# THE EFFECTS OF AN EMOTIONAL INTELLIGENCE AND EMPATHY INTERACTIVE EDUCATION PROGRAM WITH PRELICENSURE NURSING STUDENTS

by

Karen Browne

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy (PhD)

Liberty University, Lynchburg, VA

2024

# THE EFFECTS OF AN EMOTIONAL INTELLIGENCE AND EMPATHY INTERACTIVE EDUCATION PROGRAM WITH PRELICENSURE NURSING STUDENTS

by

Karen Browne

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy (PhD)

Liberty University, Lynchburg, VA

2024

APPROVED BY:

Dr. Theresa Pape, PhD, MSN, BSN, RN, CNOR-E, CNE, Committee Chair

Dr. Elizabeth Whorley, PhD, RN, CNE, Committee Member

Dr. Shuhong Luo, PhD, Committee Member

## Table of Contents

## ABSTRACT

A dissertation is presented on a teaching program for emotional intelligence (EI) and empathy with a cohort of nursing students enrolled in a traditional, undergraduate nursing college in the Northeast region of the United States (US). An interactive teaching program was used with various media to present new material and learning activities during the spring semester. The importance of teaching nursing students the aspects of EI was to prepare them for the rigors of the profession by allowing them to delve into their own self-awareness and emotional regulation, which in turn helps to connect with patients in a more robust and empathetic manner. This quasi-experimental study had 36 participants complete the Trait-Meta Mood Scale-24 (TMMS-24) and 33 for the Toronto Empathy Questionnaire (TEQ) at two set points in the semester. A paired-sample *t*-test was completed, along with the Shapiro-Wilk and Wilcoxon Signed Rank Test to determine a normal distribution. The results indicated data that was not statistically significant, and the researcher failed to reject the null hypotheses. However, mean scores in females improved in both the TMMS-24 and TEQ, as did Hispanic/Latino and Asian participant scores in the TMMS-24, as well as one participant who had prior topic training. Future research is recommended on this subject considering correlation studies, nursing program type, increased participant numbers, race, and combining different instruments.

Keywords: *emotional intelligence, empathy, self-awareness, emotional regulation, nursing students, interactive teaching program*

## List of Tables

## List of Figures

## List of Abbreviations

American Association of Colleges of Nursing (AACN)

Collaborative Institutional Training Initiative (CITI)

Emotional Intelligence (EI)

Experiential Learning Theory (ELT)

Intensive care unit (ICU)

Mean = (M)

Newly licensed registered nurse (NLRN)

New York (NY)

Parkinson's Disease (PD)

Statistical Package for Social Sciences (SPSS)

Time one (T1)

Time two (T2)

Toronto Empathy Questionnaire (TEQ)

Trait Meta-Mood Scale-24 (TMMS-24)

Virtual Reality (VR)

# CHAPTER ONE: INTRODUCTION

## Overview

Emotional Intelligence (EI) has roots in the psychology field and is used in various terms such as emotional quotient or emotional empathy, all of which have developed over time (Freedman, J, 2024).With its significance to the medical field and nursing specifically, EI concepts help individuals learn to identify and regulate personal emotions and use these skills in their professional practice (Salovey & Mayer, 1989. Nurses who understand these objectives display empathy more thoughtfully, a vital part of quality patient care. Caring for and knowing oneself and learning to manage personal and others' emotions help nurses reciprocate empathy for others. Emotional clarity can improve shared empathetic responses in relationships and stressful events in nursing (Eckland et al., 2018). Beginning with undergraduate nursing students, learning these concepts of EI theory can better equip them to take on the emotional challenges of the profession (Erkayiran & Demirkiran, 2018). This study determined how an educational program in EI concepts affected overall EI and empathy knowledge attainment.

## Background

Historically, EI remained a psychology-based phenomenon in which many scholars robustly developed the concepts and furthered its use in various clinical settings. Dating back to the 1920s -1940s, a few psychology and sociology sectors reported concepts of EI regarding how people function in social contexts, what behaviors are demonstrated, how they understand people around them, and how interactions deploy emotions. From the mid-1960s to the 1980s, the psychology of EI gained momentum, noting aspects of EI taking shape in a more formal context and several publications among practitioners and doctoral students (Sfetcu, 2020). In seminal works, Salovey and Mayer (1989 built the concepts of EI around three common ideas:

appraisal and expression, regulation, and utilization of emotions. Goleman (2005) used this work further and built a collection of ideas, grouping them according to their meanings based on five concepts of EI: emotional awareness, emotional regulation, social awareness, motivation, and empathy. Shortly after Goleman's work materialized, health science programs began to look further into the close ties to holistic medical care. Naturally, this became popular in nursing programs, which focus on empathic care and identifying connections with patients. Several studies emerged reporting the importance of using EI concepts in nursing academia and practice settings. Wilson and Carryer (2008) described emotional competence in nursing students and how educators facilitated this learning. Smith et al. (2009) and Harrison and Fopma-Loy (2010) completed fieldwork with nurses and noted practices that correlate to the structures of EI and emotional competence in practice. Winship (2010) reported phenomenological data on EI viewpoints in nursing practice, stating that the concepts are new and pointed out the importance of emotional regulation. Cerit and Beser's (2014) study on EI with nursing students correlated significant aspects of EI and emphasized the need for more research within academia. Yetka and Abdolrahimi's (2015) work reviewed the significance of EI competence in nursing practice and also welcomed further development of the topic.

Due to the pressures of the current healthcare climate, the need to follow academic regulations, and the depth of knowledge required to prepare student nurses for the licensure exam, the softer nursing skills, such as empathy and other EI concepts, may be deemed less than vital in curricular builds. However, these essential skills bind the profession to its roots, building both the science and the art of nursing. When pondering how to teach EI and empathy skills, faculty wonders if these skills are innate or can be taught, as doing so would provide a

more holistic realism to the profession (Abor, 2019; Dou et al., 2022; Miao et al., 2021; Newham et al., 2021).

Those serving in nursing faculty roles must stand up to the profession's rigors, which include delivering well-rounded graduate nurses ready to begin practice. Honkavuo (2019) discussed in her study on nurse educators that healthcare and nursing education have changed in the past two decades, describing caring sciences and the importance of investing time to teach EI. Studies report a significant decline in nurses' abilities to show empathy in their practices over time. Whether it originates from a lack of resilience, a lack of support mechanisms, feelings of burnout, stress from working in high acuity areas, or compassion fatigue, this challenge to understand empathy continues to be a real concern (Sansen et al., 2021; Xu et al., 2021). Furthermore, nursing students tend to lack an empathy skill set that needs cultivation, for which nursing faculty are partially responsible. Studies on this topic have been reported for years, and more recently, how EI training improves moral character and empathy in the professional nurse (Newham et al., 2019). Clinically-based student opportunities raise awareness that EI and empathy development are vitally important. Educators report from their clinical observations that students lack emotional cognizance and regulation, empathetic communication and decreased confidence to deploy softer nursing skills (Betkas et al., 2020; Kirkbakk-Fjaer et al., 2018; Silva, 2020; Sun et al., 2020).

According to the American Association of Colleges of Nursing (AACN), nursing faculty must lead in educating the next generation of nurses using various teaching methods to engage students and incorporate the art of nursing using a holistic approach (2019). Nursing faculty have adjusted to becoming more technologically savvy but feel the pressures of adapting to keep up with the latest advances in content delivery systems (Collins, 2013; Hill,

2017; Lavoie et al., 2018; Wain, 2017). Using the EI conceptual focus, numerous studies in nursing academia have emerged over the years to assist students in intrapersonal growth. The aims of the researchers varied in these studies from EI awareness, improvement in communication skills, confidence in clinical practice, and emotional regulation when dealing with challenging patient situations (Cerit & Beser, 2014; Duo et al., 2022; Keates, 2021; Kim et al., 2019; Waite & McKinney, 2016; Wilson & Carryer, 2008; Zhang et al., 2022).

Kolb's (1984) experiential learning theory (ELT) was used to focus the education intervention for this study. ELT has been utilized traditionally in primary education, but its use has grown over the years, expanding into academia (Kolb, 1984). One author reviews education theory which has guided ELT, notably the work of Lewis and Dewey, and similarly, in collegiate efforts (Murray, 2018). Kolb's ELT has been extended in nursing studies, focusing on guiding educators to produce positive student learning outcomes. Through the years of academic change, nurse educators have been challenged to provide content and programming to engage students in the art and science of the profession and be delivered in ways that students respond to positively (Campos et al., 2021).

In the past five years, nursing programs have continued to use ELT as a guide for students to gain essential skills for practice readiness (Campos et al., 2021; Murray, 2018; Podgurski, 2016; Wain, 2017;). ELT in nursing education has helped develop critical thinking and clinical competence by using various interventions that enhance learning, teach holistic care, and encourage introspection (Chiang, 2014; Dearmon et al., 2012; Hawks, 1992; McCaugherty, 1991; Stutsky & Laschinger, 1995). The changes in healthcare have been significant over the past 20 years and even more so during the past few years. These shifts have caused teaching in this profession to change focus and become more holistic.

Schools of nursing must follow curricular guidelines for their state, as well as regulations and recommendations by governing bodies, one of which indicates a need for nursing students to have higher EI skills (American Association of Colleges of Nursing [AACN], 2019). In the AACN's vision statement of 2019, it is recommended that student nurses learn the importance of developing virtues such as compassion and empathy and a holistic approach to patient care (AACN, 2019). The latest update of the essentials for nursing education highlights areas in the core competencies reflective of EI. Within this publication, domains outline the standards that nursing programs must fulfill to acquire profession-ready students. One of the domains is professionalism, which is explicitly defined by EI and intrapersonal skills (AACN, 2023). Nursing program administrators strive to build curricula that balance the science and art of the profession. Empathy is one concept of EI that stems from the development of emotional awareness and regulation (Salovey & Mayer, 1995). Learning these vital traits can assist the student nurse in personal and professional growth. A study by Contreras et al. (2020) reviews how self-reflective practices have enhanced student nurse competency, decreased stress and anxiety, and helped with coping. A qualitative study by Hutchinson et al. (2018) describes the results of nursing students who were given EI training before mental health and medical-surgical clinical rotations. These self-awareness practices improved empathy and understanding in softer nursing skills and feeling more confident and optimistic in the student nurse role. A study by Erkayiran and Demirkiran (2018) examined a nursing program in Turkey that facilitated an EI training program with their students. The results indicated that EI knowledge and improved interpersonal communication and self-regulation skills in professional relationships were attained. Two studies report that EI training assisted nursing students with clinical experiences, improving self-awareness and

emotional regulation (Duo et al., 2022; Goudarzian et al., 2019). A few other studies measured the outcomes of empathy knowledge in nursing students before and after EI training. The interventions improved empathy scores (McKinnon, 2018; Fountouki et al., 2020; Galetz, 2019).

EI concepts have developed over the past few decades and have been used to enhance nursing education. Emotional awareness and regulation are components of EI that help develop empathy. Kolb's (1984) ELT has guided education programs over the years and was used in this study. Developing empathetic behaviors in nursing students has been supported by EI and ELT over the years. Still, studies are limited on emotional awareness and regulation and its correlation to empathic maturity in student nurses.

## Problem Statement

Though there has been growth in studies about generalized EI knowledge in the nursing profession and nursing academia, a gap still exists in EI studies related to self-awareness, emotional regulation, and how education in these areas affects empathy development in nursing students. In a literature review of the past five years, on the topic of teaching emotional awareness to nursing students, only seven of 150 resulting studies were relevant to this topic specifically (Jack, 2012; Li et al., 2022; Miao et al., 2021; Rasheed et al., 2018; Sisman & Buzlu, 2021; vanVliet, 2018). Patterson (2018) describes the challenges in teaching empathy to the current generation, blaming societal distraction, lack of face-to-face interactions, social media presence, and the foreseeable communication gaps. The concept of empathy has been taught from various points of view, which has also been part of the challenge in defining it. A study by McCormick et al. (2021) blended various active teaching methods to incorporate lesson plans focusing on compassion and empathy in caring for patients with Parkinson's

Disease (PD). Another academic study by Kimzey et al. (2021) used simulation to depict the life of a patient with dementia and how this program improved nursing students' empathy scores.

To be effective in their work, nurses require self-awareness, emotional control, and the ability to demonstrate empathy for the people they serve. Yet, the profession's challenges cause some nurses to struggle to demonstrate effective, empathetic behaviors when faced with stressors (Nugent et al., 2022; Heggestad et al., 2022; Patterson, 2018; Wedin et al., 2019; Zhu et al., 2020). Nurses entering the field are often overwhelmed with many aspects of the job. The results of these negative feelings have led new nurses to wrestle with coping, feeling overwhelmed by the responsibilities, compromising compassion at the bedside, and wanting to leave the profession before they can fully develop their skills (Cau et al., 2021). Atar and Asti (2020) found in their work with student nurses that their comfort level and confidence in providing intimate and supportive patient care were lacking. Significant guidance in applying empathetic skills was necessary.

Still, the literature shows limited EI education in many pre-licensure nursing programs. The result is an incongruence of what new nurses view their expectations are in relation to the emotional connection with patients, and how learned EI skills can help develop personal emotional awareness, both of which assist in the overall well-being of patients (Duygulu et al., 2011; Ferri et al., 2019; Vandewaa et al., 2016). There is a lack of literature to support the use of EI education, specifically in the concepts of self-awareness and self-regulation in relation to empathy development in nursing academia. The problem is that many nursing students lack the understanding and ability to regulate their own emotions; therefore, it is a challenge to display empathetic behaviors when they become professional nurses.

## Purpose Statement

The purpose of this study was to teach nursing students EI concepts to prepare them for the demands of the nursing profession and potentially enhance their ability to care for patients with more empathetic care. The aim to present an interactive education program focused on EI and empathy skills, particularly self-awareness and emotional regulation, was introduced to nursing students enrolled in junior-level core nursing courses in the spring semester. The modes of providing the education considered Kolb's (1984) ELT to ensure that aspects of learning methods are demonstrated during these sessions. The education program was the independent variable, and the measurement of EI and empathy were the dependent variables. The program was preceded by two surveys that measured baseline EI and empathy scores and was presented again following the interventions. Potentially, when student nurses improved self-awareness, they can improve emotional regulation and empathy, becoming more well-rounded and holistic caregivers. Because there is a gap in these concepts, the study determined whether student nurses' growth of knowledge in EI resulted in improved empathy scores, with an anticipated improvement in both.

## Significance of the Study

This quasi-experimental study determined if pretest/posttest scores on concepts of EI enhanced nursing students' EI and empathy scores. This work lent itself to understanding the importance of EI concepts, particularly self-awareness, self-regulation, and empathy. Soner and Mumcu (2021) described their study with nursing students using a combination of acting and education, a term they called "cinemaeducation," to study the impact the intervention had on empathetic responses. Students were able to connect with the emotions of the actors and demonstrate empathy through their verbalizations and reflections. Chen and Liou (2022) used a

virtual reality (VR) education intervention in the obstetrics content of their nursing program. One of the study's aims was to determine if the intervention could impact empathy growth in the students. The video clip used standardized patients and a headset, which limited distractions and helped students feel immersed in the scene. Students could make decisions based on a patient's presentation and actively engage in the outcomes. Participants reported feeling more supported, acknowledged their feelings about laboring women, and improved communication and empathy skills with this patient population. Simulation activities have also been used to support empathy development in nursing students in patient topic areas such as dementia, homelessness, economically vulnerable patients, and chronic disease states (Kimzey et al., 2021; Sanko et al., 2021). These studies and others indicate the importance of using various media in nursing education as interventions that can improve EI and empathy skills.

Several studies have been reported on the use of EI training with nursing students to enhance their knowledge and awareness of emotions. For example, Duo et al. (2022) noted an improvement in the clinical performance of nursing students in the areas of empathetic communication, emotional regulation, and building confidence in the nurse-patient relationship. Vishavdeep et al. (2016) used a teaching intervention from Goleman's (2005) original theory of EI. The results indicated a two-point increase in scores from the pretest to the posttest measurement of overall EI knowledge in the student nurse population. Erkayiran and Demirkiran (2018) described the findings of their EI education module in a nursing program, noting individual EI improvement, as well as improvement in teamwork, multidisciplinary communication, and self-awareness, which help develop professional relationships.

There were also areas of teaching which indicated there were limited research studies combining EI training (in particular, the concepts of self-awareness and emotional regulation)

plus improved empathy as the cornerstone outcome in nursing education (Jack, 2012; Li et al., 2022; Miao et al., 2021; Rasheed et al., 2018; Sisman & Buzlu, 2021; vanVliet, 2018). Having self-aware student nurses who can regulate personal emotions could allow for a more grounded nurse-patient relationship and improve interprofessional interactions within the healthcare team (Berduzco-Torres et al., 2021; Ferri et al., 2019; Hajibabaee et al., 2018). Empathy stems from being able to identify with the feelings of others and act or react accordingly. One must first be aware of self before implementing other supportive feelings (Salovey & Mayer, 1989). Implications for practice in this area are essential, including the potential for stronger nurse-patient interactions, a more satisfied nursing staff, improved clinical judgment, and greater team-building skills. Nursing students who learn these soft skills while in their programs also build confidence, improve their communication skills, and the ability to connect with patients (Heggestad et al., 2022; Perez-Fuentes et al., 2020; Yu et al., 2021). Nursing students who are self-aware and regulate personal emotions can better identify professional emotional maturity when they enter as participants in the healthcare team. EI studies can also be taught in healthcare settings to reduce burnout and compassion fatigue in nursing staff. Awareness of emotions can help new and seasoned nurses understand their own emotions and how these can directly impact patient care (Duo et al., 2022; Lorain et al., 2018; Smith et al., 2009; Stacey & Cook, 2019; Vandewaa et al., 2016).

## Research Questions

**RQ1:** What is the difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention?

**RQ2:** What is the difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention?

## Definitions

1. *Cinemeducation:* Cinemeducation is an experiential learning platform that combines education by acting (Soner & Mumcu, 2021).
2. *Clinical competence:* In nursing, clinical competence is using critical thinking to provide safe and effective patient care.
3. *Compassion:* Compassion is connecting with patients, to feel the sufferings of others and be able to provide the care necessary to assist in relieving that suffering (Watson, 1985).
4. *Compassion fatigue:* In nursing, compassion fatigue is sacrificing oneself in prolonged and challenging situations results in decreased empathetic care for others.
5. *Critical thinking:* In the nursing profession, critical thinking is the process of making decisions is based on logical thought, research, creativity, and knowledge to solve clinical problems.
6. *Emotional awareness*: Emotional awareness is understanding personal emotions and how these control and impact self-behaviors (Goleman, 2005).
7. *Emotional intelligence:* Emotional intelligence is the ability to process information about personal emotions and use that information as a guide to control those emotions of self and others (Salovey & Mayer, 1989).
8. *Emotional regulation:* Emotional regulation is being aware of personal emotions and understanding how to manage these emotions (Goleman, 2005).
9. *Empathy:* Empathy is the ability to understand and share the feelings of others (Watson, 1985).

10. *Holistic:* Holistic references care of a patient that considers all aspects of the person: physical, emotional, and spiritual well-being (Abor, 2019).
11. *Quasi-experimental, cross-sectional:* A quasi-experimental, cross-sectional design is a quantitative research method that does not require randomization, but rather a study that considers certain group results at specific timeframes to identify differences (Creswell & Creswell, 2018).
12. *Simulation:* Simulation is a type of experiential learning style that combines nursing scenarios and technology to enhance knowledge and skills in a controlled setting (Kimzey et al., 2021).

# CHAPTER TWO: LITERATURE REVIEW

## Overview

The purpose of this chapter is to review the conceptual and theoretical frameworks of the study and related literature in teaching emotional intelligence (EI) and empathy responses in student nurses, focusing on self-awareness and emotional regulation. What effects these concepts have on practicing nurses was also identified to understand what education is necessary for academic practices to prepare students for the profession. Psychologists Salovey and Mayer's (1989) expertise in EI from the late 1980s connected this content to the medical community. Individuals work through emotional awareness and regulation, social skills adapted from emotional control, while skills in motivation and empathy develop from this learned mindfulness (Salovey & Mayer, 1989). The literature review noted challenges in EI concepts in nursing and nursing academia. It also reviewed educational interventions supporting these concepts. Examining the reliability and validity of the instruments used for the study, the Trait Meta Mood Scale-24 (TMMS) and the Toronto Empathy Questionnaire (TEQ) were included in the literature review (Salovey et al., 1995; Spreng et al., 2009). There is limited research in EI concepts of self-awareness and emotional regulation and the correlation to the empathetic response in nursing students.

## Conceptual Framework

A lengthy history of studying the emotions of self and others is evident. In the 1980s, psychology professors Salovey and Mayer built from these concepts of what is now termed EI. The basis for the EI model deals with the ability to acknowledge and understand personal emotions and feelings, allowing insight into others' emotions and coping abilities. Opportunities to grow, support, and sustain relationships, guiding social and emotional

situations in a more composed way, further define EI (Salovey & Mayer, 1989). The concepts from their work are explained through three categories: assessment, regulation, and utilization of emotions. People express emotions with verbal and nonverbal words and behaviors. Self-awareness and emotional regulation are two EI concepts that need further exploration in terms of developing these skills at the student-nurse level. Self-awareness refers to the ability to understand personal emotions, what drives them, how the body feels when certain emotions are inflicted, and how the person reacts to these stimuli. Emotional regulation is being able to control the inflicted emotions in circumstantially appropriate ways. Utilizing emotions to motivate, plan, think creatively, empathize, and redirect are reviewed (Salovey & Mayer, 1989). A study by Mansel and Einion (2019) in healthcare leadership reports the importance of merging EI concepts with their staff. Nurse managers specifically must become aware of EI conceptual frameworks, as leaders are charged to empower their staff by example. The study results note that a lack of EI knowledge, especially at a leadership level, can hinder teams; therefore, vital work in this area must begin in academia.

## Theoretical Framework

The theoretical framework for this study was shaped by Kolb's (1984) experiential learning theory (ELT). This theory bridges both psychology and educational backgrounds by studying different learning styles. Educators use these concepts to assist in building curricular needs. Four main concepts are identified in ELT: concrete learning, reflective observation, abstract conceptualization, and active experimentation (Kolb, 1984). The concrete learning concept takes place when the student is engulfed in the actual experience. It can be a completely new encounter or an area that was previously known with added elements to explore and grow from. Reflective observation in the learning cycle refers to the student

ruminating the new knowledge and decides how it can be used in context. It is important to explore any questions or misinterpretations at this phase to assure understanding before moving forward. This phase also paves the way for developing self-awareness. The abstract conceptualization phase is when the student has learned from the experience and is able to use this as part of their knowledge bank. The final stage of this cycle, active experimentation, is when the new knowledge has become part of the learner, using it in their daily activities. This knowledge does not become stagnant, rather part of testing and pondering changes that come from its modifications. The premise of this framework focuses on how learners comprehend and process educational materials. Individuals think and learn in different ways; therefore, the educator must be well-versed in teaching techniques that develop students' skills in different ways. Since ELT represents a cycle that has fluidity, the educator must also be flexible by making accommodations in their teaching styles as needed (Kolb, 1984). A study by Cameron and Jusela (2023) considered the use of unfolding case studies with nursing students. Presenting simple to complex "real-life" scenarios which may be encountered in clinical practice, students were able to process using stages of the ELT. This framework incorporated the stages outlined in this model by providing a concrete learning experience, allowing for reflective practice in debriefing, applying the knowledge in practice, and modifying the information as needed.

## Related Literature

Common themes emerged in the literature review that summarize content areas pertaining to EI and empathy for both professional nurses and nursing students. Researching practicing nurses, both novice and experienced, helped determine what current struggles remain for these professionals. It also allowed educators to appreciate what academic struggles

remain. Another focus area reviewed innovative teaching strategies used to deliver related materials, tying in Kolb's (1984) ELT framework directly or indirectly. Further topics for the review broke down the availability of research specific to the EI concepts of self-awareness and emotional regulation, both of which are essential in the nursing profession. The Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medline, and PubMed databases were searched using various features. Seminal works, as well as studies within the past five years, were reviewed and reported for topic inclusion. Full-text, English-language, research articles were chosen settings to limit the search results. Since several topics were explored, narrowing and making the search more specific allowed for more relevant studies to include in the document. Topics that were searched include: EI, empathy, self-awareness, emotional regulation, Kolb's ELT, TMMS-24, and the TEQ, all with either practicing nurses or student nurses as sub-search categories. If a search resulted in over 100 results, the search was defined further.

