

A Comparison of Standardized Patients with Role Play for Teaching Therapeutic
Communication

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Abstract

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Background: The experience of stress and anxiety in nursing students can reach a high level because of fear of making an error or causing fatal harm to a patient. Unmitigated stress and anxiety can hinder learning and the performance of psychomotor skills in the clinical setting, eventually affecting patient care.

Aim: This study aimed to examine anxiety, stress, self-efficacy for nursing clinical skills, and self-efficacy for therapeutic communication in undergraduate nursing students who were randomized to either an intervention with a standardized patient or the comparison group who participated in role play.

Method: An experimental study with randomization was conducted with prelicensure nursing students ($N = 87$) recruited from associate and bachelor's degree nursing programs in the Finger Lakes region of New York State, using the State-Trait Anxiety Inventory (STAI), Perceived Stress Scale (PSS), Clinical Skills Self-Efficacy Scale (CSES), and Self-Efficacy in Therapeutic Communication (SETC). Data collection occurred at preintervention, postintervention, and at follow-up, approximately 2 weeks after the intervention.

Results: The first report describes the development of the Self-Efficacy for Therapeutic Communication Scale (SETC) developed by the principal investigator and used in this study.

Exploratory factor analyses with a Varimax rotation of the 15 items yielded two factors accounting for 51.3% of the variance. Two subscales were formed by summing the items loading above .4 on each factor. The first subscale was Communication Techniques, which included 9 items and had a Cronbach's alpha of .91. The second subscale was Intuitive Practices with 6 items and a Cronbach's alpha of .79. The correlation between the two subscales was $r = .67$ ($p < .001$). Test-retest reliability for the scale from pre- to posttest was .68, pre- to follow-up was .41, and posttest to follow-up was .68.

In the second report, Pearson's r was used to determine that state anxiety, trait anxiety, and stress were highly correlated with each other, with a range of correlations, $r = .53$ to $.91$, $p < .001$. Inverse contemporaneous correlations were found for trait anxiety and for stress with self-efficacy for clinical skills at all time points, whereas state anxiety was inversely related to self-efficacy for clinical skills at posttest and follow-up. Inverse correlations for self-efficacy for therapeutic communication were statistically significant with state anxiety, trait anxiety, and stress, but only at posttest.

In the third report, mixed Analysis of Variances (ANOVAs) determined that there was a statistically significant interaction between time and group on state anxiety scores, $F(2, 170) = 3.551$, $p = .031$, $\eta^2 = .040$. Simple main effects analyses showed that the intervention and comparison group means did not differ at any of the three testing times. Paired samples t tests indicated that the scores on anxiety in the intervention group did not show any statistically significant change over time, whereas anxiety in the comparison group was significantly higher at follow-up than at any other time. Mixed ANOVAs showed no interaction between time and groups for self-efficacy for clinical skills or for self-efficacy for therapeutic communication. Results indicated that the intervention and comparison group means on self-efficacy for clinical

skills and self-efficacy for therapeutic communication improved over time. Both intervention and comparison groups reported increased self-efficacy in clinical skills and therapeutic communication at follow-up data collection.

In addition, two separate mixed ANOVAs were performed to determine if stress had a moderating effect on the intervention. Students in the high stress group (PSS greater than 18), did not experience a change in anxiety over time, while the comparison group of participants with low stress (scores less than or equal to 18), had significant changes in anxiety from pretest to follow-up and posttest to follow-up, while the intervention group did not.

Conclusion: Stress and anxiety can have detrimental effects on nursing students' self-efficacy for clinical skills and self-efficacy for therapeutic communication. Prioritizing and mitigating the effects of stress and anxiety to improve self-efficacy in nursing students is one way of preparing nursing students for competency-based education, as outlined in the American Association of Colleges of Nurses, *The Essentials: Core Competencies for Professional Nursing Education*. Throughout the Domains of *The Essentials*, therapeutic communication is found in 13 competencies, indicating that this once considered *soft skill*, is a critical skill required for safe patient care. Teaching methods that include interactions with standardized patients and managing difficult conversations can be helpful for the nursing student to experience in pre-clinical preparation.

Keywords: *Anxiety, self-efficacy, standardized patients, therapeutic communication, clinical nursing skills*

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List of Abbreviations

Abbreviation	Definitions
AACN	American Association of Colleges of Nurses
A.A.S.	Associate of Applied Science in Nursing
ANA	American Nurses Association
ANOVA	Analysis of Variance
B.S.	Bachelor of Science
CI	Confidence Interval
CSES	Clinical Skills Self-Efficacy Scale
HFHS	High-fidelity human simulation
IPR	Individual Process Recording form
IRB	Institutional Review Board
MCC	Monroe Community College
NCCC	Niagara County Community College
NLN	National League for Nursing
PSS	Perceived Stress Scale
RWU	Roberts Wesleyan University
SETC	Self-Efficacy for Therapeutic Communication Scale
SP	Standardized patient
STAI	State-Trait Anxiety Inventory

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C. L.

Dedication

I dedicate this dissertation to my precious granddaughter, Valentina.

Your laughter, sweet voice, the way you are always singing, your playful ways and hugs and kisses put a sparkle in my eyes.

Chapter I: Introduction to the Dissertation

Anxiety presents itself as an “alert” when an individual is faced with an imminent threat and as physiologic changes, such as elevated pulse and blood pressure and increased muscle tension. *State* anxiety is described by Sarason and Spielberger (1975), as a “subjective, consciously perceived feeling of tension, apprehension and nervousness accompanied by the activation of the autonomic nervous system” (p. 137). *Trait* anxiety on the other hand, is differentiated by Spielberger (2015) as a personality trait where elevated responses to any situations can be considered a typical reaction for a person.

Nursing students experience anxiety at potentially elevated levels due to the rigorous curricula, high-stakes examinations, and fear of harming a patient or committing a fatal error with a patient (Akca et al., 2015; Gore et al., 2011; Ratanasiripong et al., 2015). A concept analysis done by Simpson and Sawatsky (2020) included the following attributes that describe the experience of anxiety in undergraduate nursing students: fear of making mistakes and causing patient harm, feeling incompetent and overwhelmed by responsibility, and lacking knowledge in patient care. Unmitigated anxiety in nursing students can have negative effects on the performance of psychomotor skills (Akca et al., 2015; Nielsen & Harder, 2013), communicating with patients (Szpak & Kameg, 2013), and being alert to salient changes in a patient whose condition is deteriorating (Stump et al., 2012).

Therapeutic Communication

The Nursing Code of Ethics emphasizes that communication “is critical to maintaining a safe patient care environment” (ANA, n.d.). Student nurses learn communication techniques that enhance therapeutic communication as well as those that hinder therapeutic communication. It is important for the student nurse to look for congruency between verbal and nonverbal messaging

in a patient to make accurate assessments of the patient's condition. It is equally important for the student nurse to convey congruency with verbal and nonverbal communication to the patient. Peplau (1952) stressed in her teachings that it was important for the nurse to understand "the meaning of the experience to the patient ..." (p.41).

Several strategies have been used in nursing education to teach therapeutic communication: lecture, vignettes with discussion, role-play, high-fidelity human simulation (HFHS) with a manikin, and simulation with a standardized patient (SP). Using lecture to introduce therapeutic communication is an effective way of imparting large amounts of information, such as the terminology associated with therapeutic versus non-therapeutic techniques. As a passive style of learning however, lecture does not allow the learner to experience using these techniques. Vignettes with discussion can be used to supplement lecture so as to provide contextual meaning to various techniques that may be displayed in the chosen vignettes. Lecture with vignettes and discussion can enhance the textbook reading of therapeutic communication; however, the active learning strategies of role play and simulation engage the learners as they practice newly learned communication techniques. Limitations with the use of role play and of HFHS for teaching therapeutic communication exist. The authenticity of role play is dependent on students' willingness and ability to "act" when given a script to follow for learning therapeutic communication. The authenticity of the learning experience can become dulled since the manikin in HFHS cannot display nonverbal communication (Kameg et al., 2014). A simulation learning experience with a SP can better promote authenticity with the use of an actor to follow a script and portray the necessary verbal and nonverbal messaging in the learning situation. Nursing students entering their psychiatric clinical rotation have demonstrated decreased anxiety after participating in a simulation learning experience with a SP (Doolen et al.,

2014; Ganzer & Zauderer, 2013; Martin & Chanda, 2016). The purpose of this study was to examine the effects of an intervention with a SP in a simulated learning experience using therapeutic communication, on the anxiety and self-efficacy of undergraduate nursing students as compared to students using therapeutic communication with role play. Data collection occurred at pretest, posttest and approximately 2 weeks following the intervention on anxiety, stress levels, self-efficacy for therapeutic communication and self-efficacy for clinical skills.

Specific Aims

Aim 1

This study examined the differences in state anxiety and self-efficacy in nursing students before and after a learning activity with a standardized patient (SP), as compared to nursing students who participated in role play.

Hypotheses

1. State anxiety in nursing students learning therapeutic communication will be lower in the nursing students exposed to SPs in a simulated learning experience versus a standard teaching method (role play), immediately after a learning activity on therapeutic communication and in the follow-up assessment approximately 2 weeks into their clinical experience.
2. Nursing students who participate in a learning activity with a SP will perceive greater self-efficacy for nursing skills and therapeutic communication at posttest and follow-up data collection, which will be scheduled after the nursing student has attended clinical placement at least two times.

3. Stress in undergraduate nursing students will moderate the effect of the intervention on state anxiety, such that nursing students with high stress will show less of an intervention effect than nursing students with low stress levels.

Aim 2

This study will examine the relationships among perceived stress, state anxiety, and trait anxiety in undergraduate nursing students with self-efficacy for therapeutic communication and clinical nursing skills at pretest, posttest and follow-up which will occur approximately 2 or more weeks after the intervention.

Hypotheses

4. In undergraduate nursing students a positive relationship exists between the perception of stress, state anxiety and trait anxiety at all data collection points.
5. In undergraduate nursing students an inverse relationship exists between stress and self-efficacy in therapeutic communication and clinical skills.
6. In undergraduate nursing students an inverse relationship exists between state anxiety and trait anxiety with self-efficacy in therapeutic communication and clinical skills.

Modifications to Study Protocol

This study was accepted and approved by the Institutional Review Board of Teachers College, Columbia University as Protocol #21-386 (Appendix A) on July 21, 2021, for a period of one year, September 9, 2021, through November of 2022. A request for modifications to the original protocol was requested for an extension of time to recruit more subjects. The request was approved in June 2022, to extend the study through June 2023 (Appendix B). All other matters regarding the protocol and implementation of the study remained the same. All

participating nursing programs also provided approval: Roberts Wesleyan University, Niagara County Community College, and Monroe Community College (Appendix C).

Organization of Dissertation

This dissertation is written in five chapters, with Chapters II, III, and IV written as manuscripts for submission to peer-reviewed journals. Chapter I introduces the topic and the significance of the problem. It also includes the specific aims and hypotheses and modifications made to the study protocol. Dissemination plans for the research findings are also discussed. Chapter II describes the development of the Self-Efficacy for Therapeutic Communication Scale (SETC) that was created by the principal investigator for use in this study (Appendix D). Chapter III examines the relationships between stress, state anxiety, trait anxiety, self-efficacy for therapeutic communication and self-efficacy for clinical skills. Chapter IV describes the full study, a 2-group pretest-posttest control group design with follow-up. Chapter V provides a conclusion with implications for nursing education and future nursing research.

Dissemination

The manuscripts from Chapters II, III, and IV will be submitted to peer-reviewed nursing journals. The first manuscript, from Chapter II, entitled “Development of the Self-Efficacy for Therapeutic Communication Scale” will describe the steps taken to create the 15-item questionnaire as a valid and reliable instrument. This manuscript will be submitted to the *Journal of Nursing Education*. The second manuscript, from Chapter III, entitled “The Effects of Stress and Anxiety on Self-Efficacy for Therapeutic Communication and Clinical Skills in Prelicensure Nursing Students” will be submitted to *Nurse Educator*. From Chapter IV, a manuscript entitled, “Standardized Patients vs Role Play: The Effect on Undergraduate Nursing Students’ Anxiety and Self-Efficacy when Learning Therapeutic Communication.” will be submitted to *Clinical*

Simulation in Nursing. A fourth manuscript evolved from research on Hildegard Peplau's influence on the nursing profession and therapeutic communication. This manuscript will be entitled, "Hildegard Peplau's Interpersonal Relations in Nursing Theory: Application in Nursing Education, Not Just for Psychiatric Nursing" to be submitted to *Nurse Educator*. An abstract of this study has been accepted for a podium presentation at Roberts Wesleyan University Faculty Development Series scheduled for March 23, 2023.

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Chapter II: Development of the Self-Efficacy for Therapeutic Communication Scale

Therapeutic communication is essential to the nurse-patient relationship and requires the student nurse or registered nurse to have an “understanding of the meaning of the experience to the patient ... for nursing to function as an educative, therapeutic, maturing force” (Peplau, 1952, p. 41).

In the updated version of *The Essentials: Core Competencies for Professional Nursing Education*, the American Association of Colleges of Nursing included the concept of communication in 5 of 10 domains (AACN, 2021). Specifically, communication is included in 23 competency statements under the domains of: Person-Centered Care, Population Health, Interprofessional Partnership, Informatics, Professionalism, and Leadership, 13 of which are competencies related to communication with a patient or patients. Under the directive of the AACN, which guides prelicensure nursing programs with quality indicators for nursing education, nursing education will soon transform the concepts in their current curricula into competency-based outcomes.

The National League for Nursing has endorsed competency-based education for nursing as the way to bridge classroom concepts into clinical practice. “Competencies are measurable, occupationally relevant, and behaviorally based characteristics or capabilities of people” (NLN, 2023). Valid assessment and evaluation instruments will be required to declare a student’s competence in therapeutic communication as well as the other concepts included in competency-based education.

Currently, there are few instruments developed to evaluate the student nurse’s competence in communication skills; notably absent are instruments to evaluate self-efficacy for therapeutic communication skills by itself. Communication skills for advanced practice nursing

students have been evaluated (Rosenzweig et al., 2008) and the Objective Structured Clinical Examination (OSCE) has been used to assess communication skills of medical students with patients (Cömert et al., 2016). However, the use of the OSCE to evaluate clinical skills in nursing education has not been adopted as readily in undergraduate nursing education (McWilliam & Botwinski, 2009). O’Shea et al (2013) conducted a study ($N = 55$) whereby communication observers documented several instances of missed opportunities of student nurses to provide “patient-centered communication, active and/or empathic listening,” (p. e10), the results of which contributed to the development of the Health Communication Assessment Tool (HCAT). The HCAT is a 22-item instrument that was developed to evaluate, from an observer’s viewpoint, a broad range of student behaviors surrounding the nurse-patient relationship including communication skills of undergraduate nursing students during simulation learning experiences (Campbell et al., 2013). Because items on the HCAT measure behaviors and communication techniques of nursing students beyond the scope of this study, a search for measuring the nursing student’s own perception of their confidence when using therapeutic techniques ensued, but none was found.

Purpose

This paper describes the development of the Self-Efficacy for Therapeutic Communication Scale, which has been influenced by Albert Bandura’s Self-Efficacy Theory.

Theoretical Framework

Albert Bandura’s Self-Efficacy Theory

“Perceived self-efficacy is a judgment of capability to execute given types of performances” (Bandura, 2006, p. 309). Albert Bandura (1994) described four factors that influence the development of self-efficacy in an individual: past performances of mastering a

skill; committing to a goal that can be obtained, learning vicariously, and receiving positive reinforcement. Albert Bandura's Self-Efficacy Theory guided the principal investigator in the development of the Self-Efficacy for Therapeutic Communication scale (SETC). The principal investigator hypothesized that student nurses who experience an encounter with a standardized patient in a simulation experience, with the objective of applying therapeutic communication techniques will perceive greater self-efficacy for therapeutic communication techniques with real patients in the clinical setting. The inability to find an existing instrument that measured self-efficacy for therapeutic communication in undergraduate nursing students as the primary construct, was the impetus for the development of the SETC.

In his book, *Self-Efficacy Beliefs of Adolescents*, Albert Bandura included guidelines for developing self-efficacy scales in which he explains "scales of perceived self-efficacy must be tailored to the particular domain of functioning that is the object of interest" (2006, p. 308). Bandura's (2006) guide includes: 1) complete a conceptual analysis of the "relevant domain of functioning" (p.310), 2) tailor the "multifaceted ways in which efficacy beliefs operate within the selected domain" (p. 310), 3) check that scale items "accurately reflect the construct" (p.308) (content validity), 4) measure scale items "over the gradations of challenges or impediments to successful performance" (p.311), and 5) perform item analysis and compute Cronbach's alpha (internal consistency).

Development of the Self-Efficacy for Therapeutic Communication Scale

The Self-Efficacy for Therapeutic Communication scale (SETC) is a 15-item, Likert-type instrument using a range of ratings from 1 (*no confidence*) to 10 (*total confidence*). Each item includes a specific construct of therapeutic communication and prompts the student nurse to rate their confidence with each statement. Each statement on the SETC scale begins with the words,

How confident do you feel at this moment right now... Research on self-efficacy found in the literature revealed that the word confidence is used in lieu of self-efficacy in many measurement scales. Bandura (1994) stated that people with high self-efficacy, “approach threatening situations with assurance that they can exercise control over them (p. 1). Furthermore, the definition of confidence is, “a feeling of self-assurance... of one’s abilities” (Merriam-Webster, n.d.). Additionally, the word confidence is more familiar than the word self-efficacy. For these reasons, the principal investigator found it reasonable to use the word confidence in the items of a scale measuring self-efficacy.

Although a formal concept analysis on the concept of therapeutic communication was not completed by the principal investigator, terms associated with therapeutic communication were investigated. Key terms used to gather the information about techniques for therapeutic communication were therapeutic communication, nurse-patient relationships, communication, and nursing.

An item pool was developed by the principal investigator from an existing instrument on therapeutic communication purposely developed for nursing students (Campbell et al., 2013), textbooks utilized in undergraduate nursing curriculum (Arnoldussen et al., 2019; Hinkle & Cheever, 2018; Potter et al., 2015; Riley, 2012; Townsend, 2014), a comprehensive search of the literature, and in the study of Hildegard Peplau’s Theory of Interpersonal Relations. Initially, the number of items was 10, but after a review by an expert panel and a secondary review, five additional items were added for a total of 15 items.

Therapeutic communication techniques that were gathered from the array of textbooks included: listening, active listening or attentive listening; using silence or accepting silence; restating or paraphrasing; reflecting back to the patient; seeking clarification; giving recognition,

offering self, or offering of one's presence; using general leading questions; giving broad openings, and using open-ended questions.

Content Validity. Three faculty members from Roberts Wesleyan University, where the principal investigator teaches, were invited to serve on a panel of content experts to assist with establishing content validity of the SETC. Content validity, established by a panel of experts is “a judgment... ensuring adequate content coverage on an instrument” of a construct (Polit & Beck, 2012, p. 336). The panel inspected each of the items for simplicity of language, use of jargon, evidence of redundancy and clarity. Next, they were asked to evaluate each item with this set of questions: (a-e). During the review process a sixth question, (f), was added by the panel when attention was brought to the title of the instrument, Self-Efficacy for Therapeutic Communication, as having two constructs: self-efficacy, and therapeutic communication.

- a. Does the question clearly relate to therapeutic communication being measured?
- b. Is the intent of the question clear?
- c. Is the wording of the question clear and understandable to English as second language learners?
- d. Is the content of the question clear and unambiguous?
- e. Is the question written at an appropriate level for undergraduate nursing students?
- f. Is the question specifically related to self-efficacy that is being measured?

Table 2.1 lists the original items of the SETC with the responses from the two content experts, and also lists the final 15 items. Changes in the wording of 6 questions of the original 10-item scale were suggested by content expert 1 (CE 1), such as inserting the word, ‘can’ which she thought reflected the concept of self-efficacy more accurately. Bandura has also stated, “Self-efficacy is concerned with perceived capability. *Can* is a judgment of capability...” (2006,

p. 308). Content expert 2 (CE 2) did not provide feedback on the original 10-items, but discussed with the principal investigator the addition of Q13 - *inquiring about a patient's spirituality* and Q14 - *can the student pray with a patient if asked?* Content expert 3 (CE 3) reviewed the final 15 items of the instrument before it was put into use and agreed with all items as written.

Factor Analysis. IBM SPSS version 29 was used to conduct an exploratory factor analysis on the items of the SETC scale described in this paper. Descriptive statistics (means, standard deviations) were used to analyze characteristics of each item on the scale. The factor extraction method was principal-axis factor analysis; eigenvalues and the *scree test* were used to determine a cutoff point for factor extraction. Factor loading was obtained through factor rotation using Varimax with Kaiser normalization, and subscales were determined. In this study, loadings with an absolute value of .40 or higher were used as cutoff values (Polit & Beck, 2012, p. 366). Computing Cronbach's coefficient alphas determined reliability of each subscale.

Study Design/Sample/Setting

This was an experimental study with randomization. A convenience sample of undergraduate nursing students ($N = 90$) was recruited from nursing schools in the Finger Lakes Region of New York State. Student volunteers from two associate degree programs and one bachelor's degree nursing program participated in this study with data collection at preintervention, post-intervention, and follow-up, approximately 2 weeks after the nursing students attended their clinical rotation. Data collection took 1 year to complete. Institutional Review Board approval was obtained from Teachers College, Columbia University, as well as from all participating schools. Written consent was obtained from all students who participated in the study. Special precautions to minimize the risk of coercion were put into place for the students where the principal investigator is a lead teacher.

Procedure

This study examined the effect of a learning activity with a standardized patient (SP) in a simulation learning experience in comparison with a learning activity using role play in the classroom. The variables being examined were perceived state anxiety, perceived stress, self-efficacy for nursing skills and self-efficacy for therapeutic communication in the undergraduate nursing student. Students in the intervention group ($n = 55$) participated in a simulation with a SP while students in the comparison group ($n = 35$) were divided into pairs to participate in role play. Data collection occurred at pretest, posttest and at follow-up, approximately two weeks after the intervention took place.

