A COMMUNITY OF PRACTICE FOCUSED ON RESILIENCY IN GRADUATE NURSING STUDENTS

Megan Wildes

A DNP project submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice in the Family Nurse Practitioner Program in the School of Nursing.

Chapel Hill
2016

Approved by:

Carol Durham

Jennifer Leeman

Victoria Soltis-Jarrett

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ABSTRACT

Megan Wildes: A Community of Practice Focused on Resiliency in Graduate Nursing Students
(Under the direction of Carol Durham)

The purpose of this project was to create a Community of Practice (CoP) focused on resiliency in graduate nursing students. CoPs are networks of people who collectively learn and share in learning as a social experience. By engaging a CoP that focused on resiliency in graduate nursing students, the aim was to positively support students' sense of community and ability to care for themselves as well as others despite exposure to stressors.

Stress, a normal physiological response, becomes a problem when coping behaviors result in poor mental and physical health. Stress is widely reported in healthcare students, and students exposed to many academic and professional stressors may increase their risk for mental and physical exhaustion and poor patient care. A potential solution is to focus on student resiliency, the ability to adapt in healthy manners to a variety of stressors. Resiliency may be developed and practiced with healthy stress reduction techniques such as sleep, a healthy diet, exercise, social support, relaxation, and meditation/mindfulness.

Participants were graduate nursing students at the University of North Carolina at Chapel Hill School of Nursing, who were recruited through promotional flyers, email, and word-of-mouth. The project included a one-hour face-to-face workshop, seven emailed bulletins focused on a specific resiliency theme, weekly texts, and lastly, a CoP Facebook site. The entire project occurred over 8 weeks. Pre-and post- surveys assessed the effectiveness of coping skills. These pre- and post- surveys used validated questionnaires to

measure stress (DASS-21) and coping (Brief COPE) and incorporated additional questions based on project content. Demographic information was also collected. As a follow-up on the applicability of the weekly information, participants received an optional, short survey specific to the week's topic. Quantitative and qualitative data were compared and thematically summarized.

The program was found to be helpful by most participants and resulted in useful feedback on project content and design. However, generalizability to the target population was limited by the small sample size.

ACKNOWLEDGMENTS

Special thanks to my parents Bob and Elisa, siblings Charissa and Sheena, brothers-in-law Jared and Tim, and other family members for their support and love. Deep gratitude to my chair, Dr. Carol Durham, for believing in me, and to the members of my committee, Dr. Jennifer Leeman and Dr. Victoria Soltis-Jarrett, for their feedback and support. To my graduate school friends and colleagues Fadumo Abdi, Usha Cherian, Dr. Marie Lina Excellent, Shawna Kennedy, Derek Miller, Heather Perry, Brenda Pun, Anne Reinert, Laura Wasserman, Dawn Winter, and Jessica Zook: The road to degree completion would have been much emptier without you.

Much appreciation to those teachers, present and past, such as Dr. Diane Caruso and Dr. Deborah Smith, who are a living example of the finely honed craft, caring attitude, ethical decision making, and mentoring spirit our profession may encompass. Love and gratitude to Kathy and Michael Fladland, Sharon Huang, Dave and Dawn Olsen, Kirsten Lagerlof, Danni Li, and Laura Lindell, who consistently believed in my abilities and capacity to succeed. To Uncle George and the others who repeatedly proved I was loved in places close and far: Thank you. Aunt Doris, you would have been proud.

I owe a huge debt of gratitude to the faculty and staff at the University of North Carolina at Chapel Hill's Gillings School of Global Public Health and at Ben-Gurion University of the Negev, Be'er Sheva. My perception of health and humanity was broadened and improved by your wonderful support and training. To the friends and colleagues encountered along the way, including Jennifer Moore and Annie Taft, thank you for taking

time to know me as a person, beyond my student role. Additional acknowledgement to Ariel Adams for donating her skills with marketing and visual effects in support of this project.

Finally, to all family, friends, and colleagues: This project is for you, because you remind me daily that no human suffering, however engendered, should be ignored.

PREFACE

Virgil's Dido said, "Myself not ignorant of Woe, compassion I have learned to show" (Virgil, 1867, p. 29). In our various roles, we encounter many altruists setting out to amend the sufferings of human being. Working together, we must show compassion to ourselves as well as others in order to avoid Dido's tragedy of isolation. May we enjoy strong, resilient lives and be healthy in our habits and communities, supporting each other's health and well-being.

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LIST OF ABBREVIATIONS

ACHA-NCHA	American College Health Association National College Health Assessment
ANA	American Nurses Association
APRN	Advance Practice Registered Nurse
Brief COPE	Brief Coping Inventory
CAPS	Counseling and Psychological Services
CoP	Community of Practice
DASS-21	Depression Anxiety and Stress Scale 21
DEAL	Detect, Evaluate, Act, Learn Model
DNP	Doctor of Nursing Practice
ID	Identity
IHI	Institute for Healthcare Improvement
MBI	Maslach Burnout Inventory
MSN	Masters of Science in Nursing
NP	Nurse Practitioner
NSM	Neuman Systems Model
OSA	Objective Self-Awareness
PI	Principal Investigator
POMS	Profile of Mood States
PSS	Perceived Stress Scale
PS1	Pre-Survey
PS2	Post-Survey
RCT	Randomized Control Trial

RN	Registered Nurse
SON	School of Nursing
STAI	State-Trait Anxiety Inventory
UNC-CH	University of North Carolina at Chapel Hill
WHO	World Health Organization

CHAPTER 1: A COMMUNITY OF PRACTICE FOCUSED ON RESILIENCY

The promotion of health and well-being, in part by coping with the normal stresses of life, is one of the World Health Organization's (2013) main foci. Stress, as defined by Selye (1976), is a normal, non-specific physiological response to demands. Stress involves the response of endocrine and neurological systems to environmental stimuli (Kravits, McAllister-Black, Grant, & Kirk, 2010; Rice, 2012). Physiological ways of describing stress include Canon's flight or fight response and Selye's generalized adaptation syndrome; a cycle of alarm, resistance, and exhaustion (Rice, 2012).

Stress triggers physiological changes, influences emotional and behavioral responses, and may be perceived as negative or positive (Khamisa, Peltzer, & Oldenburg, 2013; Lim, Bogossian, & Ahern, 2010; Nakata, 2012; Roy et al., 2014; Selye, 1976; Walker, Nilsson, & Jones, 2013). How a person responds to the experience of stress has a significant impact on whether they are able to reduce or exacerbate it (Chao, 2012; Kravits et al., 2010; Li & Nishikawa, 2012; Tachè & Selye, 1985). If stress is seen as a positive (eustress), it may motivate, excite, and improve focus; and by contrast, stress that is high, chronic, and/or perceived as a negative may have long-term, distressing health repercussions (Rodríguez, Kozusznik, & Peiró, 2013).

It may therefore be argued that the focus of health promotion efforts should not be on stress itself, a normal part of existence, but on the differences resulting from individual responses to high or chronic levels of stress (Kravits et al., 2010; Rice, 2012). Negative stress is linked to poor self-care behaviors such as irregular eating patterns, overeating, low

activity, and situational avoidance (American Psychological Association, 2014; Dyrbye, Thomas, & Shanafelt, 2005; Dyrbye et al., 2010; Kravits et al., 2010; Nahm, Warren, Zhu, An, & Brown, 2012; Roohafza et al., 2014). Common symptoms of stress include irritability/anger, nervousness/anxiety, lack of interest/motivation, fatigue, feeling overwhelmed, and depression/sadness (American Psychological Association, 2014). Stress is also associated with a variety of costly and comorbid illnesses such as cardiovascular disease, diabetes, obesity, and depression (American Psychological Association, 2014; El Ansari, Oskrochi, & Haghgoo, 2014; Ho, Neo, Chua, Cheak, & Mak, 2010; Khamisa et al., 2013; Lim et al., 2010; Nakata, 2012; Shiralkar, Harris, Eddins-Folensbee, & Coverdale, 2013). Additionally, high stress levels (particularly those linked with long work hours and a heavy workload) may lead to exhaustion, depersonalization, and a low sense of accomplishment, which are classified by Maslach as 'burnout' (Leiter & Maslach, 2009; Maslach, 1976; Maslach & Jackson, 1981; Maslach & Jackson, 1982; Romani & Ashkar, 2014; Sanchez-Reilly et al., 2013).

Since the individual perception of the positive and negative effects of stress is related to either the level and duration of stress or the presence/absence of targeted coping mechanisms for stress, it is important to present the notion of coping mechanisms (Kravits et al., 2010; Rice, 2012). Coping skills, defined in this context as stress-reduction strategies (Mealer, Jones, & Moss, 2012), vary and may be classified as adaptive, accommodative, and non-adaptive (Yusoff & Esa, 2012). Positive coping skills are frequently identified in the form of evidence-based strategies for managing stressors and may be implemented cognitively or behaviorally (Abel, Abel, & Smith, 2012; Barbosa et al., 2013; Regehr,

Glancy, & Pitts, 2013; Shiralkar et al., 2013; Warnecke, Quinn, Ogden, Towle, & Nelson, 2011).

Behaviors that heighten mental health and well-being and manage stress are described as resilient (Kinman & Grant, 2011; Mealer et al., 2012; Southwick, Bonanno, Masten, Panter-Brick, & Yehuda, 2014). Individuals who employ resilient coping strategies are able to manage stress in a psychologically healthy way (Mealer et al., 2012; Neuman & Fawcett, 2010; Tachè & Selye, 1985). Coping strategies, which lower unhealthy stress-related symptoms and behaviors, may be taught and reinforced (Abel et al., 2012; Kravits et al., 2010; Regehr et al., 2013; Regehr, Glancy, Pitts, & LeBlanc, 2014). Recognition and awareness of high stress levels and one's subsequent coping strategies are an important first step in promoting resiliency (Regehr et al., 2013; Regehr et al., 2014; Shiralkar et al., 2013; Yusoff & Esa, 2014).

Background and Significance

Graduate students, including those in health related programs, report higher levels of stress than the general population, for a variety of reasons (Boren, 2013; Dyrbye et al., 2014; Payakachat, Gubbins, Ragland, Flowers, & Stowe, 2014). Multiple barriers have been reported in the literature and include: 1) situational barriers, such as multiple life roles of the adult learner, financial challenges, and lack of time; 2) institutional barriers, such as class location and geographical distance; and 3) dispositional barriers such as negative self-perception of one's learning abilities or unfamiliar technology (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; Leineweber et al., 2014; Mazerolle, Monsma, Dixon, & Mensch, 2012; Shepherd & Nelson, 2012; Veal, Bull, & Miller, 2012). For graduate students who are also employed, additional stressors may include long workdays, weekend/night shifts, and non-supportive work environments (Khamisa et al., 2013). High levels of stress, whether

recognized or not by the individual, are concerning because they may impair students' ability to succeed academically and professionally (Regehr et al., 2013; Yusoff & Esa, 2014).

Graduate nursing students may also be at higher risk for stress-related harm because as healthcare professionals, they belong to a population that reports high stress in general (Aiken et al., 2011; American Nurses Association, 2011; Boren, 2013; Dyrbye et al., 2014; Fiabane, Giorgi, Musian, Sguazzin, & Argentero, 2012; Khamisa et al., 2013; McHugh, Kutney-Lee, Cimiotti, Sloane, & Aiken, 2011). Stress that is experienced by clinicians is widely researched and studies report that if it is not addressed, stress may lead to burnout that has the potential to negatively impact patient care through poor care delivery (Dyrbye et al., 2010; Gramstad, Gjestad, & Haver, 2013; Maslach & Jackson, 1982; Sanchez-Reilly et al., 2013; Van Bogaert, Kowalski, Weeks, Van Heusden, & Clarke, 2013; Yusoff et al., 2013b). As a result, it is important to be sure that health care professionals are educated in being more aware of stress and are familiar with personalized resources for resiliency. It is also essential that health care professionals have an opportunity to practice and learn these new coping mechanism in supportive environments.

Stress reduction training includes resilience and coping strategies (González-Torres & Artuch-Garde, 2014), but the question is how to best incorporate the conscious use of stress reduction and resiliency. At least 20% of Americans do not intentionally engage in stress reduction, despite the fact that stress reduction lowers the likelihood of high stress and comorbid illnesses and diseases (American Psychological Association, 2014; National Public Radio/Robert Wood Johnson Foundation/Harvard School of Public Health, 2014). Stress reduction/resiliency and its professional and political implications are important for graduate nurses not only for personal reasons but also for potential impact on patient care.

CHAPTER 2: REVIEW OF THE LITERATURE

Populations at Risk for Stress

The conceptualization and understanding of stress is significant and relevant for all individuals. In America alone, the population at large reports stress as a significant health risk, with 74% of the Americans polled by the Robert Wood Johnson Foundation and Harvard's School of Public Health stating that stress adversely impacted their health (National Public Radio/Robert Wood Johnson Foundation/Harvard School of Public Health, 2014). These numbers are mirrored in nursing populations, with 74% percent of respondents to the 2011 American Nurses Association (ANA) health and safety survey reporting stress as their top safety concern. American nurses have reported their concern over experiences of acute and chronic stress for over a decade (from 2001 to 2011), and during this time the trend has risen from 70 to 74% (American Nurses Association, 2011).

Different stress responses are notable by gender. Females consistently report higher stress levels than males (Cohen & Janicki-Deverts, 2012; Jungbluth, MacFarlane, Veach, & LeRoy, 2011). The American Psychological Association (2010) released a report highlighting a few key gender-related facts. In a study (n=1134) respondents reported:

1. Females were more likely than males to report high stress levels (28% versus 20%) and to report that their stress levels were increasing (49% females versus 39% males).
2. Females were more likely than males to report physical symptoms associated with stress such as headaches or feeling like crying.

3. Females were more likely than males to highlight the importance of sleep in reducing stress (75% versus 58%).
4. Few females (35%) reported success in their efforts to manage stress; however this percentage was higher than the 30% of male respondents who reported success (an interesting contrast with the first point)

These gender-related data have important ramifications for nursing since 91.3% of registered nurses in America are female (United States Department of Labor, 2014). Stress, which poses health concerns for many people, is equally important to nurses, affecting both their self-care and professional care. Stress is also a concern for nursing students at the graduate level.

Stress in Graduate Students

Graduate education in general poses stressful challenges that may be linked to individual responses to new roles, multiple responsibilities, and fiscal and relationship strains (Khamisa et al., 2013; Leineweber et al., 2014; Shepherd & Nelson, 2012). As graduate students, medical students are a well-studied population and particularly prone to reporting high levels of stress, anxiety, and depression (Boren, 2013; Dyrbye et al., 2014; Payakachat et al., 2014). However, researchers have questioned why this is the case, when medical students should seem to be healthier than the general population, given their high socioeconomic status and education level (Dyrbye, Thomas, & Shanafelt, 2006; Gramstad et al., 2013).

Upon further examination, graduate student stress arises from factors beyond socioeconomic status including negative interpersonal interactions (with trainers and stressed classmates) and academic and professional demands (Jungbluth et al., 2011). Such stress is of concern, since, for example, medical students who report high levels of stress are more likely

to contemplate suicide and/or seriously consider leaving their educational programs (Dyrbye & Shanafelt, 2011). Overall student stress may be underestimated, as few students report seeking help (Leahy et al., 2010), though many note diminished quality of life when responding to research studies (Mazerolle et al., 2012; Paro et al., 2014; Paro et al., 2010). Interestingly, warning signs such as academic struggles are not necessarily a good marker of student burnout, given the fact that conscientious individuals are at risk for being burned out while still performing at high levels (Doherty & Nugent, 2011; Tyssen et al., 2007).

Several studies have linked personality factors to the expression of stress, anxiety, and depression in graduate students (Dyrbye et al., 2006; Gramstad et al., 2013; Riise, 2012; Warnecke et al., 2011; Yusoff, Esa et al., 2013). Yusoff and Esa et al. (2013) examined the relationship between five personality traits and stress, anxiety, and depression in 196 Malaysian medical students. During times of subjectively low stress, extraversion and agreeableness were associated with better health, but during times of reported high stress, neuroticism was correlated with negative outcomes. Riise (2012) studied clinical and counseling psychology students (n=309) to determine the association between personality, coping, and psychological functioning. Riise found that although conscientiousness is linked to coping skills, conscientious traits could lead to poorer psychological functioning under high academic loads (Riise, 2012). This is noteworthy because conscientiousness, often described as careful, meticulous, planned, and responsible behavior (Riise, 2012), is often seen as a desirable trait in healthcare practitioners. Other studies noted when students reported high levels of perceived stress during academic training, this stress was likely to continue into professional roles (Dyrbye et al., 2006; Gramstad et al., 2013). These findings highlight the importance of strategizing how to enhance coping and resilience in order to

mitigate stress during graduate training and professional activities (Dyrbye & Shanafelt, 2011; IsHak et al., 2013; Riise, 2012).

Stress in Graduate Nursing Students

Although medical and dental students' stress has been well documented, there are limited studies investigating stress in graduate nursing students (Alzahem, Van der Molen, Alaujan, Schmidt, & Zamakhshary, 2011; Boren, 2013; Dyrbye et al., 2014; Payakachat et al., 2014). This gap in the literature exists despite the fact that employed registered nurses widely report experiencing high levels of stress that subsequently can lead to poor health and professional burnout (Aiken et al., 2011; Ho et al., 2010; Khamisa et al., 2013; Lim et al., 2010; McHugh et al., 2011; Nakata, 2012; Toh, Ang, & Devi, 2012; Tucker, Harris, Pipe, & Stevens, 2010; Van Bogaert et al., 2013). Surveys of these nurses have reported that stress has been linked to lower self-reported health including irregular eating patterns, low physical activity, higher weight than is considered healthy, and increased substance use/abuse (Nahm et al., 2012; Tucker et al., 2010). These outcomes are relevant to graduate nursing students, since entrants to clinical graduate nursing programs are often required to have at least one year's experience in nursing (University of North Carolina at Chapel Hill School of Nursing, 2015a) and so belong to a population that reports baseline high stress and poor wellness/self-care behaviors (Khamisa et al., 2013; Nahm et al., 2012; Tucker et al., 2010; United States Department of Health and Human Services, 2008). Without a thorough assessment of student reasons for attending graduate training, it is useless to speculate on how potential burnout could impact these students. However, the gap in the literature regarding stress and resiliency status in graduate students entering nursing programs merits further research.

In the limited literature available, the causes of high stress in graduate nursing students are varied and include multiple roles, a sense of isolation, limited power, limited

time, unfamiliarity with technology, and new, academic roles (Cohen, 2011; Reilly & Fitzpatrick, 2009; Shepherd & Nelson, 2012; Veal et al., 2012). Research by Cohen (2011) found that students agreed on several key themes: 1) conflicting roles; 2) difficult transitions into the academic setting; and 3) delays in academic progression. Reilly and Fitzpatrick (2009) measured stress and belonging in (n=89) Doctor of Nursing Practice (DNP) students who reported stressors such as changes in relationships with family/friends, finances, and personal health. These stressors negatively correlated with individual's sense of personal investment and belonging in the program. The study was limited by the fact that the majority of participants were females with a mean age of 40-50, who worked in nursing education and were part-time students. A separate study of (n=16) ethnically diverse female nursing students qualitatively described their stressors: 1) A sense of disconnect due to multiple life roles and their perception that graduate students had a marginal campus voice; 2) lack of social integration, especially with peers who had many years of nursing experience; and 3) frustration with unfamiliar technology (Veal et al., 2012). Kulesa (2014) looked at compassion fatigue in DNP students and found that of 59 participants, nearly three quarters reported burnout and stress. Maville, Kranz, & Tucker (2004) examined stress in (n=12) Nurse Practitioner (NP) students during their final year of graduate studies and ninety-two percent (91.6%, n=11) reported either above average stress or the highest stress ever in their lives. The same students also reported multiple life responsibilities and time management challenges, challenging curriculum, financial strain, and a sense that the student responsibility for their own education was not balanced by faculty/classroom support.

Even after successfully graduating, nurses currently enrolled in graduate school should expect to remain at risk for stress because of their prospective work conditions and

responsibilities associated with potential roles as a parent, spouse and/or caretaker. The opportunities offered by an advanced degree do not prevent nurses from having to work long hours that are also often associated with declines in health provider functioning and patient safety. In 2008, there were 250,527 advance practice registered nurses in the United States (United States Department of Health and Human Services, 2010b). The majority of this sub-population identified as nurse practitioners; of these, 63.5% reported working more than 40 hours a week, with more than a quarter working 48 or more hours a week (United States Department of Health and Human Services, 2010b). Given these long hours, there is an ongoing need to promote and actively develop resiliency in future practitioners.

Stress on College Campuses

Stress is widely reported among university students (Regehr et al., 2013) and occurs frequently on the University of North Carolina at Chapel Hill (UNC-CH) campus, according to 2013 data provided by the American College Health Association (ACHA, 2013). In fall 2013, the ACHA surveyed 32,964 American college students, of which 978 were from UNC-CH (constituting 13.1% of the UNC-CH student population). Responses provided information regarding overall student health, including perceived stress levels. Of UNC-CH respondents, 38.1% were graduate students, and the majority of those who participated reported experiencing high stress, exhaustion, and a feeling of being overwhelmed (See Table 1). While data may be skewed by the voluntary nature of participation, this nationally administered survey (used by over 550 colleges) demonstrates that stress-related health issues are prevalent on the UNC-CH campus.

Table 1. UNC-CH Student Self-Reported Health (n=978)

91.0%	Felt overwhelmed by all they had to do during the past 12 months
85.5%	Felt exhausted in the past 12 months (not from physical activity)
61.5%	Felt very sad in the past 12 months
60.8%	Reported more than average stress or tremendous stress over the past 12 months
60.0%	Felt overwhelmed by all they had to do in the past 2 weeks
55.5%	Felt overwhelming anxiety in the past 12 months
54.9%	Felt exhausted in the past 2 weeks (not from physical activity)
43.2%	Felt things were hopeless in the past 12 months
42.0%	Reported 3 or more traumatic events in the past 12 months (e.g., family/intimate relationship problems)
26.9%	Reported stress adversely impacted academic success
Note. This data was obtained through the American College Health Association (2013) National College Health Assessment (ACHA-NCHA II).	

