

Methods of Evaluating Simulation Experiences in Nursing Programs: An Integrative Review

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Abstract

Evaluation of simulation activities in nursing programs is a continuing process and different methods have been applied in order to capture the effectiveness. Most of these methods are subjective in nature and incorporate rubrics and qualitative feedback data of both students and faculty. As simulation becomes a more utilized teaching method in nursing programs, evaluation tools will be necessary to measure outcomes and success of the simulation implementation. The varying methods currently used are not standardized and inter-rater reliability comes into question when using these tools for evaluation of students in the simulation setting. Tools must be refined and work must be done to standardize these in order for educators to quantify the impact on student learning. The aim of this review was to synthesize the varying techniques and rubrics identified in the literature used to measure simulation experiences and discuss its impact on future development of a more standardized tool. Twelve articles were reviewed that identified rubrics to measure and evaluate outcomes and perceptions of simulation experiences. Analysis of the results revealed that there is no universal standardized tool used to measure simulation in nursing programs. Evaluation rubrics do not have inter-rater reliability across educator users and programs. Although the literature suggests a strong positive correlation between the ability of simulation to produce effective learning, the measurement of the significant impact of that learning cannot be quantified. Although a quantitative tool for measurement of simulation does not exist it seems that the current rubrics being used in the simulation arena are becoming more comprehensive and present similar determinants that measure these experiences more effectively. Comparative and longitudinal studies will be needed with the current and developing rubrics across varying curricula and simulation programs to produce a reliable and valid tool to

measure the effect of simulation. Simulation standardization may first have to be achieved prior to a standardized tool to measure it.

Keywords: simulation, nursing, evaluation

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“Human patient simulation (HPS) is becoming ubiquitous in nursing education as a supplement or alternative to traditional clinical education. In order to develop evidence about the efficacy of HPS as a teaching strategy, nurse educators must adequately evaluate student learning from HPS activities. One major barrier to the accurate evaluation of learning outcomes is a lack of evaluation instruments that allow nurse educators to make valid and reliable evaluations of student performance in HPS activities (Adamson & Kardong-Edgren, 2012).” Because of the current faculty shortage and limited clinical placement facilities more simulation activities will need to be implemented in nursing programs to provide students with practical skill acquisition but in order to replace the traditional clinical experience with simulated experience educators must be able to evaluate that simulated experiences provide similar outcomes (Schlairet & Pollock, 2010). Although simulation is widely used throughout the nursing curricula it has not replaced clinical experiences because educators are hesitant, without evidence, sufficient evaluative methods and adequate technology training, to justify simulation as a scientifically effective teaching strategy (Schlairet & Pollock, 2010). The literature is robust in supporting positive faculty and student perspectives related to implementation of simulation and its impact on outcomes among varying nursing programs but inversely so in the ability to describe adequate research to support strong simulation evaluation rubric measurements to ensure reliability and validity in these tools being used (Schlairet, 2011). Simulation instruments have been designed by organizations and individuals representing various nursing programs. These tools have been studied in the simulation environments. The seven tools discovered in the literature developed by organizations, universities and individual researchers include the Lasater Clinical Judgement Rubric (LCJR), the Clark Simulation Evaluation Rubric (CSER), the Seattle University

Evaluation Tool (SUET), the Creighton-Simulation Evaluation Instrument (C-SEI), the Sweeney-Clark Simulation Performance Rubric (SCSPR), the QSEN-based Simulation and Evaluation Rubric (QSER) developed by faculty at Colorado Mountain Community College, and the Objective Structured Clinical Examination (OSCE). This literature review will analyze these tools used to study simulation outcomes and hopefully provide discussion of further research on standardization of simulation evaluation.

Methodology

The databases of CINAHL, OmniFile, Academic Search Premier, and Health Source: Nursing/Academic Edition were searched for literature within a ten year time frame including search terms of “simulation”, “nursing”, and “evaluation” in a combination query. Criteria for the search were further limited to peer-reviewed, English language, and research articles that yielded 531 results. An abstract review was conducted to search for relevant sources. An additional ancestor and hand search was conducted to seek specific articles related to evaluation tools used for simulation. From this search an additional four articles were identified. Articles that did not identify specific evaluation tools used and studied along with simulation activities were excluded. After further reviewing the articles, studies were excluded if the results discussed evaluation criteria on student reflection or perception of a simulation experience. Faculty reflection and perception interview articles were also excluded from those chosen for the literature review. 28 articles were examined. Eleven articles were chosen for the literature review (see Appendix A for Prisma diagram). The articles were then reviewed for elemental themes and a chart showing a comparison of included themes for each evaluation tool was prepared (see Appendix B for theme evaluation tool comparison chart). The results were discussed using the

themes identified in the review. The evaluation tools that showed the highest assessment for a theme were highlighted within that theme.

