A Systematic Review: Evaluating Communication Skill of Nursing Students at Class or Practical Area

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Abstract

Effective communication with health care providers has been found as relevant for nursing to delivery service excellent and the health care outcomes safety for the patient. However, the validity of the findings depends on the quality of the applied measures and strategies. This study aimed to provide an overview of strategies of nursing students-medical students-patient communication and to evaluate the effectiveness tools or methods that used and the final can improve the good communication skill. A systematic review was performed to identify tools or strategies which measure nurses' student communication. The search strategy included two databases (EBSco and Pro Quest) and reference. Studies that report the effectiveness tools or methods to evaluate the communication skill of the teacher-nursing students-medical students and patient. The extracted data with meta-analysis conduct Meta Cochrane' Q and Meta RRs with three phases: First, Grouping, second, analytic method to detect true heterogeneity across 10 studies with Cochrane' statistic test and third sensitivities analysis to evaluate robustness. Data of 15 studies during 2006-2015 years to evaluate the tools or methods of communication skill between nursing students and the other health care professional. The meta-analysis were performed by computing relative risk (RRs) 57.1% which means there are gaps and significant differences in the implementation of the tools or methods to locate the state (Non Asia and Asia) and RRs 150%, which means there are effectively of the implementation years to use tools or methods of the year below 2010 and upper 2010. The Tools or methods having heterogeneity in each of those countries, the implementation of year is sig Meta-Cochrane's Q= .027<0.05.

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The strongest of the tool or method is An Inter-professional Critical Incident Verbal Report (.0000) with Robustness in Ohio (2014). The limitations of this study are the studies published in other languages not included may have missed out recently published studies on this topic and limited number of studies especially in the nursing education context. This systematic review identified a number of tools or strategies of nurses communication to improve communication in different countries. The culture may influence how the communication skills are. RRs value 150% indicates that there are effectively of the implementation years to use tools or methods below and upper 2010.

Keywords: Communication skill; nursing students.

1. Introduction

Clinical setting should be facilitated for nurses to apply the theory into real experience practice to achieve the competency. Students nursing is a helping profession that gives direct service to individuals through interpersonal relationships with communication. Improving nurses' communication skill should focus on knowledge, attitudes and skills [24]. Effective communication is a vital component of nursing care, however, nurses often lack the skills to communicate with patients, cares and other health care professionals. The relationship between the health professional and patient is progressively being identified as a basic clinical skill through effective communication [4]. The ability of students to practice communication skills prior to entering practice area can promote effective therapeutic communication skills and decrease student anxiety [14] and increase interpersonal relationship. Other studies in health care found that poor communication was leading the cause of 90% of identified error [19]. To guarantee delivery of excellent make patient satisfaction and patient safety, quality development of communication is necessary. Although measuring the effectiveness of communication skills is difficult, the most common strategies used that evaluation of the competence of the students' verbal communication skills is best assessed during observations when simulating [20]. The communication skill should be evaluated to achieve the students competencies. The critical component of communication skills should be evaluated for nursing students. It is a critical component of any school health nursing.

1.1. Statement of problem

Communication is difficult to Measure and no evaluation rubrics were located. What is the best available on tools or methods to improve communication skills for student nursing?

1.2. The objectives of this a systematic review

- To identify the effectiveness of tools and methods or strategies of the communication skills to health care professional students in undergraduate and postgraduate programs, to facilitate communication in hospitals, nursing homes and mental health institutions.
- To evaluate the components of tools or methods communication to get competencies, collaborate to another health care professional.

1.3. Method

- Protocol and registration

The American Journal of Occupational Therapy (AJOT) was planned and conducted using the prefered repoerting items for systematic review and meta Analysize (PRISMA) guidelines.

- Eligibility criteria

Type of studies are quantitative (descriptive, independent sample *t* test, paired *t* test, etc.) and mixed methods to explore the tools or methods that used by nursing students and interaction with other health care professional. The Type of participants are nursing students or nursing student have communicated with other health care professional. Age of participants 18-49 years old. All degrees in nursing program and have practice communication int class or practice area.

Type of intervention in this study comparing the tools and methods that used to evaluate the communication from other countries in continent of Asia, Australia and America (Asia and Non Asia). Type of outcome measure is tooled in communication skill and methods to improve the communication skill in class or practice area. Tools the communication such as IICR, CBOAT, COMFORT, CAT, SBAR, the standardized grading tool and NCRM. Methods for enhancing the communication skill such as training courses, VIA (Video Inter Active), video for role play, Bandura self efficacy, and peer review.

The studies published in English explain the communication skill at class and practical area, Full text, abstract, database < 10 years (2006-2014). The studies included of instruments that measure the tools or methods such as df, SD, p Value, mean, validity, reliability, kappa and country where the tools or methods have implemented. The studies excluded that only reported communication only to medical students.

- Search

Utilizing the electronic of the evidence published between 2006 and 2014 was undertaken using the following databases Pro Quest and EBsco. For each database a specific search strategy have text terms in four domains: nursing students, communication skill, tools or methods and health care professional.

- Study selection

First, titles and abstracts were assessed to exclude clearly irrelevant record. Second, full texts were assessed for eligibility. Third, all search results if duplicates were removed.