Stress Reduction/Resiliency

Resilience promotes "successful adaptation, positive functioning or competence despite high risk status, chronic stress, or following prolonged or severe trauma" (Egeland, Carlson, & Sroufe, 1993). Resilient, stress-reducing behaviors and perspectives deeply impact experienced stress and can reduce feelings of helplessness (González-Torres & Artuch-Garde, 2014; Johnston, Bailey, & Wilson, 2014; Moio, 2008). Resiliency includes having a realistic perception about reality, finding meaning even in negative situations, and inventing/improvising within constraints (Coutu, 2002). Although resiliency has often been studied in individuals who have experienced abuse, torture, natural disaster, and war trauma, resilient behaviors may be seen in any population where individuals respond healthily to the stressors of life (Moio, 2008; Southwick et al., 2014). As a practice, resiliency is pivotal to academic tenacity and lifelong success (Dweck, Walton, & Cohen, 2011; Gutman & Schoon,

2013; Yeager & Dweck, 2012). Resiliency can also be developed and practiced and may be viewed as the ability to harness resources to promote well-being (Panter-Brick, 2014; Southwick et al., 2014).

Stress Reduction/Resiliency in Graduate Students

Overcoming stress necessitates understanding key factors to success in resilient graduate students. Nurses who have succeeded in graduate school noted the importance of faculty and peer support, celebrating personal growth, and self-care in overcoming stress-inducing challenges such as compassion fatigue, role conflict, lack of sleep, faculty conflict, and isolation (Cohen, 2011; Kenty, 2000; Kulesa, 2014). In 2006, the Yale School of Nursing developed weekly peer support groups for graduate nursing students (n=100) and found that students valued and learned from interpersonal stress reduction meetings (Hamrin, Weycer, Pachler, & Fournier, 2006). Besides networking and social support, persistence is key (Cohen, 2011; Shepherd & Nelson, 2012; Veal et al., 2012). The importance of perceived personal investment and accomplishment in regulating stress are also important (Gramstad et al., 2013; Rice, 2012; Romani & Ashkar, 2014).

In the fields of psychology and medicine, researchers suggest assessing entry-level graduate students to identify their current coping skills and to provide possible supportive measures where deficits exist (Regehr et al., 2014; Ying & Han, 2009; Yusoff, Yaacob, Naing, & Esa, 2013). Coping-related interventions undertaken during the course of training, especially mindfulness and meditation, have been effective in reducing stress (Barbosa et al., 2013; Shiralkar et al., 2013; Warnecke et al., 2011) According to the Robert Wood Johnson Foundation and Harvard's School of Public Health, a sense of control over stressors decreases the likelihood of reported high levels of stress (National Public Radio/Robert Wood Johnson Foundation/Harvard School of Public Health, 2014). Encouraging students to

reflect on and potentially change their views of their perceived stressors may be an effective means of reducing stress. However, stress reduction interventions should not focus exclusively on academic achievement but instead on overall student health and well-being (Galbraith & Brown, 2011).

Stress Reduction Training and Strategies

The research on stress reduction training for healthcare students and professionals over the past 30 years has been characterized by successful results that are limited by moderate to low quality research and non-standardized methods (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014). Twenty-nine (n=29) of the best-designed studies over the last three decades report small numbers, limited randomization, and inconsistent outcome measures (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014). Since stress reduction trainings have few consistent methodologies or outcomes, replicating stress reduction trainings has been further complicated by factors such as non-standardized training length (four hours to more than eight weeks) and content. In spite of the need for more rigorous research, there is strong evidence that stress reduction is effective.

Authors of a meta-analysis found 13 effective, moderate quality studies on stress reduction interventions in university settings (Yusoff, 2014). A separate review of literature identified 13 studies, which included five randomized control trials (RCTs) and eight non-RCTs (Shiralkar et al., 2013). Subjects included graduate students from a variety of years and medical specialties. The length of the intervention varied greatly, ranging from brief (less than a day) to long (over 8 weeks). The assessment instruments varied but typically included surveys such as DASS-21 (Depression Anxiety Stress Scale 21), PSS (Perceived Stress Scale), POMS (Profile of Mood States), STAI (State-Trait Anxiety Inventory), and/or MBI (Maslach Burnout Inventory), rather than physiological measurements (Shiralkar et al., 2013;

Yusoff, 2014). Interventions longer than eight weeks did not report measurably better outcomes than shorter interventions, and significant stress reduction occurred with a variety of interventions: pass/fail courses, mindfulness, self-hypnosis, and stress-management training (Yusoff, 2014). Table 2 provides a synopsis of the type of stress reduction interventions commonly provided to healthcare students and professionals.

Table 2. Types of Stress Reduction Studies Among Healthcare Students and Professionals

Curricular Changes (5 studies)	**Individualized Strategies (24 studies)**
Course Grading (Pass/Fail versus Scaled) Academic Year Length (42 versus 47 weeks) Curriculum Length (2 versus 3 years)	Emotional Analysis General Stress Management Meditation Mindfulness Self-Care Self-Development Self-Hypnosis
Note. Adapted from Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014	

Researchers studying stress and reviewing interventions strongly advocate for stress reduction and resilience-focused interventions (Bragard, Etienne, Merckaert, Libert, & Razavi, 2010; IsHak et al., 2013; Prinz, Hertrich, Hirschfelder, & de Zwaan, 2012; Shiralkar et al., 2013). Key examples of strategies that reduce stress and increase resiliency include social support, coaching/goal setting, a healthy diet, exercise, mindfulness/relaxation training, breathing, and sleep (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014). Studies have shown that a variety of positive coping skills may reduce stress and enable individuals to avoid burnout, if correctly applied (Cohen, 2011; Montero-Marin, Prado-Abril, Demarzo, Gascon, & García-Campayo, 2014; Regehr et al., 2014; Sanchez-Reilly et al., 2013; Shanafelt et al., 2012; Shiralkar et al., 2013). Other recommendations include further

high-quality research utilizing stress reduction interventions, as they positively impact student health (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014).

Stress Reduction in Community

A supportive community is also important for stress reduction. Social support, in general, is linked to mental health (Thoits, 2011) and helping one with life's challenges, specifically with change and achieving goals (Westaby, Pfaff, & Redding, 2014). Additionally, positive interpersonal interactions are important to academic success and are reported by a variety of graduate students, including medical students, as key stress-relievers (Cohen, 2011; Jungbluth et al., 2011; Shepherd & Nelson, 2012; Veal et al., 2012). By contrast, psychosocial stress negatively impacts the immune system (Nakata, 2012). Using community-based interventions to raise awareness of and support individualized coping is an effective strategy in regulating stress (Abel et al., 2012; Regehr et al., 2013).

Communal focus on individual health goals may create an atmosphere that utilizes positive peer pressure to enable change (Mann, de Ridder, & Fujita, 2013; Westaby et al., 2014). Group-based efforts and cohesion may reduce stress, independent of specific chosen intervention (Boren, 2013; Li, Early, Mahrer, Klaristenfeld, & Gold, 2014; Romani & Ashkar, 2014). Relationships may also support continued behavior change (Thoits, 2011).

Resiliency and Professional Implications

Learning how to manage stressors is a useful skill in any chosen career field (Lent & Brown, 2013). Reducing stress that could lead to burnout is especially important in healthcare. Healthcare workers face potentially hazardous work environments and long work hours (American Nurses Association, 2011; Khamisa et al., 2013; United States Department of Health and Human Services, 2008; 2010b; United States Department of Labor, 2014), which are factors in burnout. It is therefore no surprise that health care professionals

experience burnout more frequently than the general population (Dyrbye et al., 2014) and that this burnout adversely impacts clinical-decision making (Dyrbye et al., 2010; Romani & Ashkar, 2014; Sanchez-Reilly et al., 2013). Burnout is also linked to unprofessional behavior, working while ill, and high workplace overturn (Dyrbye & Shanafelt, 2012; Gramstad et al., 2013; Shanafelt et al., 2012; Toh et al., 2012; Van Bogaert et al., 2013; Yusoff, Esa et al., 2013). Knowing how to be resilient in the workplace is therefore a useful professional skill.

Nursing Values and Stress

Stress management and reduction are top nursing values. According to Nightingale (1860), the goal of nursing is to "put the constitution in such a state as that it will have no disease, or that it can recover from disease" (para. 1). This includes primary prevention efforts to reduce stress before it leads to disease. Additionally, the American Nurses Association (ANA, 2014) has made stress-management a priority, and this organization recommends that clinicians use good communication, self-care, and mentoring. Addressing potential ill health from an environmental perspective is a theme found throughout the ANA's Code of Ethics (American Nurses Association, 2013, provisions 3 & 6).

Three nursing theorists who specifically address caring in terms of health are Neuman, Watson, and Swanson. The Neuman Systems Model (NSM) is a nursing theory that may be used to describe health as well as stress (Beckman, Boxley-Harges, & Kaskel, 2012; Neuman & Fawcett, 2010). According to NSM, individual and communal responses to stressors include: the flexible line of defense, normal line of defense, lines of resistance, and other stressors (Gigliotti, 2012). Neuman identifies five possible types of response to stress: physiological, psychological, socio-cultural, spiritual, and developmental (Neuman & Fawcett, 2010). According to NSM, burnout occurs when "buffering" processes do not

adequately cope with stress (Günüsen, Ustün, & Gigliotti, 2009). By implication, wellness and prevention efforts may focus on efforts to cope with stress resiliently.

Solutions to stress may also be understood in terms of Jean Watson's theory, Caring Science (Watson, 2009). According to Watson's idea of Caritas, caring is integral to nursing and may utilize care plans that support and restore health (Nelson & Watson, 2011). Watson's theory has been studied in concert with burnout in nursing populations (Johnson, 2011) and may be applied practically when nursing populations prioritize self-care and support it through policy, environment, and training changes. Additionally, individuals themselves may formulate a self-care plan (Sanchez-Reilly et al., 2013).

Swanson (1993) developed a middle range level theory of caring, which begins by assessing if the nurse has the capacity for caring. Stress which leads to exhaustion and cynicism diminishes one's capacity to care (Maslach, 1976). It is important to note that nurses are directed by the ANA's Code of Ethics to practice self-care, as the "nurse owes the same duty to self as to others" (American Nurses Association, 2013, provision 5). Low personal resiliency and high stress must be addressed because the nurse has the duty to practice "with compassion and respect for the inherent dignity, worth, and uniqueness of every individual" (American Nurses Association, 2013, provision 1). We should therefore prioritize integrating self-care as stated by the ANA, Neuman, Watson, and Swanson into professional training.

Communities of Practice

Communities of practice (CoPs) are one way to incorporate evidence-based resiliency strategies into student training. CoPs are networks of people, often practitioners, who collectively learn and share in learning as a social experience (Lave & Wenger, 1991; Wenger, 2010). Three principles define a community of practice: a shared domain or focus,

communal relationships developed around this domain, and a shared practice or tools (Wenger, McDermott, & Snyder, 2002). CoPs may exchange information and facilitate the implementation of evidence-based practice through face-to-face interaction, email and/or online communication (Ranmuthugala et al., 2011; Swift, 2014).

In creating knowledge networks, CoPs may support the individualized experience of both community members and the individuals who these members serve (Jagasia, Baul, & Kumari, 2014). Creating a community of practice focused on resiliency and stress reduction strategies should allow members to focus on personal health and well-being while learning skills that may be passed on to patients (Regehr et al., 2014; Sanchez-Reilly et al., 2013; Yusoff, 2014; Yusoff & Esa, 2014). CoPs also promote positive interpersonal interaction and group-based efforts and cohesion, which are also stress-relievers (Boren, 2013; Boren & Veksler, 2015; Cohen, 2011; Jungbluth et al., 2011; Kulesa, 2014; Li et al., 2014; Shepherd & Nelson, 2012; Veal et al., 2012).

Policy and Health Interventions

Limiting population stress in order to improve quality of life is a concern at the highest levels of government policy and in strategic initiatives by smaller institutes. The United States government is committed to promoting community based programs which "improve health . . . and enhance quality of life," and one of its Healthy People 2020 objectives is: "HRQOL/WB-1.2 Increase the proportion of adults who self-report good or better mental health" (United States Department of Health and Human Services, 2015c). The vision of Healthy People 2020 is a society in which we all live long, healthy lives (United States Department of Health and Human Services, 2015a). Eleven of the 26 leading health indicators in Healthy People 2020 are associated with diseases or behaviors linked to stress such as diabetes, suicide, and alcohol abuse. Stress directly impacts an individual's general

health and well-being. Well-being, a positive experience of daily life, is reflective of perceived quality of life (United States Department of Health and Human Services, 2010a). This makes addressing stress and resiliency crucial in meeting the standards raised by national policy.

The Triple Aim is an example of a strategic initiative that is healthcare specific and may be used to support resiliency interventions. Developed by the Institute for Healthcare Improvement (IHI), the Triple Aim is a framework for improving health care systems by focusing on three measures: population health, patient experience, and cost (Institute for Healthcare Improvement, 2014). These aims may be incorporated into a focus on resiliency and stress reduction in graduate students who will be healthcare providers. One goal of the IHI is that the experience of care should include safe, timely, effective, and efficient interventions, which will impact the individual experience of quality and satisfaction (Institute for Healthcare Improvement, 2014). Resiliency may arguably positively impact patient experience of care, as providers who do not care for themselves and those in poor work environments are at greater risk of experiencing burnout (mental and physical exhaustion with reduced coping abilities) and providing poor quality patient care (Aiken et al., 2011; Dyrbye et al., 2010; Gramstad et al., 2013; Linzer et al., 2015; McHugh et al., 2011; Sanchez-Reilly et al., 2013; Van Bogaert et al., 2013; Yusoff, 2013). Insofar as poor patient outcomes and experiences are impacted by clinician stress, patient care may be improved by focusing on stress-control interventions for clinicians (Abel et al., 2012; Jagasia et al., 2014; Li et al., 2009; Linzer et al., 2015; Mann et al., 2013; Sanchez-Reilly et al., 2013; Shanafelt et al., 2012).

Despite goals for well-being and quality of life, policy is not widely reflected in population health. According to the World Health Organization (WHO), mental disorders are estimated to contribute to 30.9% of the global burden of disease in the United States of America (World Health Organization, 2011). A recent yearly estimate of United States spending on mental health treatment was 100 billion total (World Health Organization, 2011). The effects of stress levels are linked to a variety of illnesses and diseases that are costly both monetarily and in terms of quality of life (American Psychological Association, 2014; El Ansari et al., 2014; Ho et al., 2010; Khamisa et al., 2013; Lim et al., 2010; Nakata, 2012; World Health Organization, 2013). Across the United States, high levels of stress are also costly in terms of days missed from work and increased health provider visits (Centers for Disease Control and Prevention, 2011). It is important to recognize the positive economic implications of low-cost, preventative interventions (such as honing clinician awareness of stress and effective coping strategies) from a population perspective (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014).

CHAPTER 3: PROJECT PROPOSAL

Conceptual and Theoretical Framework

Originally proposed by Duval & Wicklund in the 1970s (Duval & Wicklund, 1972), Objective Self-Awareness (OSA) is a theory rooted in social psychology. According to OSA, self-awareness of a personal state of being, behavior, and/or values is possible; such awareness may be developed and allow for directed change (Silvia & Duval, 2001). While changes in behavior may occur without self-awareness and in response to focused attentiveness, self-awareness among individuals and populations may lead to desired changes (Silvia & Phillips, 2013). OSA has been adapted by various thinkers and used to influence outcomes in emotional training, self-assessment, behavior change, and group dynamics (Silvia & Duval, 2001). It has also been utilized as a research tool for analyzing stigma, mood, and intention (Pinel & Bosson, 2013; Yang & Chang, 2010).

Objective self-awareness is the result of focused attention on the self (Silvia & Duval, 2001); individuals who develop self-awareness become proficient in the use of self-focus as a technique to make assessments about themselves (Taylor, 2010). Key components of the original OSA theory are the idea of self, standards, and awareness (Duval & Wicklund, 1972). Focus on the self allows for objective self-awareness in which the individual is the object and subject of her or his own observation (Silvia & Phillips, 2013). According to OSA, standards may lie within, in personal values, or without, in societal or environmental norms and pressures (Silvia & Duval, 2001). As individuals become more self-aware, there is

a natural comparison against standards, which then allows for both self-focus and a rational comparison to influences (Taylor, 2010).

A further development of the OSA theory is that awareness of discrepancies between self and standard leads to either avoidant or change behaviors (Silvia & Phillips, 2013). In using self-awareness as a method to distinguish between change intention and behavior, OSA simplifies some of the complexity inherent in assessing change-readiness. By this theory, change is individualized: the likelihood of avoiding or choosing change is dependent upon individual assessment of the probability of being able to address the problem and the anticipated rate of change (Silvia & Duval, 2001). Such a clear method of predicting individual behavior makes OSA relevant to projects which seek to promote participant self-analysis and behavioral change. Additionally, OSA provides methodological guidance; that the intervention should incorporate strategies to promote self-awareness.

Recent years have brought the distinction between the terms awareness and attentiveness (Silvia & Phillips, 2013). One study showed that changes in behavior may occur without self-awareness, in response to attentiveness to the desired behavior (Silvia & Phillips, 2013). In this example, participants learned a task after being directed in ways that focused their attention upon it without being able to verbalize full awareness of what it was they were learning. This might seem to challenge the idea of self-focus leading to self-awareness; however, attentiveness which has not yet reached self-awareness has been incorporated into OSA as complimentary to it and worthy of further study (Silvia & Phillips, 2013).

Valid critiques exist as to the uses of this theory. One observation is that it may not be possible to be truly objective about oneself. Can one be both the subject and object of

observation, as OSA assumes? If so, will one's observations and reflections be accurate? Another is that since change can be undertaken without self-awareness, it may be preferable to do so (Silvia & Duval, 2001). To answer the first, whether or not one's observations about oneself are accurate or objective, self-perception impacts one's response to stimuli. Becoming more self-aware would allow one to notice one's stress-linked responses and would be a likely effect of any stress-assessment survey (Silvia & Duval, 2001). That is, if one becomes aware of comparing oneself to standards, one is utilizing dialectic judgment (a comparison of the current state against the various possibilities for that state, given self-perception of influences, etc. (Silvia & Duval, 2001). Thus, surveys lead to an increased comparison against external and internal standards regarding stress (Silvia & Duval, 2001). Truthfully, this may not always be a positive. For example, using OSA, an individual who has a negative perception of self may take more responsibility for poor outcomes than is truly objective; by contrast, someone with an inflated opinion of self may avoid claiming responsibility for the negative consequences of their actions (Pinel & Bosson, 2013). Either one of these factors would then impact individual willingness to undertake change. Despite these concerns, OSA appears to be a theory which could be successfully adapted to measure stress and to implement a resiliency-focused solution.

Problem Statement

Stress is considered a normal physiological response to individuals' interactions within environment. When confronted with a threat to health and well-being, individuals tend to respond in a 'fight' or 'flight' behavior and may go through a cycle of alarm, response, and exhaustion. These normal responses, if managed effectively, may be a well-integrated part of positive health and well-being. If such responses are ignored or coped with poorly, stress may become detrimental to personal health, potentially leading to numerous illnesses.

Graduate students are an example of a population (and sample of convenience) in which to explore this issue further. In this proposed study, graduate nursing students are the focus, with the notion that they are health care professionals whose development of self-awareness about self-care and resiliency may occur within community.

Purpose

The purpose of this project was to create a CoP focused on resiliency in graduate nursing students. By engaging this CoP, we hoped to positively support students' sense of community and ability to care for themselves as well as others. Ideally, these clinicians-in-training will pass on their resiliency knowledge and skills to future colleagues and patients through informal discussions and formal education.

Clinical Questions

Do SON graduate students who engage in a CoP focused on resiliency report a change in resiliency from pre-training to post-training?

Has the designed intervention reached the targeted population, and do individuals report intent to continue practicing resilient self-care behaviors?

Project Design

The project design was a pre-and post-assessment coupled with an intervention and no control group. The assessments surveyed participant response to the intervention 1) during the initial workshop (pre-survey); and 2) following completion of the eight week intervention (post-survey). Both the pre- and post-survey used valid and reliable questionnaires as well as questions on participant behavior and response to the intervention. Additional, weekly surveys were optional for participants.

Methods

In establishing a community of practice, a variety of methods and measurements were used. The following section will discuss setting, participants, instruments, intervention components, and resources.

Setting

The project site was the UNC-CH SON, a public school of nursing whose mission statement is "To enhance and improve the health and well-being of the people of North Carolina and the nation . . . through its programs of education, research, and scholarship, and through clinical practice and community service" (University of North Carolina at Chapel Hill School of Nursing, 2015b, para. 1). The SON reported a total of 258 enrolled graduate students and 276 undergraduates during the 2014-2015 academic year (University of North Carolina at Chapel Hill School of Nursing, 2015c). The majority of graduate classes are online, hybrid, or meet only once a week (University of North Carolina at Chapel Hill School of Nursing, 2015b). Although stress-related data are unavailable specifically for graduate students at the SON, data published from the overall university community (See Table 2) shows that UNC-CH students could benefit from resiliency training.

Participants

The targeted sample were clinically-focused (MSN, DNP, or certificate) graduate nursing students at UNC-CH SON. Inclusion criteria were enrollment as a clinically-focused (MSN, DNP, or certificate) graduate nursing student at UNC-CH SON and signature of the consent form. Exclusion criteria included failing to complete the pre-survey or dropping out the program.

Student participation was sought through direct marketing (flyers throughout the UNC-CH SON, emails to the listserv of MSN and DNP students, word-of-mouth, and

information provided during fall 2015 student orientation). Examples of the flyer, emails to incoming and current students, and the group script are found in Appendix A. Participants were given written information about the program and its potential benefits and risks as well as the opportunity to drop out at any point in time (See Appendix B). Participants' privacy and confidentiality were maintained with no adverse effects if they left the study.

As an incentive, at the end of the research study, a drawing based on chance was held in which each participant who completed the entire research study had an equal chance at winning 1 of 5 $10 gift cards. Since the surveys had an anonymous code, the honor system was used and participants were sent an email with a link in which they were asked to state that they had completed the pre- and post-surveys and to provide their email and name for the drawing.

Data Collection Instruments

This section provides an overview of the instruments used to measure changes in participant's awareness, stress levels, behavior, and perception of the CoP (see Appendix C). Instruments used in the pre- and post-survey included a Likert scale to measure stress as well as validated questionnaires to measure stress (DASS-21 [Depression, Anxiety and Stress Scale 21]) and coping (Brief COPE [Brief Coping Inventory]. Two other sections of questions were incorporated into the pre- and post-survey: 1) Questions on change in participant awareness and behavior related to stress, coping, and resiliency, and 2) Questions on participant value of the intervention (See Appendix C). Optional electronic weekly surveys, which asked questions on the value of the weekly bulletins, were also administered.

