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## Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention Program

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Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students  
Through the Implementation of a Resilience Educational Intervention Program

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## Table of Contents

Abstract.....	4
Introduction.....	5
Background.....	5-8
Problem Statement.....	8
Organizational “Gap” Analysis of Project Site.....	8-9
Review of the Literature.....	9-13
Resilience and Psychological Distress.....	10-11
Resilience-based Interventions.....	11
Resilience Training Programs.....	11-13
Evidence Based Practice: Verification of Chosen Option.....	13
Theoretical Framework/Evidence Based Practice Model.....	13-14
Methods .....	14-15
Goals, Objectives, and Expected Outcomes.....	15-16
Project Site and Population.....	16-17
Measurement Instruments .....	17
Procedure and Data Collection Procedures.....	18-19
Data Analysis .....	19-20
Ethical Considerations/Protection of Human Subjects.....	20
Results.....	20-23
Demographic Findings.....	20
Feasibility and Acceptability Findings.....	21
Qualitative Results.....	21-23

Discussion.....	24-25
Conclusion .....	26
References.....	27-32
Appendix .....	33-47
Appendix A. Theoretical Framework .....	33
Appendix B. Post-Survey.....	34-35
Appendix C. Sociodemographic Questionnaire.....	36
Appendix D. Syllabus: CMCL.....	37-39
Appendix E. Topical Outline.....	40
Appendix F. UMass Amherst: Human Subjects Determination Approval.....	41
Appendix G. UPR-MSU: Human Subjects Determination Approval .....	42
Appendix H. Letter of Approval-Site.....	43
Appendix I. Letter of Approval – Undergraduate Program Director.....	44
Appendix J. Timeline.....	45
Appendix K. Letter of Permission – Translation.....	46
Appendix L. Cost Analysis.....	47

## Abstract

**Background:** Nursing students suffer from high levels of stress and psychological distress, especially those with histories of childhood adversity. The COVID-19 pandemic has been an additional source of stress on students. Students who suffer from psychological distress are at greater risk of engaging in maladaptive behaviors that may lead to physical and psychological conditions. Despite this data, college campuses lack resilience intervention programs, which have been shown to reduce psychological distress, perceived stress, and increase resilience.

**Purpose:** The purpose of this Quality Improvement project was to implement a well-established evidence-based resilience program for nursing students, and to evaluate the feasibility and acceptability of the program.

**Methods:** A 10-week in-person resilience program was implemented with 6 undergraduate nursing students. The program included active coping exercises, psychoeducational presentations, writing, and peer support. A post-survey was used to assess the feasibility and acceptability of the program. **Results:** Six undergraduate nursing students completed the resilience program. After completing the program, one hundred percent of the students thought that their ability to use coping skills, use personal strengths, feel belonged, and supported increased significantly. Participants also described an increased ability to recognize their emotions, and healthily manage stress. One hundred percent indicated that they would recommend this program to incoming nursing students. **Conclusion:** The results of this QI project support the effectiveness, acceptability, and feasibility of the educational resilience program.

**Keywords:** resilience intervention program, psychological distress, stress, nursing students, COVID-19

# **Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention**

## **Program**

### **Introduction**

Nursing students experience high-stress levels due to academic workload and personal factors (Li & Hasson, 2020). Recently, stress levels have increased dramatically among college students due to uncertainty with the COVID-19 pandemic. Many students have been experiencing psychological distress and problems implementing healthy coping mechanisms (Brown & Kafka, 2020). Williams and Reetz (2020) compare the COVID-19 pandemic with an earthquake and its mental health consequences with a tsunami. Therefore, colleges must prepare themselves for "...this new wave of psychological distress..." (Brown & Kafka, 2020, para. 21). If not, students will suffer physical and psychological consequences that will further affect their personal and academic life. Students should be offered learning experiences that will better equip them to manage life stressors. Therefore, the purpose of this Quality Improvement (QI) project was to implement a well-established evidence-based resilience program for nursing students, and to evaluate the feasibility and acceptability of the program

### **Background**

Every college student goes through a transition process after graduating from high school. This process is full of new adjustments, exploring values, beliefs, self-identity, and assuming adult responsibilities (Jayalakshmi & Magdalin, 2015). This population also faces academic, interpersonal, financial, and psychosocial challenges that make them more vulnerable to psychological and physical distress (Steinhardt & Dolbier, 2008).

Approximately 50% of college students experience high-stress levels, causing anxiety and mood disorders (Hamza et al., 2020).

Nursing students are among the most vulnerable college population due to clinical responsibilities, high academic workloads, rigorous evaluations, and self-imposed pressure. (Li & Hasson, 2020; Savitsky et al., 2020; Smith & Yang, 2016; Walsh et al., 2020). According to Luo and colleagues (2019), approximately one-third of nursing students worldwide have experienced depression. A 2015 survey composed of approximately 67,000 US college students revealed that almost 55% of the respondents felt very anxious during the past year and one-third felt so depressed that it affected their normal functioning (Houston et al., 2017).

College students are now experiencing more anxiety, lack of motivation, and psychological distress due to the social, physical, psychological, academic, and financial sequelae of the Coronavirus (COVID-19) (Browning et al., 2021; Kecojevic et al., 2020; Wang et al., 2020; Ye et al., 2020). According to Browning and colleagues (2021), 90% of college students have experienced psychological distress since the pandemic began. Some of the most common reasons include adjusting to new online learning experiences, abandoning their college dormitories, isolating themselves from peers, and looking for new ways to support themselves financially (Browning et al., 2021; Kecojevic et al., 2020).

