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Social and emotional support as a protective factor against current depression among individuals with adverse childhood experiences

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ABSTRACT

Depression is one of the most prevalent mental health disorders among adults with adverse childhood experiences (ACE). Several studies have well documented the protective role of social support against depression in other populations. However, the impact of perceived social and emotional support (PSES) on current depression in a large community sample of adults with ACE has not been studied yet. This study tests the hypothesis that PSES is a protective factor against current depression among adults with ACE.

Data from the 2010 Behavioral Risk Factor Surveillance System (BRFSS) involving adults with at least one ACE were used for the purpose of this study (n = 12.487). PSES had three categories: *Always*, *Usually/Sometimes*, *and Rarely/Never*. Current depression, defined based on the responses to the eight-item Patient Health Questionnaire (PHQ-8) depression scale, was treated as a binary outcome of interest: *Present* or *absent*. Logistic regression models were used for the analysis adjusting for all potential confounders.

When compared to individuals who reported that they rarely/never received social and emotional support, individuals who reported that they always received were 87% less likely to report current depression (AOR: 0.13 [95% CI: 0.08–0.21]); and those who reported that they usually/sometimes received social and emotional support were 69% less likely to report current depression (AOR: 0.31 [95% CI: 0.20–0.46]).

The results of this study highlight the importance of social and emotional support as a protective factor against depression in individuals with ACE. Health care providers should routinely screen for ACE to be able to facilitate the necessary social and emotional support.

1. Introduction

Adverse childhood experiences (ACE) are defined as incidents of abuse or household dysfunction during the first 18 years of life. They include verbal, physical, or sexual abuse, as well as household dysfunction such as substance-abusing, mentally ill, or incarcerated family member, and parental divorce/separation or witnessing domestic violence (Felitti et al., 1998). According to the ACE Study, collaboration between the Centers for Disease Control (CDC) and Kaiser Permanente's Health Appraisal Clinic in San Diageo, CA, >60% of the participants reported at least one adverse childhood experience (CDC, 2014). In recent years, research on adults with ACE has received much attention in public health because of its negative impact on health outcomes. Several studies have well documented the negative impact of ACE on adult health and health risk behaviors (Anda et al., 1999; Chapman et al., 2004, 2007; Dube et al., 2002, 2003; Felitti et al., 1998; Friestad et al., 2012; Gjelsvik et al., 2014; Kelly-Irving et al., 2013).

Depression is one of the most prevalent mental disorders among adults with ACE. One recent study reported that 4 or more ACE predicted a 23.9% point higher probability of ever-diagnosed depression compared with 0 ACE (Font and Maguire-Jack, 2016). Depression has a significant effect on individuals' health and is associated with enormous economic burden (Moussavi et al., 2007; Wang et al., 2003). By the year 2020, depression will become the second leading cause of death in the world (Murray and Lopez, 1996). As depression remains to be a huge public health concern among adults with ACE, particularly among those who had been sexually abused in childhood (Gladstone et al., 1999), research needs to focus on assessing the role of protective factors (e.g., social support) against depression in such populations. This study focused on social and emotional support because it is one of the most commonly sought safety net for and important resources of coping with adverse events in life.

Social support is a multidimensional construct which includes two types: structural and functional support. Structural social support includes quantity of social relationships (e.g., social integration) whereas functional social support includes quality of social relationships (e.g.,

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emotional support) (Reblin and Uchino, 2008; Schwarzer and Knoll, 2007). Furthermore, functional social support is divided into two types: perceived available support and support actually received. Depending on the wording and context, these two could be closely related or unrelated (Schwarzer and Knoll, 2007). Emotional support is the perceived availability of caring, trusting individuals with whom life experiences can be shared. It involves the provision of love, trust, empathy, and caring, and is the most often thought of support protecting persons from potentially adverse effects of stressful events (Cobb, 1976; Cohen and Wills, 1985; House, 1981). Perceived support was found to be a better predictor of mental health than actual received support (McDowell and Serovich, 2007).

Several studies have well documented the protective role of social support in protecting against depression in a general population and non-ACE populations (e.g., adolescents, individuals with myocardial infarctions, cancer, arthritis, HIV, etc.) (Dingfelder et al., 2010; Fleming et al., 1982; Frasure-Smith et al., 2000; Grav et al., 2012; Kovács et al., 2015; Penninx et al., 1997; Prachakul et al., 2007; Stice et al., 2004; Vyavaharkar et al., 2010; Yang et al., 2010). However, to the best of our knowledge, the influence of perceived social and emotional support on current depression in a large community sample of adults with ACE has not been studied yet. Therefore, the objective of this study is to test our hypothesis that perceived social and emotional support would be a protective factor against current depression among adults with ACE. The study objective attempts to validate the stress-buffering model in an ACE population, which is documented in other non-ACE populations (Aro et al., 1989; Yang et al., 2010). Data from the 2010 Behavioral Risk Factor Surveillance System (BRFSS) were used to test the proposed hypothesis.

