Child Abuse & Neglect 79 (2018) 423–433

Contents lists available at ScienceDirect

Child Abuse & Neglect

journal homepage: www.elsevier.com/locate/chiabuneg

Evaluation of an intervention promoting emotion regulation skills for adults with persisting distress due to adverse childhood experiences

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ARTICLE INFO

Keywords:
Adverse childhood experiences
ACE
Emotion regulation
Intervention
Resilience

ABSTRACT

This phase II trial evaluated psychosocial and health outcomes of an intervention designed to improve emotion regulation skills in adults suffering from Adverse Childhood Experiences (ACEs). The study utilized a pretest-posttest design in which 92 adults enrolled in the community-based program completed pretest measures, attended either a faith-based or secular version of the 12-week ACE Overcomers program, and then completed posttest measures. The theory-guided program involved group sessions providing education and skills training to improve emotion regulation, self-awareness, resilience, and social functioning. Pretest and posttest surveys included measures of emotional regulation (suppression, rumination, cognitive reappraisal, and mindfulness), resilience (ego resilience and general self-efficacy), emotional experiences (perceived stress, moods, and depressive symptoms), quality of life (the SF-36 domains), and physical symptoms and illness (symptom load and sick days). Analyses revealed significant improvements from pretest to posttest in all facets of emotion regulation ($p < .01$), psychological resilience ($p < .001$), mental well-being ($p < .001$) and physical symptoms and illness ($p < .001$), and in specific facets of quality of life ($p < .001$). The faith-based and secular versions of the program yielded comparable improvements in well-being. Improvements were comparable for older versus younger participants, except that younger participants reported greater improvements in perceived stress ($p < .05$). These preliminary findings support the application of an emotion regulation perspective to interventions for adults with high ACEs. The study, with its single-group design, represents a promising step in the translational research pathway and provides support for further studies utilizing comparison groups.

Adverse childhood experiences (ACEs) involving family dysfunction, physical abuse, and mental abuse can confer wide-ranging consequences across the lifespan (Felitti et al., 1998; Kalmakis & Chandler, 2015; Lupien, McEwen, Gunnar, & Heim, 2009; Miller, Chen, & Parker, 2011). Although research on the risks associated with ACEs has stimulated the development of ACEs prevention initiatives (Hall, Porter, Longhi, Becker-Green, & Dreyfus, 2012; Kagi & Regala, 2012), fewer efforts have focused on developing programs to assist adults with a history of ACEs in countering ongoing psychosocial and health consequences. Deficits in emotion regulation capacities represent one set of mechanisms through which ACEs might pose ongoing risks through adulthood. Unlike ACEs, these skills are malleable targets for intervention. Programs that provide training in emotion regulation skills for managing lingering effects of ACEs and current stressors hold promise for mitigating consequences of ACEs. This Phase II trial evaluated

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https://doi.org/10.1016/j.chiabu.2018.03.002
Received 3 December 2017; Received in revised form 24 February 2018; Accepted 2 March 2018

changes in well-being resulting from participation in a psycho-educational program designed to improve emotion regulation skills. Specifically, the study examined changes in emotion regulation practices, resilience, quality of life, and physical health from pre-intervention to post-intervention for adults experiencing ongoing distress associated with ACEs.

1. ACEs and their consequences over the lifespan

In seminal studies (Dube et al., 2001; Felitti et al., 1998), researchers evaluated associations between ACEs and health outcomes in large samples of Kaiser Permanente members in California. The research was guided by a theoretical model conceptualizing childhood adversity as the foundation for social, emotional, and cognitive problems, which in turn give rise to high-risk behaviors. These behaviors, along with chronic physiological stress effects, increase risks of disease, disability, and early death. Survey findings revealed high prevalence of ACEs as well as strong, dose-response relationships between ACEs and health outcomes such as diabetes, heart disease, cancers, substance abuse, pulmonary disease, depression, and premature mortality (Anda et al., 2006; Brown et al., 2009; Dube et al., 2001; Edwards, Dube, Felitti, & Anda, 2007; Felitti et al., 1998). Further research has demonstrated similar, linear associations between ACEs and chronic diseases, emotional distress, and psychiatric disorders after controlling for socioeconomic status and other potential confounds (McCrory, Dooley, Layte, & Kenny, 2015).

