

## DEVELOPMENT AND VALIDATED OF TECHNOLOGICAL COMPETENCY AS CARING IN NURSING INSTRUMENT (TCCNI), LEARNING FROM THE OUTCOMES: A SYSTEMATIC REVIEW

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### ABSTRACT

**Background:** Caring in nursing practice is the essence of the human health experience (Newman, 1991). Caring is embedded in the human relationship between the carer and the cared for. In today's human development, the cared for often have caring experiences through the use of technology. However, there is a wide gap between the technology and human caring experiences. The use of technology often weakens the human sense taking proper care for the cared for. One who is technologically proficient may often be perceived incapable of expressing caring. While, machine technologies and caring in nursing can be harmonious aspects in nursing field. **Objectives:** to systematically review the existing literature to identify the supporting guides of the development and validated of an instrument: Technological Competency as Caring in Nursing Instrument (TCCNI). **Results:** A multiple database search was used and 12 articles were reviewed and met both inclusion and exclusion criteria from 2011–2017. The systematic review yielded three emerging themes, namely: Technology and caring, Development of an Instrument and Learning from the Outcomes. **Conclusion:** The competency to use technology in nursing and the awareness of nurses that technology is part of caring in nursing need to be assessed. The findings of this study will facilitate to gain deeper insights, contribute to the repository of knowledge and propose additional activity to do the “translation, adaptation and validation of instruments or scales for use in cross-cultural of Indonesian nurses”.

**Keywords:** *Caring in nursing, Technology, Instrument Development*

### INTRODUCTION

Measures and measurements become part of daily life for they are considered integral to decision making. Furthermore, research in every discipline is encouraged to develop instruments or develop guidelines to measure complex concepts or constructs. Good instruments will help the researcher gain the information in accordance with the wishes or expectations. Therefore, the perfect method and process of instrument's development is needed.

Both, nursing practice and nursing education are facing the technology as they practice their profession as a nurse. However, the perception of technology and caring as contradictory is present

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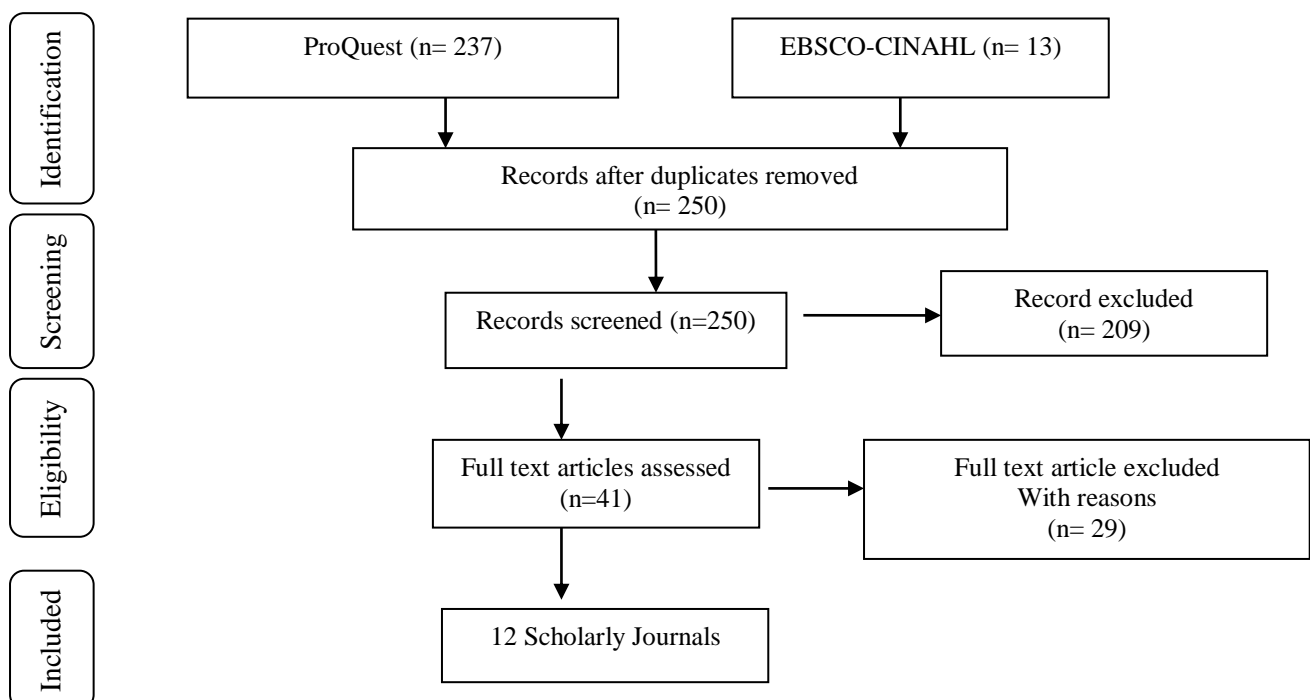
widely. One who is technologically proficient may often be assumed to be incapable of expressing caring. While, machine technologies and caring in nursing can be harmonious aspects in nursing field. Within a framework of nursing as caring, true technologic competence in clinical nursing practice can be understood as an expression of caring (Locsin, 1995).

Therefore, knowing technological competency in nursing is an expression of caring (Locsin, 2006), should be understood by nurses. This study was aim systematically review the existing literature to identify the supporting guides of the development and validated of an instrument: Technological Competency as Caring in Nursing Instrument (TCCNI). The researcher inspiring to do the literature review to get more information and literature which will become the base for the propose study on the “Translation, adaptation, and validation of an instrument or scales for use in cross-cultural health care research: Technological competency as caring in nursing instrument (TCCNI).

## Method

A systematic literature review is a method to “retrieve, sort and analyze the literatures from peer-reviewed journals, comprehensively and reproducible by peers” and this process was adopted the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) guidelines. Database of literatures published from scholarly journals were retrieved from ProQuest and CINAHL. From the ProQuest there were found 8556 scholarly journals using keywords “process of development and validated instrument in nursing” and 237 scholarly journals found using keywords “development and validated technological competency as caring in nursing”. From EBSCO-CINAHL there were found 144 academic journals, subsequently, of 144, 13 articles were record as publishing journals. Inclusion criteria and exclusion criteria were applied; the inclusion criteria were (a) only those originally published in English, (b) International journals or publishing journals, (c) focused on the process of development and validated of an instrument in nursing. Relevant grey literature was not considered, from there 12 articles to be reviewed. The reviewed articles that met the inclusion and exclusion criteria were summarized based on the content. The statistical data analysis was not possible in the literature review.