Results

Sample

The sample of 90 participants consisted of mostly female nursing students ($n = 70$), with an age range of 17 to 60 years of age. Sixty-one of the students were employed in healthcare; only 15 students reported that they were not employed. Ethnicities self-reported by the students in this study were: Asian ($n = 8$), Black ($n = 11$), Caucasian ($n = 72$), Hispanic/Latina ($n = 5$), Native American ($n = 1$), and students who identified with more than one ethnic group ($n = 13$). When choosing ethnicity selections, some students may have thought that they needed to choose each ethnicity separately, which made the number of participants in the study appear to be 110, when it was actually 90 at pre and post intervention, and 87 at follow-up data collection.

Table 2.1

Content Expert Panel Review for Self-Efficacy for Therapeutic Communication

Original 10 Items written for SETC	Content expert rating rubric	CE 1 ratings ^a	CE 2	Final 15 Items written for SETC scale ^b
<p>1. How confident are you right now that you can listen attentively to your patient with an open posture?</p> <p><i>CE 1: this looks like two concepts; listen attentively and open posture.</i></p> <p>After review, this question was rewritten into two questions, <i>listen attentively</i> became Question 1.</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. No</p> <p>e. Yes</p> <p>f. Yes</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Unsure</p> <p>d. No</p> <p>e. Yes</p> <p>f. W</p>	<p>Question 1. How confident are you right now that you can listen attentively to your patient?</p>
<p>After review: the second concept, <i>open posture</i> became Question 2.</p>				<p>New Item: Question 2. How confident are you right now that you can maintain an “open posture” while talking with your patient?</p>
<p>2. How confident are you right now that you can maintain eye contact with the patient?</p> <p>After review this became Question 3</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. Yes</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	
<p>3 How confident are you right now that you consistently lean-in during your conversation with the patient?</p> <p><i>CE 1: I recommend adding the word ‘can’, so it reflects confidence/self-efficacy.</i></p> <p>After review this became Question 4</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. No</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	<p>Question 3. How confident are you right now that you can maintain eye contact with the patient?</p> <p>Question 4: How confident are you right now that you can consistently lean toward your patient during the conversation?</p>

Original 10 Items written for SETC	Content expert rating rubric	CE 1 ratings ^a	CE 2	Final 15 Items written for SETC scale ^b
<p>4. How confident are you right now that you can maintain silence for at least 5 seconds, two or more times during your conversation with the patient?</p> <p>After review this became Question 5</p>	<p>a. Does the question clearly relate to therapeutic communication being measured? b. Is the intent of the question clear? c. Is the wording of the question clear and understandable to English as second language learners? d. Is the content of the question clear and unambiguous? e. Is the question written at an appropriate level for undergraduate nursing students? f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes b. Yes c. Yes d. Yes e. Yes f. Yes</p>	<p>a. Yes b. Yes c. Yes d. Yes e. Yes f. W</p>	<p>Questions 4. How confident are you right now that you can consistently lean toward your patient during the conversation?</p>
<p>5. How confident are you right now that you know what a broad opening in a conversation is?</p> <p><i>CE1: Should this be related to SE more? Should it be broad opening or opening with a broad question?</i></p> <p>After review: this became Question 12</p>	<p>a. Does the question clearly relate to therapeutic communication being measured? b. Is the intent of the question clear? c. Is the wording of the question clear and understandable to English as second language learners? d. Is the content of the question clear and unambiguous? e. Is the question written at an appropriate level for undergraduate nursing students? f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes b. Yes c. No d. Yes e. Yes f. No</p>	<p>a. Yes b. Yes c. Yes d. Yes e. Yes f. W</p>	<p>Questions 5. How confident are you right now that you can maintain silence for at least 5 seconds, two or more times during your conversation with a patient?</p>
<p>6. How confident are you right now that you can use general leading statement to keep the conversation going with the patient?</p> <p>After review this became Question 7</p>	<p>a. Does the question clearly relate to therapeutic communication being measured? b. Is the intent of the question clear? c. Is the wording of the question clear and understandable to English as second language learners? d. Is the content of the question clear and unambiguous? e. Is the question written at an appropriate level for undergraduate nursing students? f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes b. Yes c. Yes d. Yes e. Yes f. Yes</p>	<p>a. Yes b. Yes c. Yes d. Yes e. Yes F.W</p>	<p>Question 6. How confident are you right now that you can paraphrase what the patient says and repeat it back to the patient? 7</p>

Original 10 Items written for SETC	Content expert rating rubric	CE 1 ratings ^a	CE 2	Final 15 Items written for SETC scale ^b
<p>7. How confident are you right now that you use open-ended questions in your conversations with the patient?</p> <p><i>CE 1: Include the word 'can'</i></p> <p>After review this became Question 8</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. No</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	<p>Questions 7. How confident are you right now that you can use general leading statements to keep the conversation going with the patient?</p>
<p>8. How confident are you right now that you can restate what the patient says in a conversation, back to the patient so you can be sure that what you heard is what the patient said?</p> <p><i>CE 1: Suggest 'reflect back' or 'paraphrase' instead of 'restate' – intent of the question is unclear (b)</i></p> <p>After review this became Question 6</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. No</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. Yes</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	<p>Questions 8. How confident are you right now that you can use open-ended questions in your conversation with the patient?</p>
<p>After review, a new question was developed and became Question 9</p>				
<p>9. How confident are you right now about seeking clarification with something the patient says to you?</p> <p><i>CE1: Suggest – 'that you can seek clarification about something the patient says to you'</i></p> <p>After review this became Question 10:</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. No</p> <p>d. No</p> <p>e. Yes</p> <p>f. No</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. es</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	<p>New Item: Question 9. How confident are you right now that you can sit with a patient who remains silent?</p>

Original 10 Items written for SETC	Content expert rating rubric	CE 1 ratings ^a	CE 2	Final 15 Items written for SETC scale ^b
<p>10. How confident are you right now that you can offer therapeutic use of self with the patient in a conversation?</p> <p>After review this became Question 11</p>	<p>a. Does the question clearly relate to therapeutic communication being measured?</p> <p>b. Is the intent of the question clear?</p> <p>c. Is the wording of the question clear and understandable to English as second language learners?</p> <p>d. Is the content of the question clear and unambiguous?</p> <p>e. Is the question written at an appropriate level for undergraduate nursing students?</p> <p>f. Is the question specifically related to self-efficacy that is being measured?</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. Yes</p>	<p>a. Yes</p> <p>b. Yes</p> <p>c. Yes</p> <p>d. Yes</p> <p>e. Yes</p> <p>f. W</p>	<p>Question 10. How confident are you right now that you can seek clarification about what the patient says to you?</p>
11. This item came from Questions 10				<p>Question 11. How confident are you right now that you can offer therapeutic use of self with the patient in a conversation?</p>
12. Item reworded from Question 5				<p>Question 12. How confident are you right now that you can begin a conversation with a broad opening statement?</p>
<p>13. New Item: How confident are you right now that you can identify cues about a patient's spirituality?</p> <p><i>CE 2: the survey would be more holistic if spirituality were included</i></p>				<p>Question 13. How confident are you right now that you can identify cues about a patient's spirituality?</p>
<p>14. New Item: How confident are you right now that you can pray with a patient if asked to by the patient?</p> <p><i>CE 2: Students should be looking for cues or ask about religion, praying...</i></p>				<p>Question 14. How confident are you right now that you can pray with a patient if asked to by the patient?</p>
15. This item came from Question 6				<p>Question 15. How confident are you right now that you can remain present with a patient who becomes sad and emotional?</p>

^aNote: Under content expert review: Yes = agreement with item, No = disagreement with item, U = unsure of agree/not agree, W = without comment.

^b Reviewer 3 agreed with all items

Item Analysis

Means and standard deviations (SD) for responses to the 15 items on the SETC are shown in Table 2.2. Item means ranged from 6.61 to 8.79 with SD ranging from 1.44 to 2.67.

Table 2.2

Means and SDs of Self-Efficacy for Therapeutic Communication Scale

Item	<i>M</i>	<i>SD</i>
1. How confident are you right now that you can listen attentively to your patient?	8.74	1.450
2. How confident are you right now that you can maintain an 'open posture' while talking with your patient?	8.39	1.435
3. How confident are you right now that you can maintain eye contact with the patient?	8.56	1.768
4. How confident are you right now that you can consistently lean toward your patient during the conversation?	8.08	1.813
5. How confident are you right now that you can maintain silence for at least 5 seconds, two or more times during your conversation with a patient?	8.79	1.699
6. How confident are you right now that you can paraphrase what the patient says and repeat it back to the patient?	8.09	1.733
7. How confident are you right now that you can use general leading statements to keep the conversation going with the patient?	7.10	1.995
8. How confident are you right now that you can use open-ended questions in your conversation with the patient?	7.72	1.774
9. How confident are you right now that you can sit with a patient who remains silent?	8.14	1.969
10. How confident are you right now that you can seek clarification about what the patient says to you?	8.13	1.909
11. How confident are you right now that you can offer therapeutic use of self with the patient in a conversation?	7.26	2.359
12. How confident are you right now that you can begin a conversation with a broad opening?	7.52	2.057
13. How confident are you right now that you can identify cues about a patient's spirituality?	6.61	2.059
14. How confident are you right now that you can pray with a patient if asked to by the patient?	7.11	2.671
15. How confident are you right now that you can remain present with a patient who becomes sad and emotional?	8.37	1.899

Dimensionality

Factor extraction was performed on preintervention survey results to estimate the dimensionality of the SETC scale. Initial statistics from principal components analysis identified three components for extraction, with eigenvalues greater than 1.00. A *scree* plot demonstrated a sharp drop at approximately 2 factors, as shown in Figure 2.1. An exploratory principal-axis factor analysis was used as the factor extraction method for the SETC scale. Two factors

accounted for 51.3% of the variance, specifically, Factor 1 accounted for 44% of the variance and Factor 2 accounted for 7.3% of the variance. After Varimax rotation with Kaiser normalization, the two factors were labeled on the basis of the content of the items that loaded above .40. Two subscales were created from the factors. The *Communication Techniques* subscale included the 9 items that loaded above .50 on Factor 1. The *Intuitive Practices* subscale included 6 items that loaded above .40 on Factor 2. Items in both subscales are displayed with their corresponding factor loadings in Table 2.3. The factor loadings of the subscale items ranged from .43 to .95. The two items that cross loaded were included in the scale on which they had the higher loading. One of these was: *Lean toward the patient while talking* and the other was *Maintain silence for 5 seconds, two or more times during conversation*. Scores for each subscale were calculated by taking the sum of raw scores for the items in the subscale: Communication Techniques (Subscale 1) $M = 72.3$, and Intuitive Practices (Subscale 2) $M = 46.8$. The correlation between Communication Techniques and Intuitive Practices was $r = .67$ ($p < .001$).

Figure 2.1

Scree plot showing factor extraction of Self-Efficacy for Therapeutic Communication Scale

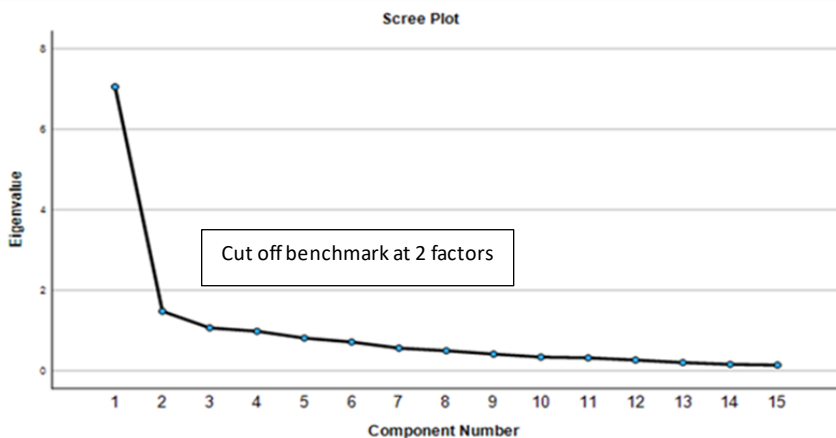


Table 2.3*Factor Loadings for SETC*

Factor	Communication Techniques	Intuitive Practices
Use general leading questions to keep conversation going	.787	.095
Begin conversation with a broad opening statement	.752	.347
Use open-ending questions	.724	.151
Listen attentively	.680	.302
Maintain an open posture	.667	.247
Paraphrase and repeat back to patients?	.609	.370
Lean toward the patient while talking	.605	.506
Seek clarification	.525	.378
Maintain eye contact	.512	.436
Remain present with an emotional patient	.109	.945
Sit with a patient who remains silent	.376	.627
Identify cues about a patient's spirituality	.316	.546
Offer therapeutic use of self	.380	.474
Pray with a patient if asked	.092	.438
Maintain silence for 5 seconds, two or more times during conversation?	.418	.430

Note: Extraction Method: Principal Axis Factoring
Rotation Method: Varimax with Kaiser Normalization

Because the scales derived from the Varimax rotation were correlated, the same data were subjected to an exploratory factor analysis with Principal-axis factor used for factor extraction and Promax rotation with Kaiser normalization. The scree plot indicated that one or two factors were appropriate. Eigenvalues greater than 1.00 were identified for two components, which accounted for 56% of the variance, with Factor 1 accounting for 49% of the variance and Factor 2 accounting for 9.8% of the variance. Items loaded on Promax rotation similarly to the Varimax rotation, with the same 9 items loaded on one subscale, and the same 6 items as were previously identified with the Varimax rotation loaded on the second subscale. The correlation

between subscales after the Promax rotation was .63. The high correlation between the factors suggested that one factor best represented the data. For this reason, the items were summed into a single scale, the Self-Efficacy for Therapeutic Communication Scale, with Cronbach's alphas .91 at pretest, .95 at posttest, and .93 at follow-up.

Reliability

The Communication Techniques Subscale (items 1, 2, 3, 4, 6, 7, 8, 10, and 12) had a Cronbach's alpha of .91. Intuitive practices (items 5, 9, 11, 13, 14, and 15) had a Cronbach's alpha of .79. The total score was used in subsequent analyses. Test-retest reliability for the scale from pre- to posttest was .68, pre- to follow-up was .41, and posttest to follow-up was .68.

Construct Validity

An additional instrument, the Clinical Skills Self-Efficacy (CSES) scale (Appendix E) was used in this study to measure student nurses' self-efficacy for clinical skills and was found to be positively correlated with the SETC at pretest, $r(88) = .35, p < .001$, and at posttest, $r(88) = .34, p < .001$. Construct validity for the CSES was previously established by Oetker-Black and Kreye (2015); therefore, evidence building for construct validity of the SETC scale was assumed (Polit and Beck, 2012).

Discussion

Ever since Florence Nightingale wrote *Notes on Nursing* (Nightingale, 1860), communicating with patients has been studied in an effort to provide improved patient outcomes, patient care, patient education, and patient satisfaction. The results of the research reported in this paper provide validity and reliability of the Self-Efficacy for Therapeutic Communication scale (SETC) developed for this study

The 15 items of the scale reflect the operational definition of therapeutic communication according to Hildegard Peplau (1987); therapeutic communication is an essential part of the relationship between a nurse and patient, where the observance of non-verbal as well as verbal messaging helps the nurse to better understand the patient. Peplau pointed out that patients come to hospital due to ‘events’ in their life where they are psychologically or physically unwell and stressed that it is the professional role of the nurse to assist the patient in recovery. To aid the patient in recovery, the nurse has to learn about the patient through observation skills that allow to nurse to see what the patient may not be showing or hear what the patient is not communicating with words yet (Peplau, 1952’). To address Bandura’s Self-Efficacy theory in the framework of this study, the student nurse who has an opportunity to care for a standardized patient in a simulated learning environment may envision that encounter as a safe way to practice therapeutic communication which may eventually progress to mastery and increased self-efficacy for therapeutic communication. The SETC scale identifies key aspects of the operational definition of therapeutic communication in the 9-item Communication Techniques subscale (verbal), and the 6-item Intuitive Practices subscale (nonverbal).

The process of instrument development described in this paper was similar to the process used by Oetker-Black et al. (2014) in developing the Clinical Skills Self-Efficacy Scale (CSES). The authors of the CSES began with 14 items related to clinical skills in undergraduate nursing students but removed 3 items after factor loadings were calculated. Cronbach’s alpha levels were computed on all 4 subscales, but two of the scales reported alphas of .54 and .64. The study by Oetker-Black et al. (2014) used a convenience sample of nursing students from one site.

A longitudinal study by Bulfone et al. (2016) described the reliability and validity of a newly developed instrument, the Nursing Self-Efficacy in Psychomotor Skills Scale (NSE-PS).

The authors dropped 17 components after factor analysis revealed low loadings. The remaining components were divided into three subscales with Cronbach's alpha of .92, .85, and .89. The sample from Bulfone et al. was large ($n = 571$ at Time 1) and ($n = 546$ at Time 2); however, the participants were all from one university in Italy.

Implications

Implications for nursing research with regards to Self-Efficacy for Therapeutic Communication Scale could be to develop a scale with a broader view of communication constructs. An investigation of empathy, a concept analysis to determine ways in which a nurse conveys empathy, as well as techniques that are considered 'active listening' could create a much broader operational definition of therapeutic communication. In addition, the scale might include the concept of communication clarity with items such as, *I am able to clearly state what I mean.*

Study Limitations

Even though this current study recruited participants from three sites, the sample size was small, ($N = 90$). Boateng et al. (2018) put forth, "The rule of thumb has been at least 10 participants for each scale item, i.e., an ideal ratio of respondents to items is 10:1" (p. 8), therefore this study would have needed at least 150 or more subjects. The use of self-report instruments can be seen as a limitation, but the nature of this study was the student's perception of self-efficacy. Also, the repetitiveness of the same surveys with three collection points can be limiting in that participants may have gotten fatigued or lost interest in completing the measures.

Conclusion

Therapeutic communication is critical to patient care, "... minimizing or eliminating miscommunication, and delivering safe, quality care" (O'Shea et al., 2013, p. e5). Along with therapeutic communication, undergraduate nursing students entering their first clinical semester

spend many hours in practice and simulation labs learning basic psychomotor skills that they will be called upon to perform in the clinical setting. In the classroom, nursing students learn about concepts covering preventive health, acute care, and restorative health for individuals across the lifespan. To administer medications, nursing students memorize metric measurements, practice preparing medications in the practice lab, and pass a dosage calculation test before they are allowed to administer medications to a patient in the clinical setting. Student nurses are also taught that communicating with a patient requires special attention to make it “therapeutic;” they learn techniques that enhance communication as well as the techniques that should be avoided because of the potential to block effective communication with a patient.

This study and the development of the SETC scale contribute to a growing body of evidence supporting the need for therapeutic communication competencies in prelicensure nursing students similar to the competencies that already exist. In light of the AACN (2021) *Essentials* document impacting undergraduate curriculum, the SETC scale could become an effective evaluation of a student nurse’s performance (competence) in therapeutic communication.

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Chapter III: The Effects of Stress and Anxiety on Self-Efficacy for Clinical Skills and Therapeutic Communication in Prelicensure Nursing Students

Eustress is a term that refers to *good* stress, such as when preparing for a celebration, the birth of a baby, or interviewing for a promotion; the effects of which can enhance an individual's "...motivation, performance and emotional wellbeing" (Merriam-Webster, n.d.). Stress that derives from an unwelcome situation is distress, which can negatively impact an individual's performance or mental well-being. Lazarus and Folkman (1984) defined psychological stress as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (p. 19).

Descriptions of Stress

Lebois et al. (2016) proposed three identifying features of a stressful event: 1) the presence of "a discrepancy between an expectation and an actual situation; 2) a threat to self; and 3) a perceived lack of self-efficacy... to remove ... the threat..." (p.121). Stressful situations identified by undergraduate nursing students include rigor of the nursing curriculum, bearing witness to pain and suffering, skill performance expectations in the clinical setting and also, a notable gap between concepts learned in the classroom and the clinical setting (Ganzer & Zauderer, 2013; Zhange et al., 2018). Severe symptoms of stress often occur disproportionately in nursing and medical students as compared to other disciplines (Chernomas & Shapiro, 2013). Specifically, Chernomas and Shapiro (2013) identified common themes about the clinical experience as a source of stress in the undergraduate nursing student, "...before, during, and after the clinical day" and "balancing multiple demands" (p. 261).

Similarly, Moscaritolo (2009) reported in her study that the clinical setting was found to be stressful; nursing students identified their "first clinical experience" and, "fear of making

mistakes” as antecedents to stress (p. 17). Ratanasiripong et al. (2015) stated, “the presence of prolonged stress and multiple stressors” can “aggravate” anxiety (p. 520).

Stress and Anxiety

Spielberger and his colleagues (1983), provided evidence of the correlation between stress and anxiety; scores of the S-Anxiety (state anxiety) from the State-Trait Inventory Scale increased during an experiment where a movie was used to induce stress. The results showed that scores for stress increased during the movie, and then stress lowered under relaxed conditions Spielberger (1983).

Theoretical Framework

The theoretical framework that guides Chapter 3 of this dissertation is based on Bandura’s (1977) Self-Efficacy theory and Benner’s (2001) Novice to Expert theory.

Self-Efficacy Theory

Bandura (1977) defined self-efficacy as the “belief in one’s capabilities to organize and execute the courses of action required to produce given attainments” (p. 3). The central tenets of the Self-Efficacy Theory include the environment in which learning occurs, motivation to master a skill, “modeling by others,” and “verbal persuasion,” (Bandura, 1977, p. 3). When an individual with high self-efficacy experiences an unsuccessful attempt at mastering a skill, they are internally driven to problem-solve and get past the obstacles that delay success, whereas an individual who does not possess self-efficacy may consider that one attempt as a failure. The literature is replete with studies on self-efficacy for specific domains, including self-efficacy of healthcare professionals in interprofessional practice (Kottorp et al., 2019), in occupational therapy, to establish therapeutic relationships (Ritter & Yazdani, 2018), and in emergency room nurses (Murphy, 2022). Nursing studies of self-efficacy focus on clinical competence (Clark et

al., 2004); critical care (Stump et al., 2012); simulation (Kimhi et al., 2016; Li et al., 2019); psychomotor skills (Bulfone et al., 2016); and clinical experiences (George et al., 2019).