Questionnaires. Questionnaires provide a consistent method to collect data, although their reliance on self-report means that questionnaires are subject to participant's interpretation and bias and suffer from under- or over-reporting. The use of self-administered

questionnaires fits the study design to measure the participant's overall state of resilience. The questionnaires selected for this project were the DASS-21 and Brief COPE, which are well-validated instruments that have been used to measure health, wellness, and disease in a variety of populations, including healthcare professionals and wellness workshop participants (Regehr et al., 2014; Shiralkar et al., 2013; Yusoff, 2014). At the present time, scales to measure resiliency do not enjoy the same literature support or widespread application as instruments such as DASS-21 and Brief COPE, and so were not included.

DASS-21 is a measurement in the public domain and is often used to measure stress (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005; Mahmoud, Hall, & Staten, 2010). DASS-21 has strong internal consistency and is valid, with alpha reliability coefficients ranging from .87 to .94 (Antony et al., 1998; Mahmoud et al., 2010). DASS-21 is a questionnaire that uses Likert measurements and three 7 item sub-scales to identify and assesses mental health in terms of: 1) Depression, 2) Anxiety, and 3) Stress. DASS-21 is scored by multiplying the total score by two (Lovibond & Lovibond, 1995). A score less than 26 is considered normal stress; 26-60 is mild to moderate, 61-126 reflects high to severe stress (Lovibond & Lovibond, 1995). The DASS-21 questionnaire is included in Appendix D and the permission to use it is located in Appendix E.

The Brief Coping Oriented Problem Experienced (Brief COPE) is a 28-point Likert scale to measure coping (See Appendix F) (Carver, 1997; Carver, 2013; Carver, Scheier, & Weintraub, 1989; Meyer, 2001; Yusoff, 2010). It has varying internal consistency, ranging from 0.5 to 0.9, yet is commonly used (Carver, 1997; Meyer, 2001; Schnider, Elhai, & Gray, 2007). The Brief COPE is available for academic use (Carver, 2013), and specific permission was granted to adapt the scale and administer it electronically (See Appendix G).

Changes in Participant Awareness and Behavior. The pre- and post-survey included questions on changes in participant awareness and behavior related to stress, coping, and resiliency (See Appendix C). In addition to general awareness and behavior questions regarding stress, coping, and resiliency, participant value and use of various coping strategies were measured in the pre-survey and post-survey. These values were measured with a Likert scale (1-5).

Participant Value of the Intervention. Additionally, questions were asked in the post-survey as to what participants perceived worked well, what would be removed, and what could be added. Participants were also given the chance to rate the value of intervention components on a Likert scale of 1-5 (See Appendix C).

Intervention Components

The intervention was designed using sequential methods to focus on and support graduate nursing students' resiliency by 1) discussing stress in a community; 2) raising awareness of current coping behavior and resiliency; and 3) providing strategies so that students may apply resiliency behavior to future stressors (See Appendix H). Intervention components coupled a targeted brief intervention (face-to-face workshop) with follow-up weekly bulletins including a link to a weekly electronic survey, the optional Facebook site, and with opt-out texts reminders (technology). During this process, participants were asked to:

- Attend a one-time, 1-hour workshop, during which they interacted, learned, and completed a short self-care/resiliency plan (See Appendices I, J, and K)
- Receive weekly bulletins for 7 weeks on resiliency themes and resources specific to UNC-CH (See Appendices I and L)

- Optionally join a Facebook site and/or receive weekly text as reminders to practice resiliency (See Appendices L and M)
- Complete a pre-survey (week 1) and post-survey (after week 8) that included questionnaires (DASS-21 and Brief COPE) as well as additional survey questions (See Appendix C)
- Complete optional weekly short surveys (See Appendix C)

The following section describes these components in greater detail.

Workshop. A one-hour workshop that used the DEAL (detecting, evaluating, acting on, and learning from stressors) method was employed (Yusoff & Esa, 2012; Yusoff, Yaccob et al., 2013; Yusoff & Esa, 2014). This model was adapted to fit a 1-hour time slot, using data addressed to nursing students (rather than medical students) and incorporating UNC-CH specific resources (See Appendix K). The workshop was offered at four distinct times during the first week of the semester to accommodate varied schedules, and it defined stress and resiliency, discussed stress reduction techniques and current coping strategies, and allowed participants to create a self-care/resiliency plan (See Appendix I). Campus-specific resources were provided, and students were challenged to develop a short resiliency plan that included practicing one or more stress reduction strategies consistently for eight weeks.

Weekly Bulletins. The in-person workshop was augmented with seven weekly bulletins focused on evidence-based stress reduction and resiliency content (See Appendix L). New content was provided each week, derived from evidence-based practice and arranged in terms of Maslow's hierarchy of needs, beginning with the physiological and progressing to information related to love, belongingness and self-esteem (Maslow, 1943). Content included evidence-based stress reduction practices and links to apps, websites, and

recordings available online (from Student Wellness and other sources). Additionally, each bulletin included a link to an optional survey on the usefulness of that week's content and to the project's Facebook site, where data was uploaded that was open to all participants (See Appendix L).

Technology. Technology is an effective means of developing community. Student success in graduate school is very dependent upon informational and interactive networking (Cohen, 2011; Kulesa, 2014; Shepherd & Nelson, 2012; Veal et al., 2012). Online project delivery overcomes geographic challenges while providing peer support and is effective in teaching stress reduction (Davies, Morriss, & Glazebrook, 2014; Frazier et al., 2015; Maher et al., 2014). Online social communities may help with decisional empowerment but may not provide effective support for behavioral change (Korda & Itani, 2013). This may be ameliorated by optional text-based reminders that promote interaction with the intervention and support change (Korda & Itani, 2013). Interventions utilizing social media must realize that effectiveness is influenced by participant age and readiness to change (Davies et al., 2014; Korda & Itani, 2013). An optional weekly text reminder was sent to students who opted-in to the text option, thereby integrating technology into the entire intervention. Besides the use of email to deliver bulletin content and optional weekly texts, technological components included electronic surveys in Qualtrics, and a Facebook site that contained content and provided a platform where participants could interact.

Intervention Length. The total length of the intervention was eight weeks, with the workshop occurring during week one, followed by seven weeks of bulletins. The brain has been shown to change neurological patterns in time-limited interventions (Grégoire, Bonenfant, Le Nguyen, Aumont, & Fernandes, 2014; Herwig, Kaffenberger, Jäncke, &

Brühl, 2010; Santarnecchi et al., 2014). Eight weeks of interventions such as mindfulness is common and results in neural changes (Britton, Shahar, Szepsenwol, & Jacobs, 2012; Davidson & McEwen, 2012; Kemeny et al., 2012), and abbreviated on-site interventions with follow-up are effective as well (Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013).

DEAL Model

All instruments and intervention components were brought together through the DEAL model (See Table 3), which was developed by M. S. B. Yusoff to create a framework for incorporating common elements of stress reduction into a concise approach to stress reduction as a continuous, preventative practice (Yusoff & Esa, 2012; Yusoff, Yacoob et al., 2013). The DEAL model was published on MedPortal and was used with author permission to adapt (Yusoff & Esa, 2012).

Table 3. The DEAL Model Applied to a Graduate Nursing Student Community of Practice

	Methods	**Tools**
Detect	Baseline survey of stress level	DASS-21
Evaluate	Baseline survey of current coping strategies	Brief COPE
Act	*Student* Commit to practicing a stress reduction strategy identified in the workshop over the next seven weeks *Community of practice* Workshop on week one with introduction to stress and types of coping strategies. Weekly bulletins (email) for seven additional weeks with a different coping strategy per week and links to resources. Opt-in/opt-out weekly text reminders to practice stress reduction. Information uploaded to Facebook	 Workshop Student Self-Care/Resiliency Plan at Workshop Face-to-face meeting Emailed information included apps, research papers, and links to campus-specific resources. Facebook site: warehousing data and provided a platform for community interaction
Learn	*Student* Knowledge of stress levels, stressor identification, and coping strategies Practice of coping *Community* Effective intervention to increase student knowledge and practices	Survey at baseline and end: 1. Reported stress levels 2. Reported use of coping strategies 3. Reported value of intervention Data collected from pre- and post-survey and weekly surveys attached to bulletins

Resources

Initial project development occurred in a resource-rich environment and thus incurred limited costs. The workshop and bulletins included in this project were developed by the principal investigator (PI), with additional resources provided by email and located on the Facebook site. UNC-CH Student Wellness provided feedback on UNC-CH specific content for weekly bulletins (J. Radhakrishnan, personal communication, March 31, 2015). The UNC-CH SON clinically oriented graduate program directors (PD) approved of the PI promoting the project to their students, and the Assistant Dean of the Office of Student Affairs facilitated promotion of the project to current and incoming students.

Initially, no outside source of funding for project implementation or analysis was utilized, although in spring 2016, the Alpha-Alpha chapter of Sigma Theta Tau awarded a grant that reimbursed the itemized items found in Table 4. As part of costs, the PI provided healthy food/snack items at the workshops and purchased project supplies. Additionally, five $10 gift cards were used as incentive raffle items for participants who completed the entire intervention. There was no reimbursement for any hours spent by the PI on the project, and not all budgeted items were listed in Table 4, since several items had been previously purchased or printed and no editing costs were included.

Table 4. Budgetary Costs

Item	**Average Cost**	**Number**	**Total Cost**	**Funding Source**
Office Supplies (printing paper, worksheets, folders, flyers)				
Black and white copies	0.13	655	85.15	PI (Office Depot)
Pack of Sticky Notes	1.99	1	1.99	PI (Office Depot)
Pack of blue folders (5 count)	9.99	4	39.60	PI (Office Depot)
Paper and copies, UNC-CH printers	-	-	27.00	PI (UNC-CH One Card)
Validated Instruments (DASS-21 and Brief COPE) and Survey	0	2	0.00	-
Technological tools (e.g. Qualtrics, Facebook)				
Qualtrics	0	1	0.00	-
Facebook	0	1	0.00	-
Mighty Text subscription	4.99 monthly	2	9.98	PI (Mighty Text)
Flash drive	12.99	1	12.99	PI (Office Depot)
Food items for workshop attendees	-	-	70.75	PI (Food Lion)
Gift Card for completing the entire project (raffle item)	10	5	50.00	PI (Food Lion)
Statistical Analysis (hourly)	20 Hourly	7.5	150.00	PI (Bank of America)
Poster Printing	-	1	94.57	PI (FedEx)
Total Project Cost			**$542.03**	

Project sustainability was enhanced by partnering with UNC-CH Student Wellness and the SON Office of Student Affairs. UNC-CH Student Wellness, which offers health-related workshops on campus, including at the Schools of Medicine and Dentistry, offered to assist with future health-related workshops for the SON and expressed interest in discussing the application of project results to other graduate student populations (J. Radhakrishnan, personal communication, March 31, 2015). The SON Office of Student Affairs was approached to share student-related outcomes and to facilitate content warehousing upon project completion. SON faculty champions will be essential to the sustainability of this community of practice, and dissemination of project-related information will be key, as will accessibility to project content. A toolkit was developed to warehouse content specific to this project and to assist in promoting a wider dissemination of the resiliency methodology (See Appendices I, J, and K for content of the workshop, bulletins, Facebook site, and texts).

Data Analysis Plan

Baseline success was measured by the quantity and quality of data gathered and the reach and effectiveness of the intervention. Data included the demographics of participants, paired surveys, quantitative data (from the pre-, post-, and weekly surveys), and qualitative themes identified through workshop discussions, Facebook posts, and select questions on the pre- and post-survey. This pilot project expanded the body of knowledge regarding a CoP focused on stress reduction and resiliency in graduate nursing students.

Data Collection

Quantitative Data. Participants completed the DASS-21, Brief COPE, and the remainder of the pre-survey at the workshop, where this data was collected. Links to a short survey regarding the weekly bulletin content were attached to each emailed bulletin; results

were reviewed weekly. The second administration of the DASS-21, Brief COPE, and additional questions (the post-survey) occurred electronically after eight weeks.

Qualitative Data. Qualitative data from group discussions at the workshop and on Facebook were summarized thematically and added to data from the qualitative questions on the survey.

Data Confidentiality

Participants created an anonymous code using the procedure described by Damrosch (1986), and this code known only to the participant was used on all survey results, data storage and analysis (See Appendix N). Demographic questions were limited to lessen the risk of identifying participants. All identifiable information that was collected for this research study remained confidential and will be disclosed only with student permission or as required by law and/or UNC-CH policy. The consent forms, with student names, emails, and phone numbers, were collected and stored separately from survey results in a secure, locked cabinet.

The face-to-face meeting and Facebook site were, by design, not anonymous. Participants were reminded at the meeting, on the Facebook site, and in the consent form that researchers would do their best to retain confidentiality; however, anything participants state in person or post online would not be anonymous. Additionally, the participants were required to sign the UNC-CH SON Social Media Form before being sent a link to the Facebook site (See Appendix O). Qualitative data was summarized thematically in analysis and stored on a secure flash drive.

Statistical Analysis

Data analysis was attempted using a paired t-test analysis to assess changes in the pre- and post-survey scores. Initially, a power analysis was performed to provide the needed number of samples; a power analysis of 80% would have been required to detect a moderate effect size of 0.5; this value was based upon a paired t-test with a 0.05 two-sided significance level. At these values, the optimal minimum sample size was 34 for a two-sided t-test and 27 for a one-sided t-test. Given the expected loss to follow-up (with reduction in effective sample size), the initial sought sample size was 40-50 participants.

Given the low number of recruited participants, both a paired two-sided and one-sided t-test were performed, along with a test of normality. The null hypothesis for the two-sided t-test was H0: change in stress scores between pre and post were equal to zero. The alternative hypothesis for the one-sided t-test was H1: change in stress scores between pre and post were larger than zero. With a small number of enrollees and limited retention/pairing, the t-tests did not yield overall statistically significant comparisons.

Raw data was aggregated and mean values and percentages reported. Descriptive statistics were used to describe the demographic distribution in participants, while reach, retention, and participant feedback were also compiled in order to measure the implementation process.

Implementation Process Measure. The implementation process was measured in terms of participant attendance (project reach), retention, and satisfaction. Attendance was tracked by 1) completion of the workshop, the pre- and post-surveys, and the weekly surveys following each bulletin and 2) activity on the Facebook site. Retention was measured by comparing the number of participants who completed the first workshop and first survey with

those who completed the final survey. Satisfaction was measured by participant response to survey questions.

Scope of Practice and Safety Measures

The use of interventions to promote wellness is within the scope of practice of registered nurses in North Carolina. Registered nurses (RNs) are able to promote health and wellness and provide, disseminate and use educational tools to facilitate learning to individuals, groups, families and communities. Such preventive measures fit within the nursing scope of practice in North Carolina, where the Nurse Practice Act includes "caring, counseling, [and] teaching... in the maintenance of health" as well as "care given to maintain the optimum health levels of individuals, groups, and communities" (North Carolina Board of Nursing, 2009). In doing so, nurses at all levels (advance practice RNs and RNs) are actively participating in the United States' government's aims of Healthy People 2020: to improve health and enhance quality of life (United States Department of Health and Human Services, 2015b). Advanced practice nurses, such as Nurse Practitioners in Primary Care, would also be able to plan and implement a similar project and program, using skills focused on specific populations and health issues (e.g. individuals with Diabetes Mellitus and Depression; or any group experiencing or at risk for stress related events in their lives). The primary investigator (PI) of this project is a doctoral student who is also being educated as an advance practice registered nurse (APRN) and will continue to provide educational and community health initiatives in her role as a Family Nurse Practitioner in Primary Care (American Nurses Association, 2008).

Safety measures. We expected that most participants would find this research study to be a positive experience. However, a small possibility existed that during the course of this project, a participant may identify and express distress. Although standardized measures were used to measure stress (DASS-21), the anonymous ID associated with surveys meant that there was low likelihood of associating a participant survey response with the participant, while the greatest likelihood of associating participant comments with individuals was through the Facebook site. In the unlikely event that a participant indicated that he/she was experiencing distress, the PI's plan was to refer the participant to UNC-CH Counseling and Psychological Services (CAPS) directly or through the Assistant Dean of the Office of Student Affairs at UNC-CH SON.

CHAPTER 4: RESULTS

This section provides participant information and demographics in addition to the data analysis and quantitative data. Twenty-two (n=22) people attended the initial workshop; of these, sixteen were retained (n=16) with an attrition rate of 27%. One participant left the graduate program and as such was lost to the project; five (n=5, 23%) participants failed to complete the post-survey. Twenty individuals (n=20, 91%) signed up to receive weekly text reminders. Three participants (n=3, 13%) chose to join the Facebook site. All participants received the weekly bulletin, sent to a closed email listserv each Tuesday morning.

Sixteen participants completed the post-survey, but the ability to pair pre- and post-surveys was hampered by the mismatch of anonymous code in five final participants, limiting comparability of individual results. A total of eleven final participants (n=11) provided data which could be paired with their pre-survey answers. Additionally, mean values of responses to the pre- and post-survey were compared.

Demographics

Gender, Age, Race, and Personal Information

All participants (n=22, 100%) were female, with a majority being Caucasian (n=18, 82%) (See Figure 1). They ranged in age from 25 to 56 years.

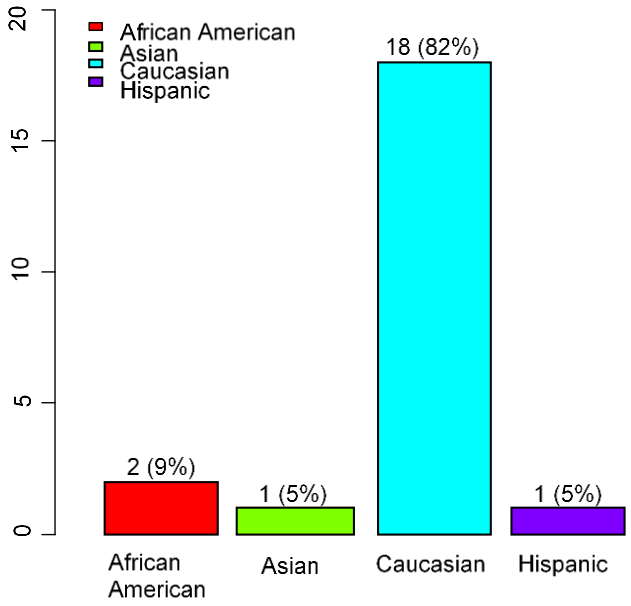


Figure 1. Sample Ethnicity Distribution

Many participants reported a lengthy campus commute, and more than a third reported dependents. The mean round-trip commute of participants to campus was one and a half hours, with a range from less than half an hour (n=2, 9%) to between three and eight hours (n=5, 23%). Participants had zero (n=14, 64%) to three dependents (n=1, 5%); for those who reported dependents, the mean number of reported dependents was two (n=5, 23%). The majority of participants owned pets (n=16, 73%).

Work Experience

Participant's mean experience working in nursing prior to current degree enrollment was 7.9 years, with a minimum of one year of nursing experience (n=1, 5%) and maximum of thirty (n=1, 5%). Although a majority reported four or less years of nursing experience (n=13, 59%), seven individuals (32%) reported a decade or more of experience. There was also a wide variety in hours currently worked per week, with participants reporting working a mean of twenty-five hours, a minimum of zero (n=1, 5%), and maximum of fifty (n=1, 5%).

Education

Participants reported a variety of academic backgrounds, programs and focuses. The majority entered their current degree program holding a BSN (n=15, 68%), followed by MSN (n=4, 18%). Notably, one reported an AA/AD (n=1, 5%). The sample was almost equally distributed between those enrolled in DNP (n=12, 55%) and MSN or certificate (n=10, 45%) programs (See Figure 2). A majority were pursuing NP qualifications (See Figure 3) and were enrolled full time (n=15, 68%). Participants reported less than a year to four years of experience as graduate students in the SON (See Figure 4), and were members of various educational cohorts, with anticipated graduation year spanning a range from 2015 (n=2, 9%) to 2018 (n=3, 14%) (See Figure 5).

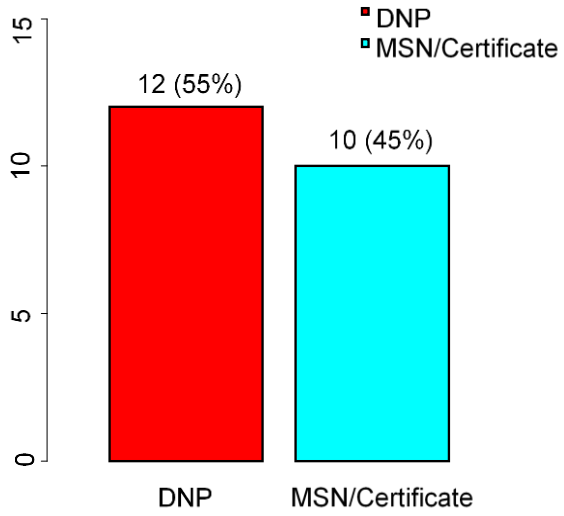


Figure 2. Participant Degree Enrollment

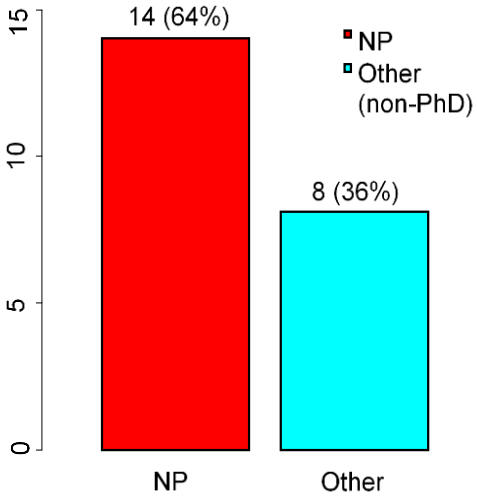
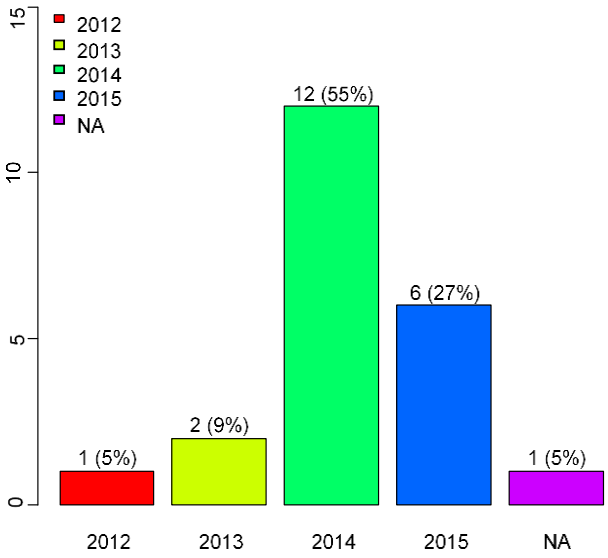


Figure 3. Participant Program Focus



* One participant's data was NA as it was not entered as a year

Figure 4. Enrollment Year for Participants

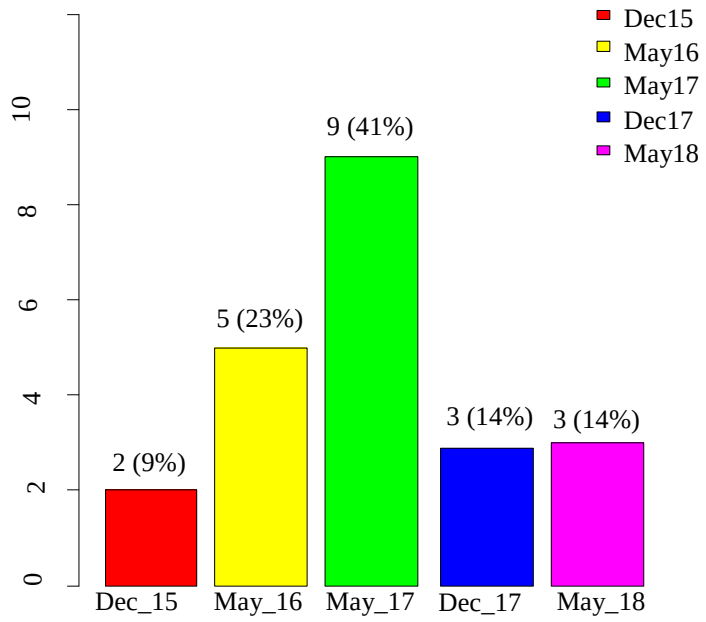


Figure 5. Expected Graduation Year and Month for Participants

Intervention Impact

After 8 weeks (August-October 2015), participants were asked to report on the impact of the intervention. To recap, the research questions were as follows: Did SON graduate students who engaged in a CoP focused on resiliency report a change in resiliency from pre-training and post-training? Did the designed intervention reached the targeted population, and did individuals report intent to continue practicing resilient self-care behaviors?

