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Feasibility of a Stress Reduction Program Among Foster Youth in College

Alexis Melinda Ferioli Morin
Chatham University - USA, alexisferiolimorin19@gmail.com

Jennifer E. Lape
Chatham University - USA, jlape@chatham.edu

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Feasibility of a Stress Reduction Program Among Foster Youth in College

Abstract

Background: Foster youth endure traumatic adversities, which can lead to obstacles when transitioning to young adulthood and pursuing postsecondary education. This vulnerable population is required to navigate independent living while also managing stress that commonly arises from postsecondary education.

Method: A pre test, post test pilot design was employed to determine the potential impact and feasibility of an evidenced-based multi-factorial stress management program in reducing foster youth's perceived stress during postsecondary education. Participants ($n = 3$) received one, 90-min individual occupational therapy session weekly over 6 weeks. Author-generated stress management surveys along with the Perceived Stress Scale were administered pre and post intervention.

Results: Outcomes reveal this cost-effective program may be feasible in decreasing foster youth's perceived stress. All participants' individual Perceived Stress Scale scores decreased over the course of the intervention. Two out of three participants demonstrated a decrease in perceived academic stress while one participant's perceived academic stress remained the same from pre to post intervention.

Conclusion: Considerations for future programs include flexibility in scheduling, addressing time management challenges with this population, and integration of trauma-informed care principles.

Keywords

stress reduction, stress management, foster youth, postsecondary education, college, occupational therapy

Cover Page Footnote

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Credentials Display

Alexis M. F. Morin, OTD, MOT, OTR/L

Jennifer E. Lape, OTD, OTR/L

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Foster youth are considered a vulnerable population who have experienced significant childhood trauma, often leading to obstacles when transitioning to young adulthood (Xie et al., 2014). Between 2015 and 2019, more than 400,000 children and youth nationwide were in the foster care system (Administration for Children and Families, 2020). While turning 18 years of age is a celebratory milestone birthday to many young adults, this is often not the case for youth in foster care. On their 18th birthday, or in some states, their 21st, foster youth are discharged from the foster care system, known as “aging out,” without having established permanent living arrangements (Child Welfare Information Gateway [CWIG], 2018). Youth can remain in the foster care system until 21 years of age if they are enrolled in an education program or employed, but this is contingent on each state’s policy (CWIG, 2017). When foster youth age out, they usually leave care without having stable social support and are expected to transition from being dependent on the state to being self-sufficient young adults living in the community. In 2019, there were 20,445 foster youth who aged out (Administration for Children and Families, 2020), and more than 23,000 youth are expected to age out each year (Sorrell, 2017). It is essential to examine the barriers they have encountered during their lives in order to acquire a greater understanding of the challenges this population endures.

Adverse childhood experiences (ACEs), defined as traumatic events occurring before age 18, may include abuse and neglect, caregiver mental illness, caregiver substance abuse, the witness of domestic violence, and any type of parental instability (e.g., divorce, separation, or incarceration) (CDC, 2020). All children in the child welfare system have experienced at least one ACE, which may result in poor physical and mental health outcomes (CDC, 2020). Specifically, they can have higher rates of mental health disorders; lack effective coping skills (NFYI, n. d.); and experience challenges in education, employment, and health management. Fewer than 3% will graduate from college (Sorrell, 2017) compared to the 35% of the general population who graduated college in 2019 (Bustamante, 2019). Foster youth who enter college need to not only navigate living independently upon “aging out” but also cope with the stress that arises from postsecondary education.

Postsecondary Education Stress

Stress can be defined as “a physical and emotional reaction that people experience” when they encounter a challenging situation or when a threat is perceived (NCCIH, 2020, para. 1). Perceived stress in college students has been on the rise for several years and was exacerbated by the COVID-19 pandemic. For example, in 2018, 63% of college students experienced significant anxiety, and only 1.6% reported experiencing no stress (ACHA, 2018). Academic factors, including fear of academic failure, exams, and high academic expectations, are a primary source of stress among college students (Banu et al., 2015; Palekar & Mokashi, 2014). Given the literature on high stress levels in disadvantaged foster youth at baseline, it is reasonable to assume that perceived academic-related stress will be an additional challenge foster youth face in higher education (Feight et al., 2016).

