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Featured Article

# Mental Health Simulation: Effects on Students' Anxiety and Examination Scores

Drew Skinner, RN, BSN, Heather Kendall Dr, PhD, H. Mabelle Skinner Dr, DNP\*,  
Cristi Campbell Dr, DNP

Missouri Western State University, School of Nursing and Health Professions, 4525 Downs Drive, Murphy Hall, St. Joseph, MO 64507, USA

## KEYWORDS

anxiety;  
mental health;  
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survey

## Abstract

**Background:** The study explored the following: (1) How does exposure to simulation affect student perception about mental health? (2) Do survey responses related to mental health predict ATI Mental Health Exam scores?

**Methods:** A revised version of the Mental Health Nursing Education Survey Part 2 was used to examine nursing students' ( $n = 63$ ) perception of mental health. Descriptive statistics described the sample population and responses to survey items. Independent t-tests analyzed the sample. Linear regression predicted outcomes on the ATI Mental Health Exam.

**Results:** A significant relationship between survey statements relating to anxiety ( $p = .047$ ) and safety ( $p = .003$ ) and the ATI Mental Health Exam was noted. A 15.4% variance in ATI Mental Health Exam scores can be predicted by the combination of responses to these survey statements.

**Conclusions:** This study found ATI Mental Health Exam scores increase when students feel safe and less anxious with mental health care. Simulation may help students feel more comfortable with mental health care.

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According to the National Institute for Mental Health in 2016, 44.7 million adults were living with a mental illness and only 19.7 million received treatment. With the increased demand for mental health care, well-equipped nurses are needed to meet these needs. Unfortunately, many nursing students are not attracted to the mental health field

and do not wish to pursue careers in mental health (Happell & Gough, 2009; Wynaden, Orb, McGowan, & Downie, 2000). Students do not believe they are prepared to work in the mental health setting, nor do they feel they can make a contribution to mental health patients or the community (Furr, 2014; Wynaden, Orb, McGowan, & Downie, 2000). The lack of nursing students' motivation and self-efficacy to work in the mental health field can contribute to a future shortage of mental health treatment

\* Corresponding author: [hskinner@missouriwestern.edu](mailto:hskinner@missouriwestern.edu) (H. M. Skinner).

availability. Simulation has been shown to enhance students' confidence, attitudes, and knowledge with mental health nursing care (Ellaway, Kneebone, & Topps, 2009). This study will explore and discuss the effects of simulation on nursing students' perceived anxiety, knowledge, preparedness, and their mental health testing scores.

### Key Points

- Simulation used in a mental health course offers students a safe, immersive, and consistent learning environment.
- Assessment Technologies Institute Mental Health Examination scores increase if students feel less anxious and safe in the mental health care environment.
- A 15.4% variance in Assessment Technologies Institute Mental Health Examination scores can be predicted by the combination of responses to survey statements “I am anxious about working with people experiencing a mental health problem” and “I feel safe about this psychiatric/mental health placement.”

Using the Mental Health Nursing Education Survey Part 1 and Part 2, Happell and Gough (2009) found nursing students with mental health clinical experience felt more prepared for employment in the field and had less anxiety toward mental illness. The survey was assessed and found to be a valid tool for examining nursing students' attitudes toward mental health nursing and mental illness. Furr (2014) also found clinical and theory helped the students feel more prepared and less anxious about working with the mentally ill. To further understand nursing students' attitudes regarding mental health, many studies have used simulation-based learning. Simulation-based learning was shown to help increase student's knowledge, skills, and attitudes toward mental health nursing care (Guise, Chamberes, & Valimaki, 2012).

## Use of Simulation in Nursing

Advancements in technology led to an increased use and heightened quality of simulation in the educational environment. Simulation is becoming an integral part of learning in nursing and many other health-related fields. Simulation is defined as, “a technique, device, or activity that aims to authentically recreate, imitate, or amplify characteristics, processes, and experiences of the real world for the purpose of teaching, acquiring and assessing knowledge, skills, and attitudes” (Guise, Chamberes, & Valimaki, 2012, p. 411). Simulation became more refined inducing the International Nursing Association for Clinical Simulation and Learning to develop comprehensive standards for simulation.

