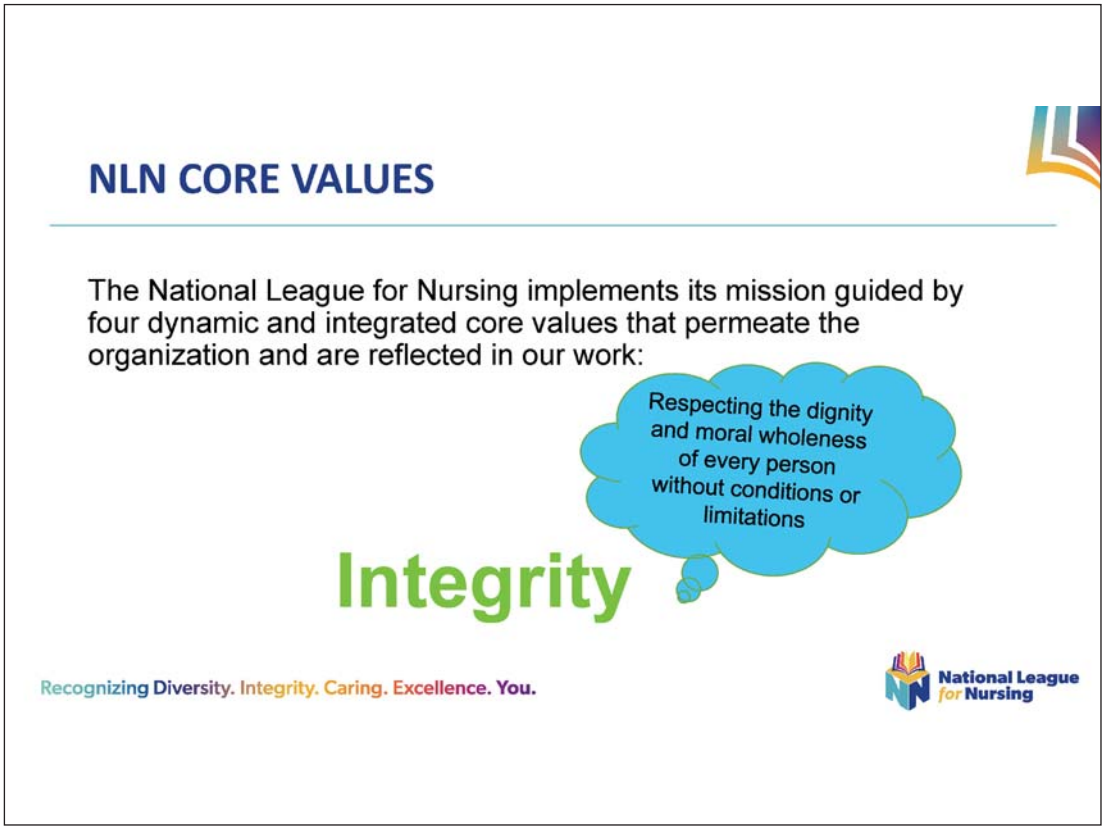
NLN CORE VALUES
The National League for Nursing implements its mission guided by four dynamic and integrated core values that permeate the organization and are reflected in our work:
Respecting the dignity and moral wholeness of every person without conditions or limitations
Integrity
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NLN CORE VALUES
The National League for Nursing implements its mission guided by four dynamic and integrated core values that permeate the organization and are reflected in our work:
Affirming the uniqueness of and differences among persons, ideas, values, and ethnicities
Diversity
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NLN CORE VALUES

The National League for Nursing implements its mission guided by four dynamic and integrated core values that permeate the organization and are reflected in our work:

Co-creating and implementing transformative strategies with daring ingenuity

Excellence

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Lifting Nurse Practice Barriers to Advance Health Equity

Lifting nurse practice barriers to advance health equity. Twenty-seven restrict full practice authority for nurse practitioners.

By 2022 all changes in policies and states and federal law in response to Covid-19 should be made permanent.

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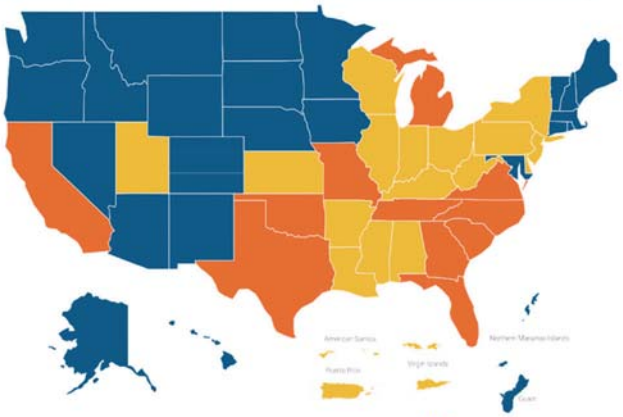
Lifting Nurse Practice Barriers to Advance Health Equity Cont.

Figure 1

Scope of Practice for nurse Practitioners by state
Source: AANP, 2020

- Full Practice
- Reduced Practice
- Restricted Practice



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Paying for Health Equity

Chronic Underfunding of public and school nurses and under use of telehealth.

Reform & embrace payment models.

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Paying for Health Equity Cont.

Each dollar invested in school health services yielded $2.20 in savings per student in avoided medical procedures and lost productivity of teachers and parents.

$1 = $2.20

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Preparing Nurses to Respond to Disasters and Public Health Emergencies

3 Preparing Nurses to Respond to Disasters and Public Health Emergencies.

3 The CDC (Center for Disease Control) should establish a Center for Disaster Nursing & Public Health Emergency Response.

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Preparing Nurses to Respond to Disasters and Public Health Emergencies Cont.

78%

of nurses had little or no familiarity with emergency preparedness and disaster response

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Transforming Nursing Education

4 Transforming Nursing Education

4 All nurses need to be educated about the country's history and it affects the communities that nurses work in.

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Transforming Nursing Education Cont.

17.3%

of full-time faculty in nursing schools were from underrepresented groups as of 2018.

80,000+

otherwise qualified applicants in the 2019-2020 enrollment cycle were turned away due to faculty shortages.

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Valuing Community and Public Health Nursing

5 The lack of valuing community and public health nursing.

5 The country needs to invest significant resources and funding to increase the number of community and public health nurses with a special focus on those serving communities of color, low income, rural communities and others with complex health care needs.

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Valuing Community and Public Health Nursing Cont.

School nurses are a lifeline for

56 Million

students, particularly children from low-income families.

Prior to the pandemic, about

one third of student health visits to school nurses were related to mental health.

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TYPES OF POWER

- Informational
- Legitimate
- Charismatic
- Coercive
- Extended

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TYPES OF STRESSORS

Inevitable Stress

Chosen

Imposed Stress

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REFERENCES

National Academy of Medicine: The Future of Nursing 2020-2030
May 2021

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Keynote 2

Nursing Education in Global Pandemic Era : The Way Forward

Professor, **Tener Goodwin Veenema,** PhD, MPH, FAAN (Johns Hopkins University, US)

Nursing Education in the Global Pandemic Era: The Way Forward

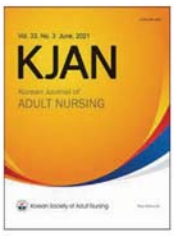
Tener Goodwin Veenema PhD MPH MS RN FAAN
Professor of Nursing and Public Health
Contributing Scholar, Johns Hopkins Center for Health Security

2021International Conference for 50th Anniversary of the Korean Society of Adult Nursing

JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH | Center for Health Security

1

Congratulations on your accomplishments and hard work!



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Nursing and Midwifery:
WHO 2020 International Year of the Nurse and the Midwife

WE ARE GLOBAL NURSES

- Nurses and midwives account for nearly 59% of the global health workforce.
- Nurses are 47.25 of the hospital workforce
- COVID-19 created untenable burden on 27.9 million nurses
- Morbidity & mortality

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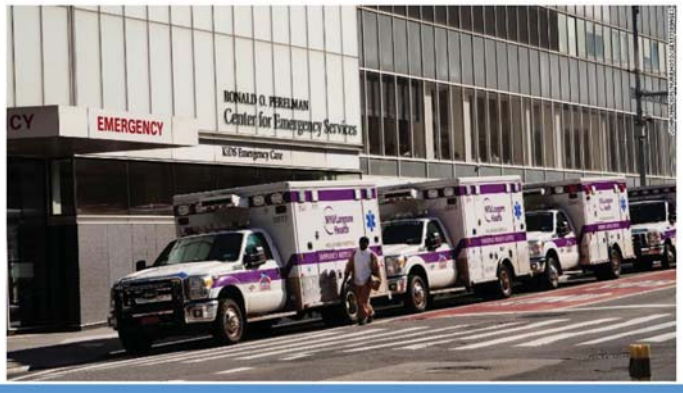
Crisis Standards of Care and Actions to Increase Critical Care Capacity



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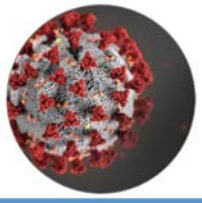
What happened?

- Health care workers were rapidly reassigned, mobilized and deployed.
- Alternate sites of care were established.
- Medical and nursing students were removed from clinical settings, given new roles.
- A false dichotomy existed between patient-centered care and learner-centered care.
- In COVID-19 *everyone learned.*
- *Flexibility and capacity to pivot quickly was critical.*



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COVID-19 Impact on Health Care System

- PPE, ventilator shortages, staffing shortages, critical care capacity limited, oxygen shortages, decision-making regarding allocation of scarce resources.
- Rapid acceleration of the COVID-19 pandemic.
- Implementation of Contingency/Crisis Standards for Care.
- Variation in adoption of masking and social distancing.

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Allocation of Scare Resources

- Difficult, painful decisions were made at times regarding allocation of scarce resources during three waves of COVID-19.
- Summer 2021 shows that we are in the “acceleration phase” once again of the COVID-19 pandemic in the United States.

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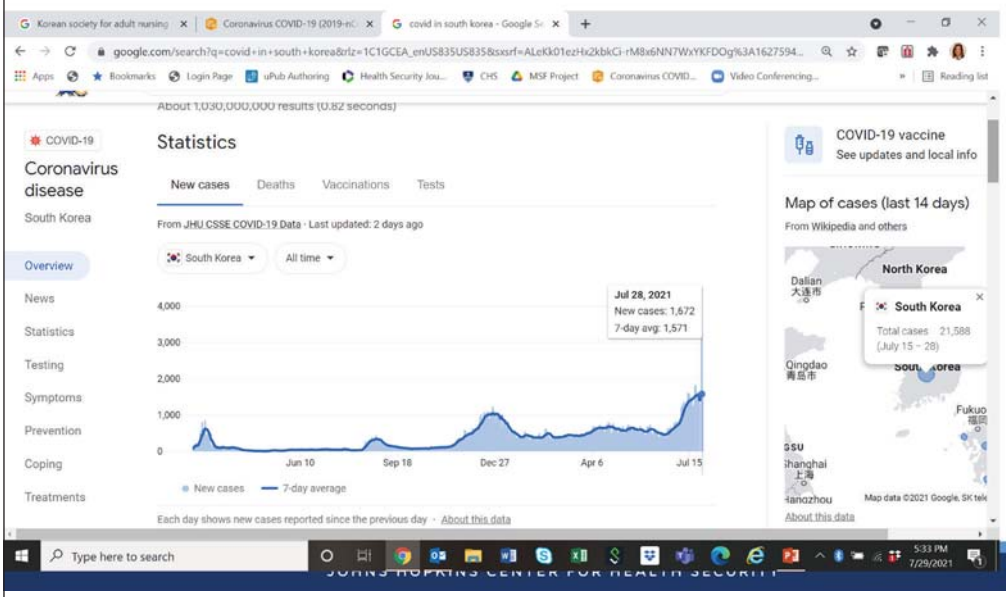

Nurses as a Critical Component of the Global Pandemic Public Health Workforce

- Clinical Patient Care
- Surge Capacity
- COVID-19 Testing & Contact Tracing
- Triage
- Tele-health, Tele-nursing
- Community Health Education
- Vaccination

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Critical Issues to Address

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Psychological and Moral Distress

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- The pandemic highlighted opportunities for greater efficiency in healthcare and drove the acceleration of both in-patient and out-patient virtual care.
- Consolidation of technologies helps support the business case for virtualization
- Lessons learned and best practices for remote monitoring, virtual ICUs, and virtual rounding from both the clinical and technical perspective,
- Standardization is becoming the new norm when installing IT solutions

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COVID-19 Impact on Faculty

COVID-19 Impact on Nursing Students

- Some nursing students were able to progress, despite the disruptions to typical campus life.
- Challenges to complete clinical coursework requirements forced some to delay graduation.
- Students who lacked experience with online learning were at a disadvantage; no internet access; privacy issues; no quiet space to complete work.
- Some students expressed perceptions of a loss of faculty support or mentoring.
- Many students experienced severe anxiety and financial hardship through loss of tuition funding, unemployment for themselves or others in their family, or other financial impacts.

Review of the Literature: Key Themes

- the need to pivot away from traditional nursing education
- integrate cognitive, affective, and psychomotor learning domains across curricula
- utilizing multiple modalities for delivery of nsg education to include asynchronous, remote technology-driven strategies
- supporting frontline health care workers while sustaining continuity of academic programming.

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Lessons learned for Nursing Education

- Traditional methods of in-person classroom based education not always necessary.
- Online (distance) learning, virtual simulation, gaming, tele-health/tele-nursing require shifts in educational pedagogy.
- Digitalization and smart health care technologies require changes in curriculum and training experiences.
- Students need support, advice and mentoring to deal with the changes in academic programming.

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National Nurse Preparedness for Pandemic Response: Lessons Learned

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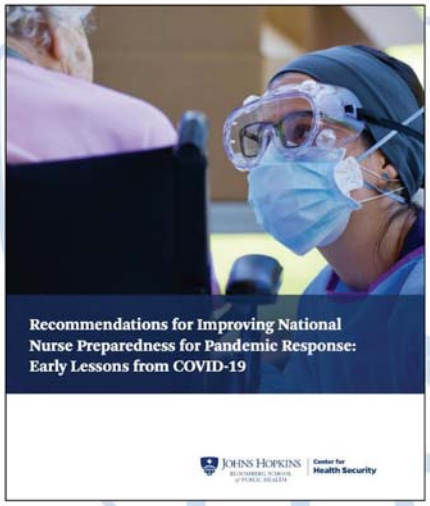

Lack of Preparedness

- Schools of nursing had not allocated sufficient time in their curricula and professional development programs to ensure that nurses were knowledgeable in infection control and disease containment strategies, the appropriate use of PPE, and the fundamental concepts of disaster and pandemic response. The impact of these curricular decisions was profound, resulting in major knowledge and skill gaps in the nursing workforce.

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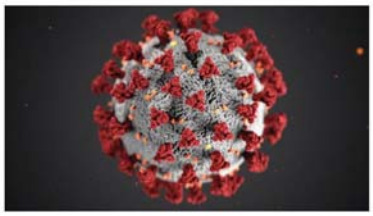
HOSPITALS AND SCHOOLS OF NURSING MUST ENSURE EDUCATION & TRAINING FOR NURSES:



- ***Surveillance and Detection***
- ***Isolation, Quarantine and Containment***
- ***Standard, Contact and Airborne Precautions***
- ***Proper Handwashing, Cough and Respiratory Etiquette***
- ***Selection and Appropriate Use of Personal Protective Equipment (PPE)***

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Lesson Learned

- Expanding and improving disaster and public health emergency education and training for nurses is vital.
- Global nursing workforce preparedness is a crucial component of pre-licensure education and lifelong professional development, including ongoing practice (regular drills and exercises).

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Academic Nursing in a Post-pandemic World

- In the future health care and higher education will look very different from its pre-pandemic state.
- The population will be older, more diverse, and potentially have more disabling conditions affecting both physical and mental health.
- To meet future health care needs, nurses will need the knowledge, skills, and abilities to address today's patient care needs, including the leadership and advocacy skills needed to enact successful changes.
- Nurses must be technologically savvy, clinically competent, and deployable across the continuum of care; and have the flexibility and knowledge needed to deal with a changing environment, including new and growing hazards to global health.

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The pandemic continues……

- We are at an inflection point in health professions education.
- The COVID-19 lessons learned must be learned quickly and implemented now.
- There is opportunity in crisis to move quickly and advance change that might not have been possible earlier.
- Going forward the academic enterprise must work in tandem with the clinical care enterprise to promote learning while ensuring capacity to surge and respond in large-scale public health emergencies.

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Nurses in Pandemic Response: The Tipping Point for Advancing Nurse Education

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Move to Competency-based Education

- Competency based time variable
- Flexible curriculum to accommodate student's personal lives
- Improved metrics for evaluation
- Goal to produce a pipeline of competent nurses

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Interprofessional Health Education

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Teaching & Learning

- Each School of Nursing should review the disaster, public health emergency and climate change content contained within its curriculum and to consider **expanding the amount of content covered and the frequency with which it is offered**.
- Curriculum complexity and uncertainty

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Elucidating the student experience

- Students commented on the agility of their schools and faculty in adapting to unforeseen and uncontrollable circumstances during the pandemic.
- Gratitude for the camaraderie, caring, and more personal nature of the communications.
- Zoom, virtual classes, online simulations, virtual work with faculty advisors and preceptors, and virtual grand rounds had great value.
- Students requested that schools not return to mandatory in-person learning, eliminate the over reliance on PowerPoint-based lectures in the curriculum, and better prepare faculty in using educational technology.
- Students requested more interactive critical thinking activities, increased communications about COVID-19, permission for clinical hours to be completed between semesters, increased access to textbooks and articles, and an increase in the number of telehealth hours that could be used for clinical experiences

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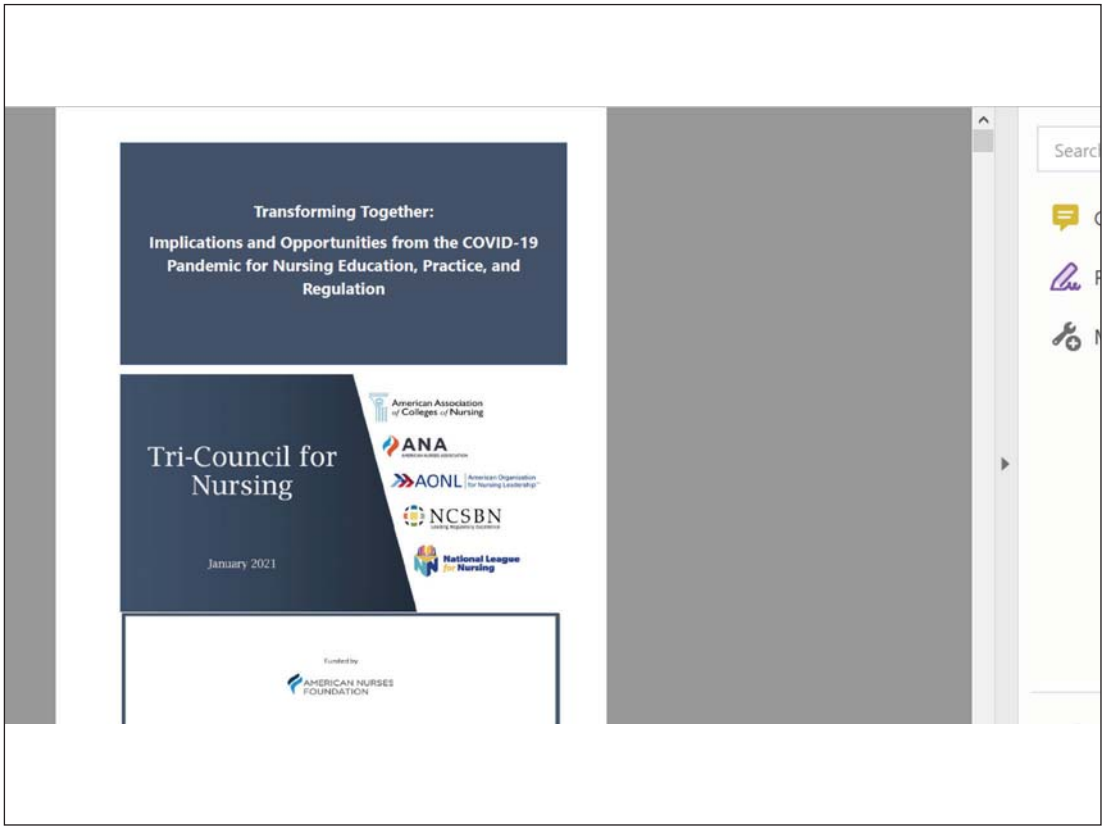
Transforming Together:
Implications and Opportunities from the COVID-19 Pandemic for Nursing Education, Practice, and Regulation
Tri-Council for Nursing
January 2021
American Association of Colleges of Nursing
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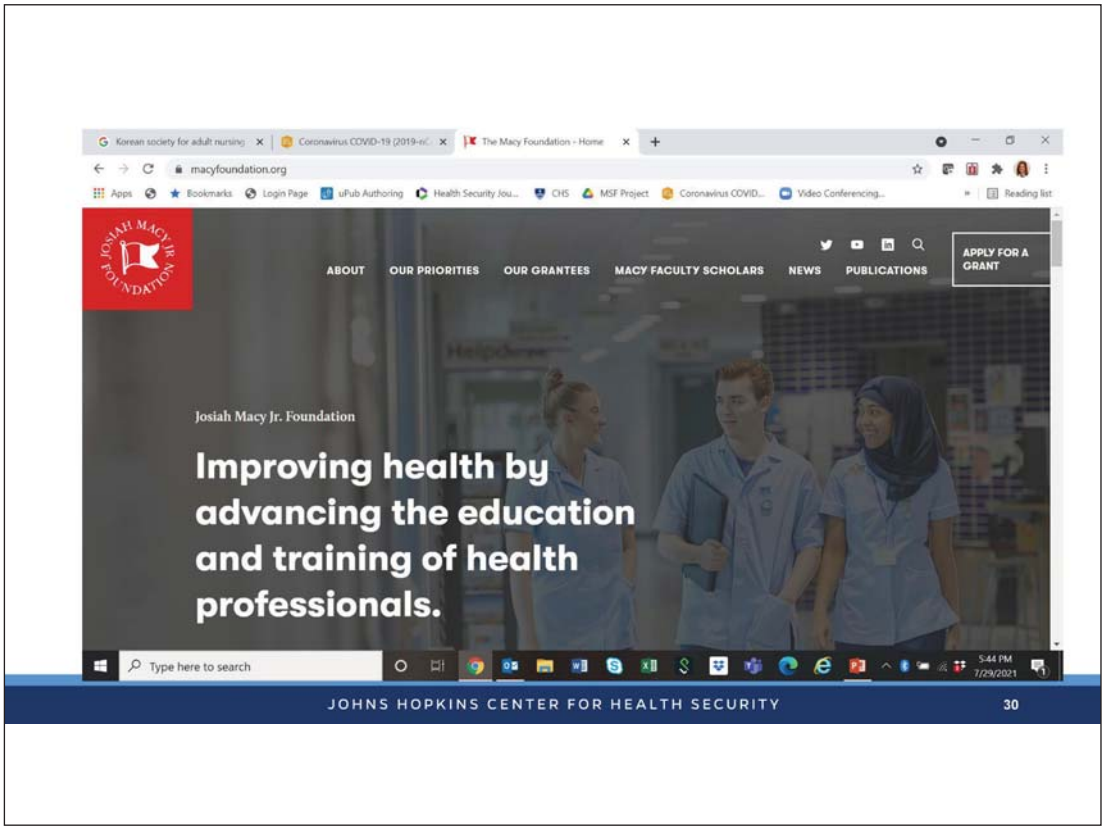
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Nurse Leadership in Pandemic Response

What role can nurse leaders and nurse researchers play in advancing this work?

How can we help to prepare the workforce for future pandemics?

How can we advance global health equity?

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Education of Nurse Researchers During the Global Pandemic

- Teaching students to ask the right questions
- Methodological rigor
- Human Subjects Protections
- Pre-position nurse scientists
- Build trusted relationships
- Interoperability of data sharing
- Technical assistance for fellow nurse scientists

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Thank you!

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Korean Society of Adult Nursing

Keynote 3

Innovation Nursing Research and Practice: Leading Change, Advancing Health

Professor, **Dawn Dowding,** PhD, RN, FAAN (University of Manchester, UK)

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The University of Manchester

Innovation Nursing Research and Practice: Leading Change, Advancing Health

The Future of Nursing Research and Practice

Dawn Dowding
Professor in Clinical Decision Making
dawn.dowding@Manchester.ac.uk

MANCHESTER 1824
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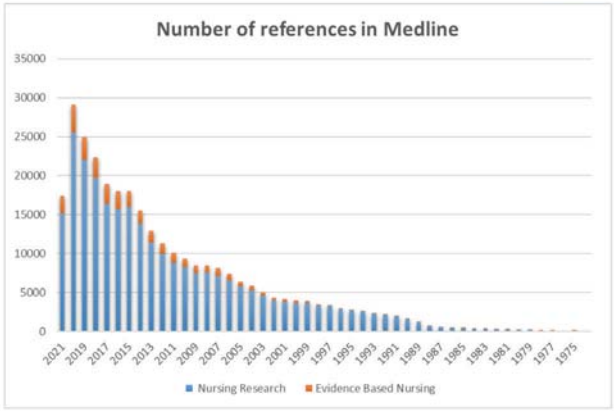

THE HISTORY OF EVIDENCE-BASED PRACTICE IN NURSING EDUCATION AND PRACTICE

APRIL MACKEY, BS(N)* AND SANDRA BASSENDOWSKI, EdD†

Evidence-Based Practice—An Emerging Concept

Florence Nightingale and Evidence-Based Nursing

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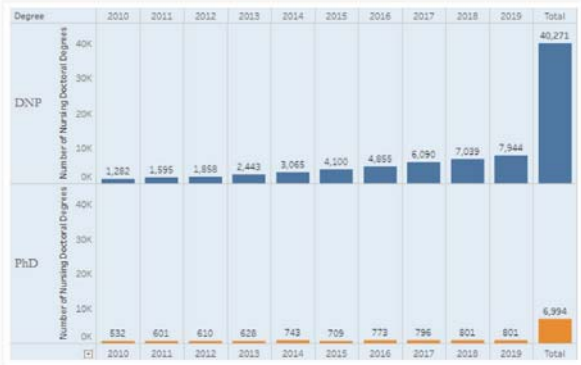
The nursing professoriate in the UK | Royal College of Nursing (rcn.org.uk)
accessed 06/07/2021



Source: Number of people receiving nursing doctoral degrees annually | Campaign for Action (accessed 06/07/2021)

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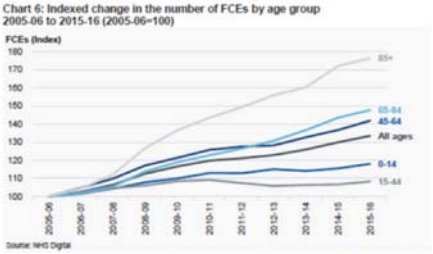
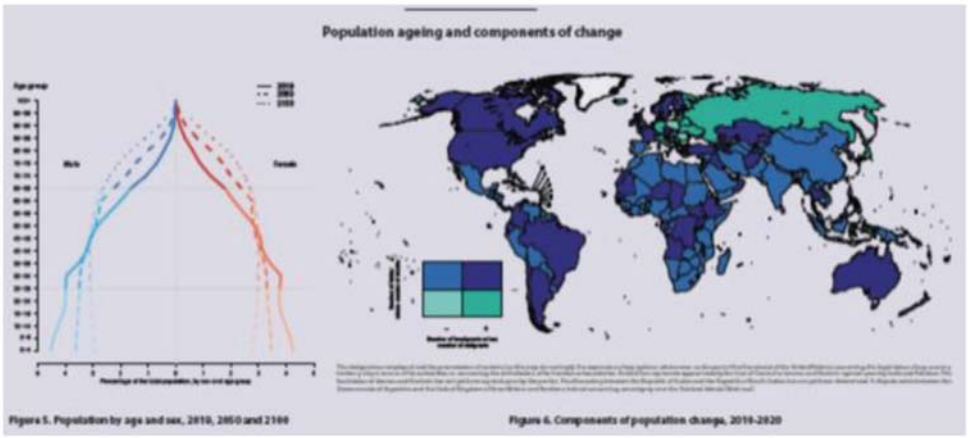


hosp-epis-stat-admi-summ-rep-2015-16-rep.pdf
accessed 06/07/2021



WPP2019-Wallchart.pdf (un.org) accessed 06/07/2021

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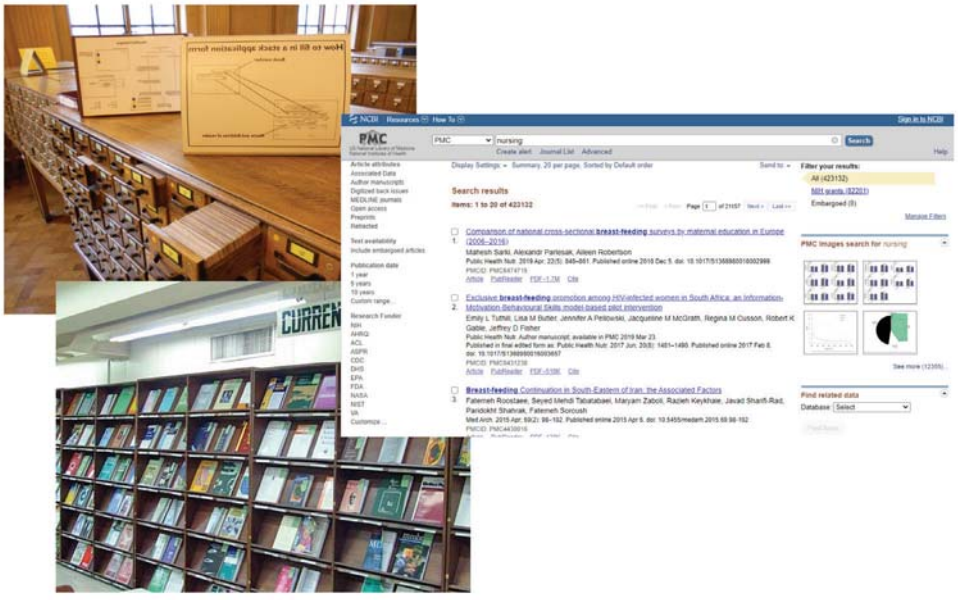

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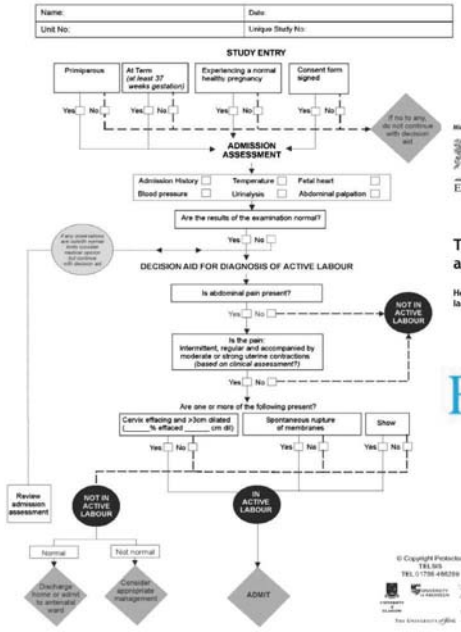

ISSUES AND INNOVATIONS IN NURSING PRACTICE

Making the diagnosis of labour: midwives' diagnostic judgement and management decisions

Helen Cheyne MSc RGN RM Dip NS
Research Programme Co-ordinator, Nursing, Midwifery and Allied Health Professions Research Unit, University of Stirling, Stirling, UK

Dawn W. Dowding BSc PhD RGN
Senior Lecturer in Clinical Decision Making, Department of Health Sciences, Hull York Medical School, York, UK

Vanora Hundley BN MSc PhD RGN RM
Associate Professor, College of Nursing, Houston Baptist University; Honorary Senior Lecturer, Nursing, Midwifery and Allied Health Professions Research Unit, University of Stirling, Nursing and Midwifery, Stirling, UK

Midwifery (2008) 24, 199–213
ELSEVIER
midwifery
www.elsevier.com/locate/midw

The development and testing of an algorithm for diagnosis of active labour in primiparous women

Helen Cheyne[a,*], Dawn Dowding[b], Vanora Hundley[a,c], Lorna Aucott[d], Maggie Styles[a], Jill Mollison[d], Ian Greer[a], Catherine Niven[a]

BMJ
RESEARCH

Effects of algorithm for diagnosis of active labour: cluster randomised trial

Helen Cheyne, research programme leader,[1] Vanora Hundley, honorary senior lecturer,[1] Dawn Dowding, senior lecturer,[2,3] Martin Bland, professor of health statistics,[2] Paul McNamee, senior research fellow,[4] Ian Greer, dean,[5] Maggie Styles, lecturer,[6] Carol A Barnett, senior midwife,[6] Graham Scotland, research fellow,[4] Catherine Niven, director[1]

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Effects of computerized decision support systems on nursing performance and patient outcomes: a systematic review

Journal of Health Services Research & Policy Vol 12 No 4, 2007: 242-249

Rebecca Randell, Natasha Mitchell[1], Dawn Dowding[1], Nicky Cullum[1], Carl Thompson[1]
Centre for HCI Design, School of Informatics, City University, London; [1]Department of Health Sciences, University of York, York, UK

Nurses' use of computerised clinical decision support systems: a case site analysis

Dawn Dowding, Natasha Mitchell, Rebecca Randell, Rebecca Foster, Valerie Lattimer and Carl Thompson

Journal of Clinical Nursing, 18, 1159–1167

The impact of an electronic health record on nurse sensitive patient outcomes: an interrupted time series analysis

Dawn W Dowding,[1] Marianne Turley,[2] Terhilda Garrido[3]

J Am Med Inform Assoc 2012;19:615–620. doi:10.1136/amiajnl-2011-000504

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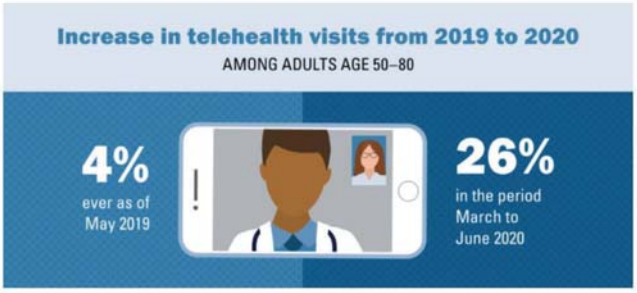
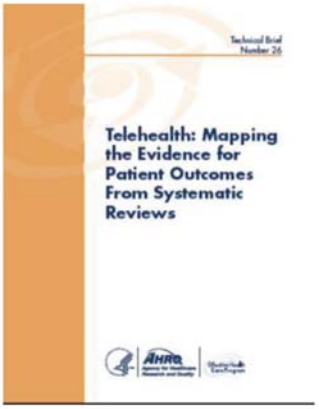
Published in final edited form as:
J Telemed Telecare. 2015 January ; 21(1): 37–44. doi:10.1177/1357633X14562734.