Literature Review

Multiple studies demonstrate decreases in college students’ perceived stress levels through participation in multi-factorial stress management programs via a range of delivery methods (Baghurst & Kelley, 2014; Harrer et al., 2018; Rith-Najarian et al., 2019; Stillwell et al., 2019). Rith-Najarian et al. (2019) examined 62 randomized controlled trials. They found that stress management programs incorporate an average of four stress management interventions, the most common being psychoeducation and relaxation techniques. Additional studies effectively used education on stress and stress management techniques (Baghurst & Kelley, 2014; Frazier et al., 2015; Kim et al., 2016; Nguyen-Feng et al., 2017), a

combination of emotional regulation and cognitive-behavioral therapy approaches (Baghurst & Kelley, 2014; Harrer et al., 2018; Kim et al., 2016), and mindfulness-based interventions (Felver et al., 2018; Gray et al., 2018; Nguyen-Feng et al., 2017; Rith-Najarian et al., 2019) to effectively manage or reduce stress in college students. Stallman et al. (2019) also discovered the effectiveness of multi-factorial web-based stress management programs, including methods such as problem-solving, self-care (e.g., sleep, nutrition, physical activity), coping skills, mindfulness, and cognitive restructuring.

Current literature largely supports stress management programs for typical college students, while minimal literature exists on providing stress management services for foster youth. The search yielded only one article exploring the effectiveness of a brief mindfulness-based intervention for reducing stress among foster youth who have aged out of the system (Gray et al., 2018). Therefore, the following research question was developed to determine the feasibility of a stress management program with current and former foster youth completing their postsecondary education studies: Does participation in a stress reduction program improve current and former foster youth's ability to cope with academic stress during their postsecondary education studies?

Method

Intervention Design

This study employed a pretest/posttest design to assess the feasibility of a stress reduction program for current and former foster youth to cope with academic stress. The following aspects of feasibility were considered in this study: acceptability, demand, implementation, practicality, and expansion. Feasibility was explored because of the limited evidence on stress management interventions for foster youth and to determine the program's potential impact. The program consisted of participants engaging in six individual sessions synchronously on Zoom lasting 90 min; each focused on stress and stress management techniques. Data were collected through self-report measures, and a university's institutional review board approved the study.

Participants

Recruitment occurred at a university in Massachusetts and an independent living program in Connecticut. Inclusion criteria were current or former foster youth, enrolled at a local university or postsecondary education program (i.e., vocational training, associates, undergraduate, or graduate program), at least 18 years of age, English speaking, access to a technology device and internet connection, and provided informed consent. The program director of the independent living program and faculty advisors of a club at the university read a recruitment script. The university's student affairs department also sent a recruitment email. A recruitment email was not sent to youth residing in the independent living program since the program director was in regular contact with all youth. A convenience sample of three female foster youth were recruited and provided informed consent. Two participants resided in Massachusetts, and one resided in Connecticut. See Table 1 for detailed participant demographics.

Table 1

Participant Demographics

Participant	Age Group	Foster Care Status	Postsecondary Education Status	Employment Status	Residential Status
1	18–20	Currently in foster care	Full-time cosmetology student	Full-time	Off-campus
2	27–30	Formerly in foster care	Full-time second-year post-graduate (Master's) level social work student	Unemployed	Off-campus
3	24–26	Currently in foster care	Full-time senior undergraduate social work student	Part-time	Off-campus

Outcome Measures

Outcome measures administered before and after the program included the Perceived Stress Scale and author-generated pre and post surveys. The Perceived Stress Scale is a standardized 10-item Likert scale questionnaire widely used to measure one's perceived stress (Cohen et al., 1983). Specifically, it measures the degree to which situations present in one's life are stressful, how often one experiences symptoms of stress, and one's perceived ability to control and cope with stress. The scale has strong reliability and validity with various populations, including students at the middle school level and above (Cohen et al., 1983).

No existing standardized academic stress assessments were found that considered one's trauma history; therefore, author-generated pre and post surveys were developed using a trauma-informed approach to specifically explore academic stressors that one with a trauma history may be more likely to experience based on the literature reviewed. The post survey also gathered information on the perceived effectiveness of learned stress management techniques, perspectives on the continued use of the strategies, and feedback on the stress management program. The author-generated pre and post surveys were shared with a subject expert for peer review and were piloted on one former and one current foster youth to identify flaws in wording, content, and layout. Necessary modifications were made to increase content validity and ensure quality questions related to the constructs of interest.