Table 1. Diagram of reviewing pross according to PRISMA



## **Result and Discussion**

### **Technology and caring**

Technology plays an important role in health care and helps nurses provide a comprehensive nursing care to the patients. There was a positive association between caring attributes and the influences of technology among nurses. Female nurses had a better attitude toward influences of technology on their care. In contrast, younger and less experienced nurses had negative views on the effects of technology on nursing care (Bagherian., Mirzaei., Sabzevari., & Ravari, 2017). Another study explains that technology supports the lives of critically ill patients and brings experienced nurses very close to their patients/families (McGrath's, 2008). In 2016, Bagherian et al. found that two themes emerged from analyzing data included: "support", and "adversity". These two themes had seven categories. The theme of "support" is composed of saving nurses' time, improving decision making and saving patients' lives, while "adversity" is consisted of 4 categories: patients' hardship, nurses' distress, dependency and emerging challenges.

Technology has attained in contemporary nursing practice (Casetta, cited in Locsin, 1995). The evolution and definition of high-tech nursing as essentially caring for technology-dependent patient who require intensive support in specialized units. Peck, 1992 (as cited in Locsin, 1995) state technology in nursing is also broadly perceived to include computer literacy and robotic proficiency. Technology allows nurses to know and assist the patient more fully toward well-being. However, technology such as computer and other health care technologies have the potential to impede with nurses' decisions and abilities to confirm patients.

Technology providing advance information and communication which are significant factors influencing healthcare systems. Technology is sometimes understood in the context of cause and effect relationships. According to Kikuchi (2004) and Thorne et al. (2004) to adopt only the binary frame can diminish and obscure the allure of technological efficiency in creating human caring realities. In the same way that technology has move become integral to human well-being, and journey beyond the bedside, beyond the community, and beyond the planet, therefore, technology and caring must be coexist in nursing. Technological competency as expression of caring in nursing is real and opportunistic much like mythical phoenix arising from the ashes. Technology plays a major role in caring for critically ill patients. Its' use in patient care can improve patient safety, save patients' lives facilitate nurses' work and save time for them and reduce hospital costs.

### **Development of an Instrument**

The process of instrument development; A valid instrument is one which measures what is supposed to measure (DeVellis 2003). There are several steps and ways that can be used to do the development and validation of an instrument. As well, there are psychometric tests should be chose properly regarding the purpose of the study. Assessing content validity is considered one of the most critical steps in instrument development (Beck & Gable, 2001). Content validity is concerns on how well the questions or items correspond to the concept being measured (Saw & Ng, 2001) or adequately represent the domain of content (Beck & Gable). There are several stages addressing content validity such as a developmental stage and a judgment-quantification stage. A developmental stage includes domain identification, item generation, and instrument formation. A judgment-quantification stage occurs when experts review the items and either report validity of the items subjectively or with an empirically referenced method, such as calculation of the content validity index (Amstrong et al. 2005).

Several studies on development and validated of an instrument are presented below:

Study	Sample		Purpose	Method	Findings
	Setting	Respondents			
Andrew Parcels, D., & Locsin, R. C. (2011). Development and psychometric testing of the Technological Competency as Caring in Nursing Instrument. International Journal for Human Caring	Summer of 2010.	Graduate nursing students, experience in a variety of specialties.	Further validating the TCCNI theory through construct quantification.	Packet mail to 13 experts included a personalized invitation letter, an informed consent, summary of the theory, and the CVI rating scale with the 30 original item statements.	Item CVI ranged from .38 to 1.0 with a mean of .93. Two items (17 and 28) with means less than .70 were deleted. Three items (14, 20 and 24) with means between .70 and .95 were revised based on specific expert's feedback.
Conroy, K. M., Elliott, D., & Burrell, A. R. (2013). Developing content for a process-of-care checklist for use in intensive care units: a dual-method approach to establishing construct validity.	Tertiary level ICU of University Hospital.	Clinical staff members at tertiary level ICU of university Hospital.	To develop the most relevant process of care checklist items for daily use during ward rounds in the ICU.	A dual-method approach modified Delphi technique using an expert clinician panel. Semi structure one-on-one interviews with a purposive sample.	Two rounds of Delphi surveys were required to reach consensus on nine checklist statements.
Viviers, M., Kritzinger, A., & Vinck, B. (2016). Development of a	South Africa	Five expert panel members were included in this study. Masters'	To develop and validate the content of clinical feeding assessment scale to diagnose oropharyngeal	Delphi method is used to establish content validity of an assessment instrument. Five international and south African speech language therapists	The initial NFAS consisted of 240 items across 8 sections. The final format was reduced to 211 items across 6 sections. Flow chart of

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Study	Sample		Purpose	Method	Findings
	Setting	Respondents			
clinical feeding assessment scale for very young infants in South Africa. South African Journal of Communication Disorders		degree qualification and 5 years clinical experience in the field of pediatric dysphagia.	dysphagia (OPD) in neonates	(SLTs) formed the expert panel, participating in two rounds of electronic questionnaires to develop and validate the content of the NFAS.	study procedures through 9 steps.
Al Hadid, L. A., Hasheesh, M. A., & Al Momani, M. (2011). Validating a tool that explores factors influencing the adoption of principles of evidence-based practice.	Different nursing fields: adult, maternity, community, and psychiatric nursing	180 nurse educators from	To measure the psychometric properties of a composite tool developed to assess factor influencing the adoption of the principle of evidence based practice in nursing education.	A descriptive, cross sectional research design. A convenience purposive sample of 85 nurse educators participated in this study.	The evidence based nursing education questionnaire items were derived following a four step approach: extensive literature reviews, thematic analysis of literature, expert opinion in the questionnaire items, and psychometric properties indicated a valid and reliable instrument. The internal consistency of the scale was calculated using Cronbach's alpha.
Dorigan, G. H., & Guirardello, E. D. B. (2013). Translation and cross-cultural adaptation of the Newcastle Satisfaction With Nursing Scales into the Brazilian culture	Brazil	40 Subjects	To translate and culturally adapt the Newcastle satisfaction with nursing scales for use in Brazil and to assess its usability.	The methodological procedure of cultural adaptation followed the steps: translation, assessment by an expert committee, and pretest.	The Brazilian version of the Newcastle satisfaction with nursing scales demonstrated adequate content validity and was easily understood by the group of subjects.
Stevens, K., & Palfreyman, S. (2012). The use of qualitative methods	UK National Health Service (NHS)	Cases	To describe how qualitative methods can be used in the development of	Qualitative methods by presenting two case studies of recently developed PBMs. Stages involved discuss the strengths and weaknesses of the	The use of qualitative methods in the development of non PBMs is fairly standard.

