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Fostering academic resilience in higher education

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Abstract

Students who develop resilience are more likely to sustain high levels of achievement, motivation, and performance despite the presence of stressful conditions. Sixty-eight collegiate students completed pre- and post-Academic Resilience Scale-30 assessments before and after a brief virtual educational programme on common resilience strategies. The virtual resilience programme's purpose was ultimately to teach the students to apply resilience strategies. Resilience strategies included “writing down feelings,” “breathing techniques,” “mantras,” “cost-benefit analysis,” “considering other perspectives,” “observing thoughts/feelings,” and “listing/expressing gratitude.” Upon completion of the brief resilience programme, subjects were tasked to rank the strategies they felt were “most helpful” and “least helpful.” Students identified some of the most helpful strategies as mantras and cost/benefit analysis whereas one of the least helpful strategies was writing down feelings. Data analysis revealed that there was a statistically significant difference between pre- and post- Academic Resilience Scale-30 scores, suggesting that the educational programme improved resilience. Educational resilience programmes have the potential to improve resilience amongst students enrolled in higher education. Faculty and staff may support their students through continued development of academic resilience programming and efforts.

Keywords: resilience, academic, education, students, college

Introduction

Resiliency in higher education

Collegiate students pursuing higher education may endure academic and personal stressors (Cassidy, 2015; Cassidy et al., 2022; de Witt et al., 2019). Stressors can range from persistent, daily occurrences to life-changing traumatic events (Younghans, 2018). Students who lack proper support to overcome stressors may experience poor academic performance or drop out entirely (Ceary et al., 2019). Conversely, students who develop resilience are more likely to sustain high levels of achievement, motivation, and performance despite the presence of stressful events and conditions (Millersville University, 2022).

Resiliency defined

Resilience is the ability to endure and succeed despite the presence of stressors (Nawaz, 2018). Previous research has noted that resilience, also known as “grit” or “mindset,” is a better predictor of academic success when compared to intelligence quotient or talent (Claro et al., 2016; Duckworth et al., 2007; Gizir & Aydin, 2009). Both internal (e.g., skills, attitudes, beliefs) and external (e.g., social supports, expectations) protective factors can affect a student’s resilience (Jowkar et al., 2014; Kutlu & Yavuz, 2016). Cultivating resilience through manipulation of internal and external protective factors has been a topic of interest in

psychological studies for years (Beri & Kumar, 2018). Most resilience-focused interventions focus on internal factors, primarily manipulating attitudes and beliefs, to promote resilience (Delany et al. 2015; Stew, 2011).

Internal protective factor interventions that have been found to be beneficial to college students include mantras, cost/benefit analysis, consideration of other perspectives, observation of thoughts and feelings, writing feelings, expressing gratitude, and breathing techniques (Goralnik & Marcus, 2020; Hughes et al., 2021). A mantra is repetition of a positive phrase that has been found to increase resilience (Goralnik & Marcus, 2020). Cost/benefit analysis and consideration of other perspectives are problem solving methodologies that allow the individual to view the situation holistically, which is beneficial to internalising resilience (Mizra & Arif, 2018). Observation of thoughts and feelings as well as writing feelings are mindfulness techniques that promote self-awareness (First et al., 2016; Houston et al., 2016). Expressing gratitude and breathing techniques derive from meditation approaches which encourage the individual to self-regulate (Rogers, 2013). Specifically for collegiate level students, educational programmes with a virtual delivery have been found to be efficacious for fostering resilience (Enrique et al., 2019; Steinhardt & Dolbier, 2010).

Primary theory guiding research

Bandura's social learning theory guided the study design. The study targeted the context of the interaction between the person (i.e., the collegiate student), behavior (i.e., use of resilience strategies), environment (i.e., college), and cognition (i.e., implementation of the strategies). Resiliency and the development of academic resilience aligns with self-efficacy, self-awareness, and insight of Bandura's social learning theory (Cole & Tufano, 2008).

Research aims and objectives

The study answered the question: "Does a brief, virtual education programme on common resilience strategies improve the academic resilience of college students?" The study also investigated which resilience strategies the subjects found most and least helpful. This study investigated the effect of a brief, virtual educational programme on college students' resilience and the students' opinions of the common resilience interventions. First, subjects completed an assessment of resilience before and after the brief, virtual educational programme to determine if the strategies were effective. Next, the subjects ranked the strategies from "most helpful" to "least helpful." This data was then used to make recommendations for higher education professionals and students interested in fostering academic resilience.

Methods

Institutional review boards (IRBs) provide core protection for human participants in biomedical and behavioral research (Grady, 2015). The IRBs consist of research ethics committees that apply research ethics by reviewing the methodology proposed for research involving human subjects. IRBs were put forth in the United States approximately 30 years ago and regulation is widely required globally (Grady, 2015). After the researchers received IRB approval, undergraduate and graduate level students were recruited through convenience sampling with flyers, social media, and email solicitation. Students were eligible to participate if they were currently enrolled in a college programme. Only subjects who completed both the pre- and post-ARS-30 assessments were included in the final analysis.