Intervention

The program occurred for 6 weeks and included one 90-min synchronous individual occupational therapist-led session per week per participant via Zoom. The content for the program was developed based on current best evidence along with the first author's clinical experience with foster youth. All sessions were conducted by the first author, a licensed occupational therapist, and sessions consisted of psychoeducation, discussions, and hands-on experiential activities focused on experimenting with stress management strategies. In addition, individual sessions in Weeks 2 through 6 involved facilitating the participants in the development of personalized stress management plans. The participants created stress management plans that included their triggers and stressors, responses to stress (i.e., physical, emotional and cognitive, and behavioral), and strategies to better control or reduce their stress and enhance resiliency. A participant workbook was created for the participants to support the content delivered. Homework provided each week included tracking daily stress levels, stressors, and the strategies applied and/or practiced. The weekly content for the individual sessions is depicted in Table 2.

Table 2

Summary of Weekly Content

Week	Content
1	<ul style="list-style-type: none"> • Administration of author-generated pre survey and Perceived Stress Scale • Fundamentals of stress (i.e., what it entails, signs, symptoms, recognizing stress) • Identify academic stressors and signs and symptoms of stress experienced via reflective activity
2	<ul style="list-style-type: none"> • Time management
3	<ul style="list-style-type: none"> • Mindfulness techniques (laughter yoga, deep breathing exercises, meditation, progressive muscle relaxation, guided imagery, and body scan)
4	<ul style="list-style-type: none"> • Self-care strategies (sleep, nutrition, and physical activity)
5	<ul style="list-style-type: none"> • Cognitive restructuring (positive self-talk and self-awareness)
6	<ul style="list-style-type: none"> • Program wrap-up (review all strategies/resources plan) • Administration of author-generated post survey and Perceived Stress Scale

Data Collection and Analysis

The quantitative data from the author-generated surveys and the Perceived Stress Scale were analyzed using descriptive statistics, including mean and percent change in Microsoft Excel 2016, to yield differences in each individual's pre and post intervention results. Analysis of qualitative data provided valuable information related to the intervention's feasibility. Raw qualitative data were analyzed by summarizing the participants' responses and searching for common replies to identify themes. The first and second authors independently analyzed these data to assist with decreasing biases and increasing the credibility of the results. Discrepancies were found and resolved through discussion to reach a consensus.