Study	Sample		Purpose	Method	Findings
	Setting	Respondents			
in developing the descriptive systems of preference-based measures of health-related quality of life for use in economic evaluation.			descriptive systems of preference based measures (PBMs) of health relate quality of life.	approach and compare with the top-down approach used in the majority of PBMs to date.	
Skúladóttir, H., & Svavarsdóttir, M. H. (2016). Development and validation of a Clinical Assessment Tool for Nursing Education (CAT-NE). Nurse education in practice	Clinical practice of the University of Akureyri in Iceland (UNAK)	nursing students at the university of Akureyri in Iceland	To develop a valid assessment tool to guide clinical education and evaluate students' performance in clinical nursing education	A mixed-method approach with individual structured cognitive interviewing and quantitative assessment was used to validate the tool supervisory teachers, a pedagogical consultant, clinical expert teachers and nursing students at the university of Akureyri in Iceland participated in this process.	The assessment tool is valid to assess the clinical performance of nursing students; it consist of rubrics that list the criteria for the student's expected performance.
Queirós, S. M. et al (2015). Development of a Form to Assess the Self-Care Competence of the Person with a Tracheostomy/.		Person with a tracheostomy	To develop a tool for assessing the self-care competence of the person with a tracheostomy.	Content validity was obtained through the judgment of experts, with a focus group methodology. Reliability was assessed using Cronbach's alpha coefficient. The instrument was applied to a sample of 80 participants, using a non-probability convenience sampling technique	The study resulted in a form with 39 indicators, divided into 6 areas, which showed good internal consistency (alpha = 0.89) and recognized content validity
Páez-Esteban, et al. (2014). Construct validity of an instrument to assess patient adherence to antihypertensive treatment		166 People with hypertension	Determine the construct validity of the result of nursing "therapeutic conduct: illness or injury".	A cross-sectional population study, carried out in the year 2010. The construct validity of the result of nursing "therapeutic conduct: illness or injury" (NOC 1609) to measure adherence to treatment both pharmacological and nonpharmacological was determine using Rasch analysis	Data adjusted to the Rasch model (values in fit and outfit: > 0.6 and 0.05).

Study	Sample		Purpose	Method	Findings
	Setting	Respondents			
Ruzafa-Martinez, M., et al (2013). ). Development and validation of the competence in evidence based practice questionnaire (EBP-COQ) among nursing students.		Undergraduate nursing students.	To develop a psychometric test of the Evidence Based Practice Evaluation Competence Questionnaire (EBP-COQ)	The questionnaire was developed by item generation through a review of scientific literature and focus groups. The instrument was validated in terms of content validity through an expert review. The EBP-COQ was administered to a cohort of nursing students (n =100) to evaluate test reliability and select the best items. Psychometric properties of the final instrument were assessed in a sample of 261 nursing students.	The EBP-COQ consisted of 25 items. A factorial analysis grouped the items into the three categories that define competence relating to EBP: attitude, knowledge and skills. Cronbach's alpha was 0.888 for the entire questionnaire. The factor solution explained 55.55% of the variance.
White, K. A. (2013). Development and validation of a tool to measure self-confidence and anxiety in nursing students during clinical decision making		Two samples of prelicensure associate and baccalaureate nursing students participated in the pilot (n = 303) and main testing (n = 242) phases of the study.	To develop and test a quantitative tool to assess undergraduate nursing students' self-confidence and anxiety during CDM	The 27-item Nursing Anxiety and Self-Confidence with Clinical Decision Making (NASC-CDM) scale is a 6-point, Likert-type tool with two subscales. Construct validity assessment, using exploratory factor analysis, produced a stable three-dimensional scale. Internal consistency reliability was assessed for each subscale (self-confidence, = .97; anxiety, = .96).	Convergent validity assessment produced positive, moderate, and statistically significant correlations of the tool subscales with two existing instruments. The NASC-CDM scale may be a useful assessment tool for nurse educators to help novice clinicians improve CDM skills.

## Learning from the Outcomes

This literature review shows several results or finding regarding: caring, technology and the process of instrument development. A technological competency is needed for nurses to be able providing caring to their patients. There was a positive association between caring attributes and influences of technology among nurses (Bagherian, et al., 2017). There was also found the beneficial effects of technology on nursing care, which are saving patients' lives, saving nurses' time, and improving decision making. Locsin, (1995) describe the theory of technological competency, Locsin idea that mastering technology is an expression of caring that sustains, supports, and helps us value ourselves as caring persons. Rather than technology being seen as a barrier to engaging with the people we care for. Nursing faculties perceive a need for training and support to effectively use educational technologies in nursing education (Nguyen, et al. 2011).

Nurses are in a key position to develop such instruments to be used in clinical care and research (Amstrong, 2005). Understanding the process of development and validation of an instrument is essential. Furthermore, nursing research take the significant role in developing instrument for nurses to conduct studies. This literature review provides several results of instruments and several concepts needed for instruments' development. Locsin, 1999 indicated that the Technological Caring Instrument (TCI) has a high internal consistency.

## CONCUSSION

Caring is the essence, moral idea, and foundation of professional nursing (Boykin & Schoenhofer, 2011; Leininger, 1997; Watson, 1998). Technology is not merely about machines or devices; it is about saving human's lives.

This systematic review was able to frame the existing literature that facilitated in the explanation of the development and validated of an instrument. From this study of review literatures most of the researcher used the Delphi method. Some studies examined the content validity through the judgment of experts, with a focus group methodology. Reliability was assessed using Cronbach's alpha coefficient. The Technological Competency as Caring in Nursing Instrument (TCCNI) last validating in 2011. The revised 25 items TCCNI has been adopted for online use with a visual analog scale. This TCCNI never had been use in Indonesia. Therefore, based on this literature review the researcher enlighten to do the Translation, adaptation and validation of instruments or scales for use in cross-cultural of Indonesian nurses.

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# The First Andalas International Nursing Conference The 1st Ainic 2017 Oral Presentation : 25 September 2017

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<b>1. Medical And Surgical Nursing/Health</b>			
<b>Moderator : Emil Huriani, SKp., MN</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Tittle</b>
1	13.30 – 13.40	Asrizal	The Effect Of Gastrocnemius Muscle Stimulation On Thediabeticfoot Ulcer Healing Process
2	13.40 – 13.50	Yesi Ariani	Nurse’s Experiences In Conducting Diabetic Foot Risk Assessment In Diabetes Mellitus Patients At H.Adam Malik Hospital Medan
3	13.50 – 14.00	Ns. Leni Merdawati, M.Kep	Relationship Social Support With Diet And Fluid Restriction Adherence In Patient With Chronic Kidney Disease Undergoing Hemodialysis At Public Hospital In Bukittinggi
4	14.00 – 14.10	Dewi Prabawati	Cardiovascular Risk Assessment Based On Laboratory Vs Non-Laboratory Test: A Systematic Review
<b>14.10 – 14.25</b>		<b>Sesi Tanya Jawab</b>	
5	14.25 – 14.35	Ns. Dally Rahman, M.Kep, Sp.Kep.Mb	The Experience On Double Stigma: Perceived By Tb And Hiv Patient
6	14.35 – 14.45	Bayhakki	Relationship Between Length Of Time Receiving Intravenous Therapy And