Students who suffer from anxiety, stress, or depression are at an increased risk of engaging in risky behaviors, such as drinking excessive alcohol, and using other substances, to cope with stress. They are also at a high risk of experiencing suicidal thoughts, sleep disorders, poor academic outcomes, systemic physiological disorders,

somatization, and poor relationships (Chandler et al., 2020; Houston et al., 2017; Luo et al., 2019; Smith & Yang, 2016; Steinhardt & Dolbier, 2008). Students may turn to negative behavioral patterns to cope with transition-related stressors, thus worsening their symptoms (Chandler et al., 2020; Smith & Yang, 2017; Steinhardt & Dolbier, 2008).

Specifically, there is a higher prevalence of depression in Latino healthcare and non-healthcare students. Puerto Ricans report more psychiatric symptoms than other Latinos (Reyes-Rodriguez et al., 2012). Reyes-Rodriguez and colleagues (2012) studied the prevalence of depression in 2,163 freshmen students enrolled in nine of the eleven University of Puerto Rico's campuses. The researchers found that female students reported more depressive symptoms than male students and that nine percent of the population had moderate to severe depressive symptoms. Additionally, among Latino students, a significant correlation was found between the following adverse childhood experiences (ACEs) and depressive symptoms: romantic problems (23%), death of a loved one (22%), medical conditions (10%), college transition (9%), and parental divorce (4%) (Reyes-Rodriguez et al., 2012).

Adverse childhood experiences (ACEs) may increase the risk of engaging in harmful behaviors among college students. Approximately 61% of Americans have suffered from a traumatic event during their childhood (Centers for Disease Control and Prevention [CDC], 2020). ACEs have detrimental effects on resilience levels, physical and mental health, thus affecting the individual's ability to cope during stressful life events (Chandler et al., 2020). Felitti and colleagues (1998) found a correlation between childhood trauma and adult health risk behaviors ( $p < .001$ ). For example, persons who



have been exposed to multiple types of traumas are at greater risk for substance use, depression, suicide, and other maladaptive coping mechanisms.

Identifying students at risk for adverse mental health outcomes, and providing appropriate health care, is important. However, many college campuses have scarce mental health services and even fewer offer mental health promotion programs, which are critical to ensure preventive and therapeutic interventions (Browning et al., 2021; Luo et al., 2019).

### **Problem Statement**

Nursing students are at an increased risk of psychological distress due the rigors of their academic and clinical program, childhood adversity, and to the recent stressors brought upon them during the COVID-19 pandemic, as indicated by reports of increased anxiety levels, stress, and the use of maladaptive coping mechanisms. A lack of mental health promotion on college campuses, such as the implementation of resilience training programs, has allowed students' distress to go unaddressed.

### **Organizational “Gap” Analysis of Project Site**

According to Cochran and colleagues (2020), young graduates are more vulnerable to psychological distress; thus, contributing to high burnout levels and turnover rates. (Cochran et al., 2020). This is due to a lack of engagement in primary mental health interventions, such as resilience training programs (Amsrud et al., 2019). Cochran and colleagues (2020) investigated the prevalence of required resilience courses in 155 accredited nursing schools and found that only 14 have a formal resilience-based curriculum.

The proposed site for this project does not have a resilience-based curriculum or elective courses based on resilience, or other programs to assist students manage stress. Also, in conversation with the proposed site's undergraduate program director, it was found that she has noticed an increase in psychological distress among undergraduate nursing students. The best practice to address this gap is implementing an evidence-based resilience training program to promote physical and psychological well-being; therefore, reducing psychological distress.

### **Review of the Literature**

The UMass Amherst online libraries were used as the primary source to conduct the literature review. Several databases, such as Cumulative Index to Nursing and Allied Health Literature (CINAHL), EBSCO Host, Cochrane Database of Systematic Reviews, APA PsychInfo, and PubMed, were used to retrieve articles and investigations related to the topic. The Discovery search was used as a secondary source during the research process.

Three different searches were made using the following Mesh and Boolean terms: (1) college students OR university students OR undergraduates AND resilience intervention program OR resilience AND psychological distress OR depression OR anxiety; (2) nursing students OR student nurses AND resilience OR resiliency OR resilience training OR resilient AND stress OR psychological distress OR anxiety OR depression; (3) college students OR university students OR undergraduates AND covid-19 OR coronavirus OR 2019-ncov OR sars-cov-2 or cov-19. A total of one-hundred and forty-nine articles were retrieved during the first search, but only ten were selected. On the other hand, a total of eighty-seven articles were yielded during the second search, but

only eleven were selected. After the third search, a total of thirty-seven articles were yielded, but only two were selected.

A total of twenty-three articles were selected for review based on their titles and abstracts. After conducting a critical appraisal, 13 articles were discarded, and ten that were most suitable were included using the Johns Hopkins nursing evidence-based practice levels of evidence. Inclusion criteria consisted of English and Spanish articles on populations of college students aged 18 years and over. Exclusion criteria included metanalysis, articles older than ten years, and articles from any other language.

### **Resilience and Psychological Distress**

Resilience has been shown to increase psychological well-being, reduce stress levels, and help overcome challenging situations by implementing healthy coping mechanisms; thus, improving mental health among college students (Mcdermott et al., 2020; Walsh et al., 2020). An online survey study examined resilience levels, coping skills, peer support, acute stress disorder (ASD) and stressful experiences due to COVID-19 among 7,800 college students and found that COVID-19 related stress was significantly correlated with ASD, low resilience levels, poor social support, and maladaptive coping mechanisms (Ye et al., 2020). Having adequate resilience levels, social support, and adaptive coping mechanisms were protective for ASD (Ye et al., 2020).

A systematic review focused on the relationship between resilience, stress, and psychological well-being in nursing students, found a strong correlation between resilience and psychological well-being (Li & Hasson, 2020). Academic efficacy and emotional exhaustion were two of the main resilience predictors (Li & Hasson, 2020).

between resilience and psychological well-being.

