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**Evaluating the Effects of
MINDSTRONG™ in Graduate Nursing Students**

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BSN, University of Missouri-St Louis, 2017

A Thesis Submitted to The Graduate School at the University of Missouri St Louis

In partial fulfillment of the requirements for the degree

Doctor of Nursing Practice

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Abstract

Problem

A high rate of burnout and lack of resiliency is a major problem in nursing graduate students resulting in dropout and mental health issues. MINDSTRONG™ is an evidence-based cognitive behavioral skills-building program with a goal of building resiliency and decreasing burnout through coping skills to improve overall adult health and well-being.

Methods

A descriptive design using quantitative data analysis through pre, and post surveys was used. The surveys evaluated graduate nursing student's burnout and resiliency after participating in MINDSTRONG™, a cognitive behavioral theory program, implemented by trained facilitators for seven sessions. The sample consisted of all six self-enrolled graduate nursing students recruited through university emails in a mid-sized public university located in Midwest.

Results:

Participants receiving MINDSTRONG™ cognitive based interventions reported slightly less burnout and minimal resiliency improvement.

Implications for Practice:

The MINDSTRONG™ program can be used as a preventive and early intervention for improving mental health outcomes and lifestyle behaviors in graduate students if required as credit-based class.

Evaluating the Effects of MINDSTRONG™ in Graduate Nursing Students

According to the American Psychiatric Association, depression and anxiety are the most common and serious medical illnesses that negatively affect graduate students (Rummell, 2015). Bullock et al. (2017), found less than 49% of graduate students complete their advanced degrees, and according to Lipson and Eidenberg (2017), there is a correlation between mental health issues and failure to complete graduate school. Barriers to program completion include life stressors, role transition into leadership, employment problems, financial burdens, time constraints, and mental health issues. As a result, many graduate students develop poor coping skills and strategies. Behaviors such as increased alcohol intake, smoking, and substance abuse have developed at a higher rate in this population. To combat the issue, many academic institutions have created interventional and counseling programs to work on more positive coping strategies.

Rummell (2015), found that greater than 49% of graduate students reported the development of significant clinical anxiety symptoms, and greater than 39% reported clinically significant depressive symptoms. According to Lowe (2018), depression and anxiety are far more common among graduate students than in the general population and are health conditions which can cause both physical and psychological problems.

Nurses comprise 30% of the hospital employee workforce. It is a profession with physical, psychological, and emotional stress due to the sensitive working environment, which can result in burnout. Burnout is characterized by a decline in physical, emotional, and psychological energy resulting from work-related stress. It includes three key aspects: emotional exhaustion, depersonalization, and low personal accomplishment (Mudallala et al., 2017). If

not addressed, burnout can negatively affect nursing students' private and academic lives, resulting in 30 to 50% of students dropping out of their programs of study (Satinsky et al., 2021) Managing stress and avoiding burnout can be accomplished through the development of personal resiliency. Resiliency is defined as reacting positively to stress or remaining functional and well despite ongoing stress (Thomas & Asselin, 2018). The American Psychological Society defines resilience as a process of adapting well in the face of adversity, trauma, tragedy, and stress (Thomas & Asselin, 2018). Given the demands of a complicated and stressful work role, combined with graduate school, and personal life challenges, it is essential for graduate nursing students to develop resiliency to reduce the effects of professional nursing and academic stress levels on graduate nursing students.

To address burnout and stress and develop resiliency in nursing graduate students, many universities are promoting mental health education and interventions to help improve the academic experience by addressing problematic coping behaviors. Many of these intervention programs are based on behavior modification theory, which purports that the alteration of behavioral patterns using specific learning techniques such as biofeedback and positive reinforcement helps students work through stress and problematic coping behaviors. These university-based intervention programs encourage self-care through nonpharmacological interventions such as biofeedback, imagery, meditation, and mind-body interventions such as relaxation. One such program, MINDSTRONG™ developed at Ohio State University is specifically designed to help graduate nursing students develop personal cognitive behavioral health strategies to cope with professional and academic stress.

