2012 -2013 Assessment Project Final Report

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Assessing Communication, Critical Thinking, Clinical Judgment and Collaboration throughout the Baccalaureate Nursing Program

Abstract

The Simulated Clinical Experience (SCE) provides a unique opportunity to assess student outcomes at specific stages throughout the nursing program. This project included two phases. Phase 1, fall 2012, the development of a standardized scoring rubric to measure communication, collaboration, critical thinking, and clinical judgment (4Cs) in a simulated clinical environment. A process of theory-driven descriptive statements, observations, review, and refinement was used to create the rubric. A total of 75 descriptors were identified, leveled and categorized. Phase 2, spring 2012, a pilot study, collected and analyzed data to investigate the relationship between student performance (as quantified by the scoring rubric) and time of day, simulation order, and semester level.

Phase 2 (the pilot study) identified some of the challenges associated with objective, quantitative assessment of communication, collaboration, critical thinking, and clinical judgment. The leveled rubric showed potential as a standardized approach to assess student progress, the integration of the 4Cs throughout the curriculum, and program outcomes. Ongoing refinement and future psychometric testing are required to validate its use in the simulated and clinical environment.

Phase 1 – Rubric Development

Purpose

The purpose of phase 1 was to develop a standardized scoring rubric for selected clinical outcomes in a Simulated Clinical Experience (SCE). The outcomes assessed were: communication, collaboration, critical thinking and clinical judgment (the 4Cs) at various stages of the nursing program.

Background

The Nursing Department Student Outcome Assessment Plan indicates that upon completion of the undergraduate program the student will be evaluated on four selected clinical outcomes: Communication, Critical Thinking, Clinical Judgment, and Collaboration (4Cs). The acquisition and development of these outcomes occur throughout the nursing program. In addition to the current process of evaluating the 4Cs during clinical placement, the on campus simulation lab provides a unique opportunity to assess student outcomes at specific stages throughout the nursing program. This facilitates evaluation of students' progress as well as the integration of the 4Cs throughout the curriculum. Additionally, this is a resource for university program review.

The International Nursing Association for Clinical Simulation and Learning indicate that simulation is a pedagogy using one or more typologies to promote, improve, and/or validate a participant's progression from novice to expert (INACSL, 2011). Simulation is becoming increasingly recognized as an effective and efficient learning methodology for nursing students, increasing both confidence and knowledge (Burns, O'Donnell, & Artman, 2010; Hoffman, O'Donnell, & Kim, 2007; Smith & Roehrs, 2009.)

A SCE includes prebriefing, the clinical scenario, and debriefing (INASCL 2011). Within the nursing program, each SCE has been developed to challenge the nursing student's critical thinking, clinical judgment, communication, and collaboration skills. The SCE provides each student the opportunity to apply the knowledge and skills from didactic, skills laboratory, and clinical practice to a patient care scenario in a safe environment. This application of theory to practice is completed without prompting, guidance, and bedside supervision from their clinical faculty or other licensed staff. This would be impossible within the clinical environment due to legal and safety issues. Following each clinical scenario the students are given the opportunity to

reflect on their experience and identify challenges they experienced. This guided reflection and feedback session, referred to as 'debriefing' are facilitated by the simulation coordinator.

Learning outcomes for a SCE are developed to align with the didactic courses and clinical environments the students are enrolled in at the time of the SCE and may include reinforcement of prior knowledge and skills. These outcomes are assessed during the simulation and debriefing. In addition to each specific objective, the SCE provides the unique opportunity to assess the key clinical outcomes (4Cs) at specific stages throughout the nursing program.

Methodology

A process of theory-driven descriptive statements, observations, review, and refinement was used during a 16 week semester in a baccalaureate nursing program.

Theory-driven description.

Initially, descriptive statements, using anchors of best performance descriptors, were derived from current literature for each of the 4Cs. Descriptive statements were also identified from nursing clinical evaluation documentation used within the baccalaureate nursing program. Three levels of performance were identified:

Level 1 (Sophomore)	outcomes expected from Semester 1 and 2 students
Level 2 (Junior)	outcomes expected from Semester 3 and 4 students
Level 3 (Senior)	outcomes expected from Semester 5 and 6 students

Observation, review and refinement.

The initial descriptive statements (derived from the literature and existing documentation) were subject to three reviews. During each review the simulation coordinator observed students' behaviors during their scheduled SCEs, and compared the observed behaviors to the descriptors identified for that level of student.

The first review process involved 96 students and 64 SCEs. The second review involved 60 student and 30 SCEs. The final review comprised of 64 student and 29 SCEs. After each period of observation, the descriptor were further revised, and sent to the lead faculty and the chair of nursing for review, feedback and approval.

Results

A 75 item rubric was developed, table 1. A total of 25 Level 3 descriptors were identified from the literature and current clinical assessment documentation and represented senior level outcomes. A further 50 descriptors were mapped to the level 3 descriptors to reflect the sophomore and junior level outcomes.