Results

The design of the simulation evaluation tools were very different among those studied but common themes for evaluation of students emerged from those tools. Suggestions for those commonalities will be discussed later. The emerging themes used in simulation evaluation tools included patient-centered care and assessment, evidence-based nursing interventions and clinical judgment, communication and teamwork, and safety. The synthesized data uncovered that nurse educators are attempting to identify similar attributes of quality among the nursing student population in all the tools used for evaluation but are scoring those attributes with different scales or using various methods to hopefully discover and pass competent new providers. These studies were not done among the same level across nursing programs and it is well known that simulation arenas and equipment can be significantly different from program to program. The results below are grouped into the themes extracted from the literature review. The tools that represented the strongest points and assessment for the theme listed are discussed within that theme below.

Patient-centered Care and Assessment

Every evaluation tool reviewed incorporated the element of patient-centered care and assessment. It is well established that practicing nurses must have a high level of assessment skills in order to correctly intervene with appropriate interventions for the best patient outcomes. Luetke & Bembenek (2012) of Colorado Mountain College identified competency areas that encompassed all themes of the literature review. Their study developed a rubric that defined expected skill achievements with a write in for faculty to list an example of those skills as

observed within the simulation activity (Luetke & Bembenek, 2012). The rubric score for patient-centered care and assessment weighed the heaviest in the grading process. Prior to developing their tool, they identified current rubric's used in the field of simulation and integrated Quality and Safety Education for Nurse (QSEN) competencies into the evaluation language (Luetke & Bembenek, 2012). Using a convenience sample of 19 first year students, a high-fidelity simulation was implemented and evaluated using the Sweeney-Clark Simulation Performance Rubric (SCSPR) and the newly faculty developed QSEN-based Simulation and Evaluation Rubric (QSER). The SCSPR, which measured simulation experience using Benner's theory of novice to expert, was identified by this faculty cohort as the comparative model in which they wanted to base their study on (Luetke & Bembenek, 2012). The findings according to Luetke & Bembenek, (2012) indicated that:

- “Students within the study group have a strong need for an evaluation rubric to be used as part of simulations to provide for structured feedback and to be used as a guide for expected learning outcomes (Luetke & Bembenek, 2012).”
- “The results also demonstrate that debriefing and verbal feedback are essential components to students learning experiences in a post simulation discussion session (Luetke & Bembenek, 2012).”
- “Students stated that self evaluation using the Sweeney Clark rubric was challenging and adversely impacted their perceived nursing self confidence (Luetke & Bembenek, 2012).”
- “In the Sweeney Clark rubric all faculty using the rubric need to have a consensus of what behaviors define each level in order to appropriately evaluate students (Luetke & Bembenek, 2012).”

- “The benefit of the QSEN rubric is that it provides additional areas of teaching outside of standard simulations including the ability to add evidence of a quality improvement project and cultural assessment (Luetke & Bembenek, 2012).”
- “The QSEN rubric allows for faculty consensus and consistency in expected simulation learning outcomes (Luetke & Bembenek, 2012).”

Evidence-based Nursing Interventions and Clinical Judgment

The Lasater Clinical Judgment Rubric (LCJR) as described in Ashcraft, et al. (2013) evaluated senior nursing students in a high-fidelity simulator lab equipped with hospital equipment and computerized charting via a laptop. The scenarios were used to evaluate clinical judgment integrating safety and effective use of assessment for each scenario. This two year study included the Bachelor of Science in Nursing (BSN) students in their final semester prior to graduation (Ashcraft, et al., 2013). The descriptive study’s design included role assignment, pre-simulation study of pathophysiology, post-performance reflection and debriefing activities (Ashcraft, et al., 2013). 86 senior nursing students participated in the first year of the study and 102 students in the second year (Ashcraft, et al., 2013). Students were consented and evaluated formatively in the first half of the semester and summatively in the final half of the semester. Randomization of simulation groups and diagnosis for patients took place initially (Ashcraft, et al., 2013). Objectives for each group was consistent. Each group received 20 minutes from the introduction of the patient via a report and the Lasater Clinical Judgement Rubric was used to score student performance (Ashcraft, et al., 2013). The rubric was assigned values for each section that ranged from 0-3 in the first year and then modified to a point scale of 0-11 for the second year group to avoid negative scoring (Ashcraft, et al., 2013). Student clinical scores based on the rubric improved for both groups between the formative and summative evaluations in