After informed consent, demographic information (e.g., age, gender, ethnicity, marital status, employment, and level of college) was collected. Subjects completed the pre-Academic Resilience Scale (ARS-30). The subjects were then instructed to watch the brief, virtual education programme on common resilience

strategies along with various hypothetical stressful academic scenarios that were developed by this study's primary investigator. Post-ARS-30 scores were recorded, and subjects ranked the strategies as "most helpful" and "least helpful."

The ARS-30 was developed to measure resilience in academic or educational contexts (Cassidy, 2016). The ARS-30 is a self-report measure with 30-items that are measured on a 5-point Likert scale (Cassidy et al., 2022). The total ARS-30 score represents the summation of responses to the 30 individual items, with a higher total score (range 30 to 150) reflecting greater academic resilience (Cassidy, 2016). The measure was found to be applicable with diverse student populations and is considered a valid construct measure of academic resilience (Cassidy, 2016; Khalaf, 2014; Ramezanpour et al., 2019; Trigueros et al., 2020). Ultimately, the researchers determined the ARS-30 to be suitable for use in current study due to its ability to measure individual psychological resilience in education. The authors did not make any amendments on behalf of the ARS-30 during the study to maintain its validity.

Before embarking on the programme, subjects completed the pre-ARS-30. After completing the pre-ARS-30, subjects proceeded to the brief, virtual education programme that taught resilient strategies and provided stressful academic scenarios. For standardisation, all subjects were provided with the same resilient strategies and same hypothetical stressful academic scenarios. Academic scenarios included an in-class presentation, pending assignment, group work, midterm exam grade, multiple assignments, classmate interaction, and exam that elicited stress. After reading the hypothetical stressful academic scenarios and applying the taught strategies, the subjects were asked to complete the post-ARS-30 again with the learned techniques in mind.

The brief, virtual educational programme on common resilience interventions was developed and designed by the primary investigator of this study. The programme focused on easy-to-understand and readily employable interventions including mantra/phrase, cost/benefit analysis, considering other perspectives, observing thought/feelings, listing and expressing gratitude, writing down feelings, and breathing techniques. The programme was a voice recorded 17-slide PowerPoint that allowed subjects to navigate at their own pace. The PowerPoint included an overview of academic resilience, an explanation of each strategy, and then progressed through the various stressful academic scenarios with the subject being taught how to apply one of the strategies to the scenario before moving onto the next scenario and strategy.

The study's ideal sample size was determined based on G*Power. "T tests" was selected for the test family. "Means: Difference between two dependent means (matched pairs)" was selected for the statistical test. "A priori: Compute required sample size – given α, power, and effect size" was selected as the type of power analysis. The effect size was set at 0.5, α error probability was set at 0.05, and power was set at 0.95. G*Power calculated the total sample size to be 54 (Faul et al., 2009).

After data collection, statistical analyses determined a change in academic resilience after completing the brief, virtual educational programme. The results were used to accept or reject the null hypothesis, "There was no statistically significant difference between pre- and post-ARS-30 scores." Subjects' ranking of strategies was then analysed to determine the "most helpful" and "least helpful" strategies included in the brief, virtual educational programme. This data was used to provide recommendations for higher education professionals and students interested in fostering resilience.

Results

Participants

Sixty-eight college subjects were included in the study. The majority of subjects were completing graduate-level coursework, 18-24 years old, female, white/Caucasian, single/never married, and not currently employed. However, there was ample diversity among the subjects noted in Table 1. Surprisingly, an overwhelming 86% of the subjects reported previously using at least one of the resilience strategies included in the programme.

Demographic information

Table 1 Demographic information of the study participants.

Demographic Information	N	Per Cent
Education Level		
Undergraduate	33	49%
Graduate	35	51%
Age		
18-24	42	62%
24-34	19	28%
35-44	6	9%
45+	1	1%
Gender		
Female	55	81%
Male	12	18%
Transgender	1	1%
Race/Ethnicity		
White/Caucasian	44	64%
Hispanic/Latino	10	15%
Black/African American	8	12%
Asian/Pacific Islander	4	6%
Other	2	3%
Marital Status		
Single, never married	57	84%
Married, domestic partnership	11	16%
Employment Status		
Not currently employed	27	39%
Part-time	21	31%
Full-time	20	30%

The average pre-ARS-30 score was 114 ± 13. The average post-ARS-30 score was 126 ± 13. After paired t-test analysis, it was determined that there was a statistically significant ($p<.01$) difference between pre-ARS-30 scores and post-ARS-30 scores. Therefore, the null hypothesis was rejected. This suggests that at least one of the strategies in the educational programme was effective at improving resilience.

