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TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

The Effects of Childhood Trauma on Romantic Support and Adult Problem Behavior

An Honors College Project Presented to
the Faculty of the Undergraduate
College of Health and Behavioral Studies
James Madison University

by Keiva Rachel Brannigan

May 2020

Accepted by the faculty of the Department of Psychology, James Madison University, in partial fulfillment of the requirements for the Honors College.

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PUBLIC PRESENTATION

This work is accepted for presentation, in part or in full, at Society for Research on Adolescents in San Diego, California on March 21, 2020 (to be rescheduled).

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Acknowledgements

This project would not have been possible without the help and guidance of my thesis advisor, Dr. David Szwedo. Dr. Szwedo agreed to work with me on this project two years ago, and since then he has provided me with endless instruction, support, and expertise. I would also like to thank Dr. Jeff Dyche and Dr. Monica Reis-Bergen for serving on my thesis committee and providing me with helpful feedback and encouragement. I could not have done this without all three of you, and I am extremely grateful for everything you've done for me.

Abstract

Adverse childhood experiences (ACEs) are a common topic in research investigating outcomes of abused or traumatized children. Previous literature on ACEs have established that high levels of ACEs are associated with both higher levels of problem behaviors in adulthood and lower quality of support in romantic relationships in adolescence/early adulthood. However, the potential for high levels of romantic support and other healthy relationship qualities to act as a buffer against the negative effects of ACEs on later problem behaviors has yet to be addressed in the literature. Thus, the present study utilizes data from an ongoing longitudinal study on social relationships and related variables to examine the moderating effect of perceived support and observed instrumental and emotional support on later engagement in problem behaviors. The results provided evidence for support to act as a buffer as was hypothesized, but they also demonstrated potential to increase further engagement in problem behaviors.

Keywords: adverse childhood experience, romantic support, romantic relationships, aggression, problem behavior, criminal behavior

The Effects of Childhood Trauma on Romantic Support and Adult Problem Behavior

Adverse events occurring during childhood have the potential to result in negative emotional and psychological consequences that may continue to pose challenges to victims for the rest of their lives (Anda et al., 2005). Many adverse outcomes are associated with the experience of childhood trauma, such as mental illness, physical illness, substance abuse, prolonged stress, and fear (Dube, 2017). However, there are also often interpersonal consequences of traumatic experiences. For example, establishing supportive and long-lasting romantic relationships may be particularly difficult when one has experienced a high number of adverse life events (Brickel, 2015; Wolfe et al., 2001). Indeed, higher rates of reported adverse childhood experiences are correlated with higher rates of divorce and violence in relationships (Wolfe et al., 2001).

However, supportive romantic relationships are usually very important in an individual's life, helping to decrease overall stress, establish a greater sense of purpose, and encourage a decrease in problematic behaviors (Muller, Skurtveit, & Clausen, 2016; Tharp et al., 2013). Failing to form supportive romantic relationships, on the other hand, can be detrimental to physical and mental health, and can potentially also contribute to the adoption of harmful, criminal, and delinquent behaviors in adulthood (Arene, 2016; Brickel, 2016; Muller, Skurtveit, & Clausen, 2016). Despite the known consequences of adverse life events and benefits of supportive relationships, research has yet to consider how adverse childhood experiences may impact the quality of romantic relationships developed in early adulthood, and moreover, how these factors may interact to predict different types of young adult problem behavior.

Childhood Trauma and Adult Behavior

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Traumatic events such as sexual assaults, physical abuse, and parental neglect tend to elicit significant emotional pain and overwhelm an individual's ability to cope adaptively with stress (Santiago et al., 2013). When such events occur in childhood, they may be even more problematic than when they occur in adulthood (Shira, Shmotkin, & Litwin, 2012). For example, adverse childhood experiences have been directly linked to harmful behaviors in adolescence such as unprotected sex, alcohol abuse, and drug abuse, as well as with more serious negative behaviors such as higher levels of criminality and delinquency (Nall, 2015). Shira and colleagues (2012) also found that individuals whose adversities occurred earlier in their lives as compared to later were more likely to be diagnosed with a mental illness later in life, suggesting that such adversity occurring at younger ages may disrupt critical processes for healthy development. More specifically, Widom (1989) compared criminal records of individuals who reported childhood abuse and neglect versus criminal records of those who did not report childhood abuse and neglect. She found that those who were abused and neglected as children, compared to those who were not, had worse criminal records as adults as reflected by more arrests and more violent offenses (Widom, 1989). Such findings highlight the potential for traumatic events occurring before adulthood to have significant, long-lasting, detrimental associations with problematic adult outcomes.