clinical dimension and judgment areas (Ashcraft, et al., 2013). Inter-rater reliability was reported at a high-level after a Cronbach's alpha testing used to rate evaluator error (Ashcraft, et al., 2013). One of the limitations of the study reported dependency of instructor interpretation of rubric descriptors (Ashcraft, et al., 2013). Dimensions measured by this rubric include effective noticing, effective interpreting, effective responding, and effective reflecting (Dillard, et al., 2009).

Communication and Teamwork

Studies using the Clark Simulation Evaluation Rubric (CSER), the Seattle University Evaluation Tool (SUET), and the Creighton-Simulation Evaluation Instrument (C-SEI) speak to all themes of this review but are good examples of the communication and teamwork evaluation strength. In a study done by Adamson & Kardong-Edgren (2012) video archived simulations were rated using the SUET, the C-SEI, and the LCJR. A review board at Washington State University approved the use of the videos via an exemption certificate regarding the use of human subjects (Adamson & Kardong-Edgren, 2012). This study focused on the inter-rater reliability of the evaluation tools (Adamson & Kardong-Edgren, 2012). Nurse faculty participants were solicited to be evaluators and met criteria as follows:

- “Currently teaching in an accredited, pre-licensure, baccalaureate nursing program in the United States (Adamson & Kardong-Edgren, 2012).”
- “A minimum of one year's experience using HPS in pre-licensure, baccalaureate nursing education (Adamson & Kardong-Edgren, 2012).”
- “Clinical teaching or practice experience in an acute care setting as an RN during the past 10 years (Adamson & Kardong-Edgren, 2012).”

The faculty sample participated in orientation meetings to become familiar with the evaluative tools and study particulars (Adamson & Kardong-Edgren, 2012). The participants were sent six video-taped National League for Nursing (NLN) simulation videos and were instructed to watch one video at a time and use the evaluative tools to rate each one (Adamson & Kardong-Edgren, 2012). Over a period of weeks this process was repeated in order to validate the reliability of the tools provided (Adamson & Kardong-Edgren, 2012). “Descriptive statistics, including means and standard deviations of scores assigned to each of the scenarios using each of the instruments, were calculated using all of the data (Adamson & Kardong-Edgren, 2012).” Inter-rater reliability, inter-instrument reliability, test-retest reliability, and internal consistency were measured using various statistical methods. Inter-rater reliability measured 0.858-0.952 (Adamson & Kardong-Edgren, 2012). Test-retest reliability measured 0.849-0.910 with the LCJR showing the highest reliability in this study.

In the study published by Gantt (2010) two cohorts of students were evaluated using the Clark Simulation Evaluation Rubric (CSER) to study elements of the rubric and its reliability of use. Prior to the studies faculty had to meet and discuss the rubric and what determined a passing score within each measure and therefore the researchers did not focus on inter-rater reliability as the aim for the study (Gantt, 2010). Gant (2010) discussed the need for standard patient simulation in order for grading of performance domains to be more objective as it was noted that rating was quite subjective and domains overlapped which led to the question of checklist use versus rubric use for simulation. Performance measures included the themes identified in the review and defined objectives for each domain in a range of not being able to see the whole picture to anticipation of a changing picture at the highest level of the evaluation in each section (Gantt, 2010). Consistent grading practices could only be achieved on 10 of the student

participants only after review and discussion of the faculty took place regarding the same scenario (Gantt, 2010). The study discusses more work needed for evaluative tool to be used consistently among raters (Gantt, 2010).