Stress is related to psychological distress. Even though its levels varied among studies, all the investigations recommended implementing resilience strategies among nursing students (Li & Hasson, 2020). Some of these strategies include mindfulness, meditation, aromatherapy, progressive muscle relaxation, physical activity, reflective journaling, among others (Lekan et al., 2018).

### **Resilience-based Interventions**

Resilience intervention programs are designed to target specific skills; therefore, there are different psychotherapeutic approaches. Cognitive-behavioral therapy (CBT) is one of the most popular approaches since it helps modify cognitive patterns during stressful situations and acquire active coping skills (Kunzler et al., 2020).

A systematic review focused on identifying interventions that improve resilience in nurses and nursing students and to study their effectiveness (Stacey & Cook, 2019). The following interventions were the most frequently used: mindfulness, education, and group intervention. Didactic education included teaching about resilience, stress, coping skills, sharing, and discussing information. Participants also indicated that group interventions were essential because it made them feel more empowered, understood, supported, and had a sense of belonging (Stacey & Cook, 2019).

### **Resilience Training Programs**

The efficacy of Changing Minds, Changing Lives (CMCL) resilience intervention program was studied in a mixed-method pilot study with college athlete students who have experienced ACEs (Chandler et al., 2020). Students in the intervention group reported higher resilience levels, emotional awareness, decision-making scores, and

lower stress (Chandler et al., 2020). One of the most relevant results was a 25% increase in emotional awareness scores among these students.

Similar results were seen in another investigation, which consisted of studying the validity of a resilience intervention program called “Transforming Lives Through Resilience Education” (Steinhardt & Dolbier, 2008). Like the CMCL program, this resilience program promoted the use of problem-solving strategies, emotion-focused coping strategies, managing stressful situations and emotions by taking responsibilities, restructuring distorted thinking, social support, and self-leadership. As expected, the intervention group had higher resilience levels, problem-solving scores, protective factors, and lower maladaptive coping scores than the control group.

The implementation of emotional skills is important in resilience programs because it helps strengthen emotional intelligence and emotional awareness (Chandler et al., 2020). Developing emotional intelligence helps individuals understand their feelings and healthily manage them; thus, increasing resilience (Jayalakshmi & Magdalin, 2015). Results from a cross-sectional study demonstrated a significant correlation between emotional intelligence and resilience ( $p < 0.01$ ), between emotional intelligence and mental health ( $p < 0.01$ ), and between resilience and mental health ( $p < 0.01$ ). Emotionally intelligent individuals have good mental health, less psychological distress, more coping skills, and resilience (Jayalakshmi & Magdalin, 2015).

A systematic review focused on studying the effectiveness of psychological interventions that promote healthcare student’s resilience. Students who participated in a resilience training program reported more resilience (“standardized mean difference (SMD) 0.43, 95% confidence interval (CI) 0.07 to 0.78; 9 studies..” p. 2), less anxiety

(“SMD  $-0.45$ , 95% CI  $-0.84$  to  $-0.06$ ; 7 studies..” p. 2), and lower levels of perceived stress (“SMD  $-0.28$ , 95% CI  $-0.48$  to  $-0.09$ ; 7 studies..” p. 2) (Kunzler et al., 2020).

### **Evidence Based Practice: Verification of Chosen Option**

The CMCL resilience intervention program is an intensive 10-week group session. It is based on the ABCS of resilience: “...Active coping, Building strength, increasing Cognitive awareness, and facilitating Social support...” (Chandler et al., 2020, p. 271). According to Chandler (n.d), "CMCL builds on current strengths, develops new coping through writing, and supports peer connection (p. 3). CMCL has been proven to improve resilience, self-efficacy, community belonging, perceived stress, emotional awareness, and psychological wellbeing among college students with ACEs. It has also been demonstrated that CMCL continues to be effective when given remotely (Chandler et al., 2020).

### **Theoretical Framework**

Every individual perceives and responds to stress in different ways according to their motivational orientation. Therefore, it is important to identify which factors predict positive and negative responses. The Self-determination Theory (SDT; Deci & Ryan, 2000).) focuses on how these responses are determined by the satisfaction of an individuals’ basic psychological needs, which are competence, relatedness, and autonomy (see Appendix A) (Patrick & Williams, 2012; Weinstein & Ryan, 2011). A supportive environment and mindful state are essential for an individual to meet these needs. This will help the person develop a sense of wellbeing, thus becoming autonomously motivated. However, an unfavorable environment prevents the fulfillment of these needs, thus causing low levels of wellbeing and motivation. This, in turn, affects behavior and

cognition and may contribute to the development of psychopathology. (Ryan & Deci, 2000; Weinstein & Ryan, 2011).

It is important to start working on enhancing motivation since this predicts the individual's response to stressful situations (Weinstein & Ryan, 2011). This can only be done by helping individuals identify their strengths and applying interventions, such as mindfulness and cognitive-behavioral strategies. This will help the individual develop autonomy orientation, a self-regulating behavior (Chandler et al., 2020; Weinstein & Ryan, 2011). This type of self-regulating behavior facilitates emotion regulation and helps improve the interpretation of stressful events. The individual changes his/her perception of the event through cognitive-behavioral strategies and is able to see the event as an opportunity instead of a threat. This, in turn, helps reduce anxiety levels and enhance self-esteem and adaptive coping mechanisms. However, to change negative self-perceptions, it is also important to be aware of our feelings and environment.

Therefore, this framework uses mindfulness to support autonomy orientation and meet the three basic psychological needs. Schools and workplaces do not focus on developing a healthy environment to meet every human being's basic needs (Weinstein & Ryan, 2011). Therefore, it is important to start promoting mental health through the SDT framework.