Given the low number of recruited participants, both a two-sided and one-sided t-test were performed, along with a power analysis and a test of normalcy. With small numbers of enrollees and limited retention/pairing, the t-test results did not yield statistically significant comparisons, nor did the normalcy test yield meaningful results. Further data analysis, however, provided information on participant response to the intervention, providing a summary of changed awareness, strategies, and abilities (See Table 5).

While the majority of participants reported a moderate to high increase in awareness of stress, coping, resilient behaviors, and community resources, changes in reported sense of community, coping strategies, and ability for self- and other-care were smaller. Participants recounted widely different results when asked if the intervention promoted their sense of community, although they noted a moderate increase in awareness of UNC-CH community resources. Participant reports of low community development was mirrored by qualitative feedback, which highlighted the fact that most participants did not use the Facebook site (the intended means of promoting long-term community) and requested additional in-person meetings. Meanwhile, participants reported that positive coping strategies/resiliency were moderately improved, but perceived changes in ability to care for self and others were split, with sixty-three percent (63%, n=10) believing that the intervention positively impacted their ability to care for themselves and others a great deal and the rest reporting it helped not at all or only a little. Changes in perceived action and ability were, overall, lower than reported changes in awareness (See Table 5). For the purposes of analyzing results and comparing aspects of the pre- and post-survey, the terms PS1 and PS2 differentiate between the pre-survey [PS1] and post-survey [PS2].

Table 5. Participant Reported Value of Intervention (n=16, PS2)

Value of Impact (Scale of 1-5)	Awareness of Stress (Q2.51.1)	Awareness of Coping Strategies (Q2.51.2)	Awareness of Resilient Behaviors (Q2.51.3)	Awareness of Community Resources (Q2.55)	Sense of Community (Q2.56)	Positive Coping Strategies/ Resiliency (Q2.52)	Ability to Care for Self and Others (Q2.57)
Not at all	6%	13%	13%	6%	**25%**	6%	13%
A little	13%	13%	6%	19%	13%	19%	**25%**
Moderately	**25%**	13%	19%	**25%**	**25%**	**31%**	0%
A great deal	**50%**	**74%**	**74%**	**44%**	**25%**	**38%**	**44%**
Completely	6%	19%	19%	6%	13%	6%	19%

Since the majority of participants (n=15, 94%) who completed this resiliency-focused CoP reported a change in resiliency following the intervention, the project met its objective in this area. Additionally, demographic data revealed that the intervention reached graduate nursing students at the SON from a variety of years and programs, although only recruiting 22 of 258 (9%) of the target population, without controlling for PhD students (University of North Carolina Chapel Hill School of Nursing, 2015c).

Before discussing the final objective, that of discovering participants' intent to continue practicing resilient self-care behavior, it is important to expand on reported changes in perspective and behavior, beginning with stress and progressing through coping strategies and resiliency.

Stress Levels

Two measurements provide information on stress: the validated DASS-21 questionnaire (low/normal, mild to moderate, and high to severe) and self-reported perceived stress on a Likert scale (1-5). At the beginning of the project, participants' stress via the DASS-21 questionnaire ranged from normal to severe, which in general was slightly lower than participants' self-reported stress on the Likert scale (See Table 6). However, the majority of participants reported mild to moderate stress on both the DASS-21 (n=13; 59%)

and Likert scale (n=12; 55%). Neither the years of nursing experience, age of participants, nor weekly hours worked were significant in relation to perceived stress levels (See Appendix P). Additionally, part-time and full time student status did not significantly impact perceived stress level.

Table 6. Baseline Stress Reported by Participants (n=22, PS1)

Level of Stress	**DASS-21**	**Likert Scale (1-5)**
Low/Normal Stress	27% (n=6)	-
Mild to Moderate	59% (n=13)	55% (n=12)
High to Severe	14% (n =3)	46% (n=10)

In both DASS-21 and Likert scales, means of recorded values of stress were lower on the post-survey than the pre-survey, with results varying slightly. Following project completion, the number of participants who reported low/normal stress as measured by the DASS-21 increased (See Table 7). This was mimicked in part by the Likert scale measure, where overall mean stress diminished (3.44 from 3.50), and where two participants reported low/normal stress (as opposed to no participants reporting low/normal stress in the pre-survey). When comparing DASS-21 scores among paired participants (n=11), the majority (55%, n=6) reported lower stress scores, although two (18%) reported higher stress.

Table 7. Change in Stress Reported by Participants, DASS-21, PS1 and PS2

Level of Stress (Based on DASS-21)	**Baseline (n=22)***	**Post-Intervention (n=16)***
Low/Normal (<26)	27% (n=6)	**63%** (n=10)
Mild to Moderate (26-60)	**59%** (n=13)	19% (n=3)
High to Severe (61+)	14% (n =3)	19% (n=3)
*Differences in participant numbers reflect attrition between pre-survey and post-survey		

In addition to measuring perceived stress levels, the project asked participants to report any 1) increase in their awareness of stress, coping strategies, and resilient behaviors, or 2) promotion of personal coping strategies/resiliency. As noted in Table 5, the majority of

participants reported that the intervention increased awareness of stress, coping strategies, and resilient behaviors and promoted positive coping strategies/resiliency. The mean Likert values for each of these targets are reported in Table 8 (1 indicates no increase and 5 indicates the greatest possible increase).

Table 8. Participant Report of Intervention Impact, Mean Value (n=16, PS2).

Reported Impact on	**Mean Value (of 5)**	**Variance**	**Mean (SD)**
Stress Awareness	3.38	1.05	1.02
Coping Strategies Awareness	3.44	1.73	1.31
Resilient Behavior Awareness	3.50	1.60	1.26
Positive Coping/Resiliency	3.19	1.10	1.05

The specific changes in awareness of coping and resilient strategies may be expanded by discussing the particular coping strategies measured by the intervention. In both the pre- and post-survey, participants recorded their perceived value of selected coping strategies in handling stress and their likelihood of using each individual strategy in the next eight weeks.

Coping Strategies and Resiliency

The preferred stress reduction strategies (selected from sleep, a healthy diet, exercise, social support, goal setting/coaching, mindfulness, and breathing/relaxation) were sleep, a healthy diet, exercise, and social support (See Figures 6-9). Following project completion, participants reported they were more likely to use social support and less likely to use goal setting/coaching as coping strategies. It is possible to show changes in the reported value of coping strategies per participant by comparing paired participant results from the pre- and post-survey (See Figures 6-12). In these figures below, values that were mutually high for participants in both the pre-survey and post-survey are found in the upper right hand corner, while strategies whose values fell are circled (The PS1 Likert values lie on the y axis and

PS2 Likert values on the x axis). This is a means of depicting whether or not the strategies retained their value for participants over the course of the intervention. Notably, while relaxation/breathing was not among the top choices as a coping strategy, it is the only strategy where paired participants reported either an increased or equal perceived value; all other strategies had at least one participant report a fall in strategy value (See Figure 12).

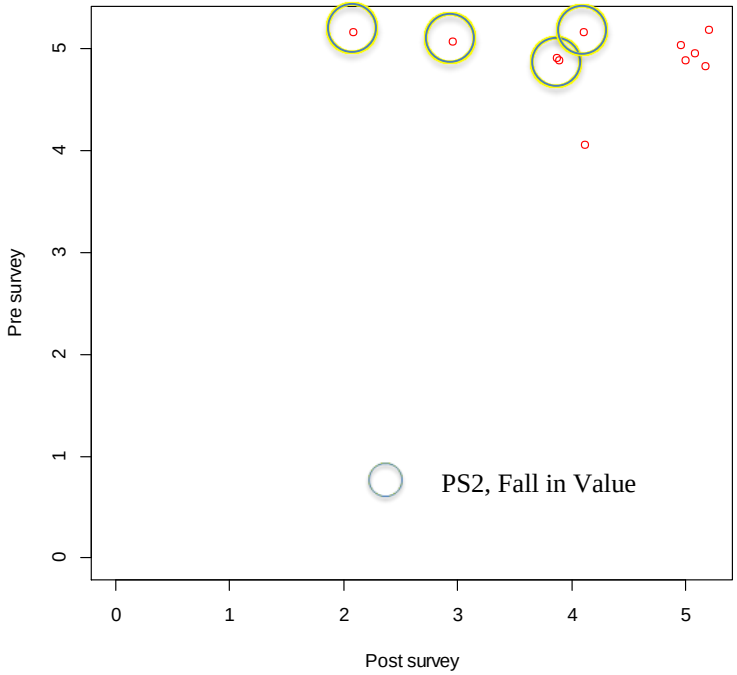


Figure 6. Change in Perceived Value of Sleep as a Coping Strategy

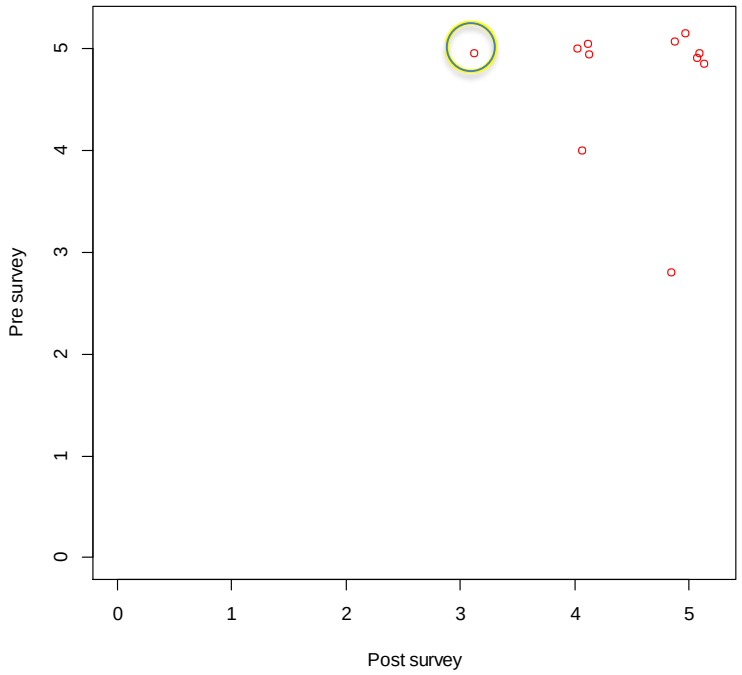


Figure 7. Change in Perceived Value of a Healthy Diet as a Coping Strategy

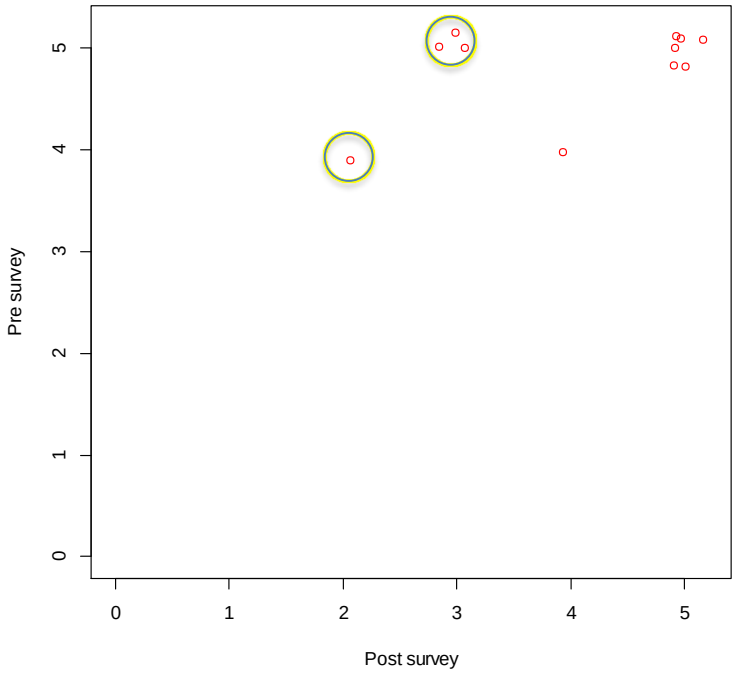


Figure 8. Change in Perceived Value of Exercise as a Coping Strategy

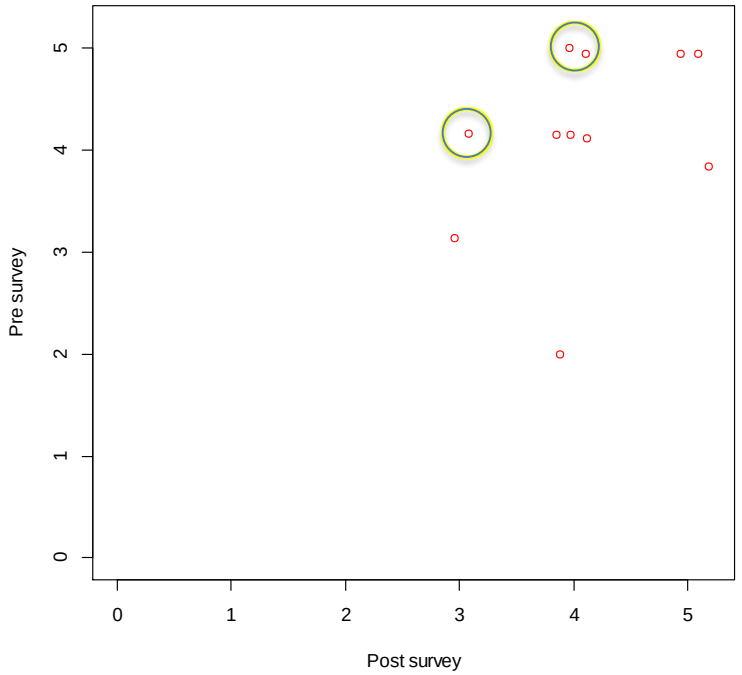


Figure 9. Change in Perceived Value of Social Support as a Coping Strategy

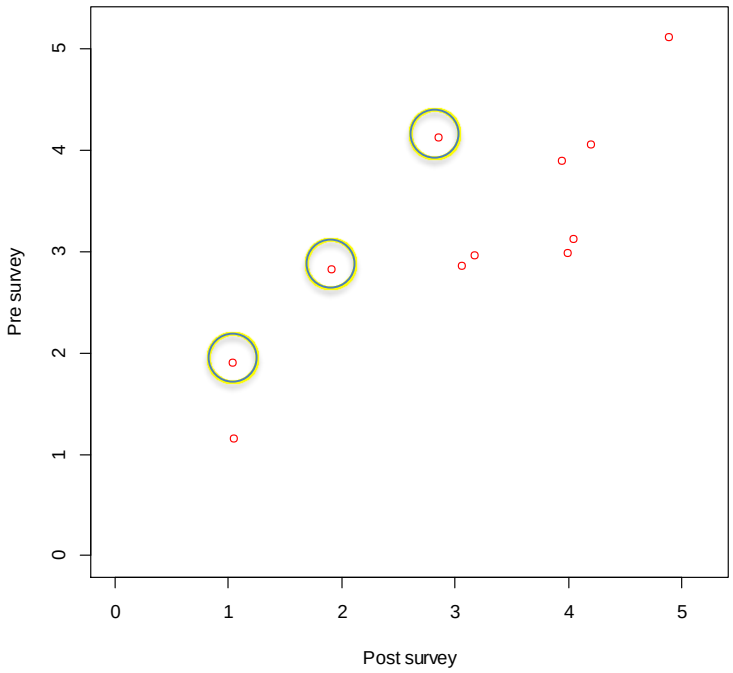


Figure 10. Change in Perceived Value of Coaching/Goal Setting as a Coping Strategy

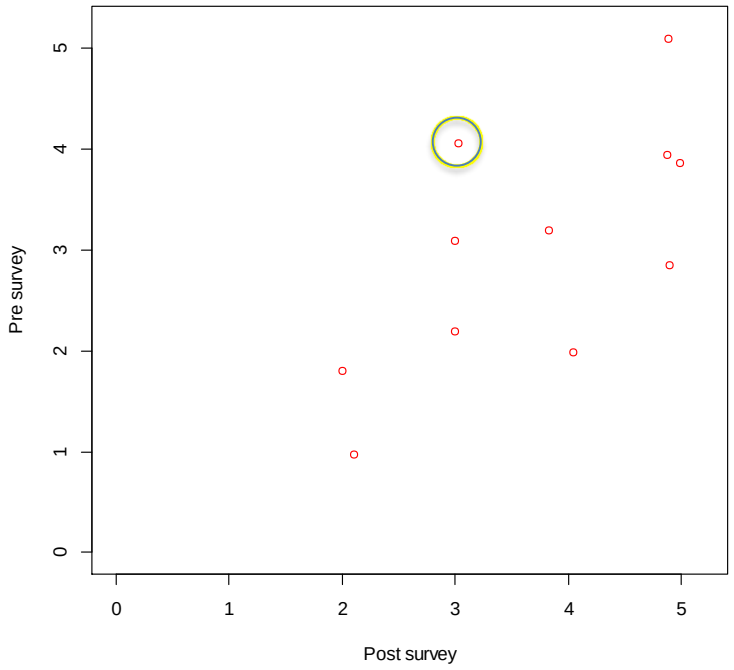


Figure 11. Change in Perceived Value of Mindfulness as a Coping Strategy

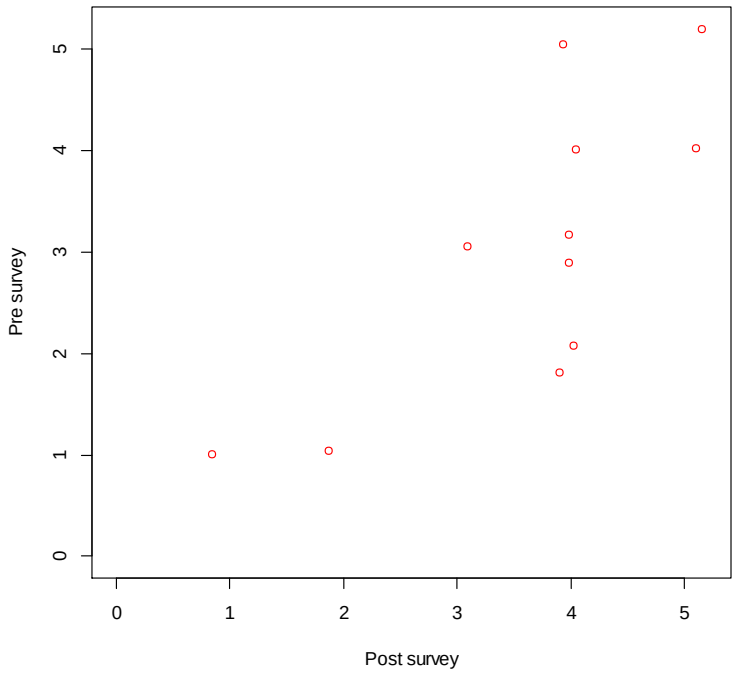


Figure 12. Change in Perceived Value of Breathing/Relaxation as a Coping Strategy

It is possible to discuss coping strategies in terms not just of individual strategies but also of the perceived role of the intervention in promoting participants' coping strategies/resiliency (See Tables 5 and 8). While mean awareness of stress and coping strategies was highest after the workshop, awareness of resilient behaviors was highest after the completion of the entire intervention. Using paired participant data, it is possible to expand on mean values by contrasting changes in participants' awareness of stress, coping strategies, and resilient behaviors with the perceived promotion of personal positive coping and resiliency (See Figures 13-15).

In the figures below, pre- and post-values overlap on a scatter plot, with values that were mutually high in the upper right hand corner of the data plots. Although values generally dropped over the course of the 8 weeks, it is notable that participant perceptions of the impact of the project remained positive (>0), with certain mutually high values overlapping.