Safety

According to Alinier, Hunt, Gordon, & Harwood (2006) the OSCE is a reliable and valid method to evaluate simulation activities because the design of the evaluation content can be marked by someone without skill or knowledge in the area and still reliably evaluate performance of participants within the skill simulation stations. “The OSCE included four theoretical stations with questions on safety and nursing practice (Alinier, Hunt, Gordon, & Harwood, 2006).” The highlight of safety in this study where 4 out of 15 testing stations were focused on safety denotes an importance of this element as part of the evaluation. 99 students participated as part of a control and experimental group where an OSCE was given pre and post-simulation for both groups (Alinier, Hunt, Gordon, & Harwood, 2006). The experimental group was exposed to the simulation activities and the control group followed a traditional clinical pathway. “A pretest/post-test design was employed with volunteer undergraduate students from second year Diploma of Higher education in Nursing programme in United Kingdom using a 15-station Objective Structured Clinical Examination (Alinier, Hunt, Gordon, & Harwood, 2006).” This was a two year study using high-fidelity HPS. The results of the comparison in the pre and post simulation tests revealed a significant statistical increase in improvement in students performance on the OSCE after exposure to simulation when compared to those in the traditional clinical exposure (Alinier, Hunt, Gordon, & Harwood, 2006). Although this evaluation tool covered other elemental themes, its specific focus on patient safety was noted.

Discussion

This review reveals several examples of evaluative tools that are used in the simulation arena and its varying strengths including the themes of patient-centered care and assessment, evidence-based nursing and clinical judgment, communication and teamwork, and safety. The varied strengths of each tool discussed include: reliability to assess simulation teaching methods, inter-rater ability to capture non-standard scenarios, and the ultimate use of standard scenarios across nursing programs in order to measure outcomes more scientifically. It is not clear whether one tool can capture all elements needed for practice or even if standardization of patient simulation scenarios would improve the reliability of these tools, but it is clear that some rubrics are more concise and are stronger at capturing certain elements of practice. The literature review does suggest that evaluation is 1) an important part of the simulation process 2) was able to strengthen simulation programs and 3) facilitate discussion among faculty regarding common denominators of objectives that educators are seeking from student performance in simulation. The relationship between which evaluation tool remains the best for use among those out there remains unanswered and more studies are needed to improve or develop a more comprehensive or standardized tool for evaluation of simulation.

Conclusion and Recommendations

There are tools that are being used to measure simulation and evaluate its effectiveness as discussed in this review. The tools being used are few but appear to be well developed using the values of assessment, teamwork, safety, evidence-based nursing, communication, patient-centered care, and clinical judgment.

Implications for Research

One of the problems noted in the literature is that these tools have not been used for a larger random-control trial study in order to test for validity and inter-rater reliability. Simulation is not standardized across programs and tools developed cannot capture completely the effectiveness of simulation when it is measuring differing variations of implementation of simulation. If simulation scenarios were standardized in formal nursing programs it would be a platform for more standardized studies and hopefully a more standardized measurement tool for evaluation could emerge. This would be a large endeavor but would help programs develop simulation strategies more readily and more easily to adopt.

Implications for Education

Funding for simulation seems robust at this time and as educators we need to grab this opportunity to attempt the standardization of simulation in nursing education. By using the tools that have been developed it may be possible to integrate the strong elements from each and create an evaluation rubric that is objective and comprehensive for use in simulation.