Currie and Tekin (2006) suggest that one possible reason for the connection between childhood trauma and crime is the totality of circumstances that such youth endure. For example, children who have higher levels of adverse experiences are more likely to reside in locations where crime rates are high and substance abuse is prevalent. They are more likely to be surrounded by individuals who, themselves, are involved in criminal behavior. Growing up in this environment may lead children to develop similar lifestyles, having learned that such

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behavior is normal. More specific mechanisms have also been considered. For example, children who experience maltreatment start engaging in crime earlier due to their deficits in emotional regulation, high levels of impulsivity, and difficulty feeling empathy (Rogosch, Cicchetti, & Aber, 1995; Widom, 1989). They are also more likely to develop unhealthy coping mechanisms, such as self-destructive behaviors and denial (Min et al., 2007; Walsh, Fortier, & DiLillo, 2010; Whiffen & MacIntosh, 2005). Although some proportion of these attributes are certainly passed on genetically (Busjahn et al., 1999; Hur et al., 2012), there is also a likely environmental component to their development. Youth who have many adverse experiences may develop poor models of interpersonal support and reliance given inadequate social and emotional care experienced growing up (Hur et al., 2012; Reyes, 2016; Reyome, 2010). Indeed, such youth tend to cope with stress by distancing themselves from their support systems, which makes it more difficult for their loved ones to identify their pain and need for support, and possibly lead to the perception that their social support is inadequate (DeLongis & Holtzman, 2005; Holtzman, Newth, & DeLongis, 2004). Notably, a lack of support from family and friends among youth with adverse childhood experiences has been associated with higher levels of youths' aggressive and criminal behaviors, suggesting the potential importance of considering social support for predicting such outcomes (Colvin, Cullen, & Vander Ven, 2002; Garcia & Lane, 2012; Laser & Leibowitz, 2009).

Childhood Trauma and Support in Future Romantic Relationships

As previously suggested, there is strong evidence that youth who experience negative events during childhood tend to have more interpersonal problems in adolescence and adulthood (Godbout, Sabourin, & Lussier, 2009; Howes & Espinosa, 1985; Labella et al., 2019; Rogosch, Cicchetti, & Aber, 1995; Salzinger et al., 1993). Childhood trauma is believed to inhibit the

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formation of supportive relationships because they may limit children's development of healthy coping mechanisms and communication skills (Labella et al., 2019; Min et al., 2007; Whiffen & MacIntosh, 2005). For example, children who are abused or who grow up in abusive environments often have few examples of healthy relationships, making it more difficult for them to learn relationship skills necessary to establish supportive relationships (Godbout, Sabourin, & Lussier, 2009; Howes & Espinosa, 1985; Labella et al., 2019; Reyes, 2016; Reyome, 2010; Salzinger et al., 1993; Wolfe et al., 2001). Reyes (2016) suggests that children who experience more negative early life events frequently also have poor or insecure attachments with, and a lack of support from, their caregivers. Moreover, such insecure attachments with caregivers tends to predict their own unsupportive romantic relationships later in life. These children have fewer opportunities to experience stable, close, and supportive relationships, and therefore have fewer opportunities to develop the skills needed to establish and maintain one. Moreover, the maladaptive schemas that abused children develop, such as mistrust and emotional inhibition, may also contribute to these children ending up in less supportive relationships (Reyome, 2010).

Labella and colleagues (2019) also discussed the role that childhood trauma specifically plays in the development of romantic competence and relational violence in young adulthood. They found that higher levels of reported childhood abuse/neglect exposure were significantly associated with inhibited levels of romantic competence (Labella et al., 2019). They also discovered that higher levels of childhood abuse predicted higher levels of relational violence in young adulthood, consistent with the findings of other related studies (Webster, 2016; Wolfe et al., 2001). On the other hand, there is also evidence that individuals who endured a high number of adverse experiences during childhood may cope with this stress instead by distancing

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themselves from their support systems, which likely includes their romantic partner, making it difficult to build a supportive relationship (DeLongis & Holtzman, 2005).

Romantic Relationships and Problem Behavior

Poor interpersonal and romantic relationships are highly correlated with later engagement in problem behaviors (Garcia & Lane, 2012; Wyse, Harding, & Morenoff, 2014). For example, Garcia and Lane (2012) explored the role that poor relationships with friends, romantic partners, and family play in the lives of girls in the juvenile detention system. Using a focus group of 27 delinquent girls, these researchers determined that nearly every girl attributed their behavior to relationship strain defined by a lack of valued positive interactions and an excess of negative or painful interactions. The girls reported that their inability to specifically cope with these relationship strains were likely explanations for their behaviors (Garcia & Lane, 2012).