**Quasi-experimental Study Design**

Quasi-experimental research was feasible for this study due to the availability of study participants, the ease of use, and practicality (Gall et al., 2007). This type of research has been used by many in the medical field and in these related topics. Teskereci et al. (2020) reported their findings from a survey of EI and compassion constructs after an educational intervention in a nursing course focusing on understanding and caring behaviors in the nursing profession. The authors used a pretest-posttest method and obtained the results from the Emotional Intelligence Evaluation Survey and the Compassion Scale to measure participant data. Erkayiran and Demirkiran (2018) also used this design with nursing students. The researchers presented an educational program on EI and reviewed the impact these skills have on

relationships. Cho and Hwang (2019) conducted their quasi-experimental study using the pretest-posttest method with nursing students on ethical decision-making in opportunities related to death and dying. Similarly, Kacan and Orsal (2020) used the same research method with nursing students to test cultural intelligence and empathy. The study used only posttests to measure data from four different scales: the Nurses Professional Values Scale, the Empathic Skill Scale-B form, the Intercultural Sensitivity Scale, and the Cultural Intelligence Scale. The results from this study indicated an improvement in empathy scores when compared to the control group. Bamakan et al. (2021) and Demirtas and Basak (2021) reported their studies with student nurses using the quasi-experimental method and simulation as the intervention measuring empathy for the geriatric patient population. Both studies used Kogan's Attitudes Toward Older People Scale as one of their measurement tools. Bamakan et al.'s study reported an improvement in attitudes from the pretest measure to the posttest measure that demonstrated significance with a $p < .05$. In Demirtas and Basak's (2021) study, similarly, statistically significant data from the pretest to the posttest of the group who attended the simulation was $p < .05$. Both studies reported improved empathy as part of the attitude shift in nursing students' care of the elderly population.

**Practicing Nurses: Emotional Intelligence and Empathy Concerns**

Practicing nurses are at risk for burnout, decreased empathy, and depersonalization. Terzi et al. (2022) stated ". . . nurses encounter gratifying events, as well as many conditions that cause emotional burnout. A high level of emotional intelligence and emotional management skills are necessary to be able to be successful in nursing" (p. 3025). Also expressed by Adimando (2018) in her study, "After prolonged exposure to traumatic experiences of patients, caregivers begin to integrate the emotions, fears, and grief of their

patients, ultimately increasing their own stress and emotional pain" (p. 304). Specifically, challenging settings, such as behavioral health and critical care, are familiar places nurses experience stress and difficulties managing emotions. Kharatzadeh et al. (2019) report in their work the emotional strain associated with nurses working in the intensive care unit (ICU). Contributing to these emotions are the loss of life, care of suffering and trauma, and the need for high critical thinking challenges. Salvarani et al. (2019) and Ackerman et al. (2019) studied the desensitization and lack of emotional regulation in nurses and other medical professionals working in the ICU and emergency departments. This phenomenon is a common problem among healthcare workers and was also noted in a study of nurses working in neonatal ICU (Park & Oh, 2019). The results from this study report that nurses have challenges in death perception and managing the stresses of the environment, which correlates to emotional regulation. Higher emotional control, holistic thinking with empathy, and solid communication are essential components of a professional nurse's skillset. Kirk et al. (2022) broke down these emotions even more in their study when they described the inability of emergency department (ED) nurses to decompress after highly stressful situations, common to this setting. There is no debriefing time, and as it was noted, this reflection is a vital piece in ELT where one grows and refines their knowledge. Developing appropriate coping strategies to help in these situations is discussed in a study by Rantung et al. (2021). ED nurses must develop intrinsic and extrinsic factors that affect their professional sustainability as well as stay motivated to self-care when it is needed. Another area that must be considered in high-risk nursing units is the factor of time management and its relationship to EI. A study conducted by Tofighi et al. (2022) recognized this correlation in the ICU and ED where nurses are often feeling the strain of time deadlines, high stress, emotional burnout, and lower job satisfaction. The need for more training in EI and

having leadership support was identified as a way to improve overall job morale. Tofighi et al. state, “When nurses are committed to action, time management can be improved through better planning, prioritizing, and improving self-awareness” (p. 30). Another aspect that is tied to improved patient outcomes and safe and effective care is nurses who understand how positive communication is linked to personal EI development. The stressors of the profession, especially in high-risk areas such as the ED, include that nurses must make quick decisions, which at times can become challenging among the healthcare team. These high-intensity and stressful interactions can lead to burnout if staff do not incorporate aspects of EI in their communications with patients and one another. Raeissi et al. (2019) review their study results working with nurses in various hospital departments, noting the higher the EI scores, the higher the improved communication scores. Those with positive self-awareness and emotional regulation often have a positive work ethic and are satisfied with their jobs, which produces nurses who care about patient satisfaction and outcomes. Along with the emotional toil that comes with the nursing profession, work incivility is frequent, which impairs emotional regulation. When workplace bullying becomes a routine part of a nurse’s day, negative effects such as emotional breakdown, decreased empathy, communication challenges, and even work-life balance are seen (Blanco-Donoso et al., 2019).

A study by Alhadidi et al. (2016) showed the difficulties with emotional regulation in nurses who work in behavioral health. Because of the patient population, verbally and sometimes physically abusive situations, along with treatment options that are not always optimal, nurses sometimes feel hopeless and helpless in their working environment. Similarly, Basogul et al. (2019) report emotional management difficulties with nurses in this field for similar reasons, and that nurses typically do not have an outlet for their own debriefing needs.

Frajo-Apor et al. (2016) also studied mental health nurses and confirmed high-stress loads and constant turnover rates in the department, relating much of this to the need for showing endless empathy and the unique skills this patient population requires. Another study in the mental health field by Tingleff et al. (2017) noted the challenges nurses have in this setting and similarly, the requirement to develop empathetic and caring responses when behavioral escalation occurs. Rather than using physical or pharmacologic restraints, measures to use therapeutic communication and empathy decrease forceful interventions. Similarly, Jansen et al. (2020) report in their study how nurses working in behavioral health feel a lack of support from leadership, have moral dilemmas presented regularly, and are afraid of the violence that can implode without warning in acute psychiatric units. These feelings have led nurses to feel doubtful about their work and chosen profession, notice a decreased quality in their work, and feel guilt and shame. Peng et al. (2022) studied how healthcare organizational leadership affected overall nursing values. Their results indicated that if leadership held a supportive environment, these values were more prominent, noting emotional regulation improvement among their nursing staff, a sense of belonging, reduced burnout, and negative emotions about their jobs. A study by Jalil and Dickens (2017) investigated the topic of anger management in mental health nurses. Because it is known that this field of nursing comes with many stressors, the emotion of anger was looked at to determine its causes. The study concluded with two main origins of anger feelings, one being patient treatment options and the second being the lack of leadership support. Nurses who felt angry gave less quality care. Another phenomenon that is seen in the behavioral health field is “surface acting.” Noted in a study by Delgado et al. (2020), this phenomenon can be defined when a person, typically a caregiver, expresses feelings for another person’s circumstances, but the feelings are not genuine. Mental health

nurses must constantly be aware of their own emotions and feelings when caring for patients who suffer from psychological impairments, thus surface acting becomes a real coping skill for them. The longer-term problem with this is that over time it can cause many physical, emotional, and relationship problems in their personal life which require interventions that are often difficult to work through (Delgado et al., 2020).

Empathetic communication is also studied in palliative care nursing. The unique skills required to understand and provide compassionate care and empathy during patient delirium associated with end-of-life can be a challenge. Being able to recognize and control emotions within oneself while supporting the patient and family is essential (Hosie et al., 2014). Maillet and Read's (2021) study examined EI and compassion fatigue in practicing nurses. They found that a correlation exists between the demands of the job and low EI, or lack of EI training, to support the welfare of practicing nurses. In another nursing specialty, perioperative care, nurses have high stress in a fast-paced environment. Nurse leaders in this field must juggle the intricacies of it while using collaborative skills and unique EI interventions with all staff. An integrated review of the literature by Rhodes and Foran (2022) noted several themes around these topics. Nurse leaders must develop personal EI concepts of self-awareness, self-reflection, motivation, self-esteem, and empathy when faced with the high-stress environment of the perioperative field. Staff burnout is elevated in operating room nursing and needs the support of well-rounded leadership.

Emotional strain in nursing appears to be a national and global problem noted by Sitzman (2017). Nurse-patient communication gaps were reported in Africa per Abor (2019). In China, Zhang et al. (2022 and Leng et al. (2021) share similar studies reporting stress and job dissatisfaction among practicing nurses. During the COVID-19 pandemic and unstable and

changing healthcare environments, psychological distress in nurses was a significant problem with noted empathy gaps, numbness to emotions, and a lag of moral and caring practices in studies from Norway by Joranson et al. (2022) and in the United Kingdom by Newham and Hewison (2021). Kusakli and Husmenoglu (2021) from Istanbul discussed in their work the emotional toil the nursing profession endures. Potential strategies to assist practicing nurses in learning essential EI skills are posed, noting this education should be provided at the pre-licensure level in academic programs. A study completed in Turkey by Yayla and Ilgin (2020) reviewed the psychological impact the COVID-19 pandemic had on work-life balance. Relationships, personal time, self-care, and family life were reported to have declined quality, with causes from working longer hours, stress at the workplace, and fear of the unknown negatively affecting any sense of normalcy. Concluding findings from the participants were feelings of increased stress, decreased psychological well-being, and no work-life balance. Feelings of being overwhelmed and exhausted contributed to emotional regulation issues. Also in Turkey, Gulsen and Ozmen (2019) determined the correlation between high emotional labor resulted in decreased job satisfaction in nurses. Nurses in Iran were studied by Zarrin and Veyskarami (2020) to reveal what causes burnout. They focused on spirituality and psychological stability and indicated the higher the scores, the lower the burnout rates. Training nurses on personal awareness, symptoms of emotional strain, and empowering their spirituality connections were factors that gave them hope, comfort, and drive to continue caring for patients. Across the globe, obstetrics is another area of nursing that offers challenges in EI and empathetic responses. While nurses are required to contribute in high-stress environments with a calming and empathetic nature, it is not always easy during crises. A study by Lartey et al. (2020) reported qualitative findings on emotional awareness concepts. Themes emerged

from the phenomenological study noting emotional mismatch, overstimulated emotions, and psychological distress. Recommendations include beginning emotional regulation training early on in prelicensure nursing programs.

The literature also expresses concerns with newly licensed registered nurses (NLRN) in emotional regulation and empathy. Coming into the profession, NLRNs experience transition stress, feeling overwhelmed, decreased job satisfaction, and burnout before their skills are fully developed. These negative feelings and lack of coping skills are traits seen at the bedside and reduce the ability to display empathy and compassionate care with patients (Cao et al., 2021. Duo et al. (2022) described similar findings with new nurses, noting a lack of emotional connectedness and challenges with decision-making. Stacey and Cook (2019) discussed the consequences of nurses not having emotional stability in themselves such as making moral compromises based on a lack of emotional control. Hardiman et al. (2022), in their phenomenological study, aimed to understand what NLRNs were struggling within their first year as new nurses. Four main themes emerged, including negative feelings from fear and self-doubt, needing more support than what they originally thought, learning how to communicate and be part of teams, and anxiety and lack of confidence. Though supportive programs, such as nurse residencies, “boot camps,” and preceptorships improve these feelings, many NLRNs do require a significant amount of time to understand themselves and their new role as professional nurses. Concerningly, Im et al. (2020) stated that there is a decreased ability of new nurses to solve and identify problems at a critical thinking level, because of their nature and limited experiences, many lack emotional maturity and awareness. These traits correlate directly to concepts of EI, as NLRNs are overwhelmed with the amount of information, the number of tasks, and the laborious work, having time for emotional regulation and reflection

simply does not happen (LeLorain et al., 2019). Being very task-oriented, novice nurses are slaves to their checklist, and many report decreased job satisfaction because their time and ability to connect with patients in a meaningful way is very limited for this reason (Cerit & Dinc, 2013). Goldberg et al. (2018) presented in their work the responsibility of nurses to be well-rounded in both the science and art of the profession. They identified empathy requirements, recognizing personal emotional awareness, bias considerations, and the ability to care for all patients regardless of their demographics. Personal biases were outlined in this empathy training for new nurses as it pertained to sexual orientation population differences. Lelorain et al. (2018) completed a study looking at emotional control and regulation in motivating practices with patients and patient education. The results indicated that the more emotionally grounded and connected nurses were with themselves, the more robust their patient education experiences were, thus improving their overall motivation and well-being. Creating positive patient outcomes is essentially linked with EI. Bernburg et al. (2020) performed a study with NLRNs to determine if a workshop in mental health self-care would assist with the feelings new nurses struggle with. Describing the concerns that brought them to this study, the authors report new nurses have high stress, emotional exhaustion, limited supervision, and fear and worry of making wrong decisions. They stated, “Such situations are often accompanied by strong negative emotions and require effective coping strategies to regulate these emotions. However, in research on mental health interventions for health professionals, this focus on emotion regulation remains largely untargeted” (p. 584). Concerningly, teaching these softer nursing skills is simply lagging in nursing education despite knowledge of this potentially closing these gaps if given early in student nurses’ educational experience.

**Student Nurses: Emotional Intelligence and Empathy Concerns**

As with both seasoned and new nurses, many student nurses are often inadequately prepared to take on the emotional toil of being in nursing school. A study by Yildirim-Hamurcu et al. (2021) stated, “If the stress is long or the level is high; it has a negative impact on students’ learning, clinical and academic performance, as well as physio-psychosocial health and well-being. Even depression and suicidal tendencies can be seen more in nursing students who experience excessive stress” (p. 1381). Many students are also inept at using empathy and EI skills in their personal and professional lives because they lack understanding and training, or it has not been a routine part of their upbringing (Betkas et al., 2020). In a work by Fino et al. (2018), it was reported that those student nurses must acquire emotional regulation skills to deal with struggles seen in the profession. Being able to transform an emotionally charged situation into one that can be calm and have a positive outcome does not come without training. Nursing students are inadequately prepared for this part of the job. Waite and McKinney (2016) note in their work how vital it is for nursing programs to teach “softer” nursing skills, such as EI and empathy training. These imperative components of the nursing profession often become lost in curricular requirements that, at times, seem less important than those that may be more easily measured in a competency. Student nurses are simply not prepared for the emotional rigors of the occupation, which leaves healthcare systems in a quandary on how to improve these skills in their residency programs. Bringing these concerns back to academia is where it belongs; however, the requirements continue to expand in education and what the essentials of nursing curricular foci are (Cerit & Dinc, 2013).

Knowing that EI training has been effective in preparing nursing students for the workforce, a more centralized concentration in these topics should surface more regularly

across the world (Varga-Valencia et al., 2022). Critical thinking improves when students are able to recognize a patient's physical and psychological cues. Being able to reflect on the holistic nature of a situation allows them to identify in themselves what struggles they had in dealing with it. This deeper understanding of self warrants a much more robust and mature understanding of how to care for patients (Kaya et al., 2018). Another positive aspect of learning EI skills relates to the student nurses' abilities to connect with and develop the nurse-patient relationship. By being aware of personal emotions and the regulation of challenging ones, the student nurse becomes more centered and stable, which allows them to be open and free to address patient struggles more easily (Foster & McCloughen, 2020). Internal reflections noted by studies on EI concepts increase emotional regulation in nursing students as they navigate their clinical experiences during their work (Rasheed et al., 2018). Similarly reported in working nurses, the mental health field is challenging for students. Kirkbakk-Fjaer et al. (2018) and Silva et al. (2021) reported that student nurses come to behavioral health clinical settings with a lack of coping skills and confidence, have a disconnection with patients, and lack empathy and emotional maturity. Similarly, Sun et al. (2020) reported significant stress, frustration, and powerlessness by nursing students in the clinical setting when dealing with suicidal patients. Nursing students are often burdened with these stressful clinical experiences and settings as well as high-stakes exams and grade requirements, often causing emotional regulation issues. Gul et al. (2021) conducted a study on the emotions of nursing students and their difficulties with EI. Because the profession has high emotional demands, nurses are often strained by these. Students have different emotional struggles, but essentially without proper training in emotional regulation and EI, nursing students will have these same challenges as they enter the workforce as well. A study with students by Yildirim et al. (2021) noted a

correlation between low EI and low communication skills when working with patients and the healthcare team. It was also seen that students with low EI scores struggled with emotional control and motivation. Remarkably, when a person has unsettled emotions in themselves, they tend to be self-centered and unable to see a more robust view of what is around them (Aradilla-Herrero et al., 2012).

Nursing students have the opportunity in their clinical practice settings to experience numerous life-changing events. When a student is faced with families' pain from losing a loved one during a clinical setting, this can be particularly difficult. Many student nurses have not had the life experiences yet to care for a loved one in that state of health, and surely not a stranger and family whom they need to support during times of grief (Aradilla-Herrero et al., 2012; Valente et al., 2022). Patients who suffer from substance abuse disorders often come to the hospital in crisis. Many students have not been involved in situations such as these, and often absorb not only the emotions of these conditions but may see or be involved in bias struggles (Durgun-Ozan et al., 2020; Keates, 2021). Student nurses can be unsure how to approach and deal with certain interpersonal challenges, such as patients who are in pain, who are suffering, or who are angry and fighting are other, partially because they lack experience and training in emotional regulation and self-awareness (Costello & Barron, 2017; Zheng et al., 2022). Summarizing these emotional challenges, McCloughen et al. (2020) considered the fear and anxiety students have when beginning their clinical rotations encountering unexpected situations that cause unwarranted feelings. Topics of end-of-life, a poor prognosis, the birth of a baby, traumatic events, and the effects of mental health disorders are taught in the classroom, but once they are seen in real life, they can cause emotional regulation issues if not reflected upon before and after the events. McCloughen et al.'s qualitative study reported common

themes from the participants who were student nurses. The students felt they did not have enough support in the emotional component of the clinical experiences, had too many preceptors to learn from which caused confusion, were unwanted or annoying to the staff, and had feelings of not being part of the team. The authors conclude with:

> We argue for a stronger focus in preregistration curricula on formal emotion management strategies and targeted support in clinical settings for the development of skills to implement those strategies in appropriate, sustainable ways. These interventions should inform students about emotions, emotional dissonance, and the impacts of negative emotions, promote self-development strategies of self-regulation, reflection, social connection, and EI skills . . . (p. 2517).

Studies of nursing students by Erkin and Aykar (2021)) and Flynt et al. (2021) described program workload stress and lack of personal awareness and emotional regulation. Teaching mindfulness meditation techniques and coping strategies were reported as positive interventions. Berduzco-Torres et al. (2021) focused their work on the desire that student nurses can improve their management and empathetic skills, which help them professionally and personally. Smith's (2017) study noted that learning the nursing profession, coupled with EI training, helps to increase the knowledge of what quality nursing care means. Nurses who use critical thinking in decision-making help improve patient outcomes related to high-quality care. Similarly, Wilson and Carryer (2008) studied student nurses and emotional management skills. Once education was provided, students were better equipped to manage and control decisions that could often be emotionally based. In 2014, a study by Cerit and Beser  easured EI in nursing students. The concept of emotional awareness scored lower than other concepts of EI, which supports the need to continue training student nurses in this area as they prepare to

enter the profession. Matriano and Middleton (2020) shared a different perspective in their descriptions of how student nurses make themselves available, both physically and emotionally, while supporting patient care needs. Once students felt the importance of being present, open, and honest with themselves and demonstrate these same skills with patients, nursing students understand the caregiving role more empathetically. A study by Kim et al. (2019) examined male nursing students to analyze their satisfaction in the profession. The results indicated several issues that relate to the topic of EI. Male students tended to have more stress related to communication and emotional regulation. When these concepts were introduced in academic studies, aspects of EI made them feel less anxious, and their satisfaction in their clinical experiences improved. Another study by Varga-Valencia et al. (2022) surveyed nursing students post-pandemic, looking at emotional strength, resilience, and how EI affected self-efficacy. Though EI and emotional awareness improved with the year in program level, the lower the EI scores, the lower their efficiency was.

## Academic Teaching: Emotional Intelligence and Empathy

### *Simulation and Virtual Reality*

According to the American Association of Colleges of Nursing (AACN), academic centers are charged with the task of preparing the nursing workforce to enter the profession and be part of the healthcare team (AACN, 2019). Innovative teaching strategies in the classroom have been noted to enhance critical thinking and EI concepts. For example, simulation is a standard teaching method used in nursing education.

A study by Kimzey et al. (2021) used a simulation program to portray the struggles of a patient with dementia. From the intervention, student nurses developed a measurable sense of empathy. Amod and Brysiewicz (2019) used simulation with their midwifery students, which

improved clinical competency, self-reflection, and psychomotor skills. They were also able to measure the positive improvement in emotional components of emergencies in this field. Similarly, Ruiz-Fernandez et al. (2022) present how a simulation program in a community health rotation focused on softer nursing skills and improved self-awareness and emotional regulation in nursing students. Another study by Tseng and Hill (2020) used high-fidelity simulation with undergraduate nursing students to promote critical thinking and reflection to improve knowledge and emotional awareness. Tying in the TEQ instrument, Phillips et al. (2020) showed how simulation improved empathy scores with nursing students when caring for impoverished patients. A similar study using Kolb's (1984) learning theory and simulation with student nurses studying higher acuity patients indicated improved cognitive and affective skills (Dante et al., 2021). Holland (2020) also used simulation in their program, examining key ways to foster empathy in student nurses. Focusing on teaching empathy and geriatric nursing content, Losa-Iglesias et al. (2019) completed a simulation study with their students as well. They used the TMMS-24 and another empathy scoring tool pre- and post-intervention. The results showed increased empathy in the students following the intervention. Teaching various communication techniques, requiring role-playing, encouraging reflection, allowing unfolding events in simulation, and offering debriefing sessions were ways educators helped students connect with their empathetic and emotional selves. In a study by Akselbo et al. (2018) simulation was used in nursing education and public health scenarios. The process for students to practice their skills and knowledge in a safe environment was essential to their learning. The authors also highlighted the importance of debriefing to enhance their emotional regulation and self-awareness knowledge. Hansen et al. (2023) used simulation in an undergraduate nursing course on the topics of assessment and decision-making. The aim of this

study was to measure stress and self-efficacy in students. The results indicated students felt more confident, learned more about their personal strengths and areas that needed improvement, and were able to identify coping strategies when feeling stressed.

A similar virtual reality (VR) teaching technique has become more robustly used in nursing academia. Chen and Liou (2022) used VR in obstetrics with the subjects of assessment and care of the laboring patient. The results of the study held several themes: empathy growth, improved communication, and confidence building in a stress-free environment. A study by Dean et al. (2020) posed questions on the ability to invoke true empathetic responses in student nurses using VR. Their discussion noted how valuable the VR experience can be, but more research and experience are necessary to use the technology. Somewhat like VR, a study by Yu et al. (2021) used digital storytelling to enhance empathy with nursing students. The posttest scores for empathy in the intervention group improved from 112.13 to 118.76, with an increase of four points in the intervention group versus the control group. However, this study indicated that sustaining empathetic understanding over longer time periods would require further research to understand why empathy can be challenging to teach and to keep.

### *Reflection, Role Play, and Storytelling*

Another common teaching method used in nursing academia to improve EI skills is the use of self-reflection. Thomas and Asselin (2018) and Contreras et al. (2020) reported findings with their nursing students on how using reflection and narratives increased practical listening skills, reduced stress, regulated emotions, improved coping, decreased anxiety, and helped to focus learning. Harrison (2021) and Costello and Barron (2017) used reflective practices with professional nursing staff to help reduce burnout, improve confidence, and decrease stress among patient units requiring specific care such as intensive care and end-of-life care. The

results indicated journaling is beneficial to help nurses use their softer skills and improve EI. Another study by Harrison and Fopma-Loy (2010) used Goleman's EI guide to develop reflection prompts for journaling with nursing students, which assisted their EI development during a psychiatric nursing course. These reflections could be used in similar courses to improve confidence, a connection of deeper meaning, and, essentially, nurse-patient relationships. An article by Kaisfas (2021) described the role of the Christian nurse educator in enhancing EI skills using various techniques, noting self-reflection and journaling to be two of the most effective assignments students can use to develop the softer skills and concepts of EI. Other creative interventions exist to help with emotional awareness in health professionals. A study by Nunes da Fonseca et al. (2017) wanted to assist organ donation representatives in their ability to identify and elicit appropriate emotional responses when working with families who have a loved one that could be a candidate for organ donation. A unique intervention showing pictures of various items was presented to the group. Reflections on the emotional responses were recorded and shared among them individually, then collaboratively, giving support to one another and obtaining a perspective on the emotions of self and others. Concluding the study, the authors identified ". . .the creation of poems/writings in which we observed greater assertiveness, self-control, and self-involvement related to the emotions for the future" (p. 8).