MINDSTRONG™ is a cognitive-behavioral skill-building program. The main premise in cognitive behavior theory (CBT) is that negative patterns of thinking result in negative

emotions which can lead to symptoms of depression and anxiety and unhealthy behaviors. Research from other studies has demonstrated the positive outcomes of the COPE-CBT program from which MINDSTRONG™ was created (Melnyk et al., 2013; Hart Abney et al., 2019; Buffington et al., 2016). MINDSTRONG™ encourages healthy lifestyles and behaviors to decrease the symptoms of depression, anxiety, stress, and burnout. The program includes seven bi-monthly 45-minute sessions led by a trained facilitator to provide theory-based approaches to reduce stress and offer support to graduate students. Each session is followed with skill building activities that assist the participants in putting the key concepts into practice. The program can be delivered individually or in small group or classroom formats.

The purpose of this project is to understand burnout and resilience among nursing graduate students enrolled in a Doctor of Nursing Practice (DNP) program at a mid-size public university located in the Midwest before and after implementation of MINDSTRONG™. The aim of the project is to increase graduate nursing student resilience and decrease burnout by learning appropriate cognitive based skills. The aim of the quality improvement project is to understand the effect of a cognitively based intervention on the burnout and resiliency of graduate nursing students in a doctoral program.

Literature Review

A systematic review of the literature was conducted utilizing EBSCOhost, CINAHL, PubMed UMSL, and Medline databases. Key search terms included *online graduate programs, social isolation, depression, anxiety, online education, MINDSTRONG™ program, Ohio State, online classes, mental health graduate students, lifestyle changes, g dropout rate, suicide rate, nurses, resiliency, and burnout* with Boolean operator AND. Inclusion criteria was free full text, peer-reviewed articles, studies based on university students and

participants over 18 years of age, online evidence-based nonpharmacological skills-building programs to build resilience and coping skills to improve overall adult well-being and mental health of students graduates program. Exclusion criteria was publications older than five years, and non-graduate students. After searching the identified databases, 32 articles were located. After sorting the abstracts for appropriateness, 17 articles were selected. Upon further review using inclusion and exclusion criteria eight articles were selected for inclusion in this literature review. The articles chosen for review represented the need to develop programs for college students, what type of program components are needed, barriers faced when trying to create programs, and the importance of including a resilience component.

According to Stillwell et al. (2017), graduate nursing students are more exposed to stress due to the increasing complexity and continuously evolving education styles. Using a systematic review approach, Stillwell et al. (2017), evaluated existing evidence to identify evidence-based self-care interventions for coping with perceived stress. The authors performed an asynchronous review between themselves and then included the review of a wellness expert. The interventions of focus in the review included stress management courses like mind-body-stress-reduction (MBSR), yoga, breath work, meditation, and mindfulness. The outcomes were measured with the Perceived Stress Scale. Each study demonstrated a reduction in perceived stress post intervention. The researchers also concluded that the most effective self-care MBSR interventions include a didactic component, a guided MBSR practice session, and homework. They also recommended that a trained or certified MBSR instructor teach the intervention. Hence, university programs geared toward helping students develop stress and coping skills must contain these important components for success.

A systematic review of prevention programs targeting depression, anxiety, and stress in university students was undertaken by Rith-Najarian et al. (2019). The aim of the review was to assess the effectiveness of prevention programs for these problems. Programs could be delivered in a group-based, online/computer-delivered, or self-administered format and at the universal, selective, or indicated prevention level. The sample evaluated included 62 articles covering 68 prevention programs for college, graduate, or professional students across 15 countries. The researchers used effect size to evaluate the outcome-producing results of each program. Results showed that average effect sizes were moderate overall regardless of delivery format or prevention level. The most common practice elements of programs included psychoeducation (72%), relaxation (69%), and cognitive monitoring/restructuring (47%). Limitations of programs included symptom target-outcome mismatches, disproportionately female samples, and inconsistently reported adherence data. Lastly, due to findings reporting moderate effect size overall regardless of modality or prevention level, the researchers determined more research is needed regarding depression, anxiety, and stress prevention programs for university students.