Criteria inclusion

- Participants were students enroll in formal education nursing in baccalaureate at the last level.
- Area practical : hospital and community

- Communication Skill include verbal and non verbal

- The language of the publication is English

- The measured construct is communication (interpersonal skill)

Criteria exclusion

- Procedural doctors

- Student Diploma and masteral nursing

- Mobile communication

- The instrument communication not found

1.4. Data Collection process with meta analysis

- The authors independently to collect data appropriate with criteria inclussion.

- Data extraction if any data duplicate.

- The extraction data with meta-analysis conduct Meta Cochran's' Q and meta RRs with three phases: First, Grouping, second, analytic method to detect true heterogeneity across 10 studies with Cochran's statistic test and third sensitivity analysis to evaluate robustness [13].

1.5. Data item

The information from data was extracted from each included the characteristics of participants nursing students who interrelation with other health care professional (medical students and nursing educator). The type of tools and methods and type of outcome measure effect on communication skill with statistic method, show the significance for the effectiveness tools or methods in each country that has implemented.

1.6. Risk of bias in individual studies

First, publication risk can be caused by various published sources are different and from different countries Asia, United States and Australia. Second, the risk of bias because selection process use only two searching system the international journal (ProQuest and EBSco). Third, tools or methods that conduct this study very heterogeneity and not comparable on applied implementation in many countries with different years and cultures. Fourth, many studies didn't appear the quality of data in completely.

To reduce bias any bias that may occur, the reviewer should make grouping pretends years and countries. Separate criteria for assessing risk of bias of individual studies from those that assess precision on 95%-99% significant level divide two categories and applicability.

1.7. Summary Measures

- Grouping meta-analysis pretends: tools or methods type, number of studies, samples of the students and significances level also depend on the years.

- The meta-analysis were performed by computing relative risk (RRs) 57.1%, which means there are gaps and significant differences in the implementation of the tools or methods to locate the state (Non Asia and Asia).

- The meta-analysis were performed by computing relative risk (RRs) 150%, which means there are effectively of the implementation years to use tools or methods below 2010 and upper 2010.

- The Tools or methods having heterogeneity in each of those countries, the implementation of year is sig Meta-Cochran's Q= .027<0.05.

- The strongest of the tool or method is An Inter-professional Critical Incident Verbal Report (.0000), with Robustness in Ohio (2014) by Jacqueline AG studies [5].

1.8. Discussion and Limitation

Summary of evidence from 10 studies show main outcome to health care education and providers by level of precision. Data of 15 studies during 2006-2015 years to evaluate the tools or methods of communication skill between nursing students and the other health care professional The data extract 5 studies because instrument not complete, there are no have a significance value (p value).

There is asymsig .027 for effective tools and methods of the countries and implementation years, with Meta-Cochran's' Q analysis. The tools and methods will more applicable 150 times (150%) if the year is higher. The best tool or method to evaluate communication skill is An Inter-Professional Critical Incident Verbal Report (.0000) with Robustness.

The limitations of this study are the studies published in other languages not included may have missed out recently published studies on this topic and limited number of studies especially for the nursing education context. This systematic review identified a number of tools or methods of nursing communication to improve communication in different countries. The culture influence how the communication skills are. RR value 57.1% indicates that the tools or methods influence the communication in the country. However, further tool evaluation of the measures strongly recommended.

1.9. Conclussion

This systematic review provides an overview the tools and methods on nursing students communication and may help researchers to identify the appropriate tools or methods for research purpose.

The other hand, this study have gaps in the methodological quality of studies on tools or methods and quality of their result. I recommend that future evaluations studies on methods should apply for therapeutic communication to enhance quality in nursing education.
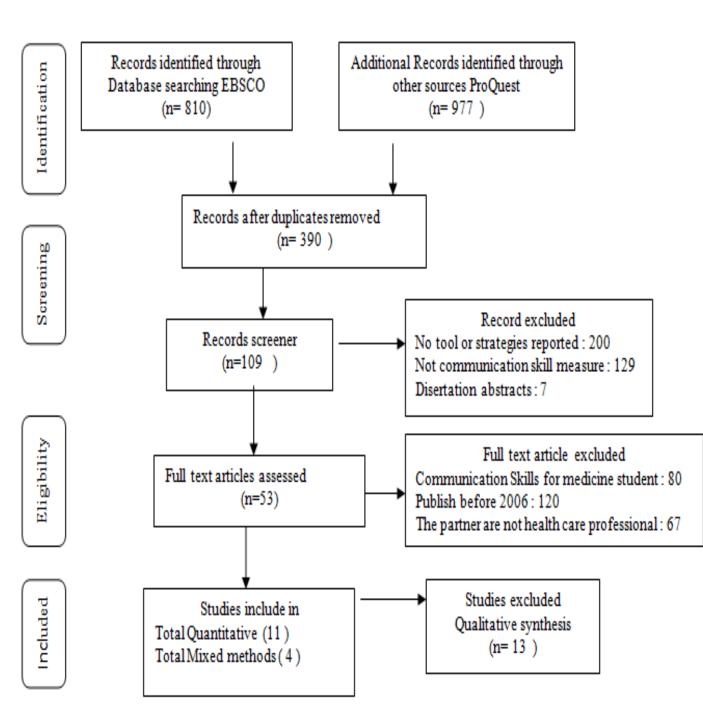
1.10. Tables

Table 1: Flow diagram of reviewing prosess according to PRISMA

Table 2: Description of studies for the tool or strategis to evaluate communication skills