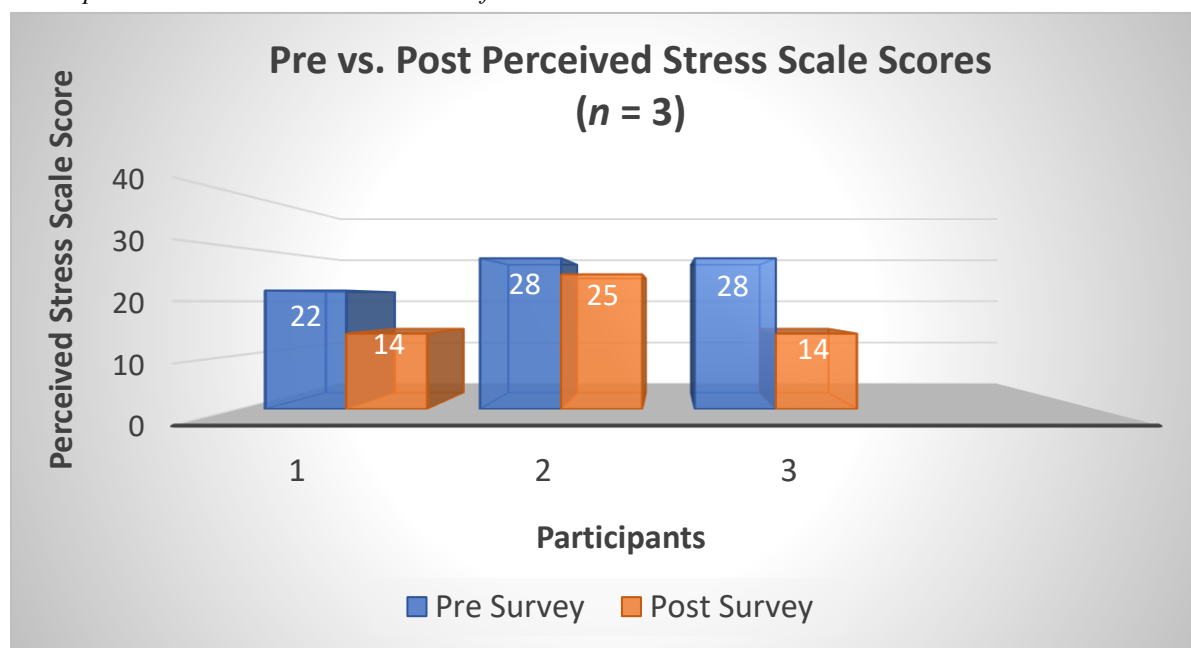
Results

Quantitative

Scores on the Perceived Stress Scale range from 0 to 40 with higher scores indicating a higher level of perceived stress (Cohen et al., 1983). All of the participants' individual Perceived Stress Scale scores decreased over the course of the intervention. Participant 1's stress level decreased by -36.4%, Participant 2 demonstrated a -10.7% reduction in stress, and Participant 3 exhibited a -50% decline in perceived stress. Individual mean scores from pre to post intervention are illustrated in Figure 1.