### **Methods**

This QI project used a cross-sectional design with post-intervention measures to evaluate a well-established, and previously effective evidence-based, 10-week educational program to increase resilience and wellbeing, and decrease stress, among nursing students in Puerto Rico.

CMCL was designed for small class sizes to promote consistency and familiarity (Chandler & Helling, 2021). Each class is based on the ABCS of resilience, has the same sequence of activities, and time structure. Take home assignments are assigned from week 1 – 9 to promote the discovery of inner strengths through actions planning and practical activities. This promotes positive neuroplasticity; therefore, the individual is able to substitute maladaptive mechanisms for adaptive ones (Chandler & Helling, 2021).

### **Goals, Objectives, and Expected Outcomes**

The overall goal/purpose of this QI project was to implement a well-established evidence-based resilience program for nursing students, and to evaluate the feasibility and acceptability of the program.

**Table 1.**

*Description of goals, objectives, and outcomes*

Goal	Objective(s)	Outcome(s)
1. Implement a resilience intervention program based on the ABCS of resilience among nursing students.	Conduct ten (10) sixty-minute psychoeducational sessions each week on Wednesdays from 11:00 am – 12:00 pm.	At least 90% of nursing students would complete the program.
	Analyze students' strengths by completing the Top 5 Clifton Strengths talent assessment.	At least 90% of nursing students would identify and discuss five strengths by using the strengths action plan.
	Promote stress management strategies based on active coping activities, such as mindfulness, breathing exercises, writing prompts, and social support.	At least 90% of nursing students would participate in active coping activities.



2. Evaluate the feasibility and acceptability of the CMCL resilience intervention program.	Discuss with students what they learned, how they might use what they learned in their lives, and in their nursing careers.	At least 90% of nursing students would be able to discuss what they learned and the usefulness in their life and careers.
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### **Project Site and Population**

The CMCL program took place at a local nursing school in San Juan, Puerto Rico. The 10-week resilience intervention program was implemented in person from September to November 2021. The nursing school has one counselor, which provides personal development, academic, and vocational services specifically to nursing students. In the 2017-2018 academic year, the nursing school provided individual counseling services to a total of 259 students (Catala, 2018). However, in the 2018-2019 academic year, there was a 40% increase of students who received counseling services (n= 365) (Catala, 2019). More than half of these students were in the bachelor's degree program. The counselor addressed problems such as self-esteem, self-efficacy, grief, crisis management, anxiety, depression, romantic and family issues, interpersonal, financial, and housing problems, among others (Catala, 2018).

The current undergraduate nursing population consists of approximately 175 students. This population mainly consists of Hispanics/Latinos between the ages of 20-26. For this project, the sample consisted of six undergraduate junior students, consistent with the CMCL program's small group design. This project served as a feasibility pilot project to determine its application in this setting. The inclusion criteria were undergraduate nursing students in their third year of college, aged 18 years and older.

Exclusion criteria were students from other health professional schools and under 18 years of age.

The proposed site did not have a resilience-based curriculum or elective courses based on resilience. Therefore, this was the first known resilience intervention program to be implemented in the proposed site. The CMCL resilience training program was taught in-person following the universities' and the Centers for Disease Control and Prevention (CDC) COVID-19 guidelines and protocols.

### **Measurement Instruments**

A post-intervention survey was used to assess the feasibility and acceptability of the educational program. This survey consisted of twelve questions: eleven items are based on a 5-point Likert scale, and one item is based on a 3-point Likert scale. These questions were used to assess participants' perception of stress, use of active coping strategies, resilience, cognitive awareness, and sense of belonging. Assessment of the program was also obtained using questions on whether participants would recommend the intervention program to future nursing students and how they would rate the program overall. This survey was developed collaboratively between the DNP student, a fellow DNP student, and the faculty sponsor (see Appendix B). The DNP student also translated the post-survey to Spanish.

Additionally, sociodemographic information was obtained. This questionnaire queries a participant's age, gender, race/ethnicity, work status, and financial aid status (see Appendix C). This instrument consists of one fill in the blank question and 4 multiple choice questions. The original instrument was developed in English and then translated to Spanish.

## **Procedure and Data Collection Procedures**

### ***Pre-intervention***

The DNP student met with the undergraduate program director to obtain the student's institutional emails. Flyer invitations were sent via email to undergraduate junior nursing students. Seven students accepted the invitation. A formal 1-hour meeting was conducted virtually. During this meeting, the DNP student discussed the program's purpose, objectives, and topical outline (Appendix E). The DNP student also explained that this will be used as a DNP project and that their participation is completely voluntary.

The sociodemographic questionnaire was administered via Qualtrics Research Suite prior to the start of the 10-week program. A link to the survey was sent to the participants. The sociodemographic questionnaire took approximately 5 minutes to complete. Participants then received the course's materials via email.

### ***Intervention***

The CMCL resilience training program was offered every Wednesday from September to November 2021. The implementation of this project did not interfere with the student's programmed classes because it was offered during the designated university's free period from 11:00 am – 12:00 pm. The DNP student sent the students weekly reminders via email one day before each session. A relaxation, research, writing, and reflection format was used during each class. Current COVID 19 precautions were followed and updated as appropriate throughout the project.

Each session began with a discussion about an assigned positive practice exercise and an individual strength (Chandler et al., 2020). Afterward, active coping exercises,

such as mindfulness and breathing exercises, were demonstrated, and practiced. A facilitators guide was used to assist the DNP student during each session.

The DNP student used a discussion format to guide the week's research topic (see Appendix D & E). Then, each student completed the reflective writing exercise, which took approximately 5 minutes to complete. After each participant finished, the DNP student guided the process of each student providing supportive feedback on the writing. Each student took turns to read aloud what they wrote, thus promoting peer support. At the end of each session, participants were invited to say something they learned, appreciated, or provide feedback regarding the session (Chandler et al., 2020).