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
1	A Mixed-Methods, International, Multisite study to develop and validate a Measure of Nurse-to-Physician Communication in simulation. [3]	This study examined the reliability and validity of the isbar inter professional communication rubric (iicr).	Isbar inter professional communication rubric (IICR) The study used a multisite, descriptive design with a mixed-methods approach	A convenience sample of students (N =229) The rubric was used to evaluate 100 students in the United States (26 in associate degree in Nursing programs [ADN]; 74 in baccalaureate programs [BSN]) and 129 ADN students in China. 20 nurse educators from the five schools who evaluated the student participants in simulation participated in the Qualitative portion of the current study.	The correlation coefficient among all nurse educators using the rubric was rs = 0.79. The estimated internal consistency reliability of the nurse educators in the United States on BSN students (α = 0.70) and ADN students (α = 0.73) was higher than that of the nurse educators in China (α = 0.58). The median score for the communication performance of students in China was 13.0 (interquartile range, IQR = 2.5). The ADN students in the United States had a median performance score of 12.0 (IQR = 3.1); the BSN students had a median score of 10.8 (IQR = 3.6) No significant differences were obtained (p = 0.119) between ADN and BSN students in the United States.

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					Qualitative Three major categories reflecting the topics discussed in the interview were derived from the data: a) overall acceptability of the tool, b) ease of use, and c) perceptions of the importance of communication skills for patient safety. All 20 participants rated their experience using the rubric positively.
2	Teaching Nursing and Allied Health Care Students How to "Communicate Care" to Older Adults. [10]	The purpose of this research was to evaluate student perceptions of a 5-week TC module that was part of the foundations coursework for baccalaureate nursing	Therapeutic Communication (TC) module. The 20-item questionnaire used to evaluate the TC module This study quantitative Independent sample t-tests were used to compare responses between nursing and AHC students on the quantitative.	This study evaluated baccalaureate nursing (n =35) and allied health care (AHC) (n=25) students' perceptions of a 5-week	1. Nursing/allied health care (NSG/AHC) student responses to TC survey: What helped you improve your therapeutic communication skills? Means with the same subscript were significantly different at $p < .05$. df =0.58; η^2 .09 to .18, a medium-to-large effect size. 2. Nursing/allied health care (NSG/AHC) student responses to TC survey: Rate the items listed about the value of the video inter ACTIVE lab where you were video recorded Means with the same subscript were significantly different at $p < .05$. df=0.58; η^2 .18 to.34, a large effect size 3. Nursing/allied health care (NSG/AHC) student responses to TC survey: Think about the confidence you had in your ability to communicate therapeutically with patients/clients at the very beginning of the therapeutic communication module and your ability now. Means with the same subscript were significantly different at $p < .05$. df=0.58; η^2 .06 to.18, a

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					medium-to-large effect size. To use TC skills in their future work as health care professionals, significantly more nursing students (M = 4.83, SD = .75) than AHC students (M = 3.92, SD = 1.26) said such was likely. Not surprisingly, there was a sizeable and significant gap between nursing students' view of how important the changes in their TC skills were as a result of the program (M = 4.23, SD = .65) compared to the opinion of AHC students (M = 3.04, SD = 1.02). Consistent with that response, most nursing students felt the training was useful or extremely useful (M = 4.71,SD = .62) in contrast to their AHC colleagues (M = 3.20, SD = 1.15). The difference was statistically significant.
3	Development and Validation of a Collaborative Behaviors Objective Assessment Tool For End-of-Life Communication. [2]	The objective of this project was to develop and validate observational assessment tools to measure Specific inter professional competencies in medical and nursing students related to end-of-life discussions.	A literature search for evidence-based guidelines and competencies and focus groups with an expert panel of nurses and physicians were used to outline best collaborative practice behaviors for nurses and physicians in an end-of-life decision making simulation. The panel used these practice-behavior checklists to rate videotaped student scenarios and then refined the checklists for validity and clarity until the tools had acceptable inter-rater reliability.	Nursing and medical students	For the medical CBOAT we found 85% agreement between raters, with an overall kappa of 0.744 and Cronbach's alpha of 0.806. For the nursing CBOAT there was 81% agreement, with a kappa of 0.686 and Cronbach's alpha of 0.845. The resulting instruments provide a helpful guide for teaching inter professional sessions related to the end of life and measuring student outcomes using an objective strategy.
4	An Evaluation tool to measure	The aim was to develop a tool that educators can	Inter-Professional Critical Incident Verbal Report Evaluation Tool	47 baccalaureate junior-level students in a medical-	That the tool can measure a significant improvement in verbal reports (t= 9.72,