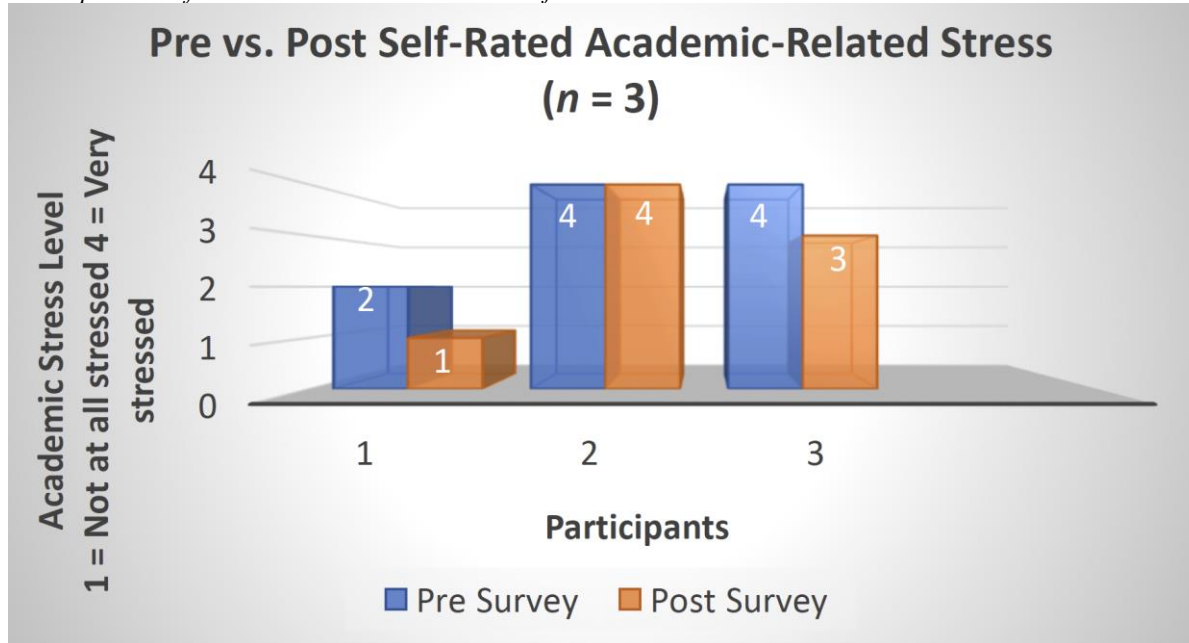
Figure 1

Participants' Perceived Stress Scale Scores from Pre to Post Intervention

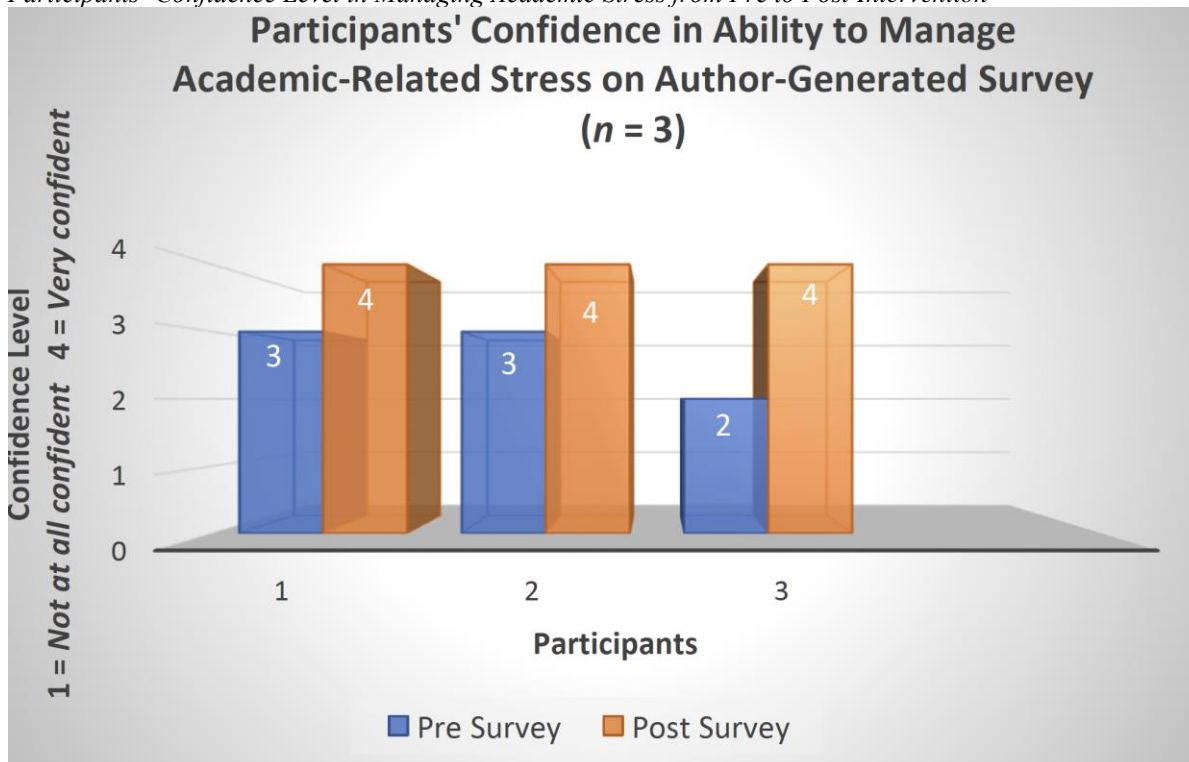


Note: Higher scores indicate a higher level of perceived stress.

Perceived academic-related stress was measured on the author-generated pre and post surveys. Participant 1 displayed a -50% decrease in perceived academic stress, while Participant 3 demonstrated a -25% decrease in perceived academic stress. Participant 2's perceived academic stress level remained the same. Pre and post academic-related stress results of each participant are depicted in Figure 2.

Figure 2*Participants' Self-Rated Academic-Related Stress from Pre to Post Intervention*

Each participants' confidence level increased to "very confident" with regard to their ability to manage academic-related stress at the conclusion of the intervention. Results yielded a 33.3% increase in confidence level regarding managing stress for Participants 1 and 2 while Participant 3 displayed a 100% increase in confidence. Please see Figure 3 for a visual depiction of each participants' confidence level in their ability to manage academic-related stress from pre to post intervention.

Figure 3*Participants' Confidence Level in Managing Academic Stress from Pre to Post Intervention*

The results concluded that two out of the three participants displayed an increase in their frequency of implementing stress management techniques. Participant 1 had a 50% increase in their use of stress reduction strategies, while the results of Participant 2 revealed no change in her use of strategies. Participant 3 demonstrated a 100% increase in her use of stress management techniques.

