An effective measure of childhood adversity that is valid with older adults

Ramona Danielson[*], Gregory F. Sanders

North Dakota State University, Fargo, ND, USA

ABSTRACT

Childhood adversity (CA) has life-long effects that we are just beginning to understand. The Midlife in the United States (MIDUS) data is a rich resource that could contribute to the knowledge of the impact of CA in the later years but, while a number of CA items are included in MIDUS, a cumulative CA scale based on those items has not been created. Development of a CA scale would create numerous research opportunities within MIDUS and overcome some of the challenges of using a secondary dataset. The present study aimed to demonstrate that a cumulative measure of CA that is valid with older adults could be created using retrospective MIDUS Refresher study data (Ryff et al., 2016); analysis included data collected from 2011 to 2014 from 2542 adults ages 23–76 (1017 adults 55–76). The present study provided a rationale for which measures of CA to include in a cumulative scale. The distribution of eight types of CA and the cumulative CA scale were consistent with findings from past studies of CA. The factor structure of the cumulative CA scale was similar to the original ACE study and included two factors: household dynamics and child abuse/neglect. Consistent with past studies, the CA scale predicted a negative association with life satisfaction and a positive association with number of chronic conditions. This study demonstrated that an effective cumulative measure of CA could be created that would be of value to other studies using MIDUS data to explore outcomes with older adults.

1. Introduction

Current literature found that early traumatic experiences have long-lasting repercussions across the life span, influencing our health as adults, the incidence of chronic disease, and quality-of-life indicators (e.g., Alwin, 2012; Braveman & Barclay, 2009; Schafer, Ferraro, & Mustillo, 2011). Understanding childhood adversity (CA) has become instrumental to public health efforts to address the root causes of health disparities (Braveman & Barclay, 2009; Centers for Disease Control & Prevention (CDC), 2013). Childhood adversities include abuse and neglect, parental psychopathology, and other stressful life events (Cuijpers et al., 2011). In research across numerous study populations, childhood adversity (CA) has been associated with a wide variety of outcomes, including: lower health-related quality of life in adulthood (Corso, Edwards, Fang, & Mercy, 2008), higher disease burden and multimorbidity (Tomasdottir et al., 2015), and mental health challenges (Hughes, Lowey, Quigg, & Bellis, 2016), as well as behavioral health risk factors, sexual and reproductive health issues, and substance abuse (Anda et al., 2006).

The seminal Adverse Childhood Experiences (ACE) study examined CA experiences reported retrospectively by 17,337 adults 18 and older (approximately 1/3 were 65 and older) with health insurance in San Diego, CA (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016; Felitti et al., 1998). These 10 ACEs were emotional, physical, and sexual abuse and

* Corresponding author at: Department of Public Health, North Dakota State University, Dept. 2662, P.O. Box 6050, Fargo, ND, 58102, USA.
E-mail address: ramona.danielson@ndsu.edu (R. Danielson).

emotional and physical neglect as well as household dynamics including alcohol or substance abuse in the home, mental illness of a household member, domestic violence, criminal behavior of a household member, and parental separation or divorce (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). The study found that 64% experienced at least one ACE and 13% experienced four or more (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). The researchers created a cumulative score of the 10 ACEs and found a strong, graded relationship between the ACE score and 18 different health outcomes (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). As the cumulative ACE score increased, disease prevalence and comorbidity increased as well (Anda et al., 2006). High ACE scores have also been associated with premature mortality (Anda, Butchart, Felitti, & Brown, 2010). Longitudinal analysis of mortality records of the original ACE participants found that people with six or more ACEs died an average of nearly 20 years earlier than those without any ACEs (Brown et al., 2009).

Friedman, Montez, Sheehan, Guenewald, and Seeman, 2015 used the nationally representative MIDUS dataset to explore whether the type of adverse childhood event, timing of event, or quantity of events was most strongly associated with cardiometabolic health as an adult. Their research replicated the dose-response relationship seen with the original ACE study cumulative score (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). In their study of Philadelphia respondents ages 18–97 years, Wade et al. (2016) used the original 10 ACEs and added experiences including racism, being a witness to violence, bullying, being in foster care, and unsafe neighborhoods. For the original 10 ACEs, the researchers found dose-response relationships consistent with the original ACE study (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). The additional factors, which they labeled community-level stressors, were not as strongly associated with health outcomes, which the researchers concluded reinforced the importance of family-level dynamics during childhood (Wade et al., 2016).