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	interdisciplinary critical incident verbal reports.[5]	use to evaluate whether student interdisciplinary critical incident reports are effective.	Using a paired t-test.	surgical nursing course were asked to participate in this study, which was completed during a nursing laboratory as a learning activity. Students were informed the study would have no impact on their grades. 4 students chose not to participate, 2 students were absent on one of the two taping days, and data from 5 students were lost due to technical problems with the tape recorder. Thirty-six complete data sets were included in the analysis	df= 35, p < .000). Inter rater reliability was 94.8 percent The maximum score on the tool was 15. In the pretest, scores ranged from 2 to 11, with a mean of 6.25 (SD= 1.81). In the posttest, scores ranged from 5 to 15, with a mean of 10.86 (SD= 2.53). The overall gain in scores was 4.61 (SD= .83). Using a paired t-test, students Showed a significant improvement in their verbal reports (t = 9.72, df= 35, p < .000). These results support the use of this tool for measuring nurse-to-physician critical incident reports. The percent of agreement on subsequent testing ranged from 77.4 percent to 87.5 percent. The tool can be used to identify weaknesses within a report so that students can receive specific feedback about their communication. As more interdisciplinary training occurs, this tool might be used to promote discussion between disciplines.
5	Assessment of an Inter professional Online Curriculum for Palliative Care Communication Training. [18]	This study identifies the COMFORT communication curriculum as an effective online curricular tool to teach multiple disciplines	COMFORT are Communication; Orientation and Opportunity; Mindful presence; Family; Openings; Relating, and Team	Modules were completed and assessed by 177 participants, including 105 nurses, 25 physicians, and a category of 'other' disciplines totaling 47	Self-reported Confidence in Communication from Pre survey Data Nurses reported the greatest confidence in communication that attempted to recognize the individuality of patients (mean = 5.0), with least confidence in talking with patients and families about

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		specific palliative care communication.	Using SPSS 22.0 (IBM, Armonk, NY) statistical software, the nonparametric Kruskal-Wallis test was conducted to ascertain specific group of difference at item level.		treatment (mean = 4.6) and with information beyond medical information (Mean = 4.6). Physicians had greatest confidence in their ability to help patients understand diagnoses (mean = 5.0) and were least confident in understanding the patient's life prior to the visit (mean = 4.4). Clinicians falling into the 'other' category were less confident overall, particularly in discussions about pain and symptoms and understanding the patient's Life (mean = 4.3). Cultural Differences and Literacy in Communication from Pre survey Data The majority of physicians (80%) reported that cultural differences with patients and families reduce the quality of care they deliver, with more than one-third of nurses (47.6%) and 'other' clinicians (42.9%) reporting similarly. Half of all nurses' observer conflict caused by cultural differences between patients and clinicians occurring 50% of the time or more, with 40% of physicians reporting these observations. Communication with family members. The majority of nurses (46.4%) reported that communication with family members is primarily psychosocial in nature.

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					Post curriculum evaluation Nurses provided the highest evaluation scores overall (mean = 4.53), followed by physicians (mean = 4.39) and then other disciplines (mean = 3.94)
					Average Percent Correct On Posttest Knowledge Quiz. Nurses performed best on the Communication module (86%), with other disciplines performing best on the knowledge quiz for the Family Communication module (89%), and physicians scoring highest on the Team Communication module (average score 92%).
					Conclusions: This study identifies the COMFORT communication curriculum as an effective online curricular tool to teach multiple disciplines specific palliative care communication
6	Psychometric Testing of a Simulation rubric for Measuring Inter professional Communication. [12]	The aim of this study was to establish psychometric testing of the Indiana University Simulation Integration Rubric (IUSIR), a tool for measuring inter professional communication in simulations.	The resulting tool consists of six measures of individual communication and six measures of team communication. Each measure provides for three different levels of performance. ANOVA to test for difference between the two levels of students was used to establish validity.	A sample of 229 pre-licensure bachelor of science in nursing students and 66 pre-licensure first- and second-year medical students was evaluated using the IUSIR Individual Nursing Juniors 117 Nursing Seniors 112 Medical First-Year 34	The scoring schema is a Likert scale from 1 to 5 and the option for "not applicable." Inter rater agreement across four scenarios ranged from 65 percent to 86 percent, while the Cronbach's alpha across the entire tool was .83. Correlation coeffients among the four constructs ranged from .53 to .57. The Cronbach's alphas for the individual items were .82 for all nursing students ($n = 229$) and .86 for

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.				Medical Second-Year 32 Team Nursing Junior/Medical First-Year 34. Team Nursing Senior Medical Second-Year Team 32	all medical students (n = 66). Cronbach's alphas for team items in the nursing and medicine teams (n = 100) were .79 as scored by nursing and .90 (n = 64) as scored by medicine. For use in simulated environments where individual and team communication skills are measured, the internal consistency of the IUSIR is supported.
					Inter rater reliability Inter rater reliability for individual nursing and medical student individual scores was 92 percent (n = 91). Inter rater reliability for student teams on team scores was 94 percent (n = 59).
					Validity For nursing scores on individual items, senior-level students performed significantly better than junior-level students, F (1, 228) = 34.308, p < .000. In addition, senior-level team scores on team items were significantly higher than junior level team scores, F (1, 99 = 4.300, p < .001.
					The IUSIR is a reliable and valid tool to measure inter professional communication competency in nursing and medical student teams engaged in simulation.
7	Nursing Students' Self-Evaluation Using	Using three outcome measures	Students' communication skills were measured by the communication	Forty sophomore nursing students enrolled in the	The experimental group showed higher skill competency (p< 0.001),