Additional research has provided further evidence that a lack of support in youth relationships is associated with problem behaviors such as delinquency, depression, substance abuse, and sexual acting out in both girls and boys (Colvin, Cullen, & Vander Ven, 2002; Garcia & Lane, 2012; Laser & Leibowitz, 2009). Overall, relationships that lack support may put a child or adolescent at a greater risk for engaging in later problem behavior (Colvin, Cullen, & Vander Ven, 2002; Wyse, Harding, & Morenoff, 2014).

Supportive romantic relationships, on the other hand, can provide significant mental, emotional, and physical benefits for the people in them (Braithwaite, Delevi, & Fincham, 2010; Brickel, 2016; Whitton et al., 2012). In a study of college students, those who were in committed romantic relationships had fewer mental health and physical issues (Braithwaite et al., 2010); furthermore, college students in healthy, supportive, romantic relationships were found to have fewer problems with alcohol abuse (Whitton et al., 2012). Married couples seem to report even

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more mental and physical health benefits from their relationships (Blanchflower & Oswald, 2004; Gove, Hughes, & Briggs, 1983; Horwitz, White, & Howell-White, 1996; Simon & Marcussen, 1999).

In addition to providing health benefits, marriage has been associated with general decreases in recidivism and criminal behavior in ex-offenders; these effects are more pronounced for men than for women (Beaver et al., 2008; Burt et al., 2010; Kerr et al., 2011; King, Massoglia, & MacMillan, 2007; Sampson, Laub, & Wimer, 2006; Shouse, 2017). Additionally, individuals who are married also tend to display lower levels of criminal and antisocial behavior than do those who are unmarried (Burt et al., 2010; King, Massoglia, & MacMillan, 2007). Furthermore, in the years leading up to marriage, men reported lower levels of criminal and antisocial behavior, suggesting that the relationships themselves assisted in decreasing deviant behaviors, and this decrease simply became more pronounced once the man committed to marriage (Burt et al., 2010). This finding speaks to the importance of developing romantic relationships and how these relationships can have significant benefits in decreasing problematic behaviors.

Romantic Support

As discussed throughout thus far, one of the most important qualities associated with a romantic relationship that may impact associations between early adverse experiences and future problem behavior is romantic support (Boyes, 2013; Madson & Collins, 2011). Support, in general, has been correlated with higher levels of individual happiness and overall well-being, lower levels of stress and anxiety, lower levels of loneliness, and a greater sense of belonging (Hagerty & Williams, 1999; Morelli et al., 2015). Romantic partners are often sources of instrumental support, which refers to advice-giving, problem solving, and informational support,

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and emotional support, such as caring, listening, and boosting self-esteem (Morelli et al., 2015; Semmer et al., 2008; Shakespeare-Finch & Obst, 2011). The literature suggests that emotional support is the most important aspect of social support in terms of romantic relationships because it satisfies the need to belong and to be cared for (Sarason et al., 1996; Semmer et al., 2008). For example, Semmer et al (2008) demonstrated that even when supportive actions by a partner appear to be instrumental (by an observer/researcher), the receiver frequently interprets them as having an emotional meaning. Instrumental support, on the other hand, appears to be more effective when received from non-romantic others, likely due to the fact that the receiver of the support does not interpret the support as having an underlying emotional connotation (Dakof & Taylor, 1990; Semmer et al., 2008; Wortman & Dunkel-Schetter, 1979). This research draws attention to the fact that individuals sometimes perceive support differently than it might be intended or observed by others, and the way in which an individual perceives social support from others has an impact on their overall well-being and the quality of their relationships (Lakey & Cassady, 1990; Semmer et al., 2008).

Thus, although social support in romantic relationships is often associated with positive benefits for the individual, it may perhaps be best considered as a nuanced construct, the effect of which potentially determined by the type of support given and one's perception of it. There is also evidence that indicates that supportive partners in some contexts may even facilitate problem behavior. For example, individuals with a history of criminal behavior who enter into relationships with people who are more tolerant or supportive of this behavior tend to recidivate more frequently than do individuals who enter relationships with partners who are less tolerant or supportive of this behavior (Anderson, Anderson, & Skov, 2015; Shouse, 2017). That is, individuals who are more predisposed to criminal behavior might actually see an increase in

these behaviors if they enter a relationship with someone who is supportive and/or tolerant of their actions. Furthermore, theories of self-selection indicate that people are more likely to date individuals to whom they are similar, suggesting that people who are more likely to engage in problem behaviors are likely to date people who support and share the same predisposition (Rhule-Louie & McMahon, 2007). These studies suggest that while many supportive relationships may contribute to a decrease in criminal and problem behaviors, there may be conditions under which support exacerbates problem behavior. For example, a supportive relationship with an equally problematic partner might increase problem behaviors rather than decrease them (Anderson, Anderson, & Skov, 2015; Rhule-Louie & McMahon, 2007; Shouse, 2017).