Mantra/phrase and cost/benefit analysis were reported to be the two most helpful strategies according to 42% of the subjects. While breathing techniques, observing thoughts/feelings, and considering other perspectives were cited as the third, fourth, and fifth most helpful strategies. Of the seven strategies, 35% of the subjects reported writing down what they feel and listing and expressing gratitude to be the two least helpful strategies. Data for these findings can be found in Table 2 and Table 3.

Most helpful strategy

Table 2 Ranking of the most helpful strategy indicated by study participants

Strategy	N	Percent
Mantra	14	21%
Cost/Benefit Analysis	14	21%
Breathing Techniques	11	16%
Observe Thoughts/Feelings	9	13%
List and Express Gratitude	8	12%
Consider Other Perspectives	8	12%
Write Down Feelings	4	5%

Least helpful strategy

Table 3 Ranking of the least helpful strategy indicated by study participants

Strategy	N	Percent
Write Down Feelings	18	26%
Mantra	18	26%
Cost/Benefit Analysis	18	26%
List and Express Gratitude	5	8%
Consider Other Perspectives	5	8%
Breathing Techniques	2	3%
Observe Thoughts/Feelings	2	3%

Discussion

This study was sufficiently powered with 68 subjects and documented statistically significant findings when comparing pre- and post-ARS-30 scores. The results of this study highlight the positive impacts of a brief, virtual educational programme on resilience interventions for collegiate-level students. These findings are

congruent with the results of past research on virtual, educational resilience programmes for college students (Enrique et al., 2019; Steinhardt & Dolbier, 2010). Therefore, academic professional staff and students can utilise this widely accessible, easy-to-administer modality to deliver and receive resilience programming.

Prior to this study, many resilience research articles about college students studied only one resilience strategy (First et al., 2016; Goralnik & Marcus, 2020; Houston et al., 2016; Hughes et al., 2021; Mizra & Arif, 2018; Rogers, 2013). This study uniquely employed multiple resilience strategies. The findings from subject rankings of strategies demonstrated the diverse, and sometimes conflicting, opinions of college students (e.g., mantra being listed as a "most helpful" and "least helpful" strategy). These results illustrate the need for education on numerous resilience strategies as a "one size fits all" approach would be limiting the programme's effectiveness. Future programmes aimed at fostering college student resilience should therefore incorporate multiple resilience strategies, acknowledging that more students may benefit from a greater diversity of options.

Most (i.e., 86%) of the subjects reported previously using at least one of the resilience strategies included in the programme. Even with this past exposure, post-ARS-30 scores improved following the brief, virtual resilience programme. Although the exact reason is unknown, it is possible that students were exposed to resilience strategies that were not effective for them or the ability to apply those strategies to academic situations may have not been elucidated. Providing a variety of resilience strategies and demonstrating their application to academic scenarios may be beneficial for this population (Shay & Pohan, 2021).

Due to the statistically significant change in pre and post test scores, the brief, virtual resilience programme will be utilised with incoming collegiate student cohorts. The researchers plan to further investigate the perceptions of academic resilience in collegiate students. A qualitative focus group is planned to help better understand why certain strategies work well and how they can best be taught/implemented in an academic environment.

There were several limitations of this study. Although the sample population exceeded the ideal sample size, the subjects were predominantly female. This may limit the generalisability to other genders. Future studies should strive for greater diversity of subjects. Second, the virtual nature of the educational programme may have deterred some prospective participants. Multiple formats may be beneficial for recruiting a larger, more diverse sample population. Third, 39 participants failed to complete the post-ARS-30 assessment. It is unknown as to why these subjects did not finish the evaluation, but if high levels of attrition are noted in future studies and programmes, potential causes should be investigated and addressed. Future research should aim to address these limitations to confirm or dispute the findings of this study.

Conclusion

Resilience is a key factor directly related to collegiate students' success (Claro et al., 2016; Duckworth et al., 2007; Gizir & Aydin, 2009). Resilience can be cultivated in this population through virtual, educational programmes on a variety of resilience-promoting strategies. Professional staff can support students by creating or providing academic-specific resources. Educators can also help students implement these helpful strategies during times of stress. Students can seek out resilience education and implement the strategies that most benefit their unique circumstances. Overall, the findings of this study show promising results that can benefit faculty and students alike in achieving their mutual goal to foster resilience.

Biographies

Blair Carsone is an assistant professor and doctoral capstone coordinator at Gannon University. She is also the co-founder of Carsone KIDS Inc.

Juliana Bell is an occupational therapy doctorate student at Gannon University.

Bryce Smith is an occupational therapist and co-founder of Carsone KIDS Inc., a non-profit that has a mission to make difficult therapeutic concepts accessible and easy-to-understand.

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