Students wishing to fulfill a dream of becoming a nurse enter an extremely rigorous program where they begin clinical courses right away. They attend high-stakes didactic courses each semester accompanied by the clinical rotations for those nursing courses. Content overload in undergraduate nursing education is pervasive, and with high-stakes exams, the stress on nursing students can be overwhelming. Adding to the challenge of acquiring new nursing knowledge, are the psychomotor skills that must be competently performed by the nursing student before attending clinical rotations. Benner (2001) adapted her theory, Novice to Expert theory to nursing from the works of the Dreyfuss brothers, who had developed a model of skill acquisition, and believed that a student passes through five levels of proficiency in the acquisition of a skill: novice, advanced beginner, competent, proficient, and expert. At the novice level, undergraduate nursing students function under “rules-governed behavior” due to their lack of experiences to rely on for information (Benner, 2001, p. 21). Benner wrote, “Experience is therefore a requisite for expertise” (2001, p. 3).

Self-Efficacy for Nursing Skills

Stump et al. (2012) stated that a self-efficacy scale evaluating nursing skill performance requires an instrument that provides “reliable and valid interpretation of students’ scores” (p. 150). The authors of The Nursing Student Self-Efficacy Scale (NSSSES) further explained this point by stating that students who experience low self-efficacy for performing a critical skill may “delay initiation” of action, which may lead to “adverse consequences for the patient” (Stump et al., 2012, p. 149). Furthermore, “adverse patient outcomes” can also result from a student who is over-confident in performing a skill yet does not perform it correctly (p. 149).

Oetker-Black and Kreye (2015), guided by Bandura's Self-Efficacy Theory, developed an instrument to evaluate self-efficacy for clinical nursing skills, the Clinical Skills Self-Efficacy Scale (CSES). Oetker-Black and Kreye (2015) found that results supported past "performance accomplishments hav[ing] a direct effect on an individual's self-efficacy" (p.166). More recently, Bulfone et al. (2016) developed an instrument that measures the acquisition of psychomotor skills by undergraduate nursing students along with self-efficacy for performing that skill. The authors found that clinical skills performance can be highly stressful, and may impact self-efficacy, skill performance, and also affect "memory, concentration, problem-solving skills, and coping" (Bulfone et al., 2016, p. e5). The purpose for developing the instrument, was to improve self-efficacy for psychomotor skills, which they hoped would reduce student stress (Bulfone et al., 2016, p. e4). The Nursing Student Self-Efficacy in Psychomotor Skills scale was then used in a longitudinal study ($n = 571$ at Time 1; $n = 546$ at Time 2) by Bulfone et al. (2016), where the authors found the level of self-efficacy for psychomotor skills had significantly increased between timepoints $p = .002$, at Time 1 and, $p < .001$ at Time 2, leading the authors to wonder about the reciprocal nature of self-efficacy, as mastery of skill could then motivate the learner for the next skill to learn.

Self-Efficacy for Therapeutic Communication

Therapeutic communication is also a critical component of the nurse-patient healing relationship. The manner in which Hildegard Peplau described the nurse-patient relationship epitomized it as "the central event in nursing" according to Gastmans (1998, p. 1315). Peplau developed the Interpersonal Relations in Nursing Theory which highlights the vital role of the nurse in understanding both verbal and non-verbal messages of the patient as a goal toward gaining the patient's trust and advocating on behalf of the patient. Student nurses are taught

techniques to enhance communication with a patient, the behaviors that limit effective communication, and about body language that is congruent with verbal messaging. These skills are then used together to help form the trust necessary for the nurse-patient relationship to develop (Blake & Blake, 2019; Lin, 2019; Webster, 2014; Zavertrnik et al., 2010).

The American Nurses Association (ANA, n.d.) states, “because nurses are likely to have the most direct contact with patients, effective nurse-patient communication is critical.” The American Association of the Colleges of Nursing has declared, “Communication ... is a central component in all areas of nursing practice” (AACN, 2021, p.12).

Learning strategies that are used to teach therapeutic communication include role play in the classroom, vignettes with discussion, the use of a standardized patient (an actor) in a simulation learning experience, or an interprofessional simulation experience. Rosenberg and Gallo-Silver (2011) developed role play scenarios that resembled “difficult patient encounters” where cue cards depicting challenging “statements and behaviors” that a student nurse might encounter were used (p. 5). Rosenberg and Gallo-Silver stressed that the short amount of time during the clinical day that a student nurse has to develop a therapeutic relationship with a patient does not leave much room for “less than optimal communication” (2011, p. 3). Practice in the lab or classroom setting followed by reflection provides an opportunity for the novice communicator to explore communication barriers and enhancers and plan for future patient interactions. There is a plethora of research on High-Fidelity Human Simulation (HFHS) used for teaching psychomotor skills and even clinical decision making in complex simulations of decompensating patients or a complicated birth. However, there are limitations in using HFHS to teach therapeutic communication. Foremost among those limitations is the lack of authenticity

evidenced by “the inability of the manikin to display nonverbal communication” (Kameg et al., 2014, p. 568).

Purpose

The purpose of this report was to examine relationships between the perceptions of stress, state anxiety, and trait anxiety in the undergraduate nursing student. In addition, the principal investigator examined the relationships between self-efficacy for nursing skills and self-efficacy for therapeutic communication and stress, state anxiety, and trait anxiety. This study is part of a larger study where a standardized patient was used in a simulation learning experience on therapeutic communication for the students in the intervention group. The comparison group of this larger study participated in role play in the classroom.

Hypotheses

1. In undergraduate nursing students, a positive relationship exists between the perception of stress, state anxiety, and trait anxiety.
2. In undergraduate nursing students, an inverse relationship exists between stress and
 - a. self-efficacy for nursing skills and
 - b. self-efficacy for therapeutic communication
3. In undergraduate nursing students, inverse relationships exist between state anxiety and
 - a. self-efficacy for nursing skills and
 - b. self-efficacy for therapeutic communication,
4. In undergraduate nursing students, inverse relationships exist between trait anxiety and
 - a. self-efficacy for nursing skills and

- b. self-efficacy for therapeutic communication.

Method

Study Design

This was an experimental study with randomization using a two-group intervention/comparison design with data collection points, preintervention, post-intervention, and at follow-up, which occurred two or more weeks after the intervention.

Protection of Human Subjects

This study was approved by the Institutional Review Boards (IRBs) of Teachers College Columbia University, Roberts Wesleyan University, Monroe Community College (MCC), and Niagara County Community College (NCCC). Nursing students were invited to participate in the study after attending an information session held at each of the nursing schools. Students were informed that participating in the study was voluntary, and that they could end their participation at any time. Students were also told that all documentation received from them would remain confidential with the use of a random number that would replace their name on each survey using Research Randomizer (www.randomizer.org). Students were assured that participating, or not participating in this study would not impact their grades in any way, and all students who completed the surveys at pretest, posttest and follow-up would be compensated for their time with a \$10 gift card. To minimize the perception of coercion for the nursing students at Roberts Wesleyan University, where the primary investigator is a lead teacher, a research assistant managed the recruitment, informed consent, and data collection for those participating in the study at that university.

Sample Size

A priori power analysis using G*Power 3.1.9.4. software for bivariate correlation using an alpha probability of .05, power of .80 and a .3 effect size revealed a sample size of 67 was needed. The sample size in this study initially was 90 and then dropped to 87 by the end of all data collection.

Participants and Settings

This study was completed with a convenience sample of nursing students from one traditional bachelor's degree nursing program and two associate degree nursing programs. Roberts Wesleyan University (RWU) offers a Bachelor of Science in Nursing degree (BS) at a small, private Christian college. Nursing enrollment at the time of this study was 30 junior level nursing students and 40 students in the senior level. Roberts Wesleyan University is located in a suburb on the western side of Rochester, New York, which is located in the Finger Lakes Region of New York State.

Monroe Community College is located in a suburb on the east side of Rochester, New York, where the nursing program admits approximately 150 nursing students each year into the 2-year Associate of Applied Science in Nursing degree (A.A.S.). Total student enrollment at the two campuses is 12,000. The third nursing program that participated in this study was at NCCC which also offers the A.A.S in Nursing degree. At the time of this study, enrollment in the nursing program was 100 students. NCCC is located 90 miles from Rochester, near the New York State and Canadian border.

Procedure

After receiving approval from the IRB at each school, the process of the study was then shared with the Nursing Department Chairs and lead teachers involved. Dates for an information

session for the students, and subsequent data collection were then agreed upon. The information session was conducted by the principal investigator at MCC and NCCC and followed a script written by the principal investigator to be sure that the same information was given to all potential participants. However, at RWU the research assistant read the same script, instead of the principal investigator, thereby minimizing the perception of coercion for students at RWU to participate in a study conducted by their teacher.

At the end of the information session, every student was given an envelope with consent forms (Appendix F) and survey instruments that counted as the pretest data. Envelopes were collected at the same time from every student, thereby negating any stigma that might accompany participating or not participating in the study. After separating participants from non-participants, students were then randomized to the intervention group or comparison group using a random table of numbers generated by Research Randomizer software (www.randomizer.org). At the pretest, participants were asked to complete six survey instruments: the STAI-Y1 (state anxiety) and the STAI-Y2 (trait anxiety), (Appendix G) the Perceived Stress Scale (PSS), (Appendix H), the Clinical Skills in Self-Efficacy Scale (CSES) (Appendix E), Self-Efficacy for Therapeutic Communication Scale (SETC) (Appendix D), and a Demographic Form (Appendix I). Following the learning activity participants were asked to complete an additional instrument, the National League for Nursing Learning Activity Design Scale (Appendix J), along with the STAI-Y1 (state anxiety), CSES, and SETC. After the participants had attended their clinical rotation at least two times, they were asked to complete the STAI-Y1, CSES, and SETC instruments a third time. Data collection took 1 year to complete since this study depended on the scheduled instruction of therapeutic communication within each school's curriculum.

Standardized Patient

A standardized patient (SP) is an actor who is trained to play the role of a fictitious person in a scenario just as they would with any acting position. The actor follows a script with the language and behaviors designated by the producer of the scenario. In this study, the SP was someone who had acted in this role in previous simulations and was familiar with the types of questions and responses she might encounter with student nurses. The script she followed provided general guidelines on condescending behaviors and language that she could use to mimic a slightly difficult patient who is intolerant of a student nurse, while all along she is hiding a deep concern that her medical problem would require surgery, which was her greatest fear. The SP was instructed to only reveal her fears regarding surgery upon direct questions from the student nurse about surgery, anesthesia, or dying while under anesthesia.

Role play

Role play is a common teaching/learning strategy where a situation or behavior can be acted out by one or more students to bring a situation or behavior “to life.” The benefits of role play are that it does not require high-tech equipment, or a paid actor to work. The realism of role play however, is contingent on the willingness and ability of students to become an actor and play the parts as written.

Individualized Process Recording

An Individualized Process Recording (IPR) form (Appendix K), or a transcription tool is often used in the application of therapeutic communication by students learning the phases of the nurse-patient relationship (Townsend, 2014). Hildegard Peplau (1987) identified chronological phases to the nurse-patient relationship as it pertains to therapeutic communication: orientation, working, and termination (p. 201). The IPR includes space for each of these phases with separate

columns for statements made by the student nurse and statements made by the patient. Space on the form is also included for non-verbal communication by either the student or patient, as well as space for the student to analyze the communication techniques used in the conversation they captured. Filling out the form allows the student time to reflect on their communication techniques. After the form is completed, it can be used during debrief to explore how the student applied the communication techniques learned.

Intervention

Classroom rosters were used in this study to randomly assign students in each class to either the intervention group or comparison group. Each group in the study included study participants as well as students who chose not to participate in the study as the learning activity on therapeutic communication was part of the scheduled activity for therapeutic communication, however, data were only collected from students who had consented to participate in the study.

Intervention group. The intervention group went to the simulation area at each site where the SP was waiting in a simulated hospital room. A 10-minute pre-brief with the students included orientation to the simulation lab environment, and review of the objectives that guided the simulation learning experience, as suggested by Jeffries et al. (2016). After receiving report on Ms. Taylor “the patient,” each student entered her hospital room individually and engaged in a 3-to-4-minute conversation. After the encounter, each student completed an Individual Process Recording (IPR) form where the conversation they had with Ms. Taylor was written out verbatim. When all students had completed their reflection, the principal investigator facilitated debriefing of the simulation.

Students were given a brief report of the patient that they were to interview:
female patient, age 50, not married, no known allergies, has a high-stress job, is here for a diagnostic work up for diverticulitis. Vital signs are within normal limits; last given pain medication 4 hours ago for abdominal pain rated at 8 out of 10. She is anxious and awaiting results of testing.

Comparison Group. Students who had been randomized to the comparison group were paired with another student and participated in role play, in the classroom. Each student in the pair was given a script to follow when it became their turn to play the role of the patient. The patient in each pair was directed to behave in a certain way with specific language and each had a secret that would only be revealed if the student in the role of the student nurse asked specific open-ended questions. After a 3-to-4-minute conversation, the student who had the role of student nurse took a few minutes to write out their conversation on the IPR. Role play then commenced with the pair reversing roles; the student playing the role as the patient in the new scenarios followed a new script with a new secret that could only be shared if the student nurse asked specific questions. As previously done in the first round of role play, time was given for the student in the role of student nurse to complete an IPR. When all students were done with the IPRs a short debrief ensued.

Scenario One - Patient role. Students playing the role of the patient in scenario one, were provided the same script to follow as the SP: You are a successful business owner in your 40's who is at the hospital because testing for diverticulitis has indicated that you may require surgery. You fear surgery, but most of all anesthesia-because you had an uncle who died during surgery many years ago. Because of this fear, you are preoccupied and trying to stay busy with work while in the hospital. You are becoming impatient and frustrated that the physician is

taking so long to come and speak with you. You will be a patient who is intolerant of most things, but most of all the student nurse, *what can she do for me?* When it comes time to give medications, you inform the student nurse that you only want the “real nurse” to give you medications. All along you are hiding your deep fear and concern that your medical problem would require surgery. Only reveal your fears regarding surgery with direct questioning from the student nurse about surgery, anesthesia or dying while under anesthesia.

Scenario One – Nurse Role. Students playing the role of the nurse were given a brief report of the patient that they were to interview: Female patient, age 40, not married, no known allergies, has a high-stress job and is here for a diagnostic work up for diverticulitis. Vital signs are within normal limits, last given pain medication, 4 hours ago for abdominal pain rated at 8 out of 10. She is anxious and awaiting results of testing.

Scenario Two – Patient Role. Students playing the role of the “patient” in scenario two were given the following directions: You are a 70-year-old and live alone in your own home. You are 3 days post hip surgery after a fall at home while washing windows. You hear rumors that you will need to go to a rehabilitation center before being discharged to your own home, and you fear that if you go to a rehab center, a nursing home, that you will never return to your home. You spend all the time with the student nurse focusing your attention on the student nurse. You are cautioned to withhold any disclosure of information about yourself unless you are asked a direct question about your fears, the rehabilitation center, the nursing home, and your fear of never returning to your own home.

Scenario Two – Nurse Role. Student nurses taking on the role of the nurse in scenario two are given this report: Patient is 70-years old, vital signs are within normal limits, last received pain medication 2 hours ago for pain at surgical site. Patient has been attending physical

therapy twice a day and will be transferred to the rehabilitation center tomorrow before finally being discharged home.

Instruments

State-Trait Anxiety Inventory (STAI)

The State-Trait Inventory (STAI) has 40 items divided into two 20-item scales using a 4-point Likert-type measure with a range of scores of 20 to 80. The STAI-Y1 measures state anxiety, measuring the intensity of feelings “at this moment,” and STAI-Y2, which measure trait anxiety, is directed at feelings that are “relatively enduring” in their personality (Spielberger, 2015, p. 16).

Reliability. Reliability includes “test-retest correlations for the STAI-Y2 Scale, (trait anxiety), .73 to .86” and changes little over time, whereas the test-retest correlations for the “STAI-Y1 Scale, (state anxiety), range from .16 to .62” which is reflective of a response to an anxiety-producing situation (Spielberger, 2015, p. 36). In the current study, the Cronbach’s alpha on the STAI-Y1 measuring state anxiety at pretest was .90; posttest was .89; and follow-up was .93 while the STAI-Y2, measuring for trait anxiety was .92.

Perceived Stress Scale (PSS-10)

The Perceived Stress Scale (PSS-10) uses a 5-point Likert scale with 10 questions that measure stress, which Cohen et al. (1983) defined as “the measure of the degree to which situations in one’s life are appraised as stressful” and directs the individual to evaluate situations in their life over the past month that the individual has found to be “unpredictable, uncontrollable, and overloaded” (p. 387). Total scores on the PSS-10 range from 0 to 40 on the “feelings and thoughts the learner has experienced in the last month” with “0” (*never*) to “4” (*very often*) (Cohen et al., 1983, p. 388). In this self-report instrument, low stress is considered a

score of 0 to 13; moderate stress as 14 to 26; and high stress as 27 to 40. The PSS-10 was found to be psychometrically superior to the PSS-14 or the PSS-4 (Lee, 2012).

Reliability. In the study by Lee (2012), the Cronbach's alpha of the PSS-10 was evaluated at .70. Test-retest reliability of the PSS-10 was $> .70$. In the current study the Cronbach's alpha was .91 (pretest), .89 (posttest), and .88 (follow-up).

The Clinical Skills Self-Efficacy Scale (CSES)

The Clinical Skills Self-Efficacy Scale (CSES) is a 9-item questionnaire which, guided by Bandura's Self - Efficacy Theory, Oetker-Black and Kreye, (2015) developed to be specific to relevant clinical psychomotor skills. The student is directed to answer this question for each of the nine items: "how confident are you right now of your ability to perform ..." and, then rating themselves on a scale of 1 (*no confidence*) to 10 (*total confidence*). Factor analysis resulted in two factors, Factor 1 included technical skills (injections, dressing changes, medication calculation, and transfer of patients); and Factor 2 included higher level clinical reasoning skills (heart sounds, lung sounds and CPR) (Oetker-Black & Kreye, 2015).

Validity and Reliability. Content validity index of $> .80$ was found for all scale items. Factor 1, which contained items with technical skills had a Cronbach's alpha = .84; and Factor 2 with Cronbach's alpha = .74 included items about higher level, clinical reasoning skills (Oetker-Black & Kreye, 2015). Using the CSES, Van Horn and Christman (2017), found that senior nursing students reported performing all skills on the CSES significantly more often than junior nursing students ($p < .01$), with subsequent higher levels of self-efficacy ($p < .01$) demonstrating evidence of construct validity. In this study, Cronbach's alpha for the CSES was .93 (pre), .93 (post) and .88 (follow-up).

The Self-Efficacy for Therapeutic Communication Scale (SETC)

The Self-Efficacy for Therapeutic Communication Scale (SETC) was developed for this study by the principal investigator. After a literature search determined that the instruments currently in use did not measure the construct in the way that the principal investigator had hoped to, the process of creating the SETC began. Polit and Beck (2012) recommend first establishing a pool of items specific to the construct of interest. Sources used in creating a pool of items for therapeutic communication included four nursing textbooks and a nursing textbook on communication. (Arnoldussen et al., 2019; Hinkle & Cheever, 2018; Potter et al., 2015; Riley, 2012; Townsend, 2014). Next an expert panel was convened to assess clarity, inclusiveness, and readability.

Reliability. Although a content validity index was not calculated from the expert panel, comments from the expert panel were used in rewriting question items for the version of the SETC that was used in this study. Cronbach's alpha for this new scale was .91 (pretest), .95 (posttest), and .93 (follow-up).

Demographic Questionnaire

Characteristics of each study participant were collected on a 12-item demographic questionnaire developed by the principal investigator, in part, to identify the existence of extraneous variables. The questions included: age, gender, ethnicity, language, whether they were employed in health care, and what methods, if any, were used to promote self-care, Four questions were asked that could be identified with behaviors related to increased stress and/or anxiety: "had the student missed days from either school or work in the last 30 days," "had the student visited their healthcare provider in the last 30 day," and had the student ever been prescribed medication for the treatment of anxiety?"

Data Analysis

Data analysis was completed using IBM SPSS version 29. Demographic variables were analyzed with frequencies, percentages, means, and standard deviations. Correlation coefficients were computed to evaluate relationships between stress (PSS), state anxiety (STAI-Y1), and trait anxiety (STAI-Y2). Correlation coefficients were then computed for each variable and PSS, STAI -Y1, and STAI-Y2 with self-efficacy for nursing skills (CSES) and self-efficacy for therapeutic communication (SETC). Assumptions of normal distribution of variables were met. Scatterplots depicted linear relationships among variables.

Results

Data were collected from 90 undergraduate nursing students at pretest and posttest, and 87 undergraduate nursing students at follow-up data due to attrition. Data collection occurred over one full year, fall semester 2021, where 29 students initially enrolled, and 28 students completed all three sets of data instruments. An additional 30 students consented to participate in the study and completed all instruments in spring 2022. In fall 2022, 31 students consented to participate in this study, and 29 completed all survey instruments.

Demographic Characteristics.

The age range of the participants in this study was 18 to 60 years, with 40% of the students between 18 and 21 years of age. Seventy-four percent of the participants were female, and 80% were Caucasian. Additional ethnicities reported were: 12.2% Black ($n = 11$), 8.9% of Asian descent ($n = 8$), 5.6% Hispanic/Latina ($n = 5$), and one participant Native American, while 14.4% ($n = 13$) identified with more than one ethnic group. Some students chose more than one selection in the ethnicity item, thereby inflating the sample size to appear to be 110 participants when it was really 90 study participants for pretest and posttest data, and 87 participants for

follow-up data. Demographic characteristics for the participants in this study are presented in Table 3.1.