ACEs also place a substantial cost burden on the health care system. Additional lifetime costs for a child who has experienced maltreatment are estimated at over $200,000 on average, including an estimated $32,648 in additional childhood medical costs and another $10,530 in additional adult medical costs (Fang, Brown, Florence, & Mercy, 2012). With the high prevalence of ACEs, their significant health consequences, and their substantial costs to the healthcare system, there is a growing need to address the gap in research on interventions for adults suffering the consequences of ACEs.

2. Emotion regulation Skills: A malleable target for intervention

As delineated by the theoretical model guiding the initial ACEs study (Felitti et al., 1998), one proposed pathway linking ACEs to negative health outcomes is through emotional dysfunction and maladaptive coping with stressful events (Poole, Dobson, & Pusch, 2017a; Salinas-Miranda et al., 2015). Sustained emotional distress can cause chronic activation of the hypothalamus-pituitary-adrenal (HPA) axis (Kalmakis, Meyer, Chiodo, & Leung, 2015; Paquola, Bennett, & Lagopoulos, 2016; Reading, 2006; Woon & Hedges, 2008) which, in turn, can adversely affect social, cognitive and emotional development (Hunt, Slack, & Berger, 2017; Lupien et al., 2009) while laying the foundation for increased disease susceptibility later in life (Miller et al., 2011).

Deficits in social, cognitive, and emotional development induced by ACEs could hamper abilities to regulate anger, depression, and anxiety through appropriate expression and processing, cognitive reappraisal, and dispositional mindfulness (Boyes, Hasking, & Martin, 2016; Whitaker et al., 2014). In a recent survey of over 500 adults, we demonstrated that higher ACEs are associated with poorer emotion regulation tendencies, including lower levels of cognitive reappraisal and mindfulness as well as higher levels of suppression and rumination (Cameron, Hamilton, & Carroll, 2018). Further, these emotion regulation skills mediated the relationships of ACEs with poorer mental health, quality of life, and physical illness. These findings support other research suggesting that poor emotion regulation skills can undermine social, psychological, and physical well-being over the lifespan (Berking & Wupperman, 2012; Gross, 2008; Kuster, Orth, & Meier, 2012; Nyklíček et al., 2011). With previous interventions showing that emotion regulation skills can be learned and enhanced (Jazaieri et al., 2014; LeBlanc, Uzun, Pourseied, & Mohiyeddini, 2017), these skills represent promising targets for interventions aimed at reducing the deleterious consequences of ACEs.

3. The ACE Overcomers program

Motivated and theoretically informed by previous ACEs research, the ACE Overcomers program (Lockridge, 2012b, Lockridge, 2012a) is designed to reduce the detrimental psychological, social, and health consequences of ACEs. The program provides training in emotion regulation and social skills to foster resolution of previous traumatic experiences as well as promote resilience in the face of current adversity. It focuses on improving emotional expression and processing (Cameron & Jago, 2008), mindfulness (Brown & Ryan, 2003), resilience (Fredrickson, Tugade, Waugh, & Larkin, 2003), and problem-solving techniques (Blanchard-Fields, 2007). The program's principles and contents are consistent with those used in evidence-based interventions developed for other populations, including women with breast cancer, individuals with anxiety or depression, and adults facing challenging life experiences (Cameron, Booth, Schlatter, Ziginskas, & Harman, 2007; Giese-Davis et al., 2002; Hofmann, Sawyer, Witt, & Oh, 2010).

The 12-week program involves weekly group sessions with skills training offered through lectures and homework assignments. Participants attend either a faith-based or secular version of the program; they are generally equivalent and differ primarily in the references to biblical verses and prayer in the former and references to philosophical quotes in the latter.

The primary aims of this Phase II trial were to gather initial data on feasibility; program fidelity; and pretest-posttest changes in emotion management skills and quality of life. Pretest-posttest designs can be used effectively to gather critical information about feasibility including potential benefits, effect sizes, and unexpected negative consequences of interventions that can inform larger, randomized controlled trials (e.g., Brothers, Yang, Strunk, & Andersen, 2011). We recruited program participants to complete measures of emotion regulation skills, psychological well-being, physical health, and quality of life at the start (baseline) and after the end of the program (follow-up). We predicted that participants would show improvements in all skills and indices of well-being from baseline to follow-up. We also tested whether these changes differed for those completing the faith-based versus secular programs. Finally, we conducted a process evaluation to evaluate fidelity in program implementation.