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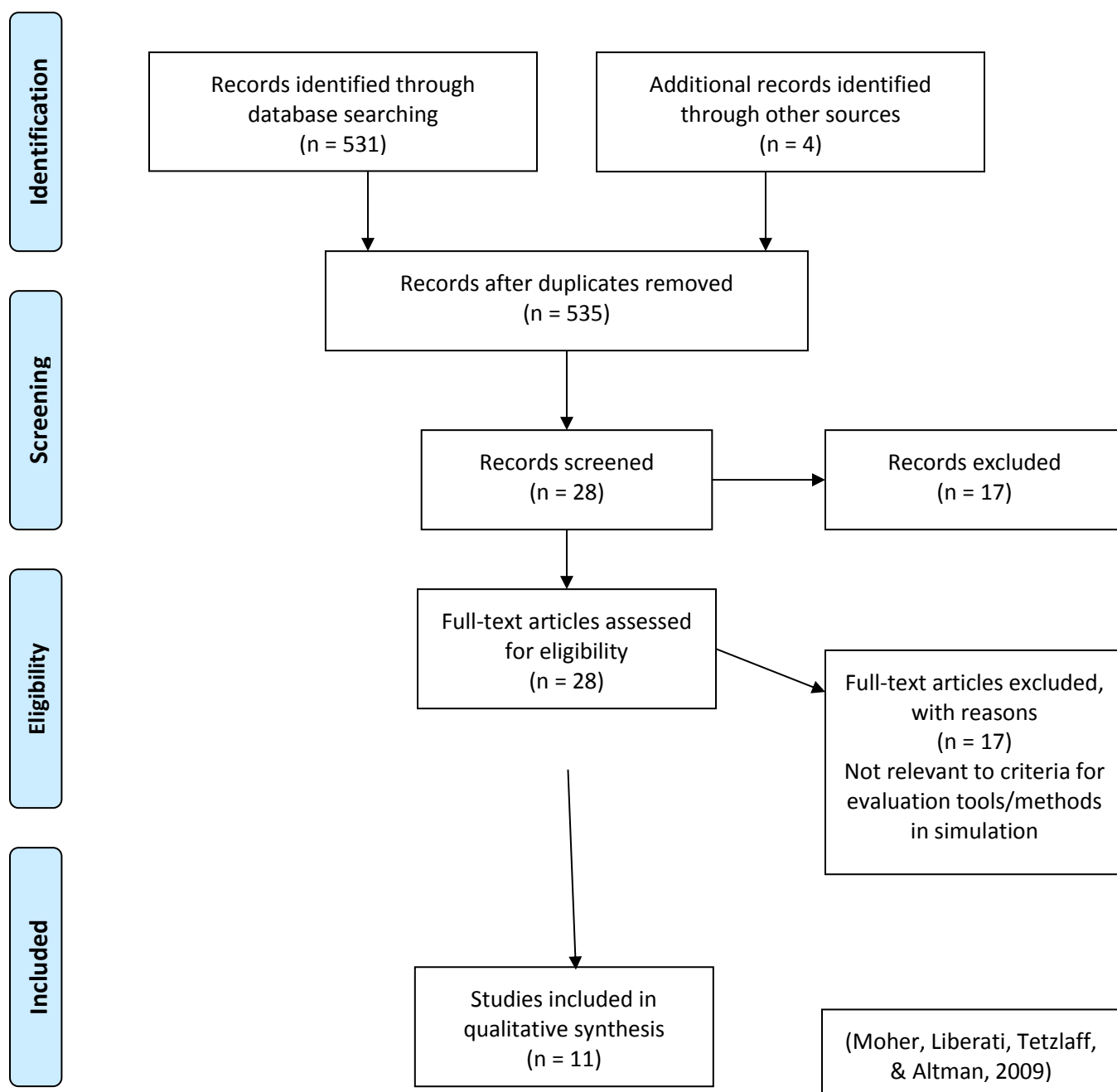
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Appendix A

Prisma Diagram



PRISMA 2009 Flow Diagram



Appendix B

Simulation Evaluation Theme Elements

Simulation Evaluation Elements				
	Patient-centered Care and Assessment	Evidence-based Nursing Interventions and Clinical Judgment	Communication and Teamwork	Safety
Clark Simulation Evaluation Rubric (CSER)	X	X	X	
Lasater Clinical Judgment Rubric (LCJR)	X	X	X	
Sweeney-Clark Simulation Performance Rubric (SCSPR)	X	X	X	X
Colorado Mountain College 2012				
QSEN Based Simulation Evaluation Rubric (QBSER)	X	X	X	X
Objective Structured Clinical Examination (OSCE)	X	X	X	X
The Seattle University Evaluation Tool (SUET)	X	X	X	
The Creighton-Simulation Evaluation Instrument (C-SEI)	X	X	X	