Akerman et al. (2019) sought to identify whether a brief, scalable, universal resilience program targeting students early in their college career could decrease the impact of depression and anxiety. The researchers used a randomized control style design in which 126 student participants completed the resilience program as a part of their first-year orientation class compared to the control group composed of 180 students who completed the typical orientation class (Akerman et al., 2019). The intervention group received the new session known as the resilience program. The sessions utilized cognitive-behavioral therapies (CBT) for anxiety and depression. Trained facilitators held the sessions with the focus on interventions to change the

mindset of the participants. The primary mechanism of the resiliency program was the use of emotion regulation, mindfulness, and CBT skills to improve depression, anxiety, and stress among new students. The investigators reported that the programs were feasible and acceptable, with improvements reported by the semester's end (Akeman et al., 2019).

Graduate students face many difficulties, including academic pressure, developmental changes, lack of time, and scheduling concerns resulting in stress and social isolation. However, many university campuses do not have resources to address the student population's needs adequately (Palacios et al., 2018). Additionally, many students do not think it appropriate to get professional help. The main barriers cited to seeking help are lack of time, conflicting schedules, and stigma. Palacios et al. (2018) conducted an open trial in which recruited participants were asked to choose between three interventions targeting depression, anxiety, or stress. Inclusion criteria included access to the internet, computer, and completion of the screening form with a score of five or greater on the Patient Health Questionnaire-9 (PHQ-9) for depression, greater than 5 on the Generalized Anxiety Disorder-7 (GAD-7) for anxiety, and greater than 15 on the Depression, Anxiety and Stress Scale - 21 (DASS-21) stress subscale. Participants selected one of the three offered cognitive behavioral-based programs, Space from Depression, Space from Anxiety, or Space from Stress. Space from Depression was based on cognitive behavior modifications that discussed negative thinking and its consequences and included personal stories from people. Space from anxiety included a module on facing one's fears and working through the hierarchy of fears. Space from stress primarily focused on improving positive thinking by adopting positive attitudes towards life. The investigators reported a significant decrease in mean PHQ-9 by and GAD-7, and DASS-21 stress subscale scores by 30% from baseline to eight weeks. The students appreciated having choices

about different aspects of the intervention because it allowed them to access the intervention they needed and to go back and engage with previous parts of the program that they found helpful. Eighty-three percent of the who reported improvement in symptoms stated that web-based interventions were useful for growing mental health service needs on campus (Palacios et al., 2018).

The health, well-being, and employability of university students are key considerations within higher education. Increased resilience is associated with social support from family, friends, and faculty. According to Thomas and Asselin (2019), nursing students experience higher levels of stress when compared to other health majors due to exposure to personal patient/clinical situations. These students are exposed to many challenging experiences such as death, diverse lifestyles, and communicable diseases. Fostering resilience in these students helps them to be more successful in their education program and better prepares them for reasonable practices (Thomas & Asselin, 2018).

A systematic review and meta-analysis by Joyce et al. (2018) used various databases to examine the importance of resilience training among various groups, including intensive care nurses, college students, cancer survivors, immigrants, physicians, radiologists, youth, and office workers. The investigators reported that almost all the programs researched in this systematic review shared the common goal of increasing resiliency and decreasing burnout; however, they used a variety of theoretical frameworks or consensus statements to guide the development and application of these programs. Due to the lack of a gold standard for comparison, the researchers cited this as a study limitation. Out of the 285 studies, 11 studies made the inclusion criteria of randomized controlled trials (RCTs) assessing the efficacy of the programs designed to improve resilience in adults. Additional inclusion criteria included resiliency improvement

outcomes that met the validity assessment criteria and measured an individual's ability to adapt to change and have a healthy coping mechanism.