Several studies explored the application and effects of simulation on the overall student learning experience. Simulations must be systematic with well-defined goals and be performed in a safe, supportive environment to foster the best learning outcomes (Brown, 2008; Ellaway, Kneebone, & Topps, 2009; INACSL Standards Committee, 2016). Each simulation should start with a prebrief and conclude with a debrief session (INACSL Standards Committee, 2016). Providing adequate and timely feedback during the debriefing session positively impacts the quality of student learning (INACSL Standards Committee, 2016; Schwindt, 2015). A survey examining overall attitudes and perception of the simulation can be used to further explore the effectiveness of simulation. The design of the simulation must be complex versus simple. Complex simulation was found to be superior to simple modular simulation related to lack of context (Ellaway, Kneebone, & Topps, 2009). Using real-life standardized patients and videos portraying realistic patient situations were more beneficial to student learning and satisfaction (Alexander & Dearsley, 2013; Clarke, Anderson, & Loth, 2017; Ellaway, Kneebone, & Topps, 2009; Hollenbach, 2016; Unsworth & Kelleher, 2012). These high-fidelity simulations are especially valuable in teaching mental health concepts (Alexander & Dearsley, 2013; Clarke, Anderson, & Loth, 2017). The literature shows simulation can augment clinical experience. The combination of conventional clinical and simulation resulted in significantly higher pregraduate exit examination scores than just conventional clinical alone (Curl, Smith, Chrisholm, McGee, & Das, 2018).

## Benefits of Simulation

Benefits from simulation include the acquisition and development of knowledge, skills, and attitudes toward mental health nursing care. Communication and collaboration skills were enhanced by students participating in simulation (Alexander & Dearsley, 2013; Clarke, Anderson, & Loth, 2017; Unsworth & Kelleher 2012; Young-Hee, Kyung-Hye, & Ok-Hee 2018). Unsworth and Kelleher (2012) found simulation helped students recognize and manage patient deterioration and gave them an opportunity to practice these important skills. Students participating in simulations with standardized patients were shown to have enhanced communication skills, ability to respond to unexpected situations, and decision-making skills (Curl et al., 2018; Ellaway, Kneebone, & Topps, 2009).

The use of simulation to boost student preparedness and confidence in mental health nursing care appears continually throughout the literature (Alexander & Dearsley, 2013; Clarke, Anderson, and Loth, 2017; Hollenbach, 2016; Schwindt, 2015). In addition, simulation decreases student

anxiety before entering the clinical setting (Alexander & Dearsley, 2013; Brown, 2008; Hollenbach, 2016; Curl et al., 2018; Unsworth & Kelleher, 2012). Guise, Chamberes, & Valimaki (2012) found simulation improved critical thinking skills, self-efficacy, and cultural competency. They also found overall student confidence was gained through participation in simulation. Simulation increased self-efficacy and lessened anxiety for nursing students performing their fundamental skills (Hsin-Hsin & Lin, 2016; Young-Hee, Kyung-Hye, & Ok-Hee, 2018).

## Theoretical Framework

The theoretical framework for this article is Bandura's Social Cognitive Theory. Bandura's Social Cognitive Theory can be applied when discussing the effectiveness of simulation on students' knowledge, skills, and attitudes. The theory posits the human mind is not just reactive but is creative, proactive, and self-reflective (Bandura, 1999).

Bandura explored the impacts of self-efficacy on human agency. Self-efficacy is a key component of the Social Cognitive Theory. For humans to do what is wanted, the effects must be desirable. Advancements in current technology enable students to have vast knowledge at their fingertips, but the students must be motivated. Simulation can help nursing students reach their goals regarding their knowledge, skills, and attitudes. Environmental factors, personal factors, and behavioral factors all influence the end behavior of a person. A simulation provides a safe, comfortable learning environment with clear goals and expectations. When feedback and self-reflection are integrated, the students' end behavior can be influenced. This can impact the nursing students' response to mental health and impact their acquired knowledge, skills, and attitudes.

## Purpose of Study

The previously mentioned studies show how simulation affects students' knowledge, skills, and attitudes. This article will explore the effects of simulation on prelicensure baccalaureate nursing students at a Midwestern university. The students' overall anxiety with mental health was studied. The purpose of this study is to explore the relationship between simulation and student anxiety with mental health and how their level of anxiety affects their Assessment Technologies Institute (ATI) Mental Health Examination scores. The research questions being studied were the following: (1) How does exposure to simulation affect student perception about mental health care? (2) Do survey responses related to mental health predict the ATI Mental Health Examination scores?

## Materials and Methods

As part of the mental health course work, students participated in a 15-week lecture course, six-week clinical rotation in a mental health facility, and simulation. The faculty used the ATI Real Life simulation product to immerse students in mental health care. The ATI Real Life product features live action, interactive video with branching logic that allows students to make critical decisions about patient care (ATI, 2018). Students were assigned the anxiety, schizophrenia, mood disorder, and alcohol abuse modules during their six-week clinical rotation. They completed the modules independently before specified clinical days and again as a group during postconferences. The group sessions featured instructor guidance, discussion, and role-play activities. The students took the ATI Mental Health Examination at the end of the semester in which they completed the lecture course, clinical rotation, and simulation. The ATI Mental Health Examination score represented ten percent of the students' mental health course grade.