A systematic review of telehealth tools and interventions to support family caregivers

Nai-Ching Chi[1] and George Demiris[1,2]
[1]Biobehavioral Nursing and Health Systems, School of Nursing, University of Washington, USA
[2]Biomedical and Health Informatics, School of Medicine, University of Washington, USA



Telehealth Use Among Older Adults Before and During COVID-19 | National Poll on Healthy Aging (healthyagingpoll.org)



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Drivers for Technological Change

- Data from 10 countries
  - Australia, Brazil, Canada, Columbia, India, Jordan, New Zealand, Sri Lanka, USA, UK
  - Regulatory issues
  - Capacity and Delivery
  - Regulated vs Unregulated telehealth
  - Uptake and perception
  - Training and education

Basu A, et al. Telehealth and the COVID-19 Pandemic: International Perspectives and a Health Systems Framework for Telehealth Implementation to Support Critical Response. Yearb Med Inform. 2021 Apr 21. doi: 10.1055/s-0041-1726484. Epub ahead of print.

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Digitally Enabled Nursing Practice

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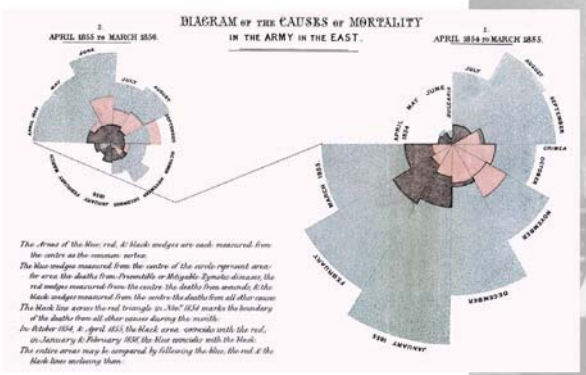

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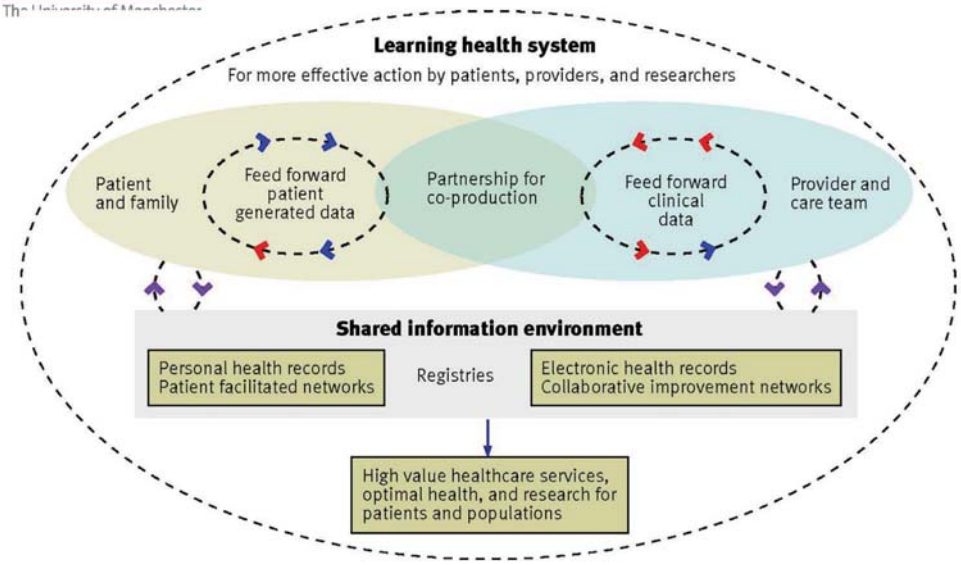
Fig 1 Model of registry enabled care and learning health system .



Eugene C Nelson et al. BMJ 2016;354:bmj.i3319

thebmj

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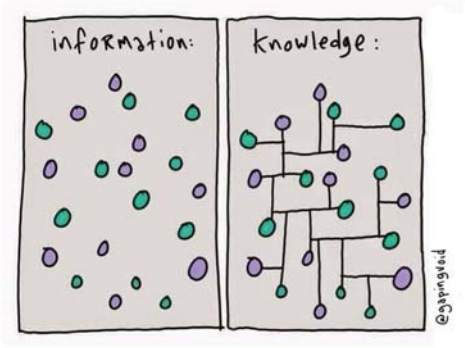
What Data should we collect?



- Nursing Minimum Data Set
- Usability of systems
- Moral/ethical issues – only collect what you need, consent, security, trust

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What should data look like?

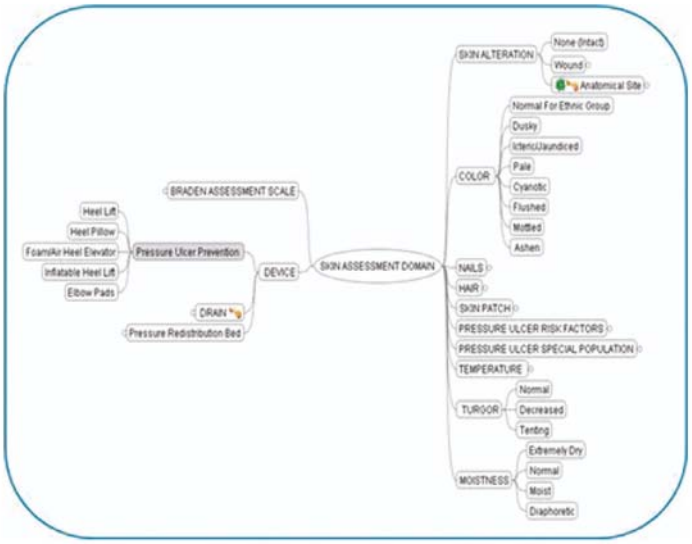

Figure 1: Mapping of data elements related to HAPU risk assessment.

J Am Med Inform Assoc, Volume 22, Issue 3, March 2015, Pages 608–614, https://doi.org/10.1093/jamia/ocu026
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OXFORD UNIVERSITY PRESS

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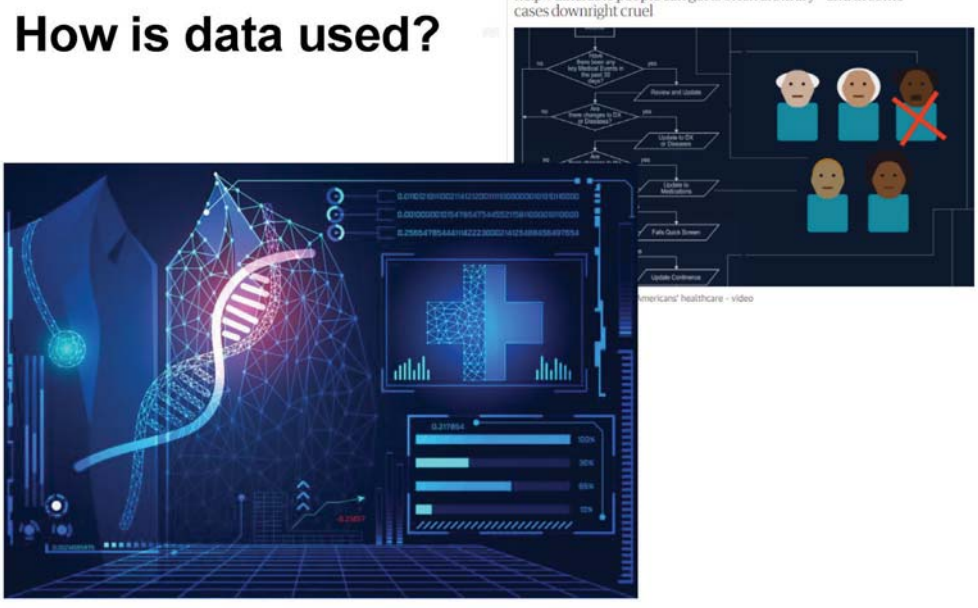
How is data used?

What happened when a 'wildly irrational' algorithm made crucial healthcare decisions

Advocates say having computer programs decide how much help vulnerable people can get is often arbitrary - and in some cases downright cruel



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Fall Prevention - Keep on keep up from Reason Digital on Vimeo

About Us (kokuhealth.com)

Alzheimer's news: Playing video games 'could stave off the disease'

ELDERLY people can stave off Alzheimer's disease by playing active video games popular with kids, according to new research.

SHARE TWEET

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Journal of Alzheimer's Disease 55 (2017) 569–574
DOI 10.3233/JAD-160703
IOS Press

The Utilization of Robotic Pets in Dementia Care

Sandra Petersen[a,*], Susan Houston[b], Huanying Qin[c], Corey Tague[d] and Jill Studley[e]
[a]The University of Texas at Tyler, College of Nursing and Health Sciences, Tyler, TX, USA
[b]Baylor Scott and White Health Care System Office of the CNO, Plano, TX, USA
[c]Baylor Scott and White Health Care System, Dallas, TX, USA
[d]ACH Health Services, Hurst, TX, USA
[e]Baylor Elder HouseCalls, Dallas, TX, USA

International Journal of Older People Nursing

ORIGINAL ARTICLE | Open Access

How do "robopets" impact the health and well-being of residents in care homes? A systematic review of qualitative and quantitative evidence

Rebecca Abbott PhD, Noreen Orr PhD, Paige McGill BSc, Rebecca Whear MSc, Alison Bethel PGDip, Ruth Garside PhD, Ken Stein MD, Jo Thompson-Coon PhD

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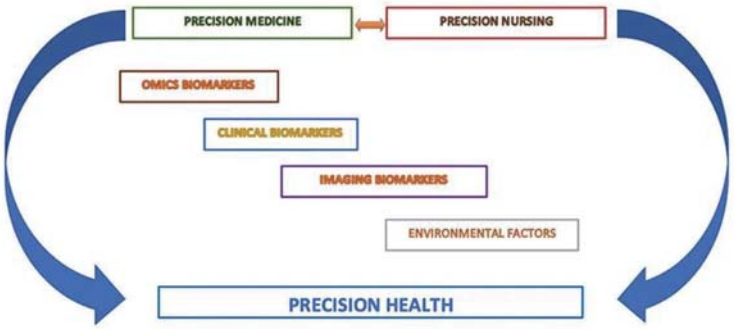
ONLINE CLINICAL INVESTIGATIONS

Detecting Patient Deterioration Using Artificial Intelligence in a Rapid Response System

Cho, Kyung-Jae MS[1]; Kwon, Oyeon MS[1]; Kwon, Joon-myoung MD, MS[2]; Lee, Yeha PhD[1]; Park, Hyunho MD[1]; Jeon, Ki-Hyun MD, MS[2]; Kim, Kyung-Hee MD, PhD[2]; Park, Jinsik MD, PhD[2]; Oh, Byung-Hee MD PhD[3]

Author Information

Critical Care Medicine: April 2020 - Volume 48 - Issue 4 - p e285-e289
doi: 10.1097/CCM.0000000000004236



Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132

Review

Precision health: A nursing perspective

Mei R. Fu [a,*], Emma Kurnat-Thoma [b,c], Angela Starkweather [d], Wendy A. Henderson [d], Ann K. Cashion [b], Janet K. Williams [e], Maria C. Katapodi [f], Karin Reuter-Rice [g], Kathleen T. Hickey [h], Veronica Barcelona de Mendoza [i], Kathleen Calzone [j], Yvette P. Conley [k], Cindy M. Anderson [l], Debra E. Lyon [m], Michael T. Weaver [m], Pamela K. Shiao [n], Rose E. Constantino [o], Shu-Fen Wung [p], Marilyn J. Hammer [p], Joachim G. Voss [q], Bernice Coleman [r]

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Nurses of the Future

- Skills in the collection and use of data to inform nursing practice
- Integration of digital skills and data science into curricula
- Focus on population health management and care coordination
- Nurse researchers with skills in data science, data analytics
- Leadership in digital transformation

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Korean Society of Adult Nursing

감사합니다

Thank you

Pre-conference workshop :
Road Map to Success of Graduate Students in Nursing

1) **Ji Yea Lee** (PhD Student, Yonsei University, South Korea)

2) **JunYeong Byun** (PhD Student, Univ of Alabama at Birmingham, US)

3) **Kayo Kawahara** (PhD student, St. Luke's International University, Japan)

4) **Zeng Dejian** (PhD student, The Chinese University of Hong Kong)

International Conference for 50th anniversary of KSAN, Aug 20, 2021

YONSEI UNIVERSITY

"Roadmap to Success of Graduate Students in Nursing"

Ji Yea Lee, MSN, RN

August 20, 2021

YONSEI UNIVERSITY

Who am I?

Clinical experience
- Severance Hospital & Yonsei Cancer Center
- Cancer patients in surgical ward

Researcher
- Self-management education in patients with cancer
- Psychological distress in patients with cancer

Educator
- Teaching assistant
- Clinical practicum instructor
- Clinical practicum coordinator

YONSEI UNIVERSITY

Success

= the accomplishment of an aim or purpose

YONSEI UNIVERSITY

Accepted to INJS

Receiving a grant

Aim or purpose

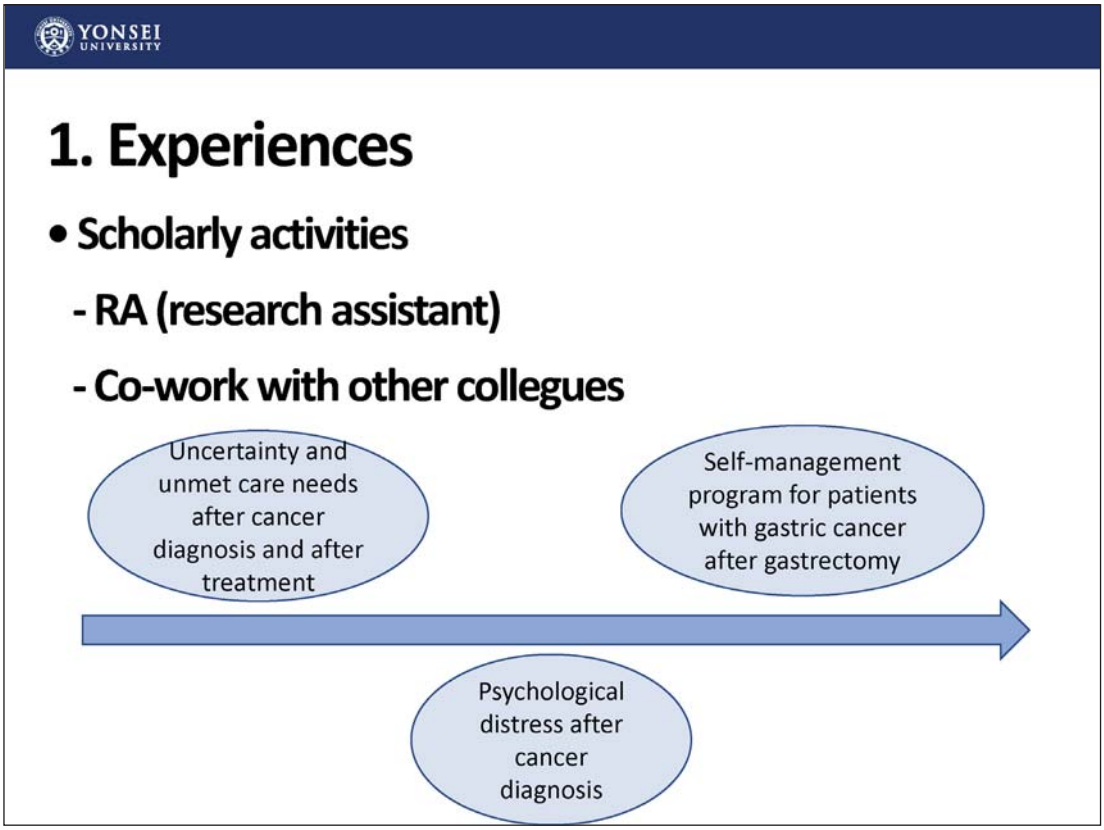
Getting a scholarship

YONSEI UNIVERSITY

- To be an independent scientist
- To prepare myself for an educator

YONSEI UNIVERSITY

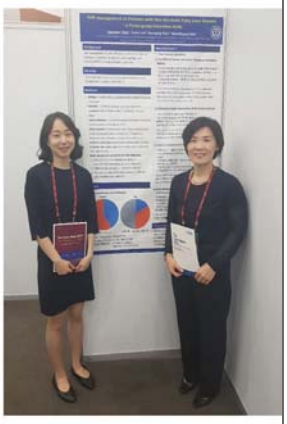
YONSEI UNIVERSITY
WELCOME TO
SUCCESS
ENJOY THE JOURNEY
1. Experiences


YONSEI UNIVERSITY
1. Experiences
• Scholarly activities
- RA (research assistant)
- Co-work with other collegues
Uncertainty and unmet care needs after cancer diagnosis and after treatment
Self-management program for patients with gastric cancer after gastrectomy
Psychological distress after cancer diagnosis

YONSEI UNIVERSITY

1. Experiences

- Scholarly activities
  - RA (research assistant)
  - Co-work with other collegues



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- Educational activities
  - TA (teaching assistant): various teaching methods (PBL, TBL, simulation, virtual simulation etc)
  - Clinic instructor & coordinator

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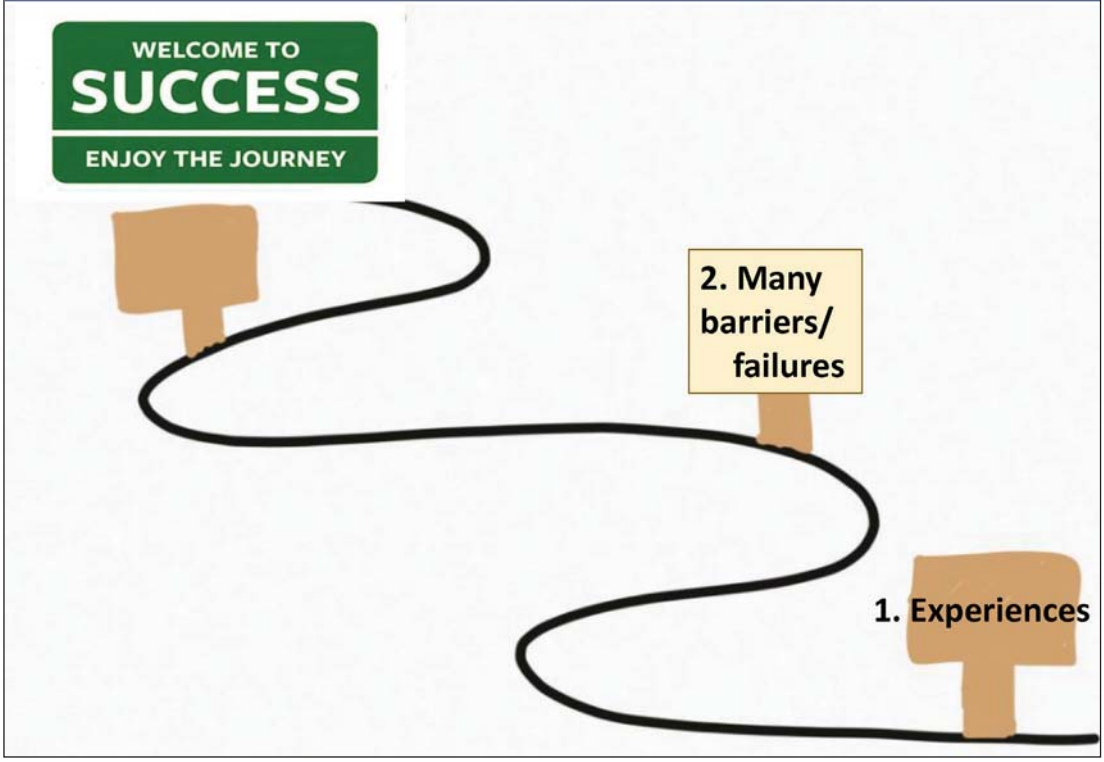

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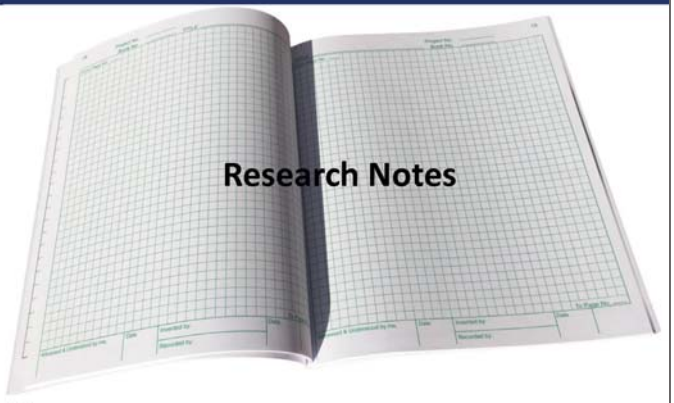
2. Barriers/Failures

- **Rejects, rejects, and rejects**

YONSEI UNIVERSITY



- Reasons for rejection
- What I have missed
- How to revise it
- What to consider in future research

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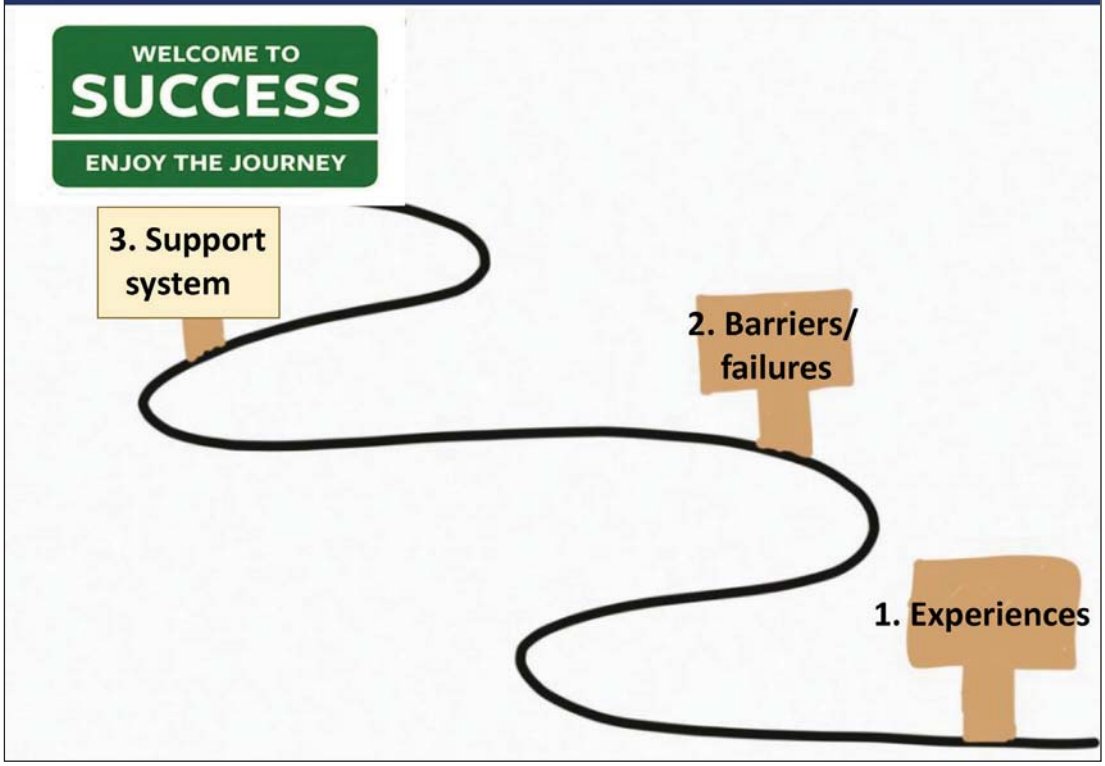

YONSEI UNIVERSITY

3. Support systems

- Learning from
  - professors, other collegues
- Getting advice from
  - professors, graduated seniors
- Stress management with
  - peer group, family and friends

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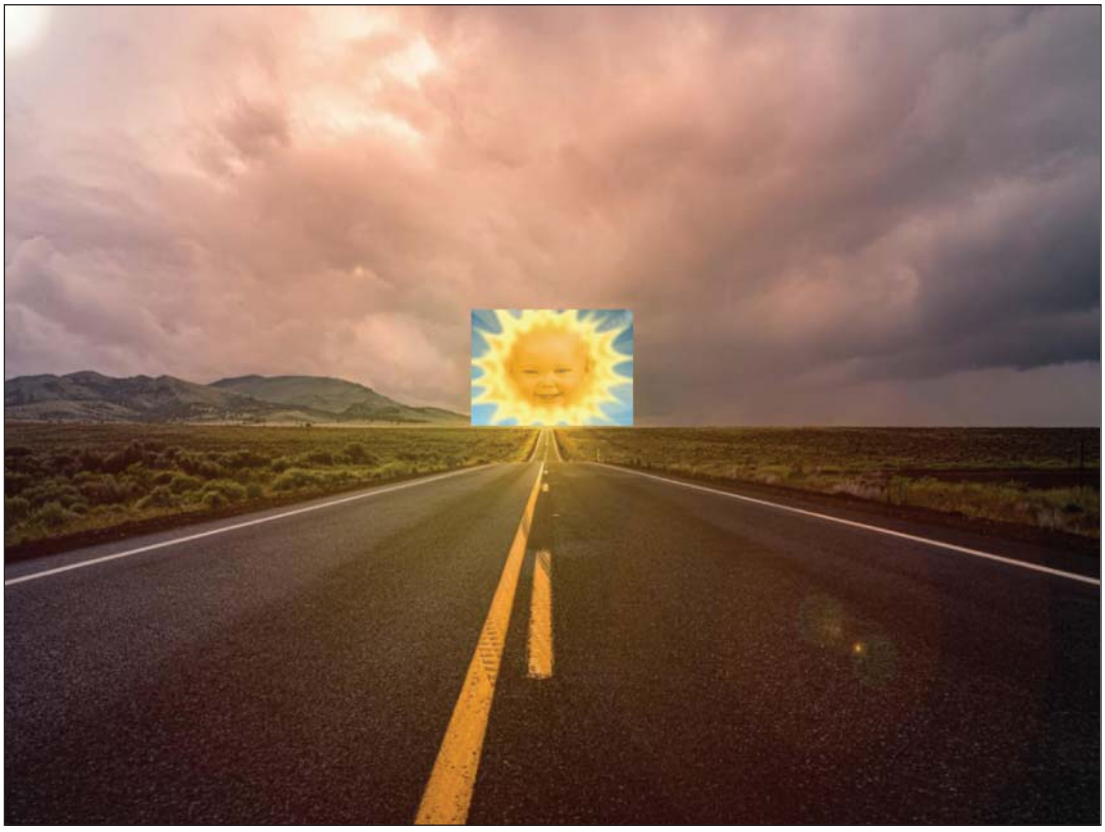
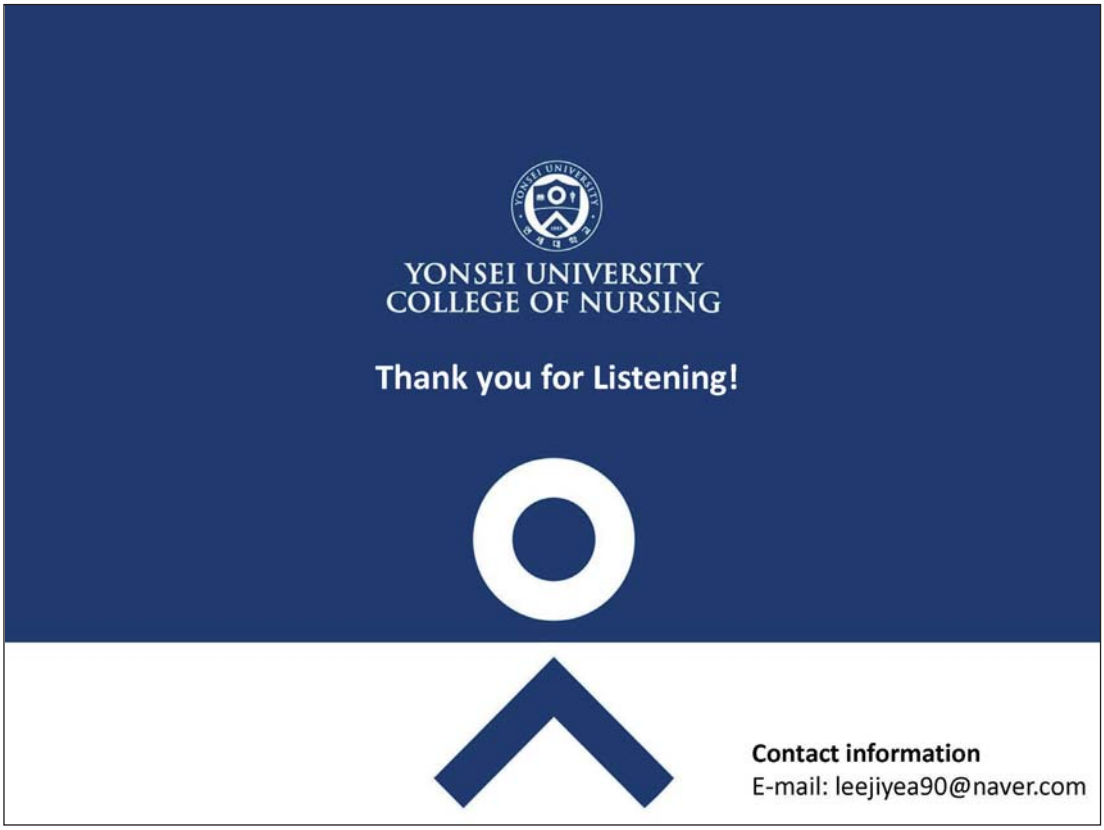
SWOT analysis

Strength Easy-going person	**Weakness** Lack insights or creativity
Opportunity Able to participate in researches and involve in education	**Threat** Balance between work and Studying




YONSEI UNIVERSITY
COLLEGE OF NURSING
Thank you for Listening!
Contact information
E-mail: leejiyea90@naver.com

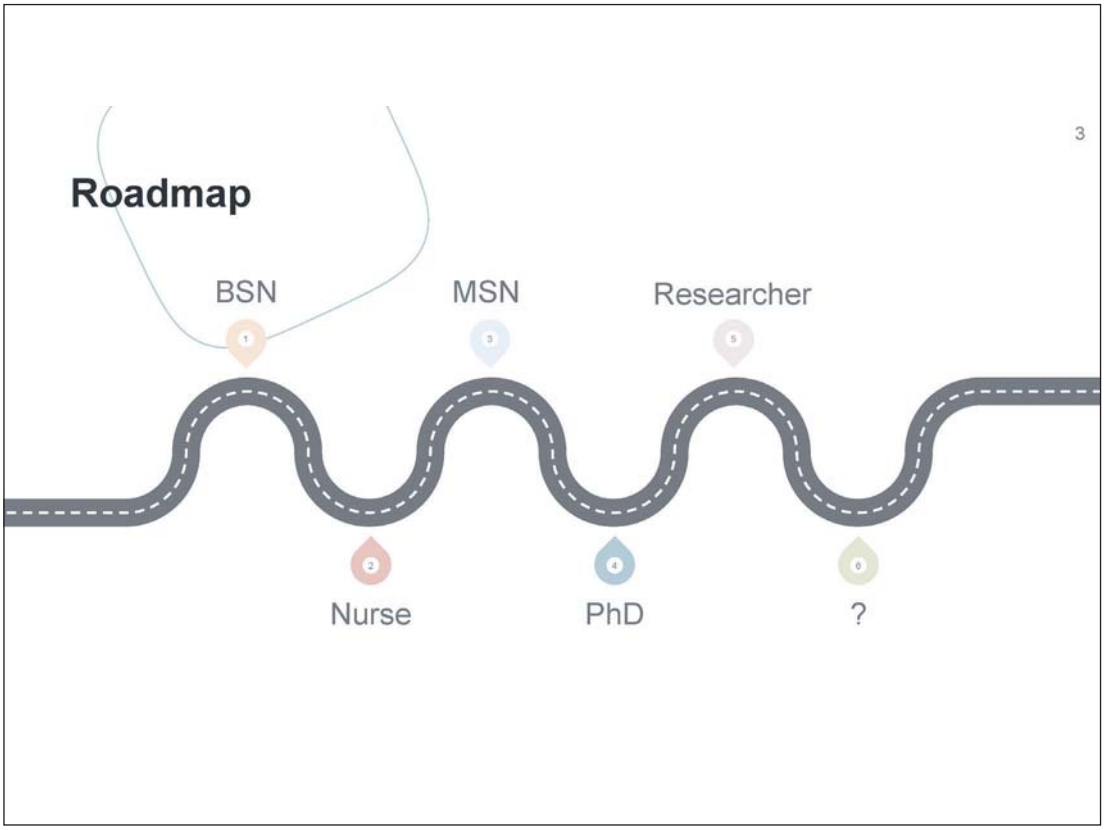
THE TRAJECTORY OF MY GRADUATE STUDENT LIFE