At week 10, students presented how they met the program objectives, how they have, or are planning to use the new knowledge and skills in their lives, and how they are planning to use this new knowledge in their nursing careers. The final presentation was a reflection exercise, in which participants were welcomed to use their creativity.

### ***Post-intervention***

Following the week 10 session, participants received a link via email and completed the post-survey in Spanish. It took approximately 10 minutes to complete. At the end of the intervention program, students received a \$10 Amazon thank you gift card and a certificate of participation.

### **Data Analysis**

Descriptive statistics were used to analyze the sociodemographic characteristics of the participant population and learning outcomes. Measures of percent and frequency were used to describe the characteristics of participants' data. Data were entered into a

Microsoft Excel spreadsheet for analysis. Verbal feedback was collected from the participant's final presentations and analyzed to extract common themes.

### **Ethical Considerations/Protection of Human Subjects**

The University of Massachusetts Amherst and the site's Human Research Protection Office determined that the proposed project did not meet the definition of human subject research under federal regulations (see Appendix F & G). Furthermore, written approval to implement this educational intervention was obtained from the site's dean and the undergraduate program director following thorough review of the project proposal (see Appendix H & I). No student academic records were accessed. The surveys that were used for the project did not include any identifying information. Data was stored in a file folder at the DNP student's personal computer, which was password protected. The project data will be used for the site's purposes to improve programs.

## **Results**

### **Demographic Findings**

A total of seven undergraduate junior nursing students were initially recruited; however, one participant withdrew from the program one day before starting the first psychoeducational session. Therefore, the final number of participants was six (n=6). Of the six participants, five (83%) were female, and one (17%) was male. Only two (34%) participants were under the age of 20, and four (66 %) were 21 years old. All 6 students (100%) identified as Hispanic/Latin citizens.

Three (50%) of the participants were unemployed, while two (33%) participants worked part-time. Only one student (17%) preferred not to answer the question. All six students (100%) received financial aid.

### **Feasibility and Acceptability Findings**

The participants were given a post-survey after the 10-week intervention program to assess the feasibility and acceptability of the program. All six participants (100%) thought that as a result of this workshop, their ability to use coping tools (i.e., talking with friends, mindfulness, writing down thoughts), use personal strengths, participate with peers, have a sense of belonging, and be resilient increased significantly.

Three participants thought that their ability to cope with stress increased some as a result of this workshop, and half thought their ability to cope with stress increased significantly. Two students thought their ability to meet challenges and reframe negative thinking increased some, while four students felt that it increased significantly. Only one participant thought that their ability to carry the learned practices in their everyday life and future nursing career increased some, five participants felt that it increased significantly.

All six participants rated this intervention program as very helpful and indicated that they would recommend it to incoming nursing students.

### **Qualitative Results**

Qualitative data was gathered during week 10 of the intervention program. Students used their creativity to present how they met the program's objectives, how they have, or are planning, to use the new knowledge and skills in their lives, and how they are planning to use this knowledge in their nursing careers. Their presentations contained positive feedback. The data from the presentations demonstrated three common themes.

### ***Emotions***

All participants responded that they were grateful to have participated in this intervention program because it helped them acknowledge and express their emotions. The participants also reported that they learned how to control their emotions by using adaptive mechanisms. Responses included, “I learned how to acknowledge and control my emotions. I stopped drawing more than five years ago because I wanted my drawings to be perfect. I spent a great amount of time erasing or ripping off pages, which frustrated me a lot. I just put my notebook away in a box because this feeling of frustration made me not want to draw anymore. After completing this program, I was able to take out my drawing notebook again. I now draw and don’t get frustrated at all. I decided to bring my drawing notebook because I feel this is a great accomplishment for me, and I want to share it with you,” “I learned not to get mad at myself and express my feelings without lashing out at people,” and “Thanks to this program, I have learned how to express myself. I cannot even begin to express how much this program has helped me.”

### ***Stress Management***

All participants reported that identifying their strengths and creating a strengths action plan helped them identify and incorporate adaptive coping mechanisms. They also reported that the program’s format of practicing an assigned positive practice and practicing active coping exercises during the sessions helped them manage their stress. Responses included, “I have learned when to apply the meditation exercises. Last week I had a rough day at work. After I got out, there was a lot of traffic, and I noticed that I would not arrive on time to a study group. I started crying in my car, but I remembered the meditation exercises we had practiced here. I started to breathe in slowly and say

positive affirmations out loud. This helped me calm down, and I felt so relieved,” “Creating a strengths action plan and practicing the relaxation exercises in the classroom helped me identify new methods to manage my stress,” I am now able to relax more easily. It brings me peace, and I can concentrate better,” and “I usually have trouble sleeping, but ever since I started implementing these relaxation exercises, I can sleep better.

### *Nursing Careers*

Students were asked how they would apply the acquired knowledge in their future nursing careers. The participants agreed that they see themselves implementing the relaxation techniques with their patients. Responses included, “This program not only made me feel safe, but it also helped me see the importance of our emotional and mental wellbeing. Therefore, I see myself implementing everything learned here with my patients,” and “I can see myself teaching patients how to breathe and implement other stress management techniques properly.”

All participants agreed that this program should be incorporated into the nursing curriculum. Several participants verbalized that their sense of belongingness had increased. One of the students mentioned, “We are all different, but I feel like I have someone to rely on thanks to this program.” Other students agreed with this comment and mentioned that they would like to continue meeting on their own to keep supporting each other. Another student mentioned that she would participate in this same course again and that she has talked about this program with other friends. Their positive feedback is consistent with the results of the quantitative data.