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	a Video Recording of Foley Catheterization: Effects on Students' Competence, Communication Skills, and Learning Motivation. [15].	of competency of procedure, communication skills, and learning motivation, the effects of self-evaluation using a video recording of the student's foley catheterization was investigated in this study.	assessment Tool (CAT), which was originally developed by Makoul, Krupat, and chang (2007). The original CAT includes 15 items and uses a 5-point Likert scale (1 = poor; , 2 = fair, 3 = good; 4 = very good, 5 = excellent). A paired t test analysis. Significant differences were found between the control and experimental groups in all three outcome measures;	fundamentals of Nursing course were recruited from a 4-year nursing school located in Kyung-gi province, Korea. Of the 40 students, 20 were assigned to an experimental group and 20 to a control group.	communication skills (p< 0.001), and learning motivation (p= 0.018) compared with the control group. The control group at the posttest, which was conducted 8 weeks after the pretest. The difference in the mean scores for communication skills between pretest and posttest was +0.8 (pretest, 23.8; posttest, 24.6) in the control group and +5.4 (pretest, 24.6; posttest, 29.9) in the experimental group. This finding suggests that students in the experimental group continuously improved their communication skills even after the pretest. This research was conducted in one nursing school with a limited number of students, replication of this method in teaching other nursing skills is recommended to allow for greater generalization of the findings. The small number of participants who were all from one educational institute may limit the generalizability of the study results.
8	Role-Play Using SBAR Technique to Improve Observed communication Skills in Senior Nursing Students. [8]	The purposes of this research were: 1. To determine whether the type of skilled communication instruction (didactic versus didactic plus role-play) influences	The SBAR steps for the communication performance when dialogue between the nurse and the health care provider. A t test of the means was used. 115 students voluntarily agreed to participate. One hundred four students	The target population was senior nursing students in traditional and second-degree nursing programs 156 students	For all of the students, the mean score on the Skilled Communication Knowledge increased from 62.1 (SD = 14.5) to 85.2 (SD = 10.5). The mean change in knowledge (M = 23.1, SD = 16.1) reflects a statistically significant difference as measured by paired sample t test analysis (t = 14.5, $p <$

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		nursing students' knowledge of skilled communication. 2. To determine whether the type of skilled communication instruction influences nursing students' skilled communication performance in simulated experiences.	participated in the Communication Knowledge Pretest-Posttest, and 109 students participated in the SBAR Observation		0.001). This finding reflects a large effect size of –1.59, as was anticipated with the communication knowledge research aim. The summed total on the five components of performance resulted in scores ranging from 0 to 5. The control group ($n = 55$) demonstrated a mean first observation score of 3.6 ($SD = 1.1$), whereas the intervention group ($n = 54$) demonstrated a mean first observation score of 4.1 ($SD = 0.9$). A one-tailed t test for unequal variances was used to address the second research question and found this to be a statistically highly significant difference ($t = –2.6$, $p = 0.005$). This finding represented a moderate effect size of 0.56. In support of the research hypothesis, students who received role-play instruction in addition to didactic instruction performed significantly better on the skilled communication first observed behavior than those students who received didactic instruction alone. These results demonstrate a statistically significant difference between the groups ($x2 = 12.8$, $p = 0.01$). As summarized, chi-square analysis demonstrated no statistically significant difference in compliance with items 1, 2, 4, and 5 between the control and intervention groups. Observed behavior 3 demonstrated that

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–					the intervention group ($n = 35$, 64.8%) performed significantly better ($x2 = 5.79$, $p = 0.02$) than the control group ($n = 23$, 41.8%). This behavior necessitated that students identify the treatment to date regarding the patient they were calling about. It is interesting to note that this treatment information was not stressed in the didactic portion of the training for either group but that the role-play group performed better on demonstration of this component of skilled communication. Conclusion This study demonstrates that in addition to didactic instruction, participating in a role-play exercise using a standardized communication technique such as SBAR may improve communication performance.
9	Improving Nursing Students' communication Skills Using Crew Resource Management Strategies. [1].	This program included a rubric for assisting students in communicating with health care providers, which appeared to be easier to use than SBAR.	NCRM—Nursing Crew Resource Management as a training method to improve nursing communication skills. This project was implemented during the 14-week winter semester for all senior-level baccalaureate degree nursing students enrolled in the Leadership and Management course method observation	Students (n= 28), faculty or staff (n=6), and others (n=3)	Respondents strongly agreed that the CRM concepts can be applied to nursing care to reduce harm to patients ($M = 4.7$, $SD = 0.46$). Respondents agreed they developed new skills ($M = 4.4$, $SD = 0.60$) and that they would use those skills ($M = 4.4$, $SD = 0.55$). They also rated the overall program ($M = 4.5$, $SD = 0.56$) and the effectiveness of the teaching strategies highly ($M = 4.6$, $SD = 0.55$). Ninety-seven percent agreed that this training should be

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			A heavy emphasis was placed on the communication tools in the workshop, including the 3 Ws (What I see, What I'm concerned about, What I want) and the Four-Step Assertive Communication Tool: (a) get attention, (b) state the concern "I'm uncomfortable with...," (c) offer a solution, and (d) pose a question (Sculli & Sine, 2011).		offered to other clinicians ($M = 4.6$, $SD = 0.54$), and 81% agreed they would be interested in receiving additional training on the NCRM concepts ($M = 4.3$, $SD = 0.77$). A version of CRM—nursing crew resource management—was implemented in a group of senior undergraduate nursing students. Students were satisfied with the program, and in a subsequent simulation they demonstrated the ability to use the communication techniques learned
10	Effects of Peer Review on Communication Skills and Learning Motivation Among Nursing Students. [16].	The purpose of this study was to investigate the effects of video-based peer review on communication skills and learning motivation among nursing students.	- Communication Assessment Tool. It consists of 15 items representing verbal and nonverbal communication, such as caring attitudes and respect for patients during the communication. - Learning motivation - Experience of peer review Descriptive statistics, an independent t test, and a paired t test were used.	The participants were 47 sophomore nursing students taking a fundamentals of nursing course at a nursing college in Korea.	Before the intervention, the communication skills in the intervention and control groups were 34.17 ± 68.55 and 36.30 ± 5.60, and the scores for learning motivation were 106.54 ± 10.27 and 106.65 ± 9.69, respectively. There was no significant difference in communication skills ($t = 1.018$, $p = 0.315$) or learning motivation ($t = 0.038$, $p = 0.970$) between the two groups. After the intervention, communication skills in the intervention group (46.54 ± 4.72) were significantly higher than in the control group (37.83 ± 6.25) ($t = -5.411$, $p < 0.001$). Learning motivation was also significantly higher in the intervention group