Table 1 **The 4C leveled rubric**

Level 1 (S1-2)	Level 2 (S3-4)	Level 3 (S5-6)
Communication		
Introduces him/herself by name and role to the patient	Introduces him/herself by name and role to patient and with/without prompting to the family	Introduces him/herself by name and role to the patient, family, and healthcare team members
Seeks information from at least 2 sources	Seeks information in all available sources	Seeks information in all available sources in a logical manner
Communicates with the patient, and family if present, to gather subjective and objective information	Communicates with the patient, family and healthcare team to gather subjective and objective information	Consistently communicates with the patient, family and healthcare team to gather subjective and objective information
Communicates the majority of information but not always in a logical or structured manner	Communicates all information in a logical and structured manner with/without prompting	Consistently communicates in a clear, logical and structured manner
Communicates with the patient in a respectful and appropriate manner. Uses appropriate terminology with prompting.	Respectfully communicates with the patient and family. Uses appropriate terminology without prompting	Respectfully communicates with the patient and family. Consistently uses appropriate terminology
Attempts to use a variety of communication strategies	Uses/attempts to use communication strategies to address various situations	Uses communication strategies appropriately in various situations
Communicates accurate information to nursing colleagues. With prompting verifies this information	Without prompting verifies verbal and nonverbal, information is communicated	Verifies all information, verbal and nonverbal, is communicated effectively
Collaboration		
Works cooperatively with other nursing team members	Works cooperatively but is inconsistent with other interprofessional team members.	Consistently works cooperatively with other interprofessional team members
Identifies significant data when caring for a single patient. Collaborates with colleagues to identify issues to report.	With minimal prompting identifies and reports significant data when caring for a patient with more than one issue/problem	When caring for multiple patients with issues/problems, consistently identifies and reports significant data to appropriate members of the interprofessional team
Involves the patient, in planning, implementing, and evaluating the plan of care focusing on one major patient care issue/problem	Involves the client/family, in the planning, implementing, and evaluating plan of care, may require some prompting	Involves the client/family, to the greatest extent possible, in the planning, implementing, and evaluating plan of care
Involves nursing colleagues in the planning, implementing, and/or evaluation of the plan of care	Involves appropriate members of the team in the planning, implementing, and evaluating plan of care, may requires some prompting	Involves appropriate members of the team in the planning, implementing, and evaluating plan of care for a patient with complex issues
Critical thinking		
Collects data and asks questions when caring for one patient with one specific issue/problem	Collects data, asks relevant questions and explores ideas when caring for a patient with more than one issue/problem	Consistently collects relevant data, asks relevant questions and explores ideas

Critical thinking (cont)		
Recognizes issues and concerns in the care of this patient	Recognizes issues and concerns in the care of a patient with more than one issue/problem	Recognizes issues and concerns
Identifies data that are significant	Identifies significant data and interprets data	Accurately identifies significant data and interprets data without prompting
Recognizes that data is incomplete	Identifies missing information with/without prompting	Identifies specific missing information without prompting
Identifies/recognizes legal/ethical issues pertaining to patient care	Considers legal/ethical issues when implementing care to a patient and family with more than one issue/problem	Considers legal/ethical issues when implementing care. Identifies possible hospital resources and examines alternative plan when appropriate
Identifies and implements appropriate plan of care for one patient with one specific issue/problem	Implements appropriate plan of care for patient and family with multiple issue/problems.	Implements appropriate plan of care for multiple patients with multiple issues. Supports plan by identifying relevant patient care data
Accurately evaluates care Identifies the implications, and consequences of care for one patient with one specific issue/problem	Accurately evaluates care Identifies the implications, and consequences of care for a patient and family with more than one issue/problem	Accurately evaluates care and identifies the implications, and consequences of care without prompting
Clinical Judgment		
Recognizes obvious changes in the patient's condition	Recognizes obvious changes in the patient's condition. Recognizes subtle changes with/without prompting	Recognizes subtle changes without prompting
Attempts to assess at least two of the following stressors; physiological, sociocultural, spiritual and developmental	With prompting assesses physiological, sociocultural, spiritual and developmental stressors	Independently assesses physiological, sociocultural, spiritual and developmental stressors
Identifies the most relevant and important data for one patient with one specific issue/problem	Focuses on the most relevant and important data for a patient and family with more than one issue/problem	Consistently focuses on the most relevant and important data for patients and family with more than one issue/problem
Recognized and attempts to interprets the patient's data patterns and compares with known patterns to provide care	Recognizes and interprets the patient's data patterns to provide care	Consistently interprets the patient's data patterns to provide care.
Identifies priorities of care	Attempts to prioritizes care	Consistently prioritizes care
With guidance displays proficiency in necessary nursing skills	Displays proficiency in necessary nursing skills	Shows mastery of necessary nursing skills
With guidance evaluates and analyzes personal clinical performance about major events or decisions; key decision points are identified, and alternatives are considered	With minimal prompting evaluates and analyzes personal clinical performance about major events or decisions; key decision points are identified, and alternatives are considered	Independently evaluates and analyzes personal clinical performance, noting decision points, elaborating alternatives, and accurately evaluating choices against alternatives

Phase 2 – Pilot Test

Purpose

The purpose of the pilot study was to assess the usability of the leveled rubric to assess communication, collaboration, critical thinking, and clinical judgment at various stages of the nursing program. The usability was assessed by collecting and analyzing data to investigate the relationship between student performance and time of day, simulation order, and semester level.

