Research Paper

Resilience Intervention for Young Adults With Adverse Childhood Experiences

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Abstract

BACKGROUND: Adverse childhood experiences (ACEs) are correlated with risk behaviors of smoking, disordered eating, and alcohol and substance abuse. Such behaviors can lead to significant public health problems of chronic obstructive pulmonary disease, obesity, liver disease, and hypertension, yet some individuals do not appear to suffer negative consequences but rather bounce back. **OBJECTIVE:** To pilot the feasibility and potential efficacy of the Empower Resilience Intervention to build capacity by increasing resilience and health behaviors and decreasing symptoms and negative health behaviors with young adults in an educational setting who have had ACEs. **DESIGN:** A two-group pre–post repeated measures design to compare symptoms, health behaviors, and resilience and written participant responses. **RESULTS:** There was a statistically significant cohort by time interaction for physical activity in the intervention group. There was no significant change in risk behaviors or resilience score by cohort. Young adults in the intervention group reported building strengths, reframing resilience, and creating support connections. **CONCLUSIONS:** An increase in health behavior is theoretically consistent with this strengths-based intervention. Evaluating this intervention with a larger sample is important. Interrupting the ACE to illness trajectory is complex. This short-term empower resilience intervention, however, holds promise as an opportunity to reconsider the negative effects of the trauma of the past and build on strengths to develop a preferred future.

Keywords

abuse, child, adolescents/adolescence, patient education, posttraumatic stress disorder (PTSD), psychoeducation

When asked what they want to be when they grow up, not one child will answer that he or she wants to be an alcoholic, be a drug abuser, or have HIV. For some children, however, adverse experiences that occur in childhood may increase perceived stress (McCrory, De Brito, & Viding, 2010; McEwen, 2007) that can precipitate health risk behaviors that lead to chronic illness. Adverse childhood experiences (ACEs) are defined as abuse, neglect, and household dysfunction that vary in severity, are often chronic, and occur within a child's family or social environment. ACEs may cause the child harm or distress, potentially disrupting physical, psychological, and social health (Kalmakis & Chandler, 2013). Maladaptive protective responses such as drinking, smoking, or having multiple partners have been shown to increase with an increase in ACEs. These risk behaviors, though they may help manage the immediate stressor, also negatively affect physical and mental health, may lead to chronic illness, next-generation child maltreatment, and health system burden (Anda et al., 2006; Cannon, Bonomi, Anderson, Rivara, & Thompson, 2010; Chartier, Walker, & Naimark, 2010; Felitti et al., 1998; Green et al., 2010; Hahm, Lee, Ozonoff, & Van Wert, 2010).

Despite clear ties between child adversity and negative sequelae, some individuals who experience adversity do not suffer long-term negative consequences but rather are resilient, bouncing back from stressful situations, employing their own capabilities and environmental resources (Bolger & Patterson, 2003; Klika & Herrenkohl, 2013; Luthar & Cicchetti, 2000; Werner & Smith, 1989). Resilience was initially considered a trait or process of extraordinary individuals. However, current evidence supports viewing resilience as a common dynamic human process that helps individuals navigate their way through

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stress using psychological, social, cultural, and physical resources that sustain their well-being (Ungar, Ghazinour, & Richter, 2013).

To promote resilient functioning, resilience researchers recommend approaches that build on strengths rather than problem-focused treatment strategies to repair disorders (Luthar & Cicchetti, 2000). As a result, innovative statewide policies have been developed through collaboration between scientists and politicians to address ACEs (Kagi & Regala, 2012), leading to the development of culturally specific community programs to promote healthy parenting practices, encourage children's development, and reduce adolescent risk (Dubowitz, 2014; Larkin, Felitti, & Anda, 2014). A strengths-based intervention designed for young adults to address the sequela of ACEs, however, still appears to be a fertile area for research. In between their original nuclear family and prior to becoming parents, young adults are for the first time likely to be in a position to affect their own health and potentially that of the next generation. The purpose of this pilot study was to examine the feasibility and potential efficacy of implementing a 4-week empower resilience intervention (ERI) to build resilience capacity using a psychoeducational approach with young adults who have experienced ACEs.