Similarly, the flipped classroom teaching method is an effective way to engage students and demonstrate empathetic behaviors. Khodaei et al. (2022) used self-directed learning and flipped classroom activities during the COVID-19 pandemic with their nursing students. This teaching style effectively involved content and emotional response discovery, enhancing students' cognitive and affective behaviors. Cho et al. (2019) reported using this method to

offer student engagement. Results were mixed; however, they indicated more self-awareness and efficacy while students prepared and presented educational materials. Similarly, Chan et al. (2021) noted their findings on what the flipped classroom offers in student engagement, ownership, and improvement in critical thinking. Students were able to increase their critical thinking skills and develop metacognitive awareness, understanding their own ways of learning and growing as they prepared for their work in different ways. A study by Larti et al. (2018) reviewed a role-play teaching technique with student nurses in operating room training. Outcomes successfully noted that empathy scores were higher in this cohort and that aspects of empathy could be taught. A study by Sisman and Buzlu (2021) used psycho-trauma role-playing where students could identify and express emotions in psychiatric care showing improvement in communication skills and self-awareness. Lee and Kim (2022) studied using role-play activities with nursing students when working with high-risk pregnant women. An improved comfort level in communication techniques were noted, and though emotional intelligence scores did not significantly improve in this study, there were setting and time constraints that the authors felt contributed to this lack of improvement. Further studies in this area were recommended, as other studies did show role-playing activities in various topic areas of care with nursing students that improved EI. A literature review by Zarzycka and Gesek (2022) focused on the development of critical thinking in nursing students. Introducing various types of education techniques, students learned to deploy empathy, compassion, and EI when role-playing, simulation, and other interactive teaching methods were used. Essentially, building nursing students' EI skills enhanced their clinical reasoning abilities. Similarly, a technique using physical art drawings to elicit emotional responses and self-awareness in

nursing students showed an improvement in self-awareness, which essentially enhanced understanding in the emotions of others (Jack, 2012).

Mindfulness activities are also a reflective type of intervention that can be used in academia to assist in the personal growth of students. Mindfulness has been shown to improve self-awareness, reduce stress, and improve clarity of thought, all traits that help student nurses be more successful in their studies (Aslan et al., 2021). A study that considered negative feelings and the correlation of empathy development in university students identified just that. Nursing students can decrease negative self-talk, improve therapeutic communication skills, improve emotional awareness, improve empathy awareness, and learn how to work with patients who are struggling with altered emotional control (Aslan et al., 2021). Similarly, those working in trauma fields can have difficulties dealing with personal emotions, especially if trauma was part of their lives prior to becoming a professional. A study by Lauridsen and Munkejord (2022) recognized this possibility and asked if a workshop intervention that allowed a "safe communication environment" would allow participants the ability to develop an improved sense of awareness of their own trauma history. The themes identified by the participants were "self-awareness and compassion for others, emotional safety and tolerance of stress in challenging communication, responding to vulnerability instead of challenging behavior, and courage to progress toward personal growth" (p. 139). This self-awareness work is a reminder of how it can assist healthcare students and workers to become more kind, compassionate, and understanding of those they care for. As noted, nurses are at risk for burnout, thus creating interventions at the student nurse level can assist in developing healthy coping skills before they enter the profession. A critical literature review by Green and Kinchen (2021) on the topic of mindfulness strategies to decrease stress among professional

nurses reported positive results. Mindfulness work in the literature reported nurses to feel more focused, and self-aware, use breathing techniques, and understand when their bodies needed a break. Once these practices are learned, nurses can use them anywhere and at any time. Developing these skills at the student level will bring a more balanced NLRN who is aware of emotions and able to control them when challenges arise on the job (Green & Kinchen, 2021).

### *Didactic Content Delivery Methods*

There are many methods to deliver educational content in nursing academia pertaining to EI training. Gholamzadeh et al. (2018) helped develop a didactic program for nursing students in empathy. Vishavdeep et al. (2016) used an education module to teach concepts focused on Goleman's EI model. This material was delivered in a workshop format considering the topics of self-awareness, self-regulation, motivation, empathy, and social skills. The results noted an improvement in nursing students' understanding of EI. McCormick et al. (2021) also held a teaching session with nursing students and hosted a live guest speaker with Parkinson's Disease (PD). The aims were met, as students were meaningfully engaged in the experience, which improved empathetic behaviors and cognitive understanding of the challenges with the disease. Barron et al. (2017) reported the results of a course in compassion with nursing students in end-of-life care. Various teaching methods were used, including videos, guest speakers, group work, and traditional lectures. The results concluded with improved knowledge of caring for patients and families' physical and emotional needs during this time of life. Sitzman (2017) also used a caring model to incorporate teaching sessions with students, and nursing professionals focused on softer nursing skills. Madsgaard et al. (2022) researched how nursing instructors in a simulation center were trained to facilitate student emotions during and after programming. The instructors carefully navigated both cognitive and

emotional growth while being careful to address any behaviors that were outside the parameters of the simulation. Moraes de Azevedo et al. (2021) developed social and emotional competencies in teaching practices to assist educators. A study by Betkas et al. (2020) showed teaching techniques that improved cognitive behaviors in relation to EI and empathy in nursing students. Other studies described using creative lecture methods on topics of general EI education, problem-solving, and the correlation to emotional awareness and communication skills with EI (Illievova et al., 2013; Kuruvilla & Menezes, 2019; Shahbazi et al., 2018). More topic areas, including increasing self-awareness, pathways to develop inner-awareness skills correlating with understanding others' emotions, mindfulness training to increase communication, EI and caring in nursing students, and how to build resilience in nursing students, were also noted in the review, which are relevant to this study (Chow et al., 2020; Kou et al., 2022; Teskereci et al., 2020; vanVliet et al., 2018; ). With the shift to hybrid and online learning in many academic centers, teaching didactic lessons requires some creativity for student engagement, self-discipline, and self-control. A phenomenological study by Peck et al. (2021) examined these alternate learning formats with nursing students. Themes that contributed to self-awareness and emotional regulation emerged, as students reported feelings of emotional regulation, learning when it was most conducive for them, engaging in topic areas that were important and a priority, and the need for flexibility.

Erkayiran and Demirkiran (2018) developed an EI training module for nursing students using lectures and interactive components in the classroom. Improved levels of EI were again the result. Studies by Gholamzadeh et al. (2018) and Shannon (2014) presented workshops on empathy with nursing students. Various teaching methods were used such as case studies, group discussions, presentations, and traditional lectures, noting positive results of improved

empathy in the intervention group. Another study using a workshop format was presented by Lee et al., which showed improvement in EI skills and teamwork within interprofessional groups (2018) and by Adimando (2018) on nursing self-care along with education on the symptoms of compassion fatigue. Elective nursing courses in the art of nursing were also offered to nursing students at various times through their programming in a study by Teskereci et al. (2020). Results showed improvement in empathy, self-care, and emotional awareness, which in turn helped them become more responsive caregivers. van-Zyl and Noonon (2018) focused their research on teaching nursing students' emotional regulation and healthy responses during stressful situations. The study discussion endorsed nurse educators' vital role in student nurse character development. A similar study by Waite and McKinney (2016) considered the effects of teaching the art of nursing skills to students. The outcomes from the work mentioned improved EI and empathy knowledge, which are imperative skills as students move closer to graduation.

Another way to link EI concepts, particularly empathy development in student nurses, is to provide opportunities in their studies to feel and reflect on emotions. McKinnon (2018) considered what defines empathy, how nurses feel in given situations, and how self-awareness and emotional regulation grow over time and experience. Themes presented in McKinnon's work identified characteristics of empathy as becoming aware of internal biases, being nonjudgmental, being present in the situation, learning how to listen, understanding others' sufferings, and understanding the self in various hardships. Giving students opportunities to reflect on their emotions builds these EI concepts and helps the student to prepare for the rigors of the profession. Similarly, a workshop to help nurses identify emotions was studied by Nikmanesh and Khosravi (2020). The goal was to see if this training was imperative to

improving resilience and emotional well-being in the study group, both of which were improved. Since these are successful in the working nurse population, holding similar trainings can also be helpful to bring emotional awareness to student nurses as they prepare for the workforce.

### *Role Modeling Behaviors*

Several academic studies report on the importance of educators being role models for their student nurses. Honkavuo's (2019) research focused on nursing faculty using EI skills and caring actions when teaching and connecting with students. Students recognized softer skills in professionalism, communication, and empathetic behaviors in their instructors, which are the same behaviors that should be demonstrated with patients. Newham et al. (2019) conducted a study with nursing faculty to determine their views of what caring, morals, and ethics mean to them about the profession. These internal views build one's EI and, in the faculty, a role that not only shows the type of character expected of a professional nurse, but also helps students value the holistic responsibilities of being a nurse. Using various narratives, reflective views were noted on their ability to incorporate these behaviors in the classroom with students. Similarly, Ali et al. (2017) completed research on EI measurement in those who teach. Developing EI skills is essential whether the content was delivered in the classroom or online. Milnar (2010) reviewed the nurse educator's responsibility to cultivate caring behaviors in presentations, lectures, and at the bedside. Guidance is given in all areas of academia. Yetka and Abdolrahimi (2015) and Vandewaa et al. (2016) stressed the importance of educators demonstrating EI concepts in their teaching methods and professional skills to help prepare students for the profession. Duygulu et al. (2011) completed a comparison study that examined EI in the freshman and senior years of a nursing program. The results reported that general

nursing education enhances EI and leadership through subtle learning in the caring sciences. Smith et al. (2009) researched nurse educators' empathetic behaviors and the impression these had on students. These gentle behaviors improved student nurses' ethical decision-making and critical thinking skills. Wilson and Carryer (2008) conducted a study with nurse educators to understand their views on evaluating emotional competence in student nurses. Overall, themes emerged from this study and stated that teaching emotional management and recognizing it within the student population can be challenging because the subjectivity of the topics make them difficult to measure. Encouraging coursework in EI is suggested. Hajibabaee et al. (2018) conducted a study with nursing faculty on teaching empathy and EI to nursing students and evaluating their ability to connect with patients. Faculty demonstrated these appropriate behaviors in clinical settings. The students who scored higher in EI and empathy also improved their ability to connect with patients. A recent study by Miao et al. (2021) addressed how emotional regulation in nursing students during the COVID-19 pandemic affected their academic studies and personal stress. A supportive academic and social structure was vital for these students in developing alternate coping skills and emotional regulation management. These intrapersonal skills are part of EI development, which can carry over into practice readiness. Considering self-awareness and ethical/moral judgment, a study by Hashish and Awad (2019) examined these concepts in nurse educators. Since these are skills that can be developed over time, as well as be innate in some, leading by example is essential when working with nursing students. As the nursing profession is held to high standards regarding morality, trust, and decision-making, educators must demonstrate and teach these concepts to their students.

Lavoie et al. (2018) conducted a theoretical review to identify what methods were used to measure student outcomes during simulation activities with nursing students and how this was impacted by learning theories. One of the more common theories used was Kolb's (1984) ELT. Self-confidence was one trait faculty observed in students, an aspect of EI development that can be interpreted as learning readiness at the bedside. An older study by Hawks (1992) reported an understanding of the importance of using experiential learning activities such as simulation to enhance competencies in intrapersonal skills and empathy. These skills empowered students giving them more confidence when working with patients. A study by Wei et al. (2019) examined the literature on Watson's caring theory used in nursing education over a 13-year period. The cumulation of this work reported that when nurse educators teach using empathetic and caring behaviors, students begin to see the correlation between self-awareness and how to translate that into practice. Batmaz et al. (2022) conducted a study with nursing students to identify their levels of self-esteem and emotional intelligence from their first year to their final year in school. Through various didactic lessons, clinical education, and other learning experiences of their school program, the scores on the Bar-On EQ-i and the Coopersmith Self-Esteem Inventory improved in the participant group. The authors concluded the study by stating, "A 4-year nursing education allowed nursing students to develop a positive self-perspective by increasing their self-esteem, and to gain an ability to distinguish own emotions and display relevant behaviors by increasing their emotional intelligence" (Batmaz et al., 2022, p. 2097). The overall recommendation included making programs that enhance EI skills a formal part of the nursing curriculum.

Another type of role-modeling behavior highlighted in nursing academic literature is peer tutoring. Students who require assistance in their academic studies respond positively to

their peers who have either successfully completed previous work or who show high academic standing and content conceptualization. A study by Gisbert and Rivas (2021) considered the effect peer tutoring had on student nurse peers in the subject of empathy development. In their quasi-experimental study, students who participated, both the tutor and the tutee, gained growth in their perception of empathy with patient care. Concluding with this statement, the authors recommend formal programs that support peer teamwork in nursing programs: ". . .peer tutoring intervention can be effective in promoting social experiences that enhance empathy. The result reinforces the idea that empathy, as a complex social skill, can be developed through teaching methods based on cooperation" (p. 13).

**Toronto Empathy Questionnaire (TEQ)**

The TEQ is one instrument used in this proposed research because it measures empathy in various populations. Spreng et al. (2009) developed the TEQ in 2009 and validated it by comparing other empathy measurement tools. Confirming it further, a study by Totan et al. (2012) used the TEQ to measure empathy in university students from Turkey, noting positive results when comparing them to other empathy measurement factors. Yi et al. (2020) used the TEQ to measure empathy with dietician students and compared it with an alternate measurement tool. Using the TEQ with medical students, Ursoniu et al. (2021) confirmed the tool's reliability in the Romanian version. Overall, empathy was measured in two different adult age groups in an attempt to understand how empathy and communication correlate. The TEQ was used as one of the measurement tools in a study by Gould and Gautreau (2014), demonstrating that empathetic responses are more valued in older participants than younger adults. More specifically, in nursing students, Phillips et al. (2018) used the TEQ as one of the tools to measure the effects of a simulation program on patient poverty. Improvement in

empathy scores was noted in the student nurse cohort. Mathad et al. (2017) completed a correlation study using four scales to measure baccalaureate nursing students' resilience and ability to cope. Perseverance, mindfulness, resilience, and empathy were then tested for the correlation of these skills. The TEQ was used to measure the empathy concept, which was noted to have a significant correlation to all other concepts and a particularly significant correlation with resilience. A study by Cosper et al. (2018) examined the decline of empathy in intensive care unit nurses and implemented a simulation intervention. The TEQ was used in this study and reported significantly improved empathy scores in nurses under age 30. Alhadidi et al. (2016) used the TEQ in their study of psychiatric nurses and their level of caring with this patient population. Results indicated that special training in mental health and leadership support improved nurses' abilities to provide necessary and empathetic care. Considering a comparison study by Altmann and Roth (2021), those working in health professions need to use coping skills as they empathize with their patients. The question was posed if empathy reduces burnout or if empathy worsens burnout in nurses. Using the TEQ as one of the tools, it was determined that working in stressful environments where giving empathetic care was essential could actually increase burnout if coping skills were not used outside of work. Isik et al. (2022) presented a study using the TEQ as one of their instruments as they measured empathy, patience, and nursing values. When examining correlation statistics, high nursing values scales and high empathy measurements were positively associated. Turken et al. stated, "While nurses care about providing appropriate care to individuals, they continue to maintain empathy as the most valuable virtue" (p. 2439). Permission to use this instrument is documented in Appendix E.

**Trait Meta-Mood Scale-24 (TMMS-24)**

The TMMS-24 was developed by Salovey et al. in 1995 to measure emotional intelligence, particularly mood and mood management. The TMMS-24 was measured for validity and reliability and has been used and modified over time for several years. A study in 2013 by Aradilla-Herrero et al. used the TMMS-24 as one of their instruments when considering EI and suicidal risk in nursing students. The TMMS-24 helped determine self-awareness and emotional regulation, which was a significant factor in determining the need for more emotional support for at-risk people. Gimenez-Espert and Prado-Gasco (2017) completed a study using the TMMS-24 to measure communication and concepts of EI in practicing nurses. Results correlated cognitive and affective domains to be overall predictors of how nurses perceive the importance of communication in their practice. Valdivia-Vazquez et al. (2015) confirmed reliability and validity in their study using the TMMS-24 in a Spanish version with high school and college students, as did Cabral et al. (2021) in a Portuguese version with university students. Espinoza-Venegas et al. (2015) from Chile presented validity results in the TMMS-24 with their nursing student research. Conden et al. (2021) compared a modified TMMS-24 and the original in a study of a specific patient population to determine if the original TMMS-24 would pertain more to them. Subscales from the original are more pertinent in the elderly population. A similar study with cancer patients measuring general coping and EI skills using the TMMS-24 instrument helped determine the effectiveness of mindfulness strategies (Romero et al., 2020). Portela-Pino et al. (2022) presented the TMMS-24 with an adolescent group to determine what life variables affect their EI. Having an improved EI at this age level can help with future emotional regulation. Edo-Gual et al. (2015) conducted a study with nursing students using the TMMS-24 to understand the correlation

between EI and their feelings on death and end-of-life care. The study revealed the need to provide improved coping strategies and EI guidance in these more challenging softer skills of the profession. A study by Montes-Berges and Augusto (2007) used the TMMS-24 to determine student nurses' ability to cope in their program and with patients. Results concluded that high EI and decreased stress relate positively. Acebes-Sanchez et al. (2019) also used the TMMS-24 to compare physical activity and EI in college students. Results acknowledged that emotional control and attention levels improved when students engaged in increased activity. Permission to use this instrument is documented in Appendix F.

## Summary

This literature review considered the conceptual and theoretical frameworks of Salovey and Mayer's (1995) EI concepts and Kolb's (1984) ELT. The history of each of these frameworks and how these seminal works correlate to the proposed research was acknowledged. EI history is rich in time, thought exchange, and further development over the years from various authors in the psychology field. It has also been used in numerous professional areas, notably in health care. Kolb's learning theory identifies how to assist students in maximizing their learning potential. Through given learning opportunities, students obtain knowledge in clinical experiences and reflection, as well as improved self-awareness and empathy.

This chapter also reviewed the problems seen in nursing practice and in nursing education as they relate to EI and empathy development. Common themes emerged, including challenges in the practice such as burn-out, stress, and lack of clinical decision-making due to challenged emotional struggles. NLRNs are particularly vulnerable to developing negative emotional regulation with low EI. Nursing programs historically have paid limited attention to

the development of EI in nursing curriculum. The literature supports the need to build these skills to ready the nursing workforce.

Nursing education programs focusing on EI concept building have been shown to produce positive outcomes related to such. Various teaching methods, such as multi-media styles, reflective practices, and lectures, effectively present EI material to students. Research is limited in specific concepts of EI. Self-awareness and emotional regulation education and how these correlate to empathy knowledge attainment are areas to focus.

Lastly, the two instruments proposed to measure empathy and EI were reviewed for the literature supporting their use in various studies. The TEQ measures empathy precisely and has been used in various healthcare-related studies. The TMMS-24 dissects EI traits for measurement in these concepts. The reliability and validity of the scales were presented as well as their use in academic work. Using both tools for the proposed study will assist in accurately defining the research questions.

# CHAPTER THREE: METHODS

## Overview

This chapter discusses the methodology of the research examining educational intervention in emotional intelligence (EI) and empathy with an undergraduate nursing student cohort at a nursing college in the Northeast region of the US. Measurement of each included pretest and posttest questionnaires using the Trait Meta-Mood Scale-24 (TMMS-24) and the Toronto Empathy Questionnaire (TEQ). Qualtrics software was used by the university where the study was conducted. The Statistical Package for Social Sciences (SPSS) was available through the said university and used to analyze the collected data.

## Design

This study used a quasi-experimental, pretest/posttest design. This design aimed to establish a relationship between the independent and dependent variables used in the study (Gall et al., 2007). Participants were placed into one group without randomization. This study did not have a control group; all students were provided the same education even if not enrolled as participants. The pretest-posttest portion of the design referred to the researcher obtaining a measurement of the students' baseline EI and empathy scores using the TMMS-24 and TEQ. These were also measured following the given intervention with the same group. For this study, participants were presented with the TMMS-24 and TEQ questionnaires at the beginning and end of the teaching sessions. This method was most appropriate for the study because of the planned educational intervention, availability of study participants, and the use of pretest and posttest measurements to collect the data. According to Gall et al. (2007), quasi-experimental research is often used in the medical field and academia due to the availability and accessibility of participants.

## Research Questions

**RQ1:** What is the difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention?

**RQ2:** What is the difference in empathy scores of undergraduate nursing students. as measured by the TEQ, before and after an interactive EI educational intervention?

## Hypotheses

**$H_0$1:** There is no difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention.

**$H_0$2**: There is no difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention.

## Participants and Setting

The participants for the study were obtained from a convenience sample of undergraduate nursing students in their junior year at a state nursing college in the Northeast region of the U.S. during the spring semester of the 2023-2024 school year. The nursing program setting is in a suburban community and enrolls students from diverse populations, genders, income levels, geographic locations, ethnicity, and religious affiliation. The nursing college enrolls, on average, 100 students each year in the traditional track program and 90 in the accelerated nursing program. The university, which houses the nursing college, has a total enrollment of over 16,500 students each year in undergraduate programs (Binghamton University State University of New York, 2023).

The desired number of participants for this research reached a medium effect size in the range of 0.5 - 0.6. Similar studies using the TEQ and TMMS-24 in healthcare-related topics, specifically nursing academia, were presented to support the use of a medium effect size,

which was appropriate for this research. In a study by Waqas et al. (2020) that examined Pakistani medical students' empathy toward patients who exhibit mental health issues, specifically depression, the TEQ was one tool used to calculate the empathy construct. The study had 674 participants and noted a medium effect size for their study achieved at a 98% statistical power. Another study using the TEQ by Mathad et al. (2017) examined predictor values of resilience in nursing students. They used a priori computation to determine sample size, which ranged from medium to high at 0.05–0.08 with a participant group of $n = 194$. A study by Edo-Gual et al. (2015) used the TMMS-24 in their work with 760 Spanish nursing students to determine their coping ability with death and dying and its correlation to EI. They calculated their sample size using enrollment data and a confidence level of 95% and $p = <.05$, placing that at a medium effect size. A second study using the TMMS-24 by Losa Iglesias et al. (2020) considered empathy measurement using simulation in a nursing student cohort. To determine their effect size, a power analysis of 80% and an error of 0.05 resulted in a medium effect size using 54 student participants. The literature showed that similar studies using the given instruments would support a medium effect size for this study.

The traditional students had $n = 100$ in their class, thus noting an $n = 34$ using a power analysis of 80%, an error of 0.05, and a medium effect size (Statulator, 2023). All students were given the EI classes outlined in the procedures section, and all students were given the opportunity to participate in the study. The inclusion criteria included the following:

1. Male and female nursing students enrolled in a baccalaureate degree program from the fall semester of their junior nursing school year who are participating in the following core nursing classes titled *"The Client System of Nursing I"* and *The*

*Client System of Nursing II."* The student cohort comprised of traditional program students from one nursing college.

2. Students must speak English and must be oriented to time, circumstance, person, and place.
3. All students, regardless of gender, age, or race were able to participate (see Table 1).

**Table 1**

*Demographics and Coding*

| Demographic Variable | Scale | Code |
|---|---|---|
| Gender | Nominal | 1=Male<br>2=Female<br>3=Other |
| Age | Nominal | 1=18-22<br>2=23-25<br>3=26-30<br>4=31-39<br>5=40-50<br>6=50+ |
| Race | Nominal | 1=Hispanic or Latino<br>2=American Indian or Alaska Native<br>3=Asian<br>4=Black or African American<br>5=Native Hawaiian or Other Pacific Islander<br>6=Other race alone, non-Hispanic<br>7=Multiracial, non-Hispanic |

Exclusion criteria were outside the listed parameters. Students were verbally informed of their privacy protection, confidentiality, and anonymity in a written consent form read and given when explaining the study. The consent was given using Qualtrics and housed there for study protection. Participants were informed to contact the researcher if desired with the information provided in the informed consent (see Appendix C). Participants were asked to provide the last four digits of their cell phone number as the unique code to remember when collecting their data in order to compare the first and the second set of results. They also were notified of their right to withdraw from the study at any time. The instructions informed the participants that study data would be kept in a safe and secure location, results would only be available to the researcher, and their answers would remain fully anonymous. Data will be kept in a file for three years, after which the data will be destroyed.

