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Summary
Impact of Adverse Childhood Experiences on Quality of Life: The Mediating Role of Stress Coping Styles

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Adverse childhood experiences (ACE) is defined as acute or chronic life events that occur early in life and result in a biological and/or psychological stress response (Gershon et al., 2013). Although some researchers state that ACE often corresponds to life events such as sexual, physical, emotional and verbal abuse and neglect (Helitzer et al., 2015), many researchers suggest that life events such as a parental death or divorce in childhood, serious economic difficulties in the family, and the physical illness threatening child's life expectancy should also be considered as a ACE (Friedman et al., 2015; Green et al., 2010; Sheffler et al., 2019).

While some researchers suggested that gender, marital status, income and education level were associated with ACE (Taillieu et al., 2016), contradicting these findings, other researchers, stated that sociodemographic variables were not associated with ACE (Badr et al., 2018). On the other hand, Wright, Crawford, and Del Castillo (2009) suggested that physical, emotional and sexual abuse were not related to gender, while they were negatively related to family income level. In short, there is no consensus in the literature on which sociodemographic variables are associated with ACE. Therefore, the first aim of this study is to reveal what the sociodemographic variables are associated with ACE.

The researchers state that the negative impact of ACE on an individual's health and quality of life is not limited to childhood, and that these negative effects continue strongly and permanently throughout the individual's life (Danese & McEwen, 2012; Friedman et al., 2015; Sachs Ericsson, Rushing, Stanley & Sheffler, 2016). Specifically, many studies conducted with individuals in young and older adulthood indicated that ACE is related to suicide attempts (Sachs-Ericsson et al., 2016), anxiety and depression (Badr et al., 2018; Wright et al., 2009) and substance abuse (Norman, Byambaa, Butchart, Scott, & Vos, 2012), heart diseases (Jakubowski, Cundiff, & Matthews, 2018), chronic diseases (Norman et al., 2012) and obesity (Danese & Tan, 2014). Furthermore, a relatively recent meta-analysis study has revealed that ACE is a risk factor for many health problems such as violence, mental illnesses, and substance use (Hughes et al., 2017).

While there is a relative consensus in the literature that ACE has negative effects on both physical and mental health, less studies have been conducted on the context or ways in which this relationship occurs. Some of these limited studies have shown that ACE affects quality of life through biological processes (Baumeister, Akhtar, Ciufolini, Pariante & Mondelli, 2016; Danese & McEwen, 2012). Along with these findings that ACE affects the quality of life through biological processes, some researchers have suggested that ACE affects the quality of life through psychological processes and coping styles (Hager & Runtz, 2012), emotion regulation (Ullman, Peter-Hagene et al. Relyea, 2014), executive functions (Kalpidou, Volungis, & Bates, 2021) and negative schemas (Wright et al., 2009). Moreover, researchers have suggested that ACE is associated with coping skills (Leitenberg et al., 2004; Thomson & Jaque, 2019) and coping skills are associated with health status (Sheffler et al., 2019; Taylor & Stanton, 2007). As a secondary goal, we wanted to examined whether coping skills play a mediating role in the potential relationship between ACE and quality of life.

Method

Participants

A total of 164 participants, whose age range was between 18 and 50 (M_{age} = 23.73, *SD* = 6.74), were included in the study.

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Materials

Demographic Form: Information about the participants' marital status, gender, whether they are a student, their age, their own and parent's income and education level were obtained.

Adverse Childhood Experiences Questionnaire: It is a 10-item self-report scale developed by Felitti et al. (1998). It measures negative experiences before the age of eighteen. The total score ranges from 0 to 10, and a high score indicates an increase in negative experiences in childhood. The psychometric properties of the Turkish version of this scale were examined by Gündüz, Yasar, Gundogmus, Savran, and Konuk (2018), and it was stated that the scale consisted of one dimension and the Cronbach Alpha internal consistency value was 0.74. In the present study, the Cronbach Alpha internal consistency value was found to be 0.76.