			Frequency Of Replacement Intravenous Cannula
7	14.45 – 14.55	Mohd Ramadan Ab Hamid	The Dietary Assessment Of Nurses In Putrajaya, Malaysia
8	14.55 – 15.05	Yesi Hasneli	Identification And Analysis Feet Sensitivity And Blood Glucose Level Of Type 2 Diabetes Mellitus
<b>15.05 – 15.20</b>		<b>Sesi Tanya Jawab</b>	
9	15.20 – 15.30	Defia Roza	The impact of Spiritual Consultation towards the dying anxiety (Thanatophobia) Defiaroza, Efitraof HIV/AIDS patients at VCT Clinics of General Hospitals
10	15.30 – 15.40	Reny Prima Gusty	Effects Of Progressive Muscle Relaxation Technigues In Pain Reduction Postoperative Abdominal Patients After Ambulation
11	15.40 – 15.50	Bayhakki	Relationship Between Length Of Time Receiving Intravenous Therapy And Frequency Of Replacement Intravenous Cannula
12	15.50 – 16.00	Elvy Oktarina	Relationship Level Pharmacology Therapy and Consumption of Salt In Achieving Target Blood Pressure At the elderly at in Padang
13	16.00 – 16.10	Nurul Huda Jasri	Nutrition Managemen in Chronic Wound from Cultural Perspective
<b>16.10 – 16.25</b>		<b>Sesi Tanya Jawab</b>	

## **2. Research And Practice Maternal Health**

**Moderator : Dwi Novrianda**

<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Tittle</b>
1	13.30 – 13.40	Yanti Puspita Sari	The Experience Of Minangkabau Women Undergoing Infertile Therapy In West Sumatera
2	13.40 – 13.50	Nova Fajri	Improving Kangaroo Mother Care Implementation At Home Through Education Video And Improvement Of Motivation
3	13.50 - 14.00	Tetti Solehati	Effects Of Educational Jigsaw Method On Knowledge And Attitude Of Female Student In Doing Self-Care When Menstruation
4	14.00 – 14.10	Prima Fithri	Design Of Ergonomic Breastfeeding Chair
5	14.10 – 14.20	Regina VidyaTrias Novita	Caring Experience Of Childbirth Primipara Undergone Emergency Cesarean Section: A Systematic Of The Literature Of Qualitative And Quantitative Study
<b>14.20 – 14.35</b>		<b>Sesi Tanya Jawab</b>	
6	14.35 – 14.45	Norimah Said	Postnatal Mother Knowledge And Attitude Towards Neonatal Jaundice
7	14.45 – 14.55	Dora Samaria	Husband's Support On Mother-Baby Attachment In Early Married Women
8	14.55 – 15.05	Siti Saidah	The Effectiveness of Intervention Model in Nursing Care through Community Involvement in Increasing the Life Quality of Pregnant Women who Suffered from HIV-AIDS
9	15.05 – 15.15	Vetty Priscilla	Characteristics and breastfeeding self efficacy amongethnisMinangkabauand

			their relationship with exclusive breastfeeding practice in Padang
10	15.15 – 15.25	Kusrini Kadar	Health Literacy (HL) in pregnant women: influences, information and impact
<b>15.25 – 15.40</b>		<b>Sesi Tanya Jawab</b>	

<b>3. Nursing Education</b>			
<b>Moderator : Ns. Yanti Puspita, M.Kep</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.30 – 13.40	Yakobus Siswadi	Determinant Of Nursing Licensure Examination Performance: A Literature Review
2	13.40 – 13.50	Christine Louise Sommers, Shin Hye Park	The Relationship Of Demographic And Admission Exam Scores With First Semester Gpa In First Year Nursing Students In Indonesia
3	13.50 - 14.00	Justina Purwarini Acihayati	A Systematic Review: Implementation Reflective Learning In Nursing Practice
4	14.00 – 14.10	Norhaini Majid	Motivation In Utilizing E-Learning System Among Distance Learning Students
<b>14.10 – 14.25</b>		<b>Sesi Tanya Jawab</b>	
5	14.25 – 14.35	Masfuri Sodikin	Analysis Standard Of Clinical Competency In Indonesia

6	14.35 – 14.45	Indriati Kusumaningsih	A Systematic Review To Support On Developing Tool Of Indonesian Public Health Nurse Competencies
7	14.45 – 14.55	Nila Kusuma	Descriptive study of dental health status in andalas 1st year students
<b>14.55 – 14.10</b>		<b>Sesi Tanya Jawab</b>	

<b>4. Public Health/Health Promotion</b>			
<b>Moderator : Nelwati</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.30 – 13.40	Henny Permatasari	Stretching Muscles And Relaxation Of Progressive, Effectively Reduce Shift Manufacturing Fatigue Workers
2	13.40 – 13.50	Endang Pertiwiwati	Public Perception Of The Use Of Health Service On Inpatient Health Center In Puskesmas Sungai Alang Regency Of Banjar
3	13.50 – 14.00	Nourmayansa Vidya Anggraini	The Correlation of Information and Communication (ICT) Use Duration with Overweight Students OfsmaitNurulFikri Depok 2015 (PHC)
4	14.00 – 14.10	Isnaniar	The Relathionship between the human factor, enviroentment, management work safety and health with diseases and accident in nurses inpatient RSUD ArifinAchmadPekanbaru
<b>14.10 – 14.25</b>		<b>Sesi Tanya Jawab</b>	
5	14.25 – 14.35	Yonrizal Nurdin	Health Education About Lgbt On The Students Of Faculty Of Nursing Andalas University



6	14.35 – 14.45	Yohanes Andi Rias	The Effect of <i>Ionized Alkaline Water</i> on Malondialdehyde Level on <i>Streptozotocin</i> -Induced <i>Rattus norvegicus</i> Barkenhout, 1769
7	14.45 – 14.55	Hilma Raimona Zadry	Redesign of ergonomic spinal board for improving patients evacuation process
<b>14.55 – 14.10</b>		<b>Sesi Tanya Jawab</b>	

<b>5. Research And Practice Mental Health</b>			
<b>Moderator : Ira Erwina</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.30 – 13.40	Sri Burhani Putri	Relations Between Characteristics And Coping Strategies With Stress Clients Breast Cancer Undergoing Chemotherapy
2	13.40 – 13.50	Nike Puspita Alwi	The Adolescents Psychosocial Phenomenology Of Online Gaming Addiction In Surau Gadang Sub District Nanggalo Of Padang 2015
3	13.50 - 14.00	Emmelia Astika Fitri Damayanti	Quality Of Life Cervical Cancer Patients Post Chemotherapy
4	14.00 – 14.10	Yade Kurnia Sari	The Effect Of Therapeutic Thought Stopping And Family Psychoeducation Toward Anxiety In Hemodialysis Clients In Rsam Bukittinggi
5	14.10 – 14.20	Debby Sinthania	The Relations Between Burden And Resourcefulness With Life Quality Of Severe Mental Illness Caregiver
<b>14.20 – 14.35</b>		<b>Sesi Tanya Jawab</b>	