Four out of the 11 studies indicated a statistically significant effect of the interventions like mindfulness and CBT skills on resilience and burnout. The difference between CBT-based resilience interventions and the control groups was 27%, showing small improvement with CBT-based resilience interventions, whereas mindfulness-based interventions and the control groups were 46%, showing moderate improvement. The studies testing both CBT and mindfulness interventions reported 51% improvement. According to the investigators, the resilience interventions based on the combination of CBT and mindfulness reported the highest impact on individual resilience (Shand, et al. 2018).

Method

Design

The QI project utilized descriptive observational quantitative data analysis. Quantitative data was collected through pre and post Qualtrics surveys submitted by the nursing students enrolled in the MINDSTRONG™ program, who were taught self-awareness and coping techniques.

Setting

This quality improvement project took place at the College of Nursing within a mid-sized public university located in Midwest. There are approximately 300 doctoral students enrolled in both the DNP and PhD programs. The College of Nursing offers both the BSN-DNP and the BSN-PhD and MSN-PhD programs in an online delivery format. The University is one campus of a multi-site state university with an enrollment of approximately 16,000 undergraduate and graduate student's total.

Sample

The project used a convenience sample of self-enrolled participants in the bi-monthly seven-week program, MINDSTRONG™ which was offered during the Spring 2022 semester to graduate nursing students. Inclusion criteria included graduate nursing students who self-selected to enroll in the program and were 18 years and older. Exclusion criteria included non-nursing graduate students, undergraduate students, and nursing graduate students under age 18.

Data Collection

Graduate nursing students who self-enrolled in the MINDSTRONG™ implementation project were included in the analysis. A pre and post Qualtrics survey was administered to the participants at the beginning of the first session, and at the end of the last session. Data collected from participants via pre and post Qualtrics survey assessed their perceived burnout and resiliency from the Copenhagen Burnout Inventory (CBI) and the Brief Resiliency Scale (BRS). Additional demographics variables of age, gender, ethnicity/race, marital status, hours worked per week, number of children, present year of graduate school, full time, or part time status, currently seeking help for mental health issues and participating in counseling sessions for mental health issues, and if on medication for anxiety, depression, and stress was also collected. All respondent information was de-identified through the Qualtrics survey.

Procedure

At the beginning of the Spring 2022 semester, two recruitment emails were sent to the College of Nursing graduate student group email list introducing the project and providing the schedule. The first email was sent at the beginning of the Spring 2022 semester and a second reminder email was sent one week before the program began. Students who chose to participate

were asked to send a reply email to one of the student investigators. Once the participant emails were received, the participants were added to the MINDSTRONG™ canvas site by the qualified facilitator. Once enrolled in the canvas website participants had access to worksheets and materials used in the MINDSTRONG™ program, with directions on accessing the Zoom meetings, and contact information for questions and concerns. The MINDSTRONG™ program occurred over seven videoconference Zoom sessions; the first four sessions were two weeks apart and the last three were one week apart and lasted approximately one hour. The first and the last sessions were one hour and fifteen minutes long because time was given for participants to fill out the pre and post Qualtrics surveys. The sessions were taught by two trained facilitators. After the conclusion of the MINDSTRONG program, the data collected by the Qualtrics survey was downloaded and analyzed for descriptive statistics and paired sample t-tests to look for statistical significance of the variables.

Typically, best practice includes sessions to be scheduled bimonthly for seven weeks. However, due to time constraints, the first four sessions were conducted two weeks apart while the last three were conducted only one week apart.

Approval process

This quality improvement project obtained formal approval from the University of Missouri, College of Nursing, and the University of Missouri IRB prior to its' implementation.