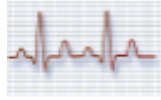
Appendix C

Study	Purpose	Theory	Sample	Methods	Design	Findings	Limitations	Comments
Schlairet, M. (2011). Simulation in an undergraduate nursing curriculum: Implementation and impact evaluation. <i>Journal of Nursing Education</i> , 50(10), 561-568.	To explore the influence of simulation across an undergraduate BSN curriculum	Nursing Education Simulation Framework NESF developed by Jeffries 2005	161 Junior and senior level BSN students enrolled at a regional university in the southeastern US representing traditional and accelerated nursing tracks. Convenience sampling, qualitative and quantitative data	Broad evaluation model, mixed methods approach. Surveys, program eval data, faculty reports, externally validated data collection instruments.	Used NLN Laerdal Multisite simulation group instruments. Demographic form for student characteristics. Faculty data derived from two investigator designed survey instruments	150/161 of student survey packets returned 94% response rate. Student findings: Students found simulation provided active learning in a safe environment.	Convenience sample Group size small Conceptual learning not measured Faculty level instruments designed by in house faculty and not validated by external source	Medium strength d/t convenience sample at one university Support continued integration of sim through curriculum
Gantt, L. (2010). Using the Clark simulation evaluation rubric with associate degree and baccalaureate nursing students. <i>Nursing Education Perspectives</i> , 31(2), 101-105.	To study the rubric to find if it captures more contextual and critical thinking components in simulation scenarios in nursing program	Benner and Bloom	69 adn students and 109 bsn students Grant from CON goal to expand clinical capacity to supplement or replace traditional clinical rotations. 2 nd goal assist comm college faculty to develop experience with simulators and scenarios					Medium strength d/t one cohort convenience sample Clark Simulation Evaluation Rubric: Concept and skills acquisition tool, needs to be further developed so that interrater reliability is achieved
McCaughey, C., & Traynor, M. (2010). The role of simulation in nurse education. <i>Nurse Education Today</i> , 30, 827-832. doi:10.1016/j.nedt.2010.03.005	To evaluate the role of medium to high fidelity simulation in the students prep for clinical practice and to evaluate how it helped students make the transition to staff nurse	NMC proficiency standards expected of third year nursing students provided framework and to extrapolate themes	An entire cohort of adult branch nursing students (153) from higher education institution chosen as a group because they had recently been exposed to simulated learning and were approaching transition from student to staff nurse within study time frame	During simulated learning students were observed through a one way mirror as sessions were videotaped to facilitate a debrief process post scenario. Thirty two item questionnaire with 27 likert scales and five demographic questions to construct profiles of population.	Data from questionnaire coded for a number value and inputted into SPSS. Descriptive stats used to illustrate frequencies and central tendencies mean mode median. Ordinal level of data, no inferential stats. Qualitative data summarized using recurrent themes.	93 completed questionnaires for a 60% response rate. All responders had used the simulator for one 4 hour period in past 8 months. Perceived effect sim has on student prep for role as RN: 72% sim will help them prep for transition in role. 92.5% sim promoted confidence to deal with similar situation as new staff RN.		