6	14.35 – 14.45	Feri Fernandes	Relationship Between Coping Mechanism And Stress Level in Preparing Thesis Among Nursing Students Of Andalas University
7	14.45 – 14.55	Rizka Ristriyani,	Stigma And Denial Of Hiv-Positive Women
8	14.55 – 15.05	Ramaita Basri	Effect Of Token Economy Therapy For Reducing Attachment Behavior Among Pre School Children In Kindergarten
9	15.05 – 15.15	Bunga Permata Wenny	Analysis Of Factors Associated With The Quality Of Life Of Clients With Schizophrenia In Outpatient Ward Prof. Dr. HbSaain Padang Hospital
10	15.15 – 15.25	Citra Sari	Effect Of Community-Based Education To Self-Efficacy Among Type 2 Diabetes Mellitus Patients In Bandung, West Java Province, Indonesia
<b>15.25 – 15.40</b>		<b>Sesi Tanya Jawab</b>	
11	15.40 – 15.50	Weddy Martin	The Differences Relation Factors Of Depression With Depression For Elderly People Living With Families With Elderly People Living In PstwSabai Nan AluihSicincin
12	15.50 – 16.00	Mahathir	It Will Stress Me Out If The Result Becomes Positive.doc
13	16.00 – 16.10	Nunung Febriany Sitepu	Relationship between disabilities with desperation on patients with stroke in hospital
14	16.10 – 16.20	Agus Sri Banowo	The Phsycological Response During HIV Test : A Pnenomenological Study
<b>16.20 – 16.30</b>		<b>Sesi Tanya Jawab</b>	

# The First Andalas International Nursing Conference The 1st Ainic 2017

## Oral Presentation : 25 September 2017

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### 1. Research And Practice Pediatric Health

**Moderator : Kusrini**

No.	Time	Presenter	Title
1	13.00 – 13.10	Hermalinda Herman	Factors That Related To Bullying Behavior In Junior High School Students In Padang City West Sumatera
2	13.10 – 13.20	Dwi Novrianda,	Kaleidoscope Effect On Pain Relief During Venipuncture Procedure In Children
3	13.20 - 13.30	Sutinah	Puzzle Play Therapy Effects To Socialization Ability Of Children With Mental Retardation
4	13.30 – 13.40	Ikeu Nurhidayah	Need Assessment in Diabetes Melitus Management in Children
<b>13.40 – 13.55</b>		<b>Sesi Tanya Jawab</b>	
5	13.55 – 14.05	Deswita	Analysis of Related Factors With Low Birth Weigh (LBW) in Hospital
6	14.05 – 14.15	Sheizi Prista Sari	Self-Efficacy Of Parents In Meeting The Nutritional Needs of Children Under Five Years During Disaster: A Mix Method Study In A Red Zone Of West Java Province
7	14.15 – 14.25	Meri Neherta	Relationship of Self Efficacy with Stress Level Nursing Students Completing

			Program B 2015 in Thesis at Faculty of Nursing Andalas University 2016
8	14.25 – 14.35	Lili Fajria	Analysis of Flebitis Occurrence in terms of Characteristics of infusion by nurses in RSI Ibnu Sina Payakumbuh
<b>14.35 – 14.50</b>		<b>Sesi Tanya Jawab</b>	

<b>1. Community/Family Health/Gerontic</b>			
<b>Moderator : Ns. Mahathir, M.Kep., Sp.Kep.Kom</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Tittle</b>
1	13.00 – 13.10	ElfiraHusna	Family Spiritual Experience In Taking Care Of Family Members That Have Stroke In RssnBukittinggiIcu 2016
2	13.10 – 13.20	Loriza Sativa Yan	Loneliness Among Elderly Female In Kota Jambi
3	13.20 – 13.30	Zuriaty	The effect of Lavender therapeutic scent toward sleep quality for elderly at Tresna Werdha (PSTW) Batu Sangkar in 2016
4	13.30 – 13.40	Yafi Sabila Rosyad,	Gay Negative Perception Regarding Gay Stigmatization By Health Care Providers
<b>13.40 – 13.55</b>		<b>Sesi Tanya Jawab</b>	
5	13.55 – 14.05	Sri Hartati Pratiwi	Needs Of Family Caregivers Of Post-Stroke Patient At Dr. Hasan Sadikin Hospital Bandung
6	14.05 – 14.15	Rika Sabri	Factors Influencing the Quality of Life of the Minang Elderly Living in

			Nursing Homes: A Perspective of Minang Culture
7	14.15 – 14.25	Ni Putu Wulan Purnama Sari, Jintana Artsanthia	Comparison Of Elderly Attitude Towards Meditation Healing Exercise (Mhe) In Bangkok And Surabaya
8	14.25 – 14.35	Reni Zulfitri	The Exploration Of Family Member Characteristics As A Caregiver Of Elderly With Hypertension: “Gender Analysis” In Melayu Riau Community Of Pekanbaru City, Indonesia.
9	14.35 – 14.45	Weni Mailita	The Effect Of Ginger Hot Pad Therapy In Reducing Rheumatoid Arthritis Pain Among Elderly In Kuranji, Padang
<b>14.45 – 15.00</b>		<b>Sesi Tanya Jawab</b>	
10	15.00 – 15.10	Gusti Sumarsih	Family Social Support In Correlation with Quality of Life Elderly with Hypertension
11	15.10 – 15.20	Tony - Suharsono	Difference Of Drug Consumption Adherence After Using Drug Consumption Reminder Card And Text Messages On Hypertension Patient In Public Health Care Kendalsari Malang
12	15.20 – 15.30	Fitra Yeni	Focus Charting Checklist Model As Effective Documentation Option in Community Health Care Program at the Public Health Center of Sijunjung 2017
13	15.30 – 15.40	Tony-Suharsono	Difference Of Drug Consumption Adherence After Using Drug Consumption Reminder Card And Text Messages On Hypertension Patient In Public Health Care Kendalsari Malang
14	15.40 – 15.50	Shinta Kasih Mahabrata	Influence Of Reminiscence Group Therapy On Screen Depression In Lansia In The Services And Advanced

		Planning Age (Bpplu) In Bengkulu Province
<b>15.50 – 16.05</b>	<b>Sesi Tanya Jawab</b>	