Coping Style Scale: The original form of this scale, developed by Folkman and Lazarus (1980), is a Likert-type scale consisting of 68 items and consists of two sub-dimensions: 'problem-focused' and 'emotion-focused' ways. Sahin and Durak (1995) examined the validity and reliability study of the 30-item Turkish version of this scale by reducing the number of items. In line with original study, researchers have stated that the scale consists of two sub-dimensions (i.e., problem oriented and emotion oriented coping ability) and 5 factors (Sahin & Durak, 1995). The researchers stated that the Cronbach Alpha internal consistency coefficients of these 5 factors ranged from .45 to .80. In the current study, Cronbach's Alpha internal consistency coefficients were found between 0.61 and 0.83.

SF-12 Health Survey: The original form of the scale was developed as a total of 36 items containing two components, physical and mental, in order to evaluate the quality of life of individuals (Ware, Snow, Kosinski, & Gandek, 1993). In a different study, Ware, Kosinski, and Keller (1995) reduced the number of questions and created a 12-item form in order to obtain a more practical form that could be applied in a short time. The psychometric properties of the Turkish version of the SF-12 scale were investigated by Soylu and Kütük (2022), and it was stated that the Cronbach Alpha internal consistency coefficient was 0.73 for physical quality of life and 0.72 for mental quality of life. In the current study, Cronbach's Alpha internal consistency coefficient was found to be 0.72 and 0.80, respectively.

Results

ACE score was not significantly related with gender $t(79.20) = 1.523$, $p = .132$, marital status $t(139.13) = -1.574$, $p = .118$, education level of participants $F(2, 161) = .899$, $p = .409$, education level of biological mother $F(3, 160) = 1.069$, $p = .364$ and education level of biological father $F(3, 160) = .285$, $p = .836$. However, as shown in Table 2, the ACE score was positively correlated with the helpless style ($r = 0.39$, $p < .001$), but negatively correlated with physical health ($r = -0.29$, $p < .001$), mental health ($r = -0.28$, $p < .001$) optimistic approach ($r = -0.25$, $p = .001$) and self-confident approach ($r = -0.20$, $p = .009$). Furthermore, mediation analysis revealed that optimistic approach and helpless style mediated the effects of ACE on mental health B = -.36, $SE = .35$, $p = .303$. The role of mediating variables was checked with the Bootstrap method and the 'optimistic style' 95% CI [2.94 – 8.57] and the 'helpless style' 95% CI [(-8.60) – (-3.16) confidence intervals did not contain zero, whereas the 'self-confident style' was found to contain zeros 95% CI [(-4.82) – (1.81).

Discussion

The results of this study show that no sociodemographic variable is associated with ACE. On the other hand, it has been found that the ACE is negatively related to the mental quality of life, and more importantly, problem and emotional focused coping styles play a mediating role between the ACE and mental health.

Subramaniam et al. (2020) stated that individuals who were exposed to negative experiences in the early years of their lives received less education than those who did not, and explained the reason for this finding as these life events disrupt normal brain development and negatively affect cognitive processes such as memory and language. A similar finding was obtained from the study of Giano et al. (2020), and a significant relationship was found between having a high level of education and a low ACE score. In the light of these findings, although it is expected that there will be a significant relationship between ACE score and education in the present study, it has been observed that there is no significant relationship. This finding may have resulted from the sample characteristics included in our study, specifically, it was not evenly distributed according to the education level of the participants and only 7.9% were literate or primary school graduates.

In previous studies, it was stated that problem-focused coping style was negatively related to mental quality of life (Wong et al., 2016), while emotion-focused coping style was positively related (Huynh & Lee, in press). In the present study, as expected, it was found that mental quality of life increased as problem-focused coping style (i.e., optimistic approach) increased and emotional focused coping style (i.e., helpless style) decreased.

One of the most important findings obtained in the present study was that problem- and emotion-focused coping styles were found to be mediating variables in the relationship between ACE and mental quality of life. This finding is in line with the research that has been obtained from different previous studies, that ACE affects problem-focused (Gipple et al., 2006) and emotion-focused (Thomson & Jaque, 2019) coping styles, while problem-focused and emotion-focused coping styles affect mental quality of life (Gilhooly et al., 2016). Our study revealed the indirect path from ACE to low mental quality of life through coping styles.

This study has some limitations. First, because the study is a cross-sectional study in terms of method, causality should not be deduced from the relationships between the variables. Second, the sample size is relatively small, future studies should be conducted with larger sample groups including older individuals.