## Instrumentation

### Toronto Empathy Questionnaire (TEQ)

The TEQ is one instrument used in this study (see Appendix A). It was chosen because it directly measures empathy, a critical factor in developing a caring mindset in student nurses. Its appropriateness to academic nurse training is valuable as it directly measures how a person understands and responds to the emotions of others (Spreng et al., 2009). The tool was validated and published in 2009 by Spreng et al. In the validation process, the authors note the following:

> The results from studies 1 through 3 demonstrate that the TEQ possesses a robust single-factor structure, high internal consistency, and convergent validity with existing self-report scales, as well as behavioral measures of interpersonal skills and high test-retest reliability. (p. 68)

The TEQ also accounts for the cognitive aspects of empathy. The ability to think and reason using affective characteristics is blended into the tool. As student nurses formulate their cognitive and affective abilities with training, these skills guide them through the science and art of the profession. The tool is comprised of 16 statements asking how the participant feels about a given scenario using a five-point Likert scale ranging from Never = 0 to Always = 4 (Spreng et al., 2009). Taking the TEQ will take approximately eight minutes, giving each participant two minutes per question. In calculating the results of the TEQ, the researcher adds up each item number and divides the total by four. Scores below 45 indicate a lower-than-average empathy score, whereas the higher the score, the higher the empathy on the self-reported scale (Spreng et al., 2009).

Totan et al. (2012) conducted a study to validate the Turkish version of the TEQ to measure empathy in college students. The authors first determined if the language was correctly translated from English to Turkish, resulting in positive and significant correlations between the two versions. The researchers then completed confirmatory and exploratory factor analyses looking at two empathy-related scales, the Empathic Tendency Scale and the Basic Empathy Scale, which both have Turkish translations. The results indicated that internal consistency scored at 0.79 and reliability with a test and retest method scored at 0.74. Yi et al. (2020) measured empathy with dietician students using the TEQ, reporting its internal consistency of $a = 0.85$. These results also confirmed similar findings from the Consultation and Relational Empathy tool used in this study with $a = 0.93$. Using the TEQ with medical students, Ursoniu et al. (2021) validated the Romanian version of the tool. The *a*-level equaled 0.72, noting anything above 0.7 to be acceptable. An intraclass correlation coefficient was used for test-retest reliability of 0.76, reporting a level above 0.3 as reliable. A study by Gould and

Gautreau (2012) used the TEQ to compare older and younger adults' empathy tendencies and their desire for conversations related to this topic. Correlating the TEQ with the subscales of empathetic concern and perspective taken from the Interpersonal Reactivity Index, these two areas were most closely related. In academia, a study by Phillips et al. (20218) examined the effects a poverty simulation had on student empathy, and the TEQ and two other scales were used to measure these effects. The results of the TEQ showed: "significantly ($t = -11.382$, $p < .01$) increased from 46.6 ($SD = 5.53$) at the pretest to 51.17 ($SD = 6.39$) at the posttest" (p. 23). Scores were also consistent with the Attitudes of Poverty and Poor People (APPP) scale, which "showed a significant ($t = -2.218$, $p < .05$) increase from pretest (121.17, $SD = 11.73$) to posttest (123.05, $SD = 11.07$)" (p. 23). A study by Mathad et al. (2017) gave the TEQ in conjunction with other tools to a nursing student cohort to measure resilience and coping ability. Results indicated that empathy correlated positively to resilience and mindfulness, whereas it negatively correlated to repeated negative thinking, mental capacity, and age. A study by Cosper et al. (2018) examined the decline of nurse empathy in a critical care setting. A pretest-posttest study was conducted using an empathy simulation intervention and testing with the TEQ. Nurses under 30 years old improved by 3.6 points, and nurses over 30 years old improved by 2.06 points.

**Trait Meta-Mood Scale-24 (TMMS-24)**

The second instrument used for this study was the TMMS-24 developed by Salovey et al. in 1995 (see Appendix B). Stemming from the psychology field, emotional intelligence measures various concepts, mood, and mood management. The TMMS-24 was chosen for this study because of its correlation to empathy and emotional intelligence. Since empathy deals with the emotional awareness of and compassion for others' emotional and physical well-

being, EI considers how self-awareness, self-control, and empathy impact relationships. The original TMMS is a 48-statement questionnaire that asks participants to answer how they feel about statements using a five-point Likert scale from 1 = strongly disagree to 5 = strongly agree (Salovey et al., 1995). A modified version, the TMMS-24, has been used most often in the literature and was also used for this study (Salovey et al., 1995). Participants took approximately 12 minutes when answering the questions, giving each question two minutes. When scoring the TMMS-24, there are three sections: *attention, clarity,* and *repair*. There are variations for males and females, scoring "adequate," for *attention* report in the 22-35 range, for *clarity* in the 24-35 range, and for *repair* in the 24-35 range (Salovey et al., 1995).

Several studies in the nursing field have used the TMMS-24 to measure EI concepts. A study by Aradilla-Herrero et al. (2012) used the TMMS-24, along with other tools, when studying death anxiety in nursing students. The results showed attention, clarity, and mood repair, subscales of the TMMS-24, and their correlation to death measurement scales. As students progressed in their program, they developed a better understanding of their own feelings and emotions, a greater sense of their feelings about death, and improved coping abilities around such emotions. Gimenez-Espert and Prado-Gasco (2017) conducted a study using the TMMS-24 to measure communication and concepts of EI in practicing nurses. This was validated in the Spanish version of the tool by using the exploratory factor analysis and the confirmatory factor analysis. Some areas did not converge well in terms of validation, but in general, the constructs adequately represented the TMMS-24 in the English version. On the same topic of death and dying, Edo-Gual et al. (2015) conducted a study with nursing students using the TMMS to understand the correlation between EI and students' ability to cope with these circumstances. Results indicated that death anxiety correlated positively to the attention

of emotions at $p = <0.01$ and negatively to clarity and mood repair, which are the three areas the TMMS-24 is based upon. A study by Montes-Berges and Augusto (2007) used the TMMS-24 to determine student nurses' abilities to cope and relieve stress in relation to EI. The TMMS-24's internal consistency is $a > 0.86$, with other tools reporting similar findings. The results indicated that emotional clarity and repair correlate positively when pairing social support with higher levels of these internal skills. Results concluded that higher EI and educational training improve coping ability and dealing with high-stress environments.

For this study, the EI intervention was brought into the courses that reflects the junior-level nursing student body of approximately 100 students. Approximately 34 participants are required to satisfy a medium effect size (Statulator, 2023). To eliminate bias, this researcher was not an evaluator of academic performance in the projected course.

## Procedures

This researcher sought permission from the original authors to use the TEQ, the TMMS-24, and content from an EI course completed in Turkey. Further procedures were completed as follows:

(1) IRB approval was obtained from Liberty University and the site university.

(2) Qualtrics Training was completed from Liberty University.

(3) Survey questions were placed in Qualtrics. The survey included one forced-answer question to ensure participants met the inclusion criteria. The remaining questions were three demographic multiple-choice questions, 16 Likert-type questions from the TEQ, and 24 from the TMMS-24. The Liberty University Director of Graduate and Doctor Studies reviewed the survey and feedback was completed. Permission was given to post survey in live format.

(4) Liberty University Nursing Director of Graduate and Doctoral Studies reviewed the survey for face validity.

(5) After the survey was approved, the survey link was created using a QR code according to Liberty University's policy.

(6) The study was discussed with colleagues who teach course content in the junior class, spring semester for planning purposes.

(7) The researcher attended the elected courses to provide an overview of the study to those in attendance and explain this is for voluntary research.

(8) The researcher provided the informed consent form to all participants (see Appendix C) as follows:

   a. All students in the course were asked to begin the survey. Those who wished to participate voluntarily began the survey after reading and agreeing to the informed consent on the first page of the survey. If consent was not given, the data would still be collected but not be reported.

   b. Students were instructed about the consent format: the first page explains the time commitment of approximately 15 minutes to complete the survey, the second page contains the demographic survey questions, the third page will start the TEQ, and the fourth page will start the TMMS-24.

   c. Students were told that the survey would remain open until at least 50 responses were collected.

   d. They were informed that their responses would be housed on the researcher's laptop in a secure file. The laptop requires two-layer authentication for file security. No identifying information would be collected.

(9) The data was moved into the Statistical Package for the Social Sciences (SPSS) and reviewed for any outliers or missing data

(10) Using SPSS, the data was analyzed.

## Data Analysis

After data from Qualtrics was moved into SPSS for data analysis, the data was sorted for any outliers and a histogram depicted them. Any outliers or missing data was removed prior to continuing the analysis. The parametric paired samples *t*-test was used to compare means from the pre-post participant survey scores. This is used in quasi-experimental studies when the researcher wants to identify the results from before and after an intervention. Assessing data for normality is necessary as it is representative of the mean, therefore ensuring accurate data interpretation exists (Mishra et al., 2019). Several methodologies are available for assessing the normality of continuous data. The Shapiro-Wilk test is one of the most well-known methods utilized for evaluating data normality. The evaluation of the Shapiro-Wilk test is more popular when $n = 50$ or less; therefore, it was most appropriate for this study with the sample size calculated at the least $n = 34$ (Statulator, 2023). The Shapiro-Wilk test reported whether the null hypothesis assumed a normal distribution. If $p < .05$, the data significantly deviates from a normal. If this occurs, the non-parametric Wilcoxon signed rank test will be run and used for the analysis instead of the paired samples *t*-test (Laerd Statistics, 2020).

To protect participant identity, each was assigned a unique code for both time points in the study. The same related units of the paired samples *t*-test refers to the analysis of the results from each unique code at these two set points, pretest and posttest. In this case, the participant results from the TEQ and the TMMS-24 (see Appendix C) were then analyzed. To determine any significant outliers, a boxplot of paired differences was created and analyzed visually. If

outliers were identified, or data was missing, the data was discarded for the results or simply noted in the report findings. Demographic data, age, gender, and race, were calculated using descriptive statistics, and determined differences in the results from these variables in the *t*-test (Mishra et al., 2019).

## Summary

Chapter three outlined the design elements of the research study. The quasi-experimental pretest/posttest design was described including the definition of such types, the reasons for its use, and how the participants were obtained. The two instruments, the TEQ and the TMMS-24 were described, and how their use in the study supported the research questions was explained. The research questions and hypotheses were presented, which focus on a multifocal education program in EI and empathy and if it will elicit improvement in EI and empathy measurements according to the use of the instruments mentioned above.

The procedure and data analysis sections described the steps taken before the study began noting the process of IRB, consent and how the study results will be protected. This section also highlighted the use of Qualtrics and SPSS in housing the consent, data, and running the statistical tests. The data analysis was run using a paired samples *t*-test, which considers the scores of each participant's pretest and posttest scores. Assumptions were addressed with standard statistical tests, which are outlined above.

# CHAPTER FOUR: FINDINGS

## Overview

This study investigated the effects of an educational intervention in emotional intelligence (EI) and empathy with an undergraduate nursing student cohort at a nursing college in the Northeast region of the United States. The study took place in the Spring semester of the 2024 term using interactive teaching approaches on the topics. The junior-level, undergraduate nursing student participants completed the Trait Meta-Mood Scale-24 (TMMS-24) and the Toronto Empathy Questionnaire (TEQ) at pre/post-intervention times. This chapter reviews the research questions, null hypotheses, descriptive statistics, and the results from the statistical findings.

## Research Questions

**RQ1:** What is the difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention?

**RQ2:** What is the difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention?

## Null Hypotheses

**$H_0$1:** There is no difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention.

**$H_0$2**: There is no difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention.

## Descriptive Statistics

The following information will outline demographic data and summaries of the TMMS-24 and TEQ data sets. Figures will offer a representation of the data.

## Demographics

The survey asked the demographic questions of age, gender, race, if the participant spoke English, if they were a junior nursing student, and if they had formal instruction in EI prior to this study. The total number of participants who completed both time one (T1) and time two (T2) surveys were $n = 36$ for the TMMS-24 and $n = 33$ for the TEQ. Those who completed the TMMS-24 had an age range majority of 18-22, $n = 35$ (92%), with smaller percentages for the age ranges of 23-25, $n = 1$, and 31-39, $n = 1$, (2.7% each). For the TEQ, the majority age range was 18-22, $n = 32$ and ages 31-29, $n = 1$. All participants were junior level nursing students and spoke English. The following gives more descriptive results of the remaining demographic questions.

### TMMS-24

Figure 1 shows a bar graph for the total mean of those taking the TMMS-24 at T1 ($M = 85.61$) and improved at T2 ($M = 86.39$). It also depicts the scores in gender. For males ($n = 5$), a decrease in the mean is noted between T1 ($M = 81.60$) and T2 ($M = 80.80$). In female participants ($n = 31$), the mean score at T1 ($M = 85.29$) improved at T2 ($M = 86.29$).

**Figure 1**

*TMMS-24, T1, T2 Means, Males/Females*

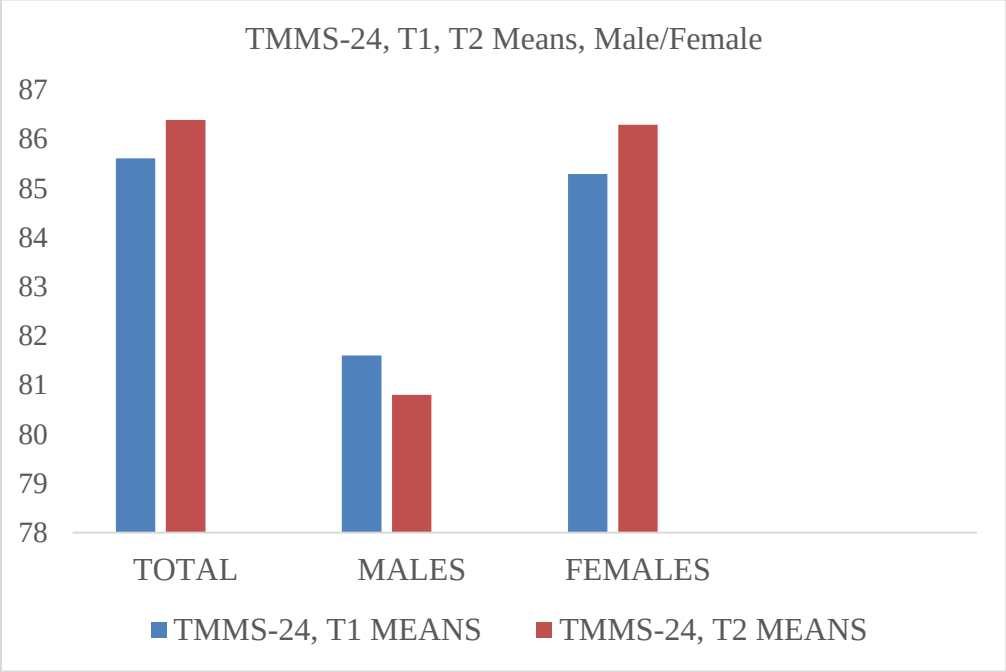



Figure 2 shows the mean scores of those who had EI education prior versus no education prior to the study. Of the 36 participants, only one had prior EI education. That participant's mean score improved by 9.00 points from T1 (*M* = 82.00) to T2 (*M* = 91.00). For the remainder 35 participants who had no formal EI training, their mean scores also improved from T1 (*M* = 84.86) to T2 (*M* = 85.47).

**Figure 2**

*TMMS-24, T1, T2 Means, Prior vs. No EI Education*

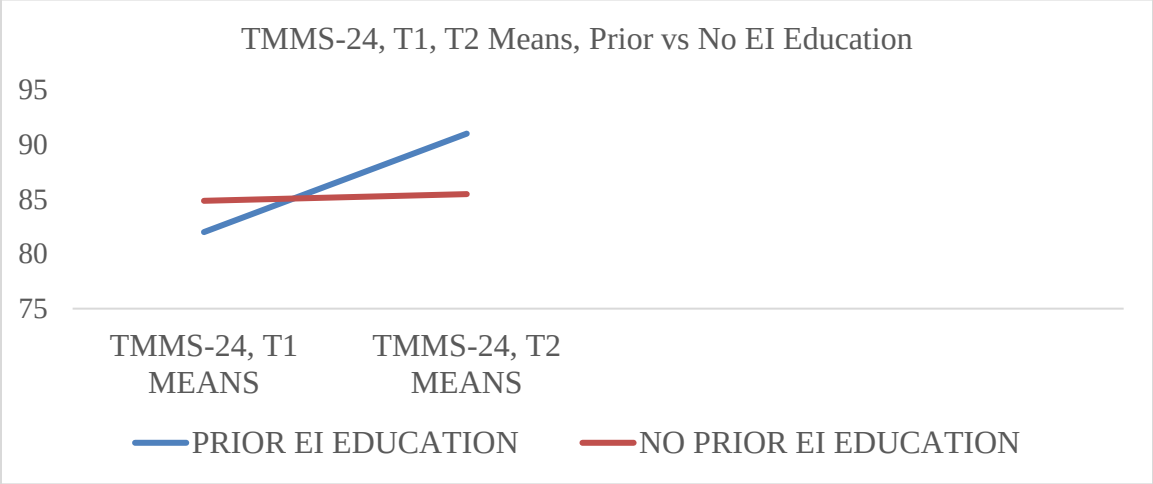



Figure 3 depicts a bar graph of race demographic participants. Asians (35.1%, *n* = 13) and Caucasian/Whites (45.9%, *n* = 17) were the majority, and Hispanic/Latinos (13.5%, *n* = 5) and Black/African Americans (4.5%, *n* = 2) had a lower participation rate. The race that improved the most from T1 to T2 was Hispanic/Latinos, noting the means to raise from *M* = 76.60, to *M* = 81.6000. At T1, Asian scores improved from T1 (*M* = 84.85) to T2 (*M* = 86.45). For Caucasians/Whites, the scores slightly decreased from T1 (*M* = 86.47) to T2 (*M* = 85.77), as well for Black/African Americans, as a decrease is noted between T1 (*M* = 90.50) to T2 (*M* = 89.00).

**Figure 3**

*TMMS-24, T1, T2 Means, Race*

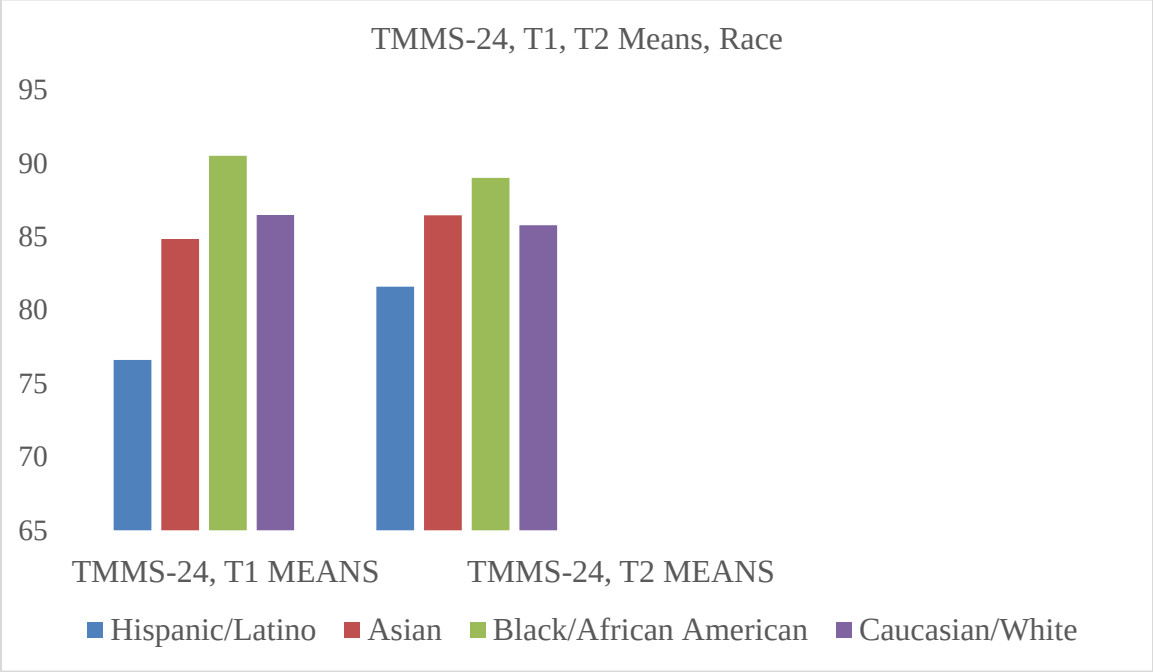
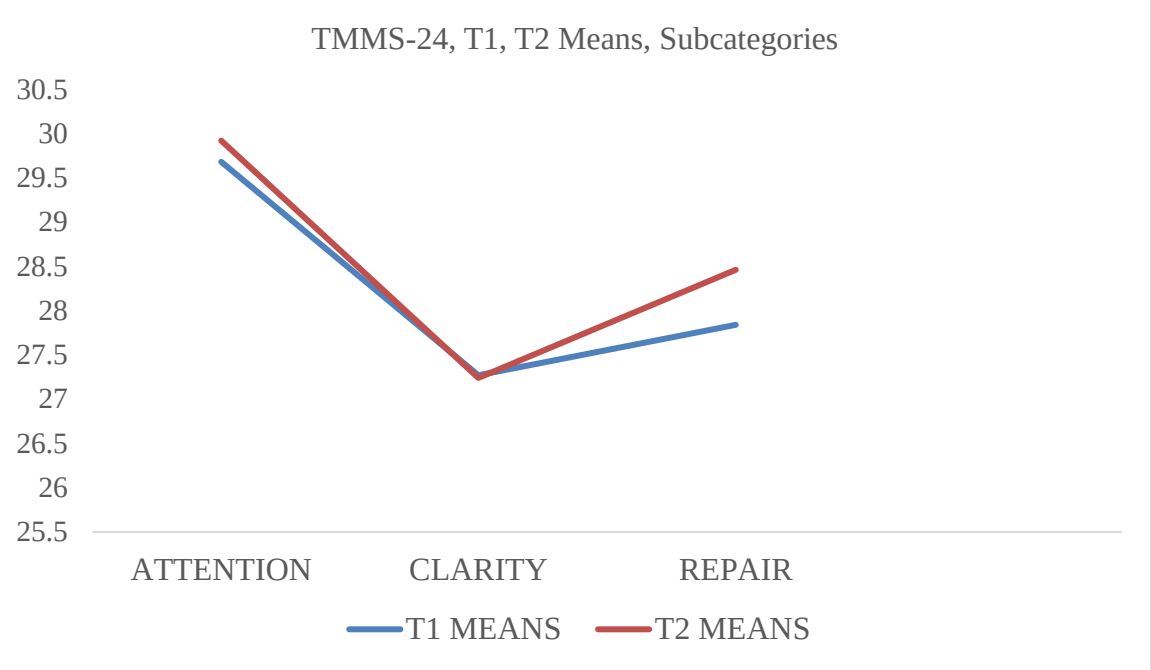



Figure 4 reveals that when dividing the mean scores of the three categories in the TMMS-24: *attention, clarity,* and *repair,* small changes were found. In the subcategory of *attention*, an improvement in the mean scores were noted (T1, *M* = 29.68, T2, *M* = 29.92). Totals between 22-35 in this section of the instrument are said to be at an "appropriate" scoring level for attention to feelings. In the subcategory of *clarity*, T1 and T2 means were very similar (T1, *M* = 27.27; T2, *M* =27.24), and these scores also fell into the "appropriate" range of 24-35. In the repair subcategory, the "appropriate" range was also 24-35. The results had an improved mean change and the range fit at the acceptable level (T1, *M* = 27.84; T2, *M* = 28.46).

**Figure 4**

*TMMS-24, T1, T2, Means, Subcategories*




**TEQ**

Figure 5 illustrates the decreasing mean scores for the total TEQ data. It also depicts the gender results. Overall, T2 (*M* = 48.17) decreased from T1 (*M* = 49.91). For males (*n* = 5), a significant decrease was noted from T1 (*M* = 52.40) to T2 (*M* = 44.20). For females (*n* = 28), a decrease was recorded from T1 (*M* = 48.86) to T2 (*M* = 48.32).