<b>1. Health Management</b>			
<b>Moderator : Ns. Leni Merdawati, M.Kep</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.00 – 13.10	Mariza Elvira	Increase Of Completeness Of Nursing Documentation Through Implementation Of Nursing Initial Assessment Format
2	13.10 – 13.20	Esthika Ariany Maisa	The Analysis Of Nurses' Positive Deviance Behaviours As A Measure In Preventing The Transmission Of Healthcare-Associated Infections (Hais) At M. Djamil Hospital, Padang, West Sumatera, Republic Of Indonesia
3	13.20 – 13.30	ReskaHandayani	The Supervision Of Chief Nurse In Apply Giving Medicine Operational Standard By Parenteral
4	13.30 – 13.40	Dewi Murni	Study Of Psychological Factors (Motivation) Connected With Pervestment Performance Of Implementers In Pendokumentasian Nursing Care In The Input Room General Hospitals Of Pariaman Region
5	13.40 – 13.50	Yuanita Ananda	Analysis Of Factors Associated With Nurses' Compliance On The Implementation Of Hand Hygiene At The Inpatient Installation Of RsupDr.M.Djamil Padang 2014

6	13.50 – 14.00	Dameria Ginting	<i>DEFENCE MECHANISM PERAWAT TERHADAP STRESS</i>
<b>14.00 – 14.15</b>		<b>Sesi Tanya Jawab</b>	
7	14.15 – 14.25	Nelwati	Nurses Professional Values Among Indonesian Undergraduate Nursing Students
8	14.25 – 14.35	Ignata – Yuliati 15.10 10.30 di padang tgl 25 sept kiriadh	Developing And Validating Of Technological Competency As Caring In Nursing Instrument (Tccni), Learning From The Outcomes: A Systematic Review
9	14.35 – 14.45	Dewi Setya Paramitha	The Head Nurse's Supervision Experience In The Hospital
10	14.45 – 14.55	Sidaria Kamal	Comparative Study Influence Of The Ethical Climate To Nurses's Organizational Commitment In Siti Rahmah Padang Private Hospital And Dr. Rasidin Padang Public Hospital In 2016
11	14.55 – 15.05	Zifriyanthi MP	Nursing Student's Coping Mechanism In Challenging <i>Bullying</i> during the Practice Of Nursing Profession
12	15.05 – 15.15	Yulastri Arif	Patients, Nurses Collegial and Healthcare Professionals's Comfortness and Satisfaction During Interactional Process
13	15.15 – 15.25	Nurman	Relationship Organizations Climate, Reward System And Competition With Workplace Bullying Among Bengkulu Nurses
<b>15.15 -15.30</b>		<b>Sesi Tanya Jawab</b>	

**1. Medical And Surgical Nursing/Health****Moderator : Kusrini**

<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.00 – 13.10	Tuti Nuraini	Uncomfortness Related To Saliva's Cortisol In Breast Cancer Patient
2	13.10 – 13.20	Rismia Agustina	Cardiorespiratory Endurance On College Student Smokers Using Harvard Step Test
3	13.20 - 13.30	Dian Sari	Related Factors To Quality Of Life Children With Chronic Renal Failure Undergoing Hemodialysis
4	13.30 - 13.40	Emil Huriani	In Andalas Public Health Center What Risk Factors Associated With Hypertension?
<b>13.40 – 13.55</b>		<b>Sesi Tanya Jawab</b>	
5	13.55 – 14.05	EkaAfrima Sari	The Community Knowledge On Coronary Heart Disease Based On Their Characteristic Of Risk Factor
6	14.05 – 14.15	Martyarini Budi Setyawati, Atun Roudatul	The Effect Of Logotherapy On The Anxiety Level Of Cervical Cancer Patient
7	14.15 – 14.25	Esi Afriyanti	The Effect Of Diaphragmatic Breathing Exercise On Pulmonary Ventilation Function In Patients With Asthma On Rsud Dr. Rasyidin Padang
8	14.25 – 14.35	Hendri Budi	
<b>14.35 – 14.50</b>		<b>Sesi Tanya Jawab</b>	



8	14.50 – 15.00	Yulia Irvani Dewi	Knowledge and education of women related to hiv/aids prevention in Pekanbaru province (medikalbedahphc)
9	15.00 – 15.10	Rika Fatmadona	The effects of structured education on knowledge, attitude and patient action in colostomic treatment 2016
10	15.10 – 15.20	Juli Widiyanto	A Retrospective Study of The Assosiated Between Quantity and Varieties Fruit Consumption with Glycemic Status in Patients Type-2 Diabetes Mellitus
11	15.20 – 15.30	Abdul Majid	Onset Analysis of phlebitis in Patients Receiving Intravenous (IV) Fluid Therapy High Osmolarity in Medical Ward Dr Wahidin Sudirohusodo Hospital Makassar
<b>15.30 – 15.45</b>		<b>Sesi Tanya Jawab</b>	

## **1. Mental Health**

**Moderator : Agus Sri Banowo, S.Kp, MPH**

<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1	13.00 – 13.10	Rika Sarfika	Stress In Nursing Student And Ways Of Dealing With It
2	13.10 – 13.20	Taty Hernawaty	Mental Health Education For Cadres In Cikatomas Sub-District Tasikmalaya District
3	13.20 - 13.30	Windy Freska	The Parents Experience In Caring For Children With Learning Difficulties In Children And Adolescents Polyclinic At HbSa'anin Psychiatry Hospital Padang
4	13.30 – 13.40	Dwi Happy Anggia	Relationship Between Job Stress And Coping Mechanism In Psychiatric Nurse At Rsj. Prof. Dr. Hb. Sa'anin Padang Tahun 2015

<b>13.40 – 13.55</b>		<b>Sesi Tanya Jawab</b>	
5	13.55 – 14.05	Ira Erwina	Relationship Between Coping Mechanism And Stress Level Among Parents With Mentally Retarded Children In Slb Wacana Asih Padang
6	14.05 – 14.15	Gita Kirana Dewi	Caregivers' Experience of Caring for Clients with Schizophrenia
7	14.15 – 14.25	Welly	Relationship Between The Characteristics And Depression With Quality Of Life In People Living With Hiv / Aids In Yayasan Lantera Minangkabau, Padang
8	14.25 – 14.35	Susi Abidin	The Effect Of Anterior Teeth Appearance On Adolescent Psychosocial
9	14.35 – 14.45	Dewi Eka Putri	Analysis Of Factors Related To Suicide Ideation In Adolescent
10	14.45 – 14.55	Susilawati	Analysis of Factors Related to the Quality of Life of Clients with Breast Cancer in DR M Djamil Hospital Padang.
11	14.55 – 15.05	Randy Refnandes	
12	15.05 – 15.15	Suherman	Initial Study Of Linguistic; Verbal And Nonverbal Sign Of Attempted Suicide Among Adolescents
<b>15.15 – 15.30</b>		<b>Sesi Tanya Jawab</b>	
<b>Poster Session</b>			
<b>No.</b>	<b>Time</b>	<b>Presenter</b>	<b>Title</b>
1		Henny S. Mediani	Nutritional Status In Children With Acute Lymphoblastic Leukemia Undergoing Chemoterapy In Bandung

**DEVELOPMENT AND VALIDATED OF  
TECHNOLOGICAL COMPETENCY AS CARING IN  
NURSING INSTRUMENT (TCCNI), LEARNING  
FROM THE OUTCOMES: A SYSTEMATIC REVIEW**

**By**

**Sr. Ignata Yuliati, SSpS**

**Catholic School of Health Sciences *St. Vincentius a Paulo*  
*Surabaya***

# INTRODUCTION

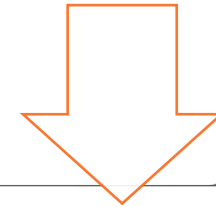
Caring is the essence, moral ideal, and foundation of professional nursing (Boykin & Schoenhofer, 2001; Leininger, 1997; Watson, 1988).