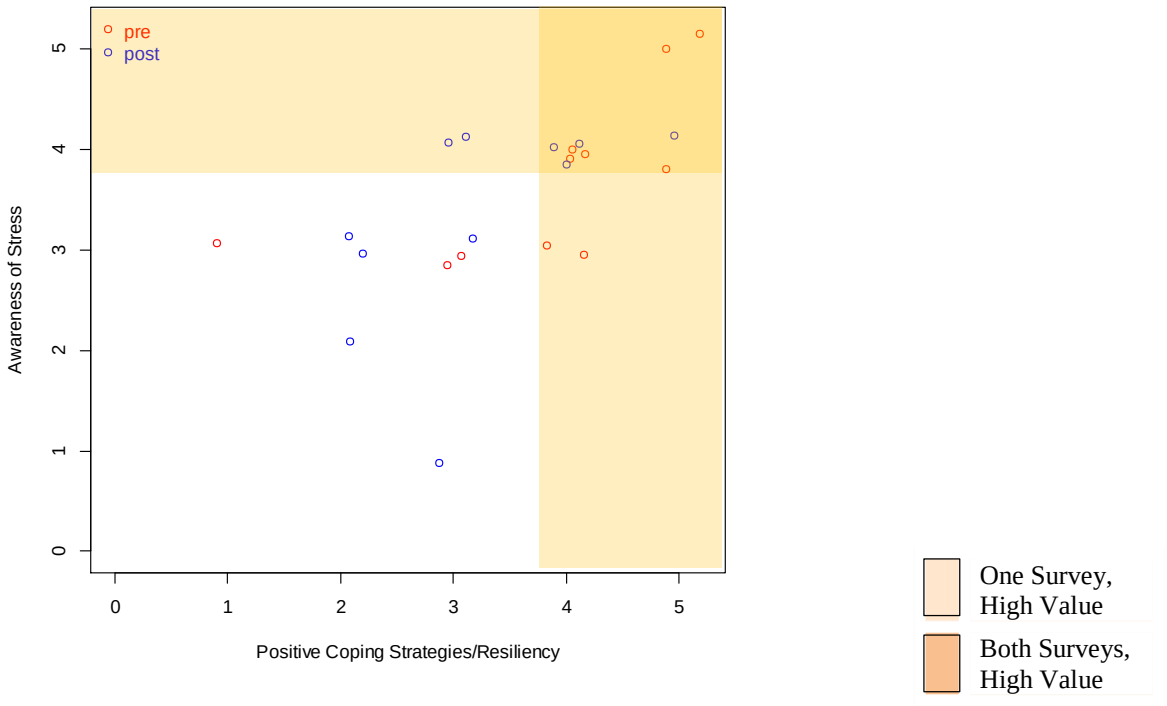


Figure 13. Contrast of Stress Awareness and Resiliency Behavior

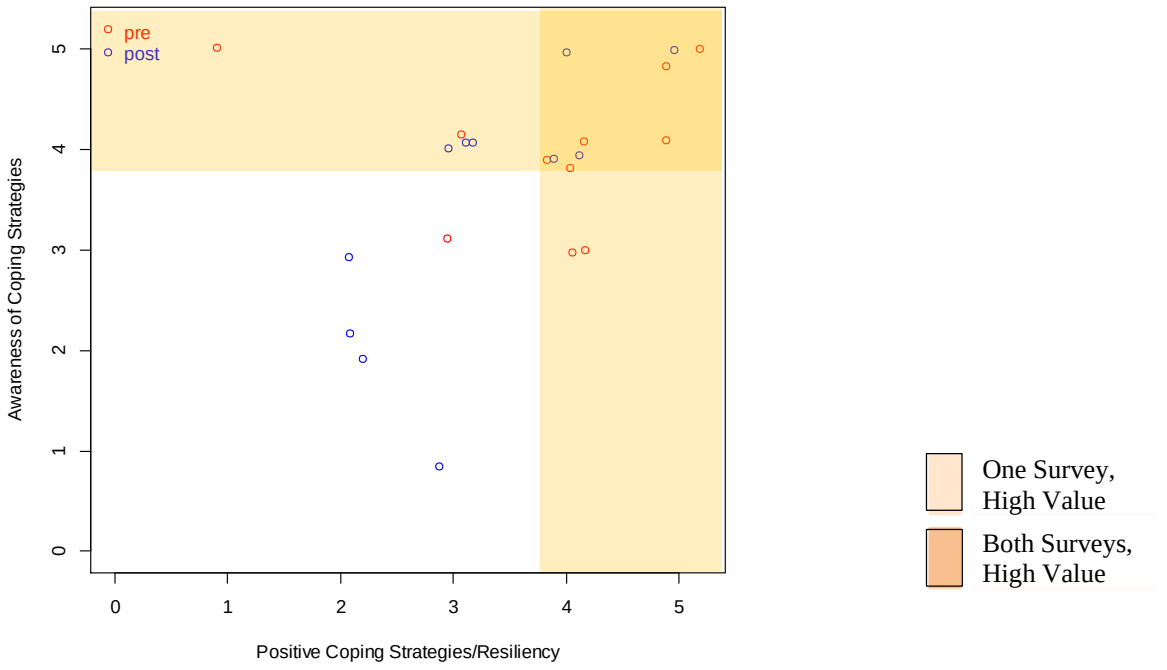


Figure 14. Contrast of Coping Awareness and Resiliency Behavior

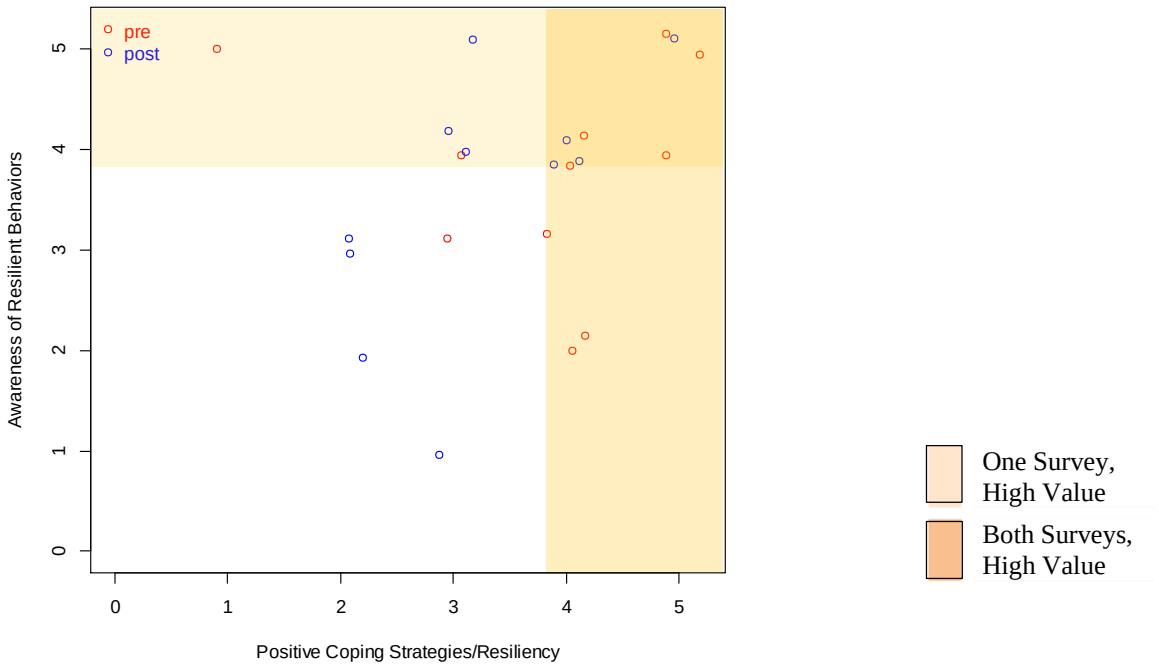


Figure 15. Contrast of Personal Resiliency Awareness and Resiliency Behavior

Likelihood of Practicing Resilient Behaviors

To address the final project objective, participants' intent to practice resilient behaviors may be assessed while 1) contrasting the reported changes in resilience with reported likelihood of practicing different stress-reduction strategies and 2) contrasting the reported likelihood of utilizing specific strategies with the perceived value of those strategies. Overall, mean reported likelihood of continuing specific resilient behaviors fell slightly during the 8 weeks of the intervention; however, participants reported that their personal coping strategies and resilience remained moderate (a reported mean of 3.19 at PS2, slightly lower than the 3.82 of PS1). Participants in general reported a moderate to high likelihood of continuing with various strategies of resiliency practice, even if that likelihood was slightly lower than at the original measurement.

Figures 16-23 show the contrast of paired participants' reported likelihood of practicing specific strategies with their perception of the value of each strategy. In these figures, both pre- and post-survey values are provided, in a scatter plot. The higher the value, the more to the upper right hand corner it appears, with the perceived value of a particular coping strategies appearing on the y axis and the participant's intent to practice that specific strategy appearing on the x axis. In general, both perceived importance (value) of strategies and likelihood of using them were lower at the post-survey measure, but they remained moderately high. In other words, although value fell slightly, these strategies remained valuable to participants, and they reported, in general, a likelihood of using them.

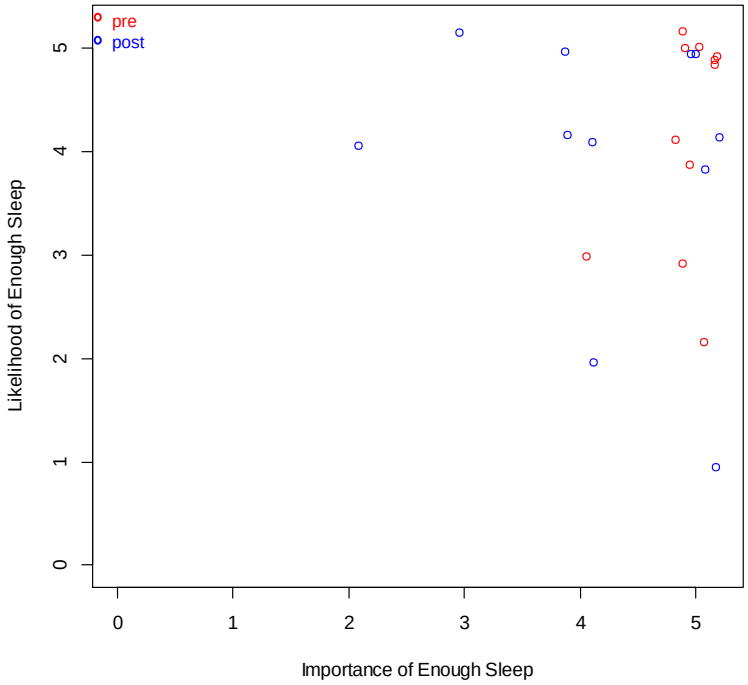


Figure 16. Sleep: Contrast of Perceived Importance Versus Likelihood of Sleep

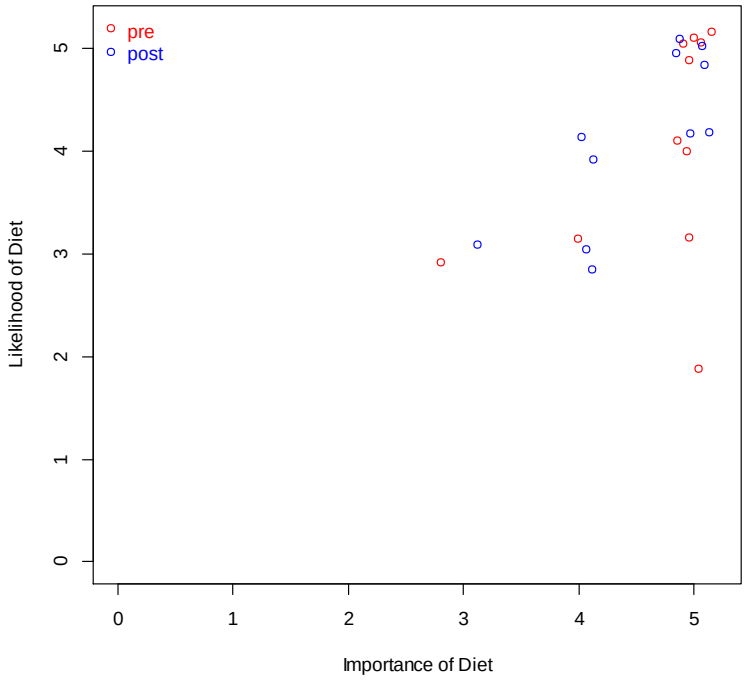


Figure 17. Healthy Diet: Contrast of Perceived Importance Versus Likelihood of a Healthy Diet

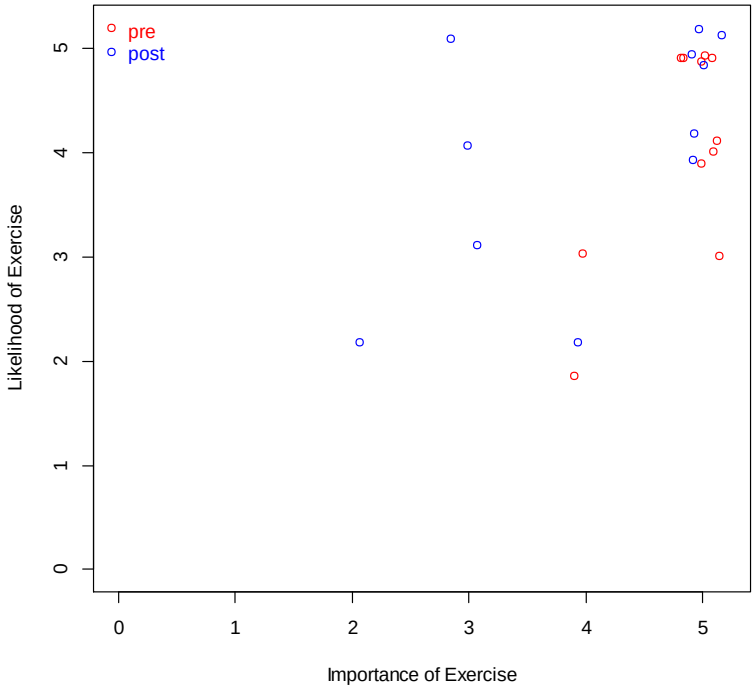


Figure 18. Exercise: Contrast of Perceived Importance Versus Likelihood of Exercise

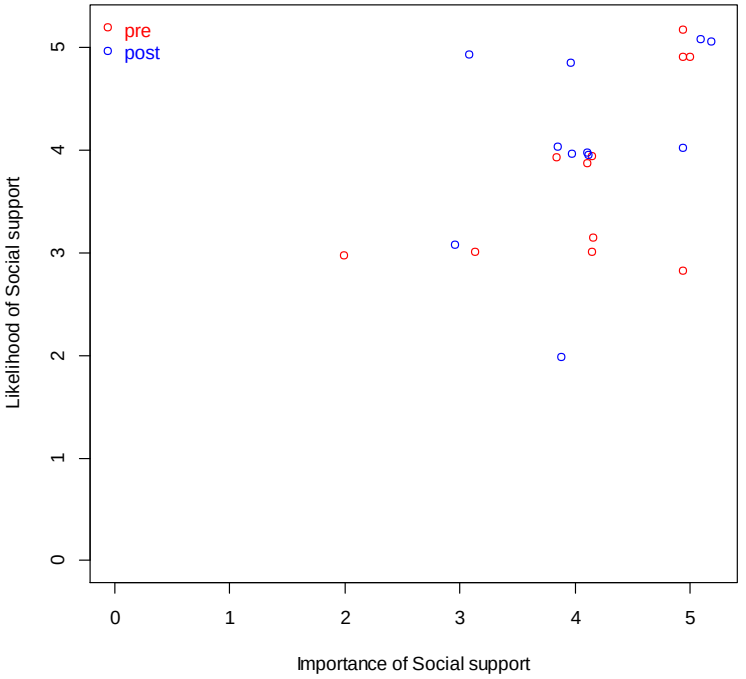


Figure 19. Social Support: Contrast of Perceived Importance Versus Likelihood of Social Support

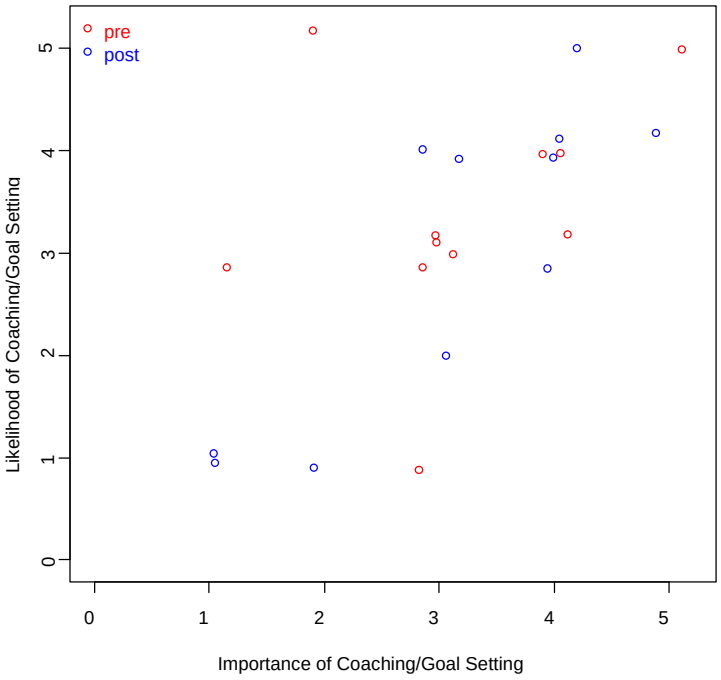


Figure 20. Coaching/Goal Setting: Contrast of Perceived Importance Versus Likelihood of Coaching/Goal Setting

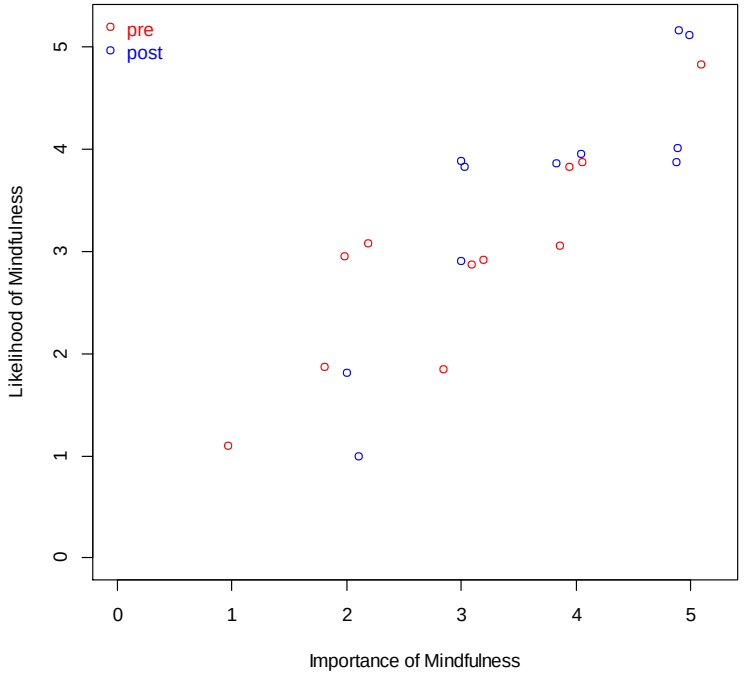


Figure 21. Mindfulness: Contrast of Perceived Importance Versus Likelihood of Mindfulness

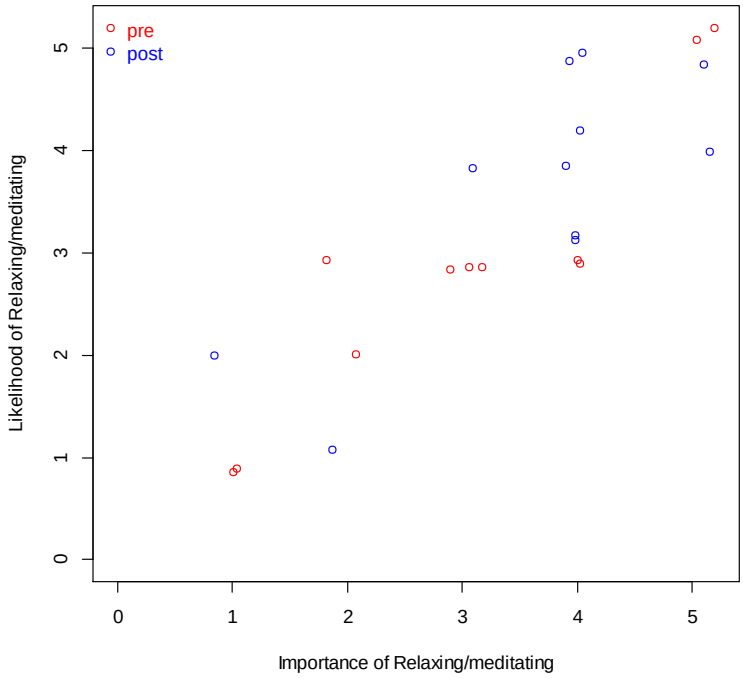


Figure 22. Relaxing/Meditating: Contrast of Perceived Importance Versus Likelihood of Relaxing/Meditations

Moving from the value of individual strategies back to the value of the project itself, we may contrast various PS1 mean values (which measured only baseline data and workshop impact) and PS2 mean values (which measured the entire intervention) for all participants (See Table 9). With the final measurement (PS2), although the impact on stress awareness (3.38), coping strategy awareness (3.44), and personal positive coping strategies/resiliency practice (3.19) diminished, the awareness of resilient behaviors increased (3.50 from 3.41), showing the probable impact of the bulletins and texts (See Table 9).

Table 9. Differences in Perception of the Intervention's Mean Value, PS1 and PS2

Mean Values (out of 5)	Pre-Survey (n = 22) Mean (SD)	Post-Survey (n = 16) Mean (SD)
Awareness of Stress	3.50 (0.67)	3.38 (1.02)
Awareness of Coping Strategies	3.59 (0.96)	3.44 (1.31)
Awareness of Resilient Behaviors	3.41 (1.05)	3.5 (1.26)
Promotion of Positive Coping Strategies/Resiliency	3.82 (1.14)	3.19 (1.05)

Value of Specific Elements of the Intervention

The participants' perceived value of various elements of the intervention also changed over time. As shown in Table 10, the perceived value of the overall intervention (3.82 to 3.19) and workshop (3.82 to 3.5) diminished slightly over the eight weeks of the intervention; the final perceived value of the bulletins (3.13) and texts (3.25) were included to provide a contrast with the perceived overall value of the intervention.

Table 10. Change in Participant View of Values of Intervention Elements, PS1 and PS2

Mean values (out of 5)	Pre-Survey (n = 22) Mean (SD)	Post-Survey (n = 16) Mean (SD)
Value of intervention	3.82 (1.14)	3.19 (1.05)
Value of workshop	3.82 (1.14)	3.5 (1.1)
Value of weekly bulletin	-	3.13 (1.15)
Value of texts*	-	3.25 (1.06)
**Value of texts was only judged by final participants who reported receiving texts (n=12)*		

The value of the weekly bulletins was analyzed and showed that most participants did not participate in weekly reporting (See Table 11). At the post-survey, the mean usefulness of the bulletins was 3.1 of 5 (moderately useful). It is noteworthy that although participants reported in the post-survey that they valued social support as a coping strategy, the weekly survey focused on social support received the lowest scores regarding content value and intent to practice (See Table 11).