Results

Demographics of the sample

The total enrollment of the MINDSTRONG™ program was eight participants however six participants took the pre- and post- intervention surveys and attended the online MINDSTRONG™ sessions. All the participants were females in graduate nursing with an

average of four years of graduate school, with 66.66% ($n=4$) of them enrolled in part time program. Five participants were 25-35 years old, and one participant was over 55 years of age. Additionally, 66.6 % ($n=4$) of the participants were single and 83.3% ($n=5$) had no children whereas 16.6 % ($n=1$) of the participants had two children. Race analysis demonstrated 66.6% ($n=4$) were Caucasian, 16.6% ($n=1$) were African American and 16.6% ($n=1$) identified themselves as other. Eighty three percent ($n=5$) of the participants reported that they were not seeing a psychiatric provider, 16.6% ($n=1$) reported yes to the question. Out of the six participants 33.3% ($n=2$) reported that they were seeing a counselor/therapist and 66.6% ($n=4$) reported no to these questions. Sixty six percent ($n=4$) of the participants were using mental health medications and 33.3% ($n=2$) reported no to the question. (Appendix A)

Survey Results

A paired-sample t test was used to analyze the means of pre, and post surveys for The Copenhagen Burnout Inventory and The Brief Resilience Scale, taken by the participants. The pre- MINDSTRONG™ program, survey results from the Copenhagen Burnout Inventory were slightly increased from 28.33 ($sd = 2.347$) to 35.50 ($sd = 3.253$) post MINDSTRONG™ program sessions. The difference between the two means was not statistically significant due to the P-value of .104578. (Appendix B Table 1)

The pre- MINDSTRONG™ program, survey results from The Brief Resilience Scale were 16.83($sd = 1.869$) to 20.16 ($sd = 2.348$) post- MINDSTRONG™ program sessions resulting in minimal improvement in resiliency. The difference between the two means was not statistically significant due to the P-value of .205165. (Appendix B Table 2)

Discussion:

The limitations of the project were the small sample size and the time constraint, as most of the participants were 3rd and 4th-year students with heavy school and workloads. Another limitation was the strict schedule vs. other self-paced online interventions. Many participants found it difficult to follow the schedule due to other commitments.

Findings from this study support some positive effects of the MINDSTRONG™ program on the mental health outcomes of the participants with burnout issues and its effectiveness on lack of resiliency symptoms. The program would benefit from another PDSA cycle with first-year graduate students by offering them credit for this program participation. The new PDSA cycle may help determine the many positive effects MINDSTRONG™ has on Burnout and resiliency through early intervention versus having an interested graduate student volunteer at the end of their program.

Although resiliency and burnout were not statistically significant between the pre and post survey, the QI project showed significant clinical improvement in the participating group. The participants seemed excited to come to the sessions. The participant's discussion, active participation and feedback during the sessions suggest that MINDSTRONG™ helped reduced adverse effects of burnout for the participants by teaching them better coping mechanisms to reduce stress, burnout and increase in resiliency in their work, school, and private life. Main stressors identified included stress due to caring of patients, school assignments, workloads, and negative interactions with staff and faculty. Themes and questions raised by the participants suggest that MINDSTRONG™ has the potential to teach coping strategies and utilized the cognitive behavioral theories by graduate nursing students including problem-solving strategies such as positive self-talk, regulating emotions, coping with stressful situations, getting good sleep, and putting it all together for better mental wellness.

The QI project was challenging to implement. All the participants were volunteers with hectic work, home, and educational schedules. The arranged sessions with a trained facilitator had to be rescheduled twice as once, the facilitator could not make it due to health issues, and then the participants could not make the rescheduled session due to other engagements. The QI project was attended by volunteer participants. It was important for the participants to be present for all the sessions and do the assigned homework. Out of six participants 33.3% of the participants attended all session and 83.3% attended six out of seven sessions. Two participants missed two out of seven sessions. (Appendix C)

Given the stressors of being a professional nurse and a graduate nursing student, graduate nursing instructors may consider the use of cognitive behavioral theory through MINDSTRONG™ interventions to reduce stress while enhancing coping skills. This program does have the potential to be helpful; however, it needs to be a credit program offered as a proper class option. This will ensure that the students attend all the sessions and learn valuable coping skills to decrease burnout and increase resiliency.