Table 3.1

Demographic Characteristics of Study Participants

Characteristics		N	%
Gender	Male	20	22.2
	Female	70	77.8
Race/ Ethnicity	American Indian		
	Asian	1	1
	Black	8	8.9
	Hispanic	11	12.2
	White	5	5.6
	More than 1 race/ethnicity	72	80
		13	14.4
Have you ever or do you now take medication for feeling nervous? (number answering Yes)		23	25.6
Have you missed any days from work or school for any reason in the last 30 days? (number answering Yes)		22	24.4
	Missed 1 day	7	7.7
	Missed 2 days	6	6.7
	Missed more than 3 up to 12 days	9	10
Have you visited a healthcare provider in the last 30 days? (number answering Yes)		52	57.8
How many visits to healthcare provider in the last 30 days?			
	No visits	38	42.2
	Visited HCP one time	28	31.1
	Visited HCP 2 to 5 times	24	26.7
Do you now, or have you ever worked in healthcare? (Number answering Yes)		61	67.8
Are you unemployed? (Number answering Yes)		15	16.7
Hours currently working each week			
	More than 20 hours (Yes)	35	38.9
	Between 6 and 20 (Yes)	36	40
	Between 1 and 5 (Yes)	3	3.3

Chi-square tests were conducted to evaluate preintervention differences on the demographic variables between intervention and comparison groups. The only statistically significant finding was that the intervention group had a greater percentage of third semester students (67.3%) than the comparison group (45.7%), Pearson $\chi^2(1) = 4.11, p = .043$.

None of the remaining demographic variables were found to be statistically significant when group differences were examined using chi-square tests. One interesting finding among the work habits of the participants in this study was that thirty-five students (38.9%) reported working more than 20 hours a week while in nursing school, however this was not found to be a significant difference between the intervention and comparison groups. Also, worth mentioning since this study was conducted during the COVID pandemic, 57.8% of the participants reported visiting a healthcare provider in the 30 days prior to the date of the study, while 26.7% reported visiting a healthcare provider at least two times, but chi-square tests did not result in statistically significant differences between groups.

Correlations between Stress, State Anxiety, Trait Anxiety

Pearson product-moment correlation coefficient (Pearson's r) was calculated to address Hypothesis 1, indicating that positive relationships exist between stress, state anxiety, and trait anxiety. Findings revealed significant contemporaneous (i.e., relationships between variables measured at the same time) correlations between stress, state anxiety, and trait anxiety across all time points, (pre, post, follow-up), as shown in Table 3.2. Positive relationships between all variables were statistically significant at $p < .001$, with a range of correlations ($r = .53$ to $.91$). In terms of magnitude, the correlations between stress, state anxiety and trait anxiety suggest a moderate to large effect size ($r^2 = .28$ to $.84$).

Table 3.2.*Correlations Among Stress, State Anxiety, and Trait Anxiety at Pretest, Posttest, and Follow-up*

		Trait	State Anxiety pre	State Anxiety post	State Anxiety follow-up	Stress Pre	Stress Post
	N	90	90	90	87	90	90
State Anxiety Pre	Pearson correlation Sig. (2-tailed)	.714 <i>p</i> < .001					
State Anxiety Post	Pearson correlation Sig. (2-tailed)	.660 <i>p</i> < .001	.699 <i>p</i> < .001				
State Anxiety Follow-up	Pearson correlation Sig. (2-tailed)	.572 <i>p</i> < .001	.645 <i>p</i> < .001	.633 <i>p</i> < .001			
Stress Pre	Pearson correlation Sig. (2-tailed)	.817 <i>p</i> < .001	.656 <i>p</i> < .001	.660 <i>p</i> < .001	.547 <i>p</i> < .001		
Stress Post	Pearson correlation Sig. (2-tailed)	.786 <i>p</i> < .001	.587 <i>p</i> < .001	.629 <i>p</i> < .001	.577 <i>p</i> < .001	.914 <i>p</i> < .001	
Stress Follow-up	Pearson correlation Sig. (2-tailed)	.670 <i>p</i> < .001	.533 <i>p</i> < .001	.598 <i>p</i> < .001	.791 <i>p</i> < .001	.778 <i>p</i> < .001	.805 <i>p</i> < .001

Note. Pre = pretest; post= posttest; follow-up= 2 or more weeks after intervention

Tests of Hypotheses

Stress

Hypothesis #2a proposed that self-efficacy for clinical skills would be inversely related to stress. Results are displayed in Table 3.3. Pearson's *r* was used to determine the correlations of stress (PSS-10) with self-efficacy for clinical skills (CSES). Contemporaneous significant correlations exist between stress and self-efficacy for nursing skills at all data collection points, pre-, post-, and follow-up ranging from $r = -.25$ ($p = .020$), to $r = -.29$ ($p < .007$). This range indicates that stress had a medium effect on self-efficacy for clinical skills, which accounted for 8% of the variance at the follow-up collection point.

Hypothesis #2b proposed that self-efficacy for therapeutic communication would be inversely related to stress. As Table 3.3 indicates the only significant contemporaneous relationship between stress and therapeutic communication is the inverse correlation at posttest

of, $r = -.23$, $p = .030$, indicating less than a medium effect on self-efficacy for therapeutic communication .

State Anxiety

Hypothesis #3a proposed that self-efficacy for clinical skills was inversely related to state anxiety. Table 3.3 shows that self-efficacy for clinical skills was found to be inversely and significantly correlated with state anxiety at two data collection points, post-, and follow-up. The correlation coefficients were $r = -.23$ ($p = .030$) at posttest, and $r = -.25$ ($p = .019$) at follow-up suggesting that state anxiety had slightly less than a medium effect on self-efficacy for clinical skills.

Hypothesis #3b proposed that self-efficacy for therapeutic communication would be inversely correlated with state anxiety. As Table 3.3 shows self-efficacy for therapeutic communication was significantly and inversely correlated with state anxiety only at posttest, $r = -.38$, $p < .001$, accounting for 14% of the variance with a slightly greater than medium effect on self-efficacy for therapeutic communication.

Trait Anxiety

Hypothesis #4a proposed that self-efficacy for clinical skills would be inversely related to trait anxiety, which was measured only at the pretest session. As indicated in Table 3.3, self-efficacy for clinical skills was found to be inversely and significantly related to trait anxiety at pre, post, and follow-up. The range of inverse correlations for trait anxiety with self-efficacy for clinical skills was $r = -.24$ ($p = .023$), to $r = -.28$ ($p < .007$), suggesting that the trait of anxiety has a medium effect on self-efficacy for clinical skills consistently at all times in this study.

Hypothesis #4b proposed that self-efficacy for therapeutic communication would be inversely related to trait anxiety. Table 3.3 shows that self-efficacy for therapeutic

communication was found to be significantly and inversely related to trait anxiety only at the posttest, with a correlation coefficient of $r = -.319$ ($p = .002$), indicating a medium effect on self-efficacy for therapeutic communication which accounts for 10% of the variance.

Correlations between Self-Efficacy for Clinical Skills and Self Efficacy for Therapeutic Communication

Pearson's r was also calculated to examine the relationships of scores from the CSES, to scores from the SETC. Statistically significant and positive correlations were found at two data collections points: at pretest, $r = .348$, $p < .001$, and at posttest, $r = .336$, $p = .001$. The two measures were not significantly correlated at follow-up.

Discussion

The purpose of this correlational study was to evaluate the relationships of stress, state anxiety, and trait anxiety to each other and also to self-efficacy for clinical skills and self-efficacy for therapeutic communication in undergraduate nursing students. The results confirmed Hypothesis #1, which posited that stress, state anxiety and trait anxiety were highly correlated in the nursing students. These findings were consistent with findings from previous studies. Yucha et al. (2009) studied stress in nursing students ($n = 175$) over four semesters in a quasi-experimental, two-group design where the intervention group remained at one hospital for their clinical rotations through the four semesters almost exclusively. Results indicated a moderately positive relationship between stress and anxiety, and also showed systematic decreases in anxiety across the four semesters for the intervention group, possibly due to familiarity with the clinical environment. The control group, on the other hand had increased anxiety scores in semester two where the nursing students in that group were placed in a new clinical setting but were now expected to be competent in the fundamental skills of the first semester. In this study, anxiety

was alleviated in the intervention group with the familiarity of the hospital unit from semester to semester. In another study, Zhang et al. (2018) examined whether an association between perceived stress, using PSS-10, and symptoms of anxiety existed in undergraduate nursing students ($n = 242$). The study also examined sleep quality which was positively correlated with anxiety ($Rho = .45, p < .01$) as was perceived stress with anxiety ($Rho = .76, p < .01$).

Stress was found to have contemporaneous inverse correlations with self-efficacy for clinical skills at all time points in the current study. These findings support Hypothesis #2a. However, Hypothesis #2b was only partially supported given that self-efficacy for therapeutic communication was only significantly and inversely correlated post intervention with stress scores. Reeve et al. (2013) examined stress and coping mechanisms in undergraduate nursing student ($n = 107$) and found that stress in undergraduate nursing students negatively affected clinical performance.

As to why neither stress nor anxiety was found to be correlated with therapeutic communication at pretest in the current study, it may be that students do not know *what they don't know*. Students entering nursing school are familiar with communicating. Oftentimes this consists of texting or using email, and, if necessary, talking on the phone or in person. Unfamiliar to the nursing student are the nuances and rules of effective communication with patients and families that are essential for communication to be “therapeutic.” The lack of correlation of scores from the pretest SETC with pretest stress and anxiety scores suggests students may have been answering the SETC haphazardly prior to performing in the simulated learning experience. The relationship of posttest stress scores and anxiety to the posttest SETC reflects the realization that therapeutic communication is another skill they have yet to learn, and they may have answered the questions more systematically so that correlations could be found.

Hypotheses #3a and #3b which posited that, as state anxiety increased in the undergraduate nursing student, self-efficacy for the clinical skills and therapeutic communication would decrease, were partially confirmed. Neither self-efficacy measure was related to anxiety at the pretest, both were inversely and significantly related to anxiety at the post test, and only self-efficacy for clinical skills was significantly related to anxiety at follow-up.

The findings from this study are similar to findings in the literature; anxiety that is measured as severe affects undergraduate nursing students in the performance of psychomotor skills (Akca et al., 2015; Nielsen & Harder, 2013); communication with patients in the clinical setting (Szpak & Kameg, 2013); and performance in the clinical setting (Baksi et al., 2017; Cheung & Kit, 2011; Gore et al., 2011; Villeneuve et al., 2018).

Although Hypotheses #3a and #3b are supported with evidence from previous studies, the number and strength of the relationships between state anxiety and self-efficacy for clinical skills and for therapeutic communication were less than what was expected. Overall stress and anxiety were related to self-efficacy for clinical skills in 8 of the 9 significant contemporaneous correlations. Stress and anxiety have fewer effects on self-efficacy for therapeutic communication skills only 3 of 9 correlations were significant and were all at posttest. Effect sizes of these few correlations were small.

Table 3.3

Correlations of STAI-Y1, STAI-Y2, PSS-10, with CSES and SETC Scale.

		Trait Anxiety	State Anxiety			Stress			Skills			Talking		
			Pre	Post	Follow - up	Pre	Post	Follow-up	Pre	Post	Follow-up	Pre	Post	Follow-up
N		90	90	90	87	90	90	87	90	90	87	90	90	87
Trait	Pearson's <i>r</i> Sig (2-tail)													
State pre	Pearson's <i>r</i> Sig (2-tail)	.714 <i>p</i> < .001												
State Post	Pearson's <i>r</i> Sig (2-tail)	.660 <i>p</i> < .001	.699 <i>p</i> < .001											
State follow-up	Pearson's <i>r</i> Sig (2-tail)	.572 <i>p</i> < .001	.645 <i>p</i> < .001	.633 <i>p</i> < .001										
Stress pre	Pearson's <i>r</i> Sig (2-tail)	.817 <i>p</i> < .001	.656 <i>p</i> < .001	.660 <i>p</i> < .001	.547 <i>p</i> < .001									
Stress post	Pearson's <i>r</i> Sig (2-tail)	.786 <i>p</i> < .001	.587 <i>p</i> < .001	.629 <i>p</i> < .001	.577 <i>p</i> < .001	.914 <i>p</i> < .001								
Stress follow-up	Pearson's <i>r</i> Sig (2-tail)	.670 <i>p</i> < .001	.533 <i>p</i> < .001	.598 <i>p</i> < .001	.791 <i>p</i> < .001	.778 <i>p</i> < .001	.805 <i>p</i> < .001							
Skills pre	Pearson's <i>r</i> Sig (2-tail)	-.284 <i>p</i> = .007	-.122 <i>p</i> = .254	-.230 <i>p</i> = .029	-.317 <i>p</i> = .003	-.246 <i>p</i> = .020	-.246 <i>p</i> = .020	-.335 <i>p</i> < .002						
Skills post	Pearson's <i>r</i> Sig (2-tail)	-.283 <i>p</i> = .007	-.113 <i>p</i> = .288	-.229 <i>p</i> = .030	-.322 <i>p</i> < .002	-.248 <i>p</i> = .018	-.249 <i>p</i> = .018	-.335 <i>p</i> < .002	.973 <i>p</i> < .001					
Skills follow-up	Pearson's <i>r</i> Sig (2-tail)	-.244 <i>p</i> = .023	-.085 <i>p</i> = .434	-.186 <i>p</i> = .084	-.252 <i>p</i> = .019	-.186 <i>p</i> = .084	-.200 <i>p</i> = .063	-.287 <i>p</i> = .007	.933 <i>p</i> < .001	.909 <i>p</i> < .001				
Talking pre	Pearson's <i>r</i> Sig (2-tail)	-.145 <i>p</i> = .173	-.153 <i>p</i> = .149	-.181 <i>p</i> = .087	.033 <i>p</i> = .762	-.080 <i>p</i> = .453	-.058 <i>p</i> = .585	-.025 <i>p</i> = .820	.348 <i>p</i> < .001	.314 <i>p</i> < .003	.319 <i>p</i> < .003			
Talking post	Pearson's <i>r</i> Sig (2-tail)	-.319 <i>p</i> = .002	-.259 <i>p</i> = .014	-.380 <i>p</i> < .001	-.099 <i>p</i> = .360	-.235 <i>p</i> = .026	-.229 <i>p</i> = .030	-.145 <i>p</i> = .181	.362 <i>p</i> < .001	.336 <i>p</i> = .001	.317 <i>p</i> = .003	.681 <i>p</i> < .001		
Talking follow-up	Pearson's <i>r</i> Sig (2-tail)	-.132 <i>p</i> = .225	-.130 <i>p</i> = .231	-.198 <i>p</i> = .066	-.019 <i>p</i> = .863	-.021 <i>p</i> = .845	-.047 <i>p</i> = .668	.041 <i>p</i> = .708	.041 <i>p</i> = .706	.020 <i>p</i> = .852	.071 <i>p</i> = .512	.409 <i>p</i> < .001	.678 <i>p</i> < .001	

Note. STAI-Y1 = State-Trait Anxiety Inventory, state anxiety; STAI-Y2 = State-Trait Anxiety Inventory, trait anxiety; PSS-10 = Perceived Stress Skill; CSES = Clinical Skills Self-Efficacy Scale; SETC = Self-Efficacy in Therapeutic Communication Scale; Skill = self-efficacy for clinical skills; Talking = self-efficacy for therapeutic communication.

Pre – pretest, post – posttest, follow-up – 2 or more weeks after intervention

Bolded = significant results *p* < .05 level. Unbolded = nonsignificant results *p* > .05

Hypotheses #4a and #4b were supported by the findings in this study: trait anxiety was inversely related to self-efficacy for clinical skills. The test for trait anxiety, STAI-Y2 was only given at pretest, yet significant inverse relationships were found with pretest, posttest, and follow-up results on self-efficacy for clinical skills, and at posttest only, for therapeutic communication. Spielberger (1983) provides this explanation of trait anxiety, that it “refers to relatively stable individual differences in anxiety-proneness” (p. 5). The consistent way in which inverse relationships with trait anxiety occurred, see Table 3.3, demonstrates that anxiety-proneness may be more related to self-efficacy than the situation specific state anxiety. Trait anxiety had four statistically significant inverse relationships with self-efficacy variables.

In reviewing the demographics of the participants in this study, 54 out of the 90 students who volunteered to be in this study were students from MCC’s associate degree nursing program. In MCC’s curriculum, there are four semesters of clinical courses, of which, therapeutic communication is taught with the psychiatric nursing course in the third semester. This could explain the confidence levels in clinical skills and therapeutic communication of students who have already been in clinical courses for two previous semesters. VanHorn and Christman (2017) examined self-efficacy for nursing skills in junior and senior nursing students and found the scores for senior nursing students much higher than for juniors. This could be due to the increased opportunities to practice nursing skills for seniors, and the effect of mastery leading to self-efficacy.

O’Shea et al. (2013) observed communication behavior of undergraduate senior nursing students ($N = 55$) in 19 recorded pediatric and obstetric simulations. The results of their findings included the following observed behaviors by nursing students: attending to assessing the patient and tasks needing to get done instead of communicating, or only communicating briefly;

engaging the patient in communication unrelated to a specific health concern; using closed-ended questions; standing over the patient when communicating instead of sitting; and, using medical jargon when speaking with patients and families. Nursing students in the O'Shea et al. (2013) study may not have been as concerned about effective communication as they were about completing an accurate assessment and other tasks that were time sensitive. The authors concluded that analyzing communication techniques of student nurses through observations or video recordings provides an opportunity for faculty to provide feedback and "develop reflective practitioners" who acknowledge the self-improvements for which they can strive.

Limitations

A limitation of this study was the sample size, which if larger, may have demonstrated more significant correlations with self-efficacy for therapeutic communication. An additional limitation was the use of self-report, which although necessary for the collection of data regarding the nursing students' perceptions, can impact validity and accuracy (Polit & Beck, 2012). In all, 13 variables were included in these analyses. Forty-four correlations were significant with a p value $< .05$ of which there were 30 positive correlations and 14 negative correlations. Some experts recommend adjusting significance levels when many analyses are conducted on the same data to correct for Type 1 errors. If the principal investigator had applied a Bonferroni adjustment to prevent the possibility of committing a Type 1 error, the significance level would have been lowered to .003, limiting the statistically significant results to four correlations, and the increasing possibility of committing a Type 2 error. Because these correlations were hypothesized and because Bonferroni is considered an overly conservative correction, the unadjusted results are presented.

Numerous attempts were made to get approval from traditional Bachelor of Science in nursing programs so that the level of nursing education would be at equivalent levels across institutions. In order to reach the sample size needed for the study, associate degree nursing programs were then solicited. The difference in curricula among the different types of nursing programs could have contributed to less than expected results of the relationship of anxiety and stress with self-efficacy for clinical skills and therapeutic communication.

Implications for Nursing Education

This study adds to the growing body of nursing education research examining the effect of stress and state anxiety on undergraduate nursing students, specifically self-efficacy for the ability of the undergraduate nursing students to perform in the clinical setting. Future research could examine the effect of stress and state anxiety on nursing student self-efficacy in a longitudinal study as the student progresses through the clinical semesters of the junior and senior years in a Bachelor of Science Nursing program, or associate degree program. Additionally, great care should be taken to include nursing students at the same level of experience in regard to the nursing program, to limit extraneous variables that may skew analytical results.

The evidence in the literature also identifies stress and state anxiety as legitimate factors that can interfere with the acquisition of skills in undergraduate nursing students, or even impact performance in the clinical setting. Awareness of the substantive impact that stress and anxiety have on undergraduate nursing students and the ability to perform clinical skills or therapeutic communication is a priority. An intentional focus on self-care for the student nurse and mental wellbeing would be a helpful addition to a nursing program.

Mitigating stress and anxiety, while demonstrating concern for the mental health of nursing students could be achieved in simple and creative ways. For instance, nurse educators in the classroom, could enhance didactic learning with experiential learning activities such as simulations, and simulations with standardized patients to provide authenticity and the opportunity for students to practice “being a nurse.” By following the guidelines of Albert Bandura’s Self-Efficacy Theory, clinical instructors can assist students in developing self-efficacy for performing in the clinical setting by allowing students to 1) practice a skill to develop mastery, 2) observe others perform skills, 3) receive encouragement for effort, and 4) have a role model. In addition, nursing programs might be more student-centered if they encouraged or educated clinical faculty to have a wellness mindset and be intentional with each interaction with their clinical students.

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Chapter IV: Standardized Patient Versus Role Play: What Is the Effect on Undergraduate Nursing Students' Anxiety and Self-Efficacy when Learning Therapeutic Communication?

Anxiety in undergraduate nursing students can increase because of fear of making an error or of causing fatal harm to a patient. This claim is supported in a concept analysis by Simpson and Sawatsky (2020) in which the attributes of anxiety were divided into four themes. The four themes included: perceived threats causing anxiety, emotional responses to the perceived threat, psychological-cognitive responses to anxiety, and physiological responses to anxiety.

According to Simpson and Sawatsky (2020), the theme of perceived threats included “overwhelming sense of responsibility, making mistakes, causing patient harm, lack of knowledge of patient care, and feeling incompetent” (p. 2). The second theme, emotional responses to the perceived threat included, “worry, uneasiness, insecurity, dread, apprehension, and uncertainty” (Simpson & Sawatsky, 2020, p. 2). A third theme identified during the concept analysis was psychological-cognitive responses to anxiety, described as, “perceptual disturbances, memory bias, misinterpretations, decreased performance, and decreased efficiency” (Simpson & Sawatsky, 2020, p. 3). The final theme that was identified by Simpson and Sawatsky (2020) was physiologic responses to anxiety including “increased pulse and respiratory rate, perspiration, facial flushing, restlessness, jaw clenching, and insomnia” (p. 3).