The study was performed at a Midwestern university with students in a traditional prelicensure BSN program. The researcher obtained Institutional Review Board approval from the Missouri Western State University Committee on the Use of Human Subjects in Research. This study uses Dr. Brenda Happell and Dr. Karla Gough's Mental Health Nursing Survey—Part 2 to examine prelicensure baccalaureate nursing student perceptions toward mental health care. The researcher received permission to use the survey from Dr. Happell. The voluntary, anonymous survey was completed via SurveyPlanet by the students from the Spring 2018 and Fall 2018 graduating cohorts ( $n = 63$ ). The survey uses a seven-point Likert Scale (1 = strongly disagree to 7 = strongly agree) and is composed of 30 items. The students were also asked to provide their demographic information of age range and cohort affiliate. The survey was revised for this study by adding two questions at the beginning to capture demographic information. Statements concerning students' perception of nursing staffing within the clinical setting were removed from the original survey as they were deemed irrelevant to this study and were not included in the revised tool.

The data were analyzed using IBM SPSS Statistics Software. Descriptive statistics were used to describe the sample population and cohort responses to survey items. Independent t-tests were used to analyze differences between the two groups. Linear regression was used to predict outcomes on the ATI Mental Health proctored examination.

## Findings

### Descriptive Findings

The Spring 2018 and Fall 2018 graduating cohorts were asked to complete the survey. Thirty-eight of 48 students

from the Spring 2018 cohort (79.2%) and 25 of 39 students in the Fall 2018 cohort (64.1%) completed the survey. For the subscale of anxiety, the results show an average score of 4.59 for the Spring cohort and 4.37 for the Fall cohort. The Spring cohort averaged 5.34 and the Fall cohort averaged 5.16 for the statements related to preparedness. For the statements measuring knowledge of mental illness; the Spring cohort averaged 5.20, and the Fall cohort averaged 5.30. Course effectiveness averages were 4.12 for both Spring and Fall cohorts. The statement related to safety showed an average of 4.69 for Spring and 5.76 for Fall. Overall, the average scores for both cohorts indicate they felt a moderate level of anxiousness, preparedness, and knowledge in mental health care.

The ATI group scores for the two cohorts were the following: May 2018 (66%) and December 2018 (71.2%). These are comparative to the national ATI Mental Health Examination mean score of other bachelor of science in nursing programs at 69.3%. Scores are further delineated by levels. The May 2018 cohort had 0% at level 3, 54.3% at level 2, 37.5% at level 1, and 8.3% at below level 1. The December 2018 cohort had 5.1% at level 3, 71.8% at level 2, 23.1% at level 1, and 0% at below level 1.

## Inferential Findings

An independent t-test showed the revised survey statements “I am anxious about working with people experiencing a mental health problem” ( $p = .047$ ) and “I feel safe about this psychiatric/mental health placement” ( $p = .003$ ) were significant. Simple linear regression was conducted to determine if responses to these statements could be used to predict scores on the ATI Mental Health Examination. The results were significant ( $p = 0.000$ ). The identified equation to predict the ATI score is  $65.9 +$  the anxiety statement response ( $-0.228$ )  $+$  the safety statement response ( $0.567$ ). The  $R^2$  indicates that 15.4% of the variance in ATI mental Health Examination scores can be predicted by the combination of responses to these statements on the Mental Health Nursing Survey—Part 2.

## Discussion

The literature shows simulation can have a positive impact on the education of nursing students in mental health care. Guise, Chambers, & Valimaki (2012) found simulation can help develop communication, critical thinking, and decision-making skills. Curl, Smith, Chisholm, McGee, and Das (2016) found groups participating in traditional clinical and simulation scored higher on their pregraduate exit examinations.

The results showed a statistically significant relationship between survey statements, “I am anxious about working with people experiencing a mental health problem” and “I feel safe about this psychiatric/mental health placement”,

and the ATI Mental Health Examination scores. Meaning, if a student has a lower Likert score on the scale for statement “I am anxious about working with people experiencing a mental health problem,” they may score higher on the ATI Mental Health Examination. In reference to statement, “I feel safe about this psychiatric/mental health placement,” if a student has a higher Likert score, they may in turn, score higher on the ATI Mental Health Examination. This study substantiated decreased anxiety and increased feelings of safety may help improve ATI Mental Health Examination scores.

## Limitations

This study had several limitations. The study used a small, convenience sample group. The sample group was from one university, primarily female, and lacked diversity. The researchers were unable to survey the groups who had not completed simulations using the ATI Real Life product related to sample availability. These factors decrease generalizability across nursing programs.

## Conclusions

Simulation has the potential to improve nursing students’ critical thinking skills, confidence, and lessen their anxiety (Guise, Chambers, & Valimaki, 2012). This study showed the less anxious and safer the student felt, the higher they scored on the ATI Mental Health Examination. Simulation can help the student become more well-rounded and readier for the field of nursing (Hsin-Hsin & Lin, 2016; Hollenbach, 2016). Further research is recommended to study the effects of simulation on learning outcomes and trends in nursing graduates’ employment choice in various care fields.

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