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					(121.08 ± 6.02) than in the control group (105.70 ± 9.27) ($t = -6.777$, $p < 0.001$). Although communication skills tended to increase after the intervention in both groups, this increase was statistically significant only in the intervention group($t = -5.808$, $p < 0.001$). Learning motivation also increased significantly in the intervention group ($t = -5.432$, $p < 0.001$), but there was a slight, but not significant, decrease in the control group ($t = 0.363$, $p = 0.72$). In the intervention group, the item with the highest score was "Use open questions" (3.63 ± 0.88), followed by "Encourage the patient to ask questions" (3.58 ± 0.78) and "Treat the patient with respect" (3.58 ± 0.72). In the intervention group, 67% answered that peer review was helpful in identifying problems in communication with the patient, 54% felt more comfortable with peer evaluation compared with evaluation by instructors, and 41% recognized peer review as interesting work. However, negative student feedback about peer review included 20% who were embarrassed because they were evaluated by their classmates, 13% who thought peer review was not objective because they evaluated their own friends, and 13% who stated that the time spent on the peer review was too long.

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11	Impact of an Inter professional Communication Course on Nursing, Medical, and Pharmacy Students' Communication Skill Self-Efficacy Beliefs. [6]	To describe an inter professional communication course in an academic health sciences center and to evaluate and compare interpersonal and inter professional communication self-efficacy beliefs of medical, nursing, and pharmacy students before and after course participation	Bandura's self efficacy

Kruskal-Wallis, Mann-Whitney, and Wilcoxon signed rank tests were employed to examine matched pre assessments and post assessments within colleges and to explore differences in self-efficacy beliefs across colleges | First-year nursing (n=36), first-year medical (n=73), and second-year pharmacy students (n=83) | Among these differences, pharmacy students, in particular, noted significantly lower self-efficacy beliefs compared to other disciplines regarding their ability to communicate effectively with healthcare team members (p=0.014), use patient-engaging strategies to reach common ground when communicating (p=0.001), actively involve patients in health care plans (p=0.032), and effectively contribute as a member of a health care team (p=0.001).

Pharmacy students perceived relatively less confidence than their colleagues in medicine and nursing in their ability to develop positive interdependent relationships with other health care team members (p=0.020), and in their ability to use patient engaging strategies to reach common ground (p=0.039). Medical and pharmacy students noted a lower understanding compared to nursing students of the roles of other health care team members (p=0.017). Pre-post matched analyses of pharmacy and medical student responses were all significant for improvement in Self-efficacy (p=0.001). |
| 12 | Innovative Approach to Teaching Communication Skills to Nursing Students. [25]. | Assessed the effectiveness of a learner centered simulation intervention designed to improve the | The standard the standardized grading tool evaluated students' skills | At the beginning of the semester, 41 students were recruited in their first clinical course of the nursing curriculum. Twenty- | Inter rater reliability (Pearson's R) was 0.71

The intervention group performed better than the control group in all four |

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
		communication skills of pre professional sophomore nursing students.	and abilities related to communication with a family member. Table grading tool, developed by Lorin and his colleagues (2006) and modified for this project, evaluated communication skills in four teaching domains: how to introduce yourself, how to gather information, how to impart information, and how to clarify goals and expectations. Both the intervention group and the control group were evaluated at the end of the semester in a testing session with a standardized family member. Three standardized family members were used for all 41 assessments.	one students from the class volunteered for the control group, and a nonrandomized group of 20 students, mainly from the investigators' two clinical groups, volunteered for the intervention group.	tested domains related to communication skills, and the difference was statistically significant in the domain of gathering information ($p = 0.0257$). Statistically significant positive correlations ($p < 0.05$) existed between gathering information and imparting information, gathering information and clarifying goals and expectations, and imparting information and clarifying goals and expectations. A significant correlation did not exist between introduction and the other three domains.
13	Evaluating a nursing communication skills training course: The relationships between self-rated ability, satisfaction, and actual performance. [11]	To evaluate the relationship between student self rating of their own ability and their satisfaction with a nurse training course as compared with an objective measure of communication skills.	Mixed method Quantitative data was analysed using SPSS 15.0 for Windows. Correlation matrices and regression analyses were conducted to determine the relationships between performance, satisfaction and self-rated ability, and between expectation of satisfaction and actual satisfaction. Related sample t-tests	74 students also completed the pre-course assessment. Ninety two percent of the full sample was female (191) and 8% was male (17). The mean age of students in the course was 21; the youngest student was aged 18 years and the oldest 49 years.	Results indicate that these two measures are significantly correlated such that an expectation of satisfaction precourse predicted 14% of the variance in actual satisfaction ($R^2 = 0.144$; $F_{1, 72} = 12.135$, $p = 0.001$). The relationship between satisfaction, self-rated ability, and performance. Level of course satisfaction was matched to final examination marks for 209 students These two outcomes were not significantly correlated ($r = -0.047$, $p = .498$). Student ratings of the course