**Figure 5**

*TEQ, T1, T2 Means, Males/Females*

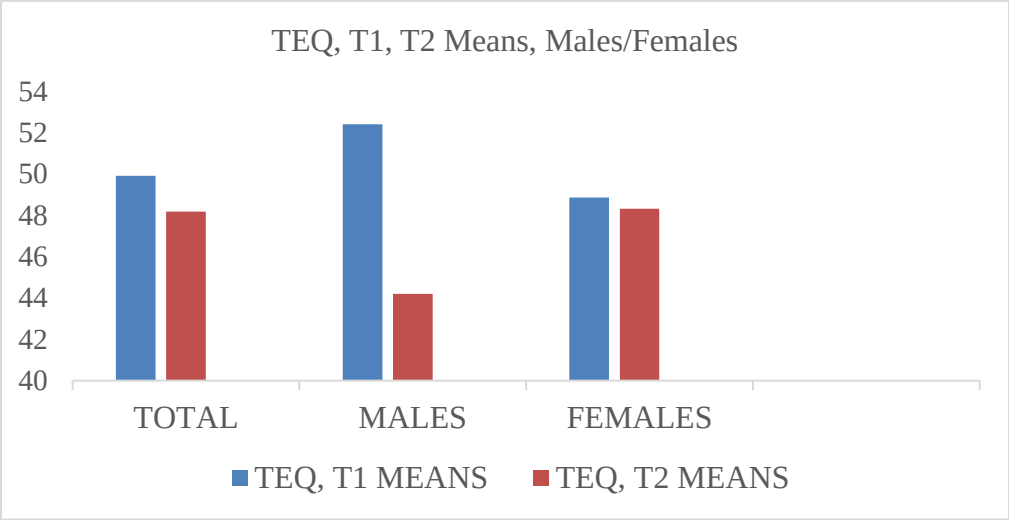
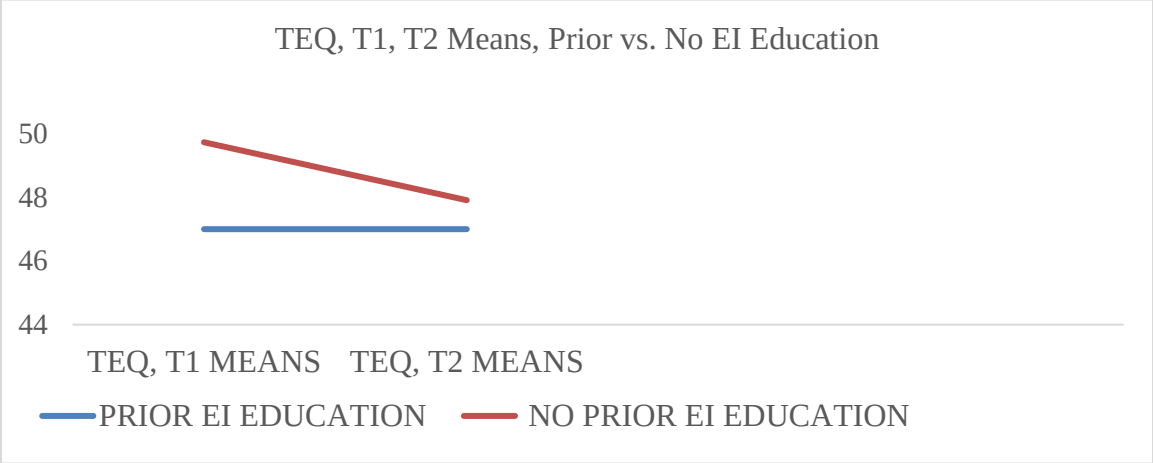



Figure 6 depicts mean score results of the TEQ in those who had, or did not have, previous EI education. There was a single participant who had prior EI education. For this participant, their mean score at T1 and T2 did not change ($M$ = 47.00). For the remaining 33 participants with no formal EI training, a decrease of approximately two points was reported from T1 ($M$ = 49.73) to T2 ($M$ = 47.91).

**Figure 6**

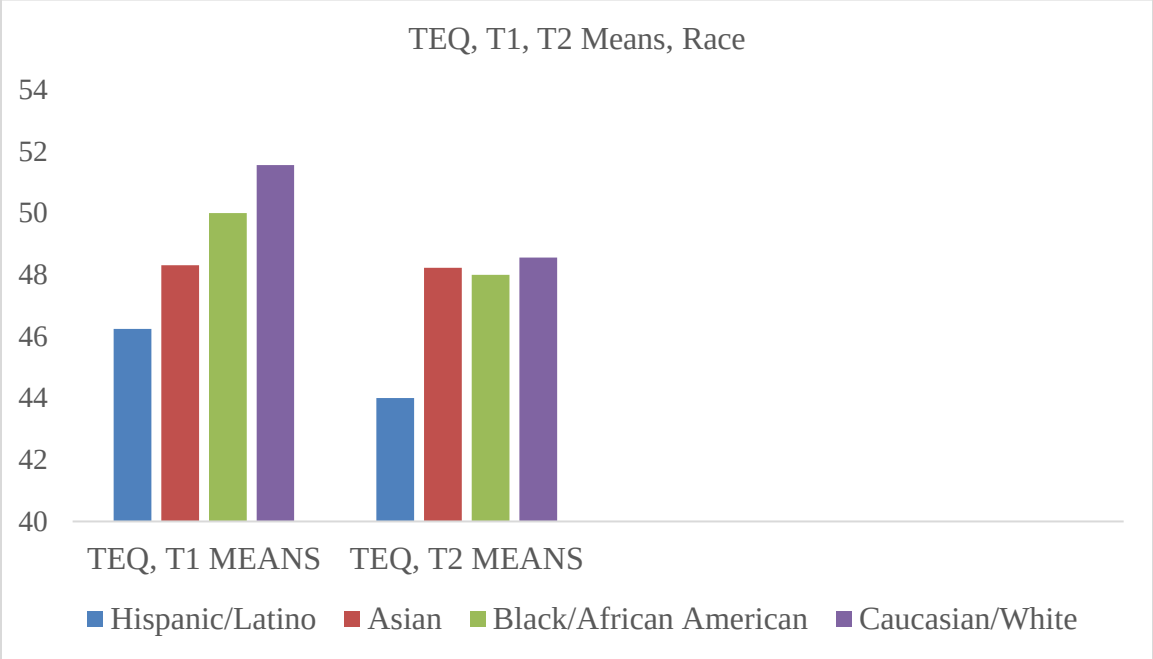
*TEQ, T1, T2 Means, Prior vs. No EI Education*




Analyzing the race demographic, all the TEQ scores from T1 to T2 decreased. Figure 7 shows that most importantly, Caucasian/White participants scored three points lower from T1 ($M$ = 51.56) to T2 ($M$ = 48.56). Only one Black/African American completed this section of the study, and this participant showed a decrease in the mean score by two points from T1 ($M$ = 50.00) to T2 ($M$ = 48.00). Hispanic/Latinos also had a decrease in over two points in mean scores from T1 ($M$ = 46.25) to T2 ($M$ = 44.00). Lastly, Asians showed the least amount of decline in scores, 0.8 points, from T1 ($M$ = 48.31) to T2 ($M$ = 48.23).

**Figure 7**

*TEQ, T1, T2 Means, Race*




## Results

The following presents the results of the research questions. The statistical data for Null Hypothesis One depicts the TMMS-24 information. The statistical data for Null Hypothesis Two describes the TEQ details. Assumptions are reviewed throughout.

### Null Hypothesis One

The null hypothesis for research question one was: There is no difference in EI scores of undergraduate nursing students, as measured by the TMMS-24, before and after an interactive EI educational intervention. An alpha of .05 is used for all statistics. The paired-samples *t*-test was run to evaluate the mean scores of the TMMS-24 from T1 and T2. When using this test, there are four required assumptions. The first assumption is that the dependent variable has measurable data. Use of the TMMS-24 instrument met this assumption. The

second assumption is having two correlated groups that use the same variable. This assumption was met using the participant scores from T1 and T2. Assumption three states that no significant outliers are used in the data analysis. One outlier was present, but the data was erroneous and discarded. Assumption four requires the need to perform a test of normality to establish if the data set has a population with normal distribution. Table 2 displays the results of the Shapiro-Wilk test noting the data to be normally distributed, T1, $p = .334$ and at T2, $p = .248$. The results indicated no statistical significance between T1($M = 85.60$) and T2 ($M = 86.39$) conditions; -.7895 (95% CI, -3.610 to 2.031)km, $t(37) = -.567$, $p = .574$, $d = -.092$, noting a very small effect size. Because the *p*-value was greater than the significance level, this resulted in failure to reject the null hypothesis.

**Table 2**

*TMMS-24, Tests of Normality*

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | *df* | Sig. | Statistic | *df* | Sig. |
| TMMS Total Score T1 | .105 | 37 | .200* | .967 | 37 | .334 |
| TMMS Total Score T2 | .074 | 37 | .200* | .963 | 37 | .248 |

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Heightened scores in the *attention* subscale of the TMMS-24 are seen in question one, "I pay a lot of attention to feelings," (T1, $M = 56.80$; T2, $M = 62.20$) and question two, "I am very conscious of what I feel," (T1, $M = 51.4$; T2, $M = 56$). Question five, which states "I allow my feelings to affect my thoughts," increased considerably from T1 ($M = 37.8$) to T2 ($M = 48$). Question eight states, "I pay a lot of attention to the way I feel." For this question, the "sometimes" category improved from 27-43% and in the "always" category from 10-16.2%.

Question five reads, “I allow my feelings to affect my thoughts” and increased considerably at T1 (*M* = 37.8) and T2 (*M* = 48). Question eight states, “I pay a lot of attention to the way I feel.” For this question in the category of “sometimes” there was improvement from 27-43% and in the category of “always” from 10-16.2%. In the subcategory of *clarity*, results from two questions were notable. Question 11 states, “I nearly always know how I feel” with results at T1 = 18.9% to T2 = 32.4% in the category of “often.” Question 16 concerns an understanding of personal feelings, which improved from T1 = 37.8% to T2 = 45.9% in the category of “sometimes.” In the subcategory of *repair*, question 18 challenges the participant to think if they are able to change a negative feeling to something positive. In the “rarely” category, there was a decrease from 13.7% to 8.7%. Positive outcomes were also noted in Question 20, asking the participant if they are able to have positive thoughts even when not feeling well. At the “rarely” category at T2, there was a zero score, which at T1, was 10.8%. In the “always” category, a score at T2 was 5.4% and zero at T1. A very significant response to Question 24 referenced the ability of the participant to change their state of mind when angry. In the category of “sometimes,” the score decreased in T1 from 59.5% to 40.5% at T2, in the “often” category increased from 27% to 43.2%, and in the “always” category from 2.7% to 5.4%.

**Null Hypothesis Two**

The second null hypothesis was: There is no difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention. For the first assumption, the dependent variable needs to have measurable data. Use of the TEQ instrument met this assumption. The second assumption requires two correlated groups that use the same variable. This study offers participant scores from T1 and T2, which meets this assumption. Assumption three states that no significant

outliers are used in the data analysis. One outlier was present, but the data was invalid and discarded. To meet the fourth assumption, the Shapiro-Wilk test was run, and the data was normally distributed at T1, $p = .194$, but not normally distributed at T2, $p = < .001$. Because at T2 the Shapiro-Wilk test failed to be normally distributed, a Wilcoxon Signed Rank Test was performed to note median data (See Table 3 and Table 4). Of the 34 participants, 10 showed improvements in their TEQ median scores, four participants had no improvement, and 20 participants showed a decrease in median scores. The test determined that there was no statistically significant median in empathy scores from T2 (47.000) compared to T1 (50.000), $z = -1.932$, $p = .053$. Because the $p$-value was greater than the significance level, the result indicated failure to reject the null hypothesis.

**Table 3**

*TEQ, Test of Normality*

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| TEQ Total Score T1 | .132 | 35 | .126 | .958 | 35 | .194 |
| TEQ Total Score T2 | .265 | 35 | <.001 | .856 | 35 | <.001 |

a. Lilliefors Significance Correction

**Table 4**

*TEQ, Wilcoxon Signed Rank Test*

| | Null Hypothesis | Test | Sig.[a,b] | Decision |
|---|---|---|---|---|
| 1 | The median of differences between TEQ Total Score T1 and TEQ T2 equals 0. | Related-Samples Wilcoxon Signed Rank Test | .053 | Retain the null hypothesis. |

a. The significance level is .050.
b. Asymptotic significance is displayed.

## Summary

This chapter effectively answered the two research questions. A paired-samples *t*-test was run to compare data from two time points. To identify tests of normality, the Shapiro-Wilk test was run and identified the data for the TMMS-24 scores to be normally distributed. For the TEQ, the data for T2 was not normally distributed; therefore, the Wilcoxon Signed Rank Test was run. Because the *p*-value for both tests was below .05, the data was not statistically significant, resulting in failure to reject the null hypotheses.

# CHAPTER FIVE: CONCLUSIONS

## Overview

This study investigated EI and empathy scores at pre/post-intervention times using an EI education program with junior level nursing students. This chapter includes the research discussion, implications, limitations, and recommendations for future research. The following chapter presents the importance of the research results and how they relate to similar studies. Concluding remarks indicate this study adds to the body of literature in nursing education related to teaching EI and empathy skills in undergraduate nursing programs and the benefits this offers to the profession.

## Discussion

The purpose of the study was to determine if teaching EI concepts to undergraduate nursing students would impact their EI and empathy scores. When evaluating data, it is important to analyze data for statistical significance, but also evaluate the mean scores of the demographics to determine other possible results and see how they relate. Considering similar studies, this research is evaluated for likeness or variability. Further discussion notes how this research adds to the body of literature and to the profession.

### Research Question One and Related Null Hypothesis

The first research question was: What is the difference in EI scores of undergraduate nursing students as measured by the TMMS-24 before and after an interactive EI educational intervention? A study by Kaya et al. (2018) examined the relationship between EI and critical thinking. This longitudinal study with nursing students ($n$ = 182) in Turkey used the California Critical Thinking Disposition Scale and the Emotional Intelligence Assessment Scale survey, collecting data at the start and end of the participants' four-year program. No specific EI

education course was given, rather the researchers were investigating to see if their curriculum supported student growth in EI as a whole. No statistical significance was noted in total EI scores. The current study differs from this, as only third year students were included, and this study had a much smaller sample size. The current study also offers specific EI education at one time point rather than taken over a cumulative period. The results from both studies are similar with no statistical significance; however in the current study, mean scores in certain demographics did show positive changes as noted in the discussion. Though the Kaya et al. (2018) study examined a component of gained insight, knowledge attainment, and EI, offering specific teaching in EI was not part of this study. It may be implied that nursing programs offer informal EI through various courses and clinical experiences; however, offering more formal coursework related to EI concepts, emotional control, self-awareness, and empathy specifically allows a student to reflect on those skills more fervently and apply them when working with patients.

A study by Varga-Valencia et al. (2022) examined self-perceived EI among nursing students during the height of the COVID-19 pandemic era. Similar to the current study, the TMMS-24 was used to measure EI and the majority of participants were females (79%, *n* = 31). Varga-Valencia et al. collected data at only one time point, and participants' results were compared across all four years of study. They also did a comparison study of each subscale of the TMMS-24 (attention, clarity, and repair) to note any differences in these across time in the program. The outcomes reported a heightened score of attention, which can be positive or detrimental if related to overwhelming feelings and anxiety. In the current study, the subcategory of attention did not show a significant change in mean scores, but it was two points higher at T1 and T2 than the study mentioned above. A heightened attention to feelings

can account for nurse burnout due to the emotional strain and toil the profession takes on nurses (Terzi et al., 2022). Allowing students to learn about self-awareness and emotional control depicts a sense of responsiveness to self, which is essential when working with the challenges in the profession of nursing. The other two subcategories of the TMMS-24, clarity and repair, are both vital to the stability of one's EI. The aforementioned study reported the need for improvement in these subcategories since scores were reported in the low to appropriate measurement levels (Varga-Valencia et al., 2022). In the current study, both the *clarity* and *repair* means fell to the "appropriate" measurement level, three points higher than the average of Varga-Valencia et al.'s study. These results can be from a variability in demographics, student body location, type of nursing program, or essential requirements for admission into the current college. Having clarity of thought it vital in nursing. It allows for a student nurse to think before acting, hold emotional struggles and express themselves appropriately, and learn what emotional responses are acceptable in the clinical setting. These skills develop over time and educational endeavors, which cultivates this awareness. Emotional repair scored at an appropriate level as well in the current study, meaning that this cohort can identify challenging emotions and cope with them accordingly. This is a strong piece of data to consider when guiding this group of students. Using those traits in challenging situations can be a great tool for them to build their EI skills.

Some of the most significant changes seen in the scores of the TMMS-24 in the current study relate to gender and race. The total scores in females increased from T1 ($M$ = 85.29) to T2 ($M$ = 86.29). For the one participant who had taken EI training prior, the mean score improved considerably from T1 ($M$ = 82.00) to T2 ($M$ = 91.00). When considering race, Hispanic/Latino participants' mean scores improved significantly from T1 ($M$ = 76.60) to T2

($M$ = 81.60), as did Asian participants' mean scores (T1, $M$ = 84.85, T2, $M$ = 86.46). For Black/African Americans and Caucasian/White participants, mean scores decreased minimally. Though the data did not show statistical significance, there was improvement noted in these demographics. There is limited research that addresses race specifically in regard to EI scores; therefore, this study is appropriate and original. Since the college of record for this study offers a variety of race admissions into the nursing program, the data collection efforts on this topic and others are quite novel and noteworthy when breaking down the differences in race scores.

**Research Question Two and Related Null Hypothesis**

The second research question was: What is the difference in empathy scores of undergraduate nursing students, as measured by the TEQ, before and after an interactive EI educational intervention? Mathad et al. (2017) studied nursing students ($n$ = 194) and their associations with resilience. The study combined all level students from year one to year four from two universities in India. Separate instruments were used for analysis, one of them being the TEQ. The present study differed due to having a much smaller cohort, one nursing college, and one year level reported. However, the parallel between the Mathad et al. study is that of having self-awareness and emotional control (EI concepts). These concepts associate with perseverance, mindfulness, and empathy and a positive correlation to resilience. Because of the development of certain EI skills, the current study infers that nursing students gain resilience, a sense of self-awareness, and strength. These traits aid in coping and dealing with the demands of the nursing profession. In addition, the reverse scored questions in the TEQ demonstrated a decrease in their mean scores accounting for improvement in empathy. Question 13 in the TEQ states, "I get a strong urge to help when I see someone who is upset." This was the only data point that had a statistically significant result of $p$ = .044. That is one small but positive

reflection of the kind of results that can come when nursing academics teach softer nursing skills such as empathy.

A study by Altmann and Roth (2021) questioned if there was a relationship between empathy and burnout among healthcare providers. Two participant groups were used, nursing students in their final year of study from eight nursing programs in Germany ($n$ = 172) and working nurses from four university hospital settings in Germany ($n$ = 146). Each completed the TEQ along with other measurement tools. The results indicated that nursing students may find it difficult to relate to typical burnout symptoms working nurses have because they lack experience in the field. Empathy and burnout had a positive correlation in working nurses. Burnout in the profession differs from burnout in academic studies. Because reporting individual empathetic responses and coping skills differ from person to person, as does personal beliefs, values, and preconceptions, it is difficult to ascertain specific challenges and solutions to increase empathy and decrease burnout. The present study correlates to the aforementioned study, as there is an inferred connection between burnout and empathy. The scores for the present study indicate no statistical significance in empathy scores overall, with a few scattered mean score increases. This decline in empathy may suggest signs of academic burnout as the T2 data collection happened at the midterm after a spring break session, when changes in schedules were happening. Students develop academic stress as do professional nurses in the practice role. Students are not able to entirely identify yet with practice stress and a correlated lack of empathy because they are not fully immersed in the role of a practicing nurse yet.

A study by Berduzco-Torres et al. (2021) reported what nonacademic factors affect empathy in nursing students. Similar to the present study, females scored higher in the total

empathy scores (females, *M* = 102.80, males, *M* = 95.17). Also interesting, participants who attended a public nursing program and came from economic strain and potentially challenging upbringings, developed more empathy than those who came from a more affluent background and attended private colleges. This brings the question of a socioeconomic demographic that was not part of the present study, but could be a topic for future research. The former study also discussed the importance of having an empathetic environment for students. Demonstration of empathy by college personnel can play a factor in the development of students' personal empathy skills. As with practicing tangible clinical skills, practicing how empathy is carried out with patients can be demonstrated by faculty at the bedside with the students, in simulation, in the classroom with challenging questions or situations that arise, and in daily interactions among one another. Displays of empathy can be seen in many different forms and are difficult to define, measure, and develop in nursing students, but they are not all together impractical.

## Implications

As defined in the literature review, nurses who have a higher EI have less burnout and emotional fatigue, healthier nurse-patient relationships, and an improved work-life balance (Tofighi et al., 2022). Focusing on formal EI training in nursing programs from the start and throughout the program has the potential to positively influence student nurses' success while in school as well as prepare them for working in a professional capacity. The skills taught in EI and empathy class included recognition of personal emotions, how to regulate these emotions, communication with others, teamwork exercises, self-care, and how to navigate challenging situations. Practicing and completing the activities associated with the topics used Kolb's (1984) experiential learning theory, bringing forth different teaching methods to recognize

different learning styles within the group. This is an important consideration in the connectedness of learning attainment and how students discover its importance and application in their lives (Kolb, 1984). These learned skills will not only help students grow as student nurses but also in life. What seems to be informal topics for some are foreign to others, especially those who are new to healthcare. The results of EI education can result in decreased stress and an improvement in coping strategies and emotional regulation. These skills have the potential to improve student nurse readiness for clinical practice and build empathy at the bedside, which are nursing skills vital for professional practice (Erkayiran & Demirkiran, 2019).

This study found an improvement in mean scores of the TMMS-24 in females who did not have formal EI training prior to the intervention and in Hispanic/Latino and Asian participants. When considering the three subscales of the TMMS-24, *attention, clarity,* and *repair*, the mean scores for all participants were deemed "appropriate" by definition, with a slight rise in attention to feelings and emotional repair. Being overly sensitive to emotions can cause both positive and negative reactions, as focusing too much on feelings can be a deterrent for reasoning skills (Varga-Valencia et al., 2022). The scores in the current study do indicate some concerns for higher *attention* scores in several of the questions. Nurses must be aware of their feelings and control them enough to allow critical and organized thinking in challenging situations (Varga-Valencia et al., 2022). In nursing, the positive side of heighted attention to feelings can be an area of personal growth, or on the negative side, substantial hyper focus leading to lack of concentration in the professional role (Varga-Valencia et al., 2022). In the subcategory of *clarity,* nursing students being able to have clarity of their emotions is vital for both academic performance and participation in the clinical role. Participants were able to have

more insight into the way they felt and recognize emotional challenges. In the subcategory of *repair,* the definition reflects the ability to progress beyond negative thinking. In general, participants identified the ability to improve their states of mind, improve positive thinking, and defuse anger. These concepts are extremely important in the nursing profession, as nurses participate in many challenging life situations, many of which are deemed negative and difficult. Learning how to support patients emotionally during difficult times is a skill that should continue to develop during nursing school.

The art of nursing is described as showing empathy and compassion with patients (AACN, 2019). Many nursing students and newly licensed nurses hold these values at the core of who they are, but many also struggle to apply and understand the meaning of these concepts at the bedside (Duo et al., 2022). The TEQ was used in the present study measuring scores before and after an EI education intervention. Since empathy is one concept of EI, this instrument was an appropriate fit for this study. It was noted in the literature review that in the nursing profession, empathy, burnout, and compassion fatigue are common problems. Empathy looks different in nursing students, as they do not necessarily "burnout" from empathy, rather they seem to tire from the educational process. Nursing students typically do not have much experience in healthcare yet to be able to identify and recognize empathy that licensed nurses do over a period of time (Altmann & Roth, 2021). Though this study was given over only a two-month time period, there was still some consideration that the decrease in empathy scores may actually be related to the time in the semester the T2 data was collected. At T2, mid-semester projects, exams, and clinical evaluations were due. Students were changing clinical experiences, learning new medical systems, and obtaining new clinical instructors. This is a stressful time in their program, and having one more survey or engagement opportunity could

have been part of the decreasing scores. The significant decrease in male participant' scores (T1, *M* = 52.40; T2, *M* = 44.20), while female participants' scores only slightly decreased is inexplainable. There is also a consistent decrease is scores across all races. It is important to identify why nursing students, at certain time periods in their program, report a lower empathy score or if those scores were simply coincidental.

Overall, the current study identified some improvement in EI mean scores of various demographics over a short time period. Thoughts to consider are how to infuse EI education with nursing students in the curriculum. Information could be given and practiced informally, perhaps in clinical instruction, or given in a more structured classroom setting. The race demographics of Asians, Hispanic/Latinos, Blacks/African Americans, and Caucasians were all affected by the program both positively and negatively; therefore, it would be interesting to understand how and why variations in race results seemed to be a consistent finding. Since male nursing students are becoming more prevalent, and this study represented only a small cohort of men, attempting to work with them on these softer nursing skills may require alternate methods. There may also be some bias that needs to be addressed by male nursing students, where being empathetic or compassionate is not considered "strong" or "manly" in a worldview. A very concerning situation was also presented by the empathy scores decreasing in all participants. This has been a consistent finding in the literature review of practicing nurses and in the stress level of nursing students. Paying attention to the emotional health of nursing students is essential and could potentially impact their ability to show empathetic behaviors with patients during clinical assignments and perhaps in personal life situations. In general, the participants in this study indicated a strong desire to help those who seems upset or hurting. This is a positive start and has the momentum to develop change. The one participant

reporting former EI education prior to the study had a mean score that improved significantly. This poses the thought of the development of EI and empathy skills over time with students and would need to be tested further with a larger sample size and over a longer time period.

## Limitations

Limitations are always present in research. In the present study, the internal threats to validity reference maturation, testing, and social interaction. Maturation denotes the improvement of skills through one's regular or trained growth (Creswell & Creswell, 2018). In this study, participants may have improved EI and empathy skills from other opportunities during the study time period, and this could have impacted the T2 results. Growth and improvement are expectations in educational endeavors; therefore, it may be a general concern, however difficult to measure or control if it was a threat. Testing is another internal threat and refers to the participant attempting to recall what they scored previously in an attempt to match their following scores (Creswell & Creswell, 2018). This threat cannot be controlled, nor can one tell if participants are answering the questions according to their actual feelings or just out of an expected response. Another internal threat is social interaction (Creswell & Creswell, 2018). This situation refers to participants discussing their thoughts about the study with other participants which can influence study responses. Despite the researchers' requests to refrain from outside discussion, students typically discuss their thoughts regardless of those requests. Therefore, this cannot be controlled in the present study.

Testing is an external threat; participants do improve their skills through the educational process. This situation is called "demand characteristics" and is unable to be controlled and an expectation of student progression. The Hawthorne effect is another external threat. This suggests that participants change behavior (answers) according to how they feel the

researcher wants the outcome. This is a possibility in the current study, as behavior change is difficult despite requests made to give honest feedback in T2 (Creswell & Creswell, 2018).

## Recommendations for Future Research

The demands of the nursing profession are numerous and require a degree of knowledge in the art of nursing, which can be developed through EI training. There are many recommendations for further research on these topics. Correlation studies using the TMMS-24 and TEQ to determine the relationship between EI and empathy could help understand empathetic behaviors in nursing students. Offering formal training in EI concepts with various time-point checks could be presented early and carried out throughout the four-year program as a way to measure growth in these skills. As it was mentioned, increasing participant numbers could have changed the statistical significance of the study, therefore considering study start and end dates at various times in the semester could potentially change the amount of participant responses. The topics presented could also be presented using a qualitative research method, posing a phenomenological study asking questions that reflect EI and empathy constructs.

Anther future research recommendation is to consider what type of nursing student is participating using the same instruments, and comparing associate degree registered nursing students with traditional, four-year baccalaureate degree students and accelerated nursing track students. Because student demographics tend to be very different in these three student cohorts (age and life experience in particular), analyzing their results could provide a broader sense of EI and empathy development in various groups. Also examining how race plays a factor in these topics is important for future research. Since scores among the races were so varied, looking at how race differs in their view of those softer nursing skills is important. Only four

races were identified in this student population, when it is known that there are many more identified races and populations in this world that could be studied further studied.

Pairing various instruments with either of the two presented in the study could correlate different findings in regard to EI and empathy. In particular, since the overall empathy scores declined, attempting to connect the reason may be more impactful when joined with psychological assessment tools or used in qualitative studies. As it is noted, there are many options and suggestions for future research on the topic of EI and empathy development in undergraduate nursing students.

## Summary

The purpose of this quasi-experimental study was to identify if an interactive education program on emotional intelligence and empathy would impact the scores of the TMMS-24 and the TEQ at two time points when given to junior level nursing students. The findings of this study indicated no statistically significant difference in pretest and posttest scores; thus, there was a failure to reject the null hypotheses. Despite this, there were noteworthy changes identified when evaluating the demographic scores. In the TMMS-24, female mean scores improved, and females showed a higher average empathy score in the TEQ than males. An individual's race played a role in the improvement of mean scores in the Hispanic/Latino and Asian population of the TMMS-24, and there was a considerable improvement in one participant who had EI training prior to the study.

The stress of nursing school may also be a contributing factor in the decrease of total empathy mean scores in all demographics. However, scores also showed decreased levels of negative thinking, an increased urge to help those who are struggling with emotional challenges, and more clarity of certain emotional responses. It is known that the use of formal

EI education is beneficial for nursing students as they move through their program. Extending such a study to incorporate length of time, various demographics, other instruments, and correlation methods may be considered for future research. This study is the first to use both the TMMS-24 and the TEQ collectively with junior-level nursing students in a pretest/posttest format. Education modules that develop these essential skills for nursing students can greatly impact their self-awareness, emotional competence, and empathetic response, all of which are vital skills of becoming a professional nurse.

## REFERENCES

Abor, P. (2019). Exploring clinical communication in a teaching hospital in Ghana. *International Journal of Health Governance, 24*(4), 155-168. http://doi.org/10.1108/IJHG-10-20180058

Acebes-Sanchez, J., Diez-Vega, I., Esteban-Gonzalo, S., & Rodriguez-Romo, G. (2019). Physical activity and emotional intelligence among undergraduate students: A correlational study. *BMC Public Health, 19*(1241), 1-7. https://doi.org/10.1186/s12889-019-7576-5

Ackerman, R., Barbosa-Camacho, F., Sander-Moller, M., Buenrostro-Jimenez, A., Mares-Pais, R., Cortes-Flores, A., Morgan-Villela, G., Valle, C., Solano-Genestra, M., Fuentes-Orozco, G., Cervantes-Cardona, G., Cervantes-Guevara, G., & Gonzalez-Ojeda, A. (2019). Burnout syndrome prevalence during internship in public and private hospitals: A survey study in Mexico. *Medical Education Online, 24*(1), 1-7. https://doi.org/10.1080/10872981.2019.1593785

Adimando, A. (2018). Preventing and alleviating compassion fatigue through self-care. An educational workshop for nurses. *Journal of Holistic Nursing, 36*(4), 304–317. https://doi.org/10.1177/0898010117721581

Akselbo, I., Olufsen, V., Ingebrigtsen, O., & Aune, I. (2018). Simulation as a learning method in public health nurse education. *Public Health Nursing, 36*, 226–232. https://doi.org/10.1111/phn.12560

Alhadidi, M., Abdalrahim, M., & Al-Hussami, M. (2016). Nurses' caring and empathy in Jordanian psychiatric hospitals: A national survey. *International Journal of Mental Health Nursing, 25*, 337-345. https://doi.org/10.1111/inm.12198

Ali, N., Ali, O., & Jones, J. (2017). High level of emotional intelligence is related to high level of online teaching self-efficacy among academic nurse educators. *International Journal of Higher Education, 6*(5), 122-130. https://doi.org/10.5430/ijhe.v6n5p122

Altmann, T., & Roth, M. (2021). The risk of empathy: longitudinal associations between empathy and burnout. *Psychology & Health, 36*(12), 1441-1460. https://doi.org/10.1080/08870446.2020.1838521

American Association of Colleges of Nursing. (2019). AACN's vision for academic nursing. https://www.aacnnursing.org/News-Information/Position-Statements-White-Papers/Vision-for-Nursing-Education

American Association of Colleges of Nursing. (2023). *Domain 9: Professionalism.* https://www.aacnnursing.org/Essentials/Domains/Professionalism

Amod, H., & Brysiewicz, P. (2019). Promoting experiential learning through the use of high-fidelity human patient simulators in midwifery: A qualitative study. *Curationis, 42*(1), 1-7. https://doi.org/10.4102/curationis.v42i1.1882

Aradilla-Herrero, A., Tomas-Sabado, J., & Gomez-Benito, J. (2013). Perceived emotional intelligence in nursing: Psychometric properties of the Trait Meta-Mood Scale. *Journal of Clinical Nursing, 23,* 955-966. https://doi.org/10.1111/jocn.12259

Aslan, G., Bakan, A., & Yildiz, M. (2021). An investigation of the relationship between alexithymia and empathy tendency in university students receiving health education. *Perspectives in Psychiatric Care, 57*, 709–716. https://doi.org/10.1111/ppc.12602

Atar, N., & Asti, T. (2020). Attitudes and behaviors of nursing students towards nurse-patient interaction. *International Journal of Caring Sciences, 13*(1), 411-423. http://www.internationaljournalofcaringsciences.org/docs/46_atar_original_13_1.pdf

Bamakan, Z., Nasiriani, K., Madadizadeh, F., & Keshmiri, F. (2021). Effect of an aged wearing suit on nursing student's knowledge and attitude. *BMC Nursing, 20*(145), 1-8. https://doi.org/10.1186/s12912-021-00668-2

Barron, K., Deery, R., & Sloan, G. (2017). Community mental health nurses' and compassion: An interpretative approach. *Journal of Psychiatric Mental Health Nursing, 24*, 211-220. https://doi.org/10.1111/jpm.12379

Basogul, C., Arabaci, L., Buyukbayram, A., Aktas, Y., & Uzunoglu, G. (2019). Emotional intelligence and personality characteristics of psychiatric nurses and their situations of exposure to violence. *Perspectives in Psychiatric Care, 55*, 255-261. https://doi.org/10.1111/ppc.12358

Batmaz, M., Kendirkiran, G., & Kavurucu, O. (2022). The effects of the education received by nursing students on their self-esteem and emotional intelligence: A 4-year longitudinal study. *Perspectives in Psychiatric Care, 58*, 2088-2098. https://doi.org/10.1111/ppc.13035

Berduzco-Torres, N., Medina, P., San-Martin, M., Bolton, R., & Vivanco, L. (2021). Non-academic factors influencing the development of empathy in undergraduate nursing students: A cross-sectional study. *BMC Nursing, 20*, 1-10. https://doi.org/10.1186/s12912-021-00773-2

Bernburg, M., Groneberg, D., & Mache, S. (2020). Professional training in mental health self-care for nurses starting work in hospital departments. *Work, 67*(3), 583-590. https://doi.org/10.3233/WOR-203311

Betkas, I., Bektas, M., Ayar, D., Kudubes, A., Sal, S., Selekoglu, Y., & Celik, I. (2020). The predict of metacognitive awareness of nursing students on self-confidence and anxiety in clinical decision-making. *Perspectives in Psychiatric Care, 57*(2), 747-752. https://doi.org/10.1111/ppc.12609

Binghamton University State University of New York. (2023). *Undergraduate admissions:* https://www.binghamton.edu/admissions/academics/profile.html

Blanco-Donoso, L., Amutio, A., Moreno-Jimenez, B., Yeo-Ayala, M., Hermosilla, D., & Garrosa, E. (2019). Incivility at work, upset at home? Testing the cross-level moderation effect of emotional dysregulation among female nurses from primary health care. *Scandinavian Journal of* Psychology, 60, 267–276. https://doi.org/10.1111/sjop.12535

Cabral, J., Bradna, T., Lamela, D., & Matos, P. (2021). The psychometric properties of a Portuguese version of the Trait-Meta Mood Scale: An attachment framework. *Journal of Psychopathology and Behavioral Assessment*, *43*, 162-173. https://doi.org/10.1007/s10862-020-09817-4

Cameron, P., & Jusela, C. (2023). Unfolding case studies for nursing leadership. *Journal of Doctoral Nursing Practice*, *16*(1), 3-8. http://doi.org/10.1891/JDNP-2021-0018

Campos, D., Alvarenga, M., Morais, S., Goncalves, N., Silva, T., Jarvill, M., & Kumakura, A. (2021). A multi-centre study of learning styles of new nursing students. *Journal of Clinical Nursing*, *31*, 111-120. https://doi.org/10.1111/jocn.15888

Cao, S., Li, J., & Gong, S. (2021). The relationships of both transition shock, empathy, resilience and coping strategies with professional quality of life in newly graduated nurses. *BMC Nursing*, *20*(1), 1-8. https://doi.org/10.1186/s12912-021-00589-0

Cerit, E., & Beser, N. (2014). Levels of emotional intelligence of nursing students. *International Journal of Caring Sciences, 7*(3), 936-945. http://www.internationaljournalofcaringsciences.org/docs/30.%20Cerit%20ORIGINAL.pdf

Cerit, B. & Dinc, L. (2013). Ethical decision-making and professional behavior among nurses: A correlational study. *Nursing Ethics, 20*(2), 200-212. https://doi.org/10.1177/0969733012455562

Chan, C., Tang, F., Chow, K., & Wong, C. (2021). Enhancing generic capabilities and metacognitive awareness of first-year nursing students using active learning strategy. *BMC Nursing, 20*(81), 1-8. https://doi.org/10.1186/s12912-021-00601-7

Chen, P,. & Liou, W. (2022). Exploring the impact of the use of immersive virtual reality interactive experiences on student learning of obstetrical nursing. *International Journal of Nursing Education, 14*(3), 121-126. https://doi.org/10.37506/ijone.v14i3.18364

Chiang, V. (2014). On learning domains, advanced simulation technology, experiential learning, and reflection in nursing education. *Journal of Problem-Based Learning, 1*(1), 7-11. https://doi.org/10.24313/jpbl.2014.1.1.7

Cho, O. & Hwang, K. (2019). Academic ethical awareness among undergraduate nursing students. *Nursing Ethics, 26*(3), 833-844. https://doi.org/10.1177/0969733017727155

Chow, K., Tang, F., Tang, W., & Leung, A. (2020). Resilience-building module for undergraduate nursing students: A mixed-methods evaluation. *Nursing Education in Practice, 49,* 1-8. https://doi.org/10.1016/j.nepr.2020.102912

Collins, S. (2013). Emotional intelligence as a noncognitive factor in student registered nurse anesthetists. *American Association of Nurse Anesthesiology Journal, 81*(6), 465-472. www.https://pubmed.ncbi.nlm.nih.gov/24597009/

Condon, S., Parmelee, P., & Smith, D. (2021). Examining emotional intelligence in older adults with chronic pain: A factor analysis approach. *Aging & Mental Health, 25*(2), 213-218. https://doi.org/10.1080/13607863.2019.1673308

Contreras, J., Edwards-Maddox, S., Hall, A., & Lee, M. (2020). Effects of reflective practice on baccalaureate nursing students' stress, anxiety and competency: An integrative review. *Worldviews on Evidence-Based Nursing, 17*(3), 239-245. https://doi.org/10.111/wvn.12438

Cosper, P., Kaplow, R., & Moss, J. (2018). The impact of patient and family advisors on critical care nurses' empathy. *Journal of Nursing Administration, 48*(12), 622-628. https://doi.org/10.1097/NNA.0000000000000692

Costello, M., & Barron, A. (2017). Teaching compassion: Incorporating Jean Watson's caritas processes into a care at the end of live course for senior nursing students. *International Journal of Caring Sciences, 10*(3), 1113-1117. http://www.internationaljournalofcaringsciences.org/docs/1_costello_original_10_3.pdf

Creswell, J., & Creswell, J. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches.* (5th ed.). Sage Publications

Dante, A., Masotta, V., Marcotullio, A., Bertocchi, L., Caponnetto, V., LaCerra, C., Petrucci, C., Alfes, C., Lancia, L. (2021). The lived experiences of intensive care nursing students exposed to a new model of high-fidelity simulation training: A

phenomenological study. *BMC Nursing, 20*(154), 1-9. https://doi.org/10.1186/s12912-021-00667-3

Dean, S., Halpern, J., McAllister, M., & Lazenby, M. (2020). Nursing education, virtual reality and empathy*? Nursing Open, 7*, 2056-2059. https://doi.org/10.1002/nop2.551

Dearmon, V., Graves, R., Hayden, S., Mulekar, M., Lawrence, S., Jones, L., Smith, K., & Farmer, J. (2012). Effectiveness of simulation-based orientation of baccalaureate nursing students preparing for their first clinical experience. *Journal of Nursing Education, 51*(x), 1-10. https://doi.org/10.3928/01484834-20121212-02

Delgado, C., Roche, M., Fethney, J., & Foster, K. (2020). Workplace resilience and emotional labour of Australian mental health nurses: Results of a national survey. *International Journal of Mental Health Nursing, 29*, 35–46. https://doi.org/10.1111/inm.12598

Demirtas, A., & Basak. T. (2021). Daily life activities simulation: Improving nursing students ‘attitudes toward older patients. *Japan Journal of Nursing Science, 18,* 1-9. https://doi.org/10.1111/jjns.12375

Dou, S., Hn, C., Li, C., Liu, X., & Gan, W. (2022). Influence of emotional intelligence on the clinical ability of nursing interns: A structural equation model. *BMC Nursing, 21*(1), 1-9. https://doi.org/10.1186/s12912-022-00933-y

Durgun-Ozan, Y., Duman, M., Cicek, O., & Baksi, A. (2020). The effects of clinical education program based on Watson’s theory of human caring on coping and anxiety levels of nursing students: A randomized control trial. *Perspectives in Psychiatric Care, 56,* 621-628. https://doi.org/10.1111/ppc.12477

Duygulu, S., Hicdurmaz, D., & Akyar, I. (2011). Nursing students' leadership and emotional intelligence in Turkey. *Journal of Nursing Education, 50*(5), 281-285. https://doi.org/10.3928/01484834-20110130-07

Eckland, N., Leyro, T., Berry, W., & Thompson, R. (2018). A multi-method investigation of the association between emotional clarity and empathy. *Emotion, 18*(5), 638-645. https://doi.org/10.1037/emo0000377

Edo-Gual, M., Monforte-Royo, C., Aradilla-Herrero, A., & Tomas-Sabado, J. (2015). Death attitudes and positive coping in Spanish nursing undergraduates: A cross-sectional and correlational study. *Journal of Clinical Nursing, 24,* 2429-2438. https://doi.org/10.1111/jocn.12813

Erkayiran, O., & Demirkiran, F. (2018). The impact of improving emotional intelligence skills training on nursing students' interpersonal relationship styles: A quasi-experimental study. *International Journal of Caring Sciences, 11*(3), 1901-1912. http://www.internationaljournalofcaringsciences.org/docs/64_equiarian_original_11_3.pdf

Erkin, O. & Aykar, F. (2021). The effects of the yoga course on mindfulness and self-compassion on among nursing students. *Perspectives in Psychiatric Care, 57*, 875-882. https://doi.org/10.1111/ppc.12630

Espinoza-Venegas, M., Sanheuza-Alvarado, O., Ramirez-Elizondo, N., & Saez-Carrillo, K. (2015). A validation of the construct and reliability of an emotional intelligence scale applied to nursing students. *Revista Latino-Americana de Enfermagem, 23,* 139-147. https://doi.com/10.1590/0104-1169.3498.2535

Ferri, P., Rovesti, S., Bonetti, L., Stifani, S., Panzera, N., & Lorenzo, R. (2019). Evaluation of empathy among undergraduate nursing students: A three-year longitudinal study. *Acta Biomet for Health Professions, 90,* 98-107. http://doi.org/10.23750/abm.v90i11-S.8874

Fino, E., Di Campli, S., Patrignani, G., & Mazzetti, M. (2018). The modulating role of gender and aggression in emotional reactions of nursing students: A cross-sectional study. *Journal of Advanced Nursing, 75*, 1462–1472. https://doi.org/10.1111/jan.13936

Flykt, A., Horlin, T., Linder, F., Wennstig, A., Sayeler, G., Hess, U., & Banziger, T. (2021). Exploring emotion recognition and the understanding of others' unspoken thoughts and feelings when narrating self-experienced emotional events. *Journal of Nonverbal Behavior, 45*, 67-81. https://doi.org/10.1007/s10919-020-00340-4

Foster, K., & McCloughen, A. (2020). Emotionally intelligent strategies students use to manage challenging interactions with patients and families: A qualitative inquiry. *Nursing Education in Practice, 43,* 1-8. https://doi.org/10.1016/j.nepr.2020.102743

Fountouki, A., Erdinc Demirer, M., Keles, A., & Theofanidis, D. (2020). Emotional intelligence of Turkish and Greek nursing students. *International Journal of Caring Sciences, 13*(1), 307-315. https://www.internationaljournalofcaringsciences.org/docs/35_foundouki_original_13_1.pdf

Frajo-Apor, B., Pardeller, S., Kemmler, G., & Hofer, A. (2016). Emotional intelligence and resilience in mental health professionals caring for patients with serious mental illness. *Psychology, Health & Medicine, 21*(6), 755-761. http://dx.doi.org/10.1080/13548506.2015.1120325

Freedman, J. (2024). Dr. Daniel Goleman explains the history of emotional intelligence. https://www.6seconds.org/2024/02/29/goleman-emotional-intelligence/

Galetz, E. (2019). The empathy-compassion matrix: Using a comparison concept analysis to identify care components. *Nursing Forum, 54*(3), 448-454. https://doi.org/10.1111/nuf.12353

Gall, M., Gall, J., & Borg, W. (2007). *Educational research. An introduction* (8th ed.). Pearson

Gholamzadeh, S., Khastavenah, M., Khademian, Z., & Ghadakpour, S. (2018). The effects of empathy skills training on nursing students' empathy and attitudes toward elderly people. *BMC Medical Education, 18*(198). https://doi.org/10.1186/s12909-018-129

Gimenez-Espert, M., & Prado-Gasco, V. (2017). Emotional intelligence in nurses: The Trait Meta-Mood Scale. *Acta Paulista de Enfermagem, 30*(2), 204-209. https://doi.org/10.1590/1982-0194201700031

Gisbert, D. & Rivas, A. (2021). Implementing peer tutoring for the development of empathy in nursing education. *Investigacion & Educacion en Enfermeria, 39*(2). https://doi.org/10.17533/udea.iee.v39n2e07

Goldberg, L., Rosenburg, N., & Watson, J. (2018). Rendering LGBTQ+ visible in nursing. Embodying the philosophy of caring science. *Journal of Holistic Nursing American Holistic Nurses Association, 36*(3), 262-271. https://doi.org/10.1177/0898010117715141

Goleman, D. (2005). *Emotional Intelligence: Why it can matter more than IQ*. Random House Publishing Group.

Goudarzian, A., Nesami, M., Sedghi, P., Gholami, M., Faraji, M., & Hatkehlouei, M. (2019). The effect of self-care education on emotional intelligence of Iranian nursing students:

A quasi-experimental study. *Journal of Religion & Health, 58*(2), 589-598. https://doi.org/10.1007/s10943-017-0537-3

Gould, O & Gautreau, S. (2014). Empathy and conversational enjoyment in younger and older adults. *Experimental Aging Research, 40*, 60-80. https://doi.org/10.1080/0361073X.2014.857559

Green, A., & Kinchen, E. (2021). The effects of mindfulness meditation on stress and burnout in nurses. *Journal of Holistic Nursing*, *39*(4), 356–368. https://doi.org/10.1177/08980101211015818

Gul, H., Huda, S., & Jan, M. (2021). Association between level of emotional intelligence GPA and other demographic variables among BS nursing students. *Journal on Nursing, 11(*3), 21-31. https://doi.org/10.26634/jnur.11.3.17770

Gulsen, M. & Ozmen, D. (2020). The relationship between emotional labour and job satisfaction in nursing. *International Nursing Review*, *67*, 145–154. https://doi.org/10.1111/inr.12559

Hajibabaee, F., Farahani, M., Ameri, Z., Salehi, T., & Hosseini, A. (2018). The relationship between empathy and emotional intelligence among Iranian nursing students. *International Journal of Medical Education, 9*, 239-243. https://doi.org.10.5116/ijme.5b83.e2a5

Hansen, M., Olsen, R., Brynhildsen, S., & Leonardsen, A. (2023). Nursing students' perceived stress, self-efficacy, control, and evaluation of a course in systematic clinical observation, physical assessment and decision-making: An observational study in Norway. *Nursing Open, 10*, 1007–1015. https://doi.org/10.1002/nop2.1368

Hardiman, M., Watkin, J., Barbosa, H., Heneghan, N., McHugh, M., & Ntumba, J. (2022). 'Happy, excited, terrified' feelings from the floor: A phenomenological inquiry into the lived experiences of nurses who transition from student to registered nurse. *International Practice Development Journal, 12*(2), 1-13. https://doi.org./10.19043/ipdj.82.004

Harrison R. (2021). The power of reflective practice: evaluating the impact of a psychoeducation and reflective practice group for surgical nursing staff and health care assistants in a trauma centre. *BJPsych Open, 7*(1), S191. https://doi.org/10.1192/bjo.2021.515

Harrison, P., & Fopma-Loy, J. (2010). Reflective journal prompts: A vehicle for stimulation emotional competence in nursing. *Journal of Nursing Education 49*(10), 644-652. https://doi.org/10.3928/01484834-20100730-07

Hashish, E., & Awad, N. (2019). Relationship between ethical ideology and moral judgment: Academic nurse educators' perception. *Nursing Ethics, 26*(3), 845–858. https://doi.org/10.1177/0969733017722825

Hawks, J. (1992). Empowerment in nursing education: concept analysis and application to philosophy, learning and instruction. *Journal of Advanced Nursing, 1*, 609-618. https://doi.org/10.1111/j.1365-2648.1992.tb02840.x

Heggestad, A., Konow-Lund, A., Christiansen, B., & Nortvedt, P. (2022). A vulnerable journey towards professional empathy and moral courage. *Nursing Ethics, 29*(4), 927-937. https://doi.org/10.1177/09697330221074013

Hill, B. (2017). Research into experiential learning in nurse education. *British Journal of Nursing, 26*(16), 932-938. https://doi.org/10.12968/bjon.2017.26.16.932

Honkavuo, L. (2019). Educating nursing students – Emotional intelligence and the didactics of caring sciences. *International Journal of Caring Sciences, 12*(1). https://doi.org/10.1177/0969733019871695

Holland, T. (2020). Educational strategies to foster empathy utilizing simulation pedagogy. *International Journal of Caring Sciences, 13*(3), 1589-1595. https://www.internationaljournalofcaringsciences.org/docs/7_holland_original_13_3.pdf

Hosie, A., Lobb, E., Agar, M., Davidson, P., & Phillips, J. (2014). Identifying the barriers and enablers to palliative care nurses' recognition and assessment of delirium symptoms: A qualitative study. *Journal of Pain and Symptom Management, 48*(5), 815-830. https://doi.org/10.1016/j.jpainsymman.2014.01.008.