The Link Between Adversity and Resilience

Rutter (2012) emphasized the understanding of resilience as a process between the individual and the environment in response to adversity that varies depending on the situation and available resources. Building on the interactive perspective of person and environment, Ungar et al. (2013) describe an ecological understanding of resilience with a reciprocal person–environment interaction where the individual negotiates meaningful social, relational, and physical environmental resources. Resilience begins with having an internal locus of control that can lead to a sense of agency that increases the likelihood of successful stress management (Rutter, 2012). The propensity for resilience may start with genetics and neurobiology, but it is greatly influenced by environmental factors. Individual variables, such as self-efficacy, competence, and coping, as well as social and community variables, such as family, mentors, and community capital, influence resilient capacity (Collishaw et al., 2007; Fergus & Zimmerman, 2005; Southwick, Vythilingam, & Charney, 2005). Shifting the paradigm, Brown (2004) suggested using the nurture perspective of *how much* resilience does a person possess instead of the typical nature perspective of *which* people are resilient. This shift allows for the notion of resilience building, thereby potentially reducing stress and stress-related illness.

Theoretical Framework

ERI is a trauma-informed, ACE-aware intervention that combines two approaches to adolescent development: resilience training and positive youth development. Resilience training is based on the philosophy that individuals are naturally self-righting, using psychological, social, cultural, and physical resources to support their ability to bounce back from stress. Within a safe, supportive environment, resilience may increase and promote well-being. Building on strengths to promote resilient functioning has been recognized as an efficient and effective approach (Luthar & Cicchetti, 2000).

This strengths-based perspective is furthered by the work of Southwick and Charney (2012), who suggest that a resilience intervention should include the following five components: (a) emotional regulation training to recognize and manage reactivity and impulsivity; (b) cognitive behavioral approaches to reframe thought processes and increase positive emotion; (c) physical health information on exercise, nutrition, sleep, and relaxation to increase protective behavior; (d) social support to build connections to family, peers, and mentors to increase protective factors; and (e) a neurobiological component, such as mindfulness-based stress reduction (MBSR), to increase the ability to manage stress. Mindfulness has been described as transformative, promoting an increased ability of the brain and body to be present in the moment with acceptance, attention, and awareness (Kabat-Zinn, 1994; White, 2014). Research on MBSR in a normative healthy sample revealed a positive relationship with emotion regulation (Vujanovic, Bonn-Miller, Bernstein, McKee, & Zvolensky, 2010), psychological well-being, and quality of life (Nyklicek & Kuijpers, 2008), and a negative relationship with stress (Chiesa & Serretti, 2009). In other research, mindfulness activities followed by expressive writing about a past stress or trauma alone were related to decreased physical and psychological symptoms, while expressive writing with no mindfulness activity was not predictive of improvement (Poon & Danoff-Burg, 2011).

Previous research indicated that the use of resilience training decreases depression in ACE survivors (Hartley, 2011; Wingo et al., 2010), increases resilience capacity (Kent & Davis, 2014), improves coping skills, and decreases symptomatology (Steinhardt & Dolbier, 2008). Educational interventions using a group structured writing process with adolescents have facilitated self-esteem, self-efficacy, and resilience (Brown, Jean-Marie, & Beck, 2010; Chandler, 1999, 2002; Hunter & Chandler, 1999). An education program for past trauma that promotes emotional regulation and social support (Skills Training

Table 1. The ERI Framework, Content, and Homework.