Effect of Anxiety on Undergraduate Nursing Students

Anxiety that is measured as severe affects undergraduate nursing students in the performance of psychomotor skills (Akca et al., 2015; Nielsen & Harder, 2013), communication with patients in the clinical setting (Szpak & Kameg, 2013), performance in the clinical setting (Baksi et al., 2017; Villeneuve et al., 2018), and student learning (Nielsen & Harder, 2013). A

review of the literature on anxiety revealed that nursing students described anxiety as “threatening” (Baksi et al., 2017; Beischel, 2013; Cheung & Kit, 2011), causing feelings of “worry” (Baksi et al., 2017), “fear” (Baksi, et al., 2017; Chen et al., 2012; Szpak & Kameg, 2013), and “apprehension” (Beischel, 2013; Chen et al., 2012; Chernomas & Shapiro, 2013; Gore et al., 2011; Szpak & Kameg, 2013).

Impact of high anxiety on patient care

Nursing students who experience elevated levels of anxiety may not be able to provide comprehensive and safe care to patients in the clinical setting (Kameg et al., 2014). Simpson and Sawatsky (2020) reported that the influence of anxiety on a nursing student’s cognition and ability to quickly respond to a deteriorating situation may jeopardize patient safety. Lapse of memory due to anxiety may impact vital sign interpretation, medication administration, and intravenous fluid management. Incomplete patient care or faulty assessment skills may result when elevated levels of anxiety are present.

Theoretical Frameworks

Three theoretical frameworks were used to design and implement this study.

Interpersonal Relations in Nursing Theory

Hildegard Peplau’s Interpersonal Relations in Nursing Theory, developed in 1952, stems from the theorist’s transformative ideas about “the power of relationships in nursing” (D’Antonio et al., 2013, p. 311). Hildegard Peplau’s theory has had a persistent effect on nursing practice that is still relevant today regarding the treatment of people with mental illness, the professional role of the nurse as an independent practitioner, and the importance of therapeutic communication in the nurse-patient relationship. Therapeutic communication is essential to the interpersonal relationship between a nurse and patient, whereby the nurse observes non-verbal

behavior, and listens to verbal messages of the patient to better understand the patient (Peplau, 1987). “Understanding of the meaning of the experience to the patient is required in order for nursing to function as an educative, therapeutic, maturing force” (Peplau, 1952, p 41).

Accordingly, the goal of the nurse-patient relationship is for the patient to be encouraged to share information and express their feelings and fears (Gastmans, 1998). Peplau (1987) identified chronological phases to the nurse-patient relationship: orientation, working, and termination (p. 201). These phases of development of the nurse-patient relationship are often used as the foundation for teaching therapeutic communication. Directly impacting the teaching method in this study are the phases of the nurse-patient relationship as outlined by Peplau, as well as the use of an Individual Process Recording Form (IPR), which has been widely used in teaching the application of therapeutic communication (Townsend, 2014).

Experiential Learning Theory

David Kolb (1984) described learning as “the process whereby knowledge is created through the transformation of experience” (p. 38). Kolb’s Experiential Learning Theory (ELT) as described by Poore et al. (2014) includes: (a) a concrete experience (doing), (b) reflective observation of the experience, (c) abstract conceptualization (learning from the experience), and (d) experimentation of the experience (trying out what was learned). The learning activities described in the procedures of this study follow Kolb’s theory. For the concrete experience, participants interviewed a Standardized Patient (SP) in a simulated learning environment (SLE), or they interviewed a classmate in a role play scenario in the classroom. After completing a 3-to-5- minute conversation each participant completed an Individual Process Recording (IPR) of their interview. The IPR then became the focal point of the participant’s reflection on their own performance using therapeutic communication techniques. With their reflection, participants

were asked to identify communication techniques in their conversation that either enhanced or potentially blocked therapeutic communication. This self-assessment then provided the basis for the participant's conceptualization of their current performance in using therapeutic communication techniques and laid the groundwork for future situations.

Self-Efficacy Theory

An additional theoretical framework guiding this study was Albert Bandura's Self-Efficacy Theory. According to Bandura (1977), self-efficacy is the "belief in one's capabilities to organize and execute the courses of action required to producing given attainments" (p.3). Bandura (1994) suggested, "the stronger the perceived self-efficacy" toward a goal, the stronger a person's commitment to the goal" (p.3). Bandura (1994) explained that several factors influence the development of self-efficacy in an individual: past performance and mastering a skill; positive reinforcement; recognizing challenges as motivating, rather than derailing; and learning vicariously. The use of a standardized patient in this study was influenced by Bandura's Self-Efficacy Theory as this intervention had the underpinnings of promoting self-efficacy in the nursing student in at least three ways: 1) engaging in a simulation experience where one is able to practice having a conversation using therapeutic communication techniques with a standardized patient adds to the student's past experience and contributes to their development of self-efficacy; 2) participating in a facilitated debrief after the simulation allows discussion of the experience each student had, as well as validates each student's feelings about the experience, thereby creating a safe environment where positive reinforcement could be experienced; and 3) practicing communication techniques and reflecting on one's performance provides opportunities to work towards proficiency and eventually mastery in the skill of using

therapeutic communication techniques. The safe environment provided by the simulated experience was hypothesized to diminish the fear of *saying the wrong thing to a real patient*

Therapeutic Communication

The Agency for Healthcare Research and Quality put forth that “communication between the patient, family, and clinician is a critical component of high-quality, safe care...” (Agency for Healthcare Research and Quality, 2017, p. 1). Benner et al. (2010) stated that developing the skill of therapeutic communication is essential “for delivering patient care... educating patients... and communicating effectively...” (p. 28). Nursing students are taught therapeutic communication techniques imperative to the development of a therapeutic relationship with a patient. Specific techniques that may enhance communication include attentive listening, using silence, asking open-ended questions, providing recognition, therapeutic use of self, and seeking clarification from the patient of the issues they are facing (Riley, 2012; Rosenberg & Gallo-Silver, 2011). Non-therapeutic communication techniques that may block communication include failing to listen, providing false reassurance, being judgmental, and giving advice to the patient.

Strategies for teaching therapeutic communication.

Strategies used to teach therapeutic communication have included didactic lecture, vignettes used to demonstrate various communication techniques, and active learning strategies such as role play and simulated learning experiences. Simulated learning experiences can be with a SP or in High-Fidelity Human Simulation (HFHS). The following describes these active learning strategies in more detail.

Role play. Role play is a strategy where a student takes on the role of fictional character with directed behaviors, props, and either a scripted or non-scripted dialogue (Rosenberg &

Gallo-Silver, 2011). Role play is contingent on each student's willingness to take on a persona and follow a script for the purpose of learning. Blake and Blake (2019) pointed out that role play may be limiting since students "... generally lack experience with acting" thereby affecting the authenticity of a "real-life situation[s]" (p. 263). The benefits of role play are that this activity does not require high-tech equipment, nor does it involve hiring a trained actor to play the part.

Simulation learning experience (SLE) with a Standardized Patient (SP). The Association of Standardized Patient Educators (ASPE) Standards of Best Practice (SOBP) define the terms, "*standardized patient* and *simulated patient* (SP), as a person trained to portray a patient, (an actor), in realistic and repeatable ways" (Lewis et al., 2017, p. 2). Simulation learning experiences (SLEs) with SPs "bring a level of behavioral and emotional realism to the simulation practice case," thereby rendering "SPs" as the "better choice over manikins (Sideras et al., 2013, p. 421). A disadvantage of having an actor facilitate the realism in a simulation as opposed to a manikin is the hourly wage of the actor. Additionally, the recruitment, orientation, and training of SPs can be time consuming for nursing faculty with a full teaching load (Donovan & Mullen, 2019).

High-Fidelity Human Simulation (HFHS). Nursing education literature abounds with effective ways in which HFHS is used to teach psychomotor skills. From task trainers, such as "arms" for practicing insertion of an intravenous catheter, static, low-fidelity manikins used for wound care and urinary foley catheterization practice, to high-fidelity manikins where vital signs can mimic a decompensating patient or a simulated vaginal birth can occur, the range of teaching and learning activities seems endless (Gore et al., 2011). The limitation with HFHS in teaching therapeutic communication is "the inability of the manikin to display nonverbal communication" which affects the "realism" of the learning experience (Kameg et al., 2014, p. 568).

Gaps in the Literature

The emerging research on HFHS has demonstrated the effect of decreasing anxiety in undergraduate nursing students where psychomotor skills are practiced in a safe environment and no harm can come to a patient (Cobbett & Snelgrove-Clarke, 2016; Gore et al., 2011). At the same time there has been a paucity of research on the use of SPs and role play to decrease nursing students' anxiety while practicing therapeutic communication techniques with the general hospitalized patient.

Purpose

This study aimed to examine the differences in state anxiety in undergraduate nursing students before and after an intervention (learning therapeutic communication with standardized patients) compared to standard teaching methods in the classroom (role play). A second aim was to examine the effects of the intervention on nursing students' self-efficacy for performing clinical nursing skills and self-efficacy for therapeutic communication. An additional aim was to examine whether stress levels moderate the effect of the intervention on anxiety.

Hypotheses

1. The anxiety level in undergraduate nursing students will be lower in the intervention group (standardized patients in a simulated learning environment) versus the comparison group (a standard teaching method: role play) at posttest and follow-up, approximately 2 weeks after the intervention, after the nursing students attend their clinical rotation at least two times.
2. Compared to those in the comparison group, undergraduate nursing students randomized to the intervention group (standardized patients in a simulated learning environment) will perceive

- a. greater self-efficacy for clinical nursing skills and
 - b. greater self-efficacy for demonstrating therapeutic communication techniques
- during their clinical experience as measured by posttest, and follow-up scores, approximately 2 weeks after the intervention, after the students attend their clinical rotation at least two times.
3. Stress in undergraduate nursing students will moderate the effect of the intervention on state anxiety, such that participants with high stress will show less of an intervention effect than subjects with low stress.

Method

Study Design

This was an experimental study using a 2-group pretest-posttest control group design with follow-up. Data were collected using validated survey instruments from undergraduate nursing students from three nursing programs. Participation was voluntary and students were told they could withdraw from participating in the study at any time. This paper describes part of an investigation that is from a larger research study completed for a dissertation.

Protection of Human Subjects

The Institutional Review Board (IRB) at Teachers College, Columbia University approved this study, as did the IRB at each of the three participating schools: Roberts Wesleyan University, Monroe Community College, and Niagara County Community College. Students were invited to participate in the study after attending an information session. Students were assured that participating or not participating in this study would not impact their grades in any way. Confidentiality of survey responses was assured by deidentifying surveys and replacing student names with randomized numbers obtained from Research Randomizer

(www.randomizer.org). Students who completed all survey instruments at pretest, posttest and follow-up received a \$10 gift card to compensate for their time. To minimize the perception of coercion for the nursing students at Roberts Wesleyan University, where the primary investigator is a lead teacher, a research assistant managed the recruitment, informed consent, and data collection for those participating in the study at Roberts Wesleyan University.

Sample Size

A priori power analysis using G*Power 3.1.9.4. software for repeated measures analysis of variance (ANOVA) within-between interactions using an alpha probability of .05, power of .8 and medium effect size revealed a sample size of 28 was needed. The sample size in this study initially was 90 and then dropped to 87 by the end of all data collection.

Participants and Settings

This study was completed with a convenience sample of nursing students from one baccalaureate nursing program and two associate degree nursing program.

Niagara County Community College (NCCC)

Niagara County Community College offers an Associate of Applied Science in Nursing degree (A.A.S.), typically considered a 2-year program that qualifies nursing students to sit for the National Council Licensing Exam (NCLEX). Enrollment in the nursing program at the time of this study was 100 students, with a total undergraduate body of 5000 students. NCCC is located near the border of New York State and Canada, at Niagara Falls. A majority of the students in this nursing program identified as female (56%), Caucasian (63%), and between the ages of 22 to 41 (70%). This student body consisted of 16 Black, non-Hispanic students; 6 Hispanic students; 4 Asian/Pacific Island students; 1 Native American student, and 10 students who identify with more than one race.

Monroe Community College (MCC)

Monroe Community College has two campuses in the Finger Lakes Region of New York State. One campus is located in downtown Rochester, New York, and a second one in a suburb of Rochester. Total enrollment is approximately 12,000 students. The nursing program at MCC offers an Associate of Applied Science in Nursing (A.A.S.) degree in which 150 students enroll each year. The student body of MCC is diverse with 56% Caucasian, 20% Black, 12% Hispanic, 5% Asian, 4% students who identify with two or more races, and less than 1% Native American. More than 58% of the students are female, and the median age is 21, with a range of 18 to 60 years old.

Roberts Wesleyan University

Roberts Wesleyan University is a private, 4-year college located in a suburb of Rochester, in the Finger Lakes Region of New York State. Here the undergraduate enrollment is less than 1300. At the time of this study there were 30 students enrolled in junior level of the nursing program, and 40 students in the senior level. Roberts Wesleyan University offers a Bachelor of Science (BS) degree with a major in Nursing. Students in the BS program at Roberts represent a more homogenous group than are found at larger public state institutions of higher education. Less than 20% of the nursing students enrolled in the nursing program are representative of culturally diverse groups. The student body in the nursing program is predominantly female with less than 10% representing the male nursing student. Eighteen percent (16) of the nursing student population were older than 23 years of age, with the majority of the nursing students between the ages of 18 and 22 years of age.

Procedure

After receiving approval from the IRBs at each school, the Nursing Department Chairs and lead teachers were apprised of the study components and an information session for each class of potential study participants was planned. A script, read by the principal investigator was used during the information session at the two community colleges. To prevent the perception of coercion at Roberts Wesleyan University, where the principal investigator is one of the lead teachers, a research assistant read the script to potential study participants. Every student was given an envelope with survey instruments that counted as the pretest data. Envelopes were collected at the same time from every student, thereby negating any stigma that might accompany participating or not participating in the study. After separating paperwork for participants from non-participants, students were then randomized to the intervention group or comparison group using a random table of numbers from Research Randomizer (www.randomizer.org).

At the pretest, participants were asked to complete six survey instruments: The State-Trait Anxiety Inventory, STAI-Y1: state anxiety and the STAI-Y2: trait anxiety, Perceived Stress Scale (PSS), the Clinical Skills in Self-Efficacy Scale (CSES), the Self-Efficacy in Therapeutic Communication Scale (SETC), and a Demographic Form. Following the learning activity participants were asked to complete an additional instrument, the National League for Nursing Simulation Design Scale, along with the STAI-Y1 (state anxiety), PSS, CSES, and SETC. Follow-up data collection occurred approximately 2 weeks after the intervention for most students, but up to 4 weeks later for students whose clinical rotation began on a different schedule. Follow up data collection included the STAI-Y1, PSS, CSES, and SETC instruments.

Data collection for this study took 1 year to complete since this study depended on the scheduled instruction of therapeutic communication within each school's curriculum.

Intervention

After receiving the didactic portion of the lesson on therapeutic communication in their respective classrooms, students at each school were randomly assigned to either the intervention group or comparison group. Each group consisted of students who consented to participate in the study as well as those who did not, as the learning activities were designated as part of the scheduled learning activities; however, data were only collected from students who consented to participate in the study.

Intervention group. The intervention group went to the simulation area at each site where a standardized patient, an actor, was in a simulated hospital room. Prior to the intervention, the standardized patient was provided a script to follow, that was written by the principal investigator. A 10-minute pre-brief with the students included orientation to the simulation lab environment and review of the objectives that guided the simulation learning experience as suggested by Jeffries (2012). The intervention group received "report" on a patient scenario in which a standardized patient, an actor, was part of scenarios for this activity written by the principal investigator. Students then engaged in a 3-to-5-minute conversation using therapeutic communication techniques with "the patient" in a simulated hospital room.

Simulation. Students were given a brief report of the patient that they were to interview: Female patient, age 50, not married, no known allergies, has a high-stress job is here for a diagnostic work up for diverticulitis. Vitals are within normal limits, last given pain medication, 4 hours ago for abdominal pain rated at 8 out of 10. She is anxious and awaiting results of testing.

The script given to the SP directed her to be condescending to the student nurse, annoyed at having a student rather than a real nurse attend to her. She was guided to have a demanding demeanor, and continue to work on her laptop or phone, rarely looking up or acknowledging the student nurse. The SP was also directed to act quite distracted throughout the conversation because her ultimate fear was that the doctor was going to tell her she needed surgery, and she is afraid that she will die if she receives anesthesia. Of note, the SP was instructed to only reveal these fears upon direct questioning from the nursing student about surgery, anesthesia or dying.

After a brief conversation with the SP, each student wrote their conversation verbatim on the Individual Process Recording form and was encouraged to reflect on therapeutic communication techniques that were used or identify communication techniques that either helped or hindered therapeutic communication. When all students had completed their reflection, the principal investigator facilitated debriefing of the simulation. Although most students will have begun a review of their actions immediately after their part in a simulation, the guided debrief provided an opportunity for release of any emotional responses students may have felt during the patient encounter. Furthermore, with the guided debrief, students benefit when they "...analyze actions...[and] hypothesize how the situation could be enhanced..." (Jeffries, 2012, p. 111).

Comparison Group. Students who had been randomized to the comparison group were paired with another student and participated in role play, in the classroom. Two rounds of role play were done with each student in the pair taking a turn at role playing the nurse, and then role playing the patient in the next round. In the first round, student "A" was the patient and given a script to follow while student "B" took on the role of the nurse in round one. After a 3-to-5-minute conversation, student "B" completed an IPR on the conversation he/she had with the

patient, which took an additional 2 to 3 minutes. Next, the role reversed, whereby Student “A” became the nurse, and student “B” was now the patient, and had a different script to follow. Student “A” then completed an IPR, writing the conversation verbatim. When all students were done with the IPRs a short debrief ensued.

Scenario One. Students playing the role of the patient in scenario one were provided a script to follow, much like the SP’s script in simulation. Students playing the role of the nurse in scenario one were provided the same report on the “patient” as was done in simulation.

Scenario Two – Patient role. Students playing the role of the “patient” in scenario two were given the following directions: You are a 70-year-old, who lives alone in your own home. You are 3 days post hip surgery after a fall at home while washing windows. You hear rumors that you will need to go to a rehabilitation center before being discharged to your own home, and you fear that if you go to a rehab center, a nursing home, that you will never return to your home. You spend all the time with the student nurse focusing your attention on the student nurse. You are cautioned to withhold any disclosure of information about yourself unless you are asked a direct question about your fears, the rehabilitation center, the nursing home, and your fear of never returning to your own home.

Scenario Two – Nurse Role. Nursing students taking on the role of the nurse in scenario two are given this report: Patient is 70 years old, vitals are within normal limits, last received pain medication 2 hours ago for pain at surgical site. Patient has been attending physical therapy twice a day and will be transferred to the rehabilitation center tomorrow before finally being discharged home.

Instruments

State-Trait Anxiety Inventory (STAI)

The State-Trait Anxiety Inventory (STAI) has 40 items divided into two 20-item Likert-type scale with a range of scores of 20 to 80. The STAI measures the current state of an individual's situational anxiety and distinguishes it from an individual's trait anxiety (Spielberger, 2015). Form Y1, the State-Anxiety scale is typically administered first, so as not to be influenced by the Trait-Anxiety scale, Form Y2. The State-Anxiety scale measures the intensity of feelings "at this moment," with a 4-point Likert-type scale. Whereas the Trait - Anxiety scale asks questions about how a person feels and is "not influenced by stress...and is relatively enduring" (Spielberger, 2015 p. 16). For this reason, trait anxiety is assessed only once, at pretest, because it does not seem likely to change in response to the activities of this study (Spielberger, 2015). The mean scores of state and trait anxiety of the "normative sample of college students" from the STAI-Adult Manual (Spielberger, 1983-2020, p. 13) are shown in Table 4.1.

Reliability. Reliability includes "test-retest correlations for the Trait-Anxiety Scale, .73 to .86" and for the "State-Anxiety Scale, .16 to .62" (Spielberger, 2015, p. 36). The STAI has been used in several studies measuring anxiety in undergraduate nursing students prior to their clinical experience by Gore et al. (2011) and Dearmon et al. (2013). In the current study, the Cronbach's alpha on the STAI-Y1 measuring state anxiety at pretest was .90; posttest was .89; and follow-up was .93 while the STAI-Y2, measuring for trait anxiety was .92.

Table 4.1

Measures of State Anxiety in Normed Sample of College Students

Normed Sample	<i>N</i>	<i>M</i>	<i>SD</i>
Male	296	36.47	10.02
Female	481	38.76	11.95

Note. Normed Sample = normative sample of college students. (Spielberger, 1983, 2020, p. 15)

The Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS-10) uses a 5-point Likert scale with 10 questions that measure stress, which Cohen et al. (1983) defines as “the measure of the degree to which situations in one’s life are appraised as stressful” and directs the individual to evaluate situations in their life over the past month that the individual has found to be “unpredictable, uncontrollable, and overloaded” (Cohen et al., 1983, p. 387). Total Scores on the PSS-10 range from 0 to 40 on the “feelings and thoughts the learner has experienced in the last month” with “0” (*never*) to “4” (*very often*) (Cohen et al., 1983, p. 388). In this self-report instrument, low stress is considered a score of 0 to 13; moderate stress as 14 to 26; and high stress as 27 to 40. The PSS-10 was found to be psychometrically superior to the PSS-14 or the PSS- 4 (Lee (2012).

Reliability. In the study by Lee (2012), the Cronbach’s alpha of the PSS-10 was evaluated at .70. Test-retest reliability of the PSS-10 was > .70. In the current study the Cronbach’s alpha was .91 (pretest), .89 (posttest), and .88 (follow-up).

The Clinical Skills Self-Efficacy Scale (CSES)

The Clinical Skills Self-Efficacy Scale (CSES), developed by Oetker-Black et al. (2016), is a 9-item questionnaire of relevant clinical psychomotor skills. Guided by Bandura’s Self-Efficacy Theory, Oetker-Black et al. (2016) state, “confidence was found to be a valid measurement of efficacy” (p. 169). Content validity index of > .80 was found for all scale items.