Table 11. Weekly Reports of the Mean Value of the Bulletins

Weekly Theme	Respondent Number	Mean Reported Usefulness (out of 5)	Mean Intent to Practice (out of 5)
Bulletin 1: Sleep	3	4.3	4.7
Bulletin 2: Nutrition [Healthy Diet]	4	3.3	4
Bulletin 3: Exercise	4	4.5	4.5
Bulletin 4: Social Support	5	2.8	3.2
Bulletin 5: Mindfulness	4	4.8	4.5
Bulletin 6: Coaching/Goals	3	4.3	4
Bulletin 7: Relaxation/Breathing	2	4	5

Texts were found to be useful by the majority of participants, who noted that they provided a sense of support, a regular resiliency reminder, and a reliable element to the

structure of their week. Texts were found to be the most helpful electronic element of the project, with a mean reported value of 3.25 (n=5) (See Table 10).

The Facebook site provided little quantifiable benefit to the project. Few participants enrolled in Facebook (n=3; 13.6%), with no real engagement, given that on average, two participants viewed each week's posts, the final two weeks' content was not read by participants and only one comment was made on the site. Participants also noted in their comments on the post-survey that they did not utilize the Facebook site.

Themes Identified by Participants

Qualitative themes were identified by summarizing participant feedback (provided verbally at the workshop, in written format in the optional weekly surveys, and in the pre- and post-surveys). Sources of stress and well-being were identified by participant comments at the workshop (recorded in notes by the PI as participants were speaking). Most comments were in response to specific questions asked as part of group discussion: 1) What are your sources of stress? and 2) What are your sources of well-being? They were recorded as follows:

Table 12. Themes Identified by Participants during the Workshop

Sources of Stress
Role as student
Role as caretaker (children) and spouse
Class workload and inconsistent weekly routine/schedule
Own expectations
Time management
Work/life balance
Sources of Well-Being
Relationships (family and friends, pets)
Activities (exercise, cleaning)
Mental (considering accomplishments, reflection)
Other (laughter, music, nature, alcohol)
Relaxation (massage, quiet)
Spiritual

Certain themes emerged in participants' responses discussing which project elements worked and which could be removed or changed. The valued elements were reliability of bulletins and texts, normalizing stress and coping (by peer group discussions and weekly texts), and providing in-person support (at the workshop). Participants felt that it was good that the weekly texts were regular (reliability), and participants stated they appreciated the ability to reflect on stress and coping in a positive way (normalizing). One important request from participants was that there be an option to attend more in-person meetings. A few participants focused in their comments on the perceived need for additional student support as well as on perceived barriers to resiliency:

- "It was nice to get something 'out of the blue' to remind me that *I was not alone* in this journey through graduate school."

- "[This project] forced me to look at my behavior and focus on more positive behaviors and outlooks."
- "I recognize the importance of self-care and resiliency activities, but in reality I could not make as much time for it as I should have."
- "Regularity/routine seems to really help me, and the erratic nature of the [nursing] program is a challenge."
- "My schedule is constantly changing depending on my clinical rotation . . . I also feel that the school of nursing is not a supportive community. Because much of the schoolwork is online, there isn't a sense of community. Also, many of the students work . . ."

Discussion

This project demonstrated the implementation of a resiliency program designed to promote resiliency while decreasing stress in graduate nursing students. The 8-week program was found to be successful by a majority of participants and relied heavily on reframing stress, coping, and resiliency, as well as providing practical content. The challenges inherent in teaching the clinically-oriented graduate nursing student were highlighted by the wide range of ages, life experiences and professional responsibilities reported by students. Scattered over a large geographical distance, many participants reported dependents and most reported working as professionals outside of school. These disparities in individual experience, both professional and personal, were combined with varying levels of both education and length of academic experience within the current academic environment. Participant characteristics reflected the challenges in planning a meaningful intervention for all, yet, encouragingly, most participants reported positive intervention

effects. The reported relevance of the project to participants (given the diversity in professional and scholastic experience) argues that resiliency training is meaningful regardless of years spent in the profession or familiarity with the academic environment.

Participant response to content shows that it was not only feasible to combine a face-to-face workshop with electronically delivered content, but also that the stress reduction content met a need. The slight diminution in participant value of the workshop over the course of the intervention was not unanticipated, given the time lag of 8 weeks between workshop and final survey. However, the other changes in participants' awareness and behaviors between the first and final survey are worth discussing in greater detail. Reported stress levels diminished despite the fact that the second measure was taken halfway through the semester, during a time at which conceivably more stress could be expected than during the original survey. While the lower stress levels may reflect the benefit of an intervention, it might also have been due to participant adaptation to the semester, and there is also the possibility that those whose stress became too high dropped out of the project during the semester. It should be noted that many participants had completed one or more semesters and held some familiarity with the school environment, which should have limited the possible measure modification due to adjusting to a completely new environment. It is impossible to speculate reasonably on the causality of these changes without a control sample. Furthermore, while mean values for changes in awareness and behavioral aspects fell slightly at the second measurement, there was an increase in the awareness of resilient behaviors. The weekly bulletins may have furthered awareness of resilient behaviors, while the general lowering of intent to practice resilient behaviors may have been due to time constraints, strain of competing priorities or a greater sense of what may realistically be accomplished.

However, although based on a platform of community building, the intervention was not as effective in promoting meaningful opportunities for community engagement and development. In comments, students repeatedly noted the overall challenges of "community" at the school (sources of which included but were not limited to classes with limited in-person interactions) and suggested supplementing the weekly texted reminders and bulletins with additional in-person meetings (while acknowledging the logistical challenges in attending group meetings). Project-related feedback on the barriers to community in the project was supported by objective findings of little to no electronic interactions between participants during the project. Despite the barriers to in-person meetings noted by participants themselves, participants stated a desire for additional opportunities to meet in-person during the project.

Limitations

Limitations included small numbers of participants, restricted statistical analysis, a small budget, and weak development of community. While the original design decision to focus on clinical graduate nursing students was made in part to preserve the homogeneity of the sample, the small sample was further reduced by inconsistent user ids and participant attrition, preventing statistically significant results. Though the slight budget could be considered a positive, in that it allowed demonstration of the project despite fiscal restraints, tools were restricted to either low or no-cost (rather than recruitment of paid experts or personalized apps). However, the findings that were limited by low participant numbers and the lack of a control group were positive and might be strengthened by replication in other health professional student populations or schools of nursing.

Limitations in promoting community, while predictable, had a far greater impact than expected. Contributing factors included the fact that the Facebook site, designed to overcome

participant geographical distance from the project site, was not well-utilized and so did not promote community participation. This factor was compounded by the privacy limitation of a research study, which required that contact information and phone numbers remained private. As such, participants did not exchange interpersonal thoughts or ideas other than at the workshop. The main community that was created was thus between the PI and the participants, via their responses in survey, email, and texts. This was further accentuated, as participants noted, by a baseline lack of community at the SON. One possible way of overcoming this limitation is to respond to participant feedback and to design optional, additional in-person meetings into the project.

A final limitation of the data concerns the phrasing of questions. Some questions should be revised in order to avoid future multiple, contradictory answers. An example is one demographic question concerning relationship status and length of time in a relationship, which was thrown out because several participants answered it in mutually contradictory ways, potentially due to poor wording. Furthermore, although perception of personal stress, coping and resiliency was measured, the intent to practice resiliency was not directly measured but inferred from questions about the practice of specific resilient behaviors. This leads to possible confusion of overall intent to practice resiliency with intent to use certain, specific coping skills. Such limitations may well be considered in future projects but also impact the discussion of project results.

Conclusion

The many negative ways stress may impact human health, when combined with the high levels of stress reported by healthcare professionals, demonstrate the importance of reducing stress and increasing resiliency. As such, this project is a building block that may be viewed not only as providing strategies for career success but also a primary step to promoting human health and well-being. Challenges in creating an intervention that benefited diverse participants is clear, with project participants expressing many potential barriers (geographical distance, multiple life roles, hours working, and a baseline disconnect from department-related community) to engaging in this project. Despite this fact, the stress/resiliency project was perceived as useful by students, and it yielded important data on participant demographics and helpful coping strategies, with participants noting the benefit of focusing on the positive, meeting with others, and regularity and routine. This knowledge may be highlighted both as important elements of the intervention and as key to improving student experience in general.

Overall, the intervention remained moderately to greatly valuable to those who completed it but has room for improvement. The high levels of positive responses after the workshop (as well as participant comments on the value of peer support) show the effectiveness of the one-hour, in-person workshop. The different perceived values attached to the individual weekly bulletin highlight potential areas in which to adjust content, specifically in social support. While the bulletins might be improved in terms of organization and content, they and the texts received favorable responses and should be included in future interventions. The Facebook site, however, was not utilized. It is unclear whether the poor response to Facebook was because participants did not have Facebook accounts or did not

wish to share on this site. It is recommended to drop this component of the project design and consider another online format or additional in-person meetings.

When analyzing participant feedback, it is important to note the motivations which caused participants to join the project. These included knowledge (to know more about stress, to learn a specific skill, or to learn how to cope with stress in general) and helpfulness (to help another student). In keeping with the literature, participants noted similar sources for some elements of stress and well-being, arguing that stress is linked to the extent and quality of interactions, as well as to particular causes. It is also important to note that, when speaking of stress, students repeatedly referenced their lack of time, multiple roles, and limited sense of community at the SON, which would be consistent with stressors found in the literature.

While this project met the stated goal of impacting resilient behavior and reaching participants, it fell short by failing to create a long-term community of practice. Many participants found their sense of community was not affected, and this result reflects the fact that the project elements to promote community were not well-utilized and should be reconsidered. A post-intervention follow-up, six months after the intervention, would provide information on long-term effects as well as overall participant intent to be resilient.

In summary, the various lessons learned include:

- Identifying the sources of stress and coping in a group was helpful to students and should continue to be incorporated, while the use of validated questionnaires, although important for project analysis, were not as useful to students.
- Regularly scheduled, ancillary, in-person meetings should be offered to students in addition to technological support, despite their busy schedules.

- Meetings should be tailored on-location between class schedules or included in classes or department-wide initiatives.
- Supplementary meetings should include additional practical demonstration of coping skills, per student request.
- Text reminders were beneficial supports to students, and regularity in these reminders is important.
- Sleep, a healthy diet, exercise, and social support were the preferred stress reduction strategies for this cohort, and examples of these strategies should be expanded.
- Deep breathing/relaxation, although not the highest valued coping strategy, should be highlighted as the only strategy whose perceived value increased or stayed the same (rather than dropping) for paired participants over the course of the project.

Looking to the future, in a department with strong graduate student organizations, resiliency trainings might be incorporated into programming already offered by those organizations. For a department with personnel devoted to wellness initiatives, the intervention might be supported by wellness personnel as well as students, and weekly meetings (open to all students) could be available, reliably, at set times. Departments might also partner with the university's Student Wellness program to achieve a goal of sustainable, long-term resiliency efforts.

Future Research

Although student response to this project was positive, facilitating a source of community remains a burden to be addressed. As part of this process, resiliency projects should be incorporated into a long-term, structured environment, rather than undertaken as one-time interventions. The lessons learned during implementation (such as reliability and

the need for in-person options) may be also applied by other institutions or departments wishing to implement similar projects. In any department, focus groups might be held first with students, in order to ensure the project approach met their stated needs (including frequency of meetings and technological platforms), thus avoiding the trap of a mismatch between needed and provided support (Kowitt et al., 2015).

Given the argument presented in this paper of the widespread need for resiliency and specific population need for community, it is strongly urged that future projects not exclude PhD students or faculty or staff (and potentially expand into inter-professional efforts). While differences in professional roles between these individuals could impede recruitment, the potential benefits of a diverse community are many. These include: 1) learning from each other's experiences, in part because of age, role and experience variations, 2) normalizing and de-stigmatizing stress for the entire community, 3) interacting intra-departmentally to promote community, and 4) expanding the project's potential impact.

Although graduate nursing students may be helped with their coping, resiliency, and overall health through projects based on previously undertaken research, new research should not be neglected. First, the gap in the literature on graduate nursing students' overall health and stress in particular should be addressed by focusing high-quality research studies on this population. Elements specific to this project that bear further investigation are the causality of reported lower stress levels and the intent to practice resilient behaviors. Secondly, it is important to emphasize the need for large, multi-professional research focused on incorporating resiliency into graduate student education and long-term intervention impact. Ideally, projects would map graduate students' current states of resiliency, perception of needs, and barriers to wellbeing. Thirdly, it is not enough to assume that participants in

communities have outside resources, even at the graduate level. Therefore, standardization of assessment and interventions is important, and collaboration between local and global opportunities should be pursued, in hopes of strengthening international knowledge and widespread application of resiliency.

Individual self-care is only one aspect of promoting practitioner well-being and resiliency; the other, equally important aspect, is environmental support (Tutty & Dyrbye, 2013). This support would include administrative and faculty support, environment adaptation, and a structure that promoted long-term healthy behavior with tangible benefits and adaptive support, including but not limited to breaks, easily accessible healthy food, a culture of exercise, and positive interpersonal interactions (Tutty & Dyrbye, 2013). Concrete actions which may accomplish this aim include prioritizing individual health-targeted actions that fit policy and providing concerted resources as part of a long-term strategy. Administrators and supervisors must focus on creating structures that limit chaos, promote ease of access to resources, and normalize health promotion within the structures provided (whether those are on campus or worksites).

In conclusion, it is imperative that as human beings build and maintain healthy lives, we focus on healthy ways to deal with stress but do *not* normalize a constant state of unhealthy levels of stress. Accustoming ourselves to dealing with life's diverse and often-changing challenges should not necessitate a state of constant perceived crisis. While we may advocate to change perceptions so that they adapt to reality, realism demands that, since the challenges of caregiving environments are on-going and constantly evolving, we must shift focus and funding to creating healthy environments that fit the reality of the world in which we live. Resiliency does not place the burden of life-skill development solely on individuals

or groups of communal participants; rather, it acknowledges the need for environments that are structured in healthy ways. Such realistic environments, in both academic and occupational settings, must be structured to promote and maintain adequate resources for community health and wellness, supporting clinicians as well as non-healthcare professionals with healthy environments that extend well beyond the promotion of resiliency and strategies for stress-reduction. This project is one starting point from which we may develop methodical yet individualized support for human health and resiliency.

APPENDIX A: MARKETING MATERIALS

This appendix includes a marketing flyer, recruitment emails, and a script for student recruitment.

Resiliency and You:

A Mind & Body Community Workshop

for MSN, DNP, or Certificate Graduate Students

Stress a constant in our lives!
Stress management – a challenging goal, but possible!

Do you want to know strategies, resources, and ways to be ***resilient***?

Join this one-hour workshop to exercise positive stress management with other UNC-CH graduate nursing students, in a community of practice focused on resiliency. After this one-hour workshop, you will engage in weekly emails for 7 weeks, with information designed to relax, de-stress, and enhance focus on your mind & body.

Each week will bring a new topic of discussion, as well as optional interaction in our online community through Facebook. Surveys are a part of the project and will allow you to give feedback and suggest any possible improvements. We hope you will be better able to foster positivity for yourself, your patients, and the community around you!

Workshops are offered 12-1 PM *or* 4-5 PM
August 25 and 26

Do you have tips of your own?
Join the discussion and share what works for you while learning from others.

RSVP to Megan Wildes at wildes@email.unc.edu

This workshop is a component of a research study as part of a DNP project. The target audience is graduate nursing students in clinically focused programs (MSN, DNP, or certificate). Participation in all aspects is voluntary, and we intend for this to be a fun and meaningful experience.

Email to New Students

RE: Invitation to a "Resiliency and You" Workshop: Aug 25 or 26

Greetings Incoming Students,

Welcome to the School of Nursing! My name is Megan Wildes, a DNP/FNP student, and I want to invite you to join a graduate nursing student community focused on resiliency and stress management. We are recruiting graduate nursing students pursuing clinically focused degrees (MSN, DNP, or certificate) at UNC-CH.

If you chose to take advantage of this free opportunity to develop your resiliency strategies, please sign up now to attend a one-time workshop from either 12-1 PM or 4-5 PM on Aug 25 or 26. The workshop will be held at the School of Nursing, and light refreshments will be served.

After the initial workshop, you will receive weekly emails for 7 weeks with resources and tips to build your toolbox of resiliency and stress management. Additionally, you will be included in a community of practice with other UNC students, with the potential to learn from and with each other. Surveys are a part of the project and will allow you to give feedback and suggest any possible improvements.

This 8-week DNP project is a research study that includes the one-time workshop and weekly bulletins for 7 weeks. Your participation in all aspects is voluntary, but we intend for this to be a fun and meaningful experience.

Please RSVP at this link. Also, I look forward to answering any questions at wildes@email.unc.edu.

Again, welcome to Carolina, a great place to learn. I hope to meet you in person soon!

Thank you,

Megan Wildes, RN, CCRN
Student, FNP/DNP

Email to Current Students

RE: Invitation to a "Resiliency and You" Workshop: Aug 25 or 26

Greetings Fellow Students!

Welcome to the School of Nursing. My name is Megan Wildes, and I am a DNP/FNP student. I want you to be aware of an exciting opportunity beginning the second week of Fall semester.

I'm inviting you to join a graduate student community focused on resiliency and stress management and to attend a one-time workshop from 12-1 PM or 4-5 PM on Aug 25 or 26. We are recruiting graduate nursing students pursuing clinically focused degrees (MSN, DNP, or certificate) at UNC-CH.

The workshop will be held at the School of Nursing, and light refreshments will be served. After the initial workshop, you will receive weekly emails for 7 weeks with resources and tips to build your toolbox of resiliency and stress management. Additionally, you will be included in a community of practice with other UNC students, with the potential to learn from and with each other.

This 8-week DNP project is a research study that includes the one-time workshop and weekly bulletins for 7 weeks. Surveys are a part of the project and will allow you to give feedback and suggest any possible improvements. Your participation in all aspects is voluntary, but we intend for this to be a fun and meaningful experience.

Please RSVP at this link, and I look forward to answering any questions at wildes@email.unc.edu.

Thank you,

Megan Wildes, RN, CCRN
Student, FNP/DNP

Script for Class Recruitment

Hello and thank you for your time!

My name is Megan Wildes, a DNP/FNP student. I want to invite you to sign up to join a graduate nursing student community focused on resiliency and stress management. We are recruiting graduate nursing students pursuing clinically focused degrees (MSN, DNP, or certificate) at UNC-CH.

If you chose to take advantage of this free opportunity to develop your resiliency strategies, please sign up now to attend a one-time workshop from either 12-1 PM or 4-5 PM on Aug 25 or 26. The workshop will be held at the School of Nursing. Light refreshments will be served.

After the initial workshop, you will receive weekly emails for 7 weeks with resources and tips to build your toolbox of resiliency and stress management. Additionally, you will be included in a community of practice with other UNC students, with the potential to learn from and with each other.

This 8-week DNP project is a research study that includes the one-time workshop and weekly bulletins for 7 weeks. Surveys are a part of the project and will allow you to give feedback and suggest any possible improvements. Your participation in all aspects is voluntary, but we intend for this to be a fun and meaningful experience.

As an incentive, at the end of the research study, a drawing based on chance will be held in which each participant who completes the entire research study, including pre and post surveys, will have an equal chance at winning 1 of 5 $10 gift cards. I cannot guarantee that you will receive any benefits for participating.

I'm available to answer any questions. I hope to see you at the workshop!

APPENDIX B: IRB CONSENT FORM

University of North Carolina at Chapel Hill
Consent to Participate in a Research Study
Adult Participants

Consent Form Version Date: __June 18, 2015__
IRB Study # 15-1396
Title of Study: Creating a Community of Practice Focused on Resiliency in Graduate Nursing Students
Principal Investigator: Megan Wildes
Principal Investigator Department: School of Nursing
Principal Investigator Phone number: 509-338-5745
Principal Investigator Email Address: wildes@email.unc.edu
Faculty Advisor: Carol Durham
Faculty Advisor Contact Information: (919) 966-1753

What are some general things you should know about research studies?
You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study.

You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of this study?
The purpose of this research study is to create a community of practice (a network with shared focus, relationships, and tools) focused on resiliency in graduate nursing students (you). By engaging you in this community, we hope to positively support your sense of community and ability to care for yourself as well as others. Ideally, you may also pass on their resiliency knowledge and skills to future colleagues and patients through informal discussions and formal education.

This research study is being undertaken to answer the following questions: do students at the School of Nursing (SON) who engage in a community of practice (CoP) focused on resiliency report a change in resiliency from pre-training to post-training? Has the designed intervention reached the targeted population, and do individuals report intent to continue practicing resilient self-care behaviors?

As a background, stress is considered a normal physiological response to individuals' interactions within environment. When confronted with a threat to health and well-being, individuals tend to respond in a 'fight' or 'flight' behavior and may go through a cycle of alarm, response, and exhaustion. These normal responses, if managed effectively, may be a well-integrated part of positive health and well-being. If such responses are ignored or coped with poorly, stress may become detrimental to personal health, potentially leading to numerous illnesses.

Stress, a normal physiological response, becomes a problem when coping behaviors result in poor mental and physical health. Stress is widely reported in healthcare students, and students exposed to many academic and professional stressors may increase their risk for mental and physical exhaustion and poor patient care. A potential solution is to create a CoP focused on student resiliency, the ability to adapt in healthy manners to a variety of stressors. Resiliency may be developed and practiced with healthy stress reduction techniques such as sleep, nutrition, exercise, social support, relaxation, and meditation/mindfulness.

You are being asked to be in the study because you are a clinically focused graduate nursing student at the University of North Carolina Chapel Hill (UNC-CH) SON. As such, you are a health care professional whose development of self-awareness about self-care and resiliency may occur within community.

How many people will take part in this study?
There will be approximately 10-50 people in this research study.

How long will your part in this study last?
The total time estimate for your active involvement in this research study ranges from 2 ½ hours to over 4 hours (over the course of 8 weeks). The individual workshop, including the pre-survey, will be 1 hour on the first week. You should expect to spend 15-20 minutes a week on the bulletin content (during weeks 2-8; an average of around 2 hours total). You should spend around 20 minutes on the post-survey (at the end of week 8). The optional texts and optional weekly surveys during weeks 2-8 should take no more than 6 minutes a week (an average of 42 minutes total). The optional Facebook time may be as little or as much as you choose to spend. You may expect it to average 1 hour total if posting a few comments every week during weeks 2-8. The research study will end mid-semester, Fall 2015.

After research study completion, there is no planned follow-up, although you are encouraged to continue talking to each other about resiliency.