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
			were conducted to determine the effect of the course on self-rated ability. Qualitative data was analyzed using content analysis, allowing for the triangulation of data collected in the study.		(i.e.responses to individual satisfaction items) were entered simultaneously into a multiple regression analysis to evaluate their unique contribution to predicting examination marks. Student evaluations of the course were not significant predictors of marks obtained in the examination, with student ratings accounting for only 6.2% of the variance in examination marks ($R^2 = 0.060$; F4, 68 = 1.094, p = 0.366). Pre- and post-course self-rated ability data was available for 74students in the present sample and was linked to performance on the formal assessment. As with satisfaction, performance on the formal assessment was not significantly correlated with self-rated ability pre-course (r = - 0.106 p = 0.373) or post-course (r = 0.038 p = 0.752). The relationship between individual items assessing self-rated ability post-course and examination mark was examined using a multiple regression analysis. Self-rated ability items were not significant predictors of performance as measured by examination mark, with self-rated ability accounting for only 6% of the variation in examination marks ($R^2 = 0.060$; F 4, 68 = 1.094, p = 0.366). The relationship between self-rated ability and student satisfaction ratings post-course were examined for the sub-sample of 74 students who completed

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
3					both parts of the questionnaire. Table 3 presents the Pearson product correlation matrix between student satisfaction ratings and self-rated ability. As shown, self-rated ability and students' rating of the course were significantly correlated on a number of dimensions and on total scores for each outcome.
14	The Use of Video Role Play for Teaching Therapeutic Communication Skills. [7]	The aim of this study was to evaluate the usefulness of a self-developed video using role play in facilitating teaching and learning associated with therapeutic communication.	Mixed methods Descriptive statistics were used to analyse results in Sections 1, 2 and 3 while the open-ended question in section 4 was analyzed using content analysis. Videos were produced which demonstrated the fundamental communication skills of listening, understanding, exploring and comforting/supporting, using role play. These were shown to Year 1 nursing students in tutorials over four weeks. Their usefulness was evaluated using a self-developed questionnaire	All first-year students of the Bachelor of Science in Nursing. The students' age ranged from 19 to 26 years (mean =20, SD = 1.3). Sixty-five (90%) of them were female. Among 74 questionnaires distributed at the end of the fourth tutorial, 72 were returned, with a 97% response rate.	Chronbach's alpha coefficient was used to analyse the internal consistency of the questionnaire. The alpha values for sections 1 2 and 3 were 0.93, 0.87 and 0.77. The students found using the videos to be very useful (27%) or useful (68%). A majority of students found the videos improved their understanding of the communication skills they were learning to use (93% strongly agreed/agreed). 89% of the students strongly agreed/agreed that the videos provided useful examples for role-playing of communication skills and 74% stated that the videos were a useful trigger for their own role playing. Students also felt that the videos helped them learn from other students' role playing (87% strongly agreed/agreed). The most of the students suggested that these videos be used in future teaching in therapeutic communication (90%). The majority of students (96%) suggested that more video clips need to be developed in the future to show the

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
					use of different communication skills in different nursing contexts. Analysis of open-ended questions revealed that 23 of the students (n= 49, 68%) thought there was no need to revise the videos as they considered them to be 'good, clear, understandable, relevant, concise, reflecting communication skills'. one-third of the students (n = 23, 32%) suggested the videos needed to be improved in the areas of (i) sound quality; (ii) updated content, e.g. 'cover a wider aspect and show more examples'; and (iii) choosing better actors/actresses
15	Teaching Therapeutic Communication VIA Camera Cues and Clues: The Video Inter-Active (VIA) Method. [9]	1. How do scripted and videotaped role-playing activities of simulated patient scenarios, to which students respond on videotape, influence student learning of therapeutic communication skills? 2. What kind of technology would help accomplish the goal of providing practice opportunities for students to interact with these simulated patients?	VIA (Video Inter Active) Mixed Method A classic experimental design (quantitative approach) was used to determine the relationship among communication variables and provide comparisons between the experimental and control groups. Qualitative methods were used to capture participants' experiences with the Video Inter-Active (VIA) intervention (phenomenological approach). Promotions and HSCI200 Professional Practice Foundations courses. Institutional Review Board approval was obtained for the study, and the participants were informed that there were no known risks associated with participation in the study.	40 students (experimental group = 20, control group = 20) were randomly selected to participate in the study.	*Quantitative Analysis.* The differences between the experimental group and control group in the means for the nonverbal techniques data set and the communication blocks data set. The experimental group means were higher for the nonverbal techniques data set (experimental group mean = 17.389; control group mean = 9.889) and lower for the communication blocks data set (experimental group mean = 1.722; control group mean = 4.944). Levene's test for analysis of the nonverbal techniques data set is significant at 0.001. The *t*-test results. Both of the separate *t* tests, for the analysis of the nonverbal techniques data set and for the analysis of the communication blocks data set,

E No	Name of Journals	Purpose of study	Instrument/ Methods	Population	Result
					were significant. The analysis of the nonverbal techniques data set was significant at the $p = 0.001$ level, whereas the analysis of the communication blocks data set was significant at the $p < 0.0005$ level. *Qualitative Analysis.* Data collected using qualitative methods (question-naire and focus groups) indicated that students in the experimental group demonstrated improvements in learn-ing outcomes. Two significant themes emerged from the questionnaire responses. The first theme was that the majority of the students noted that the VIA process heightened their awareness of their use of nonverbal skills.