Framework	ERI content	Homework
Active coping	Mindfulness meditation: A 5-minute guided breath-focused meditation and progressive muscle relaxation Education: Past experience influence on current health and proactive orientation to developing positive emotions Structured writing: Freewrite response to lecture and group response to writing Closing: Appreciation, affirmation, or appraisal	Weekly journal in response to positive emotion exercises from the book *Just One Thing* (*JOT*; Hanson, 2011) to increase optimistic thoughts
Building strength	Guided mindfulness meditation (same as above) Education: Strength-finder survey (Rath, 2007) and development of strength plan; physical health and well-being connection Writing: Freewrite to lecture and group response Closing: Appreciation, affirmation, or appraisal	*JOT*—Strength plan to identify competencies in daily life
Cognitive flexibility	Guided mindfulness meditation Education: CBT exercises: Identify automatic thoughts, challenge cognitive distortions, affirmations, and goal setting Preferred future presentation Writing: Freewrite to lecture and group response Closing: Appreciation, affirmation, or appraisal	Recognize body sense to improve awareness of calm, energy, stress, and strength—*JOT*; CBT practice
Social support	Guided mindfulness meditation Education: Social support: Campus resources and preferred future Writing: Freewrite to lecture and group response Closing: Appreciation, affirmation, or appraisal	Recognize current and potential social network—*JOT*

Note. ERI = empower resilience intervention; CBT = cognitive-behavioral therapy.

in Affective and Interpersonal Regulation [STAIR] narrative model) led to significant improvement in affect regulation, interpersonal skills, negative mood, and anger expression postintervention and improved symptoms over time (Cloitre, Koenen, Cohen, & Han, 2002).

The philosophy of the Positive Youth Development (PYD) movement emphasizes the potential of youth by supporting personal agency, respectful interactions, and active decision making. Unlike traditional *storm and stress* theories of adolescence, PYD programs are designed to build on strengths and competencies while recognizing risks and challenges (Dubowitz, 2014; Lerner, Almerigi, Theokes, & Lerner, 2005; Olson & Goddard, 2012). The goal of PYD is to develop promotive factors of the 5 Cs—competence, confidence, connection, character, and caring—to increase positive developmental outcomes (Lerner et al., 2005).

For youth who are exposed to risk, PYD practice can shift the focus from problems and deficits to developing agency (Case, 2006). Agency includes goal setting, developing an intention, action initiation, body sense, thinking awareness, a sense of control, and authorship (Kent, 2014). Facilitating the components of agency supports emotional awareness in adolescents to manage impulsivity and reactivity (Blum & Dick, 2013).

Outcomes of a study of service systems using PYD with 605 youth exposed to high levels of risk were significantly related to increased resilience and individual well-being (Sanders, Munford, Thimasarn-Anwar, Liebenberg, & Ungar, 2015). In the current feasibility study, the five resilience components (Southwick & Charney, 2012) are integrated with PYD approach into what we describe as the ABCs of resilience: *A*ctive coping, *B*uilding strength, *C*ognitive flexibility, and *S*ocial support (see Table 1).

In this study, the feasibility and efficacy of the 4-week ERI was examined in a sample of college-enrolled females. Based on theory and research reported above, we hypothesized that compared to the control group, individuals in the intervention group would demonstrate increased resilience and health-promoting behaviors and decreased symptoms and health-threatening behaviors. We recognize, however, a change in health threatening behaviors may require a longer term follow-up; that did not occur in this pilot study.

Intervention

The ERI is a 4-week psycho-educational intervention. Each module applies the ABCs of resilience, *A*ctive coping, *B*uilding strength, *C*ognitive flexibility, and *S*ocial support, using MBSR, education, structured writing, and social support with guided peer and facilitator interaction.

Method

Design

We used a randomly assigned two-group pretest–posttest design to compare symptoms, health behaviors, and resilience before and after the intervention program. Data were also collected as written narratives by participants describing their experience with the intervention. This study was approved by the university institutional review board. All participants provided their written informed consent prior to data collection.

Sample

Purposive sampling was used to select the participants. Inclusion criteria were that prospective participants be female, between 18 and 24 years of age, and enrolled in a northeastern university traditional undergraduate program. Student participants were recruited through a Web-based invitation from several sources: (a) a campus women's program that provides educational access, leadership training, and support services; (b) listserv for several campus women's forums; (c) the University's College of Nursing; (d) a health education class at the University; and (e) University Health Services. Students who completed the online survey were randomly assigned via coin toss into one of two groups (intervention or control).