Hypotheses of the Present Study

Childhood trauma can have detrimental, long-lasting impacts on individuals' behavior and relationships. A substantial amount of research has demonstrated the association between childhood trauma and problem behaviors, but minimal research has been conducted to examine the potential for supportive romantic relationships to serve as a buffering factor between childhood trauma and problem behaviors. While support is generally considered to have a positive impact on relationships, different kinds of support (i.e. perceived versus observed, instrumental versus emotional) might differentially impact the outcome of the interaction. It is thus hypothesized that:

1. Youth with a greater number of Adverse Childhood Experiences (ACEs) will have higher levels of problematic behavior in young adulthood.
2. Youth with a greater number of Adverse Childhood Experiences (ACEs) will have lower levels of support in their romantic relationships in young adulthood.

3. Youth with a greater number of Adverse Childhood Experiences (ACEs) who experience greater support in their young adult romantic relationships will have relative decreases in levels of problematic behavior in young adulthood compared to youth with less supportive romantic relationships.
4. All three types of romantic support (i.e. observed instrumental, observed emotional, self-perceived) will be associated with relative decreases in problematic behavior in young adulthood, with more frequent and robust effects hypothesized for emotional and perceived support.

Method

Participants and Procedure

Data for this study was drawn from a larger longitudinal study of adolescents and their relationships with family, peers, and romantic partners. The participants consisted of 184 adolescents (86 males, 98 females) and were of diverse ethnic and racial backgrounds (58% Caucasian, 29% African American, 13% “other” or mixed-race). The sample obtained for this study was representative of the general population from which it was drawn in regards to racial makeup (42% non-white in the sample compared to 40% non-white in schools) and socioeconomic status (\$43,618 in the sample compared to \$48,000 in the general population).

In addition to the adolescent participants, a selected close friend and a selected romantic partner were also invited, upon providing informed consent, to participate in the study. Data for the current study were thus obtained from the adolescents as well as from a close friend and a romantic partner, and were obtained over multiple waves of the study. Data concerning romantic partners were assessed at mean ages 18, 21, 24. If adolescents did not report having a romantic relationship of at least two months duration at age 18, but had relationships of at least two

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months at ages 21 or 24, the earliest age romantic data were available was used in analyses.

When participants reported a relationship at multiple time points, the earlier age was used in analyses; relationships at earlier ages were prioritized in analyses because it was theorized that these relationships might hold more developmental significance, due to findings from Haynie et al. (2005) and Joyner & Campa (2006), both of which emphasized the importance of early adolescent romantic relationships in later functioning and future relationships. The current study uses data obtained from the adolescent's close friend at ages 18 and 25, and from the adolescent at ages 18, 25, and 27.

Participants were initially recruited from a public middle school in the Southeastern region of the United States, consisting of 7th and 8th graders; 63% of those initially recruited ($N = 298$) agreed to participate and were eligible. Adolescents provided informed assent for their participation, and their parents provided informed consent for each wave of the study until the adolescents reached the age of 18, at which time they could provide their own consent.

Interviews took place in a private office within university academic buildings. All participants, including the adolescents, peers, and romantic partners, were financially compensated for their participation. A Confidentiality Certificate issued by the U.S. Department of Health and Human Services provided protection of the data, meaning the information obtained from the study could not be subpoenaed by federal, state, or local courts. Transportation and childcare were provided to participants when necessary.

Measures

Adverse Childhood Experiences

At age 27, participants completed a 10-item Adverse Childhood Experiences (ACEs) questionnaire in which they reported adverse childhood experiences that they encountered during

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the first 18 years of their lives by answering “yes” or “no” to each item. This measure assessed experiences including exposure to verbal threats and abuse, exposure to physical threats and abuse, exposure to sexual abuse, feelings of physical and/or emotional neglect, exposure to parental or familial alcohol and/or substance abuse, parental divorce, exposure to spousal abuse between parents, living with someone with mental health difficulties, and living with someone who was sent to prison (Anda & Felitti, n.d.). To code the items, each “yes” response was given a 1, and each “no” response was given a 0. Higher scores indicated greater exposure to adverse childhood experiences. This measure was correlated with a greater risk for negative consequences later in life (Anda & Felitti, n.d.). In the present study, the average number of ACEs per participant was 1.43 with a standard deviation of 1.86. The range was 8.1, with the low being 0 and the high being 8.1. Internal consistency for this measure was good ($\alpha = .75$).