The factors with the greatest mean contributing to the participants' academic-related stress included workload, exams, school, and life balance. While these factors did not change from pre to post intervention, the degree to which they contributed to their overall stress level decreased. For example, a -33.3% decrease in stress levels was reported from pre to post intervention related to exams and workload. Furthermore, a -10% decrease in stress associated with schoolwork and life balance was discovered post intervention. All of the participants specified the intervention was "very helpful."

Qualitative

At pre intervention, two out of the three participants said they did not understand what stress management entailed and/or when to use tools to manage stress effectively. All of the participants missed sessions at one point or another, requiring them to engage in make-up sessions, and each participant stated they struggled with follow-through and managing their time. Every participant also reported they withdrew from participating in meaningful activities or neglected obligations when they felt overwhelmed and often engaged in negative self-talk. During the program, two of the participants reported feeling they had been reminded that they are capable of being resilient and coping with their stress.

Two out of the three participants reported using substances, such as marijuana, when they experience stress to provide an instant feeling of stress relief. However, these two participants verbalized their awareness that their stressors continue to be present following their use of marijuana and stated they were invested in learning alternative coping methods. Following the intervention, all of the participants identified mindfulness strategies as effective in producing longer-lasting effects in stress reduction. In addition, two of the participants identified time management strategies were effective in decreasing stress. Several themes were derived from the open-ended questions on the pre and post surveys. They included the following: acknowledgment of additional stressors beyond academic stress, desire to learn new stress management tools, acknowledgment of negative consequences of stress, the ability to identify more specific stress management strategies following the intervention, and positive feedback on programming and value of information learned.

With regard to the first theme of "acknowledgement of additional stressors beyond academic stress," the participants were asked at pre intervention to list any other factors contributing to their stress that were not addressed elsewhere on the author-generated pre survey. One participant reported "housing insecurities, transitions, and motivations" as additional stressors. Another participant identified "family, bills, and overthinking about life" as other stress factors. Lastly, "having children with chronic health issues" was acknowledged by a participant as yet another element contributing to her stress level.

The participants were asked what they hoped to gain from participating in the program. The participants' responses indicated a clear "desire to learn new stress management tools to be successful." Supporting quotes gathered from this question included: "To learn about strategies and tools that could help manage stress currently and in the future," "Learning ways to manage stress and being able to follow thru [sic] with it," and "Looking forward to learning more techniques to help me be successful."

The participants were also able to acknowledge at least some negative consequences of stress prior to the intervention. Initial responses related to the importance of stress management included: "Stress

management could help with all facets of my life,” “It’s important to me because I don’t like the feeling of being stressed. It’s so much for me sometimes, and it ruins my mood,” and “Without stress management, I would have a mental breakdown.”

The participants were asked to identify strategies they currently used to manage stress. They noted general stress management techniques at pre intervention and more specific tools at post intervention. Pre intervention, the participants reported using the following strategies to manage their stress: “Avoiding, using tutoring resources on campus,” “I take it a day at a time, but sometimes will take a mental health day,” and “Lots of self-care routines.” The participants identified the following learned strategies as being the most effective at post intervention: “time management, mindfulness exercises, sleep tips,” “deep breathing, mindfulness,” and “meditation and time management.” On the author-generated post survey, the participants shared additional feedback on the program. All of the participants viewed the program positively and acknowledged the value of the content, the ability to use handouts and resources in the future, and the potential to share resources with others.

Discussion

This study aimed to explore the feasibility of a multi-factorial stress reduction program in increasing current and former foster youth’s ability to cope with academic stress during their postsecondary education. The results indicate that a multi-factorial stress management program with an individualized approach may promote a reduction in perceived stress among current and former foster youth pursuing postsecondary education. The outcomes of this project align with the literature supporting the effectiveness of implementing a stress management program to decrease perceived stress among postsecondary education students (Baghurst & Kelley, 2014; Nguyen-Feng et al., 2017; Rith-Najarian et al., 2019; Stillwell et al., 2017).

The participants were asked what they hoped to gain from participating in this program, and all of the participants reported an interest in learning new tools to cope with their stress. At post intervention, all of the participants identified two or more learned stress management techniques as effective in reducing their stress. Although there were commonalities between what techniques the participants identified as effective, each participant identified varying strategies. Two out of the three participants reported at post intervention that they plan to use all newly gained stress management strategies to assist with managing stress. These findings suggest that infusing a multi-factorial approach may produce positive outcomes in decreasing perceived stress compared to solely incorporating one approach, which supports the literature validating the efficacy of a multi-factorial approach in reducing perceived stress among college students (Baghurst & Kelley, 2014; Premnath et al., 2020; Rith-Najarian et al., 2019; Stillwell et al., 2017).