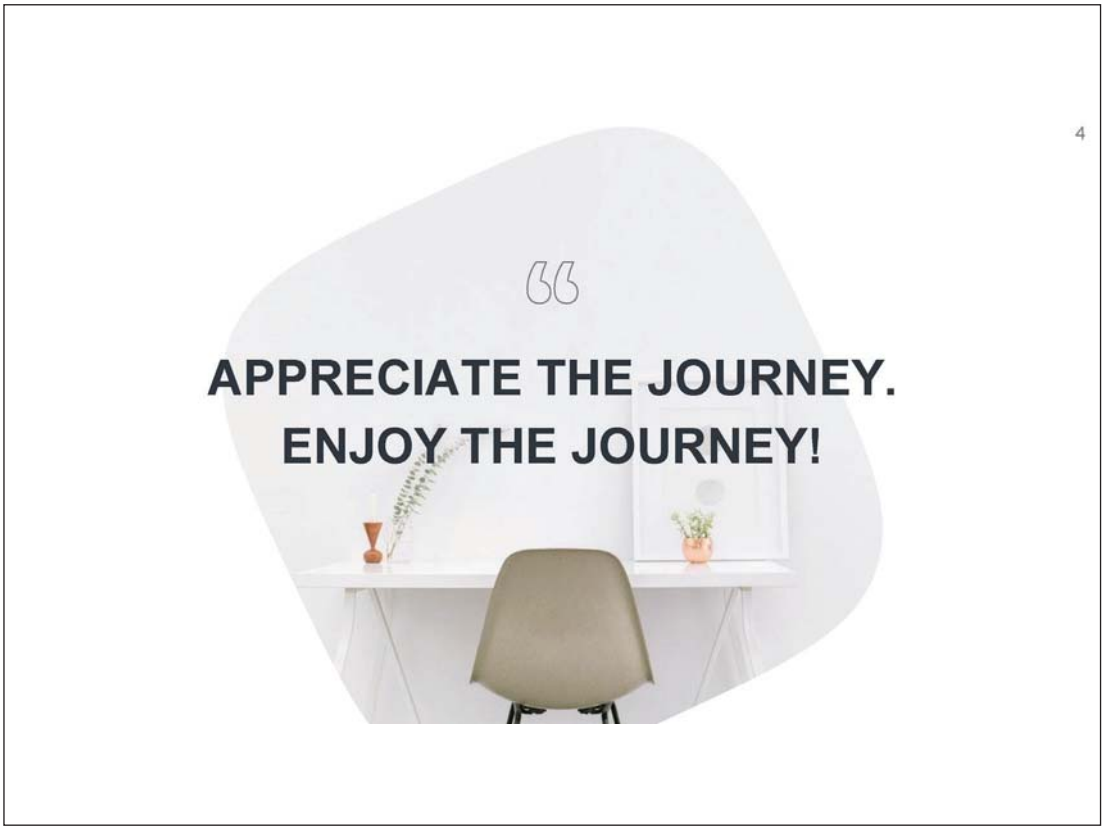
Jun Yeong Byun, MSN, RN
The University of Alabama at Birmingham
"Road Map to Success of Graduate Students in Nursing"
August 20, 2021

2

Jun Yeong Byun

- **Education**
  - 2021- PhD student in Nursing Science, University of Alabama at Birmingham
  - 2021 MSN in Nursing Science, Korea University
  - 2015 BSN in Nursing Science, Korea University
- **Clinical Background**
  - 2015-2018 Registered nurse at MICU, Korea University Medical Center, Ansan
- **Research Related Experience**
  - 2018-2021 Research Assistant, School of Nursing, Korea University


3
Roadmap
BSN
MSN
Researcher
Nurse
PhD
?

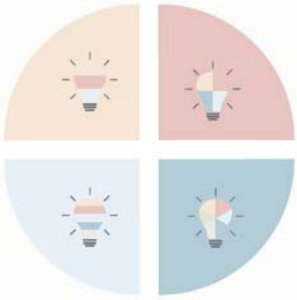

4
APPRECIATE THE JOURNEY.
ENJOY THE JOURNEY!

5

The Main Concepts of My Research Area

Stigma
Intersectional stigma.

COPD
One of the three leading causes of death worldwide.



The number of older adults with HIV (50≤age) is expected to increase to 73% in 2030.
Successful Aging

Ten percent of people with HIV are diagnosed with COPD.
HIV

6

The Trajectory of Research

The Stigma of People with COPD
-Cross-sectional quantitative study

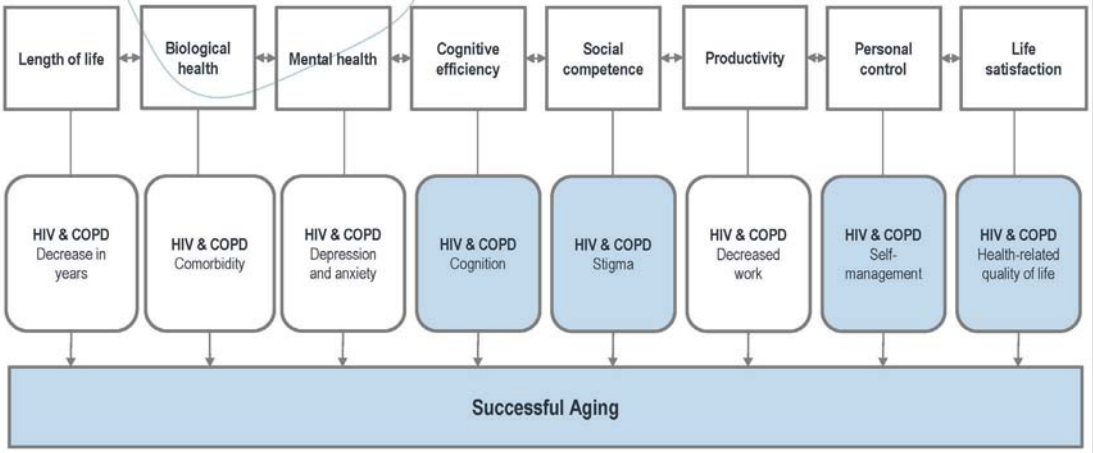
Exploring Successful Aging with HIV Plus COPD Through a Biopsychosocial Model
-Review paper
-Theoretical framework

An Exploration of Intersectional Stigma on Living with HIV and COPD in Alabama
-Case comparison study
-Qualitative approach

The Impact of Intersectional Stigma on Successful Aging in Adults Living with HIV and COPD
-Cross-sectional quantitative study
-Pilot study or secondary data analysis

7

Successful Aging of People with HIV and COPD



8

Tips

Seek and Grab Opportunities
What are your goals?

Relationship with Mentors
Reach out to your mentors!
They want you to succeed.

Faculties, staff, colleagues, and research participants.
Communication

Utilize resources around you. (e.g., Student counseling services)
Physical and Mental Health

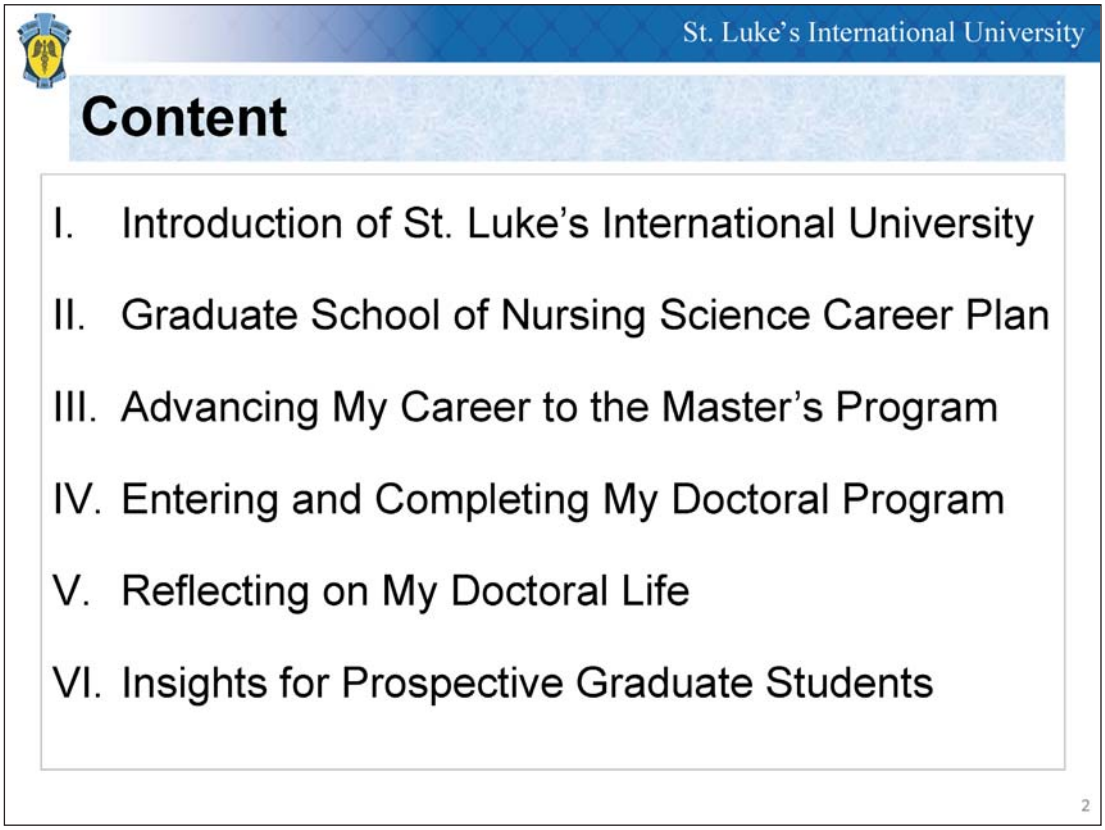
9

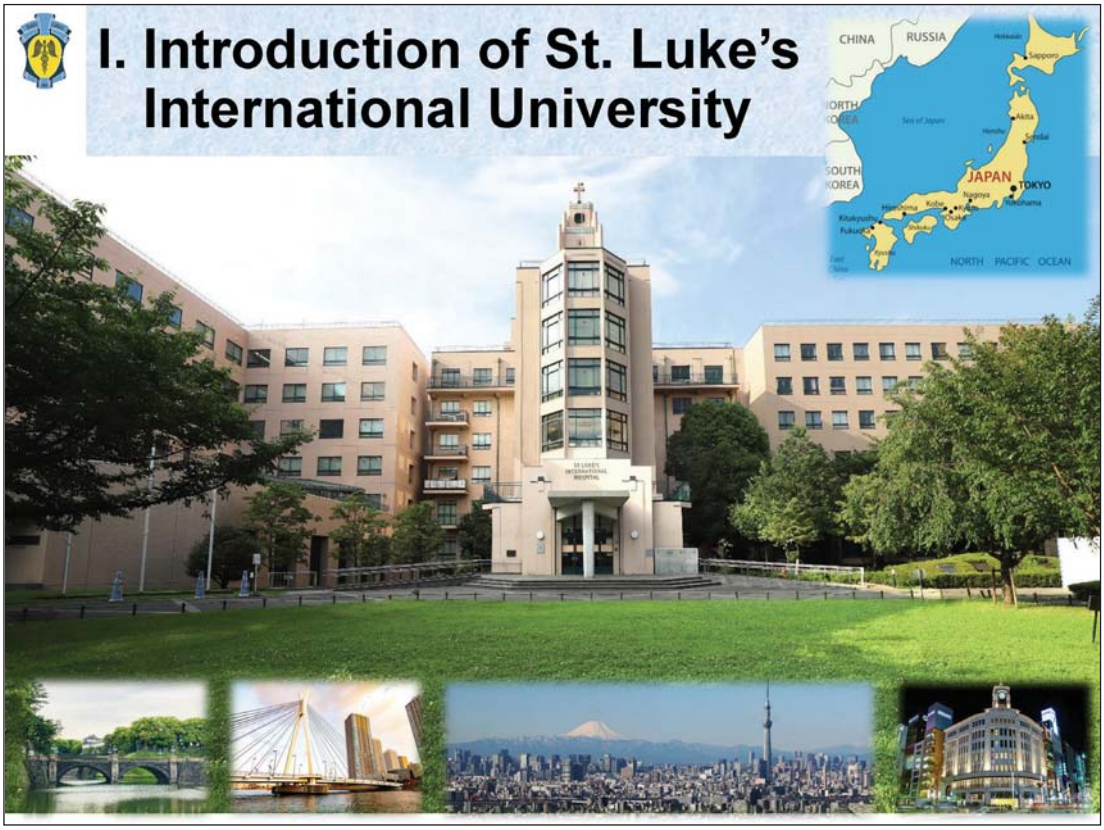
10

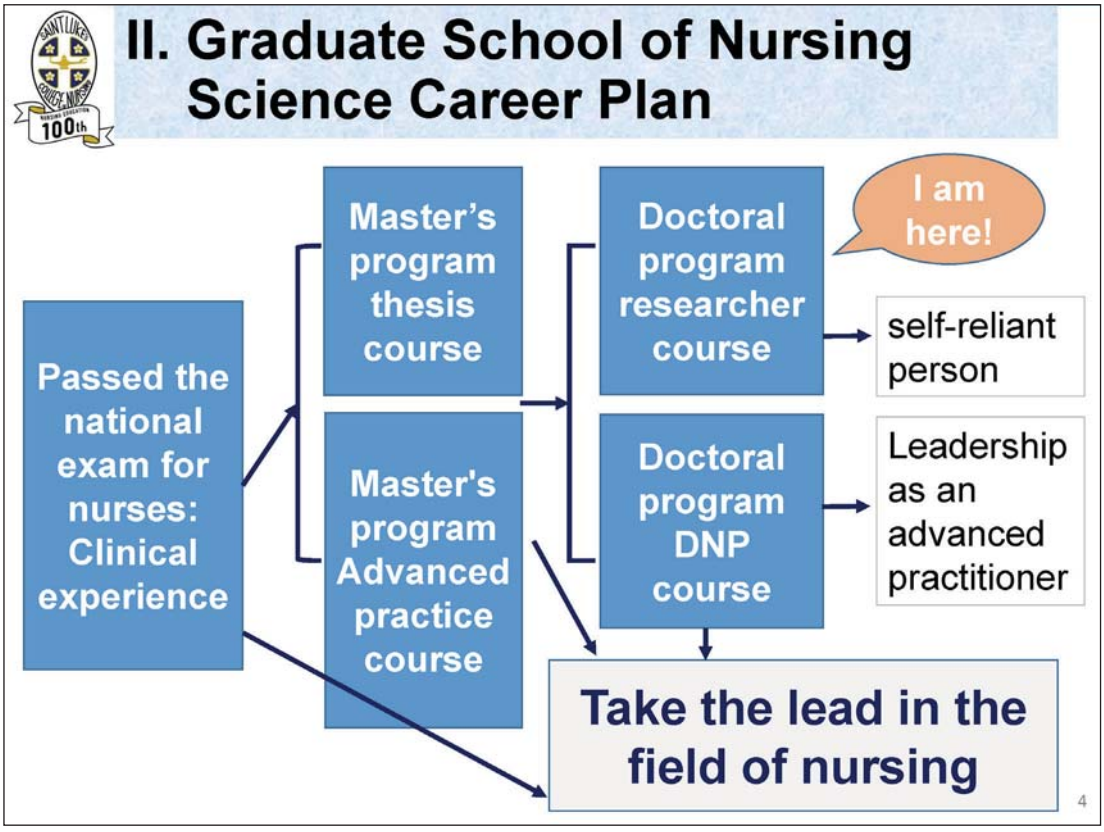
Thank you.
Any Questions or Comments?

CONTACT ME
Jun Yeong Byun
E-mail: junbyun@uab.edu
Phone: +1 205-934-5482

St. Luke's International University
Roadmap to Success for Graduate Students in Nursing
Kayo Kawahara, RN, PHN, MSN
Chronic Illness and Conditions Nursing
Graduate School of Nursing Science
St. Luke's International University, Tokyo, Japan


St. Luke's International University
Content
I. Introduction of St. Luke's International University
II. Graduate School of Nursing Science Career Plan
III. Advancing My Career to the Master's Program
IV. Entering and Completing My Doctoral Program
V. Reflecting on My Doctoral Life
VI. Insights for Prospective Graduate Students
2


I. Introduction of St. Luke's International University
CHINA
RUSSIA
JAPAN
TOKYO
NORTH PACIFIC OCEAN


II. Graduate School of Nursing Science Career Plan
Passed the national exam for nurses: Clinical experience
Master's program thesis course
Master's program Advanced practice course
Doctoral program researcher course
Doctoral program DNP course
I am here!
self-reliant person
Leadership as an advanced practitioner
Take the lead in the field of nursing
4

St. Luke's International University

2. Self-introduction

Name: Kayo Kawahara

Specialized field: Chronic illness and conditioning nursing; Cardiovascular nursing

Career:

5

St. Luke's International University

3. Background of the Graduate School

Master's Course

【Viewpoint from research】
- Palliative care for patients with heart failure(HF) does not spread clinically

【Viewpoint from career】
- Need logical thinking

Doctoral program

【Viewpoint from research】
- Develop a program for the promotion of palliative care to patients with HF.

【Viewpoint from career】
- Balance of personal life, schoolwork, and work
- Road to teachers

6

III. Advancing My Career to the Master's Program

Title: Factors influencing nurses' palliative care of hospitalized patients with end-stage heart failure: A cross-sectional investigation

Objective: To reveal the relationship between the behavior of cardiovascular nurses in palliative care for patients with end-stage heart failure and the basic attributes of nurses.

Methods: An anonymous, self-administered questionnaire survey was conducted among 1,211 cardiovascular nurses across Japan.

Results: Of the responses from 507 nurses, 362 valid responses were included in the analysis. The factors associated with the behavior of the respondents working in palliative care for patients with end-stage heart failure were years of experience in cardiovascular care ($r = .195$, $p = .000$), presence or absence of credentials ($p = .001$), ward system ($p = .001$), and efforts in palliative care for patients with end-stage heart failure ($p = .032$). Knowledge about palliative care was associated with the intention of understanding the factors encouraging actual engagement in palliative care ($r = .192$, $p = .000$). Participation/non-participation in education and training about palliative care was associated with knowledge about palliative care ($p = .000$).

Conclusion: Our findings suggest that nursing practices based on knowledge about palliative care acquired through education and training in palliative care and specialized expertise in the cardiovascular system are necessary for providing palliative care for patients with end-stage heart failure.

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1. Looking Back at My Master's Course

Merits

- Think by applying clinical experience to theory
- Understand how to search and review
- Ask the teacher what you do not understand (student privilege!!)
- Friends

Demerits

- Tuition and living expenses
- Employment problems
- Luggage is always heavy

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IV. Entering and Completing My Doctoral Program

1. Positioning of Research in the Doctoral Course

Characteristics of patients with HF

- ▸ High readmission rate
- ▸ Difficult to predict prognosis
- ▸ Many elderly people

→ **Decision-making is** important as to how much treatment you want → Need for ACP

Developed advance care planning programs for patients with heart failure and verified their effectiveness

Master's Program	Clinical	Doctoral Program	GOAL
Survey of healthcare professionals' perceptions of palliative care for patients with HF	Palliative care for patients with heart failure is not common. They do not even know the concept	• Focus on ACP for patients with heart failure	• CHF patients reach a dignified end of life

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2. Doctoral Course and Research Framework

The ADAPT-ITT Model (Wingood and Diclemente, 2008)

1. **Assessment**- Assessment of the needs of the new population
2. **Decision**- Decide on whether to adopt or adapt the intervention
3. **Administration**- Administration of the intervention
4. **Production**- Production of the adapted intervention
5. **Topical experts**- Topical experts assist the adaptation process
6. **Integration**- Integration of feedback from the topical experts into the adapted intervention
7. **Training**-Training to implement the adapted intervention
8. **Testing**- Testing the adapted intervention

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3. Assessment

- Evaluation of target needs

→ Literature review

Interview; Analyzing as preliminary research

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4. Decision

- **EBI (evidenced-based intervention) review**

→ Conduct Systematic Review and meta-analysis to determine the effectiveness of the intervention.

- **Decision on EBI to be implemented**

→ Under consideration together with the results of preliminary research

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5. Future Considerations

- Decide on the **evidenced-based intervention** to implement
- **Interview surveys** are being analyzed to determine how to effectively apply intervention methods
- What to evaluate is considered based on the **systematic review results**.

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V. Reflecting on My Doctoral Life

1. Differences from the Master's Course

- Opportunity to **present** the results of the research process (preliminary research)
- **Connect** with researchers and clinicians outside the university (if you move positively, personal connections)
- Program development requires sufficient time to **plan independently** through stages

Same as the Master's course	• Research funding • Life plan • Logical thinking, writing ability, communication ability

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2. Completing the Doctoral Program

- Remember your **passion**, **inquisitiveness**, and **love for your research**
- Always keep in mind **deadlines** (usually it does not work ...)
- Independence to **complete your research** (and sometimes at your own pace)
- Find **someone to talk to** about your research and life

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VI. Insights for Prospective Graduate Students

- If you **work diligently** on your research and course work, the results should follow.
- Listen to the experiences of various people and **adopt the method that suits you**.
- It takes **a cohesive period**, so even vaguely look at life planning.
- Completing graduate programs is decided by **one's own will**.

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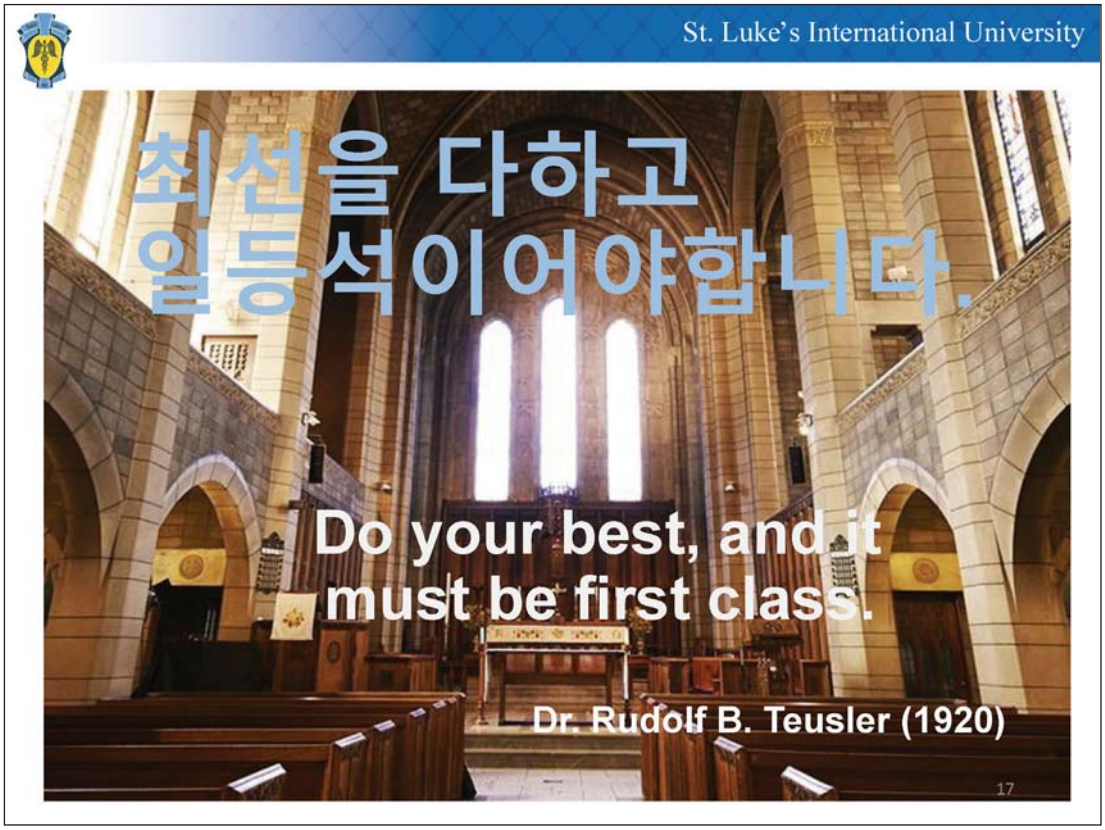
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최선을 다하고
일등석이어야합니다.
Do your best, and it must be first class.
Dr. Rudolf B. Teusler (1920)
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International Conference for 50th Anniversary of the Korean Society of Adult Nursing

'Road Map to Success of Graduate Students in Nursing'

Preliminary Results of Dissertation Study

The Feasibility and Preliminary Effect of a Family-dyad Partnership Programme on Blood Pressure Control for People with Hypertension in China Rural Communities: A Pilot Randomised Controlled Trial

ZENG Dejian, PhD, RN
Nethersole School of Nursing,The Chinese University of Hong Kong
20 August 2021

Introduction

- **Cardio-cerebrovascular disease:**
  - Leading cause of death and disability-adjusted life-year worldwide (World Health Organization [WHO], 202
- **Hypertension:**
  - A major risk factor for cardio-cerebrovascular disease morbidity and mortality. (Liu et al., 2019; Unger et al., 2020; Williams et al., 2018)
  - Systolic blood pressure (SBP) ≥ 140 mmHg and/or diastolic blood pressure (DBP) ≥ 90 mmHg. (Whelton et al., 2018; Williams et al., 2018; Liu, et al., 2019; Mahmood et al., 2018)

		Prevalence	Awareness	Treatment		Control	
All	Globally *	40.8	46.5	40.6		13.2	
	China #	23.2	46.9	40.7		15.3	
Globally	rural	39.2	33.9	33.9		9.8	
	urban	40.1	42.3	42.3		14.5	
China	Rural	23.1	44.7	38	*rural < urban* p=0.036	13.1	*rural < urban* p=0.006
	Urban	23.4	50.9	45.8		19.4	

(Chow et al., 2013; Wang et al., 2018)

Introduction Family care in hypertension management

- **Health disparities in rural areas / developing countries**
  - Health care systems
  - Socioeconomic conditions
  - Geographical distance
  - Manpower and competence of health care providers
  - Individual characteristics
- **Hypertension management**
  - A continuous process, needing very good compliance to the guidelines
  - Patients require high level of motivation and continuous support/supporvision
- **"Family" culture** and filial piety highlighted in rural areas of China

- **Family care**
  - **Definition:** unpaid assistance to a patient by family in the patient's place of residence. (Kent et al., 2016)
  - **Effectiveness:**
    - -A review of systematic reviews
    - Family involvement in chronic disease care
    - Mainly psychoeducational intervention: some ↑ behaviour change or health status (inconsistent).
    - Few studies employed relationship-focused interventions: ↓ depressive symptoms; ↑ longer term coping ability (Gilliss et al., 2019)
  - **Limitations**
    - Theory-based intervention: largely absent
    - Lack of intervention intended to strengthen the family's ability to work effectively on/for the challenging situations.
    - Family (relationship) outcomes were inconsistently measured.

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Introduction Family (dyad) care

Roles of family carers for hypertensive patients

- to **monitor and support lifestyle change**.
- to work **effectively together** in the present or in future **challenging situations.**

Gilliss et al., 2019; Rosland et al., 2010

Family *dyads* are stressful in care giving/receiving process:

- **criticisms and nagging** in communication (Mayberry et al., 2015; Rosland et al., 2010)
- **guilty feeling and arguments** among family members. (Costa & Nogueira, 2008; Lee et al., 2017; Najimi et al., 2016)
- family **conflicts** on health-related decision-making, and **over-controlling or protective behaviours**

Family programmes for hypertension care should emphasise the development of a **healthy *patient-family (dyad) relationship/partnership*** in illness management

4

Introduction

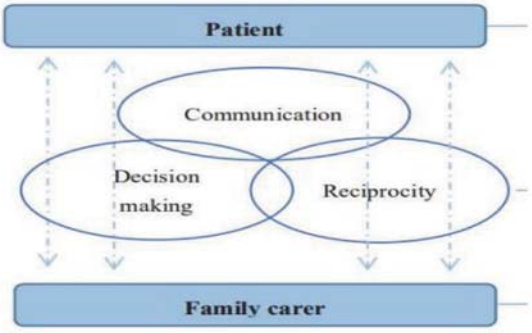
Main purpose of this study

- To develop and evaluate a patient-family (carer) partnership intervention (PFPI) in rural communities of the mainland China

Family dyadic partnership

Defined as the supportive and collaborative relationship in which patient and family carer exchange information, advice and values with each other, identify barriers, make decisions, and take actions on illness management, being mutual support/aid.

Bennett et al., 2017; Sebern, 1996



Shared Care Model (SCM; Sebern, 1996)

Contents

A Study of a Family-dyad Partnership Programme

Phase I	Phase II	Phase III
• Systematic review	• Instrument translation and validation	• Theory-based intervention development • Pilot study • Main RCT

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Pilot sutdy (ChiCTR1900027087)

Study design

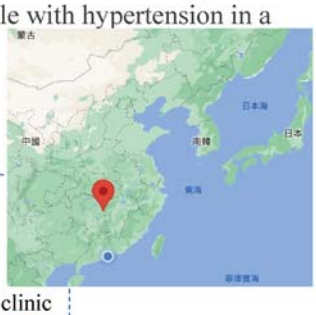
A pilot randomized controlled trial using pretest and posttest design

Aim

To evaluate the feasibility, acceptability and preliminary effectiveness of a theory-based Patient-Family Carer Partnership Intervention (PFPI) for people with hypertension in a Chinese rural community.

Setting

A village in Liuyang city, Hunan Province, China



The village clinics:

- Public
- Only one medical staff (village doctor),
- Providing primary health care to all residents in the village.
- Patients with hypertension were receiving home visit service in each clinic

Pilot sutdy

Subjects

Sample size: **40**, could achieve an 85% power to identify a medium effect size ($\eta p^2 = 0.06$) on SBP and DBP change computed by 2x2 ANOVA test (group x time interaction effect) at the significant level of 5%.

Patients: identified via patients' medical records in the village clinic.

Inclusion criteria:

1) having essential hypertension **without adequate BP control** (SBP≥140 mmHg and/or DBP≥90 mmHg); 2) aged 18 years or above; 3) **living with one or more family members**; 4) speaking Mandarin or local dialect.

Exclusion criteria:

1) diagnosed with a **terminal** illness (e.g., cancer, end-stage renal disease, and severe heart failure); 2) with history of **mental** illness such as dementia and schizophrenia; 3) having **stroke or COPD**; 4) **needing help** with toilet, feeding, dressing, grooming, physical ambulation, and/or bathing; and/or 5) participating or had recently participated in a structured hypertension care intervention in past 6 months.

Family carers: a member of one family with kinship, marital, or co-residence relationship who are involved in patients' health care in everyday life (Rosland, et al., 2018).

Patient nominated one main family carer, taking major daily caregiving role to patient

Inclusion criteria:

1) aged 18 years or above; and 2) able to speak Mandarin or local dialect.

Exclusion criteria:

1) diagnosed with **mental** illness (e.g., dementia, schizophrenia and depression) and/or **learning disorder**, with difficulties in understanding intervention contents; 2) having **severe physical diseases and disability**; or 3) caring for more than one family member with acute or chronic illness.

Pilot sutdy — *Recruitment, randomization and contamination*

- **Random sampling**
  - The researcher reviewed the patients' medical records in the village clinics and created a list of potential participants in **alphabetical order** of their family names.
- **Block randomization**
  - **Block randomization with a block size of 4 or 6 and sealed opaque envelopes were adopted**.
  - The randomization sequence was generated from https://www.sealedenvelope.com.
  - Group allocation was **blinded to the outcome assessor**.
- **Intervention fidelity**
  - An **intervention fidelity checklist**: covered all activities of each PFPI session.
  - The intervenor checked against the fidelity checklist **by reviewing and summarising the session contents**, together with the participants, at the end of each session.
  - A fidelity rate of > 90% was considered acceptable.
- **Contamination**
  - **Blinding village doctors** to participants' group allocation.
  - Reminding participants **not to share** their participation and received services in this program to others.