Support in Romantic Relationships

At mean ages 18, 21, and 24, if participants were in a relationship of at least two months’ duration, they and their romantic partners completed different measures and tasks to assess romantic support. Data from the earliest age romantic relationships were available were used in the present study. To assess self-perceived support within the relationship, participants completed the Network of Relationships Inventory (NRI), 45-item a questionnaire that assessed several constructs in order to analyze the quality of the relationship. Support was assessed using three items from the questionnaire: “How often do you turn to this person for support with personal problems,” “How often do you depend on this person for help, advice, or sympathy,” and “When you are feeling down or upset, how often do you depend on this person to cheer things up?” Constructs were scored on a 5-point Likert scale: 1) little or none, 2) somewhat, 3) very much, 4) extremely much, or 5) the most. (Furman, 1998; Furman & Buhrmester, 1985).

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Internal consistency across the three time points assessed was excellent (alphas = .89, .89, and .88, respectively.)

To assess instrumental and emotional support received from their romantic partner, participants completed the Supportive Behavior Task (SBT) with their romantic partners. This task included a six-minute interaction during which the participant was to address a “problem they were having that they could use some advice or support about.” The discussion was coded based on different types of support provided to the participant by his/her romantic partner. The coders rated the interactions based on two types of support: instrumental support and emotional support. The types of support assessed in the current study were Instrumental Support Given and Emotional Support Given. When evaluating instrumental support, the coders assessed the supporter’s ability to recognize that a problem exists and that a solution is needed, to offer plans on how to solve the problem, to keep the conversation directed towards solving the problem, and to commit to helping to find a solution to the problem. Supporters were given a score 0-4, 0 representing no instrumental support or any planning of how to solve the problem at all, 4 representing the highest level of instrumental support, characterized by the criteria above. Emotional support was coded based on the supporter’s ability to validate the seeker (the person seeking support) by making statements that demonstrated understanding, to sympathize with the seeker, to be able to identify the emotion the seeker was feeling, to listen to and recognize the feelings of the seeker and that a problem exists, to attempt to elicit emotional disclosure from the seeker, to understand and recognize the seeker’s feelings, and to make a commitment to support the seeker and to be emotionally available to them. Supporters were scored 0-4, 0 representing no attempt to socially support the seeker; this might include ignoring the seeker, belittling their feelings, or only offering instrumental advice. A score of 4 represented the highest level of

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emotional support, characterized by the supporter recognizing and attempting to mend the seeker's distress and expressing sympathy and caring toward the seeker throughout the majority of the session (Allen et al., 2012). Interrater reliability for instrumental support and emotional support, respectively, were good to excellent across all three time points (age 18 = .91, .80; age 21 = .75, .66; age 24 = .80, .75).

Adult Problem Behaviors

When the participant was 18 and 25, his/her close friend completed the Adult Behavior Checklist (ABCL) in reference to the behaviors they observed in the participant. For the purpose of the present study, the variables from the ABCL will be referred to as “minor problem behaviors” because they are less specifically violent and/or illegal than the other, more severe problem behaviors. Behaviors included measures of externalizing behaviors, such as aggressive behavior (alphas = .84; .87), rule-breaking behavior (alphas = .79; .79), and intrusive behavior (alphas = .77; .76). For each scale, a higher score indicated more problems (Achenbach & Rescorla, 2003).

At ages 18 and 25, participants completed two self-report questionnaires that sought insight into their problem behaviors. The first questionnaire they completed was the Adult Self-Report (ASR) and measured the same constructs that were measured by the close friend in the ABCL: aggressive behavior (alphas = .84; .84), rule-breaking behavior (alphas = .79; .84), and intrusive behavior (alphas = .69; .67). For each scale, a higher score indicated more problems. Cross-informant reliability between the ABCL (close friend-report) and the ASR (self-report) ranged from $r = .30$ to $r = .79$ (Achenbach & Rescorla, 2003).

The second self-report questionnaire that participants completed at ages 18 and 25 was the Problem Behavior Inventory (PBI). For the purposes of this study, the variables measured

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with this questionnaire will be considered “severe problem behaviors” because they are more specifically violent and/or illegal than the other, less severe problem behaviors. This measure contains six subscales, two of which were used in the present study: 1) Crimes Against Persons (alphas = .44; .61), and 2) Crimes Not Against Persons (alphas = .49; .51). Each subscale was scored on an 8-point Likert scale: 1) never, 2) once or twice, 3) three or four times, 4) once a month, 5) two or three times a month, 6) once a week, 7) two to three times a week, 8) once a day. Higher scores higher indicated levels of criminal behaviors (Elliot & Ageton, 1980).