Results from this study have important implications for health care providers to design and implement interventions which may help increase social and emotional support for adults with ACE. Providing such a support system to individuals with ACE may help decrease the severe burden of depression. And, reducing depression can potentially improve individuals' overall quality of life (Jia et al., 2004).

2. Methods

2.1. General study design and population

The BRFSS is a federally funded telephone survey designed and conducted annually by the Centers for Disease Control and Prevention (CDC) in collaboration with state health departments in all 50 states, Washington, DC; Puerto Rico; the US Virgin Islands; and Guam. The survey collects data on health conditions, preventive health practices and risk behaviors of the adults' selected. All BRFSS questionnaires, data and reports are available at http://www.cdc.gov/brfss/. Data for this study were obtained from 5 states (Hawaii, Nevada, Ohio, Vermont, and Wisconsin) that administered the 'Adverse Childhood Experience' and the 'Anxiety and Depression' optional modules in the 2010 Behavioral Risk Factors Surveillance System (BRFSS). According to the Council of American Survey Research Organization (CASRO) guidelines, the response rates for these states ranged from 49.1% to 60.5%.

2.2. Adverse childhood experiences (ace): population of interest

The adverse childhood experiences were assessed based on a total of 11 questions in the BRFSS ACE module (Fig. 1.). These 11 questions were grouped into eight categories: i) physical abuse, ii) verbal abuse, iii) sexual abuse, iv) mental illness in a household member, v) substance abuse in a household member, vi) divorce of a household member, vii) incarceration of a household member, and viii) witnessed abuse of a household member. We considered categories i) – iii) as direct ACE and iv) – viii) as indirect ACE. Individuals who experienced at least one of the eight adverse childhood events were considered as the population of interest in this study (n = 13.992).

2.3. Perceived social and emotional support (PSES): primary exposure of interest

Perceived social and emotional support (PSES) was assessed by asking the question: "*How often do you get the social and emotional support you need?*" Possible responses were: *Always*, *Usually*, *Sometimes*, *Rarely*, *or Never*. In our analysis, we divided these responses into three categories: *Always*, *Usually*/*Sometimes*, *and Rarely*/*Never*. Similar classification has been used in other studies (Edwards et al., 2016). Since the actual support received was not measured objectively in this study, responses from the study participants to this question on social and emotional support are considered as perceived rather than received.

2.4. Current depression: primary outcome of interest

Current depression is defined based on the responses to the eight-item Patient Health Questionnaire (PHQ-8) depression scale. The scores for each item, which ranges from 0 to 3, are summed to produce a total score between 0 and 24 points. Current depression was defined as a PHQ-8 score ≥ 10 (Kroenke et al., 2009). The PHQ-8 consists of eight of the nine DSM-IV criteria for depressive disorders (American Psychiatric Association, 1994).

2.5. Covariates of interest

Age, gender, race/ethnicity, marital status, education, employment, general health, exercise, and body mass index were considered as covariates of interest in this study.

2.6. Statistical analysis

All analysis is restricted to adults with at least one adverse childhood experience. Sampling weights provided in the 2010 BRFSS public-use data that adjust for unequal selection probabilities, survey non-response, and oversampling were used to account for the complex sampling design and to obtain population-based estimates which reflect US non-institutionalized individuals with at least one ACE. We first calculated the weighted prevalence estimate and the corresponding 95% confidence interval (CI) for current depression and PSES among all individuals with at least one ACE (n = 13.992). In order to describe the characteristics of the study population, weighted prevalence estimates, and corresponding 95% confidence interval (CI) were computed based on the sample of individuals with complete data on all variables considered in this study (n = 12.487). Association between PSES and current depression was examined using logistic regression models. Since the perception of social support has different consequences for the psychological well-being for men and women (Flaherty and Richman, 1989), to examine gender-specific association between PSES and current depression, we conducted stratified analyses by gender (males, females).

All analyses were conducted in SAS 9.3 (SAS Institute, Cary, NC, USA) using SAS survey procedures (PROC SURVEYFREQ, PROC SURVEYMEANS, PROC SURVEYLOGISTIC) to account for the complex sampling design.

3. Results

3.1. Sample characteristics

Among individuals with at least one ACE, 13.0% (95% CI: 11.6%–14.5%) reported current depression; 43.2% (95% CI: 41.2%–45.1%) reported that they always received social and emotional support, followed by usually/sometimes [48.2% (95% CI: 46.2%–50.1%)], and rarely/never [7.5% (95% CI: 6.6%–8.5%)]. Table 1 describes the sample characteristics of individuals with complete data. The average age was about 45 years, 49.1% were male, 81.1% were White Non-Hispanic, 60.6%