Gap between the technology and human caring experiences.

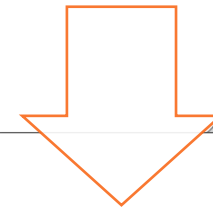
The use of technology often weakens the human sense taking proper care for the cared for. WHILE....

# INTRODUCTION

Machine **technologies** and **caring** in **nursing** can be harmonious aspects in nursing field



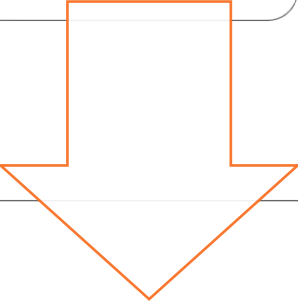
In **Indonesia**, technology is growth rapidly within the health care field including nursing practice



There are no tool develop to assess the technological as part of caring

# INTRODUCTION

Technological Competency as Caring  
in Nursing (TCNNI) by Locsin, 1999



The purpose of the instrument was  
to integrate technological caring  
and technological knowing as a  
collective expression of caring in  
professional nursing.

# OBJECTIVES

To systematically review the existing literature to identify the supporting guides of the development and validated of an instrument: Technological Competency as Caring in Nursing Instrument (TCCNI).

# Methodology

A systematic literature review is a method to “retrieve, sort and analyze the literatures from peer-reviewed journals, comprehensively and reproducibly by peers”

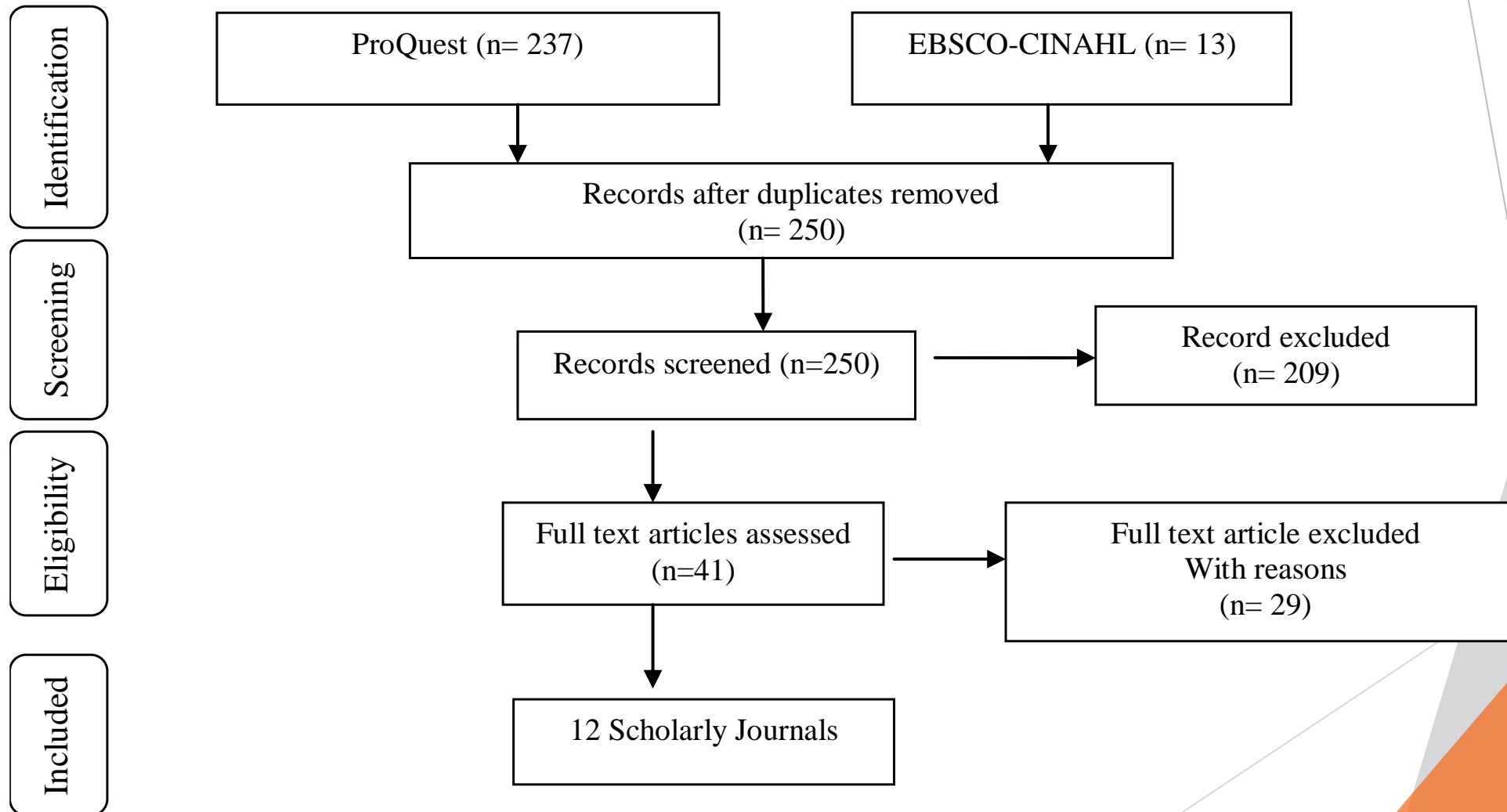
Reviewing process according to PRISMA

Database of literatures published from scholarly journals were retrieved from ProQuest and CINAHL



# Diagram of reviewing process according to PRISMA

Table 1. Diagram of reviewing process according to PRISMA



# RESULTS OF THE STUDY

Technology  
and caring

Development  
of an  
instrument

Learning  
from the  
outcomes

## RESULT AND DISCUSSION

# Technology and Caring

Technology plays an important role in health care and helps nurses provide a comprehensive nursing care to the patients

Technology: saving nurses' time, improving decision making and saving patients' lives