What will happen if you take part in the study?
You will be part of a community of practice focused on resiliency and stress reduction over a time period of 8 weeks. For the sake of convenience, participation in the research study requires only one face-to face event; all other interactions will occur electronically. The study is designed to focus and support your resiliency by 1) discussing stress in a community; 2) raising your awareness of current coping behaviors and resiliency; and 3) providing tools to help you apply resilient behavior to future stressors. You will be asked to:

- Attend a one-time, 1-hour workshop, complete a short self-care/resiliency plan (week 1)
- Receive weekly bulletins for 7 weeks on resiliency themes and resources specific to UNC-CH (weeks 2-8)
- Optionally join a Facebook site and receive weekly texts as reminders to practice resiliency
- Complete a pre-survey and a post-survey (week 1; week 8). You may choose not to answer a question for any reason
- Complete weekly short surveys

What are the possible benefits from being in this study?

Research is designed to benefit society by gaining new knowledge. The benefits to you from being in this study may be improved knowledge of personal coping techniques or resilient behaviors and community reinforcement of your self-care/resiliency plan. In a general sense, it is to be hoped that you will be able to adapt content beyond your own self-care to provide information to future patients. Studies have shown that a variety of positive coping skills, if correctly applied, may reduce stress and enable individuals to avoid burnout.

What are the possible risks or discomforts involved from being in this study?

We except that most of you will find this research study to be a positive experience. However, a small possibility exists that during the course of this project, you may identify and express distress. In this unlikely event, the PI will refer you to UNC-CH Counseling and Psychology Services (CAPS) directly or through the Assistant Dean of the Office of Student Affairs at the School of Nursing. If, in the course of this research study, any possible breach of confidentiality occurs, you, the School of Nursing, and the research study's faculty advisor will be immediately notified.

A small, highly unlikely, possibility exists that the Facebook site may be misused by participants' posting derogatory or unprofessional remarks. We consider this behavior highly unlikely, but the PI will read site content on a weekly basis and take down any inappropriate posts. Anything posted online is in the public domain and you (as an enrolled School of Nursing student) are required to follow UNC-CH School of Nursing social media policy.

There may be uncommon or previously unknown risks. You should report any problems to the researcher.

What if we learn about new findings or information during the study?

You will be given any new information gained during the course of the study that might affect your willingness to continue your participation.

How will information about you be protected?

This consent form, with your name, email, and phone numbers will be collected and stored separately from survey results in a secure, locked location when not in use. Only the PI and faculty advisor will have access to individually identifiable data. You will be provided with a copy of Damrosch's (1986) anonymity code to be used on all survey results. The anonymous code will also be used in data storage and analysis.

The face-to-face meeting and Facebook site will not be anonymous. You should be reminded that although researchers will do their best to retain your confidentiality, anything you state in person or post online will not be anonymous and as an enrolled School of Nursing student, you are required to follow UNC-CH School of Nursing social media policy. To assist with this, you have been provided with a copy of the UNC-CH SON Social Media Form. Qualitative data will be summarized thematically and anonymously in analysis.

All data will be stored on the hard drive of a password-protected computer.

Participants will not be identified in any report or publication about this study. Although every effort will be made to keep research records private, there may be times when federal or state law requires the disclosure of such records, including personal information. This is very unlikely, but if disclosure is ever required, UNC-Chapel Hill will take steps allowable by law to protect the privacy of personal information. In some cases, your information in this research study could be reviewed by representatives of the University, research sponsors, or government agencies (for example, the FDA) for purposes such as quality control or safety.

You must agree not to reveal anything you learn from group discussions or other activities.

What will happen if you are injured by this research?

All research involves a chance that something bad might happen to you. This may include the risk of personal injury. In spite of all safety measures, you might develop a reaction or injury from being in this study. If such problems occur, the researchers will help you get medical care, but any costs for the medical care will be billed to you and/or your insurance company. The University of North Carolina at Chapel Hill has not set aside funds to pay you for any such reactions or injuries, or for the related medical care. You do not give up any of your legal rights by signing this form.

What if you want to stop before your part in the study is complete?

You can withdraw from this study at any time, without penalty. The investigators also have the right to stop your participation at any time. This could be because you no longer meet inclusion criteria, have failed to follow instructions, or because the entire study has been stopped.

If you decide to withdraw, you will no longer be able to complete the intervention. Please notify the PI in writing of your decision to withdraw.

Will you receive anything for being in this study?

As an incentive, at the end of the research study, a drawing based on chance will be held in which each participant who completes the entire research study, including pre and post surveys, will have an equal chance at winning 1 of 5 $10 gift cards. However, there is no guarantee that you will receive any benefits or incentives for participating.

Will it cost you anything to be in this study?

It will not cost you anything to be in this study.

What if you are a UNC student?
You may choose not to be in the study or to stop being in the study before it is over at any time. This will not affect your class standing or grades at UNC-Chapel Hill. You will not be offered or receive any special consideration if you take part in this research.

What if you have questions about this study?
You have the right to ask, and have answered, any questions you may have about this research. If you have questions about the study (including payments), complaints, concerns, or if a research-related injury occurs, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?
All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject, or if you would like to obtain information or offer input, you may contact the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Participant's Agreement:

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

I DO □ DO NOT □

agree to weekly text reminders (you are always free to opt out)

_____

Cell Phone Number of Research Participant

_____

Email of Research Participant (for weekly bulletins and surveys)

_____ _____

Signature of Research Participant Date

_____

Printed Name of Research Participant

APPENDIX C: SURVEYS

This section contains the pre-survey (which will be offered in both electronic and paper format), the weekly survey (electronic), and the post-survey (electronic). It also contains the certification of project completion content, which will be emailed to participants after the post-survey. The paper form of the pre-survey appears below.

Resiliency and You Pre-Survey

Below are directions so you may generate your anonymous identification code.

Researchers sometimes need to collect information repeatedly from the same volunteers over a period of time in such a way as to satisfy two requirements: (a) each batch of information needs to be connected with the particular person who furnished it, and (b) the information needs to be collected anonymously to protect the privacy of the volunteers. One way to satisfy both requirements is to have each volunteer generate his/her own Identification Code based on information well known to the participant but unknown to the researcher. This is what this page involves.

The information which you will furnish below will amount to your own self-generated Identification code which will protect your anonymity. Therefore, please CAREFULLY furnish the following information:

Please *circle* the letter below that represents the **First Letter** of your **MOTHER'S FIRST NAME:**

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Please *circle* the letter below that represents the **First Letter** of your **FATHER'S FIRST NAME**.

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

How many *Older Brothers* do you have? _____

(both alive and deceased, step or otherwise)

How many *Older Sisters* do you have? _____

(both alive and deceased, step or otherwise)

Please select the month in which you were born.

January - 01	May - 05	September - 09
February - 02	June - 06	October - 10
March - 03	July - 07	November - 11

April - 04 August - 08 December - 12

Please *circle* the letter below that represents the ***First Letter*** of **Your Middle Name**.

(If you have no middle initial, circle the letter N)

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

This is your anonymous identification code.

Anonymous Code: _____

The purpose of this project is to create a community of practice (a network with a shared focus, relationships, and tools) focused on resiliency in graduate nursing students. By engaging this community of practice, we hope to positively support your sense of community and ability to care for yourself as well as others. Ideally, you may then pass on your resiliency knowledge and skills to future colleagues and patients through informal discussions and formal education.

As a part of this project, we are asking some questions about your current level of stress, coping, and resiliency.

1. Please select the response that best describes your current perceived stress. 1 is hardly any stress; 5 is the worst stress ever.

1 2 3 4 5

As we discussed in the workshop, various tools and questionnaires measure states of being. Literature often uses the following questionnaire to promote participants' awareness of their current state:

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

[2]	I found it hard to wind down	0	1	2	3
[3]	I was aware of dryness of my mouth	0	1	2	3

[4]	I couldn't seem to experience any positive feeling at all	0	1	2	3
[5]	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
[6]	I found it difficult to work up the initiative to do things	0	1	2	3
[7]	I tended to over-react to situations	0	1	2	3
[8]	I experienced trembling (eg, in the hands)	0	1	2	3
[9]	I felt that I was using a lot of nervous energy	0	1	2	3
[10]	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
[11]	I felt that I had nothing to look forward to	0	1	2	3
[12]	I found myself getting agitated	0	1	2	3
[13]	I found it difficult to relax	0	1	2	3
[14]	I felt down-hearted and blue	0	1	2	3
[15]	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
[16]	I felt I was close to panic	0	1	2	3
[17]	I was unable to become enthusiastic about anything	0	1	2	3
[18]	I felt I wasn't worth much as a person	0	1	2	3
[19]	I felt that I was rather touchy	0	1	2	3
[20]	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
[21]	I felt scared without any good reason	0	1	2	3
[22]	I felt that life was meaningless	0	1	2	3

Next, as we did in the workshop, please focus attention on current coping behaviors:

These items deal with ways you've been coping with the stress in your life *over the past 3 months*. There are many ways to try to deal with changes and challenges. These items ask what you've been doing to cope with current challenges. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all
2 = I've been doing this a little bit
3 = I've been doing this a medium amount
4 = I've been doing this a lot

[23] I've been turning to work or other activities to take my mind off things.

1 2 3 4

[24] I've been concentrating my efforts on doing something about the situation I'm in.

1 2 3 4

[25] I've been saying to myself "this isn't real."

1 2 3 4

[26] I've been using alcohol or other drugs to make myself feel better.

1 2 3 4

[27] I've been getting emotional support from others.

1 2 3 4

[28] I've been giving up trying to deal with it.

1 2 3 4

[29] I've been taking action to try to make the situation better.

1 2 3 4

[30] I've been refusing to believe that it has happened.

1 2 3 4

[31] I've been saying things to let my unpleasant feelings escape.

1 2 3 4

[32] I've been getting help and advice from other people.

1 2 3 4

[33] I've been using alcohol or other drugs to help me get through it.

1 2 3 4

[34] I've been trying to see it in a different light, to make it seem more positive.

1 2 3 4

[35] I've been criticizing myself.

1 2 3 4

[36] I've been trying to come up with a strategy about what to do.

1 2 3 4

[37] I've been getting comfort and understanding from someone.

1 2 3 4

[38] I've been giving up the attempt to cope.

1 2 3 4

[39] I've been looking for something good in what is happening.

1 2 3 4

[40] I've been making jokes about it.

1 2 3 4

[41] I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.

1 2 3 4

[42] I've been accepting the reality of the fact that it has happened.

1 2 3 4

[43] I've been expressing my negative feelings.

1 2 3 4

[44] I've been trying to find comfort in my religion or spiritual beliefs.

1 2 3 4

[45] I've been trying to get advice or help from other people about what to do.

1 2 3 4

[46] I've been learning to live with it.

1 2 3 4

[47] I've been thinking hard about what steps to take.

1 2 3 4

[48] I've been blaming myself for things that happened.

1 2 3 4

[49] I've been praying or meditating.

1 2 3 4

[50] I've been making fun of the situation.

1 2 3 4

This workshop was intended to increase your focus on resilient behaviors and your own personal tools for resiliency. Please answer the following questions related to resiliency:

In the following scale, 1 is not at all; 5 is completely

51. Please select the response that best describes how the intervention increased your awareness of your:
    A. Stress

    1 2 3 4 5

    B. Coping strategies

    1 2 3 4 5

    C. Resilient behaviors

    1 2 3 4 5

52. Do you believe this intervention promoted your personal positive coping strategies/resiliency?

    1 2 3 4 5

53. Of the following, which do you believe assists you in handling stress or allows you to cope better?

    Getting enough sleep

    1 2 3 4 5

    Eating a healthy diet

    1 2 3 4 5

    Exercising

    1 2 3 4 5

    Using social support

    1 2 3 4 5

    Coaching and goal setting

    1 2 3 4 5

    Being Mindful

    1 2 3 4 5

Consciously relaxing/meditating

1 2 3 4 5

54. Of the following, which are you are most likely to do in the next 8 weeks?

Getting enough sleep

1 2 3 4 5

Eating a healthy diet

1 2 3 4 5

Exercising

1 2 3 4 5

Using social support

1 2 3 4 5

Coaching and goal setting

1 2 3 4 5

Being Mindful

1 2 3 4 5

Consciously relaxing/meditating

1 2 3 4 5

55. Any additional comments?

Demographics

Please circle or fill in the correct answers.

1. Age (in years):

   _____

2. Gender Perception:

Male	Questioning	Decline to State/
Female	Transgender	Other

3. Race:

African American	Asian	Hispanic
American Indian/Alaskan	Caucasian	Multi-Racial/Other

4. Relationship Status:

   □ Not in a relationship

   □ In a relationship:

< 1 years	1-5 years	6-10 years	11+ years

5. Please state the number and age of your dependents:

   Number _____

   Age _____

6. Do you own pets?

   Yes No

7. Travel time commuting to the School of Nursing (one way)

   _____ minutes

8. Prior to entry into your current program, how many years of work experience did you have as a nurse?

_____

9. How many hours a week do you currently work?

As a nurse: _____

Other employment: _____

10. In what year did you first enroll in the program?

_____

11. Enrolled degree program and specialty:

Program:

MSN or Certificate DNP

Specialty:

NP Other

12. Are you a full time or part time student?

_____

13. In what month and year do you expect to receive your degree or certificate?

Month: _____ Year:_____

14. What is your current highest earned degree?

AA/AD BSN MSN DNP

PhD Other _____

Thank you for taking this survey. Remember to practice resiliency!

Weekly Survey

On a scale of 1 to 5, with 1 being not at all and 5 completely, please rate:

1. Usefulness of this week's content in assisting you to handle stress or cope better

   1 2 3 4 5

2. Likelihood you will apply this week's content to your life

   1 2 3 4 5

3. Suggestions for how this bulletin could be improved:

Thank you for taking this survey

Resiliency and You Post-Survey

Below are directions so you may generate your anonymous identification code.

Researchers sometimes need to collect information repeatedly from the same volunteers over a period of time in such a way as to satisfy two requirements: (a) each batch of information needs to be connected with the particular person who furnished it, and (b) the information needs to be collected anonymously to protect the privacy of the volunteers. One way to satisfy both requirements is to have each volunteer generate his/her own Identification Code based on information well known to the participant but unknown to the researcher. This is what this page involves.

The information which you will furnish below will amount to your own self-generated Identification code which will protect your anonymity. Therefore, please CAREFULLY furnish the following information:

Please select the letter below that represents the **First Letter** of your **MOTHER'S FIRST NAME:**

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Please *select* the letter below that represents the **First Letter** of your **FATHER'S FIRST NAME**.

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

How many *Older Brothers* do you have? _____

(both alive and deceased, step or otherwise)

How many *Older Sisters* do you have? _____

(both alive and deceased, step or otherwise)

Please select the month in which you were born.

January - 01	May - 05	September - 09
February - 02	June - 06	October - 10
March - 03	July - 07	November - 11

April - 04 August - 08 December - 12

Please *select* the letter below that represents the ***First Letter*** of **Your Middle Name**.

(If you have no middle initial, circle the letter N)

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

This is your anonymous identification code.

Anonymous Code: _____

The purpose of this project is to create a community of practice (a network with a shared focus, relationships, and tools) focused on resiliency in graduate nursing students. By engaging this community of practice, we hope to positively support your sense of community and ability to care for yourself as well as others. Ideally, you may then pass on your resiliency knowledge and skills to future colleagues and patients through informal discussions and formal education.

After 8 weeks of this project, we are asking some questions about your current level of stress, coping, and resiliency.

2. Please select the response that best describes your current perceived stress. 1 is hardly any stress; 5 is the worst stress ever.

1 2 3 4 5

The following is a questionnaire to assess your current state:

Please read each statement and select a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

2	I found it hard to wind down	0	1	2	3
3	I was aware of dryness of my mouth	0	1	2	3

4	I couldn't seem to experience any positive feeling at all	0	1	2	3
5	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
6	I found it difficult to work up the initiative to do things	0	1	2	3
7	I tended to over-react to situations	0	1	2	3
8	I experienced trembling (eg, in the hands)	0	1	2	3
9	I felt that I was using a lot of nervous energy	0	1	2	3
10	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
11	I felt that I had nothing to look forward to	0	1	2	3
12	I found myself getting agitated	0	1	2	3
13	I found it difficult to relax	0	1	2	3
14	I felt down-hearted and blue	0	1	2	3
15	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
16	I felt I was close to panic	0	1	2	3
17	I was unable to become enthusiastic about anything	0	1	2	3
18	I felt I wasn't worth much as a person	0	1	2	3
19	I felt that I was rather touchy	0	1	2	3
20	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
21	I felt scared without any good reason	0	1	2	3
22	I felt that life was meaningless	0	1	2	3

Next, please focus attention on current coping behaviors:

These items deal with ways you've been coping with the stress in your life *over the past 3 months*. There are many ways to try to deal with changes and challenges. These items ask what you've been doing to cope with current challenges. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all
2 = I've been doing this a little bit
3 = I've been doing this a medium amount
4 = I've been doing this a lot

23. I've been turning to work or other activities to take my mind off things.

1 2 3 4

24. I've been concentrating my efforts on doing something about the situation I'm in.

1 2 3 4

25. I've been saying to myself "this isn't real."

1 2 3 4

26. I've been using alcohol or other drugs to make myself feel better.

1 2 3 4

27. I've been getting emotional support from others.

1 2 3 4

28. I've been giving up trying to deal with it.

1 2 3 4

29. I've been taking action to try to make the situation better.

1 2 3 4

30. I've been refusing to believe that it has happened.

1 2 3 4

31. I've been saying things to let my unpleasant feelings escape.

1 2 3 4

32. I've been getting help and advice from other people.

1 2 3 4

33. I've been using alcohol or other drugs to help me get through it.

1 2 3 4

34. I've been trying to see it in a different light, to make it seem more positive.

1 2 3 4

35. I've been criticizing myself.

1 2 3 4

36. I've been trying to come up with a strategy about what to do.

1 2 3 4

37. I've been getting comfort and understanding from someone.

1 2 3 4

38. I've been giving up the attempt to cope.

1 2 3 4

39. I've been looking for something good in what is happening.

1 2 3 4

40. I've been making jokes about it.

1 2 3 4

41. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.

1 2 3 4

42. I've been accepting the reality of the fact that it has happened.

1 2 3 4

43. I've been expressing my negative feelings.

1 2 3 4

44. I've been trying to find comfort in my religion or spiritual beliefs.

1 2 3 4

45. I've been trying to get advice or help from other people about what to do.

1 2 3 4

46. I've been learning to live with it.

1 2 3 4

47. I've been thinking hard about what steps to take.

1 2 3 4

48. I've been blaming myself for things that happened.

1 2 3 4

49. I've been praying or meditating.

1 2 3 4

50. I've been making fun of the situation.

1 2 3 4

This project was intended to increase your focus on resilient behaviors and your own personal tools for resiliency. Please answer the following questions related to resiliency:

In the following scale, 1 is not at all; 5 is completely

51. Please select the response that best describes how the intervention increased your awareness of your:
    A. Stress

    1 2 3 4 5

    B. Coping strategies

    1 2 3 4 5

    C. Resilient behaviors

    1 2 3 4 5

52. Do you believe this 8 week intervention promoted your personal coping strategies/resiliency?

    1 2 3 4 5

53. **Do you believe your answer to the following question has changed over the past 8 weeks**? If so, complete; if not, skip: Of the following, which do you believe assists you in handling stress/coping well?

    Getting enough sleep

    1 2 3 4 5

    Eating a healthy diet

    1 2 3 4 5

    Exercising

    1 2 3 4 5

    Using social support

    1 2 3 4 5

    Coaching and goal setting

1 2 3 4 5

Being Mindful

1 2 3 4 5

Consciously relaxing/meditating

1 2 3 4 5

54. Of these options, which are you are most likely to do in the next 8 weeks?

Getting enough sleep

1 2 3 4 5

Eating a healthy diet

1 2 3 4 5

Exercising

1 2 3 4 5

Using social support

1 2 3 4 5

Coaching and goal setting

1 2 3 4 5

Being Mindful

1 2 3 4 5

Consciously relaxing/meditating

1 2 3 4 5

55. In your opinion, did this intervention increase your awareness of UNC community resources for resilience?

1 2 3 4 5

56. In your opinion, did this intervention increase your sense of community?

1 2 3 4 5

57. In your opinion, did this intervention increase your ability to care for yourself as well as others?

1 2 3 4 5

58. How helpful was the workshop to you?

1 2 3 4 5

59. How helpful were the weekly bulletins to you?

1 2 3 4 5

60. Did you use the Facebook site?

No 1-5 times > 5 times

61. If you answered "no" on question 60, skip. How helpful was the Facebook site?

1 2 3 4 5

62. Did you use the text option?

Yes No

63. If you answered "no" on question 62, please skip. How helpful were the texts?

1 2 3 4 5

64. In your opinion, what are barriers to your resiliency at this time? What could be done in our community to support your resiliency?

_____

_____

65. In this project, what worked well?

_____

66. In this project, what could be improved?

_____

67. In this project, what could be removed?

_____

Thank you for taking this survey and completing this research study!

Certification of Project Completion

□ I certify that I have completed the pre-survey and post-survey and submit my name and email to be entered in the drawing (based on chance) for an equal chance at winning a $10 gift card.

Name _____
Email_____

APPENDIX D: DASS-21

This is an example of the DASS-21 (Lovibond & Lovibond, 1995). For author permission to use and administer, see Appendix E.

DASS21 *Name:* *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree, or a good part of time

3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3

8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

APPENDIX E: DASS-21 PERMISSION TO USE

Permission to use and adapt DASS-21 (P. Lovibond, personal communication, March 28, 2015).

RE: Request to Use and Adapt DASS-21 for an Academic Workshop

Peter Lovibond [p.lovibond@unsw.edu.au]
Sent: Saturday, March 28, 2015 7:23 PM
To: Wildes, Megan Grace
Attachments: DASS_BRT_1995.pdf (808 KB) ; Henry Crawford BJCP 2005.pdf (292 KB)

Dear Megan,

You are welcome to use the DASS in your research. Please see the DASS website www.psy.unsw.edu.au/dass/ to download the questionnaires (including translations in certain languages) and scoring key. Please also see the FAQ page on the website for further information, including guidelines for electronic administration.

I have attached some articles that may be useful. If you decide you need the manual, ordering details are on the website.

Best regards,
Peter Lovibond

From: Wildes, Megan Grace [mailto:wildes@email.unc.edu]
Sent: Saturday, 28 March 2015 7:32 AM
To: Peter Lovibond
Subject: Request to Use and Adapt DASS-21 for an Academic Workshop

Dear Peter Lovibond,

I am a Doctoral Student at the University of North Carolina Chapel Hill's School of Nursing. My doctoral project's purpose is to create a community of practice focused on stress reduction and resiliency in nursing students. As a component of this work, I will develop a workshop that facilitates students' stress management.