Conclusion:

The quality improvement project supports the positive clinical effects of the MINDSTRONG™ program on the burnout and resiliency outcomes with healthy lifestyle behaviors of the graduate nursing students. However, due to the small sample size the project needs several PDSA cycles to improve the process of offering burnout and resiliency skills to a graduate nursing student.

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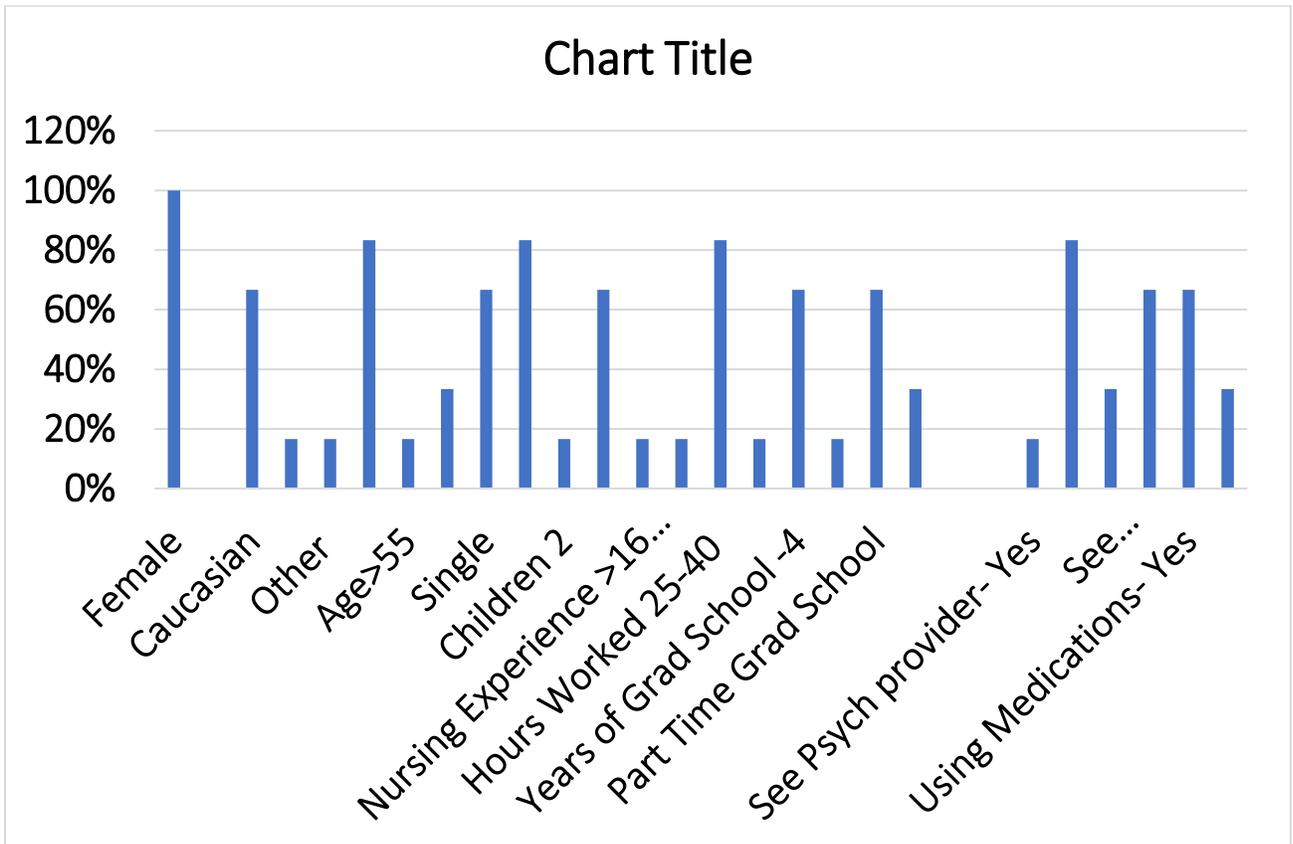
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Appendix A

Demographic data (N=6)