Machine technologies, e.g. computer and gadget enhancing nursing activities to provide quality patient care (Locsin, 2016)

Caring is helping the other grow in his own time, and in his own way (Mayeroff, 1972)

# RESULT AND DISCUSSION

## Exc. Technology in nursing

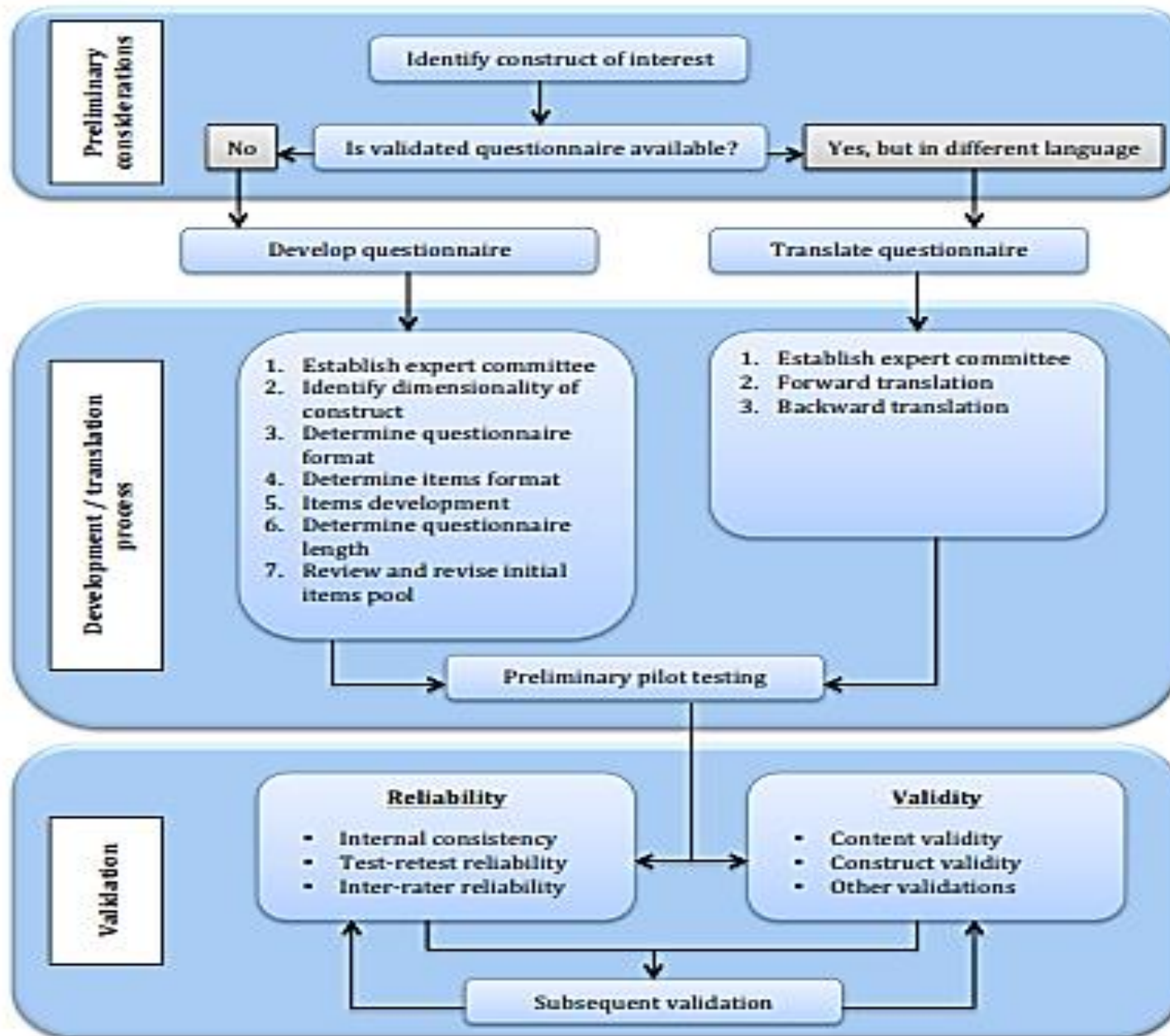


Electronic health record (EHR) and Electronic medical records (EMR) allow the healthcare providers have access to critical patient information from multiple providers, literally 24 hours a day, 7 days a week, allowing for better coordinated care record (EMR)



Virtual nurse avatars provides proven, customized monitoring and follow-up care, with a strong focus on chronic diseases.

# TOOL DEVELOPMENT



# RESULT AND DISCUSSION

## Technological Competency as Caring in Nursing Instrument (TCCNI)

The purpose of the instrument was to integrate technological caring and technological knowing as a collective expression of caring in professional nursing.

instrument originally contained of 30 items (Locsin, 1999)

after the study of Andrew Parcels and Locsin (2011) were they examined the content validity of the original TCCNI.

the final instrument version with 25 items

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

identify the dimensionality of the construct

- Many constructs are multidimensional
- consider developing subscales to assess the different components of the construct

Determine the format in which the questionnaire will be administered

- on what the questionnaire intends to measure

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

Determine  
the item  
format

- Will the items be open ended or close ended?
- Questions that are open ended allow respondents to elaborate upon their responses

- If close ended items are to be used, should multiple choices, Likert type scales, true/false, or other close ended



# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

### Item development

- Items should be simple, short, and written in language familiar to the target respondents

- The perspective should be consistent across items; items that assess affective responses (e.g., anxiety, depression) should not be mixed with those that assess behavior

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

Determine the intended length of questionnaire

- The questionnaire should contain sufficient items to measure the construct of interest,

- a large pool of items is needed in the early stages of the questionnaire's development as many of these items might be discarded throughout the development process

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

Review and  
revise initial  
pool of items

- qualified experts should review the items
- they are accurate, free of item construction problems, and grammatically correct

- a large pool of items is needed in the early stages of the questionnaire's development as many of these items might be discarded throughout the development process

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

### Preliminary pilot testing

- test the questionnaire items on a small sample (about 30-50) of respondents
- pilot test of the questionnaire on the intended respondents

- The questionnaire items should be revised upon reviewing the results of the preliminary pilot testing. This process may be repeated a few times before finalizing the final draft of the questionnaire

# RESULT AND DISCUSSION

## TOOL DEVELOPMENT

### Validation

- Internal consistency
- Inter-rater reliability
- Test-retest reliability

# Conclusion

- ▶ Caring is the essence, moral idea, and foundation of professional nursing (Boykin & Schoenhofer, 2011; Leininger, 1997; Watson, 1998). Technology is not merely about machines or devices; it is about saving human's lives.
- ▶ Understanding the process of development and validation of an instrument is essential. Furthermore, nursing research take the significant role in developing instrument for nurses to conduct studies



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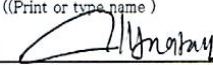
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