Table 3: Overview of the communications skills measurement

No	Tool or strategis to evaluate communication	Significancy		P Value	Mean	Kappa	Crobach Alpha	df	SD	*t*	Internal consistency	Reliability	Validity	Country
		Sig	No Sig											
1	IICR	1	0								α = 0.58 α = 0.70	0.79	0.92	China & US
2	TC	1	0	< 0.05	4.83			0.58	0.75		-	-	-	US
3	CBOAT	-	-	-	-	0.686	0.845	-	-		-	-	-	Virginia
4	Inter-Professional Critical Incident Verbal Report	1	0	0.000	-	-	-	35	0.83	9.72	-	-	-	Ohio
5	COMFORT	-	-	-	5	-	-	-	-	-	-	-	-	California
6	Psychometric Testing	1	0	< 0.01	-	-	0.83	-	-	-	-	-	-	Indiana
7	CAT	1	0	< 0.01	-	-	-	-	-	-	-	-	-	Korea
8	SBAR	1	0	< 0.01	85.2	-	-	-	14.5	14.5	-	-	-	Washington
9	NCRM	-	-	-	4.3	-	-	-	0.77	-	-	-	-	Michigan
10	Peer Review	1	0	0.001	-	-	-	-	-	- 5.43	-	-	-	Korea
11	Bandura's self efficacy	1	0	0.014	-	-	-	-	-	-	-	-	-	Tennessee
12	The standard the standardized grading tool	1	0	0.0257	-	-	-	-	-	-	-	0.71	-	Virginia
13	Evaluating a nursing communication skills training course	1	0	0.001	-	-	-	-	-	-	-	-	-	Australia
14	Use of Video Role play	-	-	-	-	0.93	-	-	-	-	-	-	-	Singapore
15	VIA (Video Inter Active)	1	0	0.001	17.389	-	-	-	-	-	-	-	-	Colorado

Grouping For Meta analysis

Table 4: The Effectiveness Significant Tool or Strategies between years 2006 – 2015

Year	2006			2007			2010			2011			2013			2014			2015		
Tool / Strategies	K	N Sample	p value Sig	K	N sample	p value Sig	K	N sample	p value Sig	K	N sample	p value Sig	K	N sample	p value Sig	K	N sample	p value Sig	K	N sample	p value Sig
IICR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	229	<0.01
TC	-	-	-	1	60	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CBOAT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Inter-Prof Critical inct Verbal Report	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	47	0.000	-	-	-
COMFORT	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	177	-	-	-	-
Psychometric Testing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	229	<0.01
CAT	-	-	-	-	-	-	1	40	<0.01	-	-	-	-	-	-	-	-	-	-	-	-
SBAR										1	156	<0.01	-	-	-	-	-	-	-	-	-
NCRM	1	36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peer Review	-	-	-	-	-	-	-	-	-	1	47	0.001	-	-	-	-	-	-	-	-	-
Bandura's self efficacy	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	192	0.001	-	-	-
The standard the standardized grading tool	-	-	-	-	-	-	1	41	0.057	-	-	-	-	-	-	-	-	-	-	-	-
Evaluating a nursing communication skills training course	-	-	-	-	-	-	1	208	0.01	-	-	-	-	-	-	-	-	-	-	-	-
Use of Video Role play	-	-	-	-	-	--	-	-	-	1	74	-	-	-	-	-	-	-	-	-	-
VIA (Video Inter Active)	1	40	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

K= Number of studies, n : sample, p value : significance level

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Analyze Meta-Cochrans' Q and RR

Table 5: Outcomes Heterogeneities between Studies Meta-Cocran's' Q for Tools or Methods To Evaluate Communication

n	Cochran's Q	df	p Value
10	7.200	2	.027

Table 5 showed that effectiveness tool or Strategies between Countries and Implementation Years is Asymsig .027; <0.05, with Meta-Cochrane's analysis. That means the tools or methods exactly have heterogeneous at all in this study conducted with 10 studies.

Table 6: Analysis Precision Level (p Value 0.05 and 0.01) and RRs to The Country Implementation and Years Implementation

		p Value sig .99%	Sig 95%	p value & Value X^2	RRs
Countries	Non Asia	4 (57.1%)	3 (42.9%)	0.175 (39.4%)	57.1%
	Asia	3 (100)	0 (0%)		
The Currently of Years Implementation	< 2010	2 (100%)	0 (0%)	0.490 (21.3%)	150%
	> 2010	5 (88.8%)	2 (22.2%)		

Table 6 showed Relative Risk (RRs) 57.1% indicated that the tools or methods influence the communication skill in a country and the tools and methods will more applicable 150 times (150%) if the year is higher.

Table 7: Robustness of The Tool or Methods Strategies

Tools/Strategies	p Value	Country
Inter-Professional Critical Incident Verbal Report	0.000	USA
Psychometric Testing	< 0.01	USA
CAT	< 0.01	Korea
Peer Review	0.001	Korea
Training Course	0.001	AUS
VIA	0.001	USA

The best tool or method to evaluate communication skill in nursing students is An Inter-professional Critical Incident Verbal Report (.0000) with Robustness.

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