The intervention group had 17 participants, with 11 in the control group. The control group participants received an incentive (gift card) for completing the online survey pre and post intervention. The intervention group participants received a gift card for each week of participation. Although the pilot project sample size is smaller than what is needed to achieve statistical significance for small- to moderate-effect sizes, we conducted this pilot project to (a) determine the feasibility of intervention and study protocol and (b) identify the power and effect size.

Intervention Protocol

The ERI course met for 1 hour per week for 4 weeks with two cofacilitators in a campus location convenient for participants. Each week prior to the session, facilitators met to ensure that the lecture content and group activities would create a responsive and safe community. During each session, the facilitators participated with participants in meditation, freewriting, and reporting on weekly homework exercises. Following each session, the facilitators met to reflect on participant responses. The nonhierarchical, nonjudgmental facilitator relationship with each other and the group was essential to the intervention.

Each session began with brief guided mindfulness meditation. The meditation was followed by checking in with each participant's response to homework exercise. Next, a 10-minute weekly educational topic was presented, such as personality assets, resilience, ACE, physical health, preferred future, and social support. In the first session, and in the informed consent document, participants were assured they would not be expected to talk about their individual past. After each topic was presented, participants responded to the topic in writing using the Amherst Writers and Artists method. This group writing method consists of an initial freewriting to a prompt followed by inviting each individual to read her writing while other participants actively listened. The listeners were asked to respond to what was strong about the writing (Schneider, 2003). The final activities included assigning homework and the closing ritual. During the closing ritual, each participant verbally affirmed one of the following: (a) something they learned during the session, (b) an appreciation of what another participant said in the session, or (c) appraisal of what they would have been helpful in the session (Chinn, 2001).

Measures

Prior to the intervention, the following measures were administered: (a) ACE Screening Survey (Felitti et al., 1998), (b) Physical and Psychological Symptom Checklist, (c) Health Behavior Questionnaire, and (d) the Resilience Scale (Wagnild, 2009). The ACE Screening Survey is a 10-item survey of childhood maltreatment and family dysfunction. Items are yes–no questions describing physical, emotional, or sexual abuse; neglect and household substance abuse; mental illness; incarcerated household members; battered mother; or parental loss through separation or divorce. All positive responses are summed for a total score. This widely used questionnaire has been validated (Dong et al., 2004), and the test–retest reliability over a 1-year interval has been reported as .64 (Dube et al., 2006).

The 18-item Symptom Checklist was developed by practice and research experts for young adults at the University of Massachusetts. The checklist includes physical and emotional symptoms, such as headaches, sleep problems, sadness, or worriedness. All items are measured on a 5-point Likert-type scale ranging from *very uncomfortable* to *very comfortable* . Although no published psychometric information is available, in this sample, there is evidence of internal consistency reliability ($\alpha = .88$).

The Health Behavior Questionnaire assessment consisted of five items that assessed cigarette, alcohol use, drug use, sexual activity, and physical activity. Students were asked how often they engaged each of these behaviors per week. Although the gold standard for alcohol and drug use assessment is biomarker evaluation (Delaney-Black et al., 2010), this was not feasible in this pilot study.

The 14-item Resilience Scale was completed using a 5-point Likert-type scale ranging from 0 = *never* to 4 = *always*. Evidence of adequate internal consistency reliability was previously established at α = .91 (Wagnild, 2009) and confirmed in this sample (α = .94). In addition to the four surveys, participants answered questions about demographic characteristics, including age-group, year in college, gender, and ethnicity. Following completion of the intervention, participants once again completed the Symptom Checklist, the Health Behavior Questionnaire, and the Resilience Scale.

Data Analysis

To test for preassessment group differences, an independent *t* test was used to compare scale means between the control group and the intervention group. Repeated measures analysis of variance was used to assess pre- versus postintervention scale means for symptoms and resilience as well as the number of times per week participants performed each of the health behavior items. Repeated measure analysis of variance was performed to compare group means across the two intervention groups while controlling for participants' ACE score and other potential covariates (e.g., age-group, race, and number of years in college).