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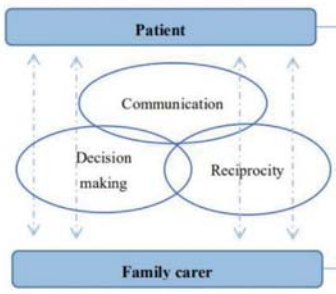
Pilot sutdy — *Intervention*

Shared Care Model (SCM)

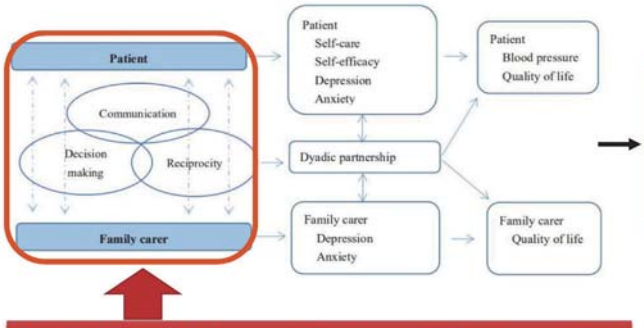
Shared care :
An interpersonal process used by home care patients and family carers to exchange information, support and manage a chronic illness.
(Sebern, 1996)



- **Communication**: the exchange of advice, information, and emotional support about an illness experience between the patients and their family carers.
- **Decision making**: a patient's capacity to seek information and be involved in decisions about his or her care.
- **Reciprocity**: the extent to which the care partners give and receive assistance, and express empathy.

Pilot sutdy

Intervention



The **relationship** of SCM elements and individual self-care, self-efficacy, quality of dyadic relationship, and emotional well-being of patients with heart disease has been well evidenced in research.
(Sebern et al., 2018;Sebern, 1996, 2005)

Patient-Family (carer) Partnership Intervention

Pilot sutdy

Intervention

Education workshop of hypertension management

PFPI

Dyadic partnership skills training

- **-Home visit**
- **-Individual-based**
- **-Dyadic-oriented**
- **-Five sessions**
- **-30-40 min for each**
- **-Biweekly**
- **-Delivered by the researcher**

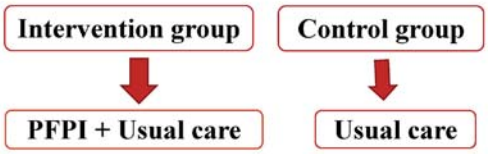
Implications from the systematic review and other research on dyadic partnership:
- **Format**: home visit, individual (dyad), dyad-oriented
- **Dosage**: 5 sessions, 30-40 min for each
- **Teaching strategies**: booklet, participatory learning

Consideration about the characteristics of environmental contexts and participants in the rural communities:
- **Living scattered (the distance and concerns on safety) and low level of education**: group education sessions may not be suitable.
- **Low level of education and allow time for implementing action plan after each session**: more intensive sessions with appropriate time intervals, like biweekly home visits.

Delivering person: the researcher
- A Registered Nurse
- Have research experience in chronic disease management for people in communities.
- Can speak the local accent.
- Familiar with the local culture.

Pilot sutdy

Intervention



Usual care: village doctors conducted the routine home visits at every three months to:

- **Monitor the patients' BP** and lifestyle modifications
- **Upload** the collected information to a government-led rural chronic disease management website
- Provide **brief suggestions** regarding hypertension management
- **Neither prescribing anti-hypertensive drugs** nor providing any drugs in home visits
- Patients visit the village clinic or other clinics/hospitals for medical care (including drugs prescription)

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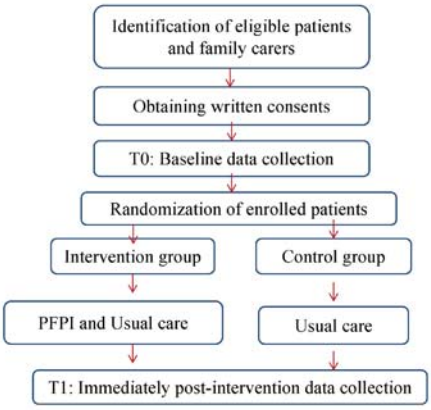
Pilot sutdy

Measures

Data Collection Procedure

- The **assessor** (a retired village doctor): blinded to the group allocation, trained by the researcher for data collection at T_1
- Data collection: baseline (T_0), immediately post-intervention (T_1) .



Data collection procedure of the main study

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Pilot sutdy

Measures

Variables	Instruments
Feasibility	➢ Recruitment rate ➢ Intervention completion rate (i.e., attendance of > 60% of the programme, or > 3 sessions) ➢ Study completion rate (completed the measurements at immediately post-intervention)
Acceptability	➢ 4-item self-designed evaluation form to gather participants' feedback on helpfulness, appropriateness, compliance, and satisfaction with the intervention

Primary outcomes

Variables	Instruments
BP change	➢ An electronic upper-arm sphygmomanometer (OMRON HEM-752) . ➢ Follow the process of BP measurement recommended by the guidelines (Liu et al., 2019)
Proportion of patients with controlled normal BP	➢ For general people SBP < 140 mmHg, and DBP < 90 mmHg; ➢ For patients aged 65 years or above, less than 150/90 mmHg; ➢ For patients with diabetes or chronic kidney disease with albuminuria, less than 130/80 mmHg (Liu et al., 2019)

Pilot sutdy

Measures

Secondary outcomes

Patients: self-care	Hypertension Self-Care Profile (HBP SCP) – Behavior Scale
Patients: self-efficacy	Hypertension Self-Care Profile (HBP SCP) – Self-efficacy Scale
Antihypertensive drug-treatment rate	'Have you taken any anti-hypertensive drugs prescribed by your doctor in the past two weeks?'
Antihypertensive drug-titration rate	'Have your antihypertensive drugs prescription been adjusted by your doctor in the past two months?'
Dyad: depressive symptoms	Patient Health Questionnaire-9 (PHQ-9)
Dyad: anxiety symptoms	Generalized Anxiety Disorder Scale-7 (GAD-7)
Dyad: HRQoL	EuroQol five-dimensional-five-level (EQ-5D-5L)
Dyad: Dyadic relationship quality	Chinese version of Dyadic Relationship Scale- patients (DRS-C-PT)
	Chinese version of Dyadic Relationship Scale – caregiver (DRS-C- CG)

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Pilot sutdy

Data analysis

- ◆The IBM SPSS version 25.0 (IBM Crop. Armonk, NY)
- ◆Intention-to-treat (ITT) principle
- ◆Frequency and percentage, mean and standard deviation were used to describe the characteristics and outcome scores.
- ◆Normality assessments were conducted for continuous variables (outcomes).
- ◆Chi-square tests (for categorized data) and independent t-tests (for continuous data) were adopted to test the homogeneity of the sample at baseline measurement.
- ◆Differences in study outcomes between measurements (baseline and immediately post-intervention) and groups (intervention and control group) were analyzed using a two-way ANOVA test.
- ◆Partial Eta-squared (ηp^2) indicating the effect size in ANOVA test was defined as small ($\eta p^2 = .01$), medium ($\eta p^2 = .06$), and large ($\eta p^2 = .14$).
- ◆Risk ratios were calculated to show the effect sizes on the categorical outcome variables (e.g., the percentage of patients with normal BP).
- ◆The level of significance was set at $p < .05$ (two-tailed).

- ◆To assess the acceptability of the intervention, the qualitative feedbacks on the intervention provided by the participants were summarized and categorized. The main categories of participant feedback were listed and supported with the written statements given.

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Pilot sutdy

Ethical considerations

- ☐ The study obtained **approvals from the ethics committees** of the Joint CUHK–NTEC Ethical Committee, CREC, Ref. No.: 2019.375, and obtained support and access permission from the village clinics under study.
- ☐ All participants were asked for **consent and voluntary** to participate.
- ☐ All names and contact information would not be reported in the research reports and thesis.
- ☐ All raw data in the questionnaires were locked in cabinet and could be accessed by the researcher only; and they would be destroyed after six years. The electronic data of the study was stored in encrypted files.
- ☐ No anticipated risks or adverse events were identified for participation in this study.
- ☐ When any physical discomfort (e.g., severe headache/dizziness, nausea and vomiting, blurred vision, and palpitation) or very negative changes in BP (SBP ≥ 180 mmHg and/or DBP ≥ 110 mmHg), the researcher assisted the patients in transferring to the village clinic or county hospital (國家計生委, 2017).

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Results: pilot study

- **Design:** A Pilot Randomized Controlled Trial
- **Participants:** 44 family dyads, 22 in each group
- **Feasibility of PFPI**
  - recruitment rate: 81.5%
  - intervention completion rate (attendance of > 60% of the programme): 95.5%
  - study completion rate (completed the measurements at immediately post-intervention): 95.5%
- **Acceptability of PFPI**
  - Dyads' feedbacks: 4-item self-report post-evaluation form

Items	Yes	No	Feedback/comments
This program is helpful for BP management.			
This program is appropriate for me			
I implemented the recommendation/learned skills in daily life.			
I am satisfied with the program			
Your suggestions:			

Helpfulness	Appropriate	Compliance	Satisfaction
☐ increased medication adherence ☐ drug adjustment ☐ improved lifestyle ☐ improved dyadic partnership	☐ closely relating to daily life ☐ convenience ☐ time-saving	☐ implementing the learned skills in daily life ☐ reminding/supervising by family carer ☐ difficulties/barriers in lifestyle modification	☐ major benefits obtained ☐ partnership improvement

Results: Pilot study

- **Preliminary effects of PFPI**
  - Interaction (group x time) treatment effect, using two-way ANOVA test
  - **Large effect size** ($\eta p^2 \geqq 0.14$) in both SBP and DBP reductions.

	Group	T0	T1	Group effect	Time effect	Interaction effect	
				F	F	F	Partial Eta Squared (ηp^2)
Patients							
SBP	IG	160.59±13.84	146.77±12.37	2.514	65.946***	18.758***	0.472
	CG	160.05±9.05	156.36±10.51				
DBP	IG	91.09±9.29	85.32±8.66	1.923	29.573***	17.855***	0.460
	CG	93.59±9.99	91.82±9.59				
Patients with normal controlled BP	IG	0	12(54.59%)			4.70† **	2.4‡
	CG	0	5(22.73%)				
DRS	IG	10.18±3.20	7.45±2.89	11.056**	14.627**	11.900**	0.362
	CG	11.71±3.55	11.41±2.74				
HBP SCP-Behaviour	IG	45.18±4.35	50.05±4.86	0.001	25.210***	17.668***	0.457
	CG	46.77±4.19	48.55±4.13				
HBP SCP-Self-efficacy	IG	51.05±5.81	57.41±6.34	2.425	52.921***	5.996*	0.222
	CG	50.64±4.80	53.05±4.03				
treatment rate	IG	0	6 (27.3%)			6.95† *	1.2‡
	CG	0	0				
Prescription adjustment	IG		8 (36.4%)			4.66† *	4.0‡
	CG		2 (9.1%)				
PHQ-9	IG	6.27±3.97	4.18±3.22	0.418	10.446**	3.190	0.132
	CG	6.18±4.13	5.45±3.14				
GAD-7	IG	5.18±3.72	2.68±2.92	0.006	17.126***	18.969***	0.475
	CG	4.18±3.25	3.55±2.60				
EQ-5D-5L index	IG	0.76±0.20	0.82±0.18	0.903	5.283*	6.577*	0.239
	CG	0.83±0.12	0.83±0.13				
EQ VAS	IG	67.73±13.95	75.00±12.72	0.004	26.875***	9.694**	0.316
	CG	70.23±10.17	72.14±9.51				
Family carers:							
DRS	IG	13.45±3.94	8.41±3.57	0.655	34.822***	12.727**	0.377
	CG	12.45±4.64	10.80±2.22				
PHQ-9	IG	3.73±2.86	2.77±2.64	0.209	0.218	5.105*	0.196
	CG	2.77±2.96	3.27±1.75				
GAD-7	IG	3.41±3.19	1.59±1.33	0.001	23.973***	1.282	0.058
	CG	3.00±1.77	2.0±1.77				
EQ-5D-5L index	IG	0.88±0.10	0.91±0.09	3.019	4.925*	1.174	0.061
	CG	0.92±0.07	0.93±0.81				
EQ VAS	IG	73.64±9.13	78.64±8.75	0.674	25.648***	6.600*	0.239
	CG	76.59±9.31	79.09±7.66				

Notes. † tested by Fisher's exact test; ‡ Risk Ratio; * $p < .05$; ** $p < .01$; *** $p < .001$.

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Results: Conlusion and Implications

- **PFPI: feasible, acceptable and may be effective**
- **To maintain high intervention and study completion rates**
  - making appointment for the coming meetings through phone calls
  - obtaining assistance from local officials to publicize the programme
- **For participants who had difficulty in reading the booklet**
  - using more pictures to explain the lifestyle modification
  - encourage participants to call the researcher when needed
  - repeated teaching
- **For barriers in lifestyle modification and treatment**
  - suggest sharing the sphygmomanometer with someone nearby having this equipment
  - explain the policy of New Rural Cooperative Medical Insurance to reduce the impact of economic difficulty on hypertension treatment
- **For data collection**
  - read and explain the items

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Strengths

- **Development of a theory-based, culturally specific intervention**: Shared Care Model + findings of systematic review + cultural context in rural areas
- **Design**: pilot RCT
- **PFPI**: focusing on patient-family carer partnership
- **Outcomes**: family dyadic relationship, family carers
- **Study setting**: rural community

Limitations

- **Design**:
  - Lack of structured process evaluation and qualitative interviews
- **Participants**:
  - Recruited in only one village
  - Patients living alone were excluded.
- **Delivering**: Delivered by the nurse researcher that may limit its transferability to primary care workers in the practice field.
- **Data collection**: Longer term effects of the program.

A further randomized controlled trial is recommended to evaluate its longer-term effects in large-sized hypertensive patients with diverse clinical, socio-demographic and ethnic backgrounds.

Acknowledgements

- Sincerest gratitude and heartfelt thanks to my supervisor, **Professor Wai Tong Chien**, for his expert guidance, constructive advice, and continuous support throughout my three-year PhD study.
- Grateful to all professors and staff in the **Nethersole School of Nursing**.
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- Special thanks are given to **Dr. Luo Chunjie, Dr. Li Qiang, Mr. Zhang Qingwen, and Mr. Zhang Gonggui** for their kind assistance in project implementation and data collection.
- Love and thankfulness to my **parents, wife, son, daughter, and sister**. Their endless support and understandings enable me to be committed to the study and make everything possible.

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Oral presentation

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Restraint Use in Hospitals: A Quality and Safety Issue in Need of Attention

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Aim(s): Use of restraint in hospitals is an under-studied problem. The purpose of the proposed talk is to introduce the topic of restraint use, including ethical concerns; review what we currently know; and highlight the need for better data and further research.

Method(s): Review of data sources, data limitations, and published findings on use of restraint in hospitals in the US and other Pacific Rim countries.

Result(s): Restraint rates vary widely both within and across countries, suggesting room for improvement. Nationwide data are very limited.

Conclusion(s): Comprehensive, national databases are needed to track both the frequency and duration of restraint episodes to allow hospitals to compare their restraint use with restraint use in similar hospitals.

Key words: Patient safety; quality of care; restraint; psychiatric care; nursing ethics

[C-02]

Risk Factors Associated with Vancomycin-Resistant Enterococcus Infection in Hematologic Cancer Patients in Korea: A Retrospective Case-Control Study

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Aim(s): Vancomycin-resistant enterococcus (VRE) has become a major cause of nosocomial infections. Hematologic cancer patients are vulnerable to VRE infections, resulting in prolonged hospitalization and increased mortality. The purpose of this study was to identify risk factors for nosocomial VRE infections in hematologic cancer patients in Korea.

Method(s): A total of 232 patients (77 in the case group and 155 in the control group) from a tertiary teaching hospital participated in this study from January 2011 to December 2017. Data about the disease, treatment, and nursing affecting VRE infections were collected from their electronic medical records using the coding form.

Result(s): VRE infections were found to be associated with leukemic-type cancer, an increase of hospital stay, high-risk antibiotics use, low-risk antibiotics use, oral antifungal agent use within one month from admission, lower serum albumin levels, and dependent self-care.

Conclusion(s): Results of this study revealed that VRE infections were associated with disease-, treatment-, and nursing-related factors besides VRE colonization known to be the main influencing factor. Thus, it is crucial to develop programs for VRE prevention and management considering these factors. In particular, oncology nurses should adhere to precaution guidelines when they have contact with patients having prolonged hospital stay, difficulty in self-care activitie, and high possibility of immune depression due to intensive chemotherapy and nutritional deficiency. Tools to screen risk factors for VRE infections and programs to encourage nurses' adherence to guidelines need to be evaluated and provided continuously.

Key words: Hematologic neoplasm; Nosocomial infection; Vancomycin-resistant enterococci

The impact of COVID-19 in social relationship and mental health of older adults living alone: A two-year prospective cohort study

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Aim(s): Owing to the COVID-19 outbreak and physical distancing protocols, older adults living alone, who can only connect socially outside their homes, are at risk of social isolation and poor mental health. However, the changes in specific aspects of social relationships and mental health of older adults living alone, comparing before and after COVID-19 by gender and age, are under research. This study aimed to identify the changes, before and after COVID-19, by gender and age, in social relationships (social activity, social network, social support) and mental health (depression, suicide ideation) among older adults living alone.

Method(s): This is prospective cohort study conducted from 2018–2020 with a 2-year follow-up. Participants included community-dwelling older adults (≥ 65 yrs.) who were living alone in S* City. The frequency of social activity and interaction with social networks were measured as a categorical variable, and social support was measured using the ENRICHD ESSI. Depression and suicidal ideation were measured with GDSSF and 10-point visual analog scale, respectively. The data were collected via face-to-face interviews. A total of 2291 cohort participants (795 for 1st wave, 771 for 2nd wave, and 725 for 3rd wave) were analysed with a GLMM framework.

Result(s): Social activity and interaction with neighbours were reduced after COVID-19; there was no evidence of changes before COVID-19, and the interaction effect of gender across the waves was significant for social activity. Interaction with family members and social support increased for both genders during the pandemic, and the interaction effect of gender was significant for interaction with family members. Depression and suicide ideation showed no significant differences before and after COVID-19.

Conclusion(s): The findings provide health administrators and health providers with insights into the impact of social relationships and mental health.

Keywords: aged, COVID-19, independent living, social networking, social support

[C-04]

Anxiety and Family Needs among Family Caregivers of Intensive Care Unit Patients in South Korea

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Aim(s): The intensive care unit (ICU) is a place that focuses on the acute care of patients with various life-threatening illnesses. ICU patients are not only physically compromised, but they are also susceptible to distressing events from their admission to their discharge. The number of patients admitted to the ICU is steadily increasing, and ICU admission remains a burden to the patient's family because of the prolonged use of life-support devices. The purpose of this study was to understand to what extent the needs of the family caregivers are currently being met and describe the associated factors that affect the anxiety of family caregivers.

Method(s): This cross-sectional descriptive correlational study was conducted from July to November 2018 in the adult ICUs of a large tertiary hospital in Seoul, South Korea. A convenience sample of 92 family caregivers of ICU patients who were hospitalized for more than 48 hours completed a questionnaire regarding their anxiety and their satisfaction with how their needs were met.

Result(s): The overall mean score for the satisfaction of ICU family caregivers was 2.47 (SD = 0.56). Specifically, the mean score for the information needs was 2.67 (SD = 0.621). Moreover, the anxiety of ICU family caregivers was reported to be high, with a mean of 57.84 (SD = 13.542). The satisfaction of information needs reduced the risk of anxiety (OR=0.380, p=.027), while the number of patients' dwelling devices increased the risk of anxiety of family caregivers (OR=1.421, p=.033).

Conclusion(s): The findings of this study indicated that satisfying the information needs of the ICU family caregivers may lower the risk of anxiety. The findings suggested that nursing interventions, which target their information needs, may be effective in lowering the risk of anxiety. Also, because the more devices used by the patient, the higher the risk of anxiety; the ICU family caregiver whose patient had more devices should be treated precisely to lower the risk of anxiety.

Keywords: Intensive care unit, family, anxiety, family needs, satisfaction of family needs

A Psychometric Analysis of the 20-item Revised University of California Los Angeles Scale Among Korean Older Adults Living Alone

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Aim(s): The 20-item Revised University of California Los Angeles (R-UCLA; Version 3) loneliness scale is the most valid and widely utilized measure of loneliness. However, questions are constantly raised regarding the ability of the scale to capture the multidimensional quality of loneliness. The current study aims to explore the factor structure of the Korean version of the R-UCLA loneliness scale for the Korean older adult population.

Method(s): The analyses were based on a cross-sectional cohort of 1041 community-dwelling older adults (≥ 65 years) living alone in one Korean city. Exploratory factor analysis (EFA) was conducted to determine the underlying structure of the scale, and confirmatory factor analysis (CFA) was used to ascertain the validity of the outcomes. For reliability, Cronbach alpha was computed.

Result(s): Based on the EFA and CFA results, a two-factor structure was found. The first factor reflected "the sense of not being affiliated with others around oneself," and the second reflected "the feeling of a lack of social connections." The derived factors demonstrated satisfactory reliability (> 0.8).

Conclusion(s): Our results emphasize the multi-dimensionality of loneliness. Especially, the two factors of loneliness identified in this study should be considered when attempting to reduce loneliness among the older adult population. Nevertheless, future studies should confirm the findings of this study and evaluate aspects of validity beyond factorial validity to further support the conceptual separation of the two identified factors.

Keywords: loneliness, older adults, factor structure, Korea

[C-06]

Nutritional Status and Risk Factors of Malnutrition in Korean Older Men Living Alone: A Secondary Data Analysis

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Aim(s): Malnutrition is common among older adults and is associated with increased risks of many adverse health outcomes including frailty and poor quality of life. Older men living alone are a vulnerable social group who have a higher risk of poor nutrition than those living with others or women living alone. However, little is known about factors related to malnutrition in older men living alone. This study aimed to investigate the nutritional status and identify risk factors related to malnutrition in Korean older men living alone.

Method(s): We analyzed the secondary data of 230 older men aged 65 years and over without severe cognitive impairment in the prospective cohort study of Korean elderly living alone conducted in 2019. Nutritional status was measured using the Mini Nutritional Assessment-Short Form (MNA-SF). Analyzed data included demographic factors (age, income), health condition (comorbidity, polypharmacy), physical (instrumental activities of daily living), cognitive (Mini-Mental Stated Examination), psychological function (depression), and lifestyle (smoking, drinking, exercise, meal frequency). Binary logistic regression analyses were performed.

Result(s): Participant's mean age was 74.23±5.70 years. Of the participants 32.2% had malnutrition and 67.8% normal nutritional status. Factors related to malnutrition in older men living alone were income (Odds Ratio [OR]=.37, 95% Confidence Interval [CI]= 15-.89), polypharmacy (OR=2.47, 95% CI=1.28-4.77), depression (OR=2.20, 95% CI=1.14-4.24), smoking (OR=2.51, 95% CI=1.27-4.97), low meal frequency (OR=4.13, 95% CI=2.11-8.07).

Conclusion(s): It is important for the elderly men living alone to take a comprehensive nutritional assessment including socioeconomic status, health condition, psychological function, and lifestyle to prevent malnutrition. Strategies to improve healthy lifestyles and reduce depression are needed for effective nutritional management of older men living alone.

Keywords: Nutrition Disorders, Risk Factors, Residence Characteristics

Developments and Effects of the video-based patient Education Program for Self-Management after Lumbar Spine Surgery: A Pilot Study

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Aim(s): The purposes of this study were to develop a video-based patient education program for self-management after lumbar spine surgery and to examine the effects of this program on patients' knowledge of HIVD (Herniated Intervertebral Disc), educational satisfaction and self-care compliance.

Method(s): In the phase of developing a video-based patient education program, the education program for self-management after lumbar spine surgery developed by Park Sang-geum (2008) for patients with lumbar disc herniation was modified. In the phase of evaluating its effectiveness, the pilot study was the nonequivalent control group pretest-posttest design. In 10 patients in the experimental group and 10 controls were recruited from the E University Hospital in Seoul from August to November 2019. In order to prevent the dissemination of the experiment, the control group was selected first, and then the experimental subjects were selected. In the experimental group, the watched the video-based patient education program at least once daily using a iPad from the day after the operation, and then the researcher and the research assistant played the video every morning (at approximately 8 am) for 7 days. Furthermore, a leaflet organized by video training contents was provided together. The control group was provided with only one page paper of educational materials related to the operation of the lumbar intervertebral disc herniation, and patients in the control group also read once a day for 7days.HIVD knowledge, educational satisfaction, and self-care compliance was measured in both the experimental group and the control group.

Result(s): As a result of this study, there was a statistically significant difference in HIVD knowledge ($p < .001$), and a statistically significant difference in educational satisfaction ($p < .001$), and self-care compliance ($p = .033$) between the experimental and control groups. However, there were no statistically significant differences in three sub-categories of self -care compliance including medical devices and utilization ($p = .165$), position change and movement in 3 questions ($p = .077$), and lifestyle related to health ($p = .192$).

Conclusion(s): The study result confirmed that video-based patient education program for self-management after lumbar spine surgery was effective to increase the HIVD knowledge, educational satisfaction, and self-care compliance. This study findings hold its significance as a research on developing qualitative and effective video-based educational program to patients with lumbar disc herniation. In clinical settings, the video-based patient education program for self-management after lumbar spine surgery can be used as an independent nursing intervention provided by nurses.

Keywords: lumbar intervertebral disc herniation, Video-based education, knowledge, educational satisfaction, self-care compliance

Acculturation, discrimination, and 24-hour activity in Asian American women

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Aim(s): Asian American women have elevated cardiovascular disease (CVD) risk but are an understudied minority group. Physical activity, sedentary behavior, and sleep duration are recognized as independent CVD risk factors, yet these behaviors have not been well described in this population. The study's purpose was to describe Asian American women's 24-hour activity behaviors and examine associations of acculturation and discrimination with objectively measured 24-hour activity and sleep quality in Asian American women.

Method(s): Participants were middle-aged normotensive Asian American immigrant women born in East, Southeast or South Asia and currently living in New York City. They completed self-reported measures of acculturation (ethnicity, English proficiency, and years of U.S. residency), discrimination (Everyday Discrimination Scale), and sleep quality. They completed 7days of wrist and hip actigraphy to measure their 24-hour activity including moderate-vigorous physical activity (MVPA), light intensity physical activity (LIPA), sedentary behavior, and sleep duration. MVPA, LIPA and sedentary behavior were classified by Freedson(1998)'s cut-points and sleep duration was identified by applying the Cole-Kripke algorithm consulting with sleep diaries. Linear regression analysis was conducted controlling for demographic variables (age, body mass index [BMI], education).

Result(s): A total of 75 women completed actigraphy monitoring (age = 61.5 ± 7.9, BMI = 25.4 ± 3.7, 58.9% college or higher). Their 24-hour behavior was composed of 0.5 hours of MVPA, 6.2 hours of LIPA, 10 hours of sedentary behavior, and 5.3 hours of sleep. South Asian subgroup was related to less MVPA (B = -30.73, p = 0.01) and LIPA (B = -121.92, p = 0.02), and longer sedentary behavior (B = 169.26, p < 0.01). Higher English proficiency was related to less MVPA (B = -19.66, p = 0.03) and LIPA (B = -109.3, p < 0.01). Longer U.S. residency was related to longer sedentary behavior (B = 77.31, p = 0.07). Discrimination was related to shorter sleep duration (B= -2.36, p = 0.03) and poorer sleep quality (B = -0.03, p = 0.06).

Conclusion(s): Asian American immigrant women had suboptimized 24-hour activity patterns, which differed by Asian subgroup and were associated with acculturation and discrimination. Larger, prospective studies are needed to explore the heterogeneity in 24-hour behaviors within this minority group and explore negative effects of acculturation and discrimination. Culturally tailored strategies may be needed to improve 24-hour behaviors in Asian American women.

Keywords: Asian Americans, physical activity, sedentary behavior, sleep, culture

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Effect of the Awareness of Calling, Wisdom, and Job Satisfaction on the Quality of Services of Care Workers in charge of Visiting Care under the Care Center of the Elderly

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Aim(s): The rapid aging of the population has led to a quantitative increase in the elderly population and a growing diversity of the elderly. Nursing care workers in charge of door-to-door care take care of patients or the elderly with poor physical function or cognitive function alone, and it is difficult to take responsibility for the health of the subjects with judgment and competent care services. Therefore, at a time when the role of care workers in the COVID-19 pandemic is becoming more important, it is urgent to identify the quality of care workers' services and bring about the development of practice through mediation and research to enhance them. The purpose of this study is to provide basic data on the development of care programs that enhance the quality of care workers' services by analyzing the impact of awareness of calling, wisdom and job satisfaction on the quality of services in charge of visiting care.

Method(s): This is a correlation study. The subjects of the study were a total of 99 nursing care workers belonging to the 2 elderly home care facilities in D city. Data analysis was performed by descriptive statistics, t-test, ANOVA, Pearson's correlational coefficients, and multiple regression.

Result(s): the subjects were nursing care workers with an average age of 60.74±7.24 years and 62.6% was aged over 60 or more. The quality of service of the subjects differed between groups at statistically significant levels, depending on the presence of religion ($t=2.25$ $p=.027$) and the degree of monthly income ($t=-2.74$, $p=.007$). The quality of the subject's services was highly correlated to awareness of calling ($r=.45$, $p<.001$), wisdom ($r=.63$, $p<.001$), job satisfaction ($r=.65$, $p<.001$). The wisdom ($\beta=.36$, $p=.001$) and job satisfaction ($\beta=.43$, $p<.001$) were found to be important factors affecting the quality of services, and their variables accounted for 51.8 % of the quality of services.

Conclusion(s): In order to improve the quality of care services for care workers in the elderly welfare center, care workers themselves need to make wise lives, and to increase job satisfaction. The head of the center needs to analyze the job itself, factors related to institutions, and factors related to the intention to change jobs and create an atmosphere to solve problems. It is necessary to develop and train a program to improve the quality of services considering these factors.

Keywords: Care workers, Quality of services, Awareness of Calling, Wisdom, Job Satisfaction

[P-002]

The Impact of Hospice Patients´ Pain, Anxiety and Depression, Perception of Dignity, and Spiritual Well-being on Attitude towards Dignified Death

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Aim(s): The purpose of this study was to examine the effects of pain, anxiety and depression, perception dignity, and spiritual well-being on attitude towards dignified death of hospice patients.

Method(s): The participants in this study were 130 terminal cancer patients admitted to hospice•palliative care institution in Korea. Data were collected using self-report questionnaires, and data were analyzed using descriptive statistics, independent t-test, one-way ANOVA, Pearson's correlation coefficients, and Hierarchial multiple regression with the SPSS Statistics 26.0. The assessment tools were Brief Pain Inventory, Hospital Anxiety and Depression Scale, Perception of Dignity Scale, Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale and Attitude towards Dignified Death Scale.

Result(s): The mean score for pain was 5.25. A mean score of 11.98 was found for anxiety and a mean of 14.56 for depression. The mean score for spiritual well-being was 22.12 and a mean of 14.38 for perception of dignity. The mean score for attitude toward dignified death was 93.12. The results of the hierarchical multiple analysis revealed that spiritual well-being (=.36, p<.001) was predictive of attitude of dignified death (R2=.13, p<.001).

Conclusion(s): These results suggest that spiritual well-being are associated with attitude of dignified death by hospice patients. The results showed of in necessary to develop effective nursing intervention programs that promote spiritual well-being for the attitude towards dignified death of hospice patients.

Key words: Hospices, Death, Respect, Pain, Spirituality

Programs for Body-Image Improvement in Adolescents: A Systematic Review y

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Aim(s): Body image formed in adolescence can affect social development and physical and mental health as well as quality of life as they grow into adulthood. The purpose of this study is to investigate the programs that aim to improve the body image of adolescents using a systematic review.

Method(s): literature searching were performed in 11 electronic databases using preferred reporting items for systematic reviews and meta-analysis guidelines. Relevant databases were searched for papers in English and Korean. Relevant papers were selected by researchers independently using predefined exclusion criteria, firstly on the basis of titles and abstracts, secondly by assessing full-text papers. Population characteristics, contents of the programs, and measured outcomes were systematically reviewed from 21 selected studies.

Result(s): The studies analyzed for systematic literature review were 17 foreign studies and 4 domestic studies, and the countries where the studies were conducted were Australia, the United States, South Korea, Canada and Israel. A lot of programs were provided for female teenagers, and in the classrooms of their schools. The contents of programs that aim to improve body image include physical, psychological, interpersonal, and sociocultural interventions. Among the theories based on the program were health belief model, ecological systematic theory, body-image care model, empowerment model, planned behavior theory, and transtheoretical model.

Conclusion(s): Multidimensional programs that seek to improve body image could be positive effective at improving body satisfaction in adolescents. But, there are few systematic programs for body-image improvement of teenagers in Korea. Thus, in further research, it is necessary to develop and verify whether adolescents' psychological health and quality of life are improved through multidimensional programs.