I am writing to request permission to use your instrument, the DASS-21, as part of this project. I also would like to adapt DASS-21 to an online format in order to administer it by computer. I plan to administer a pre/post test questionnaire regarding stress. Your instrument is a very good fit for my project, and I'm excited about the possibility of building on your work.

While I have some information about validity/reliability, if there are other references you would like me to include I'll add those as well.

Thank you very much for your consideration. I look forward to hearing from you.

Sincerely,

Megan Wildes, RN, CCRN
FNP/DNP Student
University of North Carolina Chapel Hill

APPENDIX F: BRIEF COPE

The below data was taken from the online Brief COPE (Carver, 2013). It has been adopted, with author permission (see Appendix G).

Brief COPE

These items deal with ways you've been coping with the stress in your life in the past 3 months. There are many ways to try to deal with changes and challenges. These items ask what you've been doing to cope with current challenges. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.

1 = I haven't been doing this at all

2 = I've been doing this a little bit

3 = I've been doing this a medium amount

4 = I've been doing this a lot

1. I've been turning to work or other activities to take my mind off things.

1 2 3 4

2. I've been concentrating my efforts on doing something about the situation I'm in.

1 2 3 4

3. I've been saying to myself "this isn't real."

1 2 3 4

4. I've been using alcohol or other drugs to make myself feel better.

1 2 3 4

5. I've been getting emotional support from others.

1 2 3 4

6. I've been giving up trying to deal with it.

1 2 3 4

7. I've been taking action to try to make the situation better.

1 2 3 4

8. I've been refusing to believe that it has happened.

1 2 3 4

9. I've been saying things to let my unpleasant feelings escape.

1 2 3 4

10. I've been getting help and advice from other people.

1 2 3 4

11. I've been using alcohol or other drugs to help me get through it.

1 2 3 4

12. I've been trying to see it in a different light, to make it seem more positive.

1 2 3 4

13. I've been criticizing myself.

1 2 3 4

14. I've been trying to come up with a strategy about what to do.

1 2 3 4

15. I've been getting comfort and understanding from someone.

1 2 3 4

16. I've been giving up the attempt to cope.

1 2 3 4

17. I've been looking for something good in what is happening.

1 2 3 4

18. I've been making jokes about it.

1 2 3 4

19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.

1 2 3 4

20. I've been accepting the reality of the fact that it has happened.

1 2 3 4

21. I've been expressing my negative feelings.

1 2 3 4

22. I've been trying to find comfort in my religion or spiritual beliefs.

1 2 3 4

23. I've been trying to get advice or help from other people about what to do.

1 2 3 4

24. I've been learning to live with it.

1 2 3 4

25. I've been thinking hard about what steps to take.

1 2 3 4

26. I’ve been blaming myself for things that happened.

1 2 3 4

27. I've been praying or meditating.

1 2 3 4

28. I've been making fun of the situation.

1 2 3 4

Scales are computed as follows (with no reversals of coding):

Self-distraction, items 1 and 19

Active coping, items 2 and 7

Denial, items 3 and 8

Substance use, items 4 and 11

Use of emotional support, items 5 and 15

Use of instrumental support, items 10 and 23

Behavioral disengagement, items 6 and 16

Venting, items 9 and 21

Positive reframing, items 12 and 17

Planning, items 14 and 25

Humor, items 18 and 28

Acceptance, items 20 and 24

Religion, items 22 and 27

Self-blame, items 13 and 26

APPENDIX G: BRIEF COPE PERMISSION TO USE

Permission to use and adapt Brief COPE (C. Carver, personal communication, March 27, 2015).

Re: Request to Use and Adapt Brief COPE for an Academic Workshop
Charles Carver [ccarver@miami.edu]
Sent: Friday, March 27, 2015 5:00 PM
To: Wildes, Megan Grace

no problem

Charles S. Carver
Department of Psychology
University of Miami
Coral Gables FL 33124-0751

Fellow, Center for Advanced Study in the Behavioral Sciences,
Stanford University

305-284-2817
ccarver@miami.edu
http://www.psy.miami.edu/faculty/ccarver/

On Mar 27, 2015, at 1:51 PM, Wildes, Megan Grace <wildes@email.unc.edu> wrote:

Thank you very much for the promptness of your reply. The website answers all my questions except one: As part of my doctoral project, do you have any objection to my administering this measure as an online questionnaire rather than by paper? If you do, I shall use the paper copy.

Thank you again for your time and response.

Best Regards,
Megan Wildes

Megan Wildes, RN, CCRN
Student, FNP/DNP
GPSF Senator, School of Nursing

University of North Carolina Chapel Hill
wildes@email.unc.edu

From: Charles Carver [ccarver@miami.edu]
Sent: Friday, March 27, 2015 4:34 PM
To: Wildes, Megan Grace
Subject: Re: Request to Use and Adapt Brief COPE for an Academic Workshop

I apologize for this automated reply. All measures I have developed are available for research and teaching applications without charge and without need to request permission; we ask only that you cite their source in any report that results. This also means please do not ask me to send you a letter authorizing the use of a scale, because this message is all I am going to send. If you wish to use a measure for a purpose other than teaching or research, you must also contact the copyright holder, the publisher of the journal in which the measure was published.

Information concerning the measure you are asking about can be found at the website below. I think

most of your questions will be answered there. If I know for sure that there is a translation of a scale published in a language other than English, that information will be found there. If no information is there about the language of your interest, that means I do not know of a published translation. You are free to do your own. Please do not ask for a manual. There is no manual. Read the articles.

If questions remain, do not hesitate to contact me. Good luck in your work.

http://www.psy.miami.edu/faculty/ccarver/CCscales.html

On Mar 27, 2015, at 1:31 PM, Wildes, Megan Grace <wildes@email.unc.edu> wrote:

> Dear Charles Carver,
>
> I am a Doctoral Student at the University of North Carolina Chapel Hill's School of Nursing. My doctoral project's purpose is to create a community of practice focused on stress reduction and resiliency in nursing students. As a component of this work, I will develop a workshop that facilitates students' stress management.
>
> I am writing to request permission to use your instrument, the Brief COPE, as part of this project. I also would like to adapt Brief COPE to an online format in order to administer it by computer. I plan to administer a pre/post test questionnaire regarding coping behavior. Your instrument is a very good fit for my project, and I'm excited about the possibility of building on your work.
>
> I would additionally like to adopt this instrument for students so I would like to change the wording as italicized below:
> These items deal with ways you've been coping with the stress in your life *in the past 3 months*. There are many ways to try to deal with*changes and challenges*. These items ask what you've been doing to cope with *current challenges*. Obviously, different people deal with things in different ways, but I'm interested in how you've tried to deal with it. Each item says something about a particular way of coping. I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it. Use these response choices. Try to rate each item separately in your mind from the others. Make your answers as true FOR YOU as you can.
>
> While I have some information about validity/reliability, if there are other references you would like me to include I'll add those as well.
>
> Thank you very much for your consideration. I look forward to hearing from you.
>
> Sincerely,
>
> Megan Wildes, RN, CCRN
> FNP/DNP Student
> University of North Carolina Chapel Hill

APPENDIX H: PROJECT OUTLINE

Intervention

Objectives of the DNP project

1. To promote awareness of participant stress, coping strategies, and resilient behaviors.

2. To develop a self-care plan based on positive coping/resiliency strategies.

3. To initiate membership in a community of practice focused on resilience in health care professionals.

Project Outline

Objective(s)	Content	Time Frame	Teaching Methods
Objective 1	**Week 1** Introduction to stress, coping, and resiliency Administration of DASS-21 Administration of Brief COPE Administration of demographic data/survey Discussion (group) of stress and coping Discussion of coping and resiliency Development of self-care plan Collection of signed consent forms and surveys	**1 hour workshop, offered several times**	In-person workshop Power Point
Objectives 2 and 3	**Week 2 – Sleep** Healthy tips in pulling an all-nighter UNC resources App	**Each week, an email for 7 weeks** **For those who have opted-in, a weekly text**	Weekly email with information and optional survey Facebook

Objective(s)	Content	Time Frame	Teaching Methods
	Week 3 – Healthy Diet Healthy quick snacks UNC resources App **Week 4 – Exercise** Ideas if you are in front of a computer Quick exercise ideas UNC resources App **Week 5 – Social Support** Groups – who are your groups? UNC resources App **Week 6 – Mindfulness** Brief overview of Mindfulness UNC resources App **Week 7 – Coaching and Goal Setting** Goal setting – tips Coaching – options UNC resources App **Week 8 - Relaxation** Ways to relax Meditation	**reminder to practice resiliency**	Self-care plan

Objective(s)	Content	Time Frame	Teaching Methods
	UNC resources App **Final survey** –questionnaire		
Objective 1	Measured by survey	**20-30 minutes** **Participant determined amount of time per week**	Facebook community Weekly emails Weekly Survey links
Objective 3	Measured by survey	**See above** **Participant determined amount of time per week**	Workshop Weekly emails
Evidence-based references used for developing this educational activity: DASS-21 Brief COPE ERIC database PubMed database ANA NLN UNC Student Wellness			
Updated By: Megan Wildes		**Date: February 17, 2016**	

APPENDIX I: WORKSHOP AND BULLETIN OUTLINE

Workshop Content and Materials

Workshop. 1 hour, week one

- Participant consent form
- Introduction to stress, coping, and resiliency
- Discussion (group) of stress and coping
- Administration of DASS-21 and Brief COPE
- Administration of demographic data/survey
- Discussion of coping and resiliency
- Development of self-care plan

Workshop Materials for Participants

Participant Consent Form (2 copies) *See Appendix B*

UNC-CH SON Use of Social Media Policy (2 copies) *See Appendix O*

Instructions on how to create an anonymous user name (1 copy) *See Appendix N*

Survey (1 copy) *See Appendix C*

Includes Questionnaires (1 copy each)

1. DASS-21 *See Appendix D*
2. Brief COPE *See Appendix F*

Handout of UNC resources relevant to coping (1 copy)

Student Self-Care/Resiliency Plan (1 copy) *See Appendix J*

Collect signed consent forms, policy, surveys, and questionnaires

Content of Weekly Bulletins

Week 2 - Sleep

Week 3 - Nutrition

Week 4 - Exercise

Week 5 - Social Support

Week 6 - Mindfulness

Week 7 – Coaching and Goal Setting

Week 8 – Relaxation

Final survey – Link to questionnaire

APPENDIX J: SELF-CARE WORKSHEET

Resiliency and You: Mind and Body

My Self-Care/Resiliency Plan

Pre-Intervention	*Post-Intervention*
Stress Perception	
0 1 2 3 4 5	0 1 2 3 4 5
Top Stressors	
1. 2. 3.	1. 2. 3.
Top Coping Mechanisms:	
1. 2. 3.	1. 2. 3.

What do I believe I am likely to do to cope with stress in the next 8 weeks?

What one resilient behavior do I want to commit to? What are the specifics of my plan?

APPENDIX K: WORKSHOP CONTENT

The purpose of this document is to provide a basic list of resources used in this project's workshop, including content intended to reframe participant stress, coping, and resiliency. In addition to the DEAL model, participants were introduced to Selye's definition of stress. They were challenged to analyze their sources of stress and coping, as well as discussing individuals they believed were resilient. Multi-media links were provided to:

- Kelly McGonigal: https://youtu.be/RcGyVTAoXEU?t=1m20s
- Karyn Buxman: https://youtu.be/ybnzd4zu8xs
- Jon Seskevich: http://www.managestressnow.com/
- Jon Kabat-Zinn: https://youtu.be/3nwwKbM_vJc?t=8m22s
- Mindfulness training (raisin) link: https://youtu.be/X5DfLKgJP8c?t=14s

In the workshop, UNC-CH resiliency resources were included:

Exercise: http://campusrec.unc.edu/

Wellness: https://studentwellness.unc.edu/
https://campushealth.unc.edu/services/counseling-and-psychological-services/health-topics-mental-health

Trainings: https://apps.research.unc.edu/events/index.cfm

The workshop allocated time in the following way: about 5 minutes for introductions, 8 minutes on stress, 10 on coping, and 15 on multi-media links, local resources for resiliency, defining and discussing resiliency and the personal resilience plan. An estimated 12 minutes should be left at the end of the session for survey completion.

APPENDIX L: BULLETIN AND FACEBOOK CONTENT

The weekly content links were based on research and content specific to UNC-CH. The information that is applicable to a larger base is contained below:

Content links per week:

I. Bulletin One: Sleep facts, pulling an all-nighter, and UNC resources

   a. Apps

      i. Sleep meister (iPhone): http://iapps.web.unc.edu/app/sleep-meister/

      ii. Sleep Cycle*: http://www.sleepcycle.com/*

   b. Facebook links:

      i. Tips for shift workers: http://healthysleep.med.harvard.edu/healthy/science/variations/jet-lag-and-shift-work

      ii. http://pubs.niaaa.nih.gov/publications/arh25-2/101-109.htm

      iii. http://www.medscape.org/viewarticle/502825

      iv. http://www.medscape.com/viewarticle/847220?nlid=83404_2822&src=wnl_edit_medp_nurs&uac=210668CV&spon=24src=wnl_edit_medp_nurs&uac=210668CV&spon=24&impID=753022&faf=1

      v. http://www.healthcenter.vt.edu/assets/docs/Sleep.pdf

II. Bulletin Two: Nutrition [Healthy Diet]

   a. Apps:

      i. www.myfitnesspal.com/iphone

      ii. www.livestrong.com/thedailyplate/iphone-calorie-tracker/

   b. Facebook links:

i. http://www.acefitness.org/acefit/healthy-living-article/60/2461/do-men-and-women-have-different-nutritional/

ii. http://www.eatright.org/resource/food/resources/learn-more-about-rdns/improving-overall-health-and-wellness

iii. http://nchealthcoaches.com/

iv. http://www.fannetasticfood.com/

III. Bulletin Three: Exercise

a. Apps

i. Move a bit (android): (https://play.google.com/store/apps/details?id=com.beactiveapp)

ii. Move (iphone): https://itunes.apple.com/us/app/move-daily-activity-to-stay/id555994760?mt=8

b. Facebook links:

i. Does carpal tunnel relate to exercise: doi:10.1016/j.jns.2014.12.037

ii. https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/10584/6/Walsh%20et%20al%202011%20EIR_17_2011_Part_One.pdf

iii. http://wellbeingwire.meyouhealth.com/category/fitness/exercise-fitness/

IV. Bulletin Four: Social Support

a. Apps

i. Is your fitness app backed by science and using social support? Find out: LINK

ii. Types of social networking apps:

http://thenextweb.com/apps/2013/12/22/20-social-apps-got-us-talking-2013/

b. Facebook links:

i. If you are feeling burnout, you are not alone, and there are options:

http://www.ama-assn.org/ama/ama-wire/post/burnout-busters-boost-satisfaction-personal-life-practice

ii. Social Ties and support are linked to mental and physical health:

http://community.hciresearch.org/sites/community.hciresearch.org/files/thoits11-Mechanisms%20linking%20social%20ties%20and%20support%20to%20physical%20and%20mental%20health.pdf

V. Bulletin Five: Mindfulness

a. Apps

i. http://stopbreathethink.org/

ii. http://www.calm.com/

iii. https://itunes.apple.com/ca/app/the-mindfulness-training-app/id687853790?mt=8

b. Facebook

i. https://secureweb.mcgill.ca/wholepersoncare/files/wholepersoncare/holdingtheheart_2013.pdf

ii. http://themindfulnesssummit.com/?utm_medium=email&utm_source=themindfulnesssummit.com&utm_campaign=welcomeemail&utm_con

tent=header&utm_term=changeyour&utm_source=The+Mindfulness+Summit&utm_campaign=08e2df37eb-Welcome+Email+b&utm_medium=email&utm_term=0_f5531060c6-08e2df37eb-105985609&goal=0_f5531060c6-08e2df37eb-105985609&mc_cid=08e2df37eb&mc_eid=0d8fb50b56

iii. http://www.informationisbeautiful.net/visualizations/what-is-meditation-mindfulness-good-for/

VI. Bulletin Six:

a. Apps

i. Unstuck (goal setting): http://www.unstuck.com/

ii. Time management: http://www.lifehack.org/articles/technology/top-15-time-management-apps-and-tools.html

b. Facebook:

i. Link: https://youtu.be/7FccK9UjuF0

ii. www.positivepsychologynews.com

iii. http://www.prospectivepsych.org/content/about-prospection

VII. Bulletin Seven: Relaxation and breathing:

a. Apps

i. Relax: http://appcrawlr.com/windows/relax-stress-anxiety-relief

ii. Sleep Now: http://appcrawlr.com/windows/sleepnow

iii. Alpha Waves: http://appcrawlr.com/windows/alpha-waves-2

b. Facebook links

i. A packet with relaxation resources: http://www.med.umich.edu/painresearch/patients/Relaxation.pdf

ii. The government weighs in: stress, relaxation, and tips for providers http://breakappz.com/top-5-breathing-exercises/

iii. Phyllis Quinlan offers a link with meditation/breathing instructions: http://careforthecaregiver.me/2015/06/30/meditation-101-a-beginners-guide-animation/

iv. Breathing with Jon Seskevich: http://www.managestressnow.com/videos.htm

v. The NIH talks about yoga, breathing, and relaxation: https://youtu.be/z16-HV5bnw8

VIII. Other Resources to consider

a. App links: http://iapps.web.unc.edu/

b. Healthy Heels newsletter: http://healthyheels.org/healthy-heels-newsletter/

APPENDIX M: TEXT CONTENT

This appendix includes the content of the weekly reminder texts sent to participants enrolled in that option.

Text 1: Good morning; this is your resiliency reminder. Our theme is sleep. When you lay your head on the pillow this week, hope you wake refreshed. However, resiliency means setting realistic goals (so be kind to yourself in setting these goals). To opt out of weekly text reminders, reply: STOP.

Text 2: Hello, this is your resiliency reminder. Our theme is nutrition. If food is a challenge, don't add new expectations. See if sensory awareness (pausing to smell, taste, and feel as you eat) changes the experience). To opt out of weekly text reminders, reply: STOP

Text 3: This is your Wednesday resiliency reminder. Let's break routine with 1 minute of something fun (stretching, dancing, jogging in place, etc.) What do you enjoy? To opt out of weekly text reminders, reply: STOP.

Text 4: This is your weekly Wednesday resiliency reminder. Our theme is social support. Let's take a moment to be grateful for 1) people we support and 2) people who look out for us. To opt out of weekly text reminders, reply: STOP.

Text 5: This is your Wednesday resiliency reminder. Our theme is Mindfulness. Let's treat ourselves as kindly as we treat others. Tips are online at the month-long, free October Mindfulness Summit (themindfulnesssummit.com). To opt out of weekly text reminders, reply: STOP.

Text 6: This is your Wednesday resiliency reminder. Our theme is coaching and setting goals. It's nearly mid-semester, so let’s list and celebrate 3 goals you’ve met in the past few weeks (progress counts). To opt out of weekly text reminders, reply: STOP.

Text 7: Good morning; this is your final resiliency reminder. Our theme is breathing and relaxation. Please take a moment to inhale a few deep, long breaths and just enjoy them. Thank you all for being part of this community. Good luck, and I'll follow up with the post-survey next week.

APPENDIX N: ANONYMOUS USER IDENTIFICATION CODE

Directions: Researchers sometimes need to collect information repeatedly from the same volunteers over a period of time in such a way as to satisfy two requirements:

(a) each batch of information needs to be connected with the particular person who furnished it, and (b) the information needs to be collected anonymously to protect the privacy of the volunteers. One way to satisfy both requirements is to have each volunteer generate his/her own Identification Code based on information well known to the participant but unknown to the researcher. This is what this page involves.

The information which you will furnish below will amount to your own self-generated Identification code which will protect your anonymity. Therefore, please CAREFULLY furnish the following information:

Please circle the letter below that represents the **First Letter** of your **MOTHER'S FIRST NAME:**

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Please *circle* the letter below that represents the **First Letter** of your **FATHER'S FIRST NAME**.

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

How many *Older Brothers* do you have? _____

(both alive and deceased, step or otherwise)

How many *Older Sisters* do you have? _____

(both alive and deceased, step or otherwise)

Please circle the month in which you were born.

January - 01	May - 05	September - 09
February - 02	June - 06	October - 10
March - 03	July - 07	November - 11
April - 04	August - 08	December - 12

Please *circle* the letter below that represents the ***First Letter*** of **Your Middle Name**.

(If you have no middle initial, circle the letter N)

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z

Adapted from Damrosch, S. P. (1986). Ensuring anonymity by use of subject-generated identification codes. *Research in Nursing & Health, 9,* 61 – 63.

APPENDIX O: UNC-CH SON SOCIAL MEDIA POLICY

The School of Nursing Social Media Policy is found at the following link: http://nursing.unc.edu/current-students/student-handbook/social-media-policy/

APPENDIX P: STRESS DATA

This appendix contains additional data on the relationship of stress (reported in the first survey) with participant age, years worked as a nurse, and hours worked per week. Participants were asked rate their stress on a Likert scale of 1-5, with 1 representing low or no stress and 5 representing severe stress.

Relationship of Demographics and Stress Level (Likert Scale of 1-5)

	Participant Number	Percentage Per Category
Age vs Stress		
< 30, stress of < 4	6	60% (of < 30 age group)
< 30, stress 4-5	4	40%
30-39, stress < 4	2	50% (of 30-39 age group)
30-39, stress 4-5	2	50%
≥40, stress of < 4	4	50% (of >40 age group)
≥40, stress 4-5	4	50%
Years Worked as Nurse vs Stress		
≤5, stress of < 4	8	62% (of ≤5 years worked)
≤5, stress of 4-5	5	38%
6-10, Stress < 4	1	50% (of 6-10 years worked)
6-10, Stress 4-5	1	50%
≥11, Stress < 4	3	43% (≥11 years worked)
≥11, Stress 4-5	4	57%
Hours Worked a Week vs Stress*		
≤12, stress of < 4	3	50% (of a ≤12 hour work week)
≤12, stress 4-5	3	50%
24-35, stress of < 4	4	50% (of a 24-35 hour work week)
24-35, stress 4-5	4	50%
≥36, stress of < 4	4	57% (of a ≥36 hour work week)
≥36, stress 4-5	3	43%
Note. Data is from Pre-Survey, (n=22) *As one participant entered hours per week as a non-numerical value, her data was excluded		

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