Gender	Number (<i>n</i>)	Percentage
Female	6	100%
Male	0	0%
Race		
Caucasian	4	66.6%
African American	1	16.6%
Other	1	16.6%
Age		
25-34	5	83.3%
>55	1	16.6%
Marital Status		
Married	2	33.3
Single	4	83.3
Nursing Experience		
3-5 year	1	16.6%
6-8 year	4	
>16	1	16.6%
Hours worked		
13-24	1	16.6%
25-40	5	83.3%
Children living at home		
0	5	83.3%
2	1	16.6%
Years of grad school		
3	1	16.6%
4	4	66.6
5	1	16.6%
Enrolled fulltime/part time		
Part Time	4	66.66%
Full Time	2	33.33
Seeing a Psych provider		
Yes	1	16.6%
No	5	83.3%
Seeing Counselor/therapist		
Yes	2	33.3%

No	4	66.6%
Using mental health meds		
Yes	4	66.6%
No	2	33.3%



Appendix B

Table 1

T- Test- CBI

	Mean	Std Deviation	Std Mean Error	T-Value	df	P-Value
CBI_ Total pre CBI_ Total post	-7.16667	8.84119	3.60940	-1.986	5	.104578

T-Test- BRS

	Mean	Std Deviation	Std Mean Error	T-Value	df	P-value
BRS_ Total pre BRS_ Total post	-3.33333	5.60952	2.29008	-1.456	5	.20516

Table 2

Copenhagen Burnout Inventory

	Mean	Std Deviation
CBI Total Pre- Intervention Score	28.333	5.750
CBI Total Post- Intervention Score	35.500	7.96