## Discussion

The results of this QI project support the effectiveness, acceptability, and feasibility of a 10-week resilience educational program. Six participants completed the program and were able to identify and discuss five strengths by using the strengths action plan. The students also participated in active coping activities and discussed what they learned and its usefulness in their lives and careers. All the participants thought that their sense of belongingness, support from peers, resilience, and emotional awareness increased significantly due to this program. On the other hand, half of the participants thought that their ability to cope with stress increased some, while the other half thought it increased significantly. Sixty percent felt that their ability to meet challenges and reframe negative thinking increased significantly. At the same time, five students thought that their ability to carry the learned practices in their everyday life and future nursing career also increased significantly. This pattern of results is consistent with Chandler and colleagues' (2020) mixed-method pilot study results, in which CMCL was proven to improve resilience, self-efficacy, community belonging, perceived stress, emotional awareness, and psychological wellbeing among college students with ACEs.

These results are further supported by the qualitative data collected during the 10-week period. Participants described an increased ability to recognize their emotions, manage stress in a healthy way, and use the acquired knowledge to manage stress. These results are further supported by the literature, which indicates that implementing emotional skills in resilience intervention programs increases emotional intelligence; thus, helping individuals be aware of their emotions and increase resilience levels (Chandler et al., 2020; Jayalakshmi & Magdalin, 2015).

The self-determination theory emphasizes the importance of enhancing motivation so that individuals can fulfill the three basic psychological needs. When these needs are fulfilled, the individual may become self-determined. By implementing mindfulness and cognitive-behavioral strategies, individuals can develop autonomy orientation, thus, emotional regulation (Chandler et al., 2020 & Weinstein & Ryan, 2011). The results are validated in this project by demonstrating that the program's format of creating a supportive environment enhances the use of adaptive coping mechanisms, and emotional regulation.

One of the factors to facilitate the project's success was support from the sites' dean and the undergraduate department director. Part of this support included providing the necessary time and space to implement the project. Barriers included challenges in recruitment and classroom capacity restrictions due to the pandemic. One of the reasons the students gave for not wanting to participate was a lack of free time due to the high academic workload. Also, finding a classroom for 10 weeks was challenging due to the limited capacity allowed because of the COVID-19 restrictions.

Despite these barriers, at least 90% of the participants successfully completed the program. The results confirm that this resilience educational intervention program is feasible. Therefore, it is highly recommended to incorporate this resilience intervention program in a summer workshop or as an elective course. Promoting resilience and mental health among nursing students must be among the main priorities in the healthcare industry to reduce burnout and increase psychological wellbeing. This will positively impact nursing schools and clinical settings since it improves nurse retention.

## **Conclusion**

Depression, anxiety, and substance use among college students is a significant problem, contributing to the problems of student retention and low graduation rates. Unfortunately, we are currently experiencing a global health emergency due to the COVID-19 pandemic, which has worsened the mental health crisis among college students. Past resilience intervention programs have been successful in increasing wellness and resilience among participants. This small project adds to the literature that supports the effectiveness of such programs to build resilience and reduce stress and distress among college students.

Currently, the project's site, along with most nursing schools in the US, does not have a resilience-based curriculum. Therefore, it is important to implement an evidence-based resilience intervention program at this site. For this reason, the CMCL resilience training program was implemented at a local nursing school in San Juan, Puerto Rico. Creating a welcoming psychological setting is essential for a better tomorrow.

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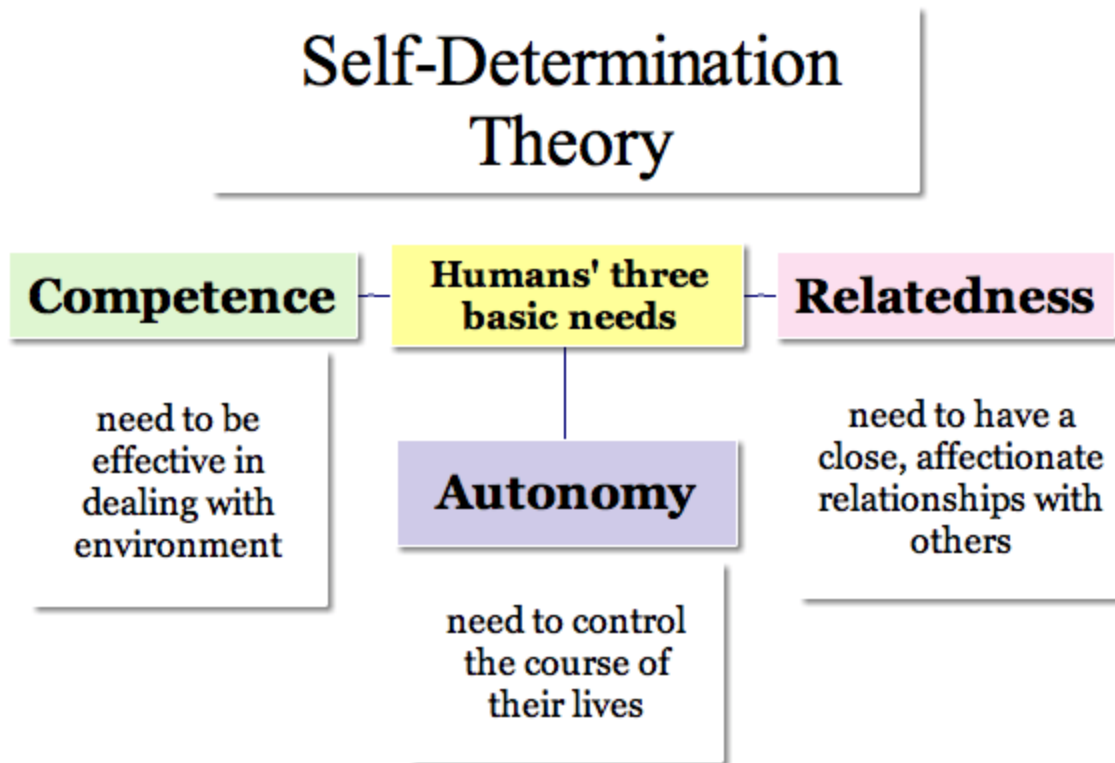


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## Appendix A

### *Theoretical Framework: Self-Determination Theory*



*Note:* The SDT theory is based on Edward L. Deci and Richard M Ryan's work (2000).