Factor analysis resulted in two factors, Factor 1 included technical skills (injections, dressing changes, medication calculation, and transfer of patients); and Factor 2 included higher level, clinical reasoning skills (heart sounds, lung sounds and CPR) (Oetker-Black & Kreye, 2015).

Validity and Reliability. A content validity index of $> .80$ was found for all scale items. Factor 1 with technical skills had a Cronbach's alpha = $.84$; and Factor 2 had a Cronbach's alpha = $.74$ which included higher level, clinical reasoning skills (Oetker-Black & Kreye, 2015). Oetker- Black et al. (2016) state, "confidence was found to be a valid measurement of efficacy (p. 169). Using the CSES, Van Horn and Christman (2017), found senior nursing students reported performing all skills on CSES significantly more often than junior nursing students ($p < .01$), and senior nursing students "demonstrated significantly higher perceived self-efficacy than junior nursing students ($p < .01$), and demonstrating construct validity for the scale. In this study, Cronbach's alpha for the CSES was $.93$ at pretest, $.93$ at posttest, and $.88$ at follow-up.

The Self-Efficacy for Therapeutic Communication Scale (SETC)

The Self-Efficacy for Therapeutic Communication Scale (SETC) was developed for this study by the principal investigator. The scale is a 15-item instrument with a range of scores from 10 to 150. Participants rate how much they agree with each statement using a scale of 1 – *no confidence*, to 10 – *total confidence*. Each item on the scale includes the word, "can," which conveys capability of goal attainment (Bandura, 2006).

Validity and Reliability. Items for the SETC scale were identified from a pool of items extracted from nursing textbooks, (Arnoldussen et al., 2019; Hinkle & Cheever, 2018; Potter et al., 2015; Townsend, 2014), and a book on communication techniques for nurses (Riley, 2012). Content validity was established with an expert panel that examined the scale and suggested changes to the scale prior to its use. In this study internal consistency was established with

Cronbach's alpha .91 (at pretest), .95 (posttest), and .93 (at follow-up). Test-retest reliability from pretest to posttest (immediately after intervention) was .68, pretest to follow-up was .41, and posttest to follow-up was .68. Follow-up scores were collected between 2 and 4 weeks after the intervention, depending on when the nursing student had their second experience in a clinical setting.

Learning Activity Design Scale

The Learning Activity Design Scale was adapted from the National League for Nursing (NLN) Simulation Design Scale. The principal investigator revised the NLN scale to reflect the learning activities developed for this study. Permission to revise the scale was granted in the instructions for use on the NLN website. The NLN Learning Activity Design Scale includes questions regarding the psychological fidelity of each learning activity as perceived by the participants in the study. Fidelity in a simulation is critical as it includes the "belief" that the physical environment as well as the scenario are conceptually relatable. Psychological fidelity is described as an authentic presentation of a patient including verbal and non-verbal communication. This scale was completed by participants with other posttest instruments after the learning activity.

Validity and Reliability. Content validity of the original scale was established by 10 content experts, and Cronbach's alpha testing reliability was found to be .92 for the presence of feature in the simulation, and .96 for the importance of the features. In order to relate to the learning activities utilized in this study, the original scale was revised significantly with permission from the NLN website. Cronbach's alpha in this study was .88.

Demographic Questionnaire

The demographic questionnaire has 12 questions used to collect data on characteristics of the study participants. Questions about age, gender, “number of hours worked outside of school each week,” “number of visits to a healthcare provider in the last 30 days,” “number of days missed from either work or school in the last 30 days,” “do you now, or have you previously worked in a healthcare facility,” and “do you speak another language other than English” were included to help identify the existence of extraneous variables. Two questions on the demographic form asked specifically about anxiety, 1) “Do you now or have you ever been prescribed medication to decrease your level of anxiety or nervousness,” and 2) “Do you participate in self-care activities to decrease your level of stress or anxiety at this present time?”

Data Analysis

Data analysis was completed using IBM SPSS version 29. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to analyze demographic variables among study participants. A mixed Analysis of Variance testing for the interaction of time of test (pretest, posttest, and follow-up) and group (intervention and comparison) was performed to examine anxiety levels using STAI-Y1. Simple main effects for time and groups were also evaluated if the interaction was significant. Similarly, mixed ANOVAs were performed with self-efficacy for clinical skills and therapeutic communication as the outcome variables, testing for the interaction of time and group. Simple main effects were evaluated if the interactions were significant. Finally, two separate mixed ANOVAs testing for the interaction of time of test and group were conducted on participants with low stress and participants with high stress to determine if stress levels moderated the effect of the intervention on anxiety.

Results

Data were collected from 87 undergraduate nursing students, although 90 students from three nursing programs had initially consented to participate in this study. Data collection occurred over one full year, fall semester 2021 where 29 students initially enrolled, and 28 students completed all three sets of data instruments. An additional 30 students consented to participate in the study and completed all instruments in spring 2022. In fall 2022, 31 students consented to participate in this study, and 29 completed all survey instruments.

Demographic Characteristics

Seventy-four percent of the undergraduate nursing students in this study were female ($n = 70$). The age range of participants was from 17 to 60 years with 40% of the students 17 to 21 years old. Students self-reported the following ethnicities on their demographic questionnaire: Black ($n = 11$), Native American ($n = 1$), Asian ($n = 8$), Hispanic/Latina ($n = 5$), Caucasian ($n = 72$). Thirteen participants reported that they identified with more than one ethnic group, which appears to increase the sample size to 110 participants, rather than the 90 that consented to participating in the study. This is because some participants who identified with more than 1 ethnicity, chose to select more than one box on the demographic form, rather than the selection choice - "identify with more than one group." Participants who self-reported having ever been prescribed medication for anxiety accounted for 24% ($n = 23$) of the sample, while 100% ($N = 90$) reported that they participated in a self-care activity to decrease their anxiety. Employment in health care was reported by 64% ($n = 61$), with 56% of participants working between 13 and more than 20 hours a week. Only 15 participants self-reported that they were unemployed. Previously reported were the findings of chi-square tests conducted to evaluate whether significant differences existed between the intervention and comparison groups, and none were

found to be statistically significant except for the level of education. The intervention group had a higher percentage of students in the third semester than the control group, Pearson $\chi^2(1) = 4.11$, $p = .043$.

Anxiety

To address Hypothesis #1 concerning the effect of the intervention using a SP on anxiety of undergraduate nursing students, a mixed ANOVA was conducted to evaluate the time x group interaction - to determine if the participants in the intervention group differed in their pattern of changes over time from those in the control group with self-reported scores of state anxiety (STAI-Y1), the dependent variable at pretest, posttest, and follow-up. Tests of between subjects included the intervention group ($n = 55$) and the comparison group ($n = 35$). The means and standard deviations of anxiety scores for the intervention group and comparison group are displayed in Table 4.2. The scores for this study are similar to the normative sample of college students as reported by Spielberger and shown in Table 4.1.

Table 4.2

Means and SDs of Anxiety in Study Participants

<i>Anxiety</i>	<i>N</i>	<i>M</i>	<i>SD</i>
IG – Pre	55	40.81	10.512
Post	55	39.32	10.533
Follow-up	53	39.36	11.47
CG - Pre	35	37.53	9.238
Post	35	37.35	10.982
Follow-up	34	41.03	11.082

Note. IG = Intervention group; CG = Comparison group
 Pre- = pretest, Post = posttest, Follow-up = 2 or more weeks after intervention
 STAI = State-Trait Anxiety Inventory

Major assumptions for analysis were met: Levene’s Test was non-significant, $p > .05$, therefore homogeneity of variances was assumed. The homogeneity of covariances assumption

was met with Box's Test of Equality of Covariance Matrices nonsignificant, $p = .735$, and the test for sphericity was nonsignificant, $p = .364$. Figure 4.2 shows the statistically significant interaction between time and groups on the STAI-Y1 (state anxiety) scores, $F(2, 170) = 3.551$, $p = .031$, $\eta^2 = .040$.

Because the interaction between time points and groups was significant, tests for simple main effects were performed. Independent samples t tests at pretest, posttest, and follow-up indicated the groups did not significantly differ from each other at any time point. There was a significant change in STAI-Y1 scores (state anxiety) with the comparison group over time, $F(2, 66) = 4.017$, $p = .023$, $\eta^2 = .109$, but no significant change over time was observed in the intervention group, $F(2, 104) = .965$, $p = .384$, $\eta^2 = .018$. Paired samples t tests indicated that participants in the comparison group were more anxious at follow-up than at any other time. Statistically significant changes were found in the comparison group over time; pretest to follow-up, $t(33) = 2.515$, $p = .017$, 95% $CI(-.077, -.780)$, Cohen's $d = .077$, and from posttest to follow-up $t(33) = 2.173$, $p = .037$, $CI(-.222, -.718)$, Cohen's $d = .022$, both with small effect sizes, however.

Self-Efficacy for Clinical Skills

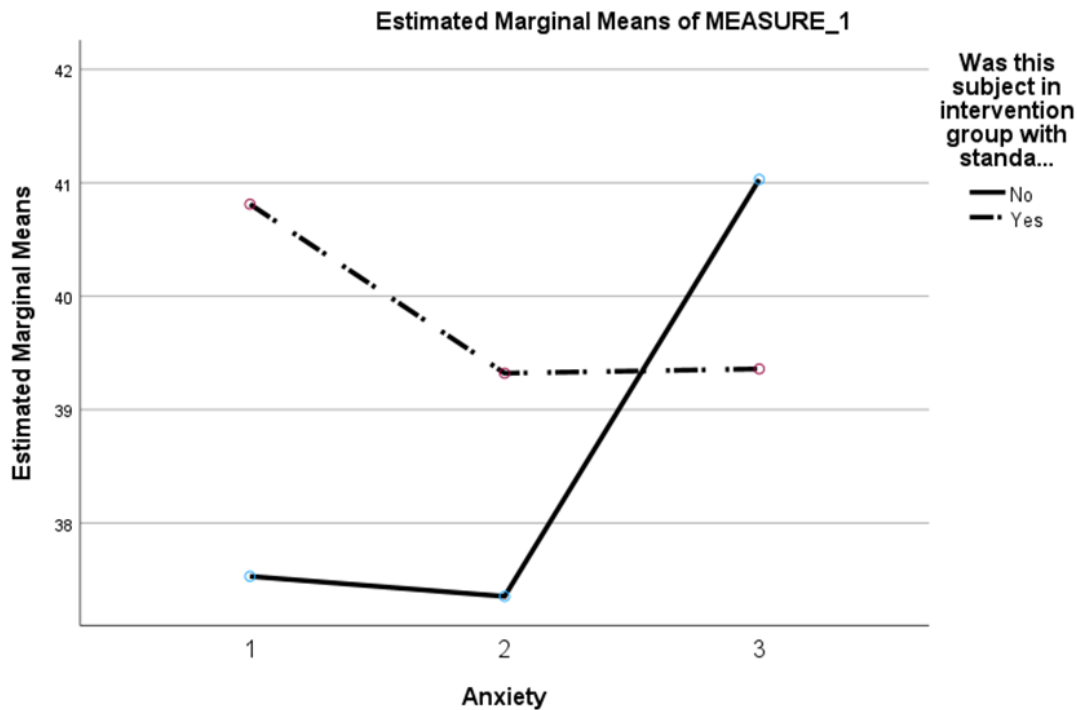
Scores from the CSES (clinical skills) were analyzed to evaluate whether Hypothesis #2a was supported and whether participants in the intervention group increased their self-efficacy in clinical skills as compared to those in the comparison group. The within-subjects variable was self-efficacy for nursing skills at three-time points, pretest, posttest, and follow-up. Between-subjects included the intervention group ($n = 57$) and the comparison group ($n = 30$).

Most major assumptions for analysis were met: Levene's Test was nonsignificant, $p > .05$, therefore homogeneity of variances was assumed. Box's Test of Equality of Covariance

Matrices was nonsignificant, $p = .080$. However, the test for sphericity was significant, $p < .001$, therefore Greenhouse-Geisser correction is reported. Means and standard deviations for CSES scores are shown in Table 4.3

Figure 4.2

Profile Plot of Interaction Time by Group for Anxiety



Note. 1 = pretest, 2 = posttest, 3 = follow-up

Although there was no statistically significant interaction in self-efficacy for clinical skills between time and groups (Figure 4.3), there was a statistically significant main effect of Time, $F(1.4, 120) = 51.808, p < .001, \eta^2 = .379$ suggesting that both groups improved over time with a large effect size. No statistically significant group differences were found. Paired samples t tests for the entire sample demonstrated statistically significant changes in scores from the CSES scale from pretest to follow-up, $t(86) = 7.588, p < .001, 95\% CI(-1.054, -.569), d = .813,$

and posttest to follow-up, $t(86) = 7.049, p < .001, CI(-.993, -.516), d = .756$. No significant differences were found between pretest and posttest scores.

Table 4.3

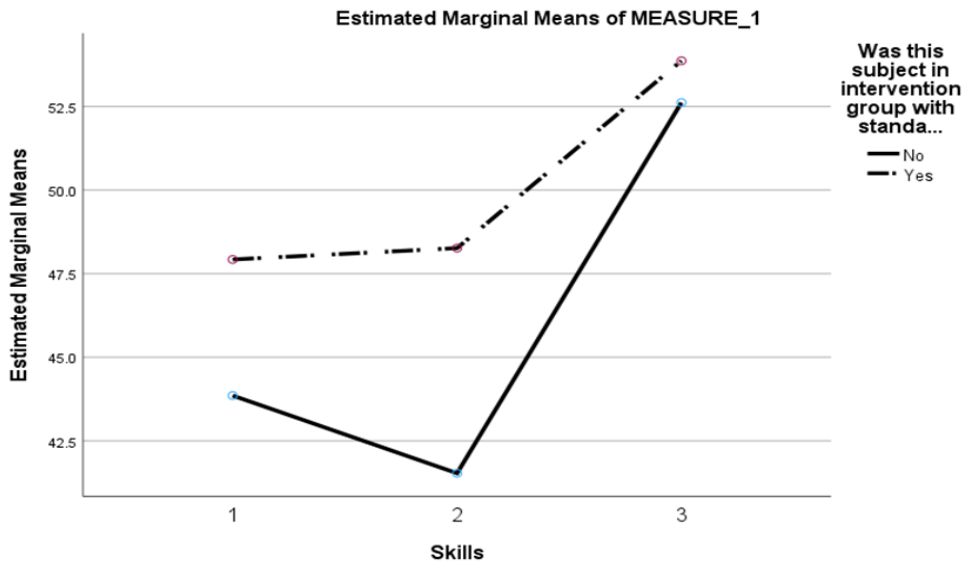
Means and SDs of Self-Efficacy for Clinical Skills

CSES	N	M	SD
IG – Pre	53	47.92	21.98
Post	53	48.26	22.06
Follow-up	53	53.87	17.89
CG - Pre	34	43.85	24.08
Post	34	41.53	25.39
Follow-up	34	52.62	19.49

Note. IG – Intervention group; CG = Comparison Group
 Pre= pretest, post = posttest, follow-up = at least 2 weeks after intervention
 CSES scores range: 10 – 100.

Figure 4.3

Profile Plot of Self-Efficacy for Clinical Skills from CSES



Note. 1 = pretest, 2 = posttest, 3 = follow-up data collection times.

Self-Efficacy for Therapeutic Communication

To test Hypothesis #2b, scores from the SETC scale (therapeutic communication) were analyzed to see if the intervention group reported higher scores in self-efficacy for therapeutic communication after the intervention, as compared to the comparison group. Means and standard deviations for scores of SETC scale are listed in Table 4.4 There was no statistically significant interaction between time and group $F(2, 170) = .150, p = .861, \eta^2 = .002$. However, a main effect for time was statistically significant, $F(2,170) = 17.863, p < .001, \eta^2 = .174$, (see Figure 4.4) indicating that participants in both groups improved their self-efficacy in therapeutic communication over time. Paired samples t tests demonstrated statistically significant changes in SETC scores for the entire group of participants from pretest to follow-up, $t(86) = 4.751, p < .001, 95\% CI(-.732, -5.923), d =.509$, and posttest to follow-up, $t(86) = 5.793, p < .001, CI(-.849, -6.561), d =.621$.

Table 4.4

Means and SDs of Self-Efficacy for Therapeutic Communication

SETC	<i>N</i>	<i>M</i>	<i>SD</i>
IG - Pre	53	120.09	21.83
Post	53	119.60	23.14
Follow-up	53	129.51	14.92
CG - Pre	34	121.29	18.66
Post	34	122.56	19.97
Follow-up	34	132.68	16.03

Note. IG – Intervention group; CG = Comparison Group
Pre= pretest, post = posttest, follow-up = at least 2 weeks after intervention
SETC scores range: 10 – 150.

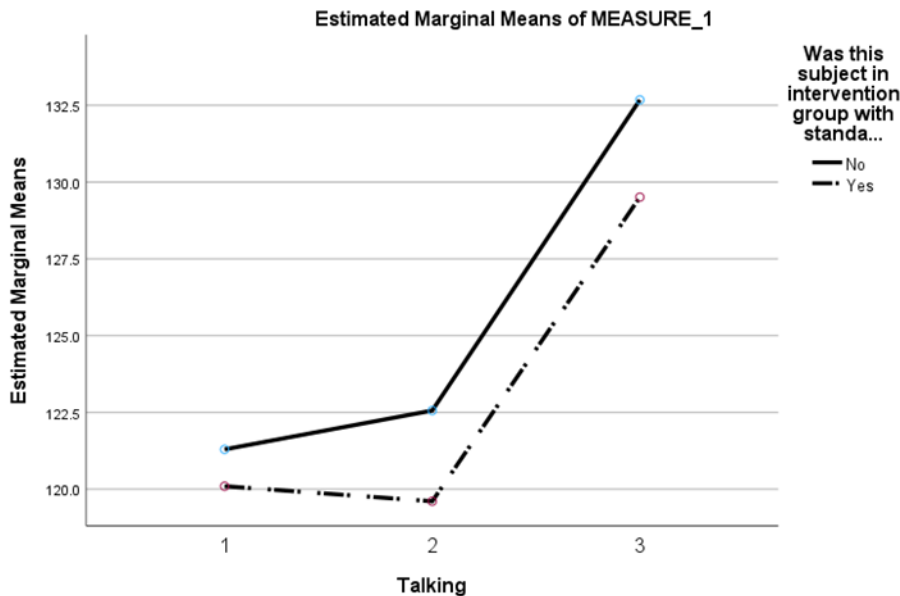
Stress as a Moderating Factor

Concerning Hypothesis #4, whether stress had a moderating effect on the intervention. Scores from the pretest Perceived Stress Scale (PSS) were dichotomized. With a range of 1 to 37,

the median value of stress at pretest was 18. A PSS score > 18 was considered high stress; there were 41 students in this group in total, with 13 students from the comparison group and 27 students in the intervention group. The low stress group (PSS score ≤ 18) consisted of 47 students, 26 in the intervention group, and 21 in the comparison group. Separate mixed ANOVAs were conducted for the high stress and low stress groups.

Figure 4.4

Profile Plot of Self-Efficacy for Therapeutic Communication Scores from SETC



Note. 1 = pretest, 2 = posttest, and 3 = follow-up.

In the mixed ANOVA for the high-stress group major assumptions were met. No significant interaction of group x time was found in the high stress group. There were no significant group differences or differences over time in the high stress group.

A mixed ANOVA in the low stress group determined that there was a statistically significant interaction of Group x Time, $F(2, 90) = 4.208$, $p = .018$, $\eta^2 = .086$. Simple main

effects analyses were carried out. Independent samples *t* tests indicated that groups were not significantly different at any testing point. Paired samples *t* tests found that anxiety increased for students in the comparison group with statistical significance from pretest to follow-up, $t(20) = 2.406, p = .026, 95\% CI(-.977, -.062)$ Cohen's $d = .525$; and posttest to follow-up, $t(20) = 2.728, p = .013, 95\% CI(-1.054, -.124)$ Cohen's $d = .595$. However, anxiety of students in the group who received the intervention did not change across time, as shown in Table 4.5.

Table 4.5

Means and SDs of Low/High Stress and Anxiety at Pretest, Posttest, and Follow-up

Collection point	Low stress < 18				High stress > 18			
	Comparison Grp		Intervention Grp		Comparison Grp		Intervention Grp	
<i>N</i>	21		26		13		27	
	M	SD	M	SD	M	SD	M	SD
Pretest	33.10	7.15	35.35	8.27	44.69	7.72	46.07	9.83
Posttest	31.81	8.65	34.38	8.88	46.31	8.15	44.07	9.91
Follow-up	37.81	11.53	33.92	9.18	46.23	8.28	44.59	11.15

Note. Low stress < 18 = score on PSS; High stress > 18 = score on PSS

Discussion

The purpose of this study was to examine the effect of an intervention using a standardized patient (SP) in a simulation on anxiety in undergraduate nursing students. The intervention was hypothesized to decrease scores on anxiety measures and increase scores on self-efficacy for nursing skills and self-efficacy for therapeutic communication. Measures of state anxiety in the intervention group did not decrease as was hypothesized in this study. The encounter with the SP was purposefully meant to be unpleasant in the moment. Anxiety was then measured after the encounter with the following directions, “How do you feel right now?” It was expected that students would be relieved to have their time with the SP over with and their

anxiety decreased. Essentially the anxiety in students in the intervention group did not significantly change. There is a possibility that a 3-to-5-minute encounter with a standardized patient is not a significant amount of time for an impactful experience to occur.

In the comparison group measures of anxiety level were relatively low at pretest and then significantly higher at follow-up. It could be that the experience with peers during role play was not impactful enough to prepare the students for patient interactions in the clinical setting. Role play with a classmate sitting at their desks in a classroom does not convey authenticity of a nurse-patient encounter in a hospital. This may have caused the students in the role play activity to become less engaged with the purpose of the activity due to the lack of realism. Additionally, the effect of role play is contingent upon the actor's willingness to represent a character or behaviors in a believable way. The role play experience may not be as anxiety producing as performing in a simulation with a stranger acting as a patient, such as what the intervention group experienced. In this study students were randomized to two groups that would be equivalent, "to the fullest extent possible" (Polit & Beck, 2012, p.206). It is possible that nursing students who did not experience substantial preclinical encounters with SPs may be very anxious when they meet their first clinical patient. It may be that the encounter with the SP prevented increased anxiety at follow-up in the clinical setting.