At the start of the program, two out of the three participants verbalized they were unaware of what stress management involved and/or when to use strategies effectively to cope with stress. Post intervention, the participants were more self-aware of their experiences with stress and their ability to manage it. Current literature supports the use of psychoeducation to deliver information effectively on the fundamentals of stress to aid with stress reduction (Baghurst & Kelley, 2014; Nguyen-Feng et al., 2017; Rith-Najarian et al., 2019; Stillwell et al., 2017). Therefore, incorporating psychoeducation at the start of the program may have contributed to the participants’ perceived reductions in stress by enabling them to gain greater awareness of when and how to implement learned techniques effectively.

All of the participants perceived overall stress decreased post intervention on the Perceived Stress Scale (see Figure 2). However, only two out of the three participants demonstrated a decrease in perceived academic stress on the author-generated pre survey, while one participant’s perceived academic stress

remained the same from pre to post intervention. This finding may be attributed to the brief intervention timeframe. The participant whose academic stress remained the same was an older student who was pursuing a master's degree. This result may indicate that the intervention approach may have greater value and impact for those currently in foster care. In addition, this participant may have required additional time to integrate stress management techniques fully into all aspects of her life.

The participants were asked on the author-generated post survey to identify which strategies, if any, they found to be most effective in reducing their stress. All of the participants listed mindfulness strategies as one of the techniques they found beneficial. Of interest, mindfulness interventions with students who have a trauma history have been found to be statistically ineffective (Nguyen-Feng et al., 2017). Nguyen-Feng et al. (2017) cautioned against using mindfulness techniques with individuals with a trauma history and recommended that students learn emotional regulation concepts prior to learning mindfulness. Additional literature also noted positive outcomes in decreasing stress among students when a combination of an emotional regulation and cognitive-behavioral focused approach was used in stress management programs (Baghurst & Kelley, 2014; Harrer et al., 2018; Kim et al., 2016). In the present study, an emotional regulation approach was incorporated heavily in the first session as well as throughout the program, along with cognitive-behavioral and problem-solving approaches. Providing education and opportunities for the participants to enhance their self-awareness of stressors, reactions to stress, and signs and symptoms experienced may have enabled them to incorporate and experience relaxation from the mindfulness techniques successfully. Furthermore, incorporating weekly homework to continue practicing self-awareness and holding themselves accountable to manage their emotions could have attributed to their decrease in stress and reports of finding mindfulness strategies useful. Implementing homework and an emotional regulation approach to assist students with gaining emotional regulation skills should be considered when including mindfulness interventions in a stress management program.

Cognitive-behavioral therapy was incorporated into the program to increase the participants' ability to reframe negative thoughts. The participants disclosed that they often engaged in negative self-talk and were reminded through this project that they are resilient. Empowering the participants during sessions is just as crucial as educating them on stress management techniques and could have further contributed to the reductions in perceived stress, further aligning with the literature supporting a blend of a cognitive-behavioral and emotional regulation approaches to reduce stress in college students (Baghurst & Kelley, 2014; Harrer et al., 2018; Kim et al., 2016).

The participants who indicated they used marijuana for instantaneous feelings of relaxation also verbalized time management and mindfulness strategies as healthier coping mechanisms. Further exploration of stress management interventions to reduce substance use among at-risk youth is warranted, given the current findings and gap in the literature. Furthermore, factors the participants identified at pre intervention as greatly contributing to their academic stress included workload, exams, and schoolwork and life balance. Despite reductions in stress levels related to these factors at post intervention, schoolwork and life balance had the lowest percent change. The participants reported that they commonly withdrew from meaningful activities and/or neglected obligations when they experienced significant stress. The participants also acknowledged their difficulties with follow-through on commitments and time management, revealing a significant need for targeted time management interventions. The small sample size and the participants' frequent need to reschedule sessions may indicate their challenges with time management and work, school, and life balance. Education geared toward work and school-life balance is essential for this population and would be a valuable addition to the program in the future.