Keywords: adolescent, body image, review

[P-004]

Factors Influencing COVID-19 Related Anxiety Among Infant's Mothers

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Aim(s): This study was to survey the Coronavirus Disease 2019 (COVID-19) related anxiety, preventive behaviors, risk perception, knowledge, and depression levels of infant's mothers, and to identify factors that influence COVID-19 related anxiety.

Method(s): An online survey was conducted from October 7th to 12th, 2020. The data were analyzed using $\chi 2$, Fisher's exact test, Pearson's correlation coefficients, and multiple logistic regression.

Result(s): Participants were 234 infant's mothers. The 68.4% (n=160) of mothers had anxiety, and mild anxiety occupied a large proportion (41.9%). Similarly, 64.1% (n=150) had depression. The practice rate of preventive behaviors was 95.0%, risk perception point was 5.86±1.17, and correct answer rate of COVID-19 knowledge was 85.5%. COVID-19-related anxiety had a significant negative correlation with COVID-19 knowledge (r=-.15, p=.026) and preventive behavior (r=-.46, p<.001), and significant positive correlation with risk perception (r=.16, p=.012) and depression (r=.77, p<.001). Through multiple logistic regression analysis, it was found that COVID19-related anxiety increases with the use of childcare centers (OR=3.60, 95% CI 1.23-10.52) and the higher the degree of depression (OR=1.88, 95% CI 1.58-2.25), and decreases with better COVID-19-related preventive behaviors (OR=0.90, 95% CI 0.84-0.97) ($\chi 2$= 5.41, p< .001, Nagelkerke R2 =.679).

Conclusion(s): The factors influencing COVID-19 related anxiety can be used to prepare appropriate mental health care. Therefore, it is necessary to identify the infant mother's mental health status in advance and to consider factors influencing anxiety when providing health policies and nursing interventions for the infectious disease prevention.

Keywords: COVID-19, Anxiety, Behavior, Depression, Infant's mother

Online Remote Diabetes Self-Management Program: Pilot Study

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Aim(s): The purpose of this study was to evaluate the feasibility and potential impact of an online remote diabetes self-management program on self-efficacy, social support, self-management behavior, and HbA1c levels.

Method(s): A online remote diabetes self-management program was developed through plan, do, check, and act procedure. The program consisted of diabetes related knowledge, daily life management, nutrition (cooking class), exercise, drugs, blood sugar, and complication management. Workbook, counseling, blood glucose meter, Thera band, and cooking ingredients were provided. The program was performed from March to April 2021 at D Community Health Promotion Center via real-time online platform, Zoom®, for 8 weeks. Data were analyzed using Shapiro-Wilk, x2, Fisher's exact, independent t-test, Mann-Whitney U test, paired t-test, and Wilcoxon test.

Result(s): A total of 28 people with diabetes participated. The experimental group (n=14) had a significant difference from the control group (n=14) in the self-efficacy (t=3.00, p=.006), social support (U=46.00, p=.014), and self-management behavior (t=2.67, p=.013). In the pre-posttest of experimental group, there were significant differences in self-efficacy (t=6.97, p<.001), social support (t=3.99, p=.002), self-management behavior (t=2.90, p=.012), and HbA1c levels (Z=-1.97, p=.048).

Conclusion: The program was effective in improving self-efficacy, social support, self-management behavior, and HbA1c levels. Because of COVID-19, diabetic patients who were receiving face-to-face management at Community Health Centers have become difficult to maintain. This program could be useful in managing diabetes effectively for diabetic patients while COVID-19 is spreading.

Keywords: Internet-based intervention, Diabetes mellitus, Self-management

[P-006]

Effect of environmental Prenatal Education Program on Pregnant Women's Environmental Health Behaviors in Korea

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Aim(s): Chemical substances, heavy metals, fine dust, electromagnetic waves, and radiation are harmful to the human body and that come from environmental elements. Women are more vulnerable to environmental toxins during pregnancy, and fetal developmental disorders have been correlated with the delivery of environmental toxins. Although environmental health behavior interventions are increasing, few studies regarding the effects of interventions on pregnant women's health behavior exist. This study aimed to verify whether an environmental prenatal education program has an effect on pregnant women's environmental health awareness and behaviors.

Method(s): The study employed a nonequivalent control group and non-synchronized design based on the protection motivation theory as a theoretical framework. Sample: In total, 96 participants had their data collected and analyzed (40 in the experimental group; and 56 in the control group). Data collection using self-reported questionnaire was conducted between August 2017 and August 2018. Intervention: The program consisted of lectures and group activities aimed at educating participants on environmental awareness and behaviors. For the control group, 4 sessions (with 240 minutes) of a general prenatal education program called 'healthy mom happy family' were performed in September 2017. The content of the program covered maternal health care, postpartum care, breastfeeding, and neonatal care. For the experimental group, 4 sessions (with 240 minutes) of the environmental program with additional general prenatal education were conducted in March 2018. The program consisted of 8 parts presented within four sessions: the environment and pregnancy; environmental toxin; effects of EDCs; airborne pollutants; water pollutant; soil pollutant; radio-electronic exposure; and environmental health behaviors during pregnancy. The program was conducted through lectures, discussions, and question-and-answer moments for four weeks. The data were analyzed using t-test, chi square test, ANCOVA using SPSS 24.0 program.

Result(s): After the intervention, participants' individual environmental behavior and communal environmental behavior were higher in the experimental group than in the control group. The experimental group had significantly higher individual environmental behavior ($F = 172.75$, $p < .001$) and communal environmental behavior ($F = 126.26$, $p < .001$) post treatment compared to the control group.

Conclusion(s): The environmental prenatal education program is necessary for the promotion of environmental health during pregnancy because it may enhance pregnant women's environmental health behavior. The program had a significant effect on environmental health awareness and behavior of pregnant women. After receiving the program, pregnant women increased environmental health behaviors, including individual and communal environmental health behaviors. The results of this study could be applied by public health nurses when providing education to promote environmental health, in addition to the prenatal education for pregnant women.

Keywords: Environment; Pregnant Women; Prenatal Education

[P-007]

Person-centered Care linked to Improving Patient Engagement and Nursing Satisfaction

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Aim(s): This study was to investigate person-centered care in relation to patient engagement and nursing satisfaction among stroke rehabilitation patients.

Method(s): This study utilized a descriptive and correlational research design. A sample of 223 post-stroke patients from 6 rehabilitation hospitals located in S city and Gyeonggi province, Korea completed a self-reported questionnaire, including demographic characteristics, person-centered care, patient engagement, and nursing satisfaction. A hypothesized model that links the person-centered care to patient engagement and nursing satisfaction was tested by a path analysis using SPSS 20.0 and AMOS 20.0.

Result(s): The tested model had good fit and explained the direct and indirect effects of study variables. Findings from the path analysis showed that person-centered care had direct effects on patient engagement and nursing satisfaction. Also, the indirect effect of person-centered care on nursing satisfaction through patient engagement was statistically significant.

Conclusion(s): Findings indicate that person-centered care is a significant predictor of patient engagement and nursing satisfaction in stroke rehabilitation patients. It is important to develop person-centered nursing care as effective strategies to improve the quality of nursing care as well as patient outcomes in rehabilitation settings.

Key words: person-centered care, post-stoke patients, patient engagement, nursing satisfaction

Factors associated with Breakthrough Pain in Cancer Patients

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Aim(s): This study was to identify factors that were associated with breakthrough pain in patients with advanced cancer.

Method(s): In this descriptive and correlational study, participants were 224 inpatients with advanced cancer and adequately controlled background pain, indicating that they have been suffering from pain for more than 12 hours a day or regularly take opioid or non-opioid analgesics and reported background pain with an intensity ≤4 on a 0-10 numerical scale. Data were collected by interview and electronic medical record about demographic, clinical, and pain characteristics from May to December, 2018 in an university hospital in Seoul, Korea. Descriptive statistics and logistic regression analysis were performed using SPSS version 22.0.

Result(s): Of 224 participants, almost half of them (45.1%) reported breakthrough cancer pain and most of them (85.1%) reported the breakthrough cancer pain was a brief flare-up of background pain. Average daily number of breakthrough pain was 3.3 and mean intensity was 8.0. Of the 101 patients with breakthrough pain, 32.7% did not receive treatment for pain and breakthrough pain was predictable in 40.6% of them. Oxycodone-immediate release was the most frequently used short-acting analgesics, followed by fentanyl buccal tablet. In logistic regression analysis, only background pain intensity was significantly associated with breakthrough pain occurrence, while controlling for individual characteristics (age, sex, and performance status).

Conclusion(s): Findings indicate that background pain intensity is a key factor of breakthrough cancer pain. Therefore, more attention is needed for detection and management of background pain to achieve effective control for breakthrough pain in patients with advanced cancer.

Key words: Breakthrough pain, cancer patients, opioid analgesics

[P-009]

Effects of One-session Laughter Therapy on Home Care Workers' Fatigue, Mood, and Job Satisfaction

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Aim(s): The social reality is that care workers are working in very poor working conditions due to heavy work, abusive language, overwork, and high-intensity physical working conditions etc. This can cause stress from exhaustion resulting in job dissatisfaction and ultimately inability to immerse in the service provision of long-term care institutions. It is necessary to confirm the effectiveness of laughter therapy by applying mediation to improve the quality of care workers' services, maintain a positive mood, and improve job satisfaction by relieving fatigue. The purpose of this study is to confirm the effects of one-session laughter therapy on fatigue, mood, and job satisfaction of care workers.

Method(s): The research design is This quasi-experimental study of nonequivalence control group design. The participants of the study were 74 care workers who have been working for more than a year at a welfare center for the elderly in an undisclosed special self-governing city and another city in Chungnam province. In total, 37 participants were in the experimental group and the other 37 were in the control group. One-session laughter therapy was conducted with the experimental group for 60 minutes, and the effects of the therapy were compared by measuring fatigue, mood, and job satisfaction of the experimental group and control group before and after the therapy.

Result(s): There was a statistically significant difference in the mood of care workers between the two groups (t=-2.33, p=.023). There was no significant difference in the fatigue (t=-1.10, p=.276) and job satisfaction (t=1.06, p=.293) level of care workers between the two groups.

Conclusion(s): Laughter therapy has been shown to be effective at a statistically significant level in the mood of care workers, so it is recommended to use laughter therapy to help care workers' feel. However, repetitive studies are recommended because differences between experimental and control groups were not significant in fatigue and job satisfaction. Meanwhile, laughter therapy had a problem that it was not easy to recruit subjects because it was conducted at a time when social distancing was recommended due to Covid-19. Therefore, there is a limitation that it is provided as a one-off. According to a prior study, it is suggested that it is effective when repeated for more than six, so an experimental study is proposed to test the effects of fatigue, mood and job satisfaction by applying repeated laughter treatment to nursing care workers.

Keywords: Care workers, One-session Laughter therapy, Fatigue, Mood, Job satisfaction

The Effect of Caring-character, Communication Ability and Problem Solving Ability on Clinical Competence of Nursing Students.

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Aim(s): Nursing students have fewer opportunities to practice observation in hospitals due to the COVID-19. Changes in clinical competence according to changes in the clinical practice education environment should be continuously checked. Caring-character is the basic personality in providing care, which is the core of nursing. Communication skills are recognized as an important factor in helping to solve problems. The purpose of this study is to determine the effect of nursing students' caring-character, communication ability, and problem-solving ability on clinical competence.

Method(s): This is a descriptive research study conducted on 185 nursing students. It was collected through an online survey from March 2020 to April 2020. Data were analyzed using descriptive analysis, t-test, Pearson correlation, and multiple linear regression.

Result(s): Higher caring-character (B=0.39), communication ability (B=0.28), and problem-solving ability (B=0.34) had an effect on clinical performance (F=58.63, p<.001). Caring-character (β=.326) was found to be the most influential variable on clinical competence. The explanatory power was 55.6%.

Conclusion(s): The results of this study show that the most influential factor on clinical competence of nursing students is caring-character. Therefore, it is necessary to develop educational programs and support and feedback from professors so that caring-character education can be conducted together during the curriculum and clinical practice.

Keywords: Nursing students, Caring-character, Communication, Problem solving, Clinical competence

[P-011]

A latent class analysis of life stress among female East Asian college students: A multi-country study

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Aim(s): College students are known to experience large amounts of stress due to personal and environmental changes as they enter early adulthood. Especially female college students tend to report more life stress than male college students. Since stress has a significant impact on both one's psychological and physical health, understanding college students' experienced life stress is important. This study aimed to classify patterns of life stress experienced by female East Asian college students and identify factors associated with it for the purpose of designing appropriate measures to reduce female college students' level of stress.

Method(s): This study was a descriptive study design. The data were collected by on-line survey from June 2019 to October 2019. The whole dataset consisted of 520 female East Asian college students (220 for South Korea and 300 for Hong Kong). The Life Stress Scale for college students was used to measure the frequency of life stress of the participants. The data were analyzed with descriptive analysis, one-way analysis of variance, the chi-square test and latent class analysis. This study was approved by the Institutional Review Board (IRB) of Yonsei University (Y-2020-0205).

Result(s): The mean age of the participants was 21.28 for South Korea and 20.36 for Hong Kong. In South Korea, participants were classified into two latent groups: "life stress high" (18.6%), and "life stress low" (81.4%). The two groups were significantly different for all factors in life stress subcategories ($p<0.05$) and subjective health status was the factor which differentiate between the two groups ($\chi2=6.926$, $p=0.032$). In Hong Kong, on the other hand, participants were classified into three latent groups: "life stress high" (13.7%), "life stress moderate" (43.9%), and "life stress low" (42.4%). Three groups were also significantly different for most factors in life stress subcategories ($p<0.05$). Each groups were different in financial status of parents ($\chi2=11.484$, $p=0.019$), subjective health status ($\chi2=19.436$, $p=0.001$), and body mass index ($\chi2=10.421$, $p=0.034$).

Conclusion(s): This research provides insights into characteristics of life stress experienced by female East Asian students in college and suggests possible intervention measures to reduce stress. Thus, maintaining good health through physical activity and receiving informal social support at the various level like family, society, and nation will be important for female college students to manage their stress levels.

Keywords: life stress, female East Asian college students, latent class analysis

A Study on the Types of Family Communication and College Adaptability of Nursing Students

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Aim(s): The purpose of this study is to find out the types of communication and college life adaptability of nursing students, and to understand their relationship. It is intended to provide basic data to improve the communication skills of nursing students.

Method(s): This study is a descriptive research study that seeks to identify the types of communication between families of nursing college students and how they affect their university adaptability and academic stress. The subjects of the study are first, second and third year nursing students attending K University in Chungbuk. In this study, a total of 65 questions are conducted with 7 general characteristics, 24 family communication types, 19 university adaptability questions, and 15 academic stress questions. The data collection method is conducted through electronic surveys. Data analysis uses the SPSS 26.0 program.

Result(s): Family communication types were shown in the order of mother-consistent, sibling-consistent, and father-consistent communication. In college life adaptation, academic activities, personal psychology, career preparation, interpersonal relationships, and social adaptation were shown in order. In college adaptation, there are significant differences in college adaptation, academic activities, personal psychology, and social experience, depending on the type of positive and negative communication between family members. According to the correlation analysis between family communication type and college life adaptation of nursing college students, there is a significant correlation between parents and siblings' corresponding communication and college life adaptation.

Conclusion(s): Family communication types correlate with college life adaptation. The more positive the family's communication, the more academic activities and personal psychology increase, and the more the level of adjustment to college life increases.

Keywords: Family communication, College adaptation, Nursing students

[P-014]

Mediating Effect of Perceived Threat on the Relationship between Cue to Action and Secondry Cancer Preventive Behaviors in Survivors from Breast and Colorectal Cancer

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Aim(s): This study was conducted to identify the relationship among cue to action, perceived threat and secondary cancer preventive behaviors (SCPB), to investigate the mediating effect of perceived threat on the relationship between cue to action and SCPB in survivors from breast and colorectal cancer.

Method(s): Participants were 505 survivors (253 breast vs 252 colorectal) from cancer related physical activities in the outpatient oncology clinic of a territorial teaching hospital, located in southwestern Korea. Participants responded to the structured and self-administered questionnaires.

Result(s): PROCESS macro revealed that cue to action had a significant positive influence ($\beta = 0.38$, $p < .001$) on perceived threat. With cue to action and perceived threat as predictors and SCPB as the dependent variable, cue to action ($\beta = 0.20$, $p < .047$) and perceived threat ($\beta = 1.28$, $p < .001$) had a significant positive effect on SCPB. In the relationship between cue to action and SCPB, 30 % of the variance was explained by perceive threat ($R2 = .30$). The bootstrap confirmed the significant mediating effect of perceive threat (95% CI: .37 - .62).

Conclusion(s): We found that cancer survivors recognize their primary cancer as a cue to action and have the effect of primary cancer experiences on the adherence of SCPB. To take secondary cancer preventive action, internal and external cue to actions are helpful to realize the risk and seriousness of the occurrence of secondary cancer, resulting in increasing the adherence of SCPB. Thus, health care providers should give accurate information to cancer survivors to recognize that cancer survivors are in a risk of the occurrence of secondary cancer.

Keywords: Physical activities, Cancer survivors, Risk reduction behavior, Health belief model

Effects of Fatigue, Nursing Information Competency, Job Control, job demand and Patient Safety Culture on Patient Safety Management Activities of Longterm-care Hospital Nurses

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Aim(s): Most of the inpatients in longterm-care hospitals are patients with chronic diseases elderly people who have difficulties in daily life due to cognitive impairment, high demands for nursing and care, and patients with high safety accidents. Longterm-care hospitals nurses, who play an important role in patient safety, have a high risk of safety accidents as the number of patients is set at 6, which is lower than the 2.5 patients per nurse, the legal workforce of general hospitals. Therefore, patient safety management activities that identify, improve, and prevent problems that occur or may occur during the patient's treatment process are important. It is necessary to understand the factors affecting the patient safety management activities of Longterm-care hospitals nurses.

Method(s): This study is a descriptive correlation study. The study subjects were 217 nurses from 19 longterm-care hospitals in C-city. Data analysis was performed by descriptive statistics, t-test, ANOVA, Scheffe test, Pearson's correlational coefficients, and stepwise multiple regression.

Result(s): The average age of nursing home nurses is 47.59±10.44 years. The average of fatigue was 4.40 out of 7, nursing information competency 3.36 out of 5, job control 3.63 out of 5, job demand 2.80 out of 5, patient safety culture 3.64 out of 5 Point, patient safety management activity was 4.38 out of 5 points. Patient safety management activities were positively related to nursing information competency (r=.28, p<.001), job control (r=.47, p<.001), patient safety culture (r=.57, p<.001) and there was a negative correlation with fatigue (r=.-.13, p=.050). The Subject of Job control (β=.43, p=.008), job demands (β=-.19, p=.006), and patient safety culture (β=.45, p<.001) are important for patient safety management activities. It is an influencing variable and 48.4% explained patient safety management activities.

Conclusion(s): In order to promote patient safety management activities of nursing hospital nurses, it is necessary to develop nursing intervention programs that control their duties, reduce job demands, and promote patient safety culture.

Keywords: Patient safety management activities, Nursing information competency, Job control, Job demand, Patient safety culture

[P-016]

Assessing Diabetes Distress Among Type 2 Diabetes Mellitus in Mongolia Using the Problem Areas in Diabetes Scale

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Aim(s): To evaluate diabetes education and psychometric properties of a Mongolian version of the Problem Areas in Diabetes Scale (PAID) in patients with Type 2 diabetes.

Method(s): The cross-sectional survey was conducted hospitals in Ulaanbaatar 203 patients with Type 2 diabetes who have been controlled by endocrinologists. The psychosocial assessment was done the questionnaire on Problem Areas In Diabetes (PAID) Questionnaire by 20-item survey uses a Likert-scale. A minimum score of 0 indicated no diabetes-related distress. A maximum score of 100 indicated significant diabetes-related distress. Internal consistency of the instrument was tested by Cronbach α.

Each participant gave written informed consent and study protocol was approved. Statistical analyses of data were performed using SPSS version 23.0.

Result(s): DM patients with mean age of 45±12 years were analyzed. We developed a Mongolian version of Polonsky's Problem Areas in Diabetes (PAID) stress questionnaire. We evaluated the utility of the questionnaire and analyzed the relationships between clinical characteristics of the study subjects and degrees of stress. Cronbach's alpha for PAID was 0.85, and PAID scores were significantly correlated patients with durations of diabetes, patients using insulin, and female patients (P=0.02, P=0.003, and P=0.001). The score also tended to increase as HbA1c levels increased, except for very poor control by HbA1c levels (above 12%)

Conclusion(s): We developed the PAID score questionnaire of Mongolian version and demonstrated its utility to evaluate levels of stress in diabetic patients.

Keywords: diabetic patients, problem areas in diabetes

Correlation between Conflict Management Style, Communication Competence and Burnout in Operating Room Nurses

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Aim(s): This study aimed to investigate operating room nurses' conflict management styles, communication competence and burnout.

Method(s): The participants were 250 operating room nurses who worked at four university hospitals and seven general hospitals with more than 200 beds. The collected data were analyzed using t-test, one-way ANOVA, Scheffé test and Partial correlation coefficient via SPSS/WIN 23.0 program.

Result(s): Communication competence was found to have a significant positive correlation with the integrating (r=.50, p=.001), compromising (r=.40, p=.001), and dominating (r=.24, p=.001) conflict management styles. Furthermore, burnout was found to have a significant positive correlation with the conflict management style of avoiding (r=.14, p=.032). Burnout was found to have a significant negative correlation with communication competence (r=-.19, p=.003) and the conflict management style of integrating (r=-.14, p=.029).

Conclusion(s): Therefore, we suggest educational programs that would reflect the conflict management styles, improve communication competence and preventing the burnout of operating nurses.

Keywords: Operating room, Nurses, Conflict, Communication, Burnout

[P-018]

Correlation between Sedation Knowledge, Clinical Decision Making and Nursing Competence in Sedation Practice among ICU Nurses

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Aim(s): The purpose of this study aimed to shed light on the relations among sedation knowledge, clinical decision-making ability and nursing competence in sedation practice for nurses in the intensive care unit of a tertiary hospitals.

Method(s): The subjects for this study consisted of 149 ICU nurses who worked in intensive care units at two tertiary hospitals located in Metropolitan City B, South Korea, for more than one year. The collected data were analyzed according to frequency, percentage, mean, standard deviation, t-test, one-way ANOVA, Pearson correlation coefficient.

Result(s): The research found that knowledge about sedation had a significantly positive (+) correlation with clinical decision making ability ($r=0.175$, $p<.05$), and clinical decision making ability had a significantly positive (+) correlation with nursing competence in sedation practice ($r=.246$, $p<0.01$).

Conclusion(s): Based on the findings, we suggest that in order to improve nursing competence in sedation practice, it is necessary to develop programs designed to enhance ICU nurses' clinical decision-making ability that can be the basis for their nursing practice, to identify the level of nursing competence in sedation practice, and to provide differentiated educational support required for it.

Keywords: Intensive care units, Sedation, Knowledge, Competences, Clinical decision making

Factors Affecting the Health-Related Quality of Life of Migrant Workers in Korea: Analysis Using a Multi-Mediation Model

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Aim(s): The present study aimed to validate a hypothetical path model estimating the health-related quality of life of migrant workers by utilizing the PRECEDE model and to verify the effects of physical activity, occupational stress, acculturative stress, and depression using a multi-mediation model

Method(s): The hypothetical model was constructed on the basis of the PRECEDE model and a literature review. Self-efficacy, hope, social support, and Korean language ability were set as exogenous variables, while physical activity, occupational stress, acculturative stress, and depression were set as endogenous variables. The data were collected between July 20 and October 1, 2020, through face-to-face surveys and online self-report questionnaires. The data of 241 participants were analyzed. SPSS version 23.0 and AMOS version were used to analyze descriptive statistics for the hypothetical model.

Result(s): The goodness of fit of the hypothetical model was tested using the indices $\chi 2$ (p), normed $\chi 2$, GFI, NFI, TLI, RMSEA, and SRMR. All the fit indices were found to be good: $\chi 2$ (p) = 23.27 (p = .026), normed $\chi 2$ = 1.94, GFI = .98, NFI = .94 CFI = .97, TLI = .91, RMSEA = .06, and SRMR = .04. The results of the hypothetical test were as follows: Social support (β = .17, p = .012) had a significant effect on physical activity. Social support (β = −.27, p < .001) and acculturative stress (β = .30, p < .001) had a significant effect on occupational stress, while self-efficacy (β = −.23, p < .001) and Korean language ability (β = −.13, p = .032) had a significant effect on acculturative stress. Hope (β = −.30, p < .001) and acculturative stress (β = .38, p < .001) had a significant effect on depression. Moreover, hope (β = .29, p < .001), social support (β = .16, p = .014), physical activity (β = .21, p < .001), occupational stress (β = −.15, p = .009), and depression (β = −.22, p < .001) had a significant effect on the health-related quality of life and were found to account for about 39% of the health-related quality of life. Furthermore, acculturative stress (β = −.13, p = .001) had an indirect effect on the health-related quality of life.

Conclusion(s): The present study confirmed that the hypothetical path model based on the PRECEDE model and a literature review could be appropriately used to determine the factors affecting the health-related quality of life of migrant workers. In order to improve the health-related quality of life of migrant workers, it is necessary to develop and implement a systematic intervention program using nursing intervention strategies that encourage hope, social support, and physical activity and reduce occupational stress and depression.

Keywords: migrant worker, quality of life, multi-mediation model

Assessing physical activity for frail elderly living in the community

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Background: Physical activity (PA) measurement for the frail elderly is essential, yet existing assessment tools are difficult to apply for this population. Objective methods of monitoring PA would be accurate, but costly and limited to a small number of participants. Subjective methods of measuring PA among the elderly often lead to less reliable information, especially among frail elderly. The newly developed Assessment of Physical activity in Frail Older People (APAFOP) focuses on items that have different intensity ratings and better represent typical forms of activity in frail elderly, and closely guarded the occurrence of system error through prevents floor and ceiling effects, which other measurements failed in this regard.

Aim(s): The purposes of this study were to translate and validate the APAFOP scale into Korean and Chinese and to find the adaptability of the tool through preliminary research in a sample of frail elderly living in the community.

Method(s): The APAFOP was translated into Korean and Chinese versions based on the established guideline for cross-cultural adaptation of self-report measures from Beaton et al. Kendall's coefficient of concordance W was used to assess the consistency of activity scores between the translated version and the original English version.

Result(s): The initial version of APAFOP applied to the sample of frail elderly with translated versions showed a consistency W=0.912 (c2= 9.118, R=0.104) for the Chinese version and W=0.326 (c2=3.261, R=0.660) for the Korean version. The following adjustments were suggested for translated version to improve the consistency: (1) the definition of related activities is required to be more specific, (2) the time line of previous 24 hours should be strictly regulated, (3) a user manual was required to the translated versions to help researchers understand and apply the scale with the standardized protocol.

Conclusion(s): This preliminary study was conducted for the first validation and adaptation of the APAFOP in the Korean and Chinese settings and found that the translated version revealed the potential applicability as the modified objective measure of PA among frail elderly living in the community. The further process of cultural adaptation of the APAFOP would be warranted to compare the scale with current objective measures (e.g., pedometer) to establish criterion validity.

Keywords: physical activity, frail elderly, APAFOP, Cross-culture research, validity and reliability

[P-021]

Evaluating a theory-based intervention for improving eHealth literacy in older adults: A single group, pretest–posttest design

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Aim(s): we developed an intervention program to improve eHealth literacy in older adults according to the information-motivation-behavioral skills (IMB) theory and Intervention Mapping. This study aimed to analyze the effect of developed intervention on information, motivation, behavioral skills, and behaviors related to eHealth information in older adults.

Method(s): This study applied a single group pretest–posttest design. The participants were 46 older adults over the age of 65 recruited from two senior welfare centers in a city in South Korea. We divided the participants into 4 groups and conducted 4 interventions in the computer room of the Senior Welfare Center from March to December 2019. One intervention was performed once a week (2 hours/1 time) for 5 weeks, and the total lecture time was 10 hours. The instructors were all researchers involved in the development of this intervention, and the instructors for each intervention consisted of one lecture instructor and two assistant instructors who supported the participants in the computer practices.

Result(s): Participants' computer/web knowledge (χ^2 = 60.04, p <.001), perceived ease of use (χ^2 = 17.86, p <.001), perceived enjoyment (χ^2 = 23.06, p <.001), and attitude toward eHealth information (χ^2 = 18.47, p <.001) showed statistically significant increases. The eHealth information literacy efficacy score (χ^2 = 72.76, p < .001), searching performance score (χ^2 = 162.57, p < .001), and understanding score (χ^2 = 60.96, p < .001) were also significantly different from those before and after the intervention. However, there was no significant difference in perceived usefulness (χ^2 = 5.91, p = .052).

Conclusion(s): Our findings suggest that the application of the current theory based methodology can improve the quality of research in developing eHealth information literacy interventions. Additionally, it is necessary to develop and continuously apply various interventions to improve eHealth information literacy among older adults. Finally, measures to improve the Internet environment for older adults should be considered.

Keywords: IMB model, Intervention Mapping, eHealth literacy, Intervention

Effect of Nursing Students' Critical Thinking Disposition and Nursing Information Literacy Competency on Nursing Process Performance

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Aim(s): There is a lack of research that has produced results on the relationship between nursing college students' nursing process performance, critical thinking disposition, and nursing information literacy competency. This study seeks to understand the impact of nursing college students' critical thinking disposition and nursing information literacy competency on nursing process performance.

Method(s): The subjects of study are 180 students from the Department of Nursing at K University in E providence. Data collection took place from 17 August to 2 September 2020. The research tools used critical thinking disposition, NILC-N (Nursing Information Literacy Competency) tools, and nursing process performance tools. The collected data analysis used the SPSS/WIN 25.0 program, using technical statistics and Independent t-test, ANOVA, Pearson's correlation coefficient method.

Result(s): Critical thinking disposition is whether or not nursing courses are completed (121.79±16.28 vs 119.31±21.52, t=.842, p=.028) showed a difference depending on. Nursing information literacy competency differed between the first and second grade groups(83.93±16.15) and the third and fourth grade groups(99.04±12.18). Nursing information literacy competency differed depending on whether or not clinical practice was experienced(99.12±12.09 vs 83.65±16.09, t=7.177, p=.047) and Completion of nursing informatics course (65.78±9.57 vs 49.48±16.38, t=5.501, p=.015) showed differences. The study subjects' nursing process performance showed a positive correlation between critical thinking disposition(r=.413, p<.001) and nursing information literacy competency(r=.769, p<.001).

Conclusion(s): It was confirmed that the impact on nursing college students' ability to nursing process performance was critical thinking disposition and nursing information literacy competency. In order to improve nursing college students' nursing process performance, it is necessary to develop educational programs that can foster nursing information literacy competency and critical thinking levels.

Keywords: critical thinking disposition, nursing information literacy competency, nursing process performance, nursing college student

[P-023]

Reliability and validity of the Korean Moral Identity Scale

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Aim(s): Instruments developed to predict moral behavior need evidence of their reliability and validity for rigorous research. The purpose of this paper is to report psychometric properties of the Korean version of the Moral Identity Scale in Intensive Care Unit nurses. The aim of this study was to assess the reliability and validity of the Korean version of the MIS (K-MIS) developed by Aquino & Reed.

Method(s): This is secondary data analysis study. The original data (n = 207; 97.1% female) were collected by paper questionnaire from February and March of 2017. This study employed a methodological design to test the validity and reliability of the Korean version of the MIS. For cross validation, the subjects in the exploratory factor analysis and confirmatory factor analysis were different in this study. Therefore, in this study, 207 participants were randomly selected using the IBM SPSS Statistics 23 & AMOS 26 programme to construct different subjects for exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Approximately 100 participants are considered appropriate for factor analysis. Thus, 103 people were used for EFA, and 104 people were used for CFA.

Result(s): The results of exploratory factor analysis showed that the Eigen values ranged from 1.63 to 4.47 and comprised 52.17% of the total explained variance. Confirmatory factor analysis showed adequate model fit indices ($\chi 2$ (p) = 28.822 (.051), df = 18, root mean square error of approximation = .076, GFI = .937, Tucker-Lewis index = .93, comparative fit index = .955) and standardized factor loadings (.45 to.82).

Conclusion(s): As a professional, the ICU nurse must protect and advocate for the patient. In this respect, K-MIS is a useful tool to measure the moral identity of ICU nurses in Korea. Therefore, it is expected that the K-MIS will be used in nursing education programs to improve the moral identity of ICU nurses.

Keywords: Intensive care, intensive care nursing, moral identity, Moral Identity Scale, validity, reliability

Relationship Between Social Support and Health-Related Quality of Life among Patients with Stroke: Mediating Effect of Rehabilitation Motivation

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Aim(s): Stroke is the globally important health concern which decreases the health-related quality of life. Previous studies have shown a link between social support, rehabilitation motivation, and health-related quality of life of patients with stroke. However, the mechanisms underlying this relationship were rarely identified in stroke patients. This study aimed to identify the mediating effects of rehabilitation motivation in the relationship between social support and health-related quality of life among patients with stroke.