Figure 1

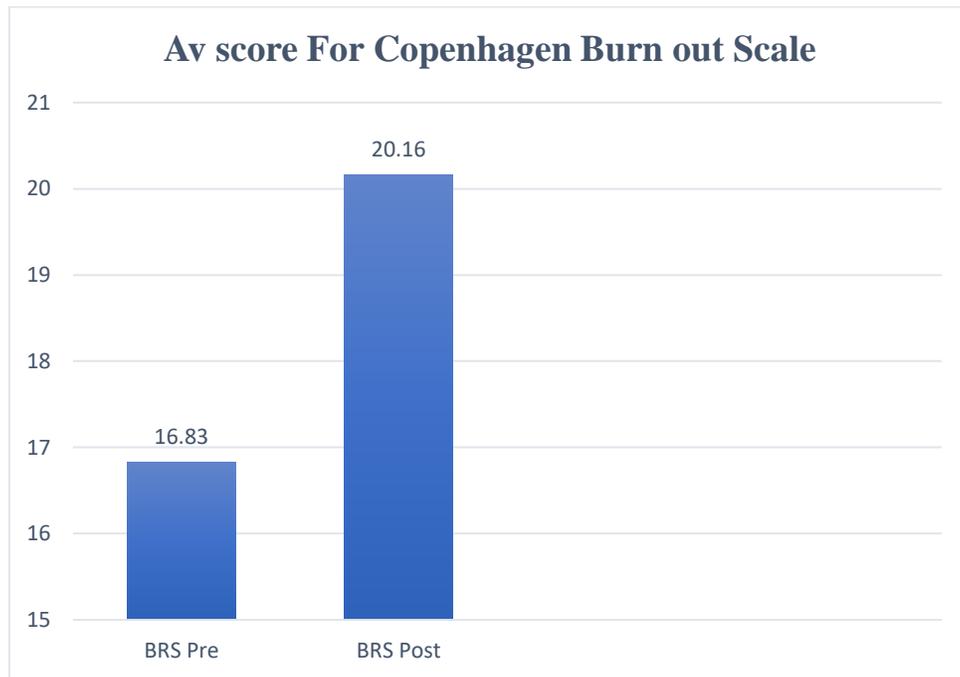
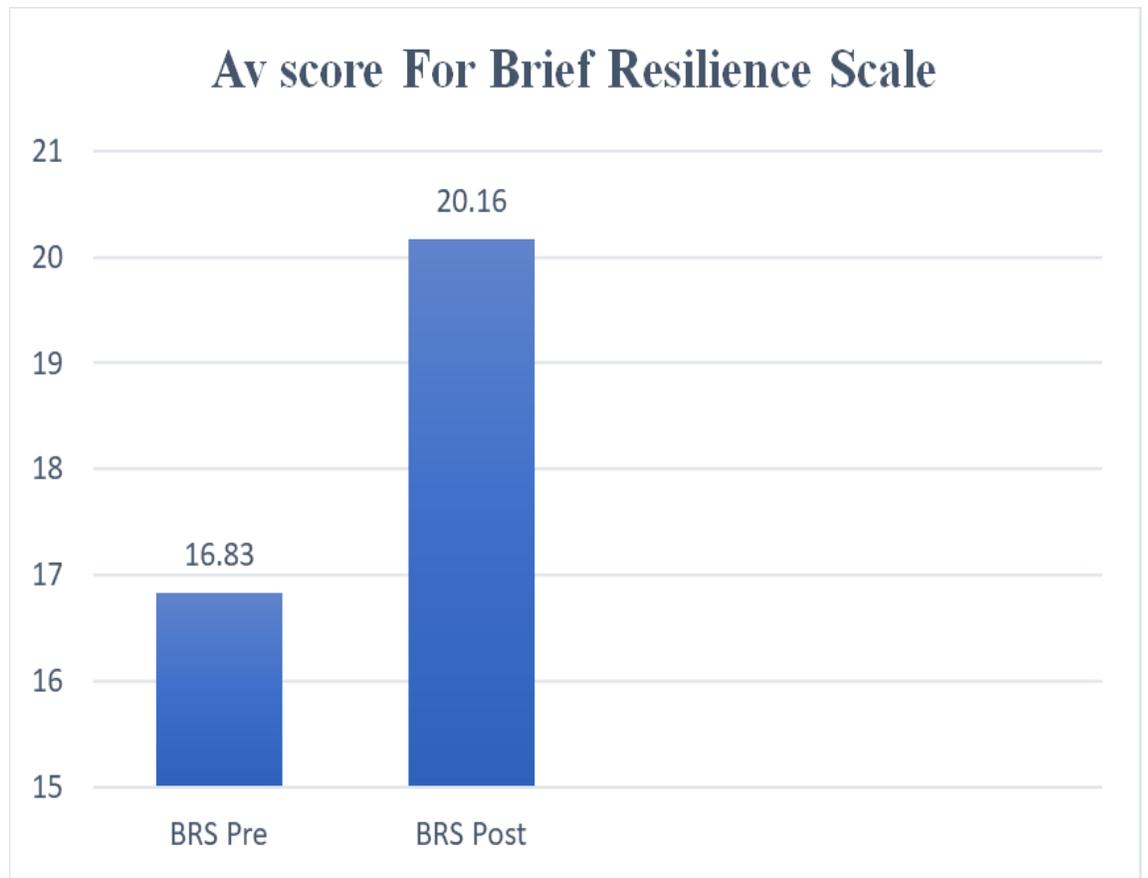


Table 3

The Brief Resilience Scale

	Mean	Std Deviation
BRS Total Pre-Intervention Score	16.83	4.57
BRS Total Post-Intervention Score	20.16	2.35

Figure 2



Appendix C

MINDSTRONG Spring 2022 Attendance By student	1 2/1	2 2/15	3 3/1	4 3/15	5 3/29	6 4/5	7 4/12
Student 1	x	AB	x	x	x	x	x
Student 2	x	x	x	x	x	x	x
Student 3	x	x	x	AB	x	AB	x
Student 4	x	x	x	x	AB	x	x
Student 5	x	AB	x	x	AB	x	x

Student 6	x						
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Attended all sessions: 2 participants

Missed 1 session: 2 participants

Missed 2 sessions: 2 participants