With respect to the moderating effect of stress on the intervention, undergraduate nursing students who were in the high stress group maintained high scores for anxiety at all time points that were somewhat higher than scores of anxiety in college students from the normed sample provided by Spielberger (1983, 2020, p. 15). For these students, the intervention with a SP did not affect their anxiety and they remained in a high anxiety state. In the low stress group, the intervention with a SP may have prevented students in the intervention group from having

increased anxiety at follow-up, whereas the comparison group had somewhat higher scores for anxiety at follow-up. Students with high anxiety and high stress may need a more substantial intervention, or more than one intervention to reduce these levels.

The less than expected results for anxiety in this study prompted the principal investigator to examine more closely a review by Turner and McCarthy (2017) of intervention strategies for anxiety in studies published between 2009 and 2015. In 26 articles reviewed, only two were randomized controlled trials with significant results of decreased anxiety. Significant results reported in these studies did not assess *state* anxiety as it was measured in this study. One study reported a decrease in trait anxiety, and the second one reported a decrease in test anxiety. A more recent systematic review of the literature addressing strategies to decrease anxiety in the undergraduate nursing student was completed by Aloufi et al. (2021). Only six studies published between 2008 and 2018 were found to target anxiety, five of which were randomized controlled trials. The most common intervention for anxiety was mindfulness training.

A study by Gore et al. (2011) examined anxiety in undergraduate nursing students (N = 92) using the STAI instrument to measure anxiety before and after an intervention. The intervention was a simulation experience in a “mock” hospital unit within the nursing building, where students provided “patient care” to a manikin in brief shifts before actually attending their clinical rotation in a clinical setting. The results showed that anxiety in the intervention group were lower than the control group after the intervention. The simulation experience could be seen as a dress rehearsal for students in the intervention group, effectively alleviating fear of performing, apprehension of being in a clinical environment for the first time, and fear of now knowing what to do. None of these studies dealt with therapeutic communication and anxiety.

A strength of the current study was that it was a randomized controlled trial with significant results in that the comparison group had more anxiety after having had contact with patients in the clinical setting, whereas the intervention group maintained the same level of anxiety from posttest to the point of follow-up data collection. The results also showed that stress had a moderating effect on the intervention. An additional strength was that a third data collection occurred between 2 and 4 weeks after the intervention.

In this study, both the intervention group and the comparison group demonstrated some improvement in scores in self-efficacy for nursing skills and self-efficacy for therapeutic communication over time. As might be expected, self-efficacy would increase for nursing students with repeated lab time to practice skills, increased knowledge over time, and weekly interactions with patients in the clinical setting. Previous studies suggested an inverse relationship between self-efficacy and anxiety (Bulfone et al., 2016; Lin, 2016). In the current study, it was not evident from the figures that this relationship exists. However, the anxiety and self-efficacy scores did have modest but significant inverse relationships with anxiety when groups were combined (see Chapter 3).

Limitations

This study has some limitations. The sample size, if bigger, may have demonstrated more significant results on the variables of anxiety, self-efficacy for nursing skills and therapeutic communication. The difference in group sizes was also a limitation. A snowstorm caused an afternoon class to be canceled, which was scheduled to do the role play activity, where there was a possibility of recruiting 25 more participants to the comparison group. Another limitation is that this study relied on the use of several self-report instruments for data collection, therefore increasing the risk of bias. Although the study took place with nursing students from three sites

for the purposes of representation and generalizability, the difference in the level of nursing student could have been a factor that impacted the results in this study. Out of 87 participants completing the data collection in this study, 30 nursing students were in their first clinical nursing course in a traditional, four-year nursing program. The remaining students were recruited from two associate degree nursing programs, which consist of four semesters. Six students were in their first semester, while the other 51 were in their third semester of an associate degree program. The difference in knowledge and skill level of the third semester nursing student as compared with the other students who were entering their first clinical course could be an explanation for nonsignificant results.

Implications for Nursing Education

This study adds to existing research on anxiety in undergraduate nursing students. It highlights the significance of anxiety for this population and for safe patient care. Future research in nursing education should include sampling from multiple sites and standardization of the level of the participating students. Also, investigators should strive to produce valid results by maintaining rigor in the development of the study with attention to reliability and validity of methods and by employing randomization to experimental and comparison groups.

Conclusion

As nursing faculty consider the recommendations of the American Association of Colleges of Nursing in *The Essentials: Core Competencies for Professional Nursing Education* (AACN, 2021) and move toward a competency-based curriculum, a paradigm shift has to occur among faculty, away from, *this is the way we have always taught*. The development of programs and course outcomes to meet the competencies will require attention to therapeutic communication, which was the focus of the current study. In addition, the current study suggests

that awareness of the cognitive and emotional load placed upon student nurses, and their impact on safe patient care should be considered with curriculum re-design.

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Chapter V: Conclusions

This was an experimental study with the purpose of examining the effect of a therapeutic communication simulation with a standardized patient (SP) on state anxiety scores and on self-efficacy for clinical skills and for therapeutic communication in undergraduate nursing students. Students were assessed three times during the study: pretest, posttest immediately after the learning activity, and follow-up two weeks later. The hypotheses in this study were partially supported with statistically significant results.

Chapter II described the development of the Self-Efficacy for Therapeutic Communication Scale (SETC) used in this study and created by the principal investigator. Items for the questionnaire were drawn from several academic references, and then critiqued for readability, bias, and language, by a panel of nursing faculty. Factor analysis was performed on the pretest results of the SETC to determine factor loadings. Two subscales were formed from the 15-item questionnaire: Communication Techniques and Intuitive Practices. These subscales were found to be correlated with each other and had good test-retest reliability as measured by correlations of pretest scores with scores at posttest and follow-up.

In Chapter III the relationships of stress, state anxiety and trait anxiety were highly correlated with each other, as was found in previous studies. The correlation of each of these variables with self-efficacy for therapeutic communication and self-efficacy for clinical skills were also examined. For stress and trait anxiety, statistically significant inverse relationships were found with self-efficacy for clinical skills at all data collection points. State anxiety was shown to have statistically significant inverse relationships with clinical skills at the posttest data collection point and at follow-up, which was approximately two weeks after the nursing student entered their clinical rotation.

An unexpected finding in Chapter III was that a statistically significant inverse relationship with state anxiety and self-efficacy for therapeutic communication was found only at the posttest data collection. A second unexpected finding was that stress accounted for more statistically significant inverse relationships than state anxiety did. This was unexpected because in reviewing the literature, my attention was directed to the effects of state anxiety and the negative outcomes for nursing students and patients when anxiety became elevated.

The methodology of the randomized controlled experiment was fully described in Chapter IV with the results showing a statistically significant interaction between group and time. The intervention group, which experienced a simulation learning experience with a SP while practicing therapeutic communication, did not show statistically significant differences from the comparison group at any time point. In addition, no changes over time were shown on the scores of state anxiety in the intervention group in this study. However, participants in the comparison group had significant changes in anxiety level over time and were more anxious at follow-up than at any other time. This increase in anxiety experienced by the comparison group may have been prevented by the intervention, considering that the intervention group did not experience an increase in anxiety at follow-up, after encounters with patients in the clinical setting.

There were no significant group by time interaction effects with self-efficacy for clinical skills or for therapeutic communication. Nevertheless, there were significant main effects for time for both types of self-efficacy. Both the intervention group and the comparison group demonstrated improved scores on self-efficacy for clinical skills and self-efficacy for therapeutic communication across the time of data collection for this study. This improvement could have

resulted from student maturity; more class time and increased knowledge, increased time spent with patients and talking with patients in the clinical setting and practicing skills.

Stress was measured in all participants in this study to see if stress scores had a moderating effect on the intervention in this study. The high stress group consisted of participants from the intervention group and the comparison group who were also found to have high anxiety scores. This group maintained their high level of anxiety whether or not they received the intervention with the SP. In the low stress group, participants who received the intervention with the SP did not experience increased anxiety, whereas participants in the comparison group had somewhat higher scores for anxiety at follow-up.

This study adds to the body of evidence recognizing the existence of stress and anxiety in undergraduate nursing students. It included the development of a scale to assess self-efficacy for therapeutic communication. This was a robust study with randomization, multi-site sampling, and a comparison group. With a larger sample some results would have been clearer. In this study every student who was interested in the study was included. Reviewing the results now, I realize that the level of the nursing student is dramatically different from semester to semester with knowledge, skills, and experiences with patients. For future research, a larger sample size of same-level nursing student if possible, might provide more informed results.

The implications for nursing education are clear: anxiety in the nursing student does exist, and it can be potentiated with the addition of stress. It is critical that nurse educators and clinical instructors recognize the impact of stress and anxiety on the student nurse, and patient safety. A second priority is recognizing the impact of a rigorous nursing curriculum and caring for the mental health of nursing students. Nursing students who are feeling anxious and stressed, may have impaired ability to learn or remember facts, perform a clinical skill, or provide safe

patient care. Most clinical rotations can seem stressful for nursing students. To support the student who is anxious and stressed, clinical instructors might need to sharpen their assessment skills of the student's mental health. Some practical remedies that may work include taking a time-out, rehearsing out-loud the steps of the skill they are about to perform, or simply taking deep breaths

With regard to teaching therapeutic communication, I mentioned previously that students do not know - *what they don't know*. It is up to nurse educators to provide instruction for and provide quality practice time with a SP so that student nurses can master the softer skill of therapeutic communication. The AACN, which directs changes in nursing curriculum, recently updated and published, *The Essentials: Core Competencies for Professional Nursing Education* (AACN, 2021). Over the next 3 years, nursing programs need to amend their curricula to include competencies from the 10 Domains of *The Essentials*. Communication is included in several of the domains, and 13 competencies are specifically related to therapeutic communication. The SETC scale could be utilized by nursing students to identify self-efficacy for the competency in therapeutic communication.

References

American Association of Colleges of Nursing. (2021). The essentials: Core competencies for professional nursing education. <https://www.aacnursing.org/AACN-Essentials/Download>

Appendices

Appendix A: IRB Approval Letter



Teachers College IRB

Approval Notification

To: Christine Lupiani
From: Karen Froud, IRB Chair
Subject: IRB Approval: 21-386 Protocol
Date: 07/15/2021

Please be informed that as of the date of this letter, the Institutional Review Board for the Protection of Human Subjects at Teachers College, Columbia University has given full approval to your study, entitled "A Comparison of Standardized Patients with Role Play for Teaching Therapeutic Communication," after a **Full Board Review** on 07/21/2021.

The approval is effective until **07/20/2022**.

The IRB Committee must be contacted if there are any changes to the protocol during this period. **Please note:** If you are planning to continue your study, a Continuing Review report must be submitted to either close the protocol or request permission to continue for another year. Please submit your report by **06/15/2022** so that the IRB has time to review and approve your report if you wish to continue your study. The IRB number assigned to your protocol is **21-386**. Feel free to contact the IRB Office (212-678-4105 or IRB@tc.edu) if you have any questions.

Please note that your Consent form bears an official IRB authorization stamp and is attached to this email. Copies of this form with the IRB stamp must be used for your research work. Further, all research recruitment materials must include the study's IRB-approved protocol number.

As the PI of record for this protocol, you are required to:

- Use current, up-to-date IRB approved documents
- Ensure all study staff and their CITI certifications are on record with the IRB
- Notify the IRB of any changes or modifications to your study procedures
- Alert the IRB of any adverse events

You are also required to respond if the IRB communicates with you directly about any aspect of your protocol. Failure to adhere to your responsibilities as a study PI can result in action by the IRB up to and including suspension of your approval and cessation of your research.

You can retrieve a PDF copy of this approval letter and the official stamped consent(s) materials from Mentor IRB.

Best wishes for your research work.

Sincerely,

A handwritten signature in black ink, appearing to read "KFroud".

Karen Froud, Ph.D.
Associate Professor of Neuroscience & Education
IRB Chair

Appendix B: IRB Modification Approval



Teachers College IRB

Continuing Review Approval Notification

To: Christine Lupiani
From: Myra Luna Lucero, Research Compliance Director
Subject: IRB Approval: 21-386 Protocol
Date: 06/15/2022

Please be informed that as of the date of this letter, the Institutional Review Board for the Protection of Human Subjects at Teachers College, Columbia University has approved your *continuing* study, entitled "A Comparison of Standardized Patients with Role Play for Teaching Therapeutic Communication" on 06/15/2022.

The approval is effective until **06/14/2023**.

The IRB Committee must be contacted if there are any changes to the protocol during this period. **Please note:** If you are planning to continue your study, a Continuing Review report must be submitted to either close the protocol or request permission to continue for another year. Please submit your report by **05/10/2023** so that the IRB has time to review and approve your report if you wish to continue your study. The IRB number assigned to your protocol is **21-386**. Feel free to contact the IRB Office (212-678-4105 or IRB@tc.edu) if you have any questions.

As subject enrollment is complete, no newly stamped copy of the consent form is provided with this continuing approval. You may retrieve a PDF copy of this approval notification from the Mentor site.

As the PI of record for this protocol, you are required to:

- Use current, up-to-date IRB approved documents
- Ensure all study staff and their CITI certifications are on record with the IRB
- Notify the IRB of any changes or modifications to your study procedures
- Alert the IRB of any adverse events

You are also required to respond if the IRB communicates with you directly about any aspect of your protocol. Failure to adhere to your responsibilities as a study PI can result in action by the IRB up to and including suspension of your approval and cessation of your research.

Best wishes for your research work.

Appendix C: Site Approval Letters



Monroe Community College

STATE UNIVERSITY OF NEW YORK

Department of Nursing

MCC VALUES:
INTEGRITY.
EXCELLENCE.
EMPOWERMENT.
INCLUSIVENESS.
COLLABORATION.
STEWARDSHIP.

April 14, 2021

Dear Ms. Lupiani:

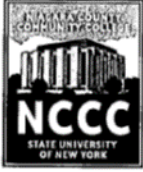
This letter affirms a contingent agreement between Monroe Community College's (MCC) Department of Nursing and Christine Lupiani which will allow the proposed research study, "*Decreasing anxiety levels in undergraduate nursing students using standardized patients in a simulated learning experience focused on therapeutic communication*" to be implemented with our NUR211 students once IRB approval is received from both Teachers College Columbia University and MCC.

Sincerely,

A handwritten signature in cursive script that reads "Laurie J. Palmer".

Laurie J. Palmer, RN, MS
Chairperson, Professor
Department of Nursing

CC:
Colleen Caruana
Patricia Guenther
Patricia Sarantis



NIAGARA COUNTY COMMUNITY COLLEGE

3111 SAUNDERS SETTLEMENT ROAD, SANBORN NY 14132-9460
PHONE 716-614-6222 • FAX 716-614-6700
WWW.NIAGARACC.SUNY.EDU

April 27, 2021

Dear Christine,

This letter confirms a preliminary agreement between Niagara County Community College Division of Nursing and Christine Lupiani, that would allow Ms. Lupiani to carry out her proposed research study commencing in fall 2021.

Ms. Lupiani's research entitled, "*Decreasing anxiety levels in undergraduate nursing students using standardized patients in a simulated learning experience focused on therapeutic communication*" has been discussed with faculty, Mrs. Kareen Klettke and Babette Strassburg. A tentative date of execution for the research study has been set for October 4, 2021.

Copies of validated instruments of measure (Spielberger State-Trait-Anxiety Inventory, a Communication Abilities Scale and, the Clinical Skills Self-Efficacy Scale) will be provided at a later date, prior to the start of the fall 2021 semester.

It is understood that this proposed research study will seek IRB approval from Teachers College Columbia University as well as the IRB at NCCC before commencing with the study.

Sincerely,

Diane Pytlik-Flammia, DHA, MSN, RN
Assistant Vice President of Academic Affairs for Nursing and Allied Health
Niagara County Community College



SBDC
3111 SAUNDERS SETTLEMENT RD.
SANBORN, NEW YORK 14132
PH: 716.210.2515
WWW.NIAGARASBDC.ORG



NIAGARA FALLS CULINARY INSTITUTE
28 OLD FALLS STREET
NIAGARA FALLS, NEW YORK 14303
PH: 716.210.2525 FAX: 716.210.2575
WWW.NFCULINARY.ORG



NCCC FOUNDATION, INC.
3111 SAUNDERS SETTLEMENT RD.
SANBORN, NEW YORK 14132
PH: 716.614.5910 FAX: 716.614.5913
WWW.NIAGARACC.SUNY.EDU/FOUNDATION



To: Christine Lupiani
From: Dr. Rachel Adams Goertel, Chair
Date: August 8, 2022
RE: Human Subjects Review Extension
Protocol #: 118-2021
Project: A comparison of standardized patients with role play for teaching therapeutic communication

The above-referenced human-subjects research project has been approved by the Roberts Wesleyan College Institutional Review Board (RWC IRB). This approval is limited to the activities described in the approved protocol narrative, and extends to the performance of these activities at each site identified in the application for IRB Review. Informed consent must be obtained as indicated. No changes may be made to the study without RWC IRB approval. This approval expires September 30, 2023.

We wish you well in your research efforts!

Sincerely,

Rachel Adams Goertel, Ph.D.
Chair, RWC IRB

Appendix D: Self-Efficacy for Therapeutic Communication Scale (SETC)

Self-Efficacy in Therapeutic Communication

DIRECTIONS: Please circle the number that identifies how confident you are right now of your ability to perform each of these therapeutic communication techniques. Remember there is no right, or wrong answers but it is very important that you answer the questions honestly.

1. How confident are you right now that you can listen attentively to your patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

2. How confident are you right now that you can maintain an 'open posture' while talking with your patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

3. How confident are you right now that you can maintain eye contact with the patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

4. How confident are you right now that you can consistently lean toward your patient during the conversation?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

5. How confident are you right now that you can maintain silence for at least 5 seconds, two or more times during your conversation with a patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

6. How confident are you right now that you can paraphrase what the patient says and repeat it back to the patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

7. How confident are you right now you can use general leading statements to keep the conversation going with the patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

8. How confident are you right now that you can use open-ended questions in your conversation with the patient?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

9. How confident are you right now that you can sit with a patient who remains silent?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

10. How confident are you right now that you can seek clarification about what the patient says to you?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence

Total Confidence

11. How confident are you right now that you can offer *therapeutic use of self* with the patient in a conversation?

1	2	3	4	5	6	7	8	9	10
No Confidence								Total Confidence	

12. How confident are you right now that you can begin a conversation with a broad opening statement?

1	2	3	4	5	6	7	8	9	10
No Confidence								Total Confidence	

13. How confident are you right now that you can identify cues about a patient's spirituality?

1	2	3	4	5	6	7	8	9	10
No Confidence								Total Confidence	

14. How confident are you right now that you can pray with a patient if asked to by the patient?

1	2	3	4	5	6	7	8	9	10
No Confidence								Total Confidence	

15. How confident are you right now that you can remain present with a patient who becomes sad and emotional?

1	2	3	4	5	6	7	8	9	10
No Confidence								Total Confidence	

Scoring Instructions for Self-Efficacy for Therapeutic Communication Scale

Scoring the Self-Efficacy for Therapeutic Communication Scale consisted of summing the raw scores for Subscale 1: Communication Techniques (items 1, 2, 3, 4, 6, 7, 8, 10, and 12) separately from subscale 2: Intuitive Practices (items 5, 9, 11, 13, 14, and 15). To get the total score all items are summed.

Appendix E: Permission to Use Clinical Self-Efficacy Scale (CSES)

Dear Dr. Oetker-Black

My name is Christine Lupiani, and I am currently a doctoral student at Teachers College Columbia University pursuing a Doctor of Nursing Education degree (E.d.D).

I have read your studies that evaluate the psychometric properties of the Clinical Skills Self-Efficacy Scale, now revised scale, and would like to ask your permission to use the CSES in research I am proposing to fulfill my degree requirements.

My research is guided by Bandura's Self-Efficacy Theory. I am examining the effect that anxiety has on undergraduate nursing students' self-efficacy in performing skills in the clinical setting. One of the hypotheses for this study is that nursing students' self-efficacy in clinical skills will increase as their anxiety level decreases. The design of the study I am proposing is a two-group, pretest, posttest with follow up.

I would be happy to provide you with more information regarding my study if you wish. I hope you grant me permission to use CSES in my research.

Thank you for your time and consideration into this matter. I hope to hear from you soon.

Respectfully,

Christine Lupiani, MS, RN, CNE
EdD Student, Online Nursing Education Program (ONE)
Teachers College Columbia University
C13501@tc.columbia.edu
585-820-0222

From: Sharon Black

Sent: Tuesday, June 22, 2021 11:08 AM

To: Christine

Subject: Re: Request for use of Clinical Skill Self-Efficacy Scale

You have my permission to use the scale. It can't be adapted.

Sent from my iPhone

Clinical Skills Self-Efficacy Scale (CSES)

DIRECTIONS: This questionnaire should take no more than 10-15 minutes to complete. Please circle the number that identifies how confident you are right now of your ability to perform each of the behaviors. Remember there is no right, or wrong answers but it is very important that you answer the questions honestly.

1. How confident are you right now that you can independently administer an intramuscular injection?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

2. How confident are you right now that you can independently administer an insulin injection?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

3. How confident are you right now that you can independently change a dressing maintaining sterile technique?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

4. How confident are you right now that you can independently insert a Foley catheter using sterile technique?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

5. How confident are you right now that you can insert a nasogastric tube with correct placement?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

6. How confident are you right now that can independently start an intravenous line?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

7. How confident are you right now that you can correctly transfer an immobile patient from bed to chair using correct technique?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

8. How confident are you right now that you can independently hang an intravenous piggyback medicine and program the pump accurately?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

9. How confident are you right now that you can administer a tube feeding through a PEG tube using correct technique?

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

No Confidence
Confidence

Total

Used with permission. Oetker-Black, S. L., Kreye, J., Davis, T., Underwood, S., & Naug, S. (2016). The psychometric evaluation of the revised Clinical Skills Self-Efficacy Scale. *Journal of Nursing Measurement*, 24(1).