Method(s): This study is a cross-sectional study design which was conducted from September 16, 2020 to December 20, 2020 at two general hospitals with more than 300 beds and one rehabilitation hospital located in Jeonbuk. The participants of this study were patients diagnosed with stroke over the age of 19 who were hospitalized for the purpose of rehabilitation treatment. A total of 174 patients who received a score of 24 or higher in the Korean version of the mini mental state examination were surveyed. Multiple regression models were tested using the SPSS PROCESS procedure with bootstrapping to determine the significance of the mediation.

Result(s): Significant associations were identified among social support, rehabilitation motivation, and health-related quality of life. Results revealed an indirect effect, suggesting that the effects of social support on health-related quality of life were mediated by rehabilitation motivation.

Conclusion(s): Social support for stroke patients had a positive effect on the health-related quality of life, and rehabilitation motivation was found to have a partial mediating effect in the relationship. This study suggests that the social support from healthcare provider and family for stroke patients can improve the patients' health-related quality of life by inducing positive rehabilitation motivation. Thus, developing intervention strategies to motivation for rehabilitation treatment could improve health-related quality of life of patients with stroke.

Keywords: social support, rehabilitation motivation, health-related quality of life, stroke

[P-025]

A Study on the Relationship between Care Burden, Depression, and Quality of Life among Families of Stroke Patients in Rehabilitation Hospital
-Comparison between Integrated Nursing Care Service Ward and General Ward-

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Aim(s): The purpose of this study is to investigate the correlation between the burden of care, depression, and quality of life in the family of stroke patients admitted to the nursing care integrated service ward of a rehabilitation hospital and the family of stroke patients admitted to the general ward.

Method(s): The data collection period was from December 2019 to March 2021.The subjects were 142 people who understood the purpose of this study and voluntarily agreed to participate among the families of stroke patients hospitalized at D and W Rehabilitation Hospital in D city. Data were analyzed using the SPSS/WIN 25.0 statistical program with t-test, and Pearson's Correlation Coefficient.

Result(s): As a result of this study, on a scale of 5 points, the care burden was an average of 3.60±0.34 for the families of stroke patients in the integrated nursing care service ward and 3.77±0.48 for the families of stroke patients in the general ward, and there was a significant difference in the burden of care between the two groups (t=-2.32, p=.022). Depression was scored out of 3, with an average of 0.39±0.28 for the families of stroke patients in the integrated nursing care service ward and 0.47±0.35 for the families of stroke patients in the general ward, and there was no significant difference between the two groups. The quality of life was 2.77±0.42 for the families of stroke patients in the integrated nursing care service ward out of a scale of 5, and 2.63±0.41 for the families of stroke patients in the general ward, indicating a significant difference between the two groups (t=2.06, p=.041). There was a significant correlation between the quality of life and depression in the families of stroke patients in the integrated nursing care service ward (r=-.362, p=.002). Among the families of stroke patients in the general ward, quality of life had significant correlations with burden of care (r=-.310, p=.011) and depression (r=-.599, p<.001).

Conclusion(s): In both types of wards in the rehabilitation hospital, it was found that there was a correlation between the quality of life of the stroke patient's families and depression. In particular, in the families of stroke patients in the general ward, the burden of care was correlated with the quality of life. Therefore, when providing nursing care, it is necessary to provide nursing intervention for families that includes the burden of care and depression.

Keywords: stroke patient, family, quality of life, burden of care, depression

A study on the relationship between academic achievement, self-efficacy and anxiety of nursing students who have experienced online remote lecture education

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Aim(s): This study was conducted in order to understand the difference in academic achievement according to the lecture time of online classes and to understand how self-efficacy and anxiety are correlated with academic achievement. Currently, due to COVID-19, the change in the learning environment of students became inevitable. Through previous studies, it was found that there is a correlation between academic achievement, self-efficacy, and anxiety. Correlation studies are needed as there are positive or negative conflicting results.

Method(s): Subjects were 1st, 2nd, and 3rd year nursing students attending 4-year K University in Chungbuk, who had experienced online classes. The collected data were used by the SPSS 18.0 program to perform t-test,®ANOVA, and correlation analysis.

Result(s): First, men have higher academic self-efficacy than women, and women have higher levels of anxiety than men. Second, academic self-efficacy was high in the order of second grade, first grade, and third grade. Third, the lower the grade, the higher the anxiety, and the higher the grade, the higher the academic self-efficacy. Fourth, the self-efficacy of solving problems was high in the order of credit 2.99 or less > 4.0 or higher > 3.5 – 3.99 > 3.0 – 3.44. Fifth, the higher the grade, the shorter the online lecture time, and the shorter the online lecture time, the higher the academic self-efficacy.

Conclusion(s): It showed a positive correlation between Academic performance and self-efficacy, a negative correlation between academic performance and anxiety. Academic performance and problem-solving, self-efficacy did not show correlation. Finally, the more time spent on online remote lectures, the lower the academic achievement and academic self-efficacy. However, it should be considered that achievements through online lectures cannot be evaluated in the same way as those through existing methods of teaching.

Keywords: Nursing students, on-line class, Academic achievement, self-efficacy, anxiety

[P-027]

The Effect of Everyday Creativity and Communication Ability on Self-Leadership in Nursing Students

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Aim(s): Recently, as the importance of providing medical information to patients and guaranteeing their rights is emphasized, autonomous leadership development of medical staff is emphasized in providing quality medical services. In particular, daily creativity and appropriate and efficient communication skills, which are concepts that improve self-actualization and adaptability in new and unique ways, are identified as factors that can develop self-leadership. The purpose of this study was to investigate the effect of everyday creativity and communication ability to self-leadership of nursing students.

Method(s): The study conducted 157 nursing students in the first and third grades who agree with study participation. Data were collected using a structured questionnaire from August to October 2020. SPSS/WIN 25.0 program was used to conduct statistical analyses, including descriptive statistics, an independent t-test, a one-way analysis of variance, and stepwise multiple linear regression.

Result(s): Self-leadership based on general characteristics showed statistically significant differences in grade, economic level, and way of living. Also everyday creativity and communication skills showed statistically significant differences in gender. Self-leadership of nursing students showed that statistically significant positive correlations in the order of everyday creativity ($r=.881$, $p<.01$), communication ability ($r=.829$, $p<.01$). Stepwise multiple linear regression demonstrated that everyday creativity explained 59.0% of the variance in self-leadership.

Conclusion(s): Through this study, positive correlation was confirmed between self-leadership, everyday creativity, and communication ability of nursing students, and it was found that everyday creativity has the greatest influence on self-leadership. Therefore, it suggests that further research is needed on the development and effectiveness of self-leadership programs that can improve everyday creativity and communication skills of nursing students.

Keywords: everyday creativity, communication ability, self-leadership, nursing student

Corona, before & after: in core basic nursing skills

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Aim(s): Now online education is major part in nursing education. In 2019 we conduct facetoface practice of core basic nursing skills. But in 2020 we convert it to nonfacetoface practice. Therefore this study investigate academic achievement score between facetoface and nonfacetoface practice in core basic nursing skills. After graduation nursing skills performed in real clinical situation. According to preceding search, to improve clinical competence student should to promote performance confidence. Therefore we also investigate performance confidence between facetoface and nonfacetoface practice in core basic nursing skills.

Method(s): This study was investigated by total 134 graduating nursing students from chungbuk K university. There is facetoface group A(n=67)in 2019 and nonfacetoface group B(n=67)in 2020. In both groups, 10 core basic nursing skills was evaluated in facetoface by 3 professiors. Total score is 100 by knowledge 20, technique 30, attitude 50. Technique score is based on protocol checklist of KABONE. A group student was educated by demonstration and practical training during limited times. B group student was educated by flipped learning. It is consist of unlimited time watching video(Elsvier), nonfacetoface cooperative learning with professor and co-students. After education, performance confidence of both group student estimated by 5-point scale. The data were analyzed by t-test with SPSS/WIN 21.0 Program.

Result(s): B group (nonfacetoface) showed higher achievement score 97.54±8.99 than A group(facetoface)94.89±3.52. The most difference showed on wearing protective equipment that B group got high score 97.73± as against A group 88.21±4.77. The highest confidence score are oral medication/admission management(5.0±0:Agroup) and oral medication(4.63±0.58:Bgroup). The lowest confidence score are wearing protective equipment(4.3±0.5:Agroup) and simple catheteriz ation(4.15±0.86:Bgroup).

Conclusion(s): With these findings, we found that nonfacetoface pactice is effective in achieve core basic nursing skills as compared with facetoface practice. But the gap is distinguished from each item. It is needed to developing effective nonfacetoface practical method and achivenment measurement. Also performance confidence vary between each group, each items. So we need more study that what is the best method at each item.

Keywords: nursing student, academic achievement, performance confidence nonfacetoface practice

[P-029]

The relationship between a nursing student's personality, self-directed learning ability, and academic achievement

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Aim(s): The purpose of this study is to identify a significant relationship between the five personality factors, self-directed learning ability, and academic achievement, focusing on college students majoring in nursing.

Method(s): This study was conducted through a descriptive correlational study to examine the relationship between personality, self-directed learning ability, and academic achievement of 268 nursing student student in 4-year K University in chungbuk. A t-test, one-way ANOVA and cross-analysis were conducted to investigate the differences in the characteristics of the five personality factors, self-directed learning ability, and academic achievement according to gender and grade. To investigate the relationship between the types of personality 5 factors and self-directed learning ability, one-way ANOVA and correlation test were performed. Cross-analysis was performed to examine the relationship between the five personality factor types and academic achievement, and one-way ANOVA was performed to examine the relationship between academic achievement and self-directed learning ability.

Result(s): The results of this study showed that the difference in self-directed learning ability between the types of personality 5 factors was significant in the learning situation (F=2.529, p=0.042). In addition, the differences between academic achievement and self-directed learning ability were found to be learning motivation [F=33.166, p=0.000], self-awareness [F=16.638, p=0.000], and learning strategy [F=26.394, p=0.000]. Finally, the relationship between the type of personality 5 factors and academic achievement was not significant as =14.887, p=0.061.

Conclusion(s): As a result of this study, it was found that the more conscientious the students, the more help to increase the self-directed learning ability. In addition, it was found that there is no relationship between the 5 personality factors and academic achievement because the relative academic achievement cannot be known as the first semester of 2020 is made as an absolute evaluation due to COVID-19. The higher the academic achievement, the higher the score of self-directed learning ability, indicating that there is a relationship between academic achievement and self-directed learning ability.

Keywords: Nursing college student, personality, learning ability, academic achievement

Impact of nursing professionalism and communication skills on major satisfaction of nursing students

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Aim(s): The purpose of this study was to identify the impact of nursing professionalism and communication skills on major satisfaction of nursing students.

Method(s): Data were collected from April 19 to September 2, 2020 for 139 first- and third-year nursing students at K university in Chungcheongbuk-do. Data analysis was performed by descriptive analysis, t-test, ANOVA, scheffe's test and correlation coefficient using the SPSS 21.0 program.

Result(s): The major satisfaction was significantly higher in the first year nursing students than the third year students, and in the nursing students without clinical experience than those with clinical experience. There were significant correlation between all variables. Major satisfaction was significantly correlated with nursing professionalism ($r=.479$, $p<.001$) and communication skills ($r=.391$, $p<.001$). There was a significant correlation between nursing professionalism and communication skills($r=.430$, $p<.001$).

Conclusion(s): A nursing education program that enhances nursing professionalism and communication skills is needed to improve major satisfaction. The results of this study showed that major satisfaction decreased after experiencing clinical practice. Therefore, further research on the stress of clinical practice and satisfaction with the major is needed.

Keywords: nursing professionalism, communication skills, major satisfaction

[P-031]

Identifying burdensome menopausal symptoms among Cambodian women by best–worst scaling

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Background(s): The prevalence and burdensome menopausal symptoms vary among different ethnic groups, and such symptoms may affect quality of life in middle aged women. However, it is unknown which menopausal symptoms Cambodian women suffer from most. This study identified the most burdensome menopausal symptoms among Cambodian women utilizing Best-worst scale (BWS).

Method(s): One hundred eight Cambodian women, aged 40 and 60, were recruited from four regions of Cambodia using convenient sampling. Using BWS, twelve choice sets were prepared by combinations of 11 symptoms on the menopause rating scale. Counting approach and modeling approach analyzed the responses of the BWS questionnaire to understand the most and least burdensome symptoms by separately based on the menopause statues.

Result(s): Among 180 participants, 41.1% were between the ages of 40 and 49, and 25.0% were over 50. The women's menopausal stages were 23.3% premenopausal, 25.0% perimenopausal, and 51.7% postmenopausal. Both counting and modeling approaches revealed that heart discomfort was the most burdensome symptom whereas dryness of vagina, hot flushes, sweating, bladder problems, and anxiety were the least burdensome.

Conclusion(s): It is important to develop symptom-specific interventions including easy-access health education programs delivered in community-based settings to better manage the burdensome menopausal symptoms among Cambodian middle-aged women.

Keywords: best-worst scaling, Cambodia, menopause, symptoms

Mediating Effect of Resilience on the Relationship between Depression and Post-traumatic Growth among Patients with Meningioma

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Aim(s): The aims of this study were to test a mediation model identifying the mediating effect of resilience on the relationship between depression and post-traumatic growth (PTG) among patients with meningioma. The hypotheses in this study were that depression has a significant direct effect on PTG and depression has a significant indirect effect on PTG via resilience.

Method(s): This study used a cross-sectional descriptive correlational design. 146 patients diagnosed brain meningioma participated in this study. Data were collected by face-to-face interview from March 2019 to December 2019 in an outpatient neurosurgery clinic. Measurement included the Hospital Anxiety Depression Scale (HADS), Dispositional Resilience Scale-15 (DRS-15), Posttraumatic Growth Inventory® (PTGI). Data were analyzed using descriptive analysis, independent t-test, ANOVA, Pearson's correlation coefficient. The mediating effect was verified using model 4, a simple mediation model of Hayes's PROCESS macro program. The significance of the indirect effect was verified by estimating the bootstrap bias-corrected 95% confidence interval, and the number of bootstrap was set to 10,000.

Result(s): Most of the participants (70.5%) were female and average age was 57.92 ± 11.27 years. They diagnosed 53.82 years and 92.5% of the participants was WHO grade I and II. The mean score of the depression, resilience, and PTG were 13.03±4.44, 26.07±6.65, and 57.45±21.49, respectively. Depression had a significant positive effect on resilience, which accounted for 33.6% (B=-0.918, p<.001, 95% CI [-1.152, -0.684]). Depression and resilience had a significant positive effect on PTG, which accounted for 35.8% (B=1.538, p<.001, 95% CI [1.006, -2.064]). But, depression had not a significant effect on PTG. Consequently, Resilience had a completely mediated on the relationship between depression and PTG among meningioma patients (B=-1.409, p<.001).

Conclusion(s): When nurses assess the PTG with meningioma, they should be considered their depression and resilience. Also, it should be needed to develop nursing interventions for resilience and PTG improvement among meningioma patients.

Keywords: depression, resilience, posttraumatic growth, psychological, meningioma

[P-033]

A Longitudinal Analysis of Alcohol Use Behavior among Korean Adults and Related Conditions: Latent Class Growth Model

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Aim(s): The present study classified the changes in alcohol use behavior among Korean adults and explored the related conditions.

Method(s): The study used data from the 4th (2009) to 14th (2019) waves of the Korean Welfare Panel Study. The subjects were 8,267 adults aged 19-60 years. The latent class growth analysis was used to classify the latent classes of alcohol use behavior among Korean adults and logistic regression analysis was performed to identify the specific factors that form the classes. In addition, 11-year trajectories of major variables associated with alcohol use behavior for the derived classes was analyzed by growth mixture modeling.

Result(s): There were four classes identified according to the trajectories of alcohol use behavior: "moderate to low risk class," "low to moderate risk class," "stable moderate risk class," and "stable low risk class." Subjects who are aged 19-49 years, males, or unemployed; belong to a single-person or grandparent/single-parent family; or have education level of high school graduate or below had higher likelihood of belonging to the "stable moderate risk class" or "low to moderate risk class." There were statistically significant differences in the trajectories of depression, self-esteem, satisfaction with family relationships, and satisfaction with leisure activities according to class of alcohol use behavior. In particular, self-esteem and satisfaction with family relationships showed distinctly decreasing trajectories in the low to moderate risk class.

Conclusion(s): These results suggested the need for longitudinal analysis on the factors that influence alcohol use behavior. Therefore, future longitudinal studies should include longitudinal analysis of not only dependent variables, but also various predictors. Furthermore, with respect to alcohol use behavior among Korean adults, the findings in the present study emphasize the need for mandatory drinking prevention education, intervention, and improvement of workplace drinking culture for males aged 20–40 years, who have been identified as high-risk group, while also suggesting intervention for families, as well as the individual drinker.

Keywords: alcohol use behavior, Korean adults, latent class growth analysis, growth mixture modeling, Korean Welfare Panel Study

Effects of Depression, Social Isolation and Quality of Communication Life on the Suicidal Ideation among older adults with hearing loss

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Aim(s): The aim of this study was to identify the factors related to the suicidal ideation among older adults with hearing loss.

Method(s): A cross-sectional survey was conducted involving 161 older adults in South Korea. Data were collected using self-report questionnaires and face-to-face interviews from March 2019 to February 2020. The measurement instruments included Suicidal ideation, Depression (GDSSK), Social isolation, and the Quality of Communication Life (QCL). The data were analyzed using descriptive statistics, independent t-tests, one-way analysis of variance (ANOVA), Pearson's correlation coefficient, and a multiple regression analysis.

Result(s): The total score for suicidal ideation of older adults with hearing loss was 14.31 (SD 4.85) out of a maximum of 25. Suicidal ideation had a statistically significant relationship with depression (r=.501, p<.001), social isolation (r=.663, p<.001), Quality of Communication Life (r=-.512, p<.001). The factors affecting suicidal ideation were social isolation (β=.615, p=<.001), gender (β=-.162, p=.007), and current residential status (β=-.159, p=.008); the explanatory power of the model was 47.2%.

Conclusion(s): The findings provide evidences that older adults with hearing loss can also reduce suicidal ideation through program support that can maintain social relationships and social resources that can improve communication satisfaction.

Keywords: Aged, Hearing Loss, Depression, Social Isolation, Suicidal Ideation

[P-035]

Predictive Factors on Blood Donation Intention in Middle Aged Public Officials Base on the Theory of Planned Behavior

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Aim(s): This study is a descriptive study to identify factors affecting the blood donation intention of middle-aged public officials based on Ajzen's theory of planned behavior.

Method(s): The participants of this study were 223 middle-aged firefighters and prison guards from one fire station and prison located in G and B districts. As a research instrument, attitudes toward blood donation, subjective norms, and perceived behavior control instrument that Kim revised and supplemented with reference Ajzen's descriptive research on the instrument development process were used. Data collection was conducted using a self-reported structured questionnaire for participants who met the criteria for selection of research participants from November 2, 2020 to November 6, 2020. The collected data were analyzed by Pearson's correlation coefficient and multiple regression analysis using SPSS WIN 25 program.

Result(s): The participants' blood donation intention showed a significant positive correlation with their attitude toward blood donation (r=.52, p<.001), subjective norms (r=.52, p<.001), and perceived behavioral control (r=.65, p<.001). The attitude toward blood donation showed a significant positive correlation with the subjective norm (r=.37, p<.001) and perceived behavioral control (r=.54, p<.001). There was a significant positive correlation with the subjective norm and the perceived behavior control (r=.46, p<.001). Influencing factors on blood donation intention were plan to participate in blood donation within 3 months (β=-.34, p<.001), perceived behavioral control (β=.31, p<.001), and attempts to donate blood in the past (β=-.31, p<.001), subjective norms (β=.20, p<.001), and attitude toward blood donation (β=.15, p<.001) were in the order of these variables. It showed 69% of explanatory power for the participants' blood donation intention.

Conclusion(s): Due to the change in the demographic structure, it is necessary to improve the system to induce the active participation of middle-aged people in blood donation. Based on the planned behavior theory, it is necessary to develop a blood donation promotion program that considers the variables that affect the intention of the middle-aged to donate blood.

Keywords: middle aged, blood donation intention, theory of planned behavior

Factors Associated with Gastrointestinal Symptoms among Rotating Shift Nurses

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Aim(s): This study aimed to investigate common gastrointestinal (GI) symptoms and their associated factors among rotating shift nurses in tertiary hospitals.

Method(s): In this cross-sectional study, nurses with rotating shifts were enrolled from two tertiary hospitals in South Korea. A self-administrated questionnaire consisting of general and occupational characteristics, lifestyle, sleep related characteristics, Evaluation of a Gastrointestinal Symptoms Questionnaire, Depression, Anxiety Stress Scale (DASS)-21, and Pittsburgh Sleep Quality Index (PSQI) was used for survey. The data were analyzed using the descriptive analysis, Independent t-test, One-way ANOVA, Pearson's correlation, and Hierarchical multiple regression analysis.

Result(s): Of 128 nurses with rotating shifts, the GI symptoms frequently experienced were in the order of empty feeling (82.0%), abdominal rumbling (75.8%), bloating (75.0%), heartburn (66.4%), and belching (6.02%). 42.4% of the participants had at least one more moderate GI symptoms and 7.0% with one or more severe GI symptoms. The average sleep quality (PSQI) score was 8.04 (SD=3.35), including 83.6% with poor sleep quality (PSQI≥5). The mean of depression, anxiety, and stress were 7.57 (SD=7.84), 6.58 (SD=6.87), and 10.89 (SD=6.45), and the prevalence of them were 32.0%, 13.3%, and 28.2%, respectively. It showed that factors significantly associated with the severity of GI symptoms were sleep quality (β=.47), job stress (β=.23), sleep duration (β=.22), and general stress (β=.17) in the final model, and its explanatory power was 40.5% by total variance (F=4.55, p=.035).

Conclusion(s): It shows that physical symptoms, especially GI symptoms, among rotating shift nurses were associated with poor quality, short sleep duration, and high stress level. The physical symptoms, sleep disorders, and psychological problems of nurses were interrelated with each other. Therefore, we should be more concerned about their health status, working conditions and quality of life among nurses.

Keywords: Nurses, Gastrointestinal disease, Sleep, Psychological Distress

[P-037]

Organ donation, what's your choice?

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Aim(s): Korea's organ donation rate is the lowest among the OECD countries This study was to investigate organ donation knowledge, practice will and identify influencing factors of college student' toward organ donation.

Method(s): Subjects were 118 college students who have voluntarily agreed to participate in the study. Data was collected from October 5 to 11, 2020, using a structured questionnaire. Collected data were analyzed by using SPSS WIN 21.0 program.

Result(s): College students' organ donation knowledge scores were averaged 12.30 out of 17 points. Question with the lowest percentage of answers(10.2%) was 'Korea has a higher rate of donating organs after brain death compared to other developed countries with a population of more than 1 million.' Question with the highest percentage of answers(93.2%) was 'Organs that have been invaded by infected infectious microorganisms or cancer cells cannot be donated. Only 6% of college students(n=7) signed an organ donation pledge. Approximately 65% of college students(n=79) answered positively about organ donation. There were only significant differences oniy in grades(p=.022), among the general characteristics, such as gender, age, religion, grades, and major. The characteristics of organ donation and the willingness to donate do not had correlation with the level of knowledge about organ donation. There was no significant correlation. in other characteristics gender, age, religion, or major. Information acquisition (t=1.11, p=2.69), education status (t=1.07, p=0.287), and organ donation pledge (t=0.5, p=0.954) were all statistically significant differences. The characteristics of the high organ donation knowledge score in the analysis of the difference in the degree of organ donation knowledge according to the general characteristics of university students are as follows. Female students, ages from 20 to 22 and under, are highly natural. In the analysis of the degree of knowledge difference, the organ donation knowledge score was low for male students, 23 years of age or older, and for humanities and social studies. Research has low awareness and interest in organ donation, regardless of the knowledge, willingness to practice, and general characteristics of college students. Therefore, it is necessary to raise the diverse interest of college students in organ donation through public relations, education, and in-depth follow-up research related to organ donation.

Conclusion(s): Research indicates poor awareness and interest in organ donation among college students, regardless of their knowledge, willingness to practice, and general characteristics. The overall findings of this research suggest the need to develop tailored education programs to improve knowledge about organ donation.

Keywords: Organ donation, Willingness to act, Knowledge, Attitude, Brain death

[P-038]

Self-concept and Psychosocial Well-being in Women with *BRCA1/2* Gene Mutation

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Aim(s): This study aimed to examine the levels of self-concept and psychosocial well-being in women with BRCA1 or BRCA2 gene mutation; explore the relationships between self-concept and psychosocial well-being; and identify the factors affecting psychosocial well-being.

Method(s): A cross-sectional study design was employed. Data collection was conducted in an online community for Korean breast cancer patients and their families. Ninety-eight women with BRCA1 or BRCA2 gene mutation answered online questionnaires consisting of the BRCA self-concept (BRCASC) scale, psychosocial well-being Index-short form (PWI-SF), demographic characteristics and disease-related characteristics. Descriptive statistics, frequencies, independent t-tests, one-way ANOVA, Pearson's correlation, and multiple regression were used for data analysis.

Result(s): The total self-concept level was 82.13±15.45 (range: 17~119), and the psychosocial well-being level was 28.81±9.51 (range: 0~54), which was indicated high-risk group. Self-concept was significantly correlated with psychosocial well-being ($r=0.56$, $p<.001$). Two factors, self-concept (std. $\beta=0.57$, $p<.001$) and family monthly income (≥4,500 USD) (std. $\beta=-0.24$, $p=.048$), were significantly affected to psychosocial well-being of women with BRCA1 or BRCA2 gene mutation.

Conclusion(s): The self-concept and psychosocial status of women with BRCA1 or BRCA2 gene mutation should be assessed carefully, and it is necessary to develop tailored consultation and education programs. Also, the supportive systems for financially vulnerable women with BRCA1 or BRCA2 gene mutation should be considered.

Keywords: genes, BRCA1/2, women, self concept, psychosocial well-being

Development and Effectiveness of Bowel Function Improvement Program for Postoperative Male Rectal Cancer Patients

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Aim(s): Low anterior resection (LAR) has become a standard surgery for rectal cancer patients to improve their health-related quality of life (HRQOL). However, rectal cancer patients with LAR experience bowel dysfunction. The purposes of this study are to develop a bowel function improvement program for male rectal cancer patients who have undergone LAR and to examine the effectiveness of the program.

Method(s): This study was a prospective, unblinded, randomized controlled trial. This trial was conducted at a tertiary hospital, the second-largest hospital in Seoul, South Korea. Participants of this study were adult male patients who were diagnosed with rectal cancer and had undergone LAR or ileostomy repair after LAR. The enrolled 34 patients were assigned to either the experimental or the control group in a 1:1 ratio. The bowel function improvement program for patients with LAR was developed based on Bandura's self-efficacy theory and the modified Medical Research Council framework for developing a complex intervention. The bowel function improvement program was provided only for the experimental group. Self-efficacy, bowel function, HRQOL, and healthcare resources utilization were measured before discharge and at 1 and 3 months after discharge. Collected data were analyzed using IBM SPSS 25.0 and STATA 16.0. Independent t-tests, Wilcoxon rank-sum tests, and analysis of covariance were used to test the hypotheses at each time point, and generalized estimation equations were used to evaluate the effects of the program over time.

Result(s): The bowel function improvement program was developed as a 4-week intensive program (face-to-face education, telephone coaching) and an 8-week maintenance program (text message). The bowel function improvement program was effective in improving self-efficacy over time (regression coefficient = 4.53, p = .049) and partially so in reducing unplanned healthcare resources utilization (p = .044). Bowel function and HRQOL were favored in the experimental group, but they were not statistically significant.

Conclusion(s): Based on the research findings, it is expected that the bowel function improvement program can be helpful to promote early recovery for patients undergone LAR after discharge.

Keywords: Rectal cancer surgery, male, self-efficacy, bowel function, quality of life

[P-040]

Development of an Early Palliative Care Intervention Based on Person-Centered Care in Intensive Care Units

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Aim(s): Clinical indicators tend to be emphasized among critically ill patients, for whom the maintenance of vital functions is important, while their dignity as human beings tends to be downplayed. However, pain relief and respect for critically ill patients improve the clinical outcomes and experience. Therefore, a need exists for interventions that guarantee the safety and dignity of critically ill patients and provide individual critical care with caregiver participation. The purpose of this study was to develop an early palliative care intervention based on person-centered care in an intensive care unit (ICU).

Method(s): This methodological study was designed to develop early palliative care interventions. Based on the person-centered care theory, a draft intervention was developed by identifying 7 cases of interventions in foreign institutions that provide palliative care in ICUs and conducting a systematic, integrated literature review of palliative care interventions and person-centered care interventions in ICUs. We then conducted individual interviews with 5 health-care providers and 5 caregivers of critically ill patients. Next, we developed a draft protocol for an early palliative care intervention based on person-centered care in ICUs, which 6 experts in intensive and palliative care evaluated for content validity. Finally, a revised version of the early palliative care intervention for patients in ICUs was established.

Result(s): Our early palliative care intervention based on person-centered care in ICUs includes working with the patient's beliefs and values, engaging authentically, sharing decision-making, being sympathetically present, and providing holistic care. It consists of interventions to be performed within 1 day after admission to the ICU, interventions to be performed within 3 days, and interventions that should be performed daily. In addition, the multidisciplinary team provided interventions. The scale-level content validity index of the draft intervention for early palliative care based on person-centered care in the ICU was 0.88, which was judged as representing a consensus among the experts.

Conclusion(s): We developed an early palliative care intervention based on person-centered care in ICUs. It is a planned and systematic intervention that is provided within 3 days of a patient entering the ICU and is delivered by health-care providers in ICUs. This intervention would be helpful for providing a positive experience for critically ill patients and their caregivers within the philosophy of patient-centered care.

Keywords: person-centered care, early palliative care intervention, intensive care unit

Effect of Nonviolent Communication Education Program on Nursing Students' Empathy and Communication Skill

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Aim(s): Nonviolent Communication (NVC) is an effective program for empathy education; handling of criticism, anger, rejection, and emotional pain; and adjustment of human relationship dynamics (Nosek & Durán, 2017). Thus, it is necessary to conduct studies on how to apply NVC, as one of the various communication methods, specifically to nursing students. The purpose of this study was to investigate whether NVC program deescalate primary anger and secondary anger and enhance empathy and communication skill. Therefore, the hypothesis were as follows: NVC program will increase empathy and NVC program will increase communication skill.

Method(s): Researchers used a non-equivalent control group pre-post-test design. The program of non-violent communication was adapted to nursing students for examination of effects on empathy, and communication skill. Convenience sampling was used to source 62 nursing baccalaureate students living at J City and 55 students living at A City, South Korea. Two universities have nursing departments located in J and A city which have similar population and sociocultural background. Empathy means understanding other's intention, predicting other's behavior, and experiencing other's affection. Empathy was measured using Chung & Kim's (2006) Korean version of Empathy Quotient (EQ). Communication efficacy was measured using Chung's (2010) Korean version of communication efficacy scale. The effect of non-violent communication program was analyzed using analysis of covariance (ANCOVA) via the Statistical Package for the Social Sciences 24.

Result(s): After the intervention, empathy was increased from 79.84 (SD=7.83) to 100.39 (SD=8.76) in the case group, and significant difference between two groups. Communication skill was increased from 46.80 (SD=11.03) to 53.50 (SD=9.53) in the case group, and significant difference between two groups.

Conclusion(s): The basic objective of this study was to provide a basis for the development of communication programs that can help improve nursing students' communication and interpersonal relationship skills based on the NVC program. The findings of this study indicate that nursing students' empathy and communication skill were improved significantly after the NVC program was implemented.

Keywords: Communication, Empathy, Interpersonal, Nonviolent Communication, Nursing

[P-042]

Is video demonstration effective in practical classes?

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Aim(s): Face-to-face classes are not possible due to COVID-19. Many nursing colleges have replaced practice classes with video demonstrations. This study identify the effectiveness of core basic nursing skills with video demonstrations of reported self confidence.

Method(s): In the study, 67 students who gave voluntary consent taking practical classes participated. The four-step flipped learning model(preparation team-activity evaluation, reflection) was applied to students from August 31 to October 30, 2021. In the preparation step, the students studied the video demostration for more than 1 hour per nursing skill. Students replied their self-confidence in nursing performance at the beginning and at the end of course. Confidence measured on a 5-point scale for 10 nursing skills was analyzed with a paired t-test.

Result(s): Students studied with a total of 10 videos for nursing skill demostration, 1 on the high level, 7 on the middle level, and 2 on the low level. The average video learning time per student was more than 15 hours. As a result of the self-report on performance confidence checked before video learning, only oral medication (4.134±0.790) scored 4 points or more out of 10 skills. Reports of the performance confidence evaluation after course, all 10 skills were 4 or higher. The nursing skill with the lowest performance confidence was simple catheterization(4.149±0.851). As for the correlation between the pre- and post-class reports to students' performance confidence, the difference in the mean values of performance confidence in oral medication (p=.010), intramuscular injection (p=.005), and intravenous injection (p=.004) were statistically significant.

Conclusion(s): In this study, it was confirmed that the video demonstration was effective in the practical class. In situations where face-to-face demonstrations are difficult, video demonstrations can be substituted, but confidence in performing nursing skills with high levels of nursing skills is low. Therefore, it is proposed to determine whether face-to-face and video learning are performed concurrently according to the difficulty.