Method

The pilot test occurred in spring 2013. Students in Semesters 1, 3 and 5 were observed during their scheduled SCEs. For analysis, each descriptor on the rubric was assigned a value. All level 1 descriptors were given a numeric value of 1, level 2 descriptors were given a numeric value of 2, and level 3 descriptors were given a numerical value of 3. The rubric was completed by either the simulation coordinator or a graduate nursing student.

SCEs included in the data analysis:

Semester 1	6 clinical groups	53 students	22 simulations
Semester 3	8 clinical groups	80 students	27 simulations
Semester 5	8 clinical groups	76 students	31 simulations

Results

Usability

It was challenging to use the tool to evaluate each student individually. Therefore, each group of 2-3 students was evaluated on one rubric.

Average scores

Groups	*Average*	*Variance*
Semester 1	23.17	40.03
Semester 3	40.54	16.26
Semester 5	72.62	20.73

Time of day

There was no statistically significant difference in Semester 1 student performance depending on the time of day (p=0.45). There was no statistically significant difference in Semester 3 student performance depending on the time of day (p=0.15).

There was a statistically significant difference in Semester 5 student performance depending on the time of day (p=0.0001). Early morning and late afternoon students scored higher than late morning students.

Simulation order

There was a statistically significant difference in Semester 1 student performance depending on simulation order (p=0.02), with students in the later simulations scoring higher than those in the earlier scenarios. There was also a statistically significant difference in Semester 3 student performance depending on simulation order (p=0.01) with students in the later simulations scoring higher than those in the earlier scenarios

There was no statistically significant difference in Semester 5 student performance depending on simulation order (p=0.4).

Semester level

There was a statistically significant difference between the performance of students at different stages of the program, with Semester 5 students scoring the highest (p<0.001).

Discussion

1. **Usability**

The tool was challenging to use for each individual student, therefore each group of 2-3 students was evaluated on one rubric. This still proved beneficial. The rubric identified gaps in the simulation scenario design and edits were made accordingly. For example, one of the critical thinking items involved legal/ethical issues. It was quickly identified that the scenarios lacked the triggers to prompt appropriate responses from the students. Such triggers were consequently included in the updated simulation scenarios design. This improved the quality of the learning and better aligned the simulation activity to the nursing program outcomes.

2. **Time of day**

Semester 1 and 3 students' performance did not appear to be affected by the time of day the SCE was scheduled. However, time of day did appear to influence Semester 5 students. It is difficult to explain why 'time of day' should only influence the most experienced students. Further investigation is required to explore whether this is a repeatable observation, and better control potentially confounding variables.

3. **Simulation order**

Semester 1 and 3 students' performance appeared to be affected by simulation order, with the later students performing better. Semester 5 students' performance did not appear to be affected by simulation order. All students observed the performance of the previous groups. However, the frequency of debriefing varies depending on student level. Debriefing is the component of the SCE that facilitates guided reflection. In Semester 1 and 3 debriefing occurs at stages throughout the SCE. In Semester 5 the debriefing occurs only once, at the completion of the SCE. The scenario is designed this way to add complexity to the learning experience. The students are required to independently give and receive patient progress reports. This better reflects the everyday work experience of a qualified nurse. The more frequent debriefing sessions in Semester 1 and 3 is the most likely explanation for the observed simulation order effects.

4. **Semester level**

As expected there was a significant difference between the performance of students at different stages of the program, with Semester 5 students scoring the highest. Student performance was consistent with expected leveled outcomes, suggesting that teaching of the 4Cs varies appropriately through the nursing program.

Weaknesses and limitations

There are many variables associated with scheduling students for clinical placements including time of day, different clinical instructors, and different clinical sites. These could not be controlled in the pilot study. The SCE were scheduled around clinical placement schedules. It

was also necessary to score students in groups of 2-3 rather than individually. This could lead to type 1 or type 2 errors. Further controlled studies are required.

Next steps

Student perception of the 4C rubric has not been explored. This will be approached next semester, fall 2013, when students will be given the opportunity to self-evaluate their performance in simulation using the 4C rubric.

Ongoing refinement to the items will continue as the 4C rubric is introduced into all SCE throughout the baccalaureate nursing program.

The 4C rubric will be piloted during clinical placement in summer 2013.

Conclusion

It is inherently difficult to assess non-technical skills such as communication, collaboration, critical thinking and clinical judgment within any program including nursing. The 4C rubric shows potential as a standardized approach to assess student progress, the integration of the 4Cs throughout the curriculum, and program outcomes. Ongoing refinement and future psychometric testing are required to validate its use in the simulated and clinical environment. The ultimate goal is that it is a valid and reliable evaluation tool for use on entry, during and at the end of the nursing program.

References

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