All problem behavior constructs were measured at age 18 to gauge and control for any preexisting problem behaviors, and again at age 25 to measure potential impacts of romantic support.

Results

Preliminary Analyses

Univariate Statistics and Correlational Analyses. Means and standard deviations are presented in Table 11. Table 11 also presents correlations between primary variables. Initial analyses examined the role of gender and income on all primary variables. For demographic variables, gender was significantly correlated with total delinquency ($r=-0.15$; $p<0.05$) and rule-breaking behavior ($r=-0.20$; $p=0.03$), indicating that males were more likely to report higher levels of these behaviors. Income was significantly correlated with adverse childhood experiences ($r=-0.29$; $p=0.0033$), suggesting that lower family income was associated with a greater number of adverse childhood experiences. With regard to predictive variables, adverse childhood experiences were significantly correlated with crimes against persons ($r=0.19$; $p=0.02$). Notably, adverse childhood experiences were not significantly correlated with any of the support measures.

Primary Analyses

Hypothesis 1: *Youth with a greater number of Adverse Childhood Experiences (ACEs) will have higher levels of problematic behavior in young adulthood.*

Regressions were run between ACEs and each measure of problem behavior at age 25, controlling for gender, family income, and baseline problem behavior at age 18. Results of regression analyses indicated that ACEs were a significant predictor of relative increases in self-reported aggression ($\beta=.33$, $p<.001$), self-reported rule-breaking behavior ($\beta=.15$, $p<.05$), and self-reported crimes against persons ($\beta=.18$, $p<.05$). All other measures of relative changes in problem behaviors over time were not significantly associated with ACEs in regression analyses. Tables 1-10 shows the step-by-step regression analysis process for outcome variable.

Hypothesis 2: *Youth with a greater number of Adverse Childhood Experiences (ACEs) will have lower levels of support in their romantic relationships in young adulthood.*

Regressions were run between ACEs and each type of romantic support. ACEs were not significantly associated with any of the support variables.

Hypotheses 3 and 4: *Youth with a greater number of Adverse Childhood Experiences (ACEs) who experience more supportive romantic relationships will have lower levels of problematic behavior in young adulthood compared to youth with less supportive romantic relationships.*

All three types of romantic support (i.e. observed instrumental, observed emotional, self-perceived) will be associated with relative decreases in problematic behavior in young adulthood, with more frequent and robust effects hypothesized for emotional and perceived support.

Interactions were run between Adverse Childhood Experiences (ACEs), reported at age 27 about their experiences from birth through age 18, and specific types of support in their romantic relationships, reported across ages 18, 21, and 24. Interaction terms were created by standardizing the continuous predictor variables ($M=0$, $SD=1$) and multiplying them together. Gender and income were also entered as covariates in all models.

Observed Instrumental Support

Higher levels of ACEs and higher levels of instrumental support predicted significant relative decreases for peer-reported intrusive behavior ($\beta=-.23$; $p=.01$; see Table and Figure 1) and peer-reported rule-breaking behavior ($\beta=-.36$; $p<.01$; see Table and Figure 2). However, the same interaction predicted a relative increase in self-reported aggression ($\beta=.21$; $p=.02$; see Table and Figure 3), and self-reported rule-breaking behavior ($\beta=.23$; $p=.02$; see Table and Figure 4).

Observed Emotional Support

The interaction between higher levels of ACEs and higher levels of emotional support predicted a significant relative increase for self-reported rule-breaking behavior ($\beta=.26$; $p<.001$; see Table and Figure 5), self-reported crimes against persons ($\beta=.20$; $p<.02$; see Table and Figure 6), and self-reported aggression ($\beta=.25$; $p<.001$; see Table and Figure 7).

Perceived Support

The interaction between higher levels of ACEs and higher levels of perceived support predicted a significant relative increase in a more minor problem behavior, peer-reported rule-breaking behavior ($\beta=.23$; $p=.04$; see Table and Figure 8). However, the same interaction predicted a significant decrease for the severe problem behaviors, self-reported crimes against

persons ($\beta = -.19$; $p = .02$; see Table and Figure 9) and self-reported crimes not against persons ($\beta = -.28$; $p < .01$; see Table and Figure 10).

Discussion

The results of this study provide evidence that Adverse Childhood Experiences (ACEs) can have long-term effects for predicting relative increases in future adult problem behavior. Importantly, the results also suggest that certain types of romantic partner support may serve as buffer against these negative effects and predict lower levels of engagement in problem behaviors as an adult. For some types of support and problem behaviors, however, positive romantic support actually appeared to increase the likelihood of engaging in problem behaviors as an adult. Each of these findings are considered in turn below.