Keywords: flipped-learning, video demostration, practical class

Clinical and Sociodemographic Factors and Arthritis in a Nationally Representative Sample of Korean Adults

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Aim(s): Social determinants of health are known to affect to health. However, the association between arthritis and social determinants of health remains undetermined. This study aimed to examine whether clinical and sociodemographic factors were associated with arthritis in a nationally representative sample of Korean adults.

Method(s): Data from the Korea Community Health Survey from 2017 were obtained and analyzed. The participants of this study (n = 216,467; age = 52.9 years) were adults aged 19 and over who responded to arthritis related items. Descriptive statistics were performed to describe sample and clinical (i.e., hypertension, diabetes, dyslipidemia) and sociodemographic characteristics (i.e., age, sex, marital and education status, income, residential area). Logistic regression analysis were performed to determine which social determinants of health had relevance with arthritis.

Result(s): More than half were female (53.9%) and married (68.5%) and lived in urban area (57.5%). Approximately a fourth were obese (27.5%) and hypertensive (26.4%). Overall, 14.9% of adults had doctor-diagnosed arthritis. Age, sex, marital and education status, household income, residential area (all ps < .001) were significant determinants and these variables explained 24.14% of the variance in arthritis. Additionally, persons who slept less than 6 hours (p<.001) and were obese, hypertensive, and depressed (all ps < .001) with smoking habits (p=.014) were more likely to have arthritis, and these explained additional 1.7% of the variance.

Conclusion(s): Some social determinants of health were strong indicators of arthritis in Korean adults. More attention should be given in the relationship between arthritis and the clinical and sociodemographic factors identified in the results to reduce arthritis prevalence.

Keywords: adults, arthritis, social determinants of health

[P-045]

Stigma in people with COPD

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Aim(s): The purposes of the study were to investigate the nature of stigma and its associated factors, and to examine its relationship to healthcare utilization, self-care behavior, and health-related quality of life (HRQoL) in people with chronic obstructive pulmonary disease (COPD).

Method(s): People with COPD (N=110, mean age=71.77, FEV1% pred.=57.16, male=82.7%) were recruited at pulmonary medicine outpatient clinics at two university hospitals for this cross-sectional observational study. Data were collected, using the Breathlessness, Cough, and Sputum Scale (BCSS), Profile of Mood States for fatigue, the Chronic Illness Anticipated Stigma Scale, the Healthcare Access Measure, the Alberto Chronic Obstructive Pulmonary Disease Self-Care Behavior Inventory, and the Medical Outcome Study 36-item short-form health survey. The collected data were analyzed with descriptive statistics, univariate regression, and multivariate regression.

Result(s): The level of total stigma was 2.79 ± 0.59. Specifically, stigma related to coworkers (3.43 ± 1.01) was the highest, among 3 subscales. Age, occupation, income, oxygen therapy, acute exacerbation, the number of comorbidities, medications taken, BCSS, and fatigue explained 28% of variance in total stigma. Multiple regression also showed that fatigue (t=2.74, p=0.01) had the most significant effect on the stigma, among these 9 variables. Higher levels of stigma were significantly related to lower levels of self-care behavior and mental HRQoL, after controlled for other covariates. However, there was no significant relationship between stigma and healthcare utilization or physical HRQoL.

Conclusion(s): Understanding the level of stigma, its associated factors, and its relationship to self-care behavior and mental HRQoL will guide healthcare providers to develop more effective interventions to relieve stigma and reduce its impact on various health-related outcomes.

Key words: COPD, stigma, healthcare utilization, self-care behavior, quality of life

Correlation between Nursing Students' Social Indirect Trauma, Coping Ability, Social Support, and Emotional Intelligence in COVID-19

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Aim(s): COVID-19 is a highly contagious disease that causes fear of infection even if it is not directly transmitted, thus acting as an indirect trauma to some extent. This study is a descriptive correlation study to confirm the degree of social indirect trauma of nursing students due to COVID-19 and to confirm the relationship between coping ability, social support, and emotional intelligence.

Method(s): General characteristics and related variables were measured for nursing students 136 at one university in Chungcheongbuk-do. Using the SPSS-21 program, descriptive statistics, t-test and correlations were analyzed.

Result(s): The average subjective physical health status of all participants was 2.93±.69 (min. 1, max. 4 points), and the average subjective mental health status was 3.12±.73 (min. 1, max. 4 points). The average indirect trauma score was 2.26±.75, the average coping ability was 1.88±.32, the average social support score was 3.17±.53, and the average emotional intelligence score was 5.02±.84. Female students had higher indirect trauma scores than male students (2.33±.68 female students, 1.52±1.00 male students, t=3.88, p<.001). The better the subjective physical health, the lower the indirect trauma score and the higher the social support score. The better the subjective mental health status, the higher the social support score and emotional intelligence score. Indirect trauma was negatively correlated with subjective physical health (r=-.18, p=.03) and positively correlated with emotional intelligence (r=.18, p=.04). Coping ability was positively correlated with social support (r=.44, p<.001), and emotional intelligence and positive correlation (r=.45, p<.001). Social support was related to coping ability, emotional intelligence (r=.52, p<.001), subjective physical health status (r=.23, p=.01), and subjective mental health status (r=.19, p=.03) was a positive correlation.

Conclusion(s): The better the subjective physical health, the lower the indirect trauma caused by COVID-19. Emotional intelligence showed a positive correlation with indirect trauma, suggesting that high emotional intelligence contributes to sensitively responding to social indirect trauma. It is necessary to understand the effect of awareness of physical health on emotional ability.

Keywords: Nursing students, Indirect Trauma, Coping Ability, Social Support, Emotional Intelligence

[P-047]

Sleep disturbance, physical activity, and health-related quality of life in patients with metabolic syndrome with and without depression

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Aim(s): With the global rise in obesity, metabolic syndrome (MetS) is becoming a global epidemic. However, MetS can be controlled through lifestyle modifications, and its prevalence can be reduced. This study was conducted to investigate the differences in sleep disturbance, physical activity, and health-related quality of life (HRQoL) among patients with MetS aged >40 years with and without depression.

Method(s): This study was an analysis of secondary data collected using the Korean National Health and Nutrition Examination Survey in 2016 and 2018. A propensity-matched comparison was conducted for 113 and 1,301 MetS patients with and without depression, respectively, using 1:1 matching of seven sociodemographic characteristics. R program version 3.6.2 was used for statistical analysis, and an independent t-test and chi-squared test were employed to examine the differences between the relevant variables of the two matched groups.

Result(s): Before propensity score matching (PSM), when weekend sleep time was <6 h or >9 h, the rate of depression was high (p=.47), sedentary time was significantly higher in patients with depression than in those without depression (8.16 vs. 9.47%; p=.02), and the HRQoL was significantly higher in patients with depression than in those without depression (0.94 vs. 0.77) (p<.001). After PSM, the HRQoL was significantly lower in patients with depression (0.77) than in those without depression (0.88) (p=.001).

Conclusion(s): The findings of this study provide evidence that establishing strategies for sleep management and reducing sedentary time is important to reduce depressive symptoms of patients with MetS.

Keywords: Sleep; Exercise; Quality of life; Depressive disorder; Metabolic syndrome

Factors Influencing on Grit of Nursing Students Experienced COVID-19

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Aim(s): Due to the prolonged COVID-19 outbreak, nursing students are experiencing more difficult and hard times for clinical practice. Because people feel burnout in such a chaotic situation, research is required to identify positive variables that can help them to be more confident and active. The purpose of this study was to identify the degree of burnout, resilience, academic self-efficacy, and learning flow of nursing college students to identify the factors that influence Grit.

Method(s): Data were collected by using questionnaires from 155 students who were in 3rd year of the nursing college in G city, from May 11 to May 25, 2021. Data were analyzed by t-test, ANOVA, Pearson's correlation, and stepwise multiple regression.

Result(s): As a result of the® study, Grit according to general characteristics showed significant differences in college life satisfaction, major satisfaction, and grades. Statistically, Grit showed a significantly negative correlation with burnout($r=-.42$, $p<.001$), resilience($r=.49$, $p<.001$) and academic self-efficacy($r=.53$, $p<.001$) showed a significantly positive correlation. Influencing factors on grit were academic self-efficacy($\beta=.33$, $p<.001$) and grades($\beta=.18$, $p=.024$) accounting for 36% of the total change.

Conclusion(s): Based on this study, academic self-efficacy and academic performance are important factors to increase the grit of nursing students. It is thought that a step-by-step learning strategy is needed to continuously keep their management and set their own goals so that you can be interested in nursing and have confidence in your studies. strategies to enhance academic self-efficacy and grades are required to improve the grit of nursing students.

Keywords: Nursing students, Burnout, Resilience, Academic self-efficacy, Grit

[P-049]

Development and Evaluation of a Post-Traumatic Growth Program for Teachers Who Have Experienced Violence

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Aim(s): This study aimed to develop and verify a post-traumatic growth program for teachers who had experienced violence from students and/or parents.

Method(s): The program consists of cognitive, emotional, and coping arbitration according to an affective-cognitive processing model of post-traumatic growth (Joseph, Murphy, & Regal, 2012). To verify the program, we used a nonequivalent control group pretest-posttest design and targeted teachers from 11 elementary schools in J province who had experienced such violence. The teachers were divided into experimental (n=27) and control (n=27) groups. The experimental group participated in two 90-minute sessions per week for 4 weeks, while the control group was given educational materials on post-traumatic growth to read on their own. The data collection period was from November 15, 2019, to July 27, 2020. The instruments applied were the Event Related Rumination Inventory, Maslach Burnout Inventory, and Post-traumatic Growth Inventory. SPSS/WIN 23.0 was used for data analysis. The study also used statistical tests such as Shapiro-Wilk test for normality; Chi-squared test, Mann-Whitney U test, and Fisher's exact test for the homogeneity of pre-test dependent variables; Independent t-test, Mann-Whitney U test, and analysis of covariance (ANCOVA) for hypothesis testing; and Cronbach' s α for the reliability of scales.

Result(s): After the program, the experimental group exhibited significantly lesser intrusive rumination (F=10.848, p=.002) and burnout (U=181.50, p=.001) as well as more post-traumatic growth (U=145.00, p<.001) than did the control group. However, the changes in deliberate rumination did not differ between the groups (t=1.48, p=.145).

Conclusion(s): The study findings indicate that the post-traumatic growth program, based on the affective-cognitive processing model, could be an effective intervention for post-traumatic growth, intrusive rumination, and burnout. Consequently, it is also an effective strategy for improving the mental health of teachers who have experienced violence.

Keywords: Violence, School Teachers, Post-traumatic Growth, Intrusive Rumination, Burnout

The Effects of a Videoconferencing-based Expressive Writing Program on Nurses with Trauma Experiences

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Aim(s): This study aimed to examine the effects of a remote Videoconferencing-based expressive writing program for nurses with trauma experience.

Method(s): This study adopted a randomized control group pretest-posttest design. The data were collected from August 18 to November 6, 2020 from 48 nurses with trauma experience working at hospitals in J Province; they were randomly assigned to a control group (n=24) and an experimental group (n=24). The survey on post-traumatic stress was conducted online. For the control group, the effect variables were measured during a preliminary survey and two actual surveys, each of which were conducted three weeks apart, for a total of three times. After surveying the control group, an expressive writing program designed based on the therapeutic mechanism and basic principles of Pennebaker's expressive writing was administered to the experimental group twice a week for three weeks for a total of six sessions. Each session of the program was 90–100 minutes long, during which 5 to 10 subjects participated in the remote video session. The same survey used for the control group was conducted before, immediately after, and three weeks after the program to measure the effect variables. Pre-homogeneity tests were analyzed using the χ^2-test, fisher's exact test, and t-test; the effect validation of dependent variables was analyzed with a repeated measures ANOVA.

Result(s): The experimental group showed a statistically significant difference in the scores of post-traumatic stress ($F=135.41$, $p<.001$), resilience ($F=94.88$, $p<.001$), and post-traumatic growth ($F=109.28$, $p<.001$) and the changes in the scores over time, whereas no statistically significant difference was observed in the control group.

Conclusion(s): This study showed that an expressive writing program for nurses with trauma experience was effective for post-traumatic stress, resilience, and post-traumatic growth in nurses. Therefore, the findings of this study can be utilized in a stress management program for nurses through supplementary education, workshops, and support from hospital management.

Keywords: Expressive writing, Nurses, Posttraumatic stress, Resilience, Posttraumatic growth

[P-051]

DNA methylation-based biomarkers of cognitive aging among community-dwelling older adults

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Aim(s): This study aims to identify biomarkers for age-related cognitive decline by examining the DNA methylation differences between normal cognitive aging (NCA) and successful cognitive aging (SCA) groups among community-dwelling older adults.

Method(s): Demographic and neuropsychological data and peripheral blood samples were obtained from the Korean Frailty and Aging Cohort Study (KFACS). The subjects were grouped into two categories—NCA and SCA. The subjects whose cognitive function test scores lay above the 50th percentile of Korean older adults score were grouped as SCA. The DNA methylation microarray using Illumina Infinium Methylation EPIC BeadChip was performed to identify the differentially methylated genes as potential DNA methylation-based blood biomarkers. The differences between NCA and SCA groups were tested using the $\chi 2$ test, t-test, and Mann-Whitey U test using SPSS software 25.0.

Result(s): Fourteen participants among baseline data from the KFACS were part of SCA group. Further, 15 age-, gender-, and education-matched participants who scored below the 50th percentile of cognitive function tests were selected to be the control group. We found 34 hypermethylated and 45 hypomethylated CpG sites between the groups. Of the 79 CpG sites, 8 were located in the promoter region, which is a vital regulatory region for gene expression. The differentially methylated genes in the promoter region were CEND1, GNAT2, SNORD95, IL2, LOC101060542, MIR885, LOC255167, and HK2.

Conclusion(s): We identified eight genes as potential biomarkers for cognitive aging in community-dwelling older adults. The findings of this study suggest that these genes may play an important role as a diagnostic and therapeutic target to prevent or control cognitive aging from an early stage. However, large longitudinal studies are needed to validate these findings. a

Keywords: Cognitive Aging, Aged, Epigenomics, DNA methylation

Online Havruta Learning: An Exploration of Nursing Students' Experiences in a Research Methodology Course for Improving Evidence-Based Practice Competency

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Aim(s): In Covid-19 pandemic situation, systematic online education and an appropriate teaching and learning method are required to improve EBP competency of nursing students. This study aims to examine the possibility of operating the Havruta learning method in an online research methodology class to strengthen EBP competency, investigate students' experiences of Havruta learning, and to collect basic data to find ways to improve class management.

Method(s): The participants of this study were 168 students who attended the research methodology class in 2020. This course was operated by the Havruta inspired pedagogy framework. Havruta learning was done using Microsoft Teams or Zoom. Students responded to open-ended questions about the four Havruta activities and this data was used for qualitative content analysis.

Result(s): The results showed that students could have confidence in EBP through Havruta learning. Havruta learning had a positive effect on academic achievement, including understanding course content, improving concentration, improving learning memory and self-directed learning and this learning was useful for strengthening the 4C core competencies (communication, collaboration & relationship, critical thinking, and creativity). Some contents for improvement related to class design and operation were also identified.

Conclusion(s): Havruta learning can be used as an effective teaching and learning method to improve EBP competency of nursing students and can also be operated by an online context. A randomized controlled trial needs to be performed to validate the effects of Havruta learning.

Keywords: Evidence-Based Practice, Online Education, Havruta Learning, Nursing Students

[P-053]

The Relationship among Traumatic Event Experience, Self-disclosure, Social Support, and Post-traumatic Growth of Intensive Care Unit Nurses

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Aim(s): This study was to examine the levels of traumatic event experience, self-disclosure, social support and post-traumatic growth of intensive care unit nurses and their relationships. Also it was to provide basic data for developing programs to promote post-traumatic growth of intensive care unit nurses.

Method(s): Participants were 142 ICU nurses who had worked for more than 3 months in six general hospitals, J province from August to September, 2020. Collected data were analyzed by using the program SPSS version 22.0 in which descriptive statistics, independent t-test, ANOVA, Pearson's correlation coefficient and Multiple regression. Traumatic event experience, self-disclosure with distress disclosure index, individual support, organizational support and the Post-Traumatic Growth Inventory were used to measure.

Result(s): The sum score of traumatic event experience of the subjects was 28.20. The sum score of self-disclosure was 43.85. The sum score of individual support (82.85) was higher than that of organizational support (45.38). The sum score of post-traumatic growth was 47.08. The post-traumatic growth was found to correlate significantly with self-disclosure($p=.005$), individual support($p<.001$) and organizational support($p<.001$). Factors influencing the participants of the post-traumatic growth were individual support($p<.001$) and organizational support($p=.007$). These factors explained 31.8% of the variance of ICU nurses' post-traumatic growth($F=14.13$, $p<.001$).

Conclusion(s): We will need to develop prevention programs about post-traumatic growth for ICU nurses and investigate their effects on the base of these results. Studies are needed to test the relationships with various variants using additional navigation for the variants that affect post-traumatic growth.

Keywords: traumatic event, self-disclosure, social support, posttraumatic growth, nurses

Risk factors associated with physical frailty and cognitive impairment among community-dwelling older adults in Korea

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Aim(s): As aging progresses, studies have reported that frailty affects negative health outcomes such as decline in physical function, falls, fractures, hospitalization and increased mortality. We became interested in cognitive frailty (CF), which is a subtype of frailty in which both physical frailty (PF) and cognitive impairment (CI) exist at the same time, but there are no studies on modifiable factors of CF. This study aimed to identify risk factors associated with CF among community-dwelling older adults in Korea.

Method(s): A secondary data analysis using the 2018 Survey of the Living Conditions of the Elderly in Seoul, 1,906 older adults over 65 years old were included. Physical frailty was measured using the Tilburg Frailty Indicator, and only 8 out of 15 items were used for classification, meaning those with a score of 4 or more were defined as having physical frailty. Cognitive impairment was measured using the Short Portable Mental Status Questionnaire, and 10 items were classified as cognitive impairment starting from 7 points or less out of 10 points.

Result(s): The average was 74.5 (±6.0) years old and 51.5% were female. Cognitive function averages 9.6 (±0.9) points and frailty score is 1.2 (±1.7) points. Of 1,619 (84.9%) free of PF and CI group (non PF-CI group), 217 (11.4%) developed only PF group, 53 (2.8%) developed only CI group and, 17 (0.9%) developed PF-CI co-occurrence group (CF group). The results of multinomial logistic regression showed that the following characteristics significantly associated with PF group using the non PF-CI group as a reference: age, low frequency of meal, difficulty chewing, hearing loss, alcohol drinking, and comorbidity. Cognitive impairment group was significantly associated with age, and low frequency of meal. Cognitive frailty group was significantly associated with age, low frequency of meal, and difficulty chewing.

Conclusion(s): High-risk groups are classified and managed through factors such as frequency of meal and alcohol drinking that affect physical frailty and cognitive impairment in the elderly. Physical functions such as chewing, and hearing should be regularly monitored. It helps the elderly to experience successful aging by developing and providing personalized nursing interventions including modifiable lifestyle factors.

Keywords: cognition, frailty, older adults

[P-055]

Effect of Nursing Students' Ethical Decision Making Confidence and Moral Sensitivity on Nursing Professionalism

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Aim(s): The purpose of this study is to analyze the effects of nursing students' ethical decision-making confidence and moral sensitivity on nursing professionalism.

Method: The subjects of this study were 3rd and 4th year nursing students who had clinical practice experience at 5 nursing universities located in Area 2. Due to the risk of transmission of infectious diseases due to COVID-19, all of the schools conducted online classes, so the online survey link was shared, and 231 copies were used for the final analysis.

Result: As a result of analyzing the correlation between ethical decision-making confidence, moral sensitivity, and nursing professionalism, each variable showed a statistically significant positive correlation. Ethical decision-making confidence showed a positive correlation with moral sensitivity (r=.46, p<.001), and positive correlation with nursing professionalism (r=.41, p<.001). Moral sensitivity was positively correlated with nursing professionalism (r=.50, p<.001). Ethical decision-making confidence (p<.001) had a significant effect on nursing professionalism. The higher the ethical decision-making confidence (B=0.38), the higher the nursing professionalism, and the explanatory power for explaining nursing professionalism was 24.3%.The higher the moral sensitivity (B=0.32), the higher the nursing professionalism, and the explanatory power to explain the nursing profession was 33.2%.

Conclusion: Based on these results, in order to establish nursing professionalism of nursing students in the future, it is necessary to develop teaching strategies and expand education to improve moral sensitivity as well as confidence related to ethical decision-making.

Keywords: Nursing Students, Ethical decision-making, Moral sensitivity, nursing professionalism

Effects of thermomechanical stimulation intervention during arteriovenous fistula puncture in patients on hemodialysis

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Aim(s): This study aimed to investigate the effects of thermomechanical stimulation intervention arteriovenous fistula puncture in patients on hemodialysis. Specifically, we examined its effects on pain, anxiety, and stress in these patients based on Jacobson's Gate Control Theory and on the theoretical framework pertaining to cognitive behavioral interventions.

Method(s): We used a nonequivalent groups pretest–posttest experimental design, and the study period was from December 28, 2020 to January 2, 2021. Forty-four patients on hemodialysis (22, experimental group; 22, control group) at the artificial kidney room at a general hospital in Korea were enrolled in the study. Based on the three-times-a-week hemodialysis schedule, patients who undergo hemodialysis on Monday®, Wednesday, and Friday were assigned to the control group, and those who undergo hemodialysis on Tuesday, Thursday, and Saturday were assigned to the experimental group. The experimental intervention was thermomechanical stimulation using the Buzzy device, and the measured variables were pain owing to arteriovenous fistula puncture (Visual Analogue Scale [VAS] and Faces Pain Rating Scale [FPRS]) and pre- and post-puncture anxiety (state anxiety, Numeric Rating Scale) and stress. The collected data were analyzed using descriptive statistics, chi-square test, independent t-test, and paired t-test using the SPSS 21.0 software.

Result(s): Regarding pain owing to arteriovenous fistula puncture according to thermomechanical stimulation intervention, the experimental group showed a significant reduction in the objective pain score (FPRS) when compared with the control group ($t=2.90$, $p<.05$), while there was no significant difference in the subjective pain score (VAS) between the two groups. Regarding anxiety and stress, both the experimental and control groups showed significant reductions in anxiety and stress after arteriovenous fistula puncture when compared with those at baseline.

Conclusion(s): This experimental study showed that thermomechanical stimulation intervention significantly reduces objective pain during arteriovenous fistula puncture in patients on hemodialysis. Subsequent studies should continue to examine the effects of thermomechanical stimulation intervention on various parameters in a larger study population. The significance of this study is that we analyzed the usefulness of thermomechanical stimulation intervention in patients on hemodialysis based on a theoretical framework; these findings will be useful as evidence for utilizing noninvasive nursing interventions to ensure the comfort of patients on hemodialysis in terms of pain during arteriovenous fistula puncture.

Keywords: renal dialysis, arteriovenous fistula, pain management, cryotherapy, vibration

Associations of eHealth literacy, lifestyle behaviors, and COVID-19-related prevention behaviors among nursing students

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Aim(s): It is essential for nursing students to obtain appropriate health information and to establish an adequate lifestyle behaviors and preventive behaviors since it is considered as one of the important roles of nurses to give health education for patients and the public with accurate information and proper exemplary health behaviors. Unprecedented pandemic these years raised health and social interests in efficient communication with health information and actual using it for individual's health protection and prevention behaviors. We aimed to explore the level of eHealth literacy of nursing students and the associations of eHealth literacy, lifestyle behaviors, and the COVID-19-related preventive behaviors among them.

Method(s): The present study®was a cross-sectional and correlational study to investigate the associations of eHealth literacy, lifestyle behaviors, and the COVID-19-related preventive behaviors among nursing students. A total of 358 nursing students participated to the online survey from 2 universities in the metropolitan area in Korea from April to May 2021. Data were analyzed with descriptive analysis, t-test, ANOVA, Pearson's correlation, and multiple linear regression analysis.

Result(s): The mean age of nursing students was 20.9 years, and 83.8% was women. The main resource for health information was the internet, and the time via internet seeking health information was 57.6 minutes per week. The COVID-19-related preventive behavior showed significantly positive correlations with satisfaction of major, health information seeking time via internet, eHealth literacy, and health promoting lifestyle behavior. Also, gender of female ($\beta = .194$, $p < .001$), health information seeking time via internet ($\beta = .114$, $p = .002$), eHealth literacy ($\beta = .167$, $p = .001$), and health promoting lifestyle behavior ($\beta = .266$, $p < .001$) were significant factors affecting the COVID-19-related preventive behavior among nursing students.

Conclusion(s): The findings provide evidences that it is necessary to strengthen the seeking behaviors of appropriate health information via internet, and to reinforce eHealth literacy and health promoting behaviors in order to improve the pandemic prevention behaviors in nursing students.

Keywords: health literacy, lifestyle, COVID-19, prevention and control, nursing students

[P-058]

Effect of Clinical Learning Environment, Nunchi, and Burnout on Clinical Practice Adaptation of Nursing Students

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Aim(s): This study was conducted to examine the correlations between clinical learning environment, nunchi, burnout, and adaptation on clinical practice, and to identify the influencing factors adaptation on clinical practice of nursing students.

Method(s): The participants of this study were 110 nursing students. Data were collected through personal interviews using a questionnaire from March 12 to Jun 14, 2021. Data were analyzed using t-tests, one-way ANOVA, Pearson's correlation coefficients, and stepwise multiple regression.

Result(s): Clinical learning environment, nunchi, burnout, adaptation on clinical practice according to the general characteristics commonly showed significant differences in clinical practice satisfaction and core basic nursing confidence. Adaptation on clinical practice showed significant positive correlations with clinical learning environment, nunchi and adaptation on clinical practice, but a significantly negative correlation with nunchi. Burnout ($p < .001$) and clinical learning environment ($p = .003$), which accounted for 52% of the variance, were significant predictors influencing adaptation on clinical practice in nursing students.

Conclusion(s): The findings provide evidences that lowering burnout and improving the clinical practice environment are important for nursing students to adapt to clinical practice. Strategies are needed to improve the clinical practice education environment and reduce burnout in order to improve the adaptation of nursing students to clinical practice.

Keywords: Adaptation, Burnout, Clinical learning environment, Nunchi, Nursing student

Factors that Influence Sexual Intercourse among Korean Adolescent

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Aim(s): Sexual intercourse in adolescence has many negative consequences that, include inappropriate contraception, unintended pregnancy, and childbirth. Age, gender, drinking and smoking have been reported as related factors for sexual intercourse experience in adolescence, and so as mental health, such as suicidal thoughts, loneliness, or sadness are also known to be related to sexual intercourse of adolescents. Therefore, it is necessary to comprehensively include these various factors to identify factors related to sexual intercourse by classifying them into middle school and high school students. The purpose of this study is to identify the factors that affect the sexual intercourse of adolescents.

Method(s): This is a secondary® analysis study using the 2020 Korea Youth Risk Behavior Survey (KYRBS) data. Data from 54,948 adolescent middle and high school students in Korea were analyzed. Demographic, health behavior, and mental health characteristics were included. Reflecting the complex sample design, χ^2-test and logistic regression analysis were performed.

Result(s): For middle school students, sexual intercourse was related to the grade, gender, economic status, housing type, drinking and smoking experience, sleep status, suicide attempt, loneliness, sadness, despair, and happiness. For high school students, sexual intercourse was related to the grade, gender, academic performance, economic status, housing type, drinking and smoking experience, drug use, suicide plan, suicide attempt, loneliness, sadness, despair, happiness, and subjective health.

Conclusion(s): It is necessary to prepare a program that can directly mediate these factors. In addition, when conducting sex education for adolescents, it is necessary to consider these mental health-related factors as well. Especially, students from middle and high school, have sexual intercourse related factors differences, so education programs should be developed in consideration to this.

Keywords: Adolescent, Coitus, Health behavior, Mental health, Suicide

[P-060]

Effects of Obesity and Depression on Asthma in Korean Elderly

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Aim(s): This study confirmed the effects of body mass index, waist circumference, and depression on asthma in elderly Koreans.

Method(s): The subjects were 1,338 elderly (≥65 years), and data were extracted from the 6th National Health and Nutrition Survey (KNHANES VI-3), 2015. The subject's data were analyzed using a complex sample t-test, $\chi 2$-test, and multiple logistic regression analysis (SPSS 25.0).

Result(s): Depression was found to increase the probability of asthma occurrence by 2.76 times [95% CI 1.08 to 7.07]. Specifically, at the onset age of depression, the probability of asthma increased by 6.83 times [95% CI 1.23 to 31.62] at 28~39 years. In the current depressed state, the probability of asthma increased by 3.23 times [95% CI=1.06 to 9.84]. The probability of asthma occurrence was not increased with the body mass index and waist circumference level. By age, the probability of asthma occurrence was 1.05 times higher [95% CI 1.01 to 1.10]. The probability of asthma occurrence in females was 1.89 times higher [95% CI 1.06 to 3.36] than in males.

Conclusion(s): This study presented evidence that interventions for depression should be included in asthma prevention programs. It also suggested that these findings can be utilized for early detection of asthma in the elderly.

Keywords: aged, asthma, body mass index, waist circumference, depression

The Evaluations of On-line Nursing Practice for Nursing Students

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Aim(s): The aim of this study was to evaluate and identify the effect of on-line nursing practice for nursing students who could not perform off-line hospital nursing practice under the COVID 19 situation.

Method(s): The study group was comprised of 150 3rd grade nursing students those who subsituted for on-line nursing practice experience. The data were collected by questionnaires and in-depth interviews from FGI to evaluate and identify self-directed learning strategy, learning satisfaction, and learning persistence during June to July in 2020. The data were analyzed with descriptive analysis, t-test, Pearson's correlation, multiple linear regression analysis, and contents analysis from qualitative interview data.

Result(s): The self-directed learning strategy was average 4.14±0.71, learning satisfaction of on-line nursing practice program was 4.05±0.79. Learning persistence was 3.63±1.22, 'I'd like to recommend this program to other person' item score was the lowest and 'I'll have intention to take a this class sustainedly' was the highest. The self-directed learning strategy was correlated with learning satisfaction($r=.80$. $p<.001$) and learning persistence($r=.69$, $p<.001$) positively. Also learning satisfaction of on-line nursing practice program was correlated with learning persistence. Factors influencing learning persistence were found in order of satisfaction($\beta=.45$), self-directed learning strategy($\beta=.33$). These variables was shown to explain learning persistence 55.1%. Contents analysis from FGI showed that on-line nursing practice had positive experiences such as becoming clear about procedure for core nursing skills, and identifying the rationale for the procedures in clinical field, while negative experiences such as a lot of assignments(homework) have also been found.

Conclusion(s): Based on the results of this study, learning persistence were highly correlated with learning satisfaction and self-directed learning. There are some negative experiences in FGI, but positive experiences that motivate self-improvement and learning achievement. we hope to improve the effectiveness and efficiency of nursing practical education for nursing students by diversifying nursing practical education and utilizing simulation and EMR program to utilize self-directed learning strategy.

Keywords: Evaluation, On-line nursing practice

[P-062]

Validity and Reliability of the Nurses' Attitude Scale toward Advance Directives of Patients- Korean Version

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Aim(s): The positive attitude of nurses plays a significant role when patients make decisions regarding advance directives in order to respect patients' dignity and their right to choose. An appropriate tool is needed to observe the attitude of nurses in Korea toward advance directives of patients. This study aimed to verify the validity and reliability to suggest the Korean version of the nurses' attitude scale toward advance directives of patients.

Method(s): After obtaining permission from the original tool developer for using the tool, we translated and back-translated the tool consisting of 20 questions and verified its content validity twice. For questions for which its content validity has been verified, a preliminary investigation was conducted among 20 nurses working in ICU, followed by the actual investigation. The subjects of this study were nurses who currently work in ICU. The data was collected from February 22 to March 30, 2019. Data were analyzed using SPSS version 24.0 for Windows and Mac and AMOS version 24.0. To verify the validity, an item analysis was conducted for all 398 samples, and then an exploratory factor analysis for 200 samples that are randomly selected, followed by a confirmatory factor analysis for the remaining 198 samples. For the exploratory factor analysis, principal component analysis and a varimax rotation were used. The confirmatory factor analysis was conducted to verify fit index, average variance extracted (AVE), and construct reliability.

Result(s): The Korean version of the nurses' attitude scale toward advance directives of patients consisting of 14 questions – 7 questions on 'patient rights,' 4 questions on 'role of a nurse,' and 3 questions on 'ethical judgment' – was completed after verifying its validity and reliability.

Conclusion(s): In this study, the validity and reliability of the Korean version of the nurses' attitude scale toward advance directives of patients have been verified. We expect the verified tool to be useful in various fields that measure the nurses' attitude toward advance directives of patients, and we make the following suggestions based on the results of this study.

Keywords: nurse, attitude, advance directives, validity, reliability

Sleep Disturbance in Patients with Prostate Cancer: A scoping review

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Aim(s): Patients with prostate cancer have a high survival rates, but they report low quality of life (QOL) due to sleep difficulties. This scoping review aimed to explore and identify the current publication trend, main concepts, measurements, and interventions addressing sleep disturbance in patients with prostate cancer.