Adamson, K., & Kardong-Edgren, S. (2012). A method and resources for assessing the reliability of simulation evaluation instruments. <i>Nursing Education Perspectives</i> , 33(5), 334-339	Describes a successfully piloted method for facilitating rapid psychometric assessments of three simulation evaluation instruments	Kolb theory of experiential teaching and need for ebp eval and practice in nursing education	47 faculty teaching in an accredited prelicensure bsn program in US with one year experience using HPS and clinical or practice experience in acute care as Rn during past 10 years	IRB approval of Washington state University. Exemption from human subject testing as videos were used. Video archived simulation sent to participants	Evaluators used same tool for each video simulation using 3 instruments: LCJR, SUET and CSEI. 22 items of assessment. Instruments selected on their conceptual frameworks. Training given to participants for interrater reliability. NLN standardized scenarios used for sim	Interrater reliability of 3 tests .85-.95 Test Retest reliability consistent Internal consistency cronbach's alpha .96 to .97	Intraclass correlation, convenience sampling, recruits had higher than average interest in simulation,	Med to high strength d/t broad range of faculty used and number of instruments tested. Move toward a more standardized approach to simulation?
Alinier, G., Hunt, B., Gordon, R., & Harwood, C. (2006). Effectiveness of intermediate-fidelity simulation training technology in undergraduate nursing education. <i>Issues and Innovations in Nursing Education</i> , 359-369	Critically appraise value of use of simulation in nursing education by comparing performance in a practical exam of two groups of students	n.a	Three consecutive cohorts of students in second year diploma program. 133 volunteers	One group exposed to scenario based sim training and one was not. Experimental group was hypothesized to do better. OSCE tool used	Pretest posttest experient to compare both groups. Data collected 2 years. Students followed normal curriculum. Students in the experiment group took part in scenario based clinical intensives for two afternoons. Random assignment.	Experimental group did better. Positive impact of sim training	No correlation between confidence levels.	Medium strength d/t convenience sampling. Stressors for some participants included being in a tech environment. Facilitators should have less interaction with participants in scenarios
Ashcraft, A., Opton, L., Bridges, R., Caballero, S., Veasart, A., & Weaver, C. (2013). Simulation evaluation using a modified Lasater clinical judgment rubric. <i>Nursing Education Perspectives</i> , 34(2), 122-126	Describe process of evaluating senior nursing students in sim lab using a modified LCJR	n.a	Study conducted over two years with students enrolled in final bsn semester using HFS. 86 in phase one and 102 in phase 2	LCJR provides numeric grading and clarity for expectations of clinical competency. IRB approval obtained.	Descriptive study. Students assigned to roles in scenarios and concept map along with pathophys prior to simulation. Sim in lab setting with HFS. Phase I was done in first year of study and phase II in second year. Random assignment. Four standard diagnosis used. Two faculty managed scenarios-each faculty evaluated only one student. 20 minute scenarios and debriefing occurred	Clinical judgment profiles increased between phase one and 2 with improvement in summative scores vs formative scoring	Students informing other students about scenarios. Faculty training on equipment. Instructor interp of rubric	Medium strength d/t convenience sample. Good length of time for study and two phases compared.
Dillard, N., Sideras, S., Ryan, M., Carlton, K., Lasater, K., & Siktberg, L. (2009). A collaborative project to apply and evaluate the clinical judgment model	To evaluate effectiveness of faculty development workshop focused on evaluating students clinical thinking during sim. To eval student learning after sim case.	Cervero model for faculty evaluation Tanners clinical judgment model	68 students enrolled in junior adult health course. Sim occurred for all. 25 of those students participated in the clinical portion cardiovascular practicum.	Mixed method. All students exposed to sim. 25 of those did clinical practicum. Each student provided written reflections of care provided to heart failure patients. All faculty completed a	Faculty evaluations of study done and Student evaluations of study done each with their own set of subscales for evaluation.	Positive impact on sim noted. Results based on lessons learned for each group with an understanding that more work needs to be done to incorporate into curriculum.	Small study with very small cohort. All faculty but no number of faculty given. 2 schools collaborated on project and	Weak strength d/t sample and design of evaluation tool. No standardized method for sim has been developed and no

through simulation. Nursing Education Research, 30(2), 99-104	To explore the perceptions of students and faculty regarding impact of sim session on actual clinical practice			workshop evaluation.			qualitative data not compiled systematically	standard method for evaluating sim has been developed
Howard, M., Englert, N., Kameg, K., & Perozzi, K. (2011). Integration of simulation across the undergraduate curriculum: Student and faculty perspectives. Clinical Simulation in Nursing, 7(1), e1-e10. doi:10.1016/j.ecns.2009.10.004	To implement and integrate the use of HFS as a teaching active learning strategy throughout undergrad curriculum and evaluate this instructional technology.	Kolbs experiential Jeffries nursing ed sim framework	151 students Accelerated and traditional BSN program 6 faculty	Mixed methods survey and focus group. Research design.	Sim helped students to better understand concepts Valuable learning experience Help to stimulate critical thinking Knowledge gained can be transferred to clinical setting	Faculty and students both agreed that use of sim beneficial to achievement of learning objectives	Small cohort studied. Students had been exposed to sim throughout program	Weak strength d/t sample and convenience size. Also based on opinions of sim. Supports use of sim in undergrad nursing curricula Adequate resources including funding noted for use of sim in programs
Luetke, R., & Bembenek, B. (2012). Simulation evaluation: A comparison of two simulation evaluation rubrics [PDF document]. Retrieved from QSEN web site: www.qsen.org/docs/2012_conference/QSEN_2012_Luetke.pdf	To evaluate 2 sim eval tools within a planned sim for sound clinical judgement.	Benner's novice to expert QSEN as guide for objectives	19 students in first year of nursing program Planned simulation with group. Sweeney Clarke eval tool based on Benner's theory novice to expert and QSEN rubric developed by faculty used to score each student. QSEN rubric based on QSEN safety objectives and standards.	Comparative study using two rubrics during a simulation at college in Colorado, one developed by faculty. Minimum of 77% on rubric to pass. If no pass student need to repeat sim and below 85 write out self study action plan to learn skills needed for sim One class (n=19) of first year students completed the same two high fidelity simulation scenarios and were evaluated as a group on their performance in each scenario. The students were evaluated with the Sweeney Clark rubric in the first scenario, the QSEN Rubric in the second scenario	Students felt positive about sim and positive about knowing the objectives and evaluation elements prior to testing. Faculty felt that QSEN competencies were a stronger basis for producing the NOF.	Students found that rubric avail prior to sim let them know ahead of time what will be expected. Faculty found it a good framework to evaluate the work and eliminates subjective components. Happens concurrently with sim	Not published. One cohort Faculty interrater reliability. Small group. Unsure if they tested more than one group. Eval tool not widely used, developed by faculty at that college	Weak strength, d/t convenience sample and unable to assess number faculty involved in small study Sim grading rubrics allow faculty to assess students on critical thinking and contextual components of pt care scenarios
Mills, J., West, C.,	Eval first year	Adaptation of traditional	47 bsn students	Unfolding case studies	Case study design conducted	Qual and quant	First year	Supported model