In the final session, participants wrote an open-ended reflection on their experience with the ERI. The reflection revealed that participants' experience was congruent with the intent of the sessions, indicating that the intervention and response were dependable. Data were deductively content-analyzed using descriptive coding to identify common themes and categories. Deductive content analysis is used when there is previous knowledge of a theory or model (Elo & Kyngas, 2008). Each written participant response was read first for an overall impression and second for an understanding of the written content. Themes were described, and categories were noted that fit or did not fit the evidence-based ABCs framework. Results are reported with supporting quotes to support the credibility of the findings. One facilitator coded the results; to determine confirmability, the other facilitator randomly read several narratives to compare coding outcomes. The results were comparable.

Results

Sample Characteristics

All participants were enrolled college students. Of the 28 students who completed both the pre- and postintervention assessments (11 control, 17 intervention), 71.4% were in the 18 to 20 years age-group, 21.4% were in the 21 to 24 years group, and the remaining two subjects were 25 years or older. The majority of the participants were Caucasian (n = 21, 75%), while the remaining were African American (n = 1, 3.6%), Asian (n = 4, 14.3%), Hispanic (n = 1, 3.6%), or other (n = 1, 3.6%). More than two thirds (67.9%) were the first member of their family to attend college, and the modal year in undergraduate education was 3 years (39.3%). Although the sample comprised traditional undergraduate women, there was enough ACE variance to perform analyses (M = 4.0, SD = 2.4). Among the overall sample, ACEs ranged from 0.0 to 8.0 events. Only two students reported no ACEs (7.1%), while four students reported eight ACEs (14.3%).

Quantitative Results

To evaluate the presence of preintervention group differences in demographics and outcome variables, independent group *t* tests were performed (Table 2). Results showed few significant differences between the two groups prior to the intervention. On average, both groups reported just below four ACEs and approximately two preintervention symptoms. Preintervention resilience scores were comparable across groups. There were no significant differences in the number of alcohol drinks consumed per week, the number of cigarettes smoked per day, physical activity, and the number of sexual partners in the past 3 months. There was a marginally significant effect for recreational drug use, with the control group using more recreational drugs per week. On average, both groups were in their second year of college.

Given the low power in this pilot study, covariates were only considered for inclusion if they were significantly related to the outcome variables (examined via Pearson correlation coefficients). As a result, only age-group was included as a covariate. Older students reported significantly lower resilience scores post intervention (r = −.45, p = .023). Although not significant, older students also reported somewhat lower resilience scores prior to intervention (r = −.21, p = .305). Given the lack of variance, race was not considered as a covariate. ACE was included in all analyses (see Table 3).

There was no change evident in the frequency of risk behavior for the pre–post intervention effect (time) or for the interaction of time and group. Similar results were found for resilience and symptom scores. Although there was no overall main effect of time, there was a statistically significant group by time interaction for physical activity. Students in the intervention group were significantly more active postintervention (2.94 vs. 4.06), while there was no change in the activity level for those in the control group (3.11 vs. 3.22). Intervention group students increased their average rate of activity level by one full day per week.

Table 2. Descriptive Statistics of ACEs and Outcome Variables by Cohort at Baseline (Control Group *N* = 11, Intervention Group *N* = 17).

Variable	Cohort	*M*	*SD*	*t*	*p*
ACE total score	Control group	4.36	2.66	0.69	.494
	Intervention group	3.71	2.31		
Symptom score	Control group	2.03	0.80	−0.01	.991
	Intervention group	2.03	0.87		
Resilience score	Control group	5.18	1.34	−0.39	.703
	Intervention group	5.36	1.15		
Cigarettes[a]	Control group	1.73	1.10	0.69	.496
	Intervention group	1.41	1.23		
Alcohol[a]	Control group	2.91	1.30	1.07	.295
	Intervention group	2.38	1.26		
Recreational drugs[b]	Control group	2.22	2.05	2.02	.055
	Intervention group	1.18	0.53		
Physical activity[b]	Control group	2.82	1.66	−0.20	.842
	Intervention group	2.94	1.52		
No. of sex partners	Control group	2.27	1.19	1.70	.102
	Intervention group	1.59	0.94		
Year in undergraduate program	Control group	2.27	0.91	−0.43	.669
	Intervention group	2.47	1.33		

Note. ACE = adverse childhood experience.
[a]1 = 1-5/week, 2 = 6-10/week. [b]Number of occasions/week.