The connections between high levels of ACEs and an increased likelihood of engaging in problem behavior were consistent with the hypotheses outlined in this study; these connections have also been found in previous research (Darnell et al., 2019; Hawkins, Catalano, & Miller, 1992; Nall, 2015; Shira, Shmotkin, & Litwin, 2012; Stein, Leslie, & Nyamathi, 2002; Widom, 1989). The current study specifically identified high levels of ACEs as predictors of individuals' greater likelihood of engaging in self-reported aggressive behavior, self-reported rule-breaking behavior, and self-reported crimes against persons as an adult. This suggests that the more traumatic events one experiences in childhood, the more likely they are to be at risk for legal difficulties in the future. Based on the literature, it is likely that this relative increase is an indirect effect of ACEs, which would explain why there are still individuals who reported high levels of ACEs that were resilient to engaging in problem behaviors. People who experience a high number of ACEs are likely to develop maladaptive schemas and processes, which likely leads to their engagement in problem behavior. Previous studies have attributed the association

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between ACEs and problem behaviors to a number of factors that are also thought to be products of high levels of ACEs: maladaptive coping strategies (Min et al., 2007; Walsh, Fortier, & DiLillo, 2010; Whiffen & MacIntosh, 2005), disruption in developmental processes (Shira, Shmotkin, & Litwin, 2012), growing up in an environment in which problem behaviors are considered normal (Currie & Tekin, 2006) high levels of impulsivity, deficits in emotional regulation, difficulty feeling empathy (Rogosch, Chicchetti, & Aber, 1995; Widom, 1989), and poor models of social support and relationships (Hur et al., 2012; Reyes, 2018; Reyome, 2010). In sum, the increase in problem behaviors that were seen in individuals with high levels of ACEs is not novel. There are a number of negative outcomes that are frequently associated with high levels of ACEs, which likely contribute to the increase in problem behaviors.

The hypothesis that ACEs would predict a decrease in romantic support in young adulthood, while supported by much of the literature, was not upheld by the findings of the present study. Related studies have found that, for similar reasons as to why ACEs are associated with higher levels of criminal behavior, ACEs are also associated with lower levels of support in romantic relationships (Labella et al., 2019; Min et al., 2007; Whiffen & MacIntosh, 2005). However, the results of the current study showed no association between these variables. The differences between our findings and the findings of related studies could be attributed to multiple things. The population sampled was relatively low-risk, which might contribute to the differing effects. The time periods examined may have also played a role in providing differing results. Romantic support was measured in late adolescence/early adulthood, while many other studies examined this variable earlier in adolescence. It is possible that by the time support was assessed, the participants had encountered other key relationships or experiences that may have influenced their later support scores.

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The most novel aspect of the study was the prediction that high levels of romantic support would serve as a buffer against the increased likelihood of engaging in problem behavior that is often seen in adults with high levels of reported ACEs. The present study provided some evidence for this prediction. Most notably, instrumental support served as a protective factor against the peer-reported problem behaviors, rule-breaking and intrusive behavior, and perceived support served as a protective factor against the effect of ACEs on crimes against persons and crimes not against persons. This could be attributed to the fact that when abused or traumatized children find healthy relationships, they develop some of the coping mechanisms necessary to lead a productive life and accommodate their schemas as they gain exposure to the relationships they did not experience as a child. Floyd and Riforgiate (2008) identify the ability for healthy relationships to reduce cortisol levels, which indicates lower levels of hormonal stress. These reduced stress levels contribute to the development of healthy coping mechanisms, as well as healthy communication between partners, that might help individuals avoid choices to engage in problem behaviors.

This association between support and lower levels of problem behaviors, however, could also be due to a number of other factors. Giordano et al. (2003) examined a highly delinquent group of individuals and found that those who later got married began to distance themselves from negative peer influences throughout their marriage, and this act of distancing led to lower levels of criminal or delinquent behavior. Married couples frequently spend time with the same group of acquaintances, and they may conform their friend group to fit more into that of their spouse (Gerstel & Sarkisian, 2006; Wilcox et al., 2005). They also may conform themselves to fit more into their spouses group of friends for fear of losing their partner, which may contribute to lower levels of criminal behavior due to pressure from outside sources (Wilcox et al., 2005).

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All in all, when individuals engage in committed romantic relationships, they typically expand their support system to encompass that of their partner (Lerman, 2002; Wilcox et al., 2005), so if they are not receiving the support they may need from their partner, they have an extended number of resources to which they can turn.