Langtree, T., Usher, K., Henry, R., Chamberlain-Salaun, J., & Mason, M. (2014). 'Putting it together': Unfolding case studies and high-fidelity simulation in the first-year of an undergraduate nursing curriculum. Nurse Education in Practice, 14, 12-17. doi:10.1016/j.nepr.2013.06.003	undergrad students level of satisfaction with new model of teaching clinical skills using case students in HFS	case study method/theory	consenting for sim 3 faculty Two standard patients 5 of above students consented for interview process for qual info	with standard pts in sim hospital setting. Live video taping and debriefing. Each scenario introduced 5 minutes prior to scenario. 15 minutes to complete scenario. Quantitative data using combo of three instruments form NLN and used in other research groups in previous sim studies, permission received from NLN. SSSL, EPQ and SDS.	over 4, 6hr sim session Descriptive stats analyse quant data for survey findings. Transcripts open coded and grouped which produced two themes emerged (being watched and putting it together)	evidence of student satisfaction to support a HFS model of teaching clinical skills. High value of learning experience	students level of experience still building confidence and competence. No authenticity of real hospital environment noted in study text. Comparing of more than one cohort over a period of consecutive years would have given results to analyze	of teaching. Positive scores in all areas of evaluation. Improvement of design elements Funded by university grant
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Championing Standard Simulation Evaluation

Michelle Paik Page MS RN



Introduction

There is a strong positive correlation between the ability of simulation to produce effective learning but the measurement of the significant impact of that learning cannot be quantified

Methods

- CINAHL, OmniFile, Academic Search Premier, and Health Source: Nursing/Academic Edition
- Ten Years
- Search Terms: Simulation, Nursing, and Evaluation
- Peer reviewed and Research Articles
- English Language
- Ancestry and Hand Search
- Integrative Review



AIM

• Analysis of current evaluation tools used to study simulation outcomes in schools of nursing

Main Themes of Simulation Evaluation

- ❖ **Patient-centered Care and Assessment**
- ❖ **Evidence-based Nursing Interventions**
- ❖ **Clinical Judgment**
- ❖ **Communication and Teamwork**
- ❖ **Safety**

Tools Used for Evaluation

- Lasater Clinical Judgment Rubric (LCJR)
- Clark Simulation Evaluation Rubric (CSER)
 - Seattle University Evaluation Tool (SUET)
- Creighton-Simulation Evaluation Instrument (C-SEI)
 - Sweeney-Clark Simulation Performance Rubric (SCSPR)
- QSEN-based Simulation and Evaluation Rubric (QSER)
 - Objective Structured Clinical Examination (OSCE)

Discussion

- Inter-rater Reliability
- Evaluation Strengthens Simulation Progress
- Combination of tools measure successful outcomes for simulation

Conclusion

- Standardized Patient Simulation
- Standardized Simulation Evaluation
- Some tools are stronger than others in capturing varying elements
- More studies needed to determine a more comprehensive and standardized tool that can be used across all nursing programs