Method(s): With the scoping review method of Arksey & O'Malley (2005), structured searches were conducted in six electronic databases using combination of the terms 'prostate cancer', 'malignant neoplasm of prostate', 'sleep*', 'circadian rhythm', and 'insomnia' for articles published from 2000 to 2021.

Result(s): The search yielded® 1173 references, 31 of which were included. The rate of publication has increased from 6.4% (2000~2005) to 51.6% (2016~2021). ISI (Insomnia Severity Index) was the most frequently used subjective measurement, subsequently followed by PSQI (Pittsburg Sleep Quality Index) and ESS (Epworth Sleepiness Scale). Objective measurements to measure sleep quality or sleep disturbance included Actigraphy and PSG (Polysomnography). Hormone therapy and radiation therapy, symptoms of hot-flashes and nocturia were identified as causal factors of sleep disturbance. Intervention strategies presented were CBT (Cognitive Behavioral Training), MBCT (Mindfulness-Based Cognitive Therapy), ACT (Acceptance and Commitment Therapy), and Qigong/tai chi programs.

Conclusion(s): An increasing interest in the QOL of patients with prostate cancer was noted, and studies utilizing wearable devices and online surveys were also reviewed. Further research on interventions for prostate cancer patients undergoing hormone therapy is needed.

Keywords: Prostate cancer, Sleep disturbance, Insomnia

[P-064]

The Effect of a Scenario-Based Spiritual Care Course on Spiritual Care Competence among Clinical Nurses

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Aim(s): Clinical nurses are facing patients' biopsychosocial and spiritual problems at diverse clinical settings, but they are lack of knowledge, skills, and confidence on providing spiritual care. However, no studies adopted simulated educational program and objective structure clinical examination (OSCE) to educate nurses and to assess the outcomes. Therefore, this study was to validate the effect of a scenario-based spiritual care course on spiritual care competence in clinical nurses.

Methods: This non-equivalent quasi-experimental study with a pre-test and two post-tests (end of the intervention and three months later) was conducted between August 2019 and February 2021 (11 sessions). The recruitment posters with a QR code were distributed to different units at three branches of a large medical institute for recruiting clinical nurses, who provided direct patient care. The attendees of one-day scenario-based spiritual care course are the experimental group (n=53) and the control group (n=85) was matched with the experimental group (1:1-3 ratio) by similar units, ages, working experience, and clinical ladder. Instruments include basic information, self-evaluated and head nurses evaluated spiritual care competence scale (SCCS), spiritual perspective scale (SPS), and spiritual care perspective scale-revised (SCPSR) for both groups and reflective log, course satisfaction scale, OSCE checklist, and standardized patient feedback scale for the experimental group. The data were analyzed using descriptive statistics, repeated measures ANOVA, linear regression, and paired t test.

Results: After controlling for pre-test scores and interest in attending spirituality/spiritual care, the experimental group showed significant higher SPS ($p=0.012$) and self-evaluated SCCS ($p=0.002$) and lower SCPSR ($p=0.015$) than the control group at the 2nd post-test. Repeated measure ANOVA also showed significant within-subject effects across three time points of the experimental group on SPS ($p<0.001$), SCPSR ($p<0.001$), and self-evaluated SCCS ($p<0.001$), but paired t test showed non-significant differences on SPS, SCPSR, and self-evaluated SCCS between pre-test and post-test with an exception of head nurse evaluated SCCS ($p=0.035$). The mean overall course satisfaction of the experimental group was 4.34 ± 0.62. The mean global performance of OSCE was

3.40±0.91 and the majority of experimental group was pass (43.4%) and good (35.8%). 64.5% and 26.1% of standardized patients were partial and strongly agreed with examinees' performance in spiritual care assessment respectively.

Conclusions: The scenario-based spiritual care course is effectively to enhance clinical nurses' spiritual care competence. It may cultivate clinical preceptors with better spiritual care pedagogy through simulation and OSCE for bedside teaching of nurse post-graduate year.

Keywords: simulation, spiritual care competence, clinical nurses, objective structure clinical examination, standardized patient

[P-065]

Effect of Critical Thinking Skills Training in Nursing Students

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Aim(s): Critical thinking skills are required to solve problems in all situations in every life. In particular, critical thinking ability is the most essential for problem solving in nursing situations. The purpose of this study was to identify the effect of critical thinking skills training sessions in the critical and creative course on critical thinking ability and problem solving ability.

Method(s): This research was one group pretest-posttest design. The subjects who agree to participate to participate in this study consisted of 32 junior nursing students in Jeollanam-do, Korea. The critical thinking skills training sessions, developed by researcher based on 'Critical thinking skills success' book (Shin, 2018), consist of 2 hours per week for 14 weeks, including orientation, pre & post-test. The instruments were critical thinking skills and problem solving ability questionnaire, and satisfaction 5 Likert scale with course. The collected data were analyzed the descriptive statistics and paired t-test.

Result(s): The post-training score of critical skills ($t=-4.09$, $p < .001$), and problem solving ability ($t=-2.89$, $p=.005$) were higher than pre-training. The score of satisfaction with training was 4.1(satisfied).

Conclusion(s): These findings indicate that this training improves critical thinking and problem solving ability. Therefore, it is necessary to propose repeated studies with different subjects and to establish a more systematic and specific training program.

Keywords: critical thinking, problem solving, nursing student

A Role of Autonomous Motivation in the Effects of Family Function and Healthcare Providers' Support Affecting Health Behavior in Breast Cancer Survivors

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Aim(s): Health-related behavior is an essential issue to maintain and improve physical and psychological quality of life among cancer survivors. The aims of this study were to investigate the relationships between perceived family function, healthcare providers' support, and motivation of self-regulation and to examine a role of self-regulatory motivation mediating the effects of family function and healthcare providers' support on health-promoting behaviors in breast cancer survivors.

Method(s): This is a cross-sectional study. A convenience sample of 218 breast cancer survivors (Mage =51.5 yrs., range age = 32~69) was recruited from a University hospital in C city of South Korea. Data were collected using a self-administered questionnaire including Health care Climate, Family APGAR, Treatment Self-Regulation, and Health-Promoting Lifestyle Profile from March 22 to April 23, 2021. The data were analyzed with descriptive statistics and Pearson's correlation analysis, and a mediation effect was tested using PROCESS macro for SPSS program 26.0.

Result(s): Both family function and healthcare providers' support were significantly correlated with autonomous motivation (r =.244, p <.001 for family function; r =.203, p =.003 for healthcare providers) as well as health-promoting behavior (r =.403, p <.001 for family function; r =.299, p <.001 for healthcare providers). There was a significant correlation between autonomous motivation and health-promoting behavior (r =.574, p <.001). Both family function (β = .097, t=2.91) and healthcare providers' support (β = .21, t=3.95) were significant predictors for self-regulatory motivation, after controlling for the covariates (i.e., age, periods since mastectomy, education and income levels, and marital status). A significant indirect effect of family function, but not healthcare providers' support, on health-promoting behavior through self-regulatory motivation (95% CI = .005, .040) was detected, supporting a mediation effect of self-regulatory motivation in the relationship between family function and health-promoting behavior.

Conclusion(s): The findings highlight the importance of supportive family function and healthcare providers for improving the autonomous motivation for self-regulation among breast cancer survivors. In particular, the finding demonstrates a critical role of autonomous motivation for self-regulation that mediates the effect of family function on health-promoting behavior. Developing a program focusing on the enhancement of supportive family function as well as autonomy for self-regulation is warranted to improve health-promoting behaviors in breast cancer survivors.

Keywords: cancer survivors, delivery of health care, family relations, health behavior, motivation

The Impact of Autonomy Support in the Relationship between Illness Perception and Health Behavior in Patients with Cardiovascular Risk Factors

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Aim(s): Individuals' perceptions of their illness and interaction with health care providers in medical encounter could affect various types of health behavior in patients with chronic diseases. This study aimed to examine the impact of autonomy support from healthcare providers in the relationship between illness perception and health behavior in patients with cardiovascular risk factors.

Method(s): A cross-sectional study was conducted using a convenience sample of 196 patients with at least one risk factor of cardiovascular diseases (Mage =58.3 yrs). Participants were recruited from three local clinics of two cities of South Korea. The data were collected by self-administered survey questionnaires including Illness Perception Questionnaire, Healthcare Climates, and Health Behavior scales and analyzed using Pearson's correlation and Process macro bootstrapping approach using SPSS WIN 26.0 program.

Result(s): Health behavior was significantly correlated with illness perception about controllability by medical treatment (r = -.157, p =.024) and autonomy support from healthcare providers (r =.323, p < .001). The effects of some dimensions of illness perception (i.e., self-controllability, coherence) on behavioral practice were significantly different by levels of perceived autonomy support from health care providers, indicating an interaction of illness perception regarding self-controllability (β = - .0277, p < .001) and illness perception regarding coherence (β = -.0187, p = .027) with autonomy support in predicting health behavior.

Conclusion(s): Autonomy support plays a role as a moderator affecting the relationship between illness perception and health behavior. Although illness perception may be a critical factor affecting health behavior, the influence is associated with autonomy support from healthcare providers. The findings emphasize that healthcare providers should recognize their significance affecting behaviors in patients with cardiovascular risk factors. The efforts for setting autonomy supportive clinical environments needs to be highlighted.

Keywords: chronic disease, perception, personal autonomy, social support, health behavior

[P-068]

Development and Evaluation of Mobile Application for Preventing Recurrence in Patients with Stroke

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Aim(s): Stroke is one of the leading causes of death and serious disability worldwide. Recurrence of stroke accounts for 25-30% of all strokes, and recurrence of stroke is fatal and has a poorer prognosis than the first stroke. To prevent stroke recurrence, it is important to improve medication adherence and make lifestyle changes such as healthy diet and adequate physical activity. The purpose of this study was to develop a mobile application that can effectively implement health behaviors for preventing recurrence of stroke patients and apply it to stroke patients to confirm the effects.

Method(s): A randomized controlled group pre-test-post design was used. Subjects were recruited from the outpatient neurology department of university hospital located in J City. Subjects were assigned to either an experimental group (n=27) or a control group (n=27). The mobile application for preventing stroke recurrence was developed based on social cognitive theory, and it consisted of providing stroke information, management of health lifestyle such as exercise, healthy diet, taking appropriate medication, and providing text messages and telephone counseling. The data were analyzed with descriptive analysis, chi-square test, independent t-test, Fisher's exact test, Shapiro-Wilkes test, and Mann-Whitney U test.

Result(s): After the eight week, the experimental group showed higher levels of medication adherence (U=210.00, p=.002), healthy eating habits (U=103.50, p<.001), and physical activity (U=18.00, p<.001) and showed lower levels of systolic pressure (U=246.00, p=.020), diastolic pressure (U=170.50, p<.001), body mass index (U=155.00, p<.001), and waist circumference (U=68.50, p<.001) than those in the control group. Interestingly, the affected-side grip strength (U=196.00, p=.002) was significantly better in the experimental group than in the control group. However, although the healthy-side grip strength (U=276.50, p=.064) increased in the experimental group, there was no significant difference between the two groups.

Conclusion(s): The mobile application for stroke recurrence prevention was confirmed to be effective in improving the medication adherence, healthy eating habits and physical activity of stroke patients, and reducing blood pressure, body mass index, waist circumference and grip strength. Therefore, it is recommended to use the stroke recurrence prevention mobile application as a nursing intervention for the prevention of disease exacerbation or recurrence of stroke patients.

Keywords: stroke, recurrence, prevention, mobile application, social cognitive theory

Comparison of Stroke Knowledge, Health Beliefs, and Stroke Prevention Behavior between Early and Middle-aged Adults

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Aim(s): Stroke is the second leading cause of death worldwide, and despite successful treatment, stroke survivors live in with long-term disability. The primary stroke prevention is important, especially recognizing risk factors, warning signs, and maintaining prevention behavior. Recently, the onset age of stroke is decreasing and it becomes a social loss. So, it is necessary to identify stroke knowledge and risk factors according to their age. The purpose of this study was to compare stroke knowledge, health beliefs, and stroke prevention behavior between early and middle-aged adults.

Method(s): This is a cross-sectional descriptive study. This survey was conducted in 3 cities of Korea from June to October 2020. A structured self-reported questionnaire was used to collect data regarding demographic characteristics as well as on the Stroke Knowledge tests including risk factors and warning signs, Health Belief, Stroke Prevention Behavior. The data were analyzed with descriptive statistics, t-test, x 2 test, and Pearson's correlation coefficients using SPSS/WIN 26.0 program.

Result(s): The early adults among the participants (below 40 years) were 104 and middle-aged adults (40~64 years) was 143. The male was 25% and female was 75% in early adult group. The male was 45.5% and female was 54.5% in middle-aged group. The mean score for stroke risk factor and warning signs knowledge were 6.94±2.55 and 3.73±2.26 in the early adult group, the mean score was 7.55±2.46 and 4.22±2.19 in the middle-aged adults group. The health beliefs in the early adults group was 47.63±5.97 and it was significantly lower than the middle-aged adults group($t=4.54$, $p<.001$). The score of stroke prevention behavior was not significant difference in two groups. But health responsibility($t=-2.00$, $p=.047$), nutrition($t=4.24$, $p<.001$) and interpersonal relations($t=2.04$, $p=.042$) that is subarea of stroke prevention behavior were significantly different between early and middle-aged adults group. The stroke prevention behavior was positive correlations with health beliefs in early and middle-aged adults groups ($r=.27$, $p=.006$: $r=.37$, $p<.001$).

Conclusion(s): It was a difference in health beliefs and also health responsibility, nutrition and interpersonal relations in stroke prevention behavior between early and middle-aged adults. So, we need to consider these finding in planning the intervention or education for stroke primary prevention.

Keywords: stroke, behavior, primary prevention, health belief, adult

[P-070]

Factors Affecting the Coping of Married Female Patients with Breast Cancer in Korea

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Aim(s): Coping was a mode of stress management in breast cancer patient. Nurses should conduct interventions to enhance coping of breast cancer patient and to build supportive relationships with patients. The purpose of this study was to determine the factors affecting the coping of married female patients with breast cancer in Korea.

Method(s): This study was a secondary data analysis, descriptive correlation study. Data accrued with the New General Self Efficacy Scale, Multidimensional Scale of Perceived Social Support, and Ways of Coping Checklist. Participants were 486 married female patients with breast cancer from a general hospital in Korea. The data were analyzed using the SPSS Win 21.0 program.

Result(s): The self-efficacy of the participants was 20.97 ± 5.43. Social support was highest in family 5.49 ± 1.26, followed by significant others (physicians and nurses) 5.35 ± 1.36, and friends 4.99 ± 1.31. The coping of the participants was 37.75 ± 7.96 for problem-focused coping and 22.25 ± 5.16 for emotional-focused coping. Self-efficacy ($\beta = .361$, $p < .001$), significant others (physicians and nurses) support ($\beta = .293$, $p < .001$), and religion ($\beta = .155$, $p < .001$) accounted for a 32.1% variance in problem-focused coping. Self-efficacy ($\beta = .214$, $p < .001$) and significant others (physicians and nurses) support ($\beta = .192$, $p = .019$) accounted for a 9.9% variance in emotional-focused coping.

Conclusion(s): The results of this study showed that factors affecting problem-focused coping and emotional-focused coping of married female patients with breast cancer were self-efficacy and significant others (physicians and nurses) support. Based on the results, nurses should provide education to increase self-efficacy in order to improve coping of married female patients with breast cancer. In addition, married female patients with breast cancer need to establish supportive relationships with medical staff.

Keywords: Breast cancer, self-efficacy, social support, coping

I Need More Abilities: Virtual Simulation Based Learning in Nursing Students

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Aim(s): Learning is a process that leads to change, which occurs as a result of experience and increases the potential for improved performance. Learning experience refers to any interaction, course, program, or other experience in which learning takes place, whether it occurs in traditional academic settings or nontraditional settings, or whether it includes traditional educational interactions or nontraditional interactions. Virtual simulation is a learning in nontraditional setting and with nontraditional interaction. Virtual simulation that helps nursing students build confidence and competence in delivering patient care. This study aim to identify nursing abilities through virtual simulation based learning in nursing students.

Method(s): The participants were 58 senior nursing students who conducted two scenarios through virtual simulation (vSim, Laerdal) for nursing. The scenarios were about postoperative hemicolectomy with pulmonary embolism and diabetes with symptoms of hypoglycemia. The researcher invited the participants to describe journals about needs for nursing ability were written anonymously by themselves after conducting two scenarios of the vSim. The data was analyzed using a latent content analysis method.

Result(s): The results emerged six categories with subcategories: “assessing information”, “managing patient’s condition”, “applying rational drug use”, “providing teaching to patient”, “supporting the patient’s emotion”, and “keeping orientation to legal practice.”

Conclusion(s): The nursing students realized to develop more abilities for scientific, accurate, and safety nursing practice through virtual simulation based learning.

Keywords: Simulation training, Nursing education, Nursing students, Qualitative research

[P-072]

Relationship between Health Literacy and Self-management Adherence in Patients with Chronic Obstructive Pulmonary Disease

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Aim(s): The purpose of this study was to identify the level of health literacy (HL) and self-management adherence and to investigate the relationship between HL and self-management adherence in patients with chronic obstructive pulmonary disease (COPD).

Method(s): The participants of this study were 165 patients with COPD from a tertiary general hospital located in G city from February 10th to May 10th , 2021. The general HL was measured by Korean health literacy assessment tool (KHLAT) and COPD specific HL was measured by COPD-related HL Tool. The COPD self-management was measured by Self-management adherence tool.

Result(s): The mean score of general HL was 60.45±9.42. The mean score of the COPD-related HL was 47.03±8.82. The mean score of the COPD self-management adherence was 87.58±14.47. There were significant differences in the level of COPD-releated HL according to age (t=2.43, p=.016), And in the level of genera HL(F=10.96, p<001) and the level of COPD-releated HL according to the level of education (F=19.14, p<001). There was statistically a significant correlation between the level of general HL and the level of COPD-related HL (r=.75, p<001), and the level of COPD-related HL and the level of self-management adherence (r=.219, p=.005).

Conclusion(s): The HL of COPD patients was at the level of middle school 1-2 years in this study. Thus, nurses who care for COPD patients should understand patients' level of HL and communicate self-management skills with patients at a level appropriate for patients' HL. In addition, it is necessary to develop strategies to easily learn COPD-related information when providing self management skills or training.

Keywords: Chronic Obstructive Pulmonary Disease; Health literacy; Self-management

Effects of alcohol drinking on 10-year diabetes mellitus risk score in adult Korean men : Focused on the mediation of quality of life

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Aim(s): The rate of high-risk drinking, a major cause of diabetes mellitus (DM), is continuously on the rise among Korean men, highlighting the urgency of ameliorating the drinking culture to prevent DM. The aim of this study is to examine whether quality of life (QoL) has a mediating effect in the relationship between drinking rate and 10-year DM risk score in adult Korean men. The results would be useful as foundational data for developing intervention strategies to reduce the incidence of DM.

Method(s): This study is a descriptive survey aiming to identify the effects of drinking rate and QoL on 10-year DM risk score in adult Korean men. The Korea National Health and Nutrition Examination Survey 7th (KNHANES VII) (January 2016 to December 2018) data was used for analysis. From the data, 4,134 men aged 40–69 years not diagnosed with DM were selected. The data were analyzed using complex sample regression, and after analyzing the mediation, the significance of mediation was tested using the Sobel test.

Result(s): In step 1 of the regression, drinking rate significantly predicted QoL (β=0.08, p<.001), and in step 2, drinking rate significantly predicted the 10-year DM risk score ((β=0.08, p<.001). In step 3, drinking rate (β=0.08, p<.001) and QoL (β=-0.09, p<.001) significantly predicted the 10-year DM risk score, confirming that QoL has a partial mediating effect (z=-3.62, p<.001).

Conclusion(s): QoL was confirmed to have a partial mediating effect on the association between drinking rate and 10-year DM risk score. Thus, sex-specific risk factors need to be taken into consideration to reduce the incidence of DM, and particularly, measures to promote healthy drinking habits need to be implemented in order to reduce the incidence of type 2 DM (T2DM) in men. Further, the study findings highlight the need to develop and actively implement various practical intervention strategies that enhance QoL.

Keywords: Diabetes Mellitus, Alcohol Drinking, Quality of Life, Mediation Analyses

[P-074]

Relations between the Uncertainty, Seriousness of Illness, Self-efficacy, and Social Support in Elderly Patients with Lung Cancer Undergoing Chemotherapy

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Aim(s): The number of elderly people with diseases is increasing because of the increase in the elderly population. Among them, an increase in elderly cancer patients is expected. Chemotherapy causes systemic side effects because it widespread cell destruction. Side effects of chemotherapy are more severe in older adults than in adults. It acts as a high stress and lives with uncertainty about life. The purpose of this study is to provide basic data on examine the uncertainty, seriousness of illness, self-efficacy, and social support in elderly patients with lung cancer undergoing chemotherapy.

Method(s): This is a descriptive survey research study. The subjects include elderly patients with lung cancer aged 65 or older that received chemotherapy in the Department of Hemato Oncology at C University Hospital in C Province. Total 120 participated in the study. Throughout the study, guidelines for ethical research would be followed. Data analysis was performed by descriptive analysis, t-test, ANOVA, Scheffé test, and Pearson's correlational coefficients.

Result(s): The elderly patients with lung cancer receiving chemotherapy scored mean 2.80±0.42 points out of 5 in uncertainty, mean 2.63±0.87 out of 5 in seriousness of illness, mean 4.03±0.68 out of 5 in self-efficacy, and mean 3.51±0.67 out of 5 in social support. There were significant correlations among the uncertainty, seriousness of illness, self-efficacy, and social support of the subjects. While seriousness of illness had positive correlations with uncertainty (r=.50, p<.001), self-efficacy had negative correlations with uncertainty (r=-.41, p<.001). Social support also had negative correlations with uncertainty (r=-.37, p<.001). Furthermore, support from family (r=-.31, p<.001) and support from healthcare workers (r=-.37, p<.001) under social support also had negative correlations with uncertainty.

Conclusion(s): It is required to develop nursing intervention programs based on these findings to reduce patients' seriousness of illness, increase their self-efficacy and social support, and thus lower their uncertainty.

Keywords: Uncertainty, Seriousness of illness, Self-efficacy, Social support, Elderly, Lung cancer

Mediating and Moderating Effect of Nursing Professionalism between Caring efficacy and Person-Centered Care Competence of Senior Nursing students

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Aim(s): This study examined the mediating and moderating effects of Nursing Professionalism on the relationship between Caring efficacy and Person-Centered Care Competence among senior nursing students.

Method(s): A cross-sectional descriptive survey design was used. The participants were 232 senior nursing students in South Korea. The survey instruments included Nursing Professionalism, Caring efficacy, Person-Centered Care Competence. Data were analyzed using the SPSS and AMOS programs. For data analysis, descriptive statistics, correlation, and mediating and moderating effect analyses were performed. Bootstrapping was implemented to verify the mediating effect of the model developed here in. ®

Result(s): Caring efficacy had a direct effect on Nursing Professionalism (β=0.32, p<.001) and Person-Centered Care Competence (β=0.45, p<.001). Nursing Professionalism was also found to affect Person-Centered Care Competence (β=0.33, p<.001). Ultimately, structural equation modeling analysis showed that Nursing Professionalism had a significant partial mediating effect on the relationship between Caring efficacy and Person-Centered Care Competence(R2=0.40). However, there was no moderating effect.

Conclusion(s): In order to enhance the Person-Centered Care Competence of senior nursing students, it is necessary to develop a strategy that can promote their Caring efficacy and Nursing Professionalism. Furthermore, these results will ultimately enhance the competence of senior nursing students, thus improving to the quality of care of the patients.

Keywords: Caring efficacy, Nursing Professionalism, Person-Centered Care Competence, Senior nursing student

[P-076]

Effectiveness of Discharge Education Using Teach-Back Method on Readmission Rate in Patients With Heart Failure: A Systematic Review and Meta-analysis

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Aim(s): Heart failure (HF) is known as the most common cause of hospital readmission. This highlights the importance of effective discharge education on self-care. Teach-back methods are one of the commonly used teaching strategies used in discharge education to improve various patient health outcomes. However, its effectiveness in patients with heart failure has not been not fully investigated yet. The purpose of this systematic review is to identify the effectiveness of discharge education using the teach-back method on health outcomes in patients with HF.

Method(s): Studies in English and published up until July 2021 were searched in MEDLINE, CINAHL, Embase, The Cochrane Library, and Web of Science, and the search terms were "discharged patient," and "teach-back", and we did not limit the outcomes. Three trained reviewers assessed the risk of bias of retrieved studies using the Risk of Bias 2.0 Cochrane tool and Risk of Bias Assessment tool for Nonrandomized Studies. Data were analyzed using Cochrane Review Manager (Revman) software 5.2.

Result(s): Twelve studies were assessed for eligibility, and only seven of them were included after excluding studies with high risk of bias. Three studies were RCTs, whereas the others were quasi-experimental studies. Most of the studies included the four stages of teach-back education: giving instruction, assessing patient understanding, reinstructing and reassessing patient understanding. Outcome variables included readmission rate, knowledge of HF, self-care behaviors for HF, physician/medical visit and quality of life. Six studies were included in the meta-analysis for examining the effectiveness of discharge education with the teach-back method on readmission rate. Under a random-effect model, the odds ratio was 0.38 (95% confidence interval, 0.17-0.86).

Conclusion(s): Discharge education using TBM is effective in various patient health outcomes, particularly in reducing patients' readmission rate. Further research is needed to identify effectiveness of discharge education using TBM in other patient groups.

Keywords: Heart failure, discharge education, teach-back method, readmission, systematic review

Risk Assessment of the Incidence of Metabolic Syndrome Depending on the Body Size Phenotype of Korean Adults: A Prospective Cohort

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Aim(s): The present study aimed to assess the risk of incidence of metabolic syndrome depending on the body size phenotype of Korean adults.

Method(s): This longitudinal study included 5,068 metabolically healthy subjects from the Korean Genome and Epidemiology Study (KoGES), which was tracked every two years from 2001 to 2016. After removing individuals with metabolic syndrome from the baseline and missing data, the sample size for analysis was n = 2,216. Analysis was performed using the log-rank test, life table method, Cox proportional hazards regression model, and time-dependent Cox proportional hazards regression model. IBM SPSS Statistics version 26 was used for the analysis.

Result(s): The incidence of metabolic syndrome was 41.5% among males and 43.3% among females when followed for 14 years. The incidence of metabolic syndrome depending on the body size phenotype significantly differed in males ($F = 92.83$, $p < .001$) and females ($F = 81.48$, $p < .001$). Compared with the metabolically healthy normal weight (MHNW) group, the hazard ratio (HR) for the risk of incidence of metabolic syndrome was 1.96 (95% CI = 1.67–2.30, $p < .001$) in the metabolically healthy overweight (MHOW) group and 3.11 (95% CI = 2.67–3.63, $p < .001$) in the metabolically healthy obese (MHO) group in males, while it was 1.89 (95% CI = 1.58–2.28, $p < .001$) in the MHOW group and 2.70 (95% CI = 2.28–3.21, $p < .001$) in the MHO group in females. In the time-dependent model, compared with the MHNW group, the HR was 1.92 (95% CI = 1.54–2.40, $p < .001$) in the MHOW group and 2.88 (95% CI = 2.32–3.58, $p < .001$) in the MHO group in males, while it was 1.89 (95% CI = 1.51–2.37, $p < .001$) in the MHOW group and 2.34 (95% CI = 1.88–2.90, $p < .001$) in the MHO group in females.

Conclusion(s): The results of the present study are expected to aid the development of interventions and policies for the prevention of metabolic syndrome and for obesity management in Korea in the future.

Keywords: body size phenotype, metabolic syndrome, prospective cohort study

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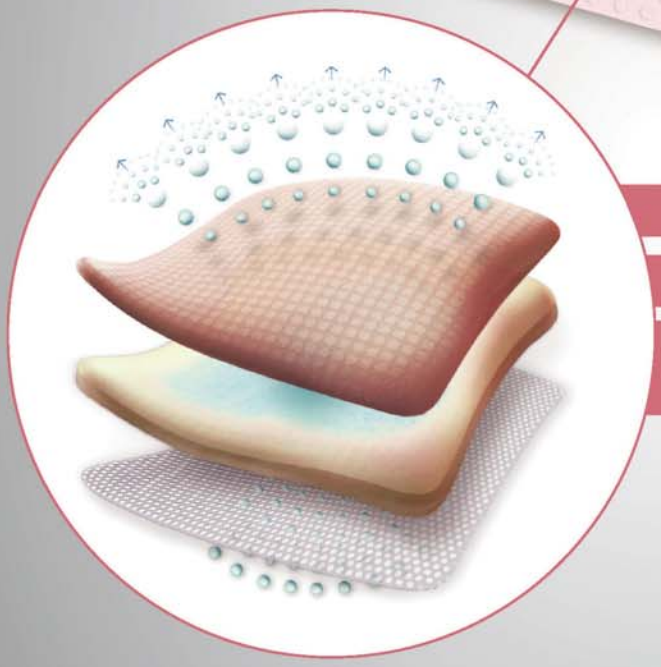

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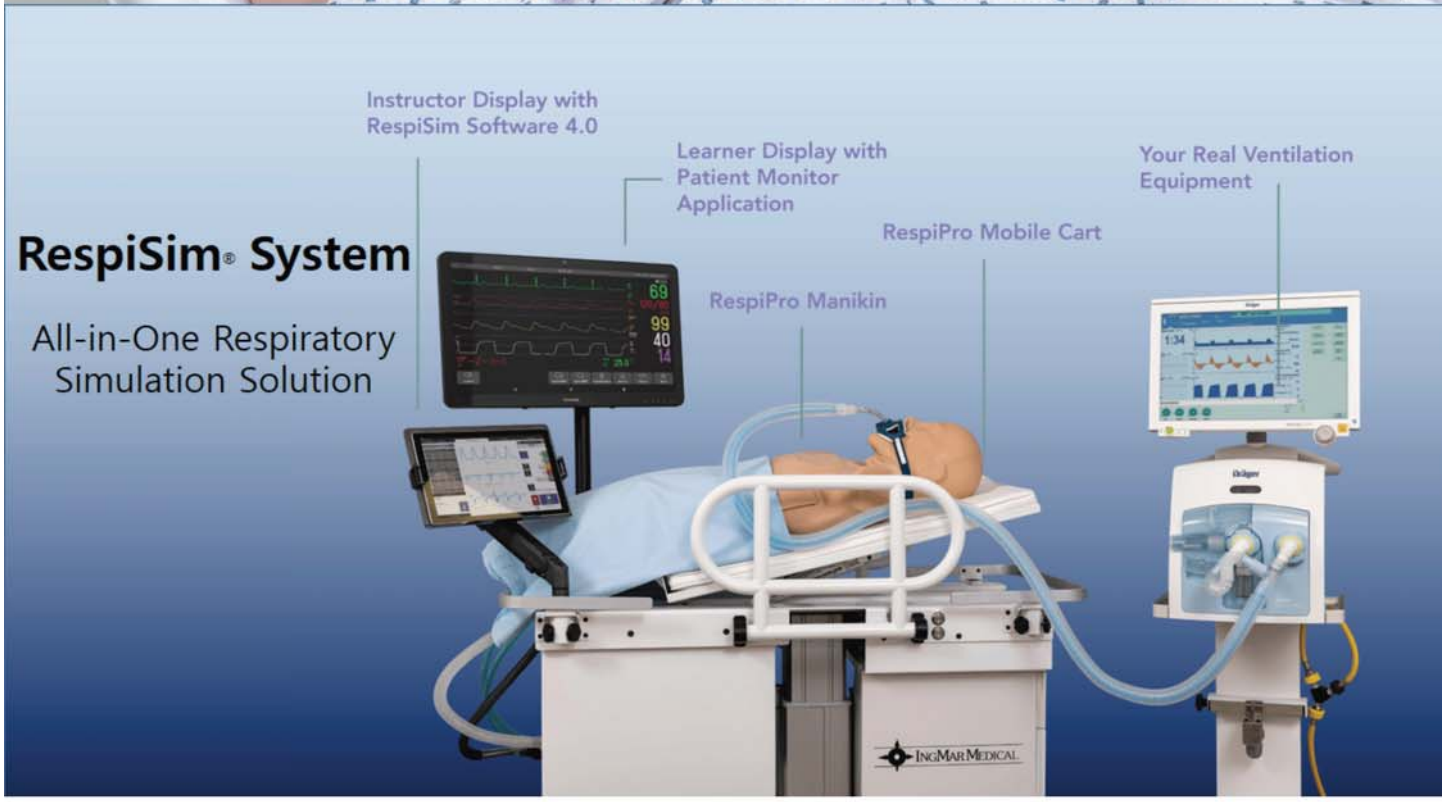

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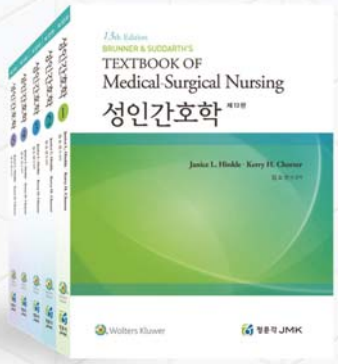

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