Table 3. Results of Repeated Measures Analysis of Variance Comparing Pre- to Postintervention Change in Physical and Emotional Symptoms, Resilience, and Health Behaviors in the ERI and Control Groups.

			Pre vs. post		Pre vs. post × Age		Pre vs. post × ACE		Pre vs. post × Cohort	
Variable	Intervention	Control	*F*	*p*	*F*	*p*	*F*	*p*	*F*	*p*
Symptoms										
Pre	2.03	1.94	2.0	.172	0.3	.615	0.8	.369	0.3	.605
Post	2.07	2.25								
Resilience										
Pre	5.32	5.23	1.7	.206	5.3	.032	3.1	.092	0.5	.495
Post	5.55	5.49								
Physical activity										
Pre	2.94	3.11	1.1	.298	0.8	.392	0.8	.376	4.6	.044
Post	4.06	3.22								
Cigarettes										
Pre	1.41	1.33	2.6	.122	8.8	.007	4.0	.057	0.2	.650
Post	1.41	1.11								
Alcohol										
Pre	2.38	2.67	3.4	.079	2.2	.155	0.0	.840	0.2	.659
Post	2.31	2.22								
Drugs										
Pre	1.18	2.25	0.0	.928	0.8	.376	0.8	.395	1.7	.210
Post	1.59	2.00								
Sex partners										
Pre	1.59	2.22	1.1	.303	1.3	.265	0.0	.865	0.0	.945
Post	1.65	2.11								

Note. ERI = empower resilience intervention; ACE = adverse childhood experience.

Given the low level of study power in this feasibility study, it is important to examine nonsignificant but potentially clinically important changes to avoid committing a Type II error. There was no change in symptoms pre- and postintervention for the intervention group (2.03 vs. 2.07), but the there was an increase in the number of symptoms reported in the control group (1.94 vs. 2.25). It is possible that the intervention may not actually decrease symptoms but may help reduce the potential for symptom increase.

Qualitative Results

Although attendance was voluntary, 100% of the participants attended all four sessions. The written reflections of participant experience in the program revealed three themes: the importance of starting with strengths, the hidden resilience in their past thoughts and behaviors, and the benefit of social connections.

Starting With Strengths. Participants wrote about benefiting from the strengths-based interactive approach that was different from the usual college lecture course. They described the approach provided them not only with new knowledge but also with new skills: "I realize I can do something now, I do not have to wait. I have strengths, even though I still have the same history and the same symptoms." They expressed an interest in learning about their thinking patterns and choosing to change them: "I like starting now, not having to go back and explain myself, my symptoms, and my past."

Participants acknowledged the immediate benefits of practicing mindfulness on their stress and sleep and benefits of developing a positive perspective. For example, when commenting on the presentation of the effect of ACEs on the brain and body and a discussion of their strengths, a participant queried, "What if we started with what we do best . . . in other areas of our lives?" On reflection, the strength focus was an important change for participants.

Reframing Resilience. Following the intervention, respondents reported feeling empowered by shifting from the usual negative perception to a positive view of their behaviors. One participant aptly described, "The risk is the reward, my past risk can be my future reward," referring to the fact that she recognized that rather than feeling negative about her past, she had developed strength from her experience. From the presentation on hidden resilience, participants felt relieved to recognize that whether they had used health-threatening or health-promoting behaviors, they were using the resources that were available at the time; by reframing their resilience, they could put their guilt to rest, "If we all spoke up (as we did through our writing), our baggage would become history."

Creating Connections. Several participants suggested that the program itself became a microcosm of a safe community. A participant commented that "this workshop of strangers now feels like a community." Participants acknowledged the importance of creating connection. One participant wrote,

> My father was diagnosed with a serious illness, I did not bring it up at the time, I kept my feelings inside, but now I can see how it is healthy to talk to people and deal with situations with someone else.

Creating connections in the workshop modeled the possibility of developing relationships beyond the group.

The importance of feeling safe enough to share personal experience and insights was a factor participants identified as a part of their experience, but it was not a distinct component of the framework. Mindfulness, relaxation, and improved sleep were the specific health behaviors described in the writing but not measured in the survey.

Discussion

This project was a pilot to evaluate the feasibility and potential efficacy of the ERI. The ERI was intended to increase resilience and health-related behaviors in college students who had ACEs. While it is well documented that ACEs are detrimental to a person's health, the ERI focused on the ways in which participants who are entering adulthood can change this potential threat by building on their strengths to develop behaviors, habits, and processes that can improve their health. This intervention builds on previous research and adds a new design that combines an educational intervention regarding the effects of ACEs on health with a positive strengths-based method. This intervention follows the five-component theoretical framework as recommended (Southwick & Charney, 2012).

Although recruitment was time-consuming, the 4-week ERI was feasible as evidenced by perfect weekly attendance among participants. As mentioned, all participants attended all sessions, reporting that they had positively changed their behavior between sessions. Several students who were unable to commit to the program said that they would like to participate if the program was a formal course for credit. Several other small content changes in the intervention format will occur in future studies. First, the meditation activities were not routine at the beginning of each session. Participants stated there was great value in learning MBSR; thus a routine timing of meditation would be recommended. Second, the weekly writing read by the students and the response from the members of the group were not used as a data source. As many of the writings were

very descriptive of their experience with the intervention, the collection and utilization of the writings could serve as important data. Finally, one common recommendation from participants was increasing the number of weekly sessions. Increasing the number of sessions could augment the potential effect of the intervention. Increasing the duration of each session could affect success. Future research should include exploring a variety of formats.

Given the small sample size, results need to be evaluated with caution. Given the amount of time between the intervention and follow-up assessment (immediately following the intervention), is it not surprising that we did not see change in risk behavior. Identifying change in these behaviors may be more likely at a 6-month follow-up assessment. Although we anticipated that we would see change in symptom score, resilience score, and physical activity, we were not surprised that immediate changes in risk behavior were not found. To evaluate fully the impact of ERI on positive and negative health risk behaviors, this study should be replicated with a larger sample and should include a long-term follow-up evaluation.

The participants were attentive to the education topics and expressed interest in learning about the research presented. Through structured writing, participants acknowledged that the information was relevant to their own lives. The use of structured writing captured the participants' voice and their recognition of how integrating new knowledge and reframing their experience as resilient could change their outlook on their future, similar to the results of previous studies using the AWA (Amherst Writers & Artists) writing method (Chandler, 1999, 2002). Writing offered the opportunity to integrate educational information, making the material relevant and meaningful to the individual, a positive practice that is essential to building resilience (Sanders et al., 2015).

Participants in this study showed interest in learning about their own thinking patterns and became aware of the value of reframing negative thinking to help regulate emotions. This finding is supported by prior research that revealed reinterpreting a stressful event or thought as less negative resulted in physical reactions to the event that were more adaptable and encouraged healthy resilience (Troy & Mauss, 2011). The positive impact of meditation on their mood and their behavior is similar to results reported in previous studies on coping with symptoms of stress, anxiety, and depression (Shallcross, Troy, Boland, & Mauss, 2010) and increasing attention focus (Jha, Krompinger, & Baine, 2007).

In the weekly closing ritual, the participants' willingness to share their opinion, respectfully listen, and consider others perspectives supports Chinn's (2001) intention of the purpose of the closing routine, which was to strengthen each individual and dynamics of the group. A participant offering specific feedback to another group member provided the opportunity to improve her awareness of others' contributions and express herself in a supportive way that could be heard and received, similar to the STAIR/Narrative Storytelling (NST) model (Hassija & Cloitre, 2014).