Image was retrieved from <https://positivepsychology.com/self-determination-theory/>

## Appendix B

### *Post-survey*

	<b>As a result of this workshop, I think that my ability to...</b>	<b>Decreased significantly</b>	<b>Decreased some</b>	<b>Neutral</b>	<b>Increased some</b>	<b>Increased significantly</b>
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					
		<b>No</b>	<b>Not sure</b>		<b>Yes</b>	
11.	Would you recommend this workshop to incoming nursing students?					
		<b>Not at all helpful</b>	<b>Not very helpful</b>	<b>Somewhat helpful</b>	<b>Helpful</b>	<b>Very helpful</b>
12.	How would you rate the workshop overall?					

**Appendix C***Sociodemographic Questionnaire*

1. What is your age? \_\_\_\_\_
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 North African
  - F. Native Hawaiian or other Pacific Islander
  - G. White
  - H. Another race or ethnicity not listed above
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

## Appendix D

*Syllabus: Changing Minds, Changing Lives*  
Fall 2021

### **What is Changing Minds, Changing Lives?**

Build individual strengths to empower stress management and increase resilience. Research, mindfulness and focused writing are applied to increase awareness of emotional responses to life's challenges and facilitate social connections to increase leadership capacity.

### **Why is it important?**

Identifying inherent strengths, developing agency, managing stress to develop social connections and build resilience, promotes health and leads to success in college, community, and career.

Upon completion of the course, you will be able to:

- Analyze individual strengths
- Utilize health-promoting stress management strategies
- Foster a sense of community across lines of difference
- Promote individual resilience
- Negotiate a social support network of mentors, role models and peers
- Demonstrate strategies to facilitate individual leadership capacity.

**Meeting Time:** *When?* Every Wednesday on the designated university free period. Starting on September 8, 2021 and finishing on November 10, 2021. *Time:* 11:00 am – 12:00 pm. *Where?* Room 202.

### **Facilitator:**

Jennifer Rivera Perez, RN, MSN, DNP-PMHNP(c)

### **Participation Expectations:**

Active participation in the course and through completion of out of meeting assignments is expected. Each student should be prepared to raise questions based on evidence of assigned readings, share their unique point of view and respond to ideas of others. A respectful response and thoughtful consideration of each other's opinion is expected.

### **Assignments:**

- In-class structured writing and feedback on the weekly topic
- In-class mindfulness practice
- Strength quest assessment, strength plan, strength log with weekly check-in
- Weekly positive practices homework from *Just One Thing*

- Read section of book assigned on the course outline
- Choose a lesson to practice, reflect on and write your response
- Facilitator feedback will be offered each week.
- Class discussion of weekly topic: Participation is part of the grade
- Final presentation is a project describing your learning experience

### Required Text

Hanson, R (2011). *Just One Thing*, CA: New Harbinger Publications  
Strength

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*Note:* The syllabus was provided by Dr. Genevieve Chandler.



## Appendix E

### *Topical Outline*

<b>Class</b>	<b>Date</b>	<b>Topic</b>	<b>Homework</b>
1	9/8/21	Honing resilience	Introduction JOT p. 1-10 <i>Just One Thing</i> (JOT), Introduction, p. 1-10 Choose one chapter in Part One, p.12-33 to use and report. Write a reflective response to the chapter/practice.
2	9/15/21	Strengths: Strength Quest assessment	Complete the Strength Quest assessment JOT Part 1: Be Good to Yourself p. 37-54 Choose one exercise to use and report
3	9/22/21	Strengths Action Plan	Complete actions plans for all 5 strengths
4	9/29/21	Resilience	JOT Part 2, p. 58-72 Choose one exercise to use and report
5	10/6/21	Self-Leadership: Our motivation to get back up	JOT Part 2, p. 76-85 Choose one exercise to use and report
6	10/13/21	Neurobiology of Stress	JOT Part 3, p. 90-106 Choose one exercise to use and report
7	10/20/21	Adverse Childhood Experiences (ACE)	JOT Part 3, p. 109-130: Choose one exercise to use and report
8	10/27/21	Automatic Thinking	Fill out the Automatic Thinking chart with another example Read JOT Part IV. p. 152-167: Choose one exercise to use and report
9	11/3/21	Connecting to Others: Mothers, Role Models and Mentors	Read: JOT Part V, p. 172-190: Choose one exercise to use and report
10	11/10/21	Presentations	Final Presentations

*Note:* The topical outline was taken from the CMCL Facilitator's Guide.

## Appendix F

### *UMass Amherst: Not Human Subjects Research Determination*

**UMassAmherst**

Human Research Protection Office

Mass Venture Center  
100 Venture Way, Suite 116  
Hadley, MA 01035  
Telephone: 413-545-3428

#### **Memorandum – Not Human Subjects Research Determination**

**Date:** June 21, 2021

**To:** Jennifer Rivera Pérez, College of Nursing

**Project Title:** *Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention Program*

**HRPO Determination Number:** 21-114

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)].

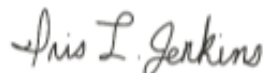
**Submission of an Application to UMass Amherst IRB is not required.**

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](mailto:humansubjects@ora.umass.edu) if you have any questions.