The nationally representative MIDUS Refresher study is a rich dataset providing opportunities for researchers to explore a broad array of issues of importance to adults. Life satisfaction is a common outcome of interest in research about successful aging (Banjare, Dwivedi, & Pradhan, 2015; Douglass & Duffy, 2015; Krause, 2016; Roh et al., 2015; Skarupski, Fitchett, Evans, & Mendes de Leon, 2013; Zlatar et al., 2015). Measures of life satisfaction allow respondents to use their own evaluations to judge their lives on a general level rather than in specific domains (Pavot & Diener, 1993). Life satisfaction involves an assessment of how well desired goals and actual outcomes have matched (Krause, 2004). Previous studies have established the effect of cumulative adversity, which included childhood experiences as well as adult adverse experiences, on life satisfaction (Krause, 2004; Seery, Holman, & Silver, 2010). Additional literature has shown that life satisfaction is negatively associated specifically with early adversity (e.g., Hughes et al., 2016; Nurius, Logan-Greene, & Green, 2012).

Extant literature has shown that cumulative CA influences a variety of health outcomes across the lifespan. Analyses from the original ACE study showed that the ACE score increased the risk for adults of autoimmune disease such as arthritis and myocarditis (Dube, Felitti, Dong, Giles, & Anda, 2003), health problems, including depression and alcoholism (Anda et al., 2006; Dube et al., 2009), and problems with sleep and obesity (Anda et al., 2006). Furthermore, other studies reinforced the understanding of a strong relationship between difficult childhoods and experiences of co-occurring problems, or multimorbidity (Anda et al., 2006; Schafer & Ferraro, 2012; Tomasdottir et al., 2015). Adults who experienced maltreatment in childhood show a curvilinear pattern by age in their personal assessments of health-related quality of life (HRQoL; Corso et al., 2008). Age is also associated with increased co-morbidity of disease (Calland, Xin, & Stukenborg, 2013).

Using this secondary dataset, researchers interested in the long-reaching impacts of CA must use existing questions rather than designing a questionnaire to their own specifications. Researchers have selected a variety of existing MIDUS Refresher measures to operationalize experiences of CA, either independently or as a cumulative score, in various publications (e.g., Ferraro, Schafer, & Wilkinson, 2016; Friedman et al., 2015; Gruenewald et al., 2012; Jung, 2017; Savla et al., 2013; Schafer et al., 2011; Turiano, Silva, McDonald, & Hill, 2017). Extant literature has shown that a cumulative measure of CA is an important research variable because it is predictive of negative outcomes; furthermore, these relationships are present when variables other than those in the original ACE study are used (Centers for Disease Control & Prevention (CDC) & Kaiser, 2016; Institute on Aging, 2011; Schafer et al., 2011; Schilling, Aseltine Jr., & Gore, 2007). The literature does not show, however, a consistent rationale for which or how many measures to use, or for creating a cumulative measure (Anda et al., 2006; Centers for Disease Control & Prevention (CDC) & Kaiser, 2016). Although the long-reaching impact of CA has been documented (e.g., Alwin, 2012; Anda et al., 2006; Braveman & Barclay, 2009; Schafer et al., 2011), the literature has not provided results that specifically examine later life (e.g., Chartier, Walker, & Naimark, 2010; Schafer et al., 2011). Furthermore, the literature offers few examples of the use of a cumulative CA score specifically among older adults.

1.1. Present study

The lack of a measure of CA based on available MIDUS items that has been shown to be valid with older adults decreases the meaningful use of this rich data source to explore the impact of CA in later life. This study addressed this gap in the literature, and created a cumulative measure of CA using the secondary MIDUS Refresher dataset that is effective for older adults. The present study had two primary objectives. The first was to create a cumulative *CA score* for older adults (ages 55–76) using MIDUS data and to explore its factor structure. The second was to establish convergent construct validity of the scale by demonstrating consistency with the ACEs literature regarding previous findings that *CA score* is an effective measure in predicting life satisfaction and experience of chronic conditions (e.g., Anda et al., 2006; Hughes et al., 2016; Tomasdottir et al., 2015). In these studies, cumulative *CA score* was inversely related to *life satisfaction*. In addition, cumulative *CA score* was positively related to number of *chronic conditions*.