Scoring Instructions for Clinical Self-Efficacy Scale

Directions for scoring for the Clinical Self-Efficacy Scale (CSES):

Scores of the 9 items on the CSES, with a range of 1 – 10 each are added.

The maximum scores = 90

Normative values for CSES were not disclosed.

Used with permission. Oetker-Black, S. L., Kreye, J., Davis, T., Underwood, S., & Naug, S. (2016). The psychometric evaluation of the revised Clinical Skills Self-Efficacy Scale. *Journal of Nursing Measurement*, 24(1).

Appendix F: Example of Informed Consent

Protocol Title: A Comparison of Standardized Patients with Role Play for Teaching Therapeutic Communication

Study site: Monroe County Community College

Principal Researcher: Christine Lupiani, MS RN CNE, Teachers College
585-820-0222, cl3501@tc.columbia.edu

IRB Protocol # 21-386

INTRODUCTION You are invited to participate in this research study. You may qualify to take part in this research study because you are a nursing student in a clinical nursing course, and you are over 18 years old. Approximately 175 people will participate in this study, it will take 15 to 20 minutes of your time to complete questionnaires on three separate occasions during this study.

Funding for this study will be obtained through education research grants.

WHY IS THIS STUDY BEING DONE This study is being done to determine if a learning activity with therapeutic communication skills using a standardized patient differs from role play with respect to their effects on nursing students' anxiety level and/or self-efficacy (confidence) for carrying out therapeutic communication.

WHAT WILL I BE ASKED TO DO IF I AGREE TO TAKE PART IN THIS STUDY? If you decide to participate, the principal investigator or one of the research assistants will ask you to complete the following:

- Complete this consent form and a 6-page questionnaire with 86 items. Items include questions about your stress and anxiety levels, about your confidence in carrying out nursing activities, and about demographic information.
- Return all paperwork in the envelope provided, with your name and email address on it.
- On the scheduled day for you to participate in the therapeutic communication learning activity, you will be asked to complete the questionnaires again at the end of class
- You will be contacted by the Principal Investigator or Research Assistant after your second clinical week to complete the last set of questionnaires.
- When you have completed all three sets of questionnaires, a \$10 beverage or gas card will be given to you.
- The responses you provide will be kept confidential, in a secured, and locked location. When all 3 sets of questionnaires have been received, questionnaires will be de-identified and given a code to keep your information confidential.
- A lecture on therapeutic communication will occur for all students in the course as scheduled, for this course at Monroe Community College. After the lecture portion of the

class all students will participate in one of two learning activities on the application of therapeutic communication. Half of the students will remain in the classroom and participate in a role play experience followed by a short period of debriefing. The other half of the class will go to the simulation lab and participate in a simulation activity with a standardized patient (actor). Each learning activity will have students who have enrolled in this study as well as students who have not. The learning activities are part of the scheduled activities for learning the application of therapeutic communication, therefore all students, whether enrolled in the study or not, will participate in one of the learning activities. At the end of the debriefing session for role play or simulation, students who are not enrolled in the study will be excused while those who are enrolled will complete post activity questionnaires.

- Students will be randomized to the standardized patient, or the role play groups. Students who have not consented to be in the study will also be randomized to groups. All students in this course will participate in either the simulation activity or the role play activity.
- Students at Monroe Community College will receive the lecture on therapeutic communication from the course instructor. The principal investigator will provide the information session on the study, collect the envelopes containing the informed consent, and the first set of questionnaires. The principal investigator will supervise students taking their turns to have their conversation with the standardized patient and then as each student completes their individual process recording form. The debrief after the learning activity will be facilitated by the principal investigator. The course instructor will supervise students in the role-play activity, and while they complete their individual process recording forms. Debrief after the role play learning activity will be facilitated by the course instructor. The principal investigator will collect post activity questionnaires from all the students enrolled in the study.
- A third data collection will occur after participants of the study have attended their second week of clinical. This follow-up will consist of paper and pencil questionnaires handed out to the participants of the study by the principal investigator or research assistant. The principal investigator or research assistant will set up a time at the end of a regularly scheduled class so the participants can easily complete the study.

WHAT POSSIBLE RISKS OR DISCOMFORTS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

This is a minimal risk study, which means the harms or discomforts that you may experience are not greater than you would ordinarily encounter in daily life. Due to the nature of the items on the questionnaires for anxiety and stress, there is a possible psychological risk from individual emotions that may be prompted from answering such questions. However, if

during the learning activity or during the time you are responding to the questionnaires you feel that you are worrying about the questions that were asked of you, please ask to speak to the principal investigator, the research assistant, one of your professors, or clinical instructor. You may be referred to the campus Counseling Center to speak with a professional who can assist you to manage those feelings. You can stop participating in the study at any time without penalty.

The principal investigator is taking precautions to keep your information confidential and prevent anyone from discovering or guessing your identity, such as using a de-identified code instead of your name and keeping all information on a password protected computer and locked in a file drawer.

Due to the evolving nature of the COVID-19 pandemic, there are inherent risks with in-person research. The researcher has put the following precautions in place to support participants.

If campus restrictions due to COVID-19 prevent visitors from attending on-campus events, the standardized patients will be able to interact with the students by way of Zoom, on a laptop placed in the simulated hospital room. The principal investigator is considered a visitor at Monroe Community College and may also have to interact with students with the use of a laptop and Zoom software.

- **RISK:** Person-to-person exposure is the most frequent route of transmission for infectious viruses and occurs via direct inhalation of respiratory droplets during close contact.
 - Infectious diseases are transmitted from person to person by direct or indirect contact. Certain types of viruses, bacteria, parasites, and fungi can all cause infectious disease.
 - If you have flu-like symptoms (e.g., fever, cough, etc.) please reschedule any in-person meetings.
 - If you experience flu-like symptoms (e.g., fever, cough, etc.) during the study activity, please immediately alert the researcher. The researcher will then stop all study activities. The researcher may provide you with information on where to get a COVID-19 test, or other safety and health information.

- **WAYS TO MITIGATE RISK:** Social distance, wear face covering
 - Simple preventative measures, such as frequent hand washing, wearing a face covering, maintaining social distance, disinfecting the workspace can cut down on disease transmission.

- **(LIMITED) MANDATED REPORTING:** When required by law, information (including individually identifiable information) related to a research subject's COVID-19 tests results may be reported to a public health authority.
 - If you find out you have tested positive for COVID-19 and recently participated in a research study, please contact the researcher at your earliest convenience. If

applicable, your name and contact information may be shared with the Environmental Health and Safety Office (EHS) to initiate viral contact tracing. The researcher will not share your research data with anyone outside of the research team.

- When communicating with anyone other than the IRB or the researcher about your symptoms or your concerns about a potential viral spread, you DO NOT have to disclose the study title or topic. The researchers will only share your name and contact information, if appropriate for viral contact tracing.
- The researcher will keep you, the research participant, updated on any next steps as they become available.

WHAT POSSIBLE BENEFITS CAN I EXPECT FROM TAKING PART IN THIS STUDY?

There may not be a direct benefit to you for participating in this study. Participation may benefit future learning activities coordinated by nursing faculty using standardized patients or role play in nursing programs.

WILL I BE PAID FOR BEING IN THIS STUDY? You will not be paid to participate in this study. However, your time will be compensated with a \$10 USD beverage or gas card for your participation in this study, once it is confirmed at the end of the study that you completed all 3 sets of questionnaires.

WHEN IS THE STUDY OVER? CAN I LEAVE THE STUDY BEFORE IT ENDS? The study is over when you have completed the third set of questionnaires. However, you can leave the study at any time even if you have not finished. Participating in this study or leaving the study at any time before it is completed will not affect your grade in this course.

PROTECTION OF YOUR CONFIDENTIALITY The principal investigator will keep all written materials locked in a file drawer in a locked office. To keep your information confidential, your name will be removed from the questionnaires, and replaced with a code by the principal investigator or research assistant once all three sets of questionnaires have been received.

For quality assurance, the study team, the study sponsor (grant agency), and/or members of the Teachers College Institutional Review Board (IRB) may review the data collected from you as part of this study. Otherwise, all information obtained from your participation in this study will be held strictly confidential and will be disclosed only with your permission or as required by U.S. or State law.

HOW WILL THE RESULTS BE USED? The results of this study will be published in journals and presented at academic conferences. Your identity will be removed from any data you provide before publication or use for educational purposes. Your name or any identifying

information about you will not be published. This study is being conducted as part of the dissertation of the principal investigator.

WHO CAN ANSWER MY QUESTIONS ABOUT THIS STUDY?

If you have any questions about taking part in this research study, you should contact the principal investigator, Christine Lupiani, at cl3501@tc.columbia.edu or by phone at 585-820-0222.

If you have questions or concerns about your rights as a research subject, you should contact the Institutional Review Board (IRB) (the human research ethics committee) at 212-678-4105 or email IRB@tc.edu or you can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY 10027, Box 151. The IRB is the committee that oversees human research protection for Teachers College, Columbia University.

PARTICIPANT’S RIGHTS

- I have read the Informed Consent form and have been offered the opportunity to discuss the form with the researcher.
- I have had ample opportunity to ask questions about the purposes, procedures, risks, and benefits regarding this research study.
- I understand that my participation is voluntary. I may refuse to participate or withdraw participation at any time without penalty to student status or grades.
- The researcher may withdraw me from the research
- If, during the study, significant new information that has been developed becomes available which may relate to my willingness to continue my participation, the researcher will provide this information to me.
- Any information derived from the research study that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- Identifiers may be removed from the data. Your data will not be used in further research studies.
- I should receive a copy of the Informed Consent Form document.

My signature means that I agree to participate in this study:

Print name: _____ **Date:** _____

Signature: _____

Appendix G: State-Trait Anxiety Inventory (STAI-Y1, STAI-Y2)

For use by Christine Lupiani only. Received from Mind Garden, Inc. on October 13, 2020

**State-Trait Anxiety Inventory
for Adults
Self-Evaluation Questionnaire
STAI Form Y-1 and Form Y-2**

Developed by Charles D. Spielberger
in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

For Review Only

Distributed by Mind Garden, Inc.

info@mindgarden.com
www.mindgarden.com

Note to Masters and Doctoral Students:
You may insert the following SAMPLE copy of the instrument
in your IRB proposal if necessary.
You may NOT insert a complete copy of the instrument
in your Thesis or Dissertation!!!
See Mind Garden Sample Item letter for details.

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SELF-EVALUATION QUESTIONNAIRE

STAI AD Form Y-1

Please provide the following information:

Name _____ Date _____ S _____

Age _____ Gender (Circle) **M** **F** T _____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

VERY MUCH SO
MODERATELY SO
SOMEWHAT
NOT AT ALL

- | | | | | |
|---|---|---|---|---|
| 1. I feel calm..... | 1 | 2 | 3 | 4 |
| 2. I feel secure..... | 1 | 2 | 3 | 4 |
| 3. I am tense..... | 1 | 2 | 3 | 4 |
| 4. I feel strained..... | 1 | 2 | 3 | 4 |
| 5. I feel at ease..... | 1 | 2 | 3 | 4 |
| 6. I feel upset..... | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes..... | 1 | 2 | 3 | 4 |
| 8. I feel satisfied..... | 1 | 2 | 3 | 4 |
| 9. I feel frightened..... | 1 | 2 | 3 | 4 |
| 10. I feel comfortable..... | 1 | 2 | 3 | 4 |
| 11. I feel self-confident..... | 1 | 2 | 3 | 4 |
| 12. I feel nervous..... | 1 | 2 | 3 | 4 |
| 13. I am jittery..... | 1 | 2 | 3 | 4 |
| 14. I feel indecisive..... | 1 | 2 | 3 | 4 |
| 15. I am relaxed..... | 1 | 2 | 3 | 4 |
| 16. I feel content..... | 1 | 2 | 3 | 4 |
| 17. I am worried..... | 1 | 2 | 3 | 4 |
| 18. I feel confused..... | 1 | 2 | 3 | 4 |
| 19. I feel steady..... | 1 | 2 | 3 | 4 |
| 20. I feel pleasant..... | 1 | 2 | 3 | 4 |

For Review Only

SELF-EVALUATION QUESTIONNAIRE

STAI AD Form Y-2

Name _____ Date _____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate you *generally* feel.

ALMOST NEVER
SOMETIMES
OFTEN
ALMOST ALWAYS

- | | | | | |
|--|---|---|---|---|
| 21. I feel pleasant..... | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless..... | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself..... | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others seem to be..... | 1 | 2 | 3 | 4 |
| 25. I feel like a failure..... | 1 | 2 | 3 | 4 |
| 26. I feel rested..... | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected"..... | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them..... | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that really doesn't matter..... | 1 | 2 | 3 | 4 |
| 30. I am happy..... | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts..... | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence..... | 1 | 2 | 3 | 4 |
| 33. I feel secure..... | 1 | 2 | 3 | 4 |
| 34. I make decisions easily..... | 1 | 2 | 3 | 4 |
| 35. I feel inadequate..... | 1 | 2 | 3 | 4 |
| 36. I am content..... | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through my mind and bothers me..... | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that I can't put them out of my mind..... | 1 | 2 | 3 | 4 |
| 39. I am a steady person..... | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns and interests..... | 1 | 2 | 3 | 4 |

For Review Only

For use by Christine Lupiani only. Received from Mind Garden, Inc. on October 13, 2020

**State-Trait Anxiety Inventory
for Adults
Scoring Key**

Developed by Charles D. Spielberger
in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

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State-Trait Anxiety Inventory for Adults Scoring Key (Form Y-1, Y-2)

Developed by Charles D. Spielberger in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

To use this stencil, fold this sheet in half and line up with the appropriate inventory side, either Form Y-1 or Form Y-2. Simply total the scoring **weights** shown on the stencil for each response category. For example, for question # 1, if the respondent marked 3, then the **weight** would be 2. Refer to the manual for appropriate normative data.

Form Y-1	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO	Form Y-2	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
1.	4	3	2	1	21.	4	3	2	1
2.	4	3	2	1	22.	1	2	3	4
3.	1	2	3	4	23.	4	3	2	1
4.	1	2	3	4	24.	1	2	3	4
5.	4	3	2	1	25.	1	2	3	4
6.	1	2	3	4	26.	4	3	2	1
7.	1	2	3	4	27.	4	3	2	1
8.	4	3	2	1	28.	1	2	3	4
9.	1	2	3	4	29.	1	2	3	4
10.	4	3	2	1	30.	4	3	2	1
11.	4	3	2	1	31.	1	2	3	4
12.	1	2	3	4	32.	1	2	3	4
13.	1	2	3	4	33.	4	3	2	1
14.	1	2	3	4	34.	4	3	2	1
15.	4	3	2	1	35.	1	2	3	4
16.	4	3	2	1	36.	4	3	2	1
17.	1	2	3	4	37.	1	2	3	4
18.	1	2	3	4	38.	1	2	3	4
19.	4	3	2	1	39.	4	3	2	1
20.	4	3	2	1	40.	1	2	3	4

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To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

State-Trait Anxiety Inventory for Adults

The four sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.

Sample Items:

- I feel at ease
- I feel upset
- I lack self-confidence
- I am a steady person

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Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Appendix H: Perceived Stress Scale (PSS)

PERCEIVED STRESS SCALE

by Sheldon Cohen

hosted by



PERCEIVED STRESS SCALE

by Sheldon Cohen

The *Perceived Stress Scale* (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The PSS was designed for use in community samples with at least a junior high school education. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.

Evidence for Validity: Higher PSS scores were associated with (for example):

- failure to quit smoking
- failure among diabetics to control blood sugar levels
- greater vulnerability to stressful life-event-elicited depressive symptoms
- more colds

Health status relationship to PSS: Cohen et al. (1988) show correlations with PSS and: Stress Measures, Self-Reported Health and Health Services Measures, Health Behavior Measures, Smoking Status, Help Seeking Behavior.

Temporal Nature: Because levels of appraised stress should be influenced by daily hassles, major events, and changes in coping resources, predictive validity of the PSS is expected to fall off rapidly after four to eight weeks.

Scoring: PSS scores are obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. A short 4 item scale can be made from questions 2, 4, 5 and 10 of the PSS 10 item scale.

Norm Groups: L. Harris Poll gathered information on 2,387 respondents in the U.S.

Norm Table for the PSS 10 Item Inventory

Category	N	Mean	S.D.
Gender			
Male	926	12.1	5.9
Female	1406	13.7	6.6
Age			
18-29	645	14.2	6.2
30-44	750	13.0	6.2
45-54	285	12.6	6.1
55-64	282	11.9	6.9
65 & older	296	12.0	6.3
Race			
white	1924	12.8	6.2
Hispanic	98	14.0	6.9
black	176	14.7	7.2
other minority	50	14.1	5.0

PERCEIVED STRESS SCALE

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

Name _____ Date _____

Age _____ Gender (Circle): M F Other _____

0 = Never 1 = Almost Never 2 = Sometimes 3 = Fairly Often 4 = Very Often

- | | | | | | |
|--|---|---|---|---|---|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly? | 0 | 1 | 2 | 3 | 4 |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? | 0 | 1 | 2 | 3 | 4 |
| 3. In the last month, how often have you felt nervous and "stressed"? | 0 | 1 | 2 | 3 | 4 |
| 4. In the last month, how often have you felt confident about your ability to handle your personal problems? | 0 | 1 | 2 | 3 | 4 |
| 5. In the last month, how often have you felt that things were going your way? | 0 | 1 | 2 | 3 | 4 |
| 6. In the last month, how often have you found that you could not cope with all the things that you had to do? | 0 | 1 | 2 | 3 | 4 |
| 7. In the last month, how often have you been able to control irritations in your life? | 0 | 1 | 2 | 3 | 4 |
| 8. In the last month, how often have you felt that you were on top of things? | 0 | 1 | 2 | 3 | 4 |
| 9. In the last month, how often have you been angered because of things that were outside of your control? | 0 | 1 | 2 | 3 | 4 |
| 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | 0 | 1 | 2 | 3 | 4 |


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References

The PSS Scale is reprinted with permission of the American Sociological Association, from Cohen, S., Kamarck, T., and Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.
Cohen, S. and Williamson, G. Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

Appendix I: Demographic Questionnaire

1. Please enter your name _____
2. Age _____
3. Gender: Female _____ Male _____ Trans _____ Prefer not to answer _____
4. Select from the list below the race/ethnicity you identify with
_____ African American/Black
_____ American Indian/Alaskan Native
_____ Asian
_____ Hispanic/Latino
_____ Native Hawaiian/Pacific Islander
_____ White
_____ More than 1 race
5. Do you speak another language other English with your family at home?
No _____
Yes _____ If yes, what language do you speak at home _____
6. Please indicate the number of hours worked *each week*, outside of school _____
7. Please indicate the number of visits to a healthcare provider for any reason,
in the last 30 days _____
8. Please indicate the number of days you have missed from either work or school for any
reason, in the last 30 days _____
9. Do you now, or have you previously worked in a healthcare facility? _____
10. Have you ever been prescribed medication for a feeling of nervousness ? _____
11. At this present time do you participate in self-care activities to decrease your level of stress
or anxiety? Check all that apply:
_____ Meditate
_____ Exercise
_____ Prayer
_____ Yoga
_____ Listen to music
_____ Watch television
_____ Deep breathing exercises
_____ Other activity not mentioned.

Please note: All information will be kept confidential, and names replaced with a code

Appendix J: Learning Activity Design

Use the following rating system when assessing the learning activity design elements. 1 = Strongly disagree with the statement, 2 = Disagree with the statement, 3 = Undecided - you neither agree or disagree with the statement, 4 = Agree with the statement, 5 = Strongly Agree with the statement, N/A = Not Applicable							Rate each item based upon how important that item is to you. 1 = Not important 2 = somewhat Important 3 = Neutral 4 = Important 5 = Very Important				
Item	1	2	3	4	5	N/A	1	2	3	4	5
1. There was enough information provided at the beginning of the learning activity to provide direction and encouragement	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
2. I clearly understood the purpose and objectives of the simulation	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
3. The simulation provided enough information in a clear matter for me to problem-solve the situation	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
Feedback/Guided Reflection											
4. Feedback provided was constructive	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
5. Feedback was provided in a timely manner	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
6. The process recording allowed me to analyze my own behavior and actions.	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
7. There was an opportunity after the simulation to obtain guidance/feedback from the teacher in order to build knowledge to another level	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
Fidelity											
8. The patient scenario resembled a real-life situation.	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
9. The patient in the scenario was convincing	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
10. The patient in the scenario was believable	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
11. I was able to suspend disbelief during the scenario	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5
12. I observed the patient's non-verbal behavior during the scenario.	0 1	0 2	0 3	0 4	0 5	0 NA	0 1	0 2	0 3	0 4	0 5

Appendix K: Individual Process Recording Form (IPR)

Purpose: The Individual Process Recording form (IPR) is used to reflect on the use of therapeutic communication techniques during a conversation with a patient.

Directions: After your therapeutic communication with the patient, copy the conversation verbatim in the appropriate spaces below. Include both verbal and non-verbal communication demonstrated by the patient and yourself. As you reflect on the conversation, use column 3 to include thoughts, or feelings you were experiencing. In column 4, review the therapeutic and non-therapeutic techniques that actually occurred in the conversation. In the student reflection at the end of this chart, reflect on your demonstration of therapeutic communication.

Student name _____ Patient initials _____ Date of interaction _____

Setting:

Student nurse verbal and non-verbal behavior (NV)	Patient verbal and non-verbal behavior (NV)	Student nurse thoughts and feelings	Analysis of interaction
Introduction phase			
Working phase			
Termination phase			

Student reflection: