



Building Resilience in Undergraduate Nursing Students: Evaluation of Changing Minds, Changing Lives

Item Type	Capstone Project
Authors	Liljestrand, Rebecca
DOI	https://doi.org/10.7275/28846192
Download date	2025-01-14 22:36:02
Item License	http://creativecommons.org/licenses/by-nc-nd/3.0/
Link to Item	https://hdl.handle.net/20.500.14394/38017

**Building Resilience in Undergraduate Nursing Students: Evaluation of *Changing Minds,*
*Changing Lives***

Rebecca Liljestrand

University of Massachusetts, Amherst

Elaine Marieb College of Nursing

DNP Project Chair: Karen Kalmakis PhD, MPH, FNP-BC, RN

Mentor: Sarah Martin MSN, RN

Date of Submission: April 15, 2022

Table of Contents

Abstract	4
Introduction	6
Background	6
Problem Statement	9
Review of Literature	9
Relative to Self	12
Relative to Others	12
Relative to the Program	13
Use of Coping Strategies	13
Discussion	14
Review Summary	15
Theoretical Framework	15
Methods	17
Goals and Objectives	17
Setting and Group Description	17
Measurement	18
Implementation	19
Data Analysis	22
Human Subjects Protection	22
Results	24
Demographics	24
Post-survey	25

Presentations	27
Enhanced Self-awareness	29
Greater Connection with Others	30
Improved Self-efficacy	30
Use of Stress Management Skills	31
Discussion	31
Recommendations for Future Practice	34
Conclusion	35
References	36
Appendices	45
Appendix A: Knowledge-to-Action Framework	45
Appendix B: Post-Survey	46
Appendix C: Demographic Questionnaire	48
Appendix D: University Of Massachusetts IRB Determination Letter	49
Appendix E: Changing Minds, Changing Lives Topical Outline	50

Abstract

Background: Undergraduate nursing students report experiencing high levels of stress, which may negatively affect academic, personal, and professional outcomes. Resilience has been found to mitigate the effects of high, prolonged stress. Specifically, nursing students who engaged in a program to enhance resilience had positive outcomes related to themselves, others, and their nursing program.

Purpose: The purpose of this project was to implement and evaluate the feasibility, acceptability, and value of an evidence-based resilience program, *Changing Minds, Changing Lives*, designed to reduce nursing student stress levels by building resilience and increasing use of positive coping strategies.

Methods: Junior baccalaureate nursing students (n = 15) at one university participated in the project to evaluate a 10-week strength-based resilience program. Students completed a 17-question post-intervention survey and presented on their experiences. The survey data was analyzed using descriptive statistics, and content analysis was used to analyze student presentations.

Results: Fifteen students completed the 10-week course. All participants (n = 15) reported an increase in resilience, identified coping strategies to address life stressors, and perceived an increased connection to peers and sense of belonging. All participants indicated they would recommend this program to nursing students. Additionally, four common themes were identified from the participant presentations: enhanced self-awareness, greater connection with peers, improved self-efficacy, and use of stress management skills. Throughout the presentations, students emphasized the importance of knowing and using their strengths.

Conclusions & Implications: Participants accepted and valued the resilience program and found it feasible. Positive outcomes included adoption of positive coping strategies. However, student attrition in program attendance indicated that the program in its current form may not be practical for all students. Instead, nursing programs should consider formally integrating resilience training into the nursing curriculum to teach nursing students to build resilience and use resilience skills for stress management during educational programs and into their nursing careers.

Keywords: resilience, stress, nursing education, students

Building Resilience in Undergraduate Nursing Students: Evaluation of *Changing Minds, Changing Lives*

Stress occurs when one's perception of a stressor threatens and stretches beyond their physical and mental limits (Onan et al., 2018). Stress can push a person into a state of disequilibrium, prompting them to seek balance using various means to cope with the stressor. Nursing students find themselves in this state of disequilibrium from the moment nursing school starts, and often do not have the tools needed to right the imbalance. The state of high stress can lead to negative outcomes academically, personally, and professionally (Admi et al., 2018; Akhu-Zaheya et al., 2015; Ching et al., 2020; Olvera Alvarez et al., 2019; Ye et al., 2018). Principles of resilience are used to adapt to the source of stress and recover from difficult experiences and life challenges (Onan et al., 2018). Resilience is not inherent; it is a skill that can be learned, practiced, and improved (Stephens, 2013). Many nursing students are not given the foundational resilience skills needed to succeed in nursing school and in a nursing career. Therefore, the purpose of this project is to implement an evidence-based resilience program among second-semester nursing students at one university, and evaluate its feasibility, acceptability, and value in reducing stress levels and building resilience via positive coping strategies.

Background

It is widely acknowledged that nursing students experience high levels of stress during undergraduate nursing education (Labrague, McEnroe-Petitte, Papathanasiou et al., 2017; Mills et al., 2020). Stress is defined as the relationship between an individual and a situation that is appraised as more than the person's resources to handle or a threat to their well-being (Lazarus & Folkman, 1984). Stress is not inherently detrimental; it can be motivational for learning

(Labrague, McEnroe-Petitte, Papathanasiou et al., 2017). However, high, or prolonged levels of stress can be harmful when not identified and managed. It is essential that nursing students are taught to effectively manage stressful events considering the high physical, emotional, and mental demands of a nursing career.

Learning how to manage stress not only benefits student nurses as they enter the nursing profession, but also plays a critical role during their nursing education. Unmanaged stress in nursing students can lead to poor academic and clinical performances (Akhu-Zaheya et al., 2015; Ye et al., 2018), poor sleep patterns (Olvera Alvarez et al., 2019), and mental health problems, such as depression (Olvera Alvarez et al., 2019), burnout (Ching et al., 2020) and dissatisfaction (Admi et al., 2018). While there is no evidence to support a direct link between stress, burnout, and attrition in nursing students, there is a link between students who use unhealthy coping skills and attrition (Deary et al., 2003). There is an alarmingly high attrition rate of new nurses, with one in three new nurses leaving their jobs within the first two years after graduation (Kovner et al., 2014).

A review of literature by Labrague, McEnroe-Petitte, Gloe et al. (2017) reveals that both the academic and clinical portions of nursing school are stressful, with clinical rotations producing the highest levels of stress. Stress levels of nursing students during clinical rotations can be mild to moderate (Admi et al., 2018) or even severe (Bhurtun et al., 2019). There are several factors that can increase a nursing student's perceived stress level during the clinical rotation, such as: patient care, assignment workload, conflict between principles learned and what is actually seen in practice, stress from faculty and nursing staff, the lack of knowledge and skills to care for patients, and the anticipation of seeing patients in pain (Admi et al., 2018; Akhu-Zaheya et al., 2015; Al-Gamal et al., 2017).

These stressful factors affect students differently depending on where they are in their nursing program. One study found preclinical students had higher overall stress levels compared to higher level students (Admi et al., 2018). Gurková and Zeleníková (2018) discovered that third-year students attributed higher levels of stress to teachers and the workload compared to students in their first year and second year.

Nursing students adopt different coping methods to manage their stress. According to Lazarus and Folkman, coping methods are classified as either problem- or emotion-based (Biggs et al., 2017, p.353). Generally, problem-based strategies are positive coping mechanisms, and emotion-based strategies are negative coping mechanisms (Biggs et al., 2017, p.354). Some studies found that more students adopt problem-based strategies such as problem-solving when coping with stressful events (Al-Gamal et al., 2017; McCarthy et al., 2018). Staying optimistic was also a coping strategy used by lower-level students (Gurková & Zeleníková, 2018; McCarthy et al., 2018). McCarthy et al. (2018) found students under 25 years of age are more likely to use emotion-based strategies such as mental disengagement as a coping strategy whereas students over the age of 25 are more likely to seek advice as a problem-based coping strategy.

Resilience training is a proven strategy that can help undergraduate nursing students identify their stressors and use positive coping skills to manage their perceived stress (Devi et al., 2021). This strategy can produce positive personal and educational outcomes. In the context of nursing school, resilience is gained when students “learn to identify, enhance, and/or develop their protective factors,” so that “they will be better equipped to effectively manage perceived adversity and stress. The cumulative successes of these events will lead to increased resilience demonstrated by enhanced coping/adaptive abilities and well-being.” (Stephens, 2013, pp. 130-

131). Unfortunately, new nursing students are not given the resiliency tools needed to avoid negative outcomes from unmanaged school-generated stress. Cochran et al. (2020) surveyed 155 nursing schools across the United States and found that no schools regularly assessed students for burnout, and only 9% of schools had a formalized resilience curriculum integrated into their nursing schools.

Problem Statement

There is an unmet need in nursing students to strengthen their resilience to meet the stressors of nursing school. The risk of high perceived stress of undergraduate nursing students is indicated by poor clinical and academic performance, burnout, mental health problems, and high attrition rates. This stress may be mitigated through learned resilience.

Review of the Literature

An extensive search of the literature was done through the University of Massachusetts Amherst online library using PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and PsycINFO. The key terms used were “stress,” “resilience or resiliency or resilient,” and “nursing students or student nurses or undergraduate student nurses”. The inclusion criteria were articles published in English between 2015 and 2021, and in peer reviewed journals. The key terms yielded 244 research articles: 176 from PubMed, 51 from CINAHL, and 17 from PsycINFO. These articles were further screened to only include research that evaluated interventions, reducing the article number down to 47. Of these, 19 were duplicate publications. The articles were analyzed using *ANA’s Framework for How to Read and Critique a Research Study* (Kaplan, n.d.) for publishing date, background information, purpose, methods and limitations, findings, and nursing implications. Each article was further evaluated for evidence level and quality using the John Hopkins Nursing Evidence-Based Practice criteria.

Only articles receiving levels I, II, or III and grades A or B were kept for the review. Sixteen research articles remained for this review.

Of the 16 articles selected, six of the studies were set in Europe (Frögéli et al., 2016; McCarthy et al., 2018; Stacey et al., 2017; Terp, Bisholt, & Hjärthag, 2019; Terp, Hjärthag, & Bisholt, 2019; van Vliet et al., 2018), three in Turkey (Karaca & Şişman, 2019; Onan et al., 2018; Yüksel & Yılmaz, 2020), two in Australia (Hurley et al., 2020; van der Riet et al., 2015), two in the United States (Beanlands et al., 2019; Snyder, 2020), one in China (Chow et al., 2020), and one in Taiwan (Liang et al., 2019). One study did not specify its location (Ignacio et al., 2016) but the authors represented universities in Singapore and the Netherlands. The study by van Vliet et al. (2018) was carried out in both the Netherlands and Sweden but the nursing students represented in the study were in Sweden.

All the studies included undergraduate nursing students, but two studies also included midwifery students (McCarthy et al., 2018; van der Riet et al., 2015), and one included medical students (van Vliet et al., 2018). Seven of the studies included students in their first year (Chow et al., 2020; Frögéli et al., 2016; Hurley et al., 2020; McCarthy et al., 2018; Onan et al., 2018; van der Riet et al., 2015; van Vliet et al., 2018), three included specifically second semester students (Snyder, 2020; Terp, Bisholt, & Hjärthag, 2019; Terp, Hjärthag, & Bisholt, 2019), two included second year students (Karaca & Şişman, 2019; Yüksel & Yılmaz, 2020), two included third year students (Hurley et al., 2020; Ignacio et al., 2016), and three included students in their final year (Beanlands et al., 2019; Liang et al., 2019; Stacey et al., 2017). Because the nursing profession is dominated by females, most of the study participants in the studies were female.

The most common research approach was qualitative (seven studies), and the sample sizes ranged from seven (Hurley et al., 2020) to 79 (Snyder, 2020). In addition, there were four

mixed method approaches (Beanlands et al., 2019; Chow et al., 2020; Ignacio et al., 2016; Karaca & Şişman, 2019), three quasi-experimental approaches (McCarthy et al., 2018; Terp, Hjärthag, & Bisholt, 2019; Yüksel & Yılmaz, 2020), one experimental (Frögéli et al., 2016), and one quantitative (Onan et al., 2018).

The purposes of each study were to determine the effectiveness of a resilience building program through stress reduction strategies. The specific intervention programs were different in every study except in two (Terp, Bisholt, & Hjärthag, 2019; Terp, Hjärthag, & Bisholt, 2019). While most intervention programs were different, nine specifically taught mindfulness and self-awareness techniques (Chow et al., 2020; Frögéli et al., 2016; Hurley et al., 2020; Stacey et al., 2017; Terp, Bisholt, & Hjärthag, 2019; Terp, Hjärthag, & Bisholt, 2019; van der Riet et al., 2015; van Vliet et al., 2018; Yüksel & Yılmaz, 2020), two taught self-care strategies (Snyder 2020; Stacey et al., 2017), and others taught other techniques such as mental rehearsal (Ignacio et al., 2016) and emotional intelligence training (Hurley et al., 2020). The interventions ranged from 70 minutes (Snyder, 2020) to 28 hours (Karaca & Şişman, 2019; Onan et al., 2018) and none of the interventions lasted longer than one semester. Five of the studies were focused during clinical rotations (Hurley et al., 2020; Ignacio et al., 2016; Karaca & Şişman, 2019; Liang et al., 2019; Stacey et al., 2017). Snyder (2020) incorporated coping techniques at the end of each mental health class over a semester.

To organize the outcomes of the interventions across the 16 research articles, three categories were used: relative to self, relative to others, and relative to program. Outcomes classified under the “relative to self” category were mindfulness/self-awareness, confidence, being present, and decreased perceived stress. Outcomes “relative to others” included empathy,

relationships with others, and communication. The “relative to program” included focus and performance outcomes.

Relative to Self

“Relative to self” outcome categories examine the influence of resilience interventions on the individual student. Four studies found that after the intervention, comparing pre-and post-tests, students had an overall decrease in perceived stress (Beanlands et al., 2019; Frögéli et al., 2016; Karaca & Şişman, 2019; Yüksel & Yılmaz, 2020), although one study did not find a statistically significant difference in stress symptoms before and after the intervention (Onan et al., 2018). The interventions also influenced mindfulness and self-awareness. In two studies, participants stated they were more aware of their feelings and body, despite not showing a statistical significance in mindfulness (Chow et al., 2020; Karaca & Şişman, 2019). Frögéli et al. (2016) found that mindfulness was increased from before the intervention to immediately after, as well as three months after the intervention. Several studies reported that students had an increase in self-awareness (Liang et al., 2019; van der Reit et al., 2015; van Vliet et al., 2018; Yüksel & Yılmaz, 2020). Being mindful and self-aware can lead to the ability to stay present in the moment. Four of the studies found improvement in their participants being able to stay present in stressful moments (Terp, Bisholt, & Hjärthag, 2019; van der Reit et al., 2015; van Vliet et al., 2018) with one study revealing that 98% of students could remain present (Karaca & Şişman, 2019).

Relative to Others

The outcome categories within “relative to others” examine the change the study participants experienced in their interactions with others after the resilience interventions. It is vital that nurses be able to connect and relate to their patients. Two studies found students to be

more empathetic toward their patients after participating in the intervention (Hurley et al., 2020; Stacey et al., 2017). Other studies found students able to connect more deeply with their fellow classmates (van Vliet et al., 2018) and to patients (van der Riet et al., 2015). In relation to connection, communication skills of students were improved in two studies (Hurley et al., 2020; Terp, Bisholt, & Hjärthag, 2019).

Relative to the Program

“Relative to the program” outcome categories examine the study participants’ positive changes in engagement with their nursing programs. Several studies showed that students had better focus after the intervention, which could lead to better problem-solving and is considered a positive coping strategy (Frögéli et al., 2016). The nursing and midwifery first-year students in the research by van der Riet et al. (2015) expressed an increased ability to focus on their studies, and McCarthy et al. (2018) found that nursing and midwifery students were able to successfully focus on the problem at hand. Some students recognized the importance of focusing on themselves to bring about better outcomes for their patients (van Vliet et al., 2018).

Use of Coping Skills

The stress management intervention in all the studies in this literature review taught coping skills to the study participants. These skills consisted of mindfulness and self-awareness skills, emotional intelligence and mental rehearsal training, and self-care strategies. Using the coping skills taught in the interventions is key to continued success. As indicated above, studies found that students understood the need to care for themselves by reducing their stress levels in order to be able to care for others (McCarthy et al., 2018; Onan et al., 2018; Snyder, 2020; Stacey et al., 2017; Terp, Bisholt, & Hjärthag, 2019; van der Riet et al., 2015). Coping skills were used in both the academic and personal settings (Karaca & Şişman, 2019; Stacey et al.,

2017). Many participants expressed feeling more equipped to handle stressors and succeed in nursing school (Chow et al., 2020; Hurley et al., 2020; Ignacio et al., 2016; McCarthy et al., 2018).

Discussion

The findings of the literature review exemplify the benefit of intentional stress management training and resilience-building in nursing programs. Through mindfulness, students can know themselves (Karaca & Şişman, 2019; Liang et al., 2019; van der Riet et al., 2015; van Vliet et al., 2018) as well as connect with their patients (Hurley et al., 2020; Stacey et al., 2017; van der Riet et al., 2015). Karaca & Şişman (2019) put it beautifully by saying mindfulness is “a bridge between professional life and inner emotional space” (p. 277).

The college experience alone is stressful (Pedrelli et al., 2015) and that stress is compounded by clinical placements (Labrague, McEnroe-Petite, Gloe et al., 2017). In addition, COVID-19 has added another layer of stress to college students, including student nurses, as students experience fear of getting the disease, sleep disturbances, and disruptions to their clinical placements (Romero-Blanco et al., 2020; Son et al., 2020; Ulenaers et al., 2021). If there was ever a time to invest in future nurses, it is now.

Because high levels of perceived stress can lead to burnout and job dissatisfaction, teaching nursing students coping skills will not only affect the individual but can also have implications for the health care field. With the shortage of nurses (American Association of Colleges of Nursing [AACN], 2020) and the anticipation of an expanding older population (National Institute of Health, 2016), the current demand for nurses is growing (Juraschek et al., 2019). Teaching nurses to be resilient can help keep them in the profession to fill the growing need for nurses (Harris et al., 2014; Stacey et al., 2017).

Review Summary

This review of the literature supports the need for and the effectiveness of resilience training in nursing schools. While change is rarely easy, it is imperative that nursing schools change the way they support their students in these times of upheaval in healthcare and society. If universities are truly in the business of producing a competent and effective nursing workforce, stress management and resilience training must be incorporated into every nursing curriculum across the country and around the globe.

It is recommended to study the long-term effects of resilience programs in nursing schools with nurses in the workforce because teaching resilience in nursing programs is a relatively new focus (Olvera Alvarez et al., 2019). It would be beneficial to determine if the current interventions have lasting effects, and to search for new ways to build long-enduring resilience in students via maintainable coping behaviors. The purpose of this project is to implement the evidence-based resilience program, *Changing Minds, Changing Lives (CMCL)*, to reduce stress levels and build resilience through education and positive coping strategies with second-semester nursing students at one university, and evaluate the feasibility, acceptability, and value of the intervention.

Theoretical Framework

The Knowledge-to-Action Framework (KTA; Graham et al., 2006) was used to guide this project. This framework outlines the process of acquiring knowledge and putting it into action. It was originally adopted in Canada to guide scientific research into clinical practice but was adapted to fit the setting of this education-based behavior change project.

The KTA framework is composed of two phases: the knowledge phase and the action cycle phase (see Appendix A). These two phases consist of multiple components. The

knowledge phase is shaped like a funnel and implies that the knowledge being learned is becoming more useful to the learner as it moves down the funnel. Knowledge inquiry begins the knowledge phase when the student is introduced to new knowledge. In this project, the nursing student was the learner and was introduced to research-based information and new resilience strategies in every program session. The learner then begins to synthesize the knowledge to determine how this information can apply to them. The third component of this phase is knowledge tools and products where the student is given tangible tools and strategies to apply the science that has been introduced.

Once the tools have been given, the action cycle phase begins. This part of the framework is dynamic in that the learner can enter the cycle at any point, and the different components of the cycle can influence another at varying degrees depending on the learner. Most learners enter the cycle when they identify a problem that needs addressing. In this case, it may be that the nursing student had an elevated level of unmanaged stress. They would evaluate the knowledge and its relevance to their problem. They would then adapt the knowledge to their own context. Once it is contextually adapted, most learners will identify any barriers to using the tools. The facilitators of the program took an active role in helping the learners identify these barriers so they could be overcome. The barriers are then evaluated, and the tools are changed to overcome the obstacles. Implementation then happens. The next step is to evaluate the new strategies that are in place. The participants were asked in each program session what tools they used during the week and to evaluate the effectiveness. If barriers were identified at this point, the facilitators helped the participant find an adapted strategy or different tool to accomplish the desired outcomes. The final step is to sustain the use of knowledge. The intention is that the cycle can

start again or can be re-entered at any point of the action cycle. This allows for the process within the framework to be adapted to the individual's learning needs.

Methods

Goals and Objectives

The purpose of the Doctor of Nursing Practice (DNP) project was to determine the feasibility, acceptability, and value of *CMCL* for undergraduate nursing students in one southeastern university. The DNP project was evaluated by the following goals, objectives, and outcomes.

Goal 1 Evaluate the feasibility of the *CMCL* among undergraduate nursing students.

Objective 1.a By November 2021, the Doctor of Nursing Practice (DNP) student conducted ten 1.25-hour program sessions.

Outcome 1.a.i At least 12 students consent to be part of the project.

Outcome 1.a.ii 80% of nursing student participants attended at least 80% of the program sessions.

Outcome 1.a.iii 80% of nursing students completed the at-home practice prior to coming to the program session 70% of the time.

Outcome 1.a.iv 80% of nursing students demonstrated knowledge to action as evidence by presenting their reflections of what they learned and how they can use it in their everyday life and future career.

Goal 2 Assess the acceptability of the *CMCL* among undergraduate nursing students.

Objective 2.a For each session of the program, the DNP student presented all five of components of the *CMCL* curriculum.

Outcome 2.a.i 80% of the students indicated they would recommend this program to incoming nursing students.

Outcome 2.a.ii 80% of students indicated the content was useful for decreasing stress.

Outcome 2.a.iii 80% of students indicated they used coping that is useful, for example, talking with friends, mindfulness, or writing down thoughts.

Outcome 2.a.iv 80% of students used their strengths.

Goal 3 Evaluate the value of the CMCL program to undergraduate nursing students.

Objective 3.a Throughout the 10-week program, the DNP student invited students to participate in an adapted version of CMCL.

Outcome 3.a.i 80% of students believed their investment in the program was beneficial.

Outcome 3.a.ii 80% of students believed they had increased their sense of belonging.

Outcome 3.a.iii 80% of students indicated they were able to participate with peers during the program.

Setting and Group Description

The project took place in a nursing department at a large university in the Appalachian Mountains in southeastern United States. The junior nursing student cohort consisted of 52 students in their second semester of the nursing program. In the first semester of the nursing program, the nursing students had completed a five-week intensive health assessment didactic course (three credits) and clinical rotation (one credit) in the summer semester of 2021. During the second semester of the nursing program, the students' workload increased significantly. The nursing students took a fundamental didactic and clinical course, a pharmacology course, and a pathophysiology course at three credits each, as well as a socialization to professional nursing course which was two credits. The potential elevated stress levels due to the increased workload made this project beneficial for all second semester students, because high stress levels cause poor outcomes in academic and clinical performances (Akhu-Zaheya et al., 2015; Ye et al., 2018).

Measurement

The post survey contained 17 questions. Ten questions used a 5-point Likert scale with the following range: decreased significantly (1), decreased some (2), neutral (3), increased some (4), and increased significantly (5). One question had a three-answer option (no, not sure, yes). Five questions were multiple choice with various answer choices, and the last question was an open-ended question providing an opportunity for additional comments. The survey took the participants less than five minutes to complete. No student identifiers were attached to the survey.

The survey was designed by the DNP student in collaboration with another DNP student and two DNP professors. The survey was created to specifically evaluate the *CMCL* program with undergraduate nursing students, so it was not widely tested for reliability and validity. The survey was tested with two nursing students at UMass Amherst who had recently completed the *CMCL* program. The two students took the survey and provided feedback. Adjustments to the survey were made according to the feedback received (Appendix B).

The demographic questionnaire was used to collect basic demographic data (see Appendix C). The questionnaire was administered electronically using Qualtrics and consisted of five multiple-choice questions. The content of the questions included age, racial and/or ethnic group identity, gender identity, work status, financial aid status, and if they were a first-generation college student.

Implementation

The DNP project consisted of a pre-intervention phase, an intervention phase, and a post-intervention phase. The pre-intervention phase consisted of gaining project approval, advertising the project, and recruiting for the project. The intervention phase contained the first nine weeks

of the 10-week resiliency program, wherein the participants learned the theory of stress management and resilience building and then practiced associated skills. The post-intervention phase began during the 10th week of the resiliency program, and included collecting, analyzing, and compiling data into a report. Once the post-intervention phase ended, the project was completed.

The project started with the DNP student presenting the project proposal to the chair of the nursing department in the early spring of 2021. A verbal approval was obtained by the department chair at that time, followed by a letter of support. A presentation of the project proposal was then given to interested nursing faculty with chair approval. The DNP student then solicited feedback and questions from the nursing faculty. A mentor for the DNP student within the nursing faculty was identified and secured. The project was submitted for approval to the Internal Review Board (IRB) at both the target university and the DNP student's place of learning; exempt status was received from both (see Appendix D).

At the end of the spring semester in 2021 the junior nursing students (n = 52) in the nursing program were invited to participate in the project. Those students who were in other stages of the program were excluded. The recruitment of participants by the DNP student started during the nursing program orientation at the end of the spring semester. Students were given an overview of the project and invited to a more detailed informational session in the fall of 2021. The program was advertised throughout the summer semester by the DNP student through posters, handouts, and emails. Advertising and recruitment continued up to the informational session in the beginning of the fall semester of 2021.

While the invitation to participate in the program was given to all 52 incoming nursing students, 46 attended the informational session. The details of the program were presented by the

DNP student and questions were answered. The goal of 20 students was set, however, small groups of 8 - 10 students were needed to ensure participation of each member. Therefore, two additional facilitators were secured and trained to implement the program.

Participation was strictly voluntary. A gift card of \$25 was offered as an incentive to those who completed the program. Students did not receive any academic credit for participating in the program, and there were no negative consequences for students who chose not to participate.

The intervention phase of the project began with the first session of the program during the third week of the fall semester of 2021. The educational intervention was a resilience program using the *CMCL* curriculum. There was a total of 10 sessions which were held in a classroom on the university campus. The 10-week program focused on managing stress and building resilience through a strength-based approach. Near the beginning of the 10-week program, the participants took a student version of the CliftonStrengths Assessment (<https://www.gallup.com/cliftonstrengths>). The results of this assessment were referenced throughout the program to help participants use their strengths to build resilience. The topical outline of the program and weekly session content can be seen in Appendix E. The weekly sessions had six parts and were synchronous, face-to-face, 1.25-hour sessions. Each session started with a time to check-in with one another and a mindfulness skill such as body scans, yoga stretches, or breathing exercises. This was followed by evidence-based presentations about the neurophysiology of stress, evidence of resilience, and leadership topics. The participants were then given a writing prompt and five minutes for reflective writing. In small groups of 10 or fewer, participants were provided the opportunity to share their writings and respond to others' writings. The sessions ended with a time of reflection called "three A's" where the participants

were invited to appreciate something they learned in that session, affirm someone or something, or share an appraisal of what they heard. The sixth part of the weekly sessions occurred during the week, outside of the face-to-face meetings. Each week the students were invited to engage in an at-home practice by intentionally using their strengths and reading a chapter in the book *Just One Thing* by Rick Hanson, practicing the skills presented in the chapter, and writing a short reflection on the usefulness of the skill. These reflections were shared the following week at the beginning of the session during the check-in time.

The post-intervention phase started on the 10th week of the resilient program. On the last day of the program each participant was invited to share a slideshow presentation highlighting what they learned from the program, attributes they found useful, and how one might use these skills in their future nursing career. The presentation was a cumulative reflection of what each participant gleaned throughout the program. Gathering information through individual participant presentations had specifically been used with the *CMCL* intervention in other settings (Chandler et al., 2020; Helling & Chandler, 2019). The three program facilitators listened to each student presentation and took notes. The data from the presentations helped determine the acceptability and value of the program to the participants.

Following the participant presentations on the final day of the program, a post-survey and demographic questionnaire was completed by each participant using a phone or laptop. The post-survey was administered electronically using Qualtrics to obtain feedback on the feasibility, acceptability, and value of the program. Upon completion of the program each student who attended eight out of the 10 program sessions and participated in the survey, questionnaire, and presentations received a \$25 electronic gift card.

Data Analysis

The feasibility, acceptability, and value of the DNP project was measured using post-surveys, questionnaires, and participant presentations. All the data from the surveys and questionnaires were exported from Qualtrics to Microsoft Excel. The data were reviewed for completeness, no missing data were noted. One question in one survey had multiple answers indicated. That one particular response was removed. Data was analyzed in Microsoft Excel using descriptive statistics to evaluate the program. The aggregate data of the responses was examined for each survey item. The data was described using central tendency and deviation statistics.

The facilitators' written notes on the participants' presentations were transcribed into Microsoft Excel by the DNP student. The three sets of notes, along with the participants' slide show presentations, were analyzed. The data was reviewed for content and common elements identified. The content was then organized into themes and categories with examples and quotes. A second member of the project reviewed the data and made suggestions. Four themes were finalized, and categories were indicated.

The data from the surveys and presentations was analyzed, report was compiled, and findings disseminated to the university nursing department and presented at the Scholarship Day at UMass in the spring of 2022.

Protection of Human Subjects

To ensure the protection of the participants, IRB approval was obtained from both the university where the project took place and the university where the DNP student was enrolled. Both exemptions were obtained in the pre-intervention phase prior to initiating the project. The Health Insurance Portability and Accountability Act of 1996 was the overarching guide for

protecting the privacy and protection of the participants even though no health information was collected from the participants. Additionally, all the data collected was aggregated and no identifying information was attributed to the individual participants. There were no student identifiers on the survey or questionnaire data collected. Student attendance and presentation data was kept in separate electronic files and was kept in the DNP student's laptop. The laptop was password protected and kept in a locked building. Only the DNP student had access to the laptop and data.

Additionally, in the beginning of the program, the participants discussed and agreed as a group that the information shared during the program would stay within the group. Since there was a potential for sharing of personal information throughout the program in the reflective writings and presentations, the participants were reminded regularly to respect the privacy of the others in the group.

The risks to the participants included potentially sensitive topics covered in the sessions and the sharing of their reflections. During the program, no participant had an emotional or physical triggered response, and no immediate support was needed in the way of the university counseling services emergency number.

Results

Purpose of this project was to evaluate the feasibility, acceptability, and value of the *Changing Minds, Changing Lives (CMCL)* program. The DNP project was carried out over one year with the 10-week resilience intervention offered in the fall of 2021. Fifteen undergraduate nursing students in the second semester of their junior year participated. Data was gathered using a post-survey and participant presentations.

Demographics

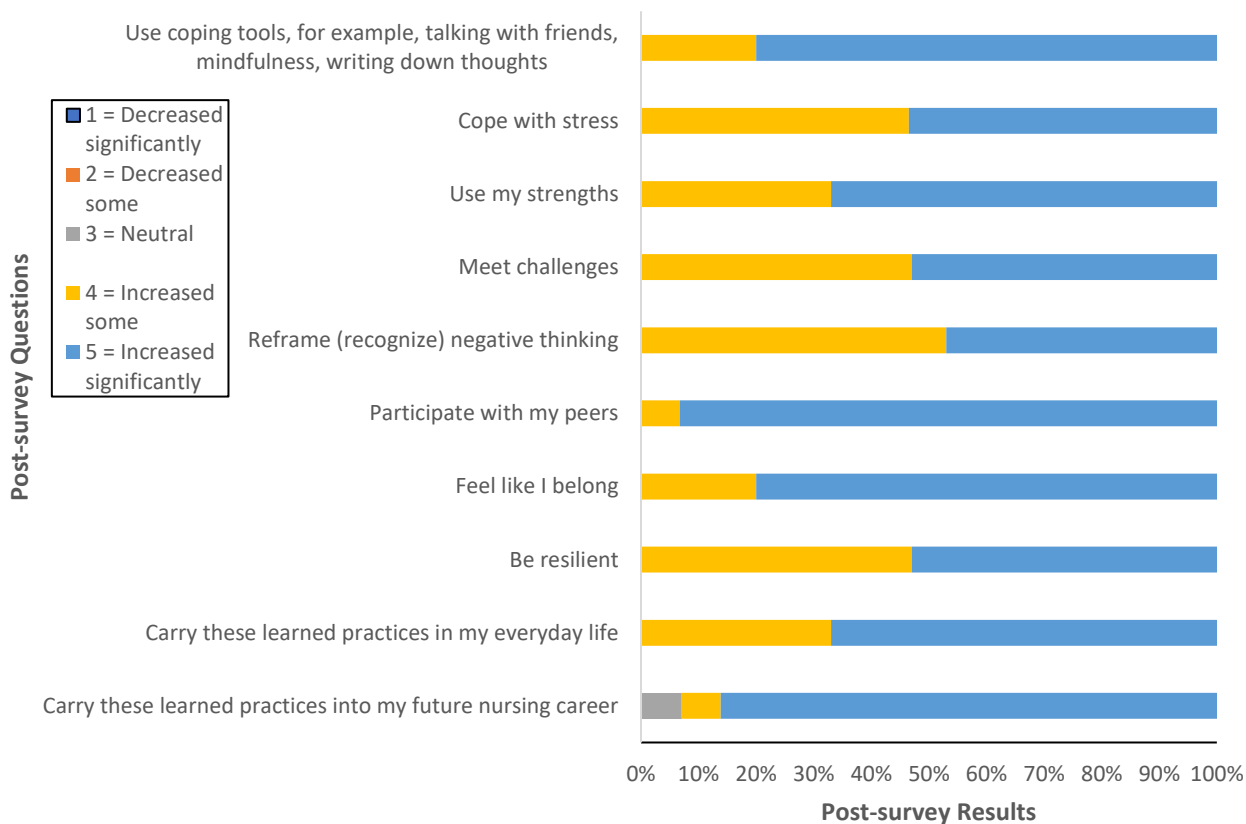
The five-question demographic questionnaire was used for descriptive purposes. The participant ages ranged from 19 to 23 years old. Fourteen participants identified as female and one as male. The racial and ethnic groups represented were white (n = 11), Hispanic/Latino/Spanish origin (n = 2), Asian (n = 1), and Asian and White (n = 1). Most of the participants were not employed (n = 14) and five received financial aid. Four were first-generation college students.

Post-survey

As per the results of the post survey, the participants found the *CMCL* program feasible, acceptable, and valuable (see Figure 1). Of the 15 respondents, all found the program helpful (very helpful, n = 11; helpful, n = 4) and all 15 would recommend the program to incoming nursing students. All participants perceived an increase in their ability to participate with their peers (mean = 4.93; SD = 0.25). All participants reported an increased sense of belonging (mean = 4.80; SD = 0.40). Most participants (n = 12) felt they had a significant increase in their ability to use coping tools (mean = 4.80, SD = 0.40) and would use what they learned in their nursing careers (n = 14, mean = 4.80, SD = 0.54). One participant was neutral about their ability to use what they learned in their future nursing career. All participants perceived an increase in their ability to use their strengths (increased significantly [n = 10], increased some [n = 5]). Most of the participants reported a significant increase in their ability to meet challenges (n = 8) and be resilient (n = 8). The majority of the participants perceived an increase in their ability to cope with stress (n = 8, mean = 4.47, SD = 0.50) and reframe negative thinking (n = 8, mean = 4.47, SD = 0.50). None of the participants reported a decrease in any area.

Figure 1

Post-survey results (n=15) answering the question “As a result of this workshop, I think that my ability to...”



Two additional questions were used to determine the value of the program. The participants were asked what were the most, and least, meaningful learning strategies of the weekly sessions. Results of the two questions showed that of the six strategies (check-in, centering practice, scientific topic presentation, writing response, three A's, and at-home practice), the most meaningful was the at-home practice (n = 5), followed by the centering practice (n = 4), writing response (n = 3), check-in (n = 2), and the three A's (n = 1). The least meaningful learning strategies were the scientific topic presentation (n = 5), the three A's (n = 3),

the at-home practice (n = 2), followed by the centering practice (n = 2), writing response (n = 2), and the check-in (n = 1).

Two of the 17 questions were intended to determine the feasibility of the program. The participants were asked how many at-home practice assignments they completed (e.g. using their strengths and/or reading a chapter in *Just One Thing*). The maximum number of possible at-home practice assignments was nine (one per week of the program) and the minimum was zero. Of the participants, 53.3% (n = 8) said they completed their at-home practice seven to nine times, 40.0% (n = 6) four to six times, and 6.7% (n = 1) zero to three times. The participants were also asked their opinion on the optimal frequency of the program sessions. Seventy-three percent (n = 11) indicated once a week was optimal, and 20% (n = 3) stated twice a week would be optimal. One respondent chose all four options (twice a week, once a week, every other week, once a month). When examining the attendance to evaluate the feasibility of the program, 33% (n = 5) attended 100% of the sessions, 27% (n = 4) attended 90% of the sessions, 33% (n = 5) attended 80% of the sessions, and 6.7% (n = 1) attended 70% of the sessions.

Presentations

At the end of the program, 14 participants shared with the group through presentations. One participant had a personal emergency and was not able to share a presentation. The presentations were guided by the following three questions:

1. What did you take away from the program?
2. What did you use from the program, and how did it work for you?
3. How can you use what you learned in your life and in your future nursing career?

The participants were encouraged to be creative with their presentation style. For example, one participant wrote a poem, one participant shared a reflection writing from the program, one

participant created three picture collages depicting different personal phases of their nursing school journey in relation to the program, and one created a music playlist to describe their journey. Every participant presented a visual and verbal presentation. From these visual and verbal presentations, four themes were identified from the participants' final presentations: enhanced self-awareness, greater connection with others, improved self-efficacy, and use of stress management skills. Within these themes, categories were formed with examples and quotes (see Table 2).

Table 2

Themes, categories, examples, and quotes from the participants' presentations (n = 14).

Themes	Categories	Examples	Quotes
Enhanced self-awareness	Being present	Breathing Acknowledge emotions	"I often get caught up in the stress of life and this helped me re-center." "Breathe!"
	Aware of thoughts	Being kind to self	"I used my strengths to be nicer to myself."
	Knowing strengths	Using Strengths	"Finding my strengths was huge and a really, really great help!" "[This program] helped me understand strengths and weaknesses."
Greater connection with others	Opening to people	Could be open and honest with classmates Can ask for help	"I learned being vulnerable is not a weakness." "I'm surrounded by strong people, good support."
	Connecting with peers	Realize peers are going through the same things Not alone	"Friends helped [me] understand I'm not alone."
Improved self-efficacy	Getting through difficult times	Can use strengths to manage stress	"Even when I doubt myself and my abilities, I know I can keep doing it." "Knowledge is power, practice is strength." "Some things need to fall apart to be built back even stronger."

	Setting goals	Go for what I want	"It's okay to fail, it's not ok to quit."
	Sense of control	Can control stress levels	"What I took away from this class is that how we react to stress is entirely up to us." "I often feel like what I 'm doing is not enough but this was a reminder that I can only control what I can control."
Use of stress management skills	Mindfulness	See beauty Stepping back from situation Taking breaks Journaling Slow down Prayer Smile	"FOMO [fear of missing out] is my biggest thing and taking a day per week for myself helps me be more present." "I learned it's ok to take breaks, which I forgot and got burnt out really quick." "Once I started doing [mindfulness] exercises, I realized how much it helped me concentrate."
	Self-care	Taking walks Being outside Meal planning	"Put your well-being first and don't let the stress of life consume you!"

The four themes in Table 2 are discussed in further detail below, using examples and quotations. The quotations are taken from the verbal presentations as well as the presentation slides.

Enhanced Self-awareness

Self-awareness was a common practice throughout the program. Every session had a centering practice that emphasized self-awareness (e.g., body scans, breathing exercises, yoga, etc.). Several scientific topics emphasized self-awareness (e.g., positive thought process, reframing, adverse childhood experiences, etc.). In addition, participants were invited to take the CliftonStrengths assessment in the beginning of the program and these results were used and emphasized throughout the program. The categories in this theme included being present, being aware of thoughts, and knowing strengths. One participant stated, "I used my strengths to be

nicer to myself.” Another participant indicated, “I often get caught up in the stress of life and this helped me re-center.” The participant author of the poem *Resilience* wrote

It is not just about getting back up
it goes deeper than that
It is about learning what caused your blow up

It's about realization
That the strengths you need
Have been inside you since your creation

It's taking an automatic thought
And redirecting it
Once it is caught

Greater Connection with Others

While social support was directly highlighted in one session, the program was designed to let the participants experience the effects of received support via reception of positive feedback from peers after the sharing of personal written reflections. Additionally, the weekly sessions were designed to be a safe place where the participants could relax and be themselves without being judged. The safe environment helped the participants build social connections. The participants realized that others were struggling with issues similar to their own. This realization allowed participants to open up and be more vulnerable. The importance of connecting with their fellow classmates as well as staying connected with their families came through in participants' presentations. One participant learned that “being vulnerable is not a weakness.” Another said, “Friends helped [me] understand I'm not alone.”

Improved Self-efficacy

Self-efficacy, defined by Albert Bandura, refers to “people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (Bandura, 1994, p.2). Participants realized that they could use their strengths to manage their stress. Another identified category in relation to self-efficacy was finding power

in setting goals. Many participants also learned that they had control over what they thought and how they reacted to stress. One participant stated, “how we react to stress is entirely up to us.” Another participant realized the limitations to their control and found strength in only focusing on what they could control.

Use of Stress Management Skills

Stress management skills were demonstrated in the weekly sessions in the form of centering exercises and reflective writing. Participants were also invited to try coping practices during the week with the “at-home practice” assignments. Many students indicated that what they took from the program came from the book. For example, one student talked about taking in the beauty around them as they drove to and from their clinical rotation, which is an act of being present. Another participant emphasized the chapter called “Smile” and indicated being increasingly mindful of smiling and finding the positive effects of their mood. Several students emphasized self-care and stated that they started walking outside more. One participant, in response to the weekly reflective writings, stated that they were going to continue journaling because it gave them perspective on situations. Other students talked about stepping back from a stressful situation to gain perspective and to take breaks. Stepping back and taking breaks are stress management techniques as well as self-awareness skills.

Discussion

The DNP project was designed to evaluate the feasibility, acceptability, and value of the *CMCL* program with 15 undergraduate nursing students at one university. The results indicate that the resilience program using *CMCL* was highly acceptable, valued, and feasible. The results of this project show that *CMCL* is a promising intervention for reducing stress levels and

building resilience through education and positive coping strategies in undergraduate nursing students.

The *CMCL* program is designed to build resilience in people through learned coping skills and the use of individual strengths to manage life's challenges. Building resilience in nursing students can provide the skills needed to cope with the stressors of nursing school and the nursing career. The lack of resilience is one contributing factor to the attrition rate of nursing students and new graduate nurses (Ching et al., 2020; Hughes et al., 2021; Van Hoek et al., 2019), and contributes to the global nursing shortage (Guo et al., 2019; Hudgins, 2015). Due to various barriers, many nursing schools do not intentionally help students build resilience (Cochran et al., 2020). Considering the global nursing shortage crisis, it is imperative that nursing schools find a feasible, acceptable, and valued way for nursing students to learn and build resilience. Intentional resilience training can provide nursing students the tools necessary to build their resilience and carry them into their nursing career with the hope of strengthening the nursing workforce (Ching et al., 2020; Hughes et al., 2021). This project shows that the *CMCL* program can be used by nursing schools to support nursing students' growth of resilience.

A study by Clark and Gorton (2019) emphasized the importance of teaching nursing students resilience skills so they can better manage stressful situations as new nurses. According to the Knowledge-to-Action Framework that this project was built upon, adoption of resilience skills would indicate that the student nurse has been introduced to the skills, found the skill(s) that fit them, and has implemented the skill(s) into their life. Many of the students in this program indicated that they would carry the resilience skills they learned from the *CMCL* program into their future nursing careers. This mindset is supported in other studies from the

literature review that show the long-term effects of undergraduate nursing resilience training on nurses' careers (Stacey et al., 2017; Terp, Hjärthag, & Bisholt, 2019).

Social support plays an important role when nursing students effectively cope with the stressors of nursing school (Mills et al., 2020; Yıldırım et al., 2017). As a result of the *CMCL* program, the students displayed an increased ability to participate with their peers. Consistent with another study from the literature review (van Vliet et al., 2018), students indicated that they were better able to connect with other students, and that they realized that they have support around them that they hadn't seen before. Getting into nursing school is very competitive, as students try to out-perform other nursing applicants. In this program, the nursing students were able to set aside their competitiveness and see their peers as allies rather than competitors. This shift in thinking made students realize that they were no longer competing against their peers but rather that they were on the same side. This paradigm shift brought a new sense of support to the program participants.

The students who participated in this project emphasized the importance of knowing their strengths in managing stress and feeling empowered to use their strengths. Using individual strengths in a time of adversity is a resilient skill that leads to problem solving (Cederbaum & Klusaritz, 2014). Cederbaum & Klusaritz (2014) further support using a strength-based approach with nursing students in the clinical setting, detailing positive outcomes such as empowerment and improved relationships. The *CMCL* program teaches resilience for individuals' lives in general, but the knowledge gained can be applied to specific areas of nursing, including the clinical setting. This is important considering the high levels of stress that clinical rotations produce in nursing students (Labrague, McEnroe-Petitte, Gloe et al., 2017).

All of the nursing students in this program expressed using more positive coping skills as a result of the program. This finding is consistent with studies in the literature review that show nursing students can use positive coping skills to reduce their stress (Karaca & Şişman, 2019; Stacey et al., 2017). The students in this project indicated using skills such as exercise, breathing techniques, journaling, taking breaks, being in nature, good nutrition, and connecting with others to reduce stress levels. Reducing stress and building resilience in nursing students through positive coping skills is consistent with other studies (Liang et al., 2019; Moore et al., 2021; Stacey et al., 2017; van der Riet et al., 2015; van Vliet et al., 2018).

The substantial attrition during the *CMCL* program is concerning. Of the 29 students who started the program, 20 remained enrolled at seven weeks, and 15 students completed the program. The high attrition rate of 48% ($n = 14$), according to the students who did not continue, may be attributed to not having enough time, feeling that adding to their schedule was not practical, and having personal issues. These echo the reasons that nursing students more broadly leave nursing school: heavy workloads, juggling work and personal life, and demands on the student's time (Galdino et al., 2020; Mills et al., 2020). While students who completed the program reported that it warranted the time it took from their busy schedules, students who did not complete the program prioritized the demands of nursing school over *CMCL*.

Recommendations for Future Practice

The DNP project provides support that the *CMCL* program is effective and acceptable for use with nursing students. The attrition of nursing students indicates that the format used for the project may not be feasible for some students considering their busy schedules. Because *CMCL* is effective, it is important to adapt the training into the curriculum to make it more accessible for

all students. Integration of the program will reduce the perceived workload of a volunteer option (Moore et al., 2021).

The Knowledge-to-Action Framework that guided this project emphasized the need to take in new knowledge, evaluate it, and then practice it before it can be adopted. Hughes et al. (2021) suggests a shift from knowledge-based learning to integrative practice-based learning when teaching resilience skills to nursing students. Nursing instructors have integrated resilience skills into the classroom (Hughes et al., 2021; Moore et al., 2021; Snyder 2020) and into the clinical setting (Ignacio et al., 2016; Liang et al, 2019; Stacey et al., 2017; Stacey et al., 2020) to enhance the learning and adoption of resilience strategies. As indicated by this project's survey responses, the didactic portion of the resilience training was the least effective part of this project. Nursing schools should discover ways to integrate the practice of resilience into classes and clinical rotations to facilitate the adoption of resilience skills without the need for a strictly didactic component.

Conclusion

Nursing students experience high levels of stress in nursing school. Unmanaged stress can lead to poor scholastic and clinical outcomes. Resilience can be learned by nursing students and can mitigate poor outcomes. Resilient nursing students will not only have positive outcomes during their education, but also as they start their nursing careers. The findings of this project contribute to a growing body of evidence to support teaching resilience skills to undergraduate nursing students to reduce attrition in the educational setting and as they transition into the nursing career. The purpose of *CMCL* is to build resilience and teach stress management skills. Through this project, *CMCL* was shown to be an acceptable and valued program for nursing students. Exploring options to make this program more feasible for all nursing students at this

university is the next step in using this evidence-based program with all nursing students. One option is to integrate the program into the nursing curriculum. Finding ways to make *CMCL* accessible to all nursing students could have positive effects for the students, the nursing school, and the future nursing workforce.

References

- Admi, H., Moshe-Eilon, Y., Sharon, D., & Mann, M. (2018). Nursing students' stress and satisfaction in clinical practice along different stages: A cross-sectional study. *Nurse Education Today*, 68, 86-92. <http://doi.org/10.1016/j.nedt.2018.05.027>
- Akhu-Zaheya, L., Shaban, I., & Khater, W. (2015). Nursing students' perceived stress and influences in clinical performance. *International Journal of Advanced Nursing Studies*, 4(2), 44-48. <http://doi.org/10.14419/ijans.v4i2.4311>
- Al-Gamal, E., Alhosain, A., & Alsunaye, K. (2017). Stress and coping strategies among Saudi nursing students during clinical education. *Perspectives in Psychiatric Care*, 54(2), 198-205. <http://doi.org/10.1111/ppc.12223>
- American Association of Colleges of Nursing. (2020). *Fact sheet: Nursing shortage*. <https://www.aacnnursing.org/news-information/fact-sheets/nursing-shortage>
- Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), *Encyclopedia of human behavior* (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], *Encyclopedia of mental health*. San Diego: Academic Press, 1998)
- Beanlands, H., McCay, E., Fredericks, S., Newman, K., Rose, D., Santa Mina, E., Schindel Martin, L., Schwind, J., Sidani, S., Aiello, A., & Wang, A. (2019). Decreasing stress and supporting emotional well-being among senior nursing students: A pilot test of an evidence-based intervention. *Nurse Education Today*, 76, 222-227. <http://doi.org/10.1016/j.nedt.2019.02.009>
- Bhurtun, H. D., Azimirad, M., Saaranen, T., & Turunen, H. (2019). Stress and coping among nursing students during clinical training: An integrative review. *Journal of Nursing Education*, 58(5), 266-272. <http://doi.org/10.3928/01484834-20190422-04>

- Biggs, A., Brough, P., & Drummond, S. (2017). Lazarus and Folkman's psychological stress and coping theory. In Cooper C. L., & Campbell Quick, J. (Ed.), *The handbook of stress and health: A guide to research and practice* (1st ed., pp. 351-364). John Wiley & Sons, Ltd.
- Cederbaum J. & Klusaritz H. A. (2009). Clinical instruction: Using the strengths based approach with nursing students. *Journal of Nursing Education*, 48(8), 422-428.
<http://doi.org/10.3928/01484834-20090518-01>
- Chandler, G. E., Kalmakis, K. A., Chiodo, L., & Helling, J. (2020). The efficacy of a resilience intervention among diverse, at-risk, college athletes: A mixed-methods study. *Journal of the American Psychiatric Nurses Association*, 26(3), 269-281.
<http://doi.org/10.1177/1078390319886923>
- Ching, S. S. Y., Cheung, K., Hegney, D., & Rees, C. S. (2020). Stressors and coping of nursing students in clinical placement: A qualitative study contextualizing their resilience and burnout. *Nurse Education in Practice*, 42, 1-7. <http://doi.org/10.1016/j.nepr.2019.102690>
- Chow, K. M., Tang, F. W. K., Tang, W. P. Y., & Leung, A. W. Y. (2020). Resilience-building module for undergraduate nursing students: A mixed-methods evaluation. *Nurse Education in Practice*, 49, Article e102912. <https://doi.org/10.1016/j.nepr.2020.102912>
- Clark, C. M. & Gorton, K. L. (2019). Cognitive rehearsal, HeartMath, and simulation: An intervention to build resilience and address incivility. *Journal of Nursing Education*, 58(12), 690-697. <http://doi.org/10.3928/01484834-20191120-03>
- Cochran, K. L., Moss, M., & Mealer, M. (2020). Prevalence of coping strategy training in nursing school curricula. *American Journal of Critical Care*, 29(2), 104-110.
<http://doi.org/10.4037/ajcc2020287>

- Deary, I. J., Watson, R., & Hogston, R. (2003). A longitudinal cohort study of burnout and attrition in nursing students. *Journal of Advanced Nursing*, 43(1), 71-81.
<http://doi.org/10.1046/j.1365-2648.2003.02674.x>
- Devi, H. M., Purborini, N., & Chang, H. J. (2021). Mediating effect of resilience on association among stress, depression, and anxiety in Indonesian nursing students. *Journal of Professional Nursing*, 37, 706-713. <http://doi.org/10.1016/j.profnurs.2021.04.004>
- Frögéli, E., Djordjevic, A., Rudman, A., Livheim, F., & Gustavsson, P. (2016). A randomized controlled pilot trial of acceptance and commitment training (ACT) for preventing stress-related ill health among future nurses. *Anxiety, Stress, & Coping*, 29(2), 202-218.
<http://doi.org/10.1080/10615806.2015.1025765>
- Galdino, M. J. Q., Almeida, L. P. B. M., Silva, L. F. R., Cremer, E., Scholze, A. R., Martins, J. T., & Haddad, M. C. F. L. (2020). Burnout among nursing students: A mixed method study. *Investigacion y Educacion in Enfermeria*, 38(1).
<http://doi.org/10.17533/udea.iee.v38n1e07>
- Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W., & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *The Journal of Continuing Education in the Health Professions*, 26(1), 13-14. <http://doi.org/10.1002/chp>.
- Guo, Y., Plummer, V., Lam, L., Wang, Y., Cross, W., & Zhang, J. (2019). The effects of resilience and turnover intention on nurses' burnout: Findings from a comparative cross-sectional study. *Journal of Clinical Nursing*, 28, 499-508.
<http://doi.org/10.1111/jocn.14637>

- Gurková, E. & Zeleníková, R. (2018). Nursing students' perceived stress, coping strategies, health and supervisory approaches in clinical practice: A Slovak and Czech perspective. *Nurse Education Today*, 65, 4-10. <https://doi.org/10.1016/j.nedt.2018.02.023>
- Hanson, R. (2011). *Just one thing*. New Harbinger Publications.
- Harris, R. C., Rosenberg, L., & O'Rourke, M. E. G. (2014). Addressing the challenges of nursing student attrition. *Journal of Nursing Education*, 53(1), 31-37. <http://doi.org/10.3928/01484834-20131218-03>
- Helling, J. & Chandler, D. E. (2019). Meeting the psychological health & growth needs of black college students: Culture, resonance and resilience. *Journal of College Student Psychotherapy*, 35(2), 152-180. <https://doi.org/10.1080/87568225.2019.1660291>
- Hudgins, T. A. (2015). Resilience, job satisfaction and anticipated turnover in nurse leaders. *Journal of Nursing Management*, 24(1), E26-E29. <https://doi.org/10.1111/jonm.12289>
- Hughes, V., Cologer, S., Swoboda, S., & Rushton, C. (2021). Strengthening internal resources to promote resilience among prelicensure nursing students. *Journal of Professional Nursing*, 37, 777-783. <https://doi.org/10.1016/j.profnurs.2021.05.008>
- Hurley, J., Hutchinson, M., Kozlowski, D., Gadd, M., & van Vorst, S. (2020). Emotional intelligence as a mechanism to build resilience and non-technical skills in undergraduate nurses undertaking clinical placement. *International Journal of Mental Health Nursing*, 29(1), 47-55. <http://doi.org/10.1111/inm.12607>
- Ignacio, J., Dolmans, D., Scherpbier, A., Rethans, J. J., Lopez, V., & Liaw, S. Y. (2016). Development, implementation, and evaluation of a mental rehearsal strategy to improve clinical performance and reduce stress: A mixed methods study. *Nurse Education Today*, 37, 27-32. <http://doi.org/10.1016/j.nedt.2015.11.002>

- Juraschek, S. P., Zhang, X., & Ranganathan, V. (2019). Republished: United States registered nurse workforce report card and shortage forecast. *American Journal of Medical Quality*, 34(5), 473-481. <https://doi.org/10.1177/1062860619873217>
- Labrague, L. J., McEnroe-Petitte, D. M., Gloe, D., Thomas, L., Papathanasiou, I. V., & Tsaras, K. (2017). A literature review on stress and coping strategies in nursing students. *Journal of Mental Health*, 26(5), 471-480. <http://doi.org/10.1080/09638237.2016.1244721>
- Labrague, L. J., McEnroe-Petitte, D. M., Papathanasiou, I. V., Edet, O. B., Tsaras, K., Christos, K. F., Fradelos, E. C., Rosales, R. A., Cruz, J. P., Leocadio, M., Lucas, K., & Vera S. (2017). A cross-country comparative study on stress and quality of life in nursing students. *Perspectives in Psychiatric Care*, 54, 469-476. <http://doi.org/10.1111/ppc.12248>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Liang, H. F., Wu, K. M., Hung, C. C., Wang, Y. H., & Peng, N. H. (2019). Resilience enhancement among student nurses during clinical practices: A participatory action research study. *Nurse Education Today*, 75, 22-27.
<http://doi.org/10.1016/j.nedt.2019.01.004>
- Kaplan, L. (n.d.). Framework for how to read and critique a research study. *American Nurses Association*.
<https://www.nursingworld.org/~4afdfd/globalassets/practiceandpolicy/innovation--evidence/framework-for-how-to-read-and-critique-a-research-study.pdf>
- Karaca, A. & Şişman, N. Y. (2019). Effects of a stress management training program with mindfulness-based stress reduction. *Journal of Nursing Education*, 58(5), 273-280.
<http://doi.org/10.3928/01484834-20190422-05>

- Kovner, C. T., Brewer, C. S., Fatehi, F., & Jun, J. (2014). What does nurse turnover rate mean and what is the rate? *Policy, Politics, and Nursing Practice*, 15, 64-71.
<http://doi.org/10.1177/1527154414547953>
- McArthur, L. H., Fasczewski, K. S., Farris, A. R., & Petrone, M. (2020). Use and perceptions of a campus food pantry among food insecure college students: An exploratory study from Appalachia. *Journal of Appalachian Health*, 2(2), 7-23.
<http://doi.org/10.13023/jah.0202.02>
- McCarthy, B., Trace, A., O'Donovan, M., O'Regan, P., Brady-Nevin, C., O'Shea, M., Martin, A. M., & Murphy, M. (2018). Coping with stressful events: A pre-post-test of a psycho-educational intervention for undergraduate nursing and midwifery students. *Nurse Education Today*, 16, 273-280. <http://doi.org/10.1016/j.nedt.2017.11.034>
- Mills, A., Ryden, J., & Knight, A. (2020). Voices of undergraduate student nurses. *British Journal of Nursing*, 29(15), 897-904. <http://doi.org/10.5539/gjhs.v5n5p153>
- Moore, M. F., Montgomery, L., & Cobbs, T. (2021). Increasing student success through in-class resilience education. *Nurse Education in Practice*, 50, Article 102948.
<https://doi.org/10.1016/j.nepr.2020.102948>
- National Institute of Health. (2016). *World's older population grows dramatically*.
<https://www.nih.gov/news-events/news-releases/worlds-older-population-grows-dramatically>
- Olvera Alvarez, H. A., Provencio-Vasquez, E., Slavich, G. M., Laurent, J. G. C., Browning, M., McKee-Lopez, G., Robbins, L., & Spengler, J. D. (2019). Stress and health in nursing students: The nurse engagement and wellness study. *Nursing Research*, 68(6), 453-463.
<http://doi.org/10.1097/NNR.0000000000000383>

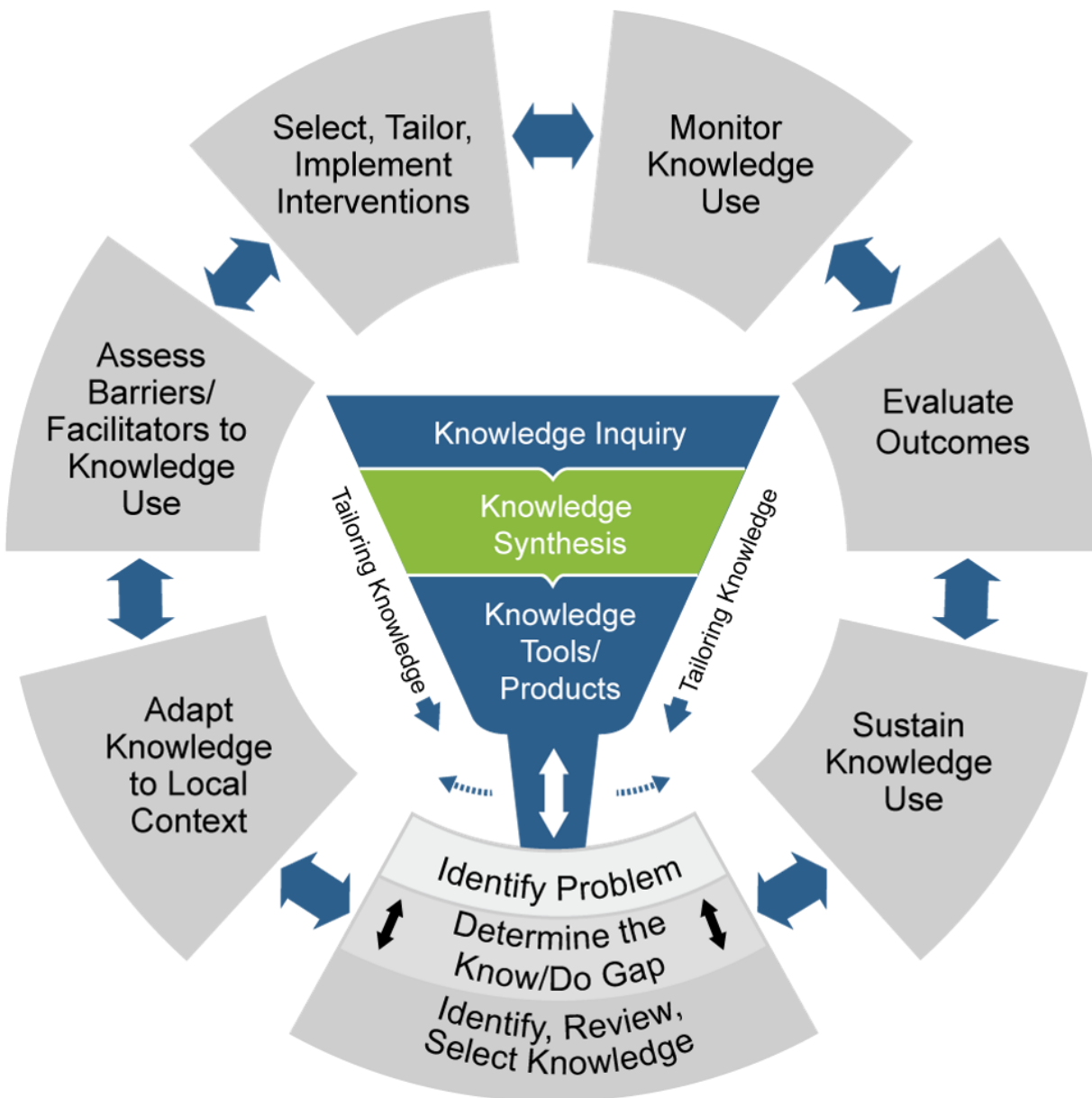
- Onan, N., Karaca, S., & Barlas, G. U. (2018). Evaluation of a stress coping course for psychological resilience among a group of university nursing students. *Perspectives in Psychiatric Care*, 55(2), 233-238. <http://doi.org/10.1111/ppc.12340>
- Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: Mental health problems and treatment considerations. *Academic Psychiatry*, 39(5), 503-511. <http://doi.org/10.1007/s40596-014-0205-9>
- Romero-Blanco, C., Rodríguez-Almagro, J., Onieva-Zafra, M. D., Parra-Fernández, M. L., Prado-Laguna, M. D. C., Hernández-Martínez, A. (2020). Sleep pattern changes in nursing students during the COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, 17(14), Article 5222. <https://doi.org/10.3390/ijerph17145222>
- Snyder, B. L. (2020). Practicing what we preach: Teaching psychiatric–mental health student nurses to care for themselves. *Journal of Psychosocial Nursing*, 58(6), 40-45.
- Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*, 22(9), 1-14. <http://doi.org/10.2196/21279>
- Stacey, G., Aubeeluck, A., Cook, G., & Dutta, S. (2017). A case study exploring the experience of resilience-based clinical supervision and its influence on care towards self and others among student nurses. *International Practice Development Journal*, 7(2), 1-16. <http://doi.org/10.19043/ipdj.72.005>
- Stacey, G., Cook, G., Aubeeluck, A., Stranks, B., Long, L., Krepa, M., & Lucre, K. (2020). The implementation of resilience based clinical supervision to support transition to practice in

- newly qualified healthcare professionals. *Nurse Education Today*, 29, Article 104564.
<http://doi.org/10.1016/j.nedt.2020.104564>
- Stephens, T. M. (2013). Nursing student resilience: A concept clarification. *Nursing Forum*, 48(2), 125-133. <http://doi.org/10.1111/nuf.12015>
- Terp, U., Bisholt, B., & Hjärthag, F. (2019). Not just tools to handle it: A qualitative study of nursing students' experiences from participating in a cognitive behavioral stress management intervention. *Health Education and Behavior*, 46(6), 922-929.
<http://doi.org/10.1177/1090198119865319>
- Terp, U., Hjärthag, F., & Bisholt, B. (2019). Effects of a cognitive behavioral-based stress management program on stress management competency, self-efficacy and self-esteem experienced by nursing students. *Nurse Educator*, 44(1), E1-E5.
<http://doi.org/10.1097/NNE.0000000000000492>
- Ulenaers, D., Grosemans, J., Schrooten, W., Bergs, J. (2021). Clinical placement experience of nursing students during the COVID-19 pandemic: A cross-sectional study. *Nurse Education Today*, 99, Article 104746. <https://doi.org/10.1016/j.nedt.2021.104746>
- van der Riet, P., Rossiter, R., Kirby, D., Dluzewska, T., & Harmon, C. (2015). Piloting a stress management and mindfulness program for undergraduate nursing students: Student feedback and lessons learned. *Nurse Education Today*, 35(1), 44-49.
<http://doi.org/10.1016/j.nedt.2014.05.003>
- Van Hoek, G., Portzky, M., & Franck, E. (2019). The influence of socio-demographic factors, resilience and stress reducing activities on academic outcomes of undergraduate nursing students: A cross-sectional research study. *Nurse Education Today*, 72, 90-96.
<https://doi.org/10.1016/j.nedt.2018.10.013>.

- van Vliet, M., Jong, M. C., & 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.
<http://doi.org/10.1177/2333393618805340>
- Ye, Y., Hu, R., Ni, Z., Jiang, N., & Jiang, X. (2017). Effects of perceived stress and professional values on clinical performance in practice nursing students: A structural equation modeling approach. *Nurse Education Today*, 17, 157-162.
<http://doi.org/10.1016/j.nedt.2018.09.036>
- Yıldırım, N., Karaca, A., Cangur, S., Acıkgöz, F., & Akkus, D. (2017). The relationship between educational stress, stress coping, self-esteem, social support, and health status among nursing students in Turkey: A structural equation modeling approach. *Nurse Education Today*, 48, 33-39. <http://doi.org/10.1016/j.nedt.2016.09.014>
- Yüksel, A. & Yılmaz, B. E. (2020). The effects of group mindfulness-based cognitive therapy in nursing students: A quasi-experimental study. *Nurse Education Today*, 85.
<http://doi.org/10.1016/j.nedt.2019.104268>

Appendix A

Knowledge-to-Action Framework



Note. This figure was taken from Crockett, L., (2017, November 6). *The Knowledge-to-Action Framework*. Knowledge Nudge. <https://medium.com/knowledgenudge/kt-101-the-knowledge-to-action-framework-7fbe399723e8>

Appendix B

Post-Survey

	Decreased significantly	Decreased some	Neutral	Increased some	Increased significantly
As a result of this workshop, I think that my ability to...					
1. Use coping tools, for example, talking with friends, mindfulness, writing down thoughts					
2. Cope with stress					
3. Use my strengths					
4. Meet challenges					
5. Reframe (recognize) negative thinking					
6. Participate with my peers					
7. Feel like I belong					
8. Be resilient					
9. Carry these learned practices in my everyday life					
10. Carry these learned practices into my future nursing career					
	No		Not sure		Yes
11. Would you recommend this workshop to incoming nursing students?					
	Not at all helpful	Not very helpful	Somewhat helpful	Helpful	Very helpful
12. How would you rate the workshop overall?					

	0-3	4-6	7-9	More than 9		
13. How many times did you do the at-home practice (intentional use of strengths and <i>Just One Thing</i> practice)?						
	Check - in	Centering Practice	Teaching and rationale	Writing and response	At- home practice	Three A's
14. What was the most meaningful part of the workshop?						
15. What was the least meaningful part of the workshop?						
	Twice a week	Once a week	Every other week	Once a month		
16. In your opinion, what would be the optimal frequency of the workshop sessions?						
17. Other comments regarding the workshop (optional)						

Appendix C

Demographic Questionnaire

1. What is your age?
 - A. 18
 - B. 19
 - C. 20
 - D. 21
 - E. 22
 - F. 23
 - G. 24 or older
 - H. Prefer not to say

2. With which racial and ethnic group(s) do you identify? (mark all that apply)
 - A. American Indian or Alaskan Native
 - B. Asian
 - C. Black or African American
 - D. Hispanic, Latino, or Spanish origin
 - E. Middle Eastern or Northern African
 - F. Native Hawaiian or another Pacific Islander
 - G. White
 - H. Another race or ethnicity not listed

3. How do you describe your gender identity? (mark all that apply)
 - A. Female
 - B. Male
 - C. Genderqueer
 - D. Agender
 - E. Transgender
 - F. Cisgender
 - G. A gender not listed

4. What is your work status?
 - A. Not employed
 - B. Employed part time
 - C. Employed full time
 - D. Prefer not to say

5. Are you a recipient of financial aid?
 - A. Yes
 - B. No
 - C. Prefer not to say

Appendix D

University Of Massachusetts IRB Determination Letter

UMassAmherst

Mass Venture Center 100 Venture Way,
Suite 116 Hadley, MA 01035

Human Research Protection Office Telephone: 413-545-3428

Memorandum – Not Human Subjects Research Determination

Date: May 10, 2021

To: Rebecca Liljestrand, College of Nursing

Project Title: *Building Resilience in Nursing Students at Appalachian State University*

HRPO Determination Number: 21-91

The Human Research Protection Office (HRPO) has evaluated the above named project and has made the following determination based on the information provided to our office:

- The proposed project does not involve research that obtains information about living individuals [45 CFR 46.102(f)].
- The proposed project does not involve intervention or interaction with individuals OR does not use identifiable private information [45 CFR 46.102(f)(1), (2)].
- The proposed project does not meet the definition of human subject research under federal regulations [45 CFR 46.102(d)].

Submission of an Application to UMass Amherst IRB is not required.

Note: This determination applies only to the activities described in the submission. If there are changes to the activities described in this submission, please submit a new determination form to the HRPO prior to initiating any changes. ***Researchers should NOT include contact information for the UMass Amherst IRB on any project materials.***

A project determined as “Not Human Subjects Research,” must still be conducted ethically. The UMass Amherst HRPO strongly expects project personnel to:

- treat participants with respect at all times
- ensure project participation is voluntary and confidentiality is maintained (when applicable)
- minimize any risks associated with participation in the project
- conduct the project in compliance with all applicable federal, state, and local regulations as well as UMass Amherst Policies and procedures which may include obtaining approval of your activities from other institutions or entities.

Please do not hesitate to call us at 413-545-3428 or email humansubjects@ora.umass.edu if you have any questions.



Iris L. Jenkins, Assistant Director
Human Research Protection Office

Appendix E

Changing Minds, Changing Lives Topical Outline

Class	Date	Centering	Topic	Writing prompt	Homework
1	9/2	Am I on my own side?	Introduction: Class Structure	“I am from.” George Ella Lyon, Where I am from poem	<i>Just One Thing</i> (JOT), Introduction, p.1-10 Choose one practice anywhere in the book and give it a try. Your homework is to write your response in one paragraph.
2	9/9	Strength	Strengths Quest Assessment	I am good at...	Strength Quest assessment JOT Part 1, p.12-54 Choose one exercise to use and report back.
3	9/16	Resilience	Resilience	A time you bounced back from stress	JOT Part 2, p. 58-71 Choose one exercise to use and report back.
4	9/23	Leadership	Who do we know as a leader?	A leader you know, hx, popular, or someone in your life	JOT Part 2, p. 72-88 Choose one exercise to use and report back.
5	9/30	Stress/calm	Neurobiology of Stress	The time when you or a friend felt stressed	JOT: Part 3, p. 90-112 Choose one exercise to use and report back.
6	10/7	Health	Adverse childhood experiences (ACE)	Objects	JOT: Part 3, p. 112-132 Choose one exercise to use and report back.
7	10/14	Wellness	Appreciative Inquiry: Is Risk resilience?	A risk that supported resilience	JOT Part 3, pp. 134-170 Choose one exercise to use and report back.

Class	Date	Centering	Topic	Writing prompt	Homework
8	10/21	Thinking	Cognitive flexibility: automatic thinking	CBT: a recent experience with automatic thinking	JOT Part 4, p. 171-192 Choose one exercise to use and report back. Repeat Automatic Thinking chart with a new example.
9	10/28	Connections	Mothers, role models and mentors	Mentoring map Describe a mentor	JOT Part 5, p. 193-219 Choose one exercise to use and report back.
10	11/4	Presentation s	Your feedback & Celebration!		