Hutchinson, M., Hurley, J., Kozlowski, D., & Whitehair, L. (2018). The use of emotional intelligence capabilities in clinical reasoning and decision-making: A qualitative, exploratory study. *Journal of Clinical Nursing, 27,* e600-e610. https://doi.org/10.1111/jocn.14106

Illievova, L., Juhasova, I., & Baumgartner, F. (2013). Opportunities for emotional intelligence in the context of nursing. *Journal of Health Sciences, 3*(1), 20-25. https://doi.org/10.17532/jhsci.2013.22

Im, E., Sakashita, R., Lin, C., Lee, T., Tsai, H., & Inouye, J. (2020). Current trends in nursing research across five locations: The United States, South Korea, Taiwan, Japan, and Hong Kong. Journal of Nursing Scholarship, 52(6), 671-679. https://doi.org/10.1111/jnu.12592

Işık, M., Dönmez, C., & Özdemir, R. (2022). Relationship between nurses' professional values, empathy, and patience: A descriptive cross-sectional study. *Perspectives in Psychiatric Care*, *58*, 2433–2441. https://doi.org/10.1111/ppc.13078

Jack, K. (2012). "Putting the words 'I am sad,' just doesn't quite cut it sometimes!": The use of art to promote emotional awareness in nursing students. *Nursing Education Today, 32,* 811-816. https://doi.com/10.1016/j.nedt.2012.04.020

Jalil, R., & Dickens, G. (2017). Systematic review of studies of mental health nurses' experience of anger and of its relationships with their attitudes and practice. *Journal of Psychiatric Mental Health Nursing, 25,* 201–213. https:/doi.com/10.1111/jpm.12450

Jansen, T., Hem, M., Dambolt, L., & Hanssen, I. (2020). Moral distress in acute psychiatric nursing: Multifaceted dilemmas and demands. *Nursing Ethics*, *27*(5), 1315–1326. https://doi.com/10.1177/0969733019877526

Joranson, N., Heggestad, A., Breievne, G., Bruun-Olsen, V., Heiberg, K., Myrstad, M., Ranhoff, A., & Lausund, H., (2022). Older patients' perspectives on illness and healthcare during the early phase of the COVID-19 pandemic. *Nursing Ethics, 29*(4), 872-884. https://doi.org/10.1177/09697330211072362

Kacan, C., & Orsal, O. (2020). Effects of transcultural nursing education on the professional values, empathic skills, cultural sensitivity, and intelligence of students. *Journal of Community Health Nursing, 37*(2), 65-76. https://doi.org/10.1080/07370016.2020.1736374

Kaisfas, K. (2021). Emotional intelligence and role-modeling nursing's soft skills. *Journal of Christian Nursing, 38*(4), 240-243. https://doi.org/10.1097/CNJ.0000000000000881

Kaya, H., Senyuva, E., & Bodur, G. (2018). The relationship between critical thinking and emotional intelligence in nursing students: A longitudinal study. *Nurse Education Today, 68,* 26-32. https://doi.org/10.1016/j.nedt.2018.05.024

Keates, C. (2021). Students' experience of the challenges of using assertive communication. *British Journal of Nursing, 31*(15), 790-798. https://doi.org/10.12968/bjon.2022.31.15.790

Kharatzadeh, H., Alavi, M., Mohammadi, A., Visentin, D., & Cleary, M. (2019). Emotional regulation training for intensive and critical care nurses. *Nursing and Health Sciences, 22,* 445–453. https://doi.org/10.1111/nhs.12679

Khodaei, S., Hasanvand, S., Gholami, M., Mokhayeri, Y., & Amini, M. (2022). The effect of the online flipped classroom on self-directed learning readiness and metacognitive awareness in nursing students during the COVID-19 pandemic. *BMC Nursing, 21*(22), 1-10. https://doi.org/10.1186/s12912-022-00804-6

Kim, E., Kang, S., Shin, H., & Kim, J. (2019). Factors affecting satisfaction in major of male nursing students. *Medico-legal Update, 19*(1), 458-464. https://doi.org/10.5958/09741283.2019.00086.0

Kim, M., & Sohn, S. (2019). Emotional intelligence, problem-solving ability, self-efficacy, and clinical performance among nursing students: A structural equation model. *Korean Journal of Adult Nursing, 31*(4), 380-388. https://doi.org/10.7475/kjan.2019.31.4.380

Kimzey, M., Patterson, J., & Mastel-Smith, B. (2021). Effects of simulation on nursing students' dementia knowledge and empathy: A mixed method study. *Issues in Mental Health Nursing, 42*(3), 274-279. https://doi.org/10.1080/01612840.2020.1797252

Kirk, K., Cohen, L., Edgley, A., & Timmons, S. (2022). ‘You're on show all the time:” Moderating emotional labour through space in the emergency department. *Journal of Advanced Nursing, 28,* 3320-3329. https://doi.org/10.1111/jan.15315

Kirkbakk-Fjaer, K., Andfossen, N., & Hedelin, B. (2018). Preceptors’ expectations of nursing students’ preparation before placement in psychiatry: Ability and will to reflect on and exercise knowledge. *Issues in Mental Health Nursing, 36,* 300-306. https://doi.org.10.3109/01612840.2014.978424

Kolb, D. (1984). Experiential learning: Experience as the source of learning and development. Prentice-Hall Inc.

Kou, H., Bi, T., Chen, S., Li, X., He, Y., Xie, Q., & He, J. (2022). The impact of mindfulness training on supportive communication, emotional intelligence, and human caring among nursing students. *Perspectives in Psychiatric Care, 52,* 2552-2561. https://doi.org/10.1111/ppc.13093

Kuruvilla, J., & Menezes, P. (2019). Effects of emotional intelligence training on emotional intelligence of graduate nursing students. *Asian Journal of Nursing Education and Research, 9*(3), 289-292. https://doi.org/10.5958/2349-2996.2019.00062.4

Kusakli, B., & Husmenoglu, M. (2021). Emotional labor and management of emotions in nursing. *Journal of Education and Research in Nursing, 18*(2), 276-279. https://doi.org/10.5152/jern.2021.97830

Laerd Statistics. (2020). Statistical tutorials and software guides. https://statistics.laerd.com/

Larti, N., Ashouri, E., & Aarabi, A. (2018). The effects of an empathy role-playing program for operating room nursing students in Iran. *Journal of Educational Evaluation for Health Professions, 15*(29), 1-7. https://doi.org/10.3352/jeehp.2018.15.29

Lartey, J., Osafo, J., Andoh-Arthur, J., & Asante, K. (2020). Emotional experiences and coping strategies of nursing and midwifery practitioners in Ghana: A qualitative study. *BMC Nursing, 19*(92), 1-12. https://doi.org/10.1186/s12912-020-00484-0

Lauridsen, M., & Munkejord, M. (2022). Creating conditions for professional development through a trauma-informed and restorative practice. *Social Work,* 67(2),135-144. https://doi.org/10.1093/sw/swac005

Lavoie, P., Michaud, C., Belisle, M., Boyer, L., Gosselin, E., Grondin, M., Larue, C., Lavoie, S., & Pepin, J. (2018). Learning theories and tools for the assessment of core nursing competencies in simulation: A theoretical review. *Journal of Advanced Nursing, 74*, 239-250. https://doi.org/10.1111/jan.13416

Lee, B., & Kim, S. (2022). Development and effects of a high-risk pregnancy emotive roleplay program for nursing students: A quasi-experimental study. *Journal of Women Health Nursing, 28*(4), 317-328. https://doi.org/10.4069/kjwhn.2022.12.06

Lee, C., Bristow, M., & Wong, J. (2018). Emotional intelligence and teamwork skills among Undergraduate engineering and nursing students: A pilot study. *Journal of Research in Interprofessional Practice and Education, 8.1,* 1-16. https://doi.org/10.22230/jripe.2018v8n1a260

LeLorain, S., Bachelet, A., Goncalves, V., Wortel, E., Billes, M., Seillier, M., Berti, N., & Bourgoin, M. (2019). Nurses' and nursing assistants' emotional skills: A major determinant of motivation for patient education. *Journal of Advanced Nursing, 75*, 2616-2626. https://doi.org.10.1111/jan.14033

Leng, M., Wei, L., Shi, X., Cao, G., Wei, Y., Xu, H., Zhang, X., Zhang, W., Xing, S., & Wei, H. (2021). Mental distress and influencing factors in nurses caring for patient with COVID-19. Nursing Critical Care, 26(2), 94-101. https://doi.org/10.1111/nicc.12528

Li, T., Jiang, T., Shi, G., Song, C., & Shi, T. (2022). Correlation between self-awareness, Communication ability and caring ability of undergraduate nursing students. A cross-sectional study. *Nurse Education Today, 116,* 1-6. https://doi.org/10.1016/j.nedt.2022.105450

Losa Iglesias, M., Jimenez Fernandez, R., Corral Liria, I., del Pino Casado, B., Rodriguez Vazquez, R., Gomez Caballero, J., Alameda, Cuesta, A., & Becerro de Bengoa Vallejo, R. (2019). Geriatric simulation to increase empathy in nursing students: A pre-post study. *Revista Argentina de Clinica Psicologica, 29*(4), 1-10. https://doi.org/10.24205/03276716.2020.801

Madsgaard, A., Smith-Strom, H., Hunskar, I., & Roykenes, K. (2022). A rollercoaster of emotions: An integrative review of emotions and its impact on health professional students' learning in simulation-based education. *Nursing Open, 9*, 108-121. https://doi.org/10.1002/nop2.1100

Maillet, S., & Read, E. (2021). Work environment characteristics and emotional intelligence as correlates of nurses' compassion satisfaction and compassion fatigue: A cross-sectional survey study. *Nursing Reports, 11,* 847-858. https://doi.org/10.3390/nursrep11040079

Mansel, B., & Einion, A. (2019). 'It's the relationship you develop with them': Emotional intelligence in nurse leadership. A qualitative study. *British Journal of Nursing, 28*(21), 1400-1408. https://doi.org/10.12968/bjon.2019.28.21.1400

Mathad, M., Padhan, B., Rajesh, S. (2017). Correlates and predictors of resilience among baccalaureate nursing students. Journal of Clinical and Diagnostic Research, 11(2), 5-8. https://doi.org/10.7860/JCDR/2017/24442.9352

Matriano, M., & Middleton, R. (2020). A reflection of my experience of compassion and vulnerability in nursing. *International Practice Development Journal*, *10*(1), 1-6. https://doi.org/10.19043/ipdj.101.009

McCaugherty, D. (1991). The use of a teaching model to promote reflection and the experiential integration of theory and practice in first-year student nurses: an action research study. *Journal of Advanced Nursing*, *16*, 534-543. https://doi.org/10.1111/j.1365-2648.1991.tb01688.x

McCloughen, A., Levy, D., Johnson, A., Nguyen, H., & McKenzie, H. (2020). Nursing students' socialization to emotion management during early clinical placement experiences: A qualitative study. *Journal of Clinical Nursing*, *29*, 2508–2520. https://doi.org/10.1111/jocn.15270

McCormick, M., Pretzer-Aboff, I., Hood, D., & Vernon, G. (2021). Providing authentic learning experiences about Parkinson's Disease: Bringing humanity into the classroom. *International Journal of Human Caring*, *25*(4), 266-276. https://doi.org/10.20467/HumanCaring-D-200042

McKinnon, J. (2018). In their shoes: An ontological perspective on empathy in nursing practice. *Journal of Clinical Nursing*, *27*(21-22), 3882-3893. https://doi.org/10.111/jocn.14610

Miao, Q., Xie, L., Xing, B., Wang, X., Tang, S., & Luo, H. (2021). Emotional states and coping methods in nursing and non-nursing students responding to COVID-19: A

cross-sectional study in China. *BMJ Open*, *11*, 1-7. https://doi.org/10.1136/bmjopen2021-054007

Milnar, S. (2010). First and third-year student nurses' perceptions of caring behaviors. Nursing Ethics, 17(4), 491-500. https://doi.org/10.1177/0969733010364903

Mishra, P., Pandy, C., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anesthesia, 22*, 67-72. https://doi.org/10.4103/aca.ACA_157_18

Montes-Berges, G., & Augusto, J. (2007). Exploring the relationship between perceived emotional intelligence, coping, social support and mental health in nursing students. *Journal of Psychiatric and Mental Health Nursing, 14*, 163-171. https://doi.org/10.1111/j.1365-2850.2007.01059.x

Moraes de Azevedo, C., Balsanelli, A., & Tanaka, L. (2021). Teachers' social and emotional competencies in nursing technical education. Revista Brazileira de Enfermagem, 74(6), 1-8. https://doi.org/10.1590/0034-7167-2021-0109

Murray, R. (2018). An overview of experiential learning in nursing education. *Advances in Social Sciences Research Journal, 5*(1), 1-6. https://doi.org/10.14738/assrj.51.4102.

National Academies of Sciences, Engineering, and Medicine. (2021). The future of nursing 2020-2030: Charting a path to achieve health equity. The National Academies Press. https://doi.org/10.17226/25982

Newham, R., Terry, L., Atherley, S., Hahessy, S., Babenko-Mould, Y., Evans, M., Ferguson, K., Carr, G., & Cedar, S. (2019). A moral profession: Nurse educators' selected narratives of care and compassion. *Nursing Ethics*, 26(1), 105-115. https://doi.org/10.1177/0969733016687163

Nikmanesh, Z., & Khosravi, Z. (2020). The effect of training emotion regulation techniques on resilience and psychological wellbeing among nurses in Zahedan. *Advances in Nursing and Midwifery*, *29*(2), 1-6. https://doi.org/10.29252/anm-20421

Nugent, A., Donohue, G., & Higgins, A. (2022). Nurses' experiences of managing vulnerability when working with seriously ill children. *Evidence and Practice/Research*, *34*(4), 19-25. https://doi.org.10.7748/ncyp.2022.e1403

Nunes da Fonseca, P., Ferreira Eleutério, R., de Melo Tavares, C., & Carvalho, J. (2017). The power of aesthetic experimentation in the process of self-knowledge: A sociopoetic study. *Brazilian Journal of Nursing*, *16(*1), 73-82. http://www.objnursing.uff.br/index.php/nursing/article/view/5904

Park, J., & Oh, J.E. (2019). Influence of Perceptions of Death, End-of-Life Care Stress, and Emotional Intelligence on Attitudes towards End-of-Life Care among Nurses in the Neonatal Intensive Care Unit. *Child Health Nursing Research*, *25*, 38 - 47. https://doi.org/10.4094/chnr.2019.25.1.38

Patterson, J. (2018). Empathy: A concept analysis. *International Journal of Human Caring*, *22*(4), 217-223. https://doi.org.10.20467/1091-5710.22.4.217

Peck, B., Smith, A., Terry, D., & Porter, J. (2021). Self-regulation for and of learning: Student insights for online success in a bachelor of nursing program in regional Australia. *Nursing Reports*, *11*, 364–372. https://doi.org/10.3390/nursrep11020035

Peng, C., Chen, Y., Zeng, T., Wu, M., Yuan, M., & Zhang, K. (2022). Relationship between perceived organizational support and professional values of nurses: Mediating effect of emotional labor. *BMC Nursing*, *21*(142), 1-9. https://doi.org/10.1186/s12912022-00927-w

Perez-Fuentes, M., Linares, J., Jurado, M., Marquez, M., & Martinez, A. (2020). The mediating role of cognitive and affective empathy in the relationship of mindfulness with engagement in nursing. *BMC Public Health, 20*(16), 1-10. https://doi.org/10.1186/s12889-019-8129-7

Phillips, C., Bassell, K., Fillmore, L., & Stephenson, W. (2018). Transforming leaders into stewards of teaching excellence: Building and sustaining an academic culture through leadership immersion. *Contemporary Issues in Education Research, 11*(1), 1-10. https://doi.org/10.19030/cier.v11i1.10104

Podgurski, M. (2016). Theorists and techniques: Connecting education theories to Lamaze teaching techniques. *The Journal of Perinatal Education, 25*(1), 9–17. http://dx.doi.org/10.1891/1058-1243.25.1.9

Portela-Pino, I., Dominguez-Alonso, J., Alvarinas-Villaverde, M., & Chinchilla-Mira, J. (2022). Influence of personal, academic, social, and level of physical activity variables on emotional intelligence. *Children, 18*(2). https://doi.org/10.3390/children9020286

Raeissi, P., Zandian, H., & Mirzarahimy, T. (2019) Relationship between communication skills and emotional intelligence among nurses. *Nursing Management, 26*(2), 31-35. http://doi.org/10.7748/nm.2019.e1820

Rantung, G., Griffiths, D., Plummer, V., & Moss, C. (2021). How emergency nurses cope and motivate themselves to sustain their caring work: An integrative literature review. *Journal of Clinical Nursing, 31*, 843–859. https://doi.org/10.1111/jocn.16005

Rasheed, S., Younas, A., & Sundus, A. (2018). Self-awareness in nursing: A scoping review. *Journal of Clinical Nursing, 28,* 762-774. https://doi.org/10.1111/jocn.14708

Rhodes, E., & Foran, P. (2022) Leading with emotional intelligence in perioperative nursing: An integrative review," Journal of Perioperative Nursing. 35 (4), e-18-e-23. https://doi.org/10.26550/2209-1092.1224

Romero, C., Delgado, Catala, J., Ferrer, C., Errando, C., Iftini, A., Benito, A., Andres, J., Otero, M. (2020). COVID-19 psychological impact in 3109 healthcare workers in Spain: The PSIMCOV group. *Psychological Medicine*, 188-194. https://doi.org/10.1017/S0033291720001671

Ruiz-Fernandez, M., Alcaraz-Cordoba, A., Lopez-Rodriguez, M., Fernandez-Sola, C., Granero-Molina, J., & Hernandez-Padilla, J. (2022). The effect of home visit simulation on emotional intelligence, self-efficacy, empowerment, and stress in nursing students. A single group pre-post intervention study. *Nurse Education Today*, *117*, 1-7. https://doi.org/10.1016/j.nedt.2022.105487

Salovey, P., & Mayer, J. (1989). Emotional intelligence. *Imagination, cognition, and personality, 9*(3), 185-211. https://doi.org/10.2190/DUGG-P24E-52WK-6CDG

Salovey, P., & Mayer, J. (1995). Emotional intelligence and the construction and regulation of feelings. *Applied & Preventive Psychology 4*:197-208 (1995). Cambridge University Press.

Salovey, P., Mayer, J., Goldman, S., Turvey, C., Palfai, T. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. *Emotion, Disclosure, and Health*, 125-154. American Psychological Association.

Salvarani, V., Rampoldi, G., Ardenghi, S., Bani, M., Blasi, P., Ausili, D., DiMauro, S., & Strepparava, M. (2019). Protecting emergency room nurses from burnout: The role of

dispositional mindfulness, emotion regulation and empathy. *Journal of Nursing Management, 27(*4), 765-774. https://doi.org/10.1111/jonm.12771

Sanko, J., Matsuda, Y., Salani, D., Tran, L., Reaves, R., & Gerber, K. (2021). A comparison of learning outcomes from two poverty simulation experiences. *Public Health Nursing, 38*(3), 427-438. https://doi.org/10.1111/phn.12853

Sansen, G., Lobefalo, A., & Fasci, A. (2021). Love can't be taken to the hospital. If it were possible, it would be better. Patients' experiences of being cared for in an intensive care unit. *Qualitative Health Research, 31*(4), 736-753. https://doi.org/10.1177/1049732320982276

Sfetcu, N. (2020). *Emotional Intelligence.* SetThings. https://www.setthings.com/en/emotional-intelligence

Shahbazi, S., Heidari, M., Heidari, E., & Rezaei, P. (2018). Effect of problem-solving skill training on emotional intelligence of nursing students: An experimental study. *Journal of Education and Health Promotion, 7*(156), 1-7. https://doi.org/10.4103/jehp.jehp_50_18

Shannon, C. (2014). Using critical pedagogy to teach social responsibility and moral courage in nursing. In P.W. Orelus & R. Brock (Eds.), *Interrogating Critical Pedagogy*, (pp. 137-144). Routledge

Silva, R. (2020). A music assignment to develop pharmacy students' empathy toward people with opioid use disorder. *American Journal of Pharmaceutical Education, 84*(4), 484-488. https://doi.org/10.5688/ajpe7631

Sisman, F., & Buzlu, S. (2021). The impact of an emotion-focused training program on nursing students' emotional awareness and expression: A randomized placebo-controlled study. *Perspectives in Psychiatric Care, 58,* 197-205. https://doi.org/10.1111/ppc.12810

Sitzman, K. (2017). Theory-guided self-care for mitigating emotional strain in nursing: Watson's caring science. *International Journal of Human Caring, 21*(2). https://doi.org/10.20467/HumanCaring-D-17-00009.1

Smith, K., Profetto-McGrath, J., & Cummings, G. (2009). Emotional intelligence and nursing: An integrative literature review. *International Journal of Nursing Studies, 46*(12). https://doi.org/10.1016/j.ijnurstu.2009.05.024

Smith, T. (2017). BSN program admittance criteria: Should emotional intelligence be included? *Nursing Forum, 52*(1), 50-54. https://doi.org/10.1111/nuf.12166

Soner, G., & Mumcu, N. (2021). Use of films in nursing education in Turkey. *Journal of Education & Research in Nursing, 18*(4), 436-440. https://doi.org/10.5132/jem.2021.98624

Spreng, R., McKinnon, M., Mar, R., & Levine, B. (2009). The Toronto Empathy Questionnaire: Scale development and initial validation of a factor-analytic solution to multiple empathy measures. *Journal of Personality Assessment, 91*(1), 62-71. https://doi.org/10.1080/00223890802484381

Stacey, G., & Cook, G. (2019). A scoping review exploring how the conceptualization of resilience in nursing influences interventions aimed at increasing resilience. *International Practice Development Journal, 9*(1), 1-9. https://doi.org/10.19043/ipdj.91.009

Statulator. (2023). Sample size calculator for comparing paired differences. https://statulator.com/SampleSize/ss2PM.html

Stutsky, B. & Laschinger, H. (1995). Changes in student learning styles and adaptive learning competencies following a senior preceptorship experience. *Journal of Advanced Nursing, 21*(1), 143-153. https://doi.org/10.1046/j.1365-2648.1995.21010143.x.