The differences in the participants' responses on the resilience and symptom survey were not statistically significant pre- and postintervention, and yet their written narrative response described changes in resilience and symptoms—in particular less worry, better stress management, and better sleep. Although the current resilience measure was internally consistent, it was developed with older adults with an individual focus; thus, it may not have been the strongest measure of resilience in this young adult population. Youth draw resilience from their internal resources as well as the external cultural and communal resources (Ungar et al., 2013). A resilience measure with an ecological focus on internal and external resources may more accurately represent this age-group's experience with the intervention. The finding of a nonsignificant difference in pre- versus immediate post symptom scores mirrors findings in a similar strengths-based program (STAIR/NST project). In the STAIR/NST project intervention, differences in symptom severity were not found until the 3- and 6-month follow-up assessments (Hassija & Cloitre, 2014).

Results of this study provide preliminary evidence that a strengths-based intervention may have a greater effect on promoting health behaviors than reducing risks or symptoms. Given that the ERI designed to educate, develop skills, and shift to a strengths-based perspective, the increase in health behavior and self-knowledge is theoretically consistent. Perhaps other health-promoting behaviors that were not assessed changed, since participants wrote and discussed having an increased awareness of mindfulness relaxation and the benefits of social support. In this study, however, no other health-promoting behaviors were measured. In future research, this construct will be evaluated using additional variables, such as nutrition, sleep, relaxation, and stress management.

We recruited college students with the rationale that the first few years of college are a time when students are exploring their lives and behaviors, are potentially more independent, and thus, may be open to learning new ways of thinking. Although members of this age-group did seem eager for this activity, younger students might also benefit from this intervention. Future research should include community college or high school students.

Implications

Interrupting the ACE to illness trajectory is a complex process. This short-term ERI holds promise to build health-promoting resilience using a strengths-based format. Psychiatric clinical nurse specialists and psychiatric nurse

practitioners employed in college counseling and mental health centers are in an ideal position to facilitate an educational, strengths-based intervention. Traditional integration in the past has focused on disease management, but new evidence-based models are needed to focus on *whole person* wellness, developing what O'Malley (2013) referred to as a life course approach to preventing disease, promoting health by offering prevention opportunities at every age and stage to build resilience.

Limitations

The main study limitation is the small sample size in this pilot study. Second, as mentioned above, the resilience and health behavior measures need to be adapted to fit a young adult population, and negative health behavior should be assessed using biomarkers of drug and alcohol use. Future research should include assessments of health-promoting behaviors, such as nutrition, rest, and relaxation, using assessment tools with demonstrated evidence of reliability and validity. Finally, intervention effectiveness was assessed immediately following completion of the intervention, before the full effect of the intervention may have influenced future behavior.

Conclusion

There are provocative trends in this feasibility study. When participants reframed past behaviors as attempts to bounce back from stress, they were able to locate strength within what had been termed *risky behavior*. As a result, the deficit paradigm of "What's wrong with me?" shifts to an empowered paradigm of "How have I been so strong?" Identifying strengths, using writing to integrate new information, and connecting to mentors and peers supported participants in recognizing that past experience affects current attitudes and behaviors; yet when individual strengths are the focus, problems retreat to the background and potential inhabits the foreground.

To disrupt the health-compromising trajectory of ACEs, innovative and effective interventions must be identified. The current ERI has potential to increase health-promoting behaviors and build resilience. The enthusiastic participant response reinforces the conclusion that this is just the beginning of a project with excellent potential.

Author Roles

Dr. Chandler was the PI for this study and primary author. Dr. Roberts, Co-I, and Dr Chandler, designed and implemented the study. Dr. Chiodo performed the quantitative data analysis, Dr. Chandler performed the qualitative analysis. All authors interpreted the analytic results and were involved in drafting the article and manuscript revisions.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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