Iris L. Jenkins, Assistant Director  
Human Research Protection Office

## Appendix G

### *UPR-MSC: Not Human Subjects Research Determination*



UNIVERSIDAD DE PUERTO RICO, RECINTO DE CIENCIAS MÉDICAS  
UNIVERSITY OF PUERTO RICO, MEDICAL SCIENCES CAMPUS

**UPR**  
Universidad de Puerto Rico

OFICINA DEL RECTOR  
OFFICE OF THE CHANCELLOR  
OFICINA PARA LA PROTECCION DE PARTICIPANTES HUMANOS EN INVESTIGACIÓN (OPPHI)  
HUMAN RESEARCH SUBJECTS PROTECTION OFFICE (HRSPPO)

COMITE DE DERECHOS HUMANOS  
INSTITUTIONAL REVIEW BOARD (IRB)

August 18, 2021

Leyra Y Figueroa Hernandez, Ed.D, MSN, RN  
Department of Nursing  
University of Puerto Rico  
Medical Sciences Campus

Jennifer Rivera Perez  
College of Nursing  
University of Massachusetts, Amherst

**QUALITY IMPROVEMENT PROJECT (QIP): "Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention Program"**

Dear Dr. Figueroa,

The submitted project was evaluated by the Human Research Subjects Protection Office and we conclude that the above Quality Improvement Project (QIP) does not comply with the definition of research with human subjects as the federal regulation 45 CFR 46.102(l) describes. This policy defines "research" as a *systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge*. Therefore, this type of project is not considered human subject research and does not require IRB review and approval. Nevertheless, patient confidentiality should be respected in all clinical situations involving identifiable medical information from patients.

If you have any questions, please do not hesitate to contact our office ([opphi.rcm@upr.edu](mailto:opphi.rcm@upr.edu)) at 787-758-2525 Ext. 2510.

Sincerely,

Mariela Maisonet-Alejandro, DrPH  
IRB Administrator  
Human Research Subjects Protection Office

## Appendix H

### *Letter of Approval – Site*



May 17, 2021

Ms. Jennifer Rivera Pérez  
 Doctoral Student  
 University of Massachusetts Amherst

Dear Ms. Jennifer Rivera Pérez:

Our office is in receipt of your letter requesting authorization to implement the DNP Quality Improvement (QI) Project as part of your doctoral project titled: "Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention Program," using both the qualitative and quantitative methodologies.

It is our understanding that the topic of your project is of great interest, relevance, and contributes to the improvement in well-being and resilience in our nursing students. Therefore, we wish to inform you that once you have obtained the letters of determination from the Institutional Review Board at the University of Massachusetts Amherst and the Medical Sciences Campus of the University of Puerto Rico, you will then have the authorization to execute your project as requested. In order to coordinate the project recruitment process, please contact the Undergraduate Department director, Dr. Carmen Irene Díaz.

Once the project has been finalized, we request for the final results and recommendations to be presented to us for the benefit of our Undergraduate Program and the School of Nursing. Please be advised that the DNP Capstone Project is a quality improvement project for which the data will be used for the site's purposes rather than for research.

We wish you the outmost success, and we look forward to learning about the project's outcomes.

Best Regards,

Suane E. Sánchez, MSN, EdD  
 Dean  
 School of Nursing

mpl

*Preparando Profesionales de Excelencia*

Patrón con Igualdad de Oportunidad en el Empleo

## Appendix I

### *Letter of Approval – Undergraduate Program Director*

August 6, 2021

Ms. Jennifer Rivera Pérez  
Doctoral Student  
University of Massachusetts Amherst

Dear Ms. Jennifer Rivera Pérez:

I received your letter requesting authorization to implement the DNP Quality Improvement (QI) Project as part of your doctoral project titled: "Changing Minds, Changing Lives: Increasing Resilience in Undergraduate Nursing Students Through the Implementation of a Resilience Educational Intervention Program." The topic of your project is of great importance to our undergraduate nursing program. Therefore, I am pleased to inform you that you have the authorization to execute your project with our undergraduate nursing students.

As I understand, the data will be used for the site's purposes rather than for research. Therefore, once the project has been finalized, I request you to present the results and recommendations to our program.

I look forward to meeting with you to discuss the recruitment process.

Best Regards,



Josmarie Ortiz Cotto, RN, DNS  
Undergraduate Program Director  
School of Nursing



## Appendix K

### *Letter of Permission – Translation*

UNIVERSITY OF MASSACHUSETTS  
School of Nursing AMHERST

413-545-1343  
128 Skinner Hall  
651 North Pleasant Street  
Amherst, MA 01003-9304



April 28, 2021

To whom it may concern,

Jennifer Rivera Perez has my permission, the creator of Changing Minds, Changing Lives intervention, to translate the program material into Spanish.

Sincerely,  
Genevieve E. Chandler  
Genevieve E. Chandler, PhD, RN  
Professor  
College on Nursing  
University of Massachusetts Amherst  
Gec@nursing.umass.edu  
413-548-9892

## Appendix L

### *Cost Analysis*

Materials	Costs
Student's workbook (including exercises & professional practice development resources)	Free – PDF
Book – Just One Thing (JOT)	Free – PDF
Amazon gift card	\$10 x 6 students = \$60.00
Individualized Strength Survey (Top 5 CliftonStrengths)	\$19.99 x 10 surveys = \$199.99
<b>Grand Total: \$259.99</b>	

*Note:* The costs of this intervention include the time needed to (1) create the pre- and post-intervention surveys, (2) translate classroom materials from English to Spanish (see appendix K), (3) administer and analyze the surveys, and (4) implement the educational intervention project. Financial expenses include a one-time fee of \$199.99 to have access to ten Top 5 Clifton Strengths talent assessments and a one-time payment of \$100.00 to buy ten Amazon thank you gift cards. These costs will be offset by the benefit to the site since the UPR-MSU: SON does not have a resilience intervention program.