Sun, F., Phil, A., Chiang, C., Wu, M., & Yao, Y. (2020). The psychological processes voiced by nursing students when caring for suicidal patients during their psychiatric clinical practicum: A qualitative study. *Journal of Clinical Nursing, 29*(3-4), 525-534. https://doi.org/10.1111/jocn.15090

Terzi, B., Polat, S., & Doğrusöz, L. (2022). The relationships between novice nurses' emotions management skills and happiness levels: A cross-sectional study. *Perspectives in Psychiatric Care, 58,* 3024–3033. https://doi.org/10.1111/ppc.13142

Teskereci, G., Oncel, S., & Arslan, U. (2020). Developing compassion and emotional intelligence in nursing students: A quasi-experimental study. *Perspectives in Psychiatric Care, 56,* 797-803. https://doi.org/10.1111/ppc.12494

Thomas, L. & Asselin, M. (2018). Promoting resilience among nursing students in clinical education. *Nurse Education in Practice, 28*, 231-234. https://doi.org/10.1016/j.nepr.2017.10.001

Tingleff, E., Bradley, S., Gildberg, F., Munksgaard, G., & Hounsgaard, L. (2017). “Treat me with respect.” A systematic review of the thematic analysis of psychiatric patients’ reported perceptions of the situations associated with the process of coercion. *Journal of Psychiatric and Mental Health Nursing, 24*, 681-698. https://doi.org/10.1111/jpm.12410

Tofighi, M., Tirgari, B., Ghomian, B., Safari, M., Bazyar, J., Mohammadi, E., Malekyan, L., & Safarpour, H. (2022). Time management behaviors and emotional intelligence in head nurses in emergency and intensive care units. *Creative Nursing, 28*(1), 29-35. http://dx.doi.org/10.1891/CRNR-D-20-00087

Totan, T., Dogan, T., & Sapmaz, F. (2012). The Toronto Empathy Questionnaire: Evaluation of psychometric properties among Turkish university students. *Eurasian Journal of Educational Research, 46*, 179-198.

Tseng, H., & Hill, L. (2020). The impact of high-fidelity simulation on nursing students' flexible and reflective thinking in higher education. *Higher Learning Research Communications, 10*(2), 52-65. https://doi.org/10.18870/hlrc.v10i2.1196

Ursoniu, S., Serban, C., Giurgi-Oncu, C., Rivis, I., Bucur, A., Bredicean, A., & Papava, I. (2021). Validation of the Romanian version of the Toronto Empathy Questionnaire (TEQ) among undergraduate medical students. *International Journal of Environmental Research and Public Health, 18*(24), 12871. https://doi.org/10.3390/ijerph182412871

Valdivia-Vazquez, J., Rubio-Sosa, J., & French, B. (2015). Examination of the Spanish Trait Meta-Mood Scale-24 factor structure in a Mexican setting. *Journal of Psychoeducational Assessment, 33*(5), 473-482. https://doi.org/10.1177/0734282914552052

Valente, S., Lourenco, A., Dominguez-Lara, S., Derakshan, A., Nemeth, Z., & Almeida, L. (2022). Teachers' emotion regulation: Implications for classroom conflict management. *Australian Journal of Teacher Education, 47*(8), 18-32. http://dx.doi.org/10.14221/ajte.2022v47n8.2

Van Zyl, A. & Noonan, I. (2018). The Trojan war inside nursing: An exploration of compassion, emotional labour, coping, and reflection. *British Journal of Nursing, 27*(20), 1192-1196. https://doi.org/10.12968/bjon.2018.27.20.1192

Varga-Valencia, A., Vega-Hernandez, M., Sanchez, J., Espinoza, J., & Lopez, A. (2022). Self-perceived emotional intelligence levels in nursing students in times of a pandemic: Multivariate representation. *International Journal of Environmental Research and Public Health, 19,*1-13. https://doi.org/10.3390/ijerph19031811

Vishavdeep, S., Das, K., Prahbhjot, M., & Ghai, S. (2016). A pre-experimental study to assess the effect of emotional intelligence skill training on emotional intelligence of undergraduate nursing students. *International Journal of Nursing Education, 8*(2), 203-208. https://doi.org/10.5958-0974-9357.2016.00076.3

Vandewaa, E., Turnipseed, D., & Cain, G. (2016). Panacea or placebo? An evaluation of emotional intelligence in healthcare workers. *Journal of Health and Human Services Administration, 38*(4), 438-477. https://www.jstor.org/stable/43948684

vanVliet, M., Jong, M., Jong, M. (2018). A mind-body skills course among nursing and medical students: A pathway for an improved perception of self and the surrounding world. *Global Qualitative Nursing Research, 5,* 1-13. https://doi.org/10.1177/23333936188053

Wain, A. (2017). Learning through reflection. *British Journal of Midwifery, 25*(10). 662-666. https://doi.org/10.12968/bjom.2017.25.10.662

Waite, R., & McKinney, N. (2016). Capital we must develop: Emotional competence educating pre-licensure nursing students. *Nursing Education Perspectives, 37*(2), 101-103. https://doi.org/10.5480/14-1343

Waqas, A., Naveed, S., Makhmoor, A., Malik, A., Hassan, H., & Aedma, K. (2020). Empathy, experience and cultural beliefs determine the attitudes towards depression among Pakistani medical students. *Community Mental Health Journal, 56,* 65-74. https://doi.org/10.1007/s10597-019-00459-9

Watson, J. (1985). *Nursing the philosophy and science of caring*. University Press of Colorado.

Watson, J. (1988). New dimensions of human caring theory. *Nursing Science Quarterly*, 175 – 181. https://doi.org/0894-3184/88/0104-0175802.00/0

Weber, M., Leemis, L., & Kincaid, R. (2006). Minimum Kolmogorov-Smirnov test statistic parameter estimates. *Journal of Statistical Computation and Simulation, 76*(3), 195-206. https://doi.org/10.1080/00949650412331321098

Wedin, A., Sandstrom, S., Sandstrom, L., & Forsberg, A. (2019). Critical care nurses' experiences of nursing intoxicated patients after abuse of drugs. *Nursing in Critical Care*, *27,* 66-72. https://doi.org/10.1111/nicc.12533

Wei, H., Fazzone, P., Sitzman, K., & Hardin, S. (2019). The current intervention studies based on Wastson's theory of human caring: A systematic review. International Journal for Human Caring, 23(1), 4-22. http://dx.doi.org/10.20467/1091-5710.23.1.4

Wilson, S., & Carryer, J. (2008). Emotional competence and nursing education: A New Zealand study. *Nursing Praxis in New Zealand, 24*(1), 36- 47. https://pubmed.ncbi.nlm.nih.gov/18557369/

Winship, G. (2010). Is emotional intelligence an important concept for nursing practice*? Journal of Psychiatric and Mental Health Nursing, 17,* 940–948. https://doi.org/10.1111/j.1365-2850.2010.01610.x.

Xu, H., Stjernsward, S., & Glasdam, S. (2021). Psychosocial experiences of frontline nurses working in hospital-based settings during the COVID-19 pandemic - A qualitative systematic review. *International Journal of Nursing Studies Advances, 3*9100037). https://doi.org/10.1016/j.ijnsa.2021.100037

Yayla, A., & İlgin, V. (2021). The relationship of nurses' psychological well-being with their coronaphobia and work–life balance during the COVID-19 pandemic: A cross-sectional study. *Journal of Clinical Nursing, 30,* 3153–3162. https://doi.org/10.1111/jocn.15783

Yetka, Z. & Abdolrahimi, M. (2015). Concept analysis of emotional intelligence in nursing. *Nursing Practice Today, 2*(4), 158-163. https://npt.tums.ac.ir/index.php/npt

Yildirim, N., Kantek, F., & Yilmaz, F. (2021). Relationships between leadership orientations and emotional intelligence in nursing students. *Perspectives in Psychiatric Care, 58,* 903-909. https://doi.org/10.1111/ppc.12871

Yi, X., Sicheng, X., Lihui, Z., Jianhui, X., Shenhui, S., Xiang, D., & Yang, H. (2021). Changes in empathy of nurses from 2009 to 2018: A cross-temporal meta-analysis. *Nursing Ethics, 28*(5), 776-790. https://doi.org/10.1177/0969733020968163

Yu, J., Parsons, G., Lancastle, D., Tonkin, E., & Ganesh, S. (2021). "Walking in their shoes": The effects of an immersive digital story intervention on empathy in nursing students. *Nursing Open, 8,* 2813-2823. https://doi.org/10.1002/nop2.860

Zarrin, S., & Veyskarami, M. (2020). Role of spirituality and psychological capital in the prediction of occupational burnout in nurses in Khorramabad, Iran during 2016. *Health, Spirituality and Medical Ethics, 7*(4), 16-24. http://dx.doi.org/10.29252/jhsme.7.4.16

Zarzycka, D. & Gesek, M. (2022). The factors affecting the critical thinking skills among nursing students – an integrative literature review. *Nursing in the 21st Century, 21*(3), 174-180. https://doi.org/10.2478/pielxxiw-2022-0021

Zhang, D., Yang, L., Wang, C., Yuan, T., Wei, H., Li, J., Lei, Y., Sun, L., Li, X., Hua, Y., & Zhang, L. (2022). Reliability and validity of the Chinese version of the brief emotion and regulation beliefs scale in Chinese nursing students. *BMC Nursing, 21*, 1-11. https://doi.org/10.1186/s12912-022-00992-1

Zhu, Y., He, M., Zhu, J., Huang, L., & Li, B. (2020). Motives for empathy among clinical nurses in China. *Journal of Korean Academics in Nursing, 50*(6), 778-786. https://doi.org/10.4040/jkan.20123

# APPENDICES

## Appendix A: TEQ

Below is a list of statements. Please read each statement carefully and rate how frequently you feel or act in the manner described. Circle your answer on the response form. There are no right or wrong answers or trick questions. Please answer each question as honestly as you can.

| | | Never | Rarely | Sometimes | Often | Always |
|---|---|---|---|---|---|---|
| 1. | When someone else is feeling excited, I tend to get excited too | 0 | 1 | 2 | 3 | 4 |
| 2. | Other people's misfortunes do not disturb me a great deal | 0 | 1 | 2 | 3 | 4 |
| 3. | It upsets me to see someone being treated disrespectfully | 0 | 1 | 2 | 3 | 4 |
| 4. | I remain unaffected when someone close to me is happy | 0 | 1 | 2 | 3 | 4 |
| 5. | I enjoy making other people feel better | 0 | 1 | 2 | 3 | 4 |
| 6. | I have tender, concerned feelings for people less fortunate than me | 0 | 1 | 2 | 3 | 4 |
| 7. | When a friend starts to talk about his\her problems, I try to steer the conversation towards something else | 0 | 1 | 2 | 3 | 4 |
| 8. | I can tell when others are sad even when they do not say anything | 0 | 1 | 2 | 3 | 4 |
| 9. | I find that I am "in tune" with other people's moods | 0 | 1 | 2 | 3 | 4 |
| 10. | I do not feel sympathy for people who cause their own serious illnesses | 0 | 1 | 2 | 3 | 4 |
| 11. | I become irritated when someone cries | 0 | 1 | 2 | 3 | 4 |
| 12. | I am not really interested in how other people feel | 0 | 1 | 2 | 3 | 4 |
| 13. | I get a strong urge to help when I see someone who is upset | 0 | 1 | 2 | 3 | 4 |
| 14. | When I see someone being treated unfairly, I do not feel very much pity for them | 0 | 1 | 2 | 3 | 4 |
| 15. | I find it silly for people to cry out of happiness | 0 | 1 | 2 | 3 | 4 |
| 16. | When I see someone being taken advantage of, I feel kind of protective towards him\her | 0 | 1 | 2 | 3 | 4 |

## Appendix B: Trait Meta Mood Scale – 24

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | I pay a lot of attention to my feelings. | 1 | 2 | 3 | 4 | 5 |
| 2 | I am usually very conscious of what I feel. | 1 | 2 | 3 | 4 | 5 |
| 3 | I usually spend time thinking about my emotions. | 1 | 2 | 3 | 4 | 5 |
| 4 | I think my emotions and state of mind deserve to be paid attention to. | 1 | 2 | 3 | 4 | 5 |
| 5 | I allow my feelings to affect my thoughts. | 1 | 2 | 3 | 4 | 5 |
| 6 | I constantly think about my state of mind. | 1 | 2 | 3 | 4 | 5 |
| 7 | I often think about my feelings. | 1 | 2 | 3 | 4 | 5 |
| 8 | I pay a lot of attention to the way I feel. | 1 | 2 | 3 | 4 | 5 |
| 9 | My feelings are clear to me. | 1 | 2 | 3 | 4 | 5 |
| 10 | I can usually define my feelings. | 1 | 2 | 3 | 4 | 5 |
| 11 | I nearly always know how I feel. | 1 | 2 | 3 | 4 | 5 |
| 12 | I usually know how I feel about people. | 1 | 2 | 3 | 4 | 5 |
| 13 | I often become aware of my feelings in different situations. | 1 | 2 | 3 | 4 | 5 |
| 14 | I can always say how I feel. | 1 | 2 | 3 | 4 | 5 |
| 15 | I can sometimes say which emotions I am experiencing. | 1 | 2 | 3 | 4 | 5 |
| 16 | I can manage to understand my feelings. | 1 | 2 | 3 | 4 | 5 |
| 17 | I usually have an optimistic outlook, although I sometimes feel sad. | 1 | 2 | 3 | 4 | 5 |
| 18 | Even when I feel sad, I try to think about pleasant things. | 1 | 2 | 3 | 4 | 5 |
| 19 | When I am sad, I think about all life's pleasures. | 1 | 2 | 3 | 4 | 5 |
| 20 | I try to have positive thoughts even when I feel bad. | 1 | 2 | 3 | 4 | 5 |
| 21 | If I think about things too much and end up complicating them, I try to calm myself down. | 1 | 2 | 3 | 4 | 5 |
| 22 | I am concerned about having a good state of mind. | 1 | 2 | 3 | 4 | 5 |
| 23 | I have a lot of energy when I feel happy. | 1 | 2 | 3 | 4 | 5 |
| 24 | When I am angry, I try to change my state of mind. | 1 | 2 | 3 | 4 | 5 |

## Appendix C: Consent for Research Participation, Liberty University

Liberty University Letter

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

August 21, 2023

Re: IRB Exemption - IRB-FY23-24-25 The Effects of an Interactive Education Program on Emotional lntelligence and Empathy Development with Prelicensure Nursing Students

Dear Karen Browne, Theresa Pape,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study to be exempt from further IRB review. This means you may begin your research with the data safeguarding methods mentioned in your approved application, and no further IRB oversight is required. Your study falls under the following exemption category, which identifies specific situations in which human participants research is exempt from the policy set forth in 45 CFR 46:104(d):

Category 1. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

For a PDF of your exemption letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your information sheet and final versions of your study documents can also be found on the same page under the Attachments tab. Please note that this exemption only applies to your current research application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued exemption status. You may report these changes by completing a modification submission through your Cayuse IRB account. If you have any questions about this exemption or need assistance in determining whether possible modifications to your protocol would change your exemption status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, PhD, CIP

Administrative Chair

Research Ethics Office

## Appendix D: Consent for Research Participation, Binghamton University

BINGHAMTON UNIVERSITY
STATE UNIVERSITY OF NEW YORK

Study Title: Emotional Intelligence and Empathy Development from a Multi-Modal Education program with Prelicensure Nursing Students

Researcher(s): Karen Browne, PhD-c, RN, CWOCN, Assistant Clinical Professor, Decker College of Nursing and Health Sciences, Binghamton University

Researcher Contact Info: [redacted]

---

You are being invited to take part in a research study conducted by the researchers named above. Below is detailed information for you to consider when determining whether or not to participate. Carefully consider all of this information and ask any questions you may have about it before deciding whether to participate or not.

| **Key Information for You to Consider** |
|---|
| ● **Voluntary Consent:** You are being asked to volunteer for a research study. It is your choice whether to participate or not. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate or discontinue participation.<br>● **Purpose:** The purpose of this research is to identify if an educational program in emotional intelligence and empathy improves scores in the Trait Meta Mood Scale-24 (TMMS-24) and/or the Toronto Empathy Questionnaire (TEQ). You are being invited to participate because you are a junior or senior-level nursing student enrolled in a core nursing course at Decker College of Nursing and Health Services. It is expected that approximately 100 individuals will be participating in this research.<br>● **Procedures and Activities:** You will be asked to take two brief questionnaires at two time points, at the beginning of the semester and at the end. The content of interactive in-class sessions will be delivered during your regular class time and does not require you to complete any out-of-class assignments.<br>● **Duration**: Your time commitment will be approximately one hour to take the surveys, and five hours of class time to deliver and interact with the content.<br>● **Risks:** One foreseeable risk of your participation includes a minimal risk of breach of confidentiality, even though anonymity will be taken, and electronic surveys will be used.<br>● **Benefits:** Some benefits that may be expected include insight into your emotional intelligence, introducing concepts of self-awareness, emotional regulation, and empathy to help you interact and be more confident with patient experiences and challenges.<br>● Participation is voluntary, and the only alternative is not to participate. |

We will tell you about any new information that may affect your willingness to continue participation in this research.

**What happens to the information collected for this research?**

Information collected as part of this research will be obtained via Qualtrics in two electronic surveys: the Toronto Empathy Scale and the Trait Meta Mood -24 Scale. This will be obtained twice, before education is given and once after. You will be given a code number to deidentify your scores. Scores will then be paired in the pre/post-tests and analyzed for findings. The data will be used in this researcher's dissertation and presented upon the defense at the program's end. This data will also be distributed for publication in peer-reviewed, nursing journals and professional presentations.

Identifiers might be removed from identifiable private information and/or identifiable specimens. After such removal, the information and/or specimens could be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you.

**How will my privacy and data confidentiality be protected?**
We will protect your privacy by using code numbers instead of names and keeping the data in a secure location with only the researcher's ability to obtain the information.

Qualtrics is a Binghamton University-approved survey platform, and we anticipate that your participation in this survey presents no greater risk than everyday Internet use.

Please note that email communications may be necessary for correspondence in this researcher's program requirements. Email is neither private nor secure. Though we are taking precautions to protect your privacy, you should be aware that information sent through e-mail could be read by a third party.

Despite these precautions, we can never fully guarantee your privacy or the confidentiality of all study information. Individuals and organizations conducting or monitoring this research may be permitted access to inspect the research records, including your private information. These individuals and organizations include approved study team members, Binghamton University's Institutional Review Board (IRB), and Liberty University's dissertation committee members for this researcher's work.

This research will remain confidential unless we are required by New York State Law to report harm to yourself, others, or your children.

**What if I want to stop participating in this research?**
Taking part in this research study is your decision. Your participation is voluntary. You do not have to take part in this study, but if you do, you can choose not to participate in any study activity or to completely withdraw at any point without penalty or loss of benefits to which you are otherwise entitled. Your decision whether to participate will not affect your relationship with the researcher(s) or Binghamton University.

**Who can answer my questions about this research?**
If you have questions, or concerns, or have experienced a research-related injury, contact the research team at:

- Karen Browne, PhD-c, RN, CWOCN, Assistant Clinical Professor, Decker College of Nursing and Health Sciences, Binghamton University
- [redacted]

- [redacted]

Binghamton University's IRB is overseeing this research. The IRB is a group of people who perform independent reviews of research studies to protect participants' rights and welfare. If you have questions about your rights or wish to speak with someone other than the research team, you may contact:

- The Binghamton University IRB
- hsrrc@binghamton.edu
- (607) 777 - 3818

**STATEMENT OF CONSENT**

I have had the opportunity to read and consider the information in this form. I have asked any questions necessary to make a decision about my participation. I understand that I can ask additional questions throughout my participation. I understand that I volunteer to participate in this research by signing below. I understand that I am not waiving any legal rights. I have been provided with a copy of this consent form.

I am at least 18 years old, and I consent to participate in this study.

| | | |
|---|---|---|
| Name of Adult Participant | Signature of Adult Participant | Date |

**Researcher Signature**

I have explained the research to the participant and answered all of his/her questions. I believe that he/she/they understand the information described in this consent form and freely consent to participate.

| | | |
|---|---|---|
| Name of Research Team Member | Signature of Research Team Member | Date |

Revised_9_21_2021nl

Appendix E: **Emotional Intelligence / Empathy Education Plan**

| Session | Content |
|---|---|
| 1 | Present study<br>Video https://youtu.be/n9h8fG1DKhA<br><br>Informed consent - Qualtrics<br><br>Pre/test questionnaires (TMMS-24, TEQ) - Qualtrics |
| 2 | Warm-up activity: busy picture slide (how do you feel right now)<br><br>Content: Define emotional intelligence and empathy<br><br>Self-awareness, emotional regulation concepts<br><br>Interactive activity: journal emotions of busy picture slide - what emotions did you recognize, did any of this surprise you, what did you do about the emotion, is there something different you could do with that emotion |
| 3 | Warm-up activity: https://youtu.be/4M0ooFlJmfk<br><br>Content: Interpersonal relationships, empathy<br><br>Interactive activity: #8 - 50 activities for developing emotional intelligence |
| 4 | Warm-up activity: https://youtu.be/TBbcS1j0e5E,<br><br>Content: Dealing with stressful situations, emotional control<br><br>Interactive activity: #9 - 50 activities for developing emotional intelligence |
| 5 | Warm-up activity: skit<br><br>Content: Verbal/ Nonverbal communication skills<br><br>Interactive activity: copycat (one person out, one leader of emotions, others follow, person out has to guess the leader) or opposite expressions (given a script and despite emotionless the opposite of what is was supposed to be. Body language says other), act out nonverbal emotions / skit |

| | |
|---|---|
| 6 | Warm-up activity: https://youtu.be/ogweL4E24ok<br>Content: How happy are you? Optimist or Pessimist<br>Interactive activity: Affirmation station |
| 7 | Warm-up activity: https://youtu.be/LjF9IqvXDjY<br>Content: How to use EI effectively<br>4 skills of emotional intelligence<br>Interactive activity: Self management |
| 8 | Warm-up activity: https://youtu.be/-4EDhdAHrOg<br>Content: Solving problems<br>Interactive activity: Frostbite<br>Posttest - Qualtrics |

Appendix F**:** Permission to use TEQ

# TEQ

3 messages:

**Karen Browne** <[redacted]> Thu, Mar 2, 2023 at 3:39 PM
To: "nathan.spreng@gmail.com" <[redacted]>

Hello Dr. Spreng,
I hope this email finds you well.
I am writing from Binghamton University, Decker College of Nursing. I am a PhD candidate and am working on my dissertation in emotional intelligence and empathy training with undergraduate nursing students. I have done much research into the TEQ you and colleagues authored. Some of my peers at the college have used the TEQ for their simulation work. I am writing to inquire about the use of it for my study which I plan to begin this fall or spring 2024.
Thank you for the consideration and if you need any further information, please let me know.
Kind Regards,

***Karen Browne, PhD-C, RN, CWOCN***
*Binghamton University*
*Decker College of Nursing*
*Clinical Assistant Professor*
[redacted]

**Nathan Spreng** <[redacted]> Thu, Mar 2, 2023 at 4:38 PM
To: Karen Browne <[redacted]>

Thank you for your interest.
You are welcome to use and reproduce the Toronto Empathy Questionnaire for non-commercial research and educational purposes without seeking my written permission. Distribution must be controlled, meaning only to the participants engaged in the research or enrolled in the educational activity. Any other type of reproduction or distribution of the TEQ is not authorized without my written permission. The original Journal of Personality Assessment paper should be referenced in any resulting publication or report.

Best,
Nathan Spreng
[Quoted text hidden]
--
R. Nathan Spreng, PhD
Director, Laboratory of Brain and Cognition
Montreal Neurological Institute
Professor of Neurology and Neurosurgery
Faculty of Medicine, McGill University
[redacted]

## Appendix G: Permission to use TMMS

# Use of the TMMS

3 messages

---

**Karen E Browne** <[redacted]> Fri, Mar 11, 2022 at 7:49 PM
To: [redacted]

Hello Professor Salovey,
I am writing to inquire about the use of the Trait Meta Mood Scale (TMMS) that you and your colleagues developed. I am a PhD student from Liberty University in the area of Nursing Education. My dissertation work is related to teaching aspects of your Emotional Intelligence Theory and how, especially empathy training, will enhance student nurses' understanding of empathy at the bedside with patients. Over the past few years, I have read and observed in new nurses and seasoned colleagues, the burnout with the pandemic. My thoughts are that if nurse educators can train student nurses to have self-regulation, self-control, and empathy, we can then sustain them in the profession with better coping abilities.
I am new to the process of requesting access to instruments. I was hoping to have permission to use this for my dissertation and future research.
Thank you for your consideration.
Best,

***Karen Browne, MSN, RN, CWOCN***
*Binghamton University*
*Decker School of Nursing*
*Clinical Instructor / Lecturer*
[redacted]

---

**Salovey, Peter** <[redacted]> Fri, Mar 11, 2022 at 8:28 PM
To: Karen E Browne <[redacted]>

Dear Karen,

Thank you for writing. You are welcome to use the TMMs in your research. I've attached an article about it, and the original scale is in the appendix.

Best of luck
Peter Salovey
President and Chris Argyris Professor of Psychology
Yale University, Office of the President
PO Box 208229
New Haven, CT 06520-8229
[redacted]