Overall, the outcomes of this study suggest the feasibility of a multi-factorial stress management program in reducing current and former foster youth's perceived stress during their postsecondary education. Areas that support feasibility were reductions in the participants' perceived stress; high levels of stress reported by the participants at pre intervention, revealing the need for stress management interventions; increase in the participants' frequency of using learned techniques at post intervention; and all of the participants expressed they found the program to be "very helpful." Regarding the practicality of this intervention, the program was cost-effective, requiring no financial resources to implement, and the time commitment to conduct the intervention was minimal, as the participants met once weekly. However, there are several considerations related to program implementation. Although the time commitment to integrate such a program is minimal, implementing this program required the program facilitator to be flexible and conduct sessions around foster youth's needs. Furthermore, consistent reminders must be provided to youth because of their time management challenges and to check on the well-being of this vulnerable population. One must also understand how to implement trauma-informed care principles with this marginalized population. This program appears feasible for expansion based on the need and the potential impact on current and former foster youth pursuing their postsecondary education, as well as the limited financial resources and space required for implementation. Challenges include effective recruitment of this population, scheduling with foster youth who may already be overwhelmed with the demands of postsecondary education, and securing a program facilitator adequately trained in trauma-informed care.

Limitations

The small sample size of three female participants recruited from one university and one independent living program in one geographic location were limitations in this study and decreased the ability to generalize the results to the current and former foster youth population at large. Potential investigator bias is another limitation, as the first author was the sole person responsible for program planning, implementation, and development of the author-generated outcome measures. The author-generated outcome measures and the Perceived Stress Scale relied heavily on participant self-report, which may decrease the validity of the responses.

The inability to control for external variables, such as participation in other therapeutic interventions, was another limitation. The participants may have also experienced increased comfort with their academics, given that the intervention occurred during the middle of the semester. The short time frame of the program limited the ability for follow-up. Ideally, the intervention would be conducted beyond the 6-week timeframe with additional follow-up to determine the use of strategies beyond the program itself. Several limitations were anticipated because of the feasibility study design.

Clinical and Research Implications

In practice, decreasing the time of the sessions would be advantageous to maintain participant engagement and enhance their ability to retain information. Rather than one weekly 90-min individual session, it is recommended that the participants engage in one 45 to 60-min individual session weekly over 12 weeks or roughly one semester. Increasing the length of this program would allow for additional time to gain knowledge, practice techniques, and provide opportunities to determine the long-term effects of the program. This population also requires more time to develop therapeutic relationships with practitioners. Increasing the intervention length would enable practitioners to establish effective rapport. Similar programming should incorporate additional interventions focused on time management and work-life balance to reduce stress further and promote optimal functioning as a young adult. Based on the

participants' feedback, learning assertiveness skills and how to set boundaries are areas in which foster youth require additional support.

With regard to policy, the outcomes of this program can serve to further advocate for the importance of additional funding for programs to support this marginalized population in attaining success by providing them with equal access to services focused on supporting their postsecondary education and overall health and well-being. Finally, incorporating additional education in the occupational therapy curriculum about vulnerable populations, such as foster youth, may increase occupational therapy students' awareness of the profession's role with at-risk populations and potentially result in increased practitioners advocating and developing additional supports for current and former foster youth.

Conclusion

The results of this study revealed that a multi-factorial stress management program may be feasible in decreasing current and former foster youth's perceived stress during their postsecondary education. Using a multi-factorial approach in stress management programming provides the opportunity for students to sample a variety of strategies and select those most beneficial in managing their stress. Similar programs may provide additional support for the foster youth population to manage academic stress and improve their educational outcomes.

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Alexis M. F. Morin, OTD, MOT, OTR/L, is a clinical instructor at a university for community-based practice. Her clinical experience includes providing individual, group, and consultative occupational therapy services to foster youth with mental and behavioral health challenges in the community. She has also developed programming and provided services to individuals in community-based and emerging practice settings.

Jennifer E. Lape, OTD, OTR/L, is an associate professor and the PPOTD Program Coordinator at Chatham University in Pittsburgh, Pennsylvania. She is a licensed occupational therapist in the state of Pennsylvania.