Interestingly enough, differing measures of support also demonstrated some effects that were opposite of what was hypothesized. High levels of certain kinds of support in romantic relationships increased the prevalence of self- and/or peer-reported aggressive, rule-breaking, and criminal behavior when youth had experienced more ACEs. More specifically, instrumental support predicted a relative increase in self-reported rule-breaking and aggressive behavior, and high levels of emotional support predicted a relative increase in all three of these self-reported problem behaviors; perceived support predicted a relative increase in peer-reported rule-breaking behavior. It is possible that low levels of support in relationships indicate that the participant's romantic partner is not supporting the deviant behavior, in which case the lack of support may actually serve as a protective factor. Taken the other way, high levels of support could mean that romantic partners are supporting the participants' aggressive, rule-breaking, and criminal behavior, contributing to the increase in these behaviors that is seen in this study. In addition to this explanation, romantic partners who know that their significant other experienced high levels of childhood trauma might be hesitant to criticize any of their behaviors, regardless of how inappropriate they are, because they do not want to upset their partner by being over critical or by calling out their behaviors (Godbout, Sabourin, & Lussier, 2009).

Notably, the different types of support were not significantly correlated with each other, suggesting that they represent distinct aspects of romantic support. Furthermore, all three of the support types produced different effects, suggesting that the different types of support impacted

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the individual in varying ways. Emotional support in the context of more ACEs predicted a relative increase in all of the more severe, self-reported problem behaviors. As mentioned above, it is possible that this emotional support might be in the form of the supporter validating and/or tolerating the problem behaviors that the participant commits. It is also interesting to note that when high levels of instrumental support were reported for individuals with more ACEs, peers reported a relative decrease in problem behaviors, while the participants reported a relative increase in their own problem behaviors. It is plausible to suggest that the participants' romantic partners encourage them, or give them advice to behave more appropriately or to be more aware of the behavior in public or with others (Prentice-Dunn & Rogers, 1982), which would contribute to the close peer reporting a decrease in poor behavior.

This study had a few limitations that may have impacted the results. One is that the Adverse Childhood Experiences scale does not differentiate between types of childhood trauma. Future replications should include other scales in order to accurately represent the effects of different types of trauma, such as physical, emotional, sexual, and verbal. Another limitation to the ACEs measure is that the population we reached was a relatively low-risk population; the average number of ACEs that the participants reported was 1. The results would likely be different had we sampled a more high-risk population; future replications should consider this.

In addition, the observed emotional support variable raised some questions. The mean score for emotional support was 0.6 on a 0-4 scale. This is quite low, suggesting that this was perhaps a rather dichotomous construct. In other words, the partner either provided emotional support or they did not; there was no in between. It would be helpful to look into this potential and assess the distribution to see if this truly was a dichotomous construct. Furthermore, future research should consider evaluating the differences between the support variables at each age

wave. It is reasonable to suggest that as the participants aged, their support grew more profound and emotional.

Moreover, this study only looked into one main quality of romantic relationships. It would be interesting and more inclusive to evaluate the effect that other relationship qualities had on later problem behaviors; this being said, it would also be beneficial to consider more specific kinds of problem behavior, such as rape and assault versus burglary and theft. Differentiating between different kinds of crimes and problem behaviors might provide some insight into the specific qualities that victims of childhood trauma develop that lead them to lives of crime and delinquency. For example, this could help determine which kinds of child abuse – emotional, verbal, or physical – are more likely to predict higher levels of violent and antisocial behavior as opposed to nonviolent crimes and less serious behavior.

Another interesting consideration to keep in mind with future replications of this study is the minimal effect that both gender and income had on outcome variables. First, gender was only correlated with one problem behavior: peer-reported rule-breaking. This association suggested that boys are more likely to engage in rule-breaking behaviors than are their female counterparts, according to their peers. However, given that men are much more heavily populated in criminal justice system, one would expect that gender would have been correlated with more outcome variables. This is perhaps because the population we sampled was low-risk; had we sampled a more high-risk population, it is possible that we may have seen more significant correlations between gender and problem behaviors. Similarly, income was not correlated with any outcome variables; rather, it was only significantly correlated with ACEs, suggesting that those with lower income were more likely to have experienced high levels of ACEs. This, again, may be partially attributed to our low-risk sample. Future replications should consider running interactions with

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gender and income as potential moderators rather than simply analyzing them with correlations and regressions. Gender and income very well might produce some interactive effects on the outcome variables that were not accounted for with our present analyses.

It is important to note that, while these results provide evidence for relationships between these variables, they do not prove causation. There are many potential confounds that could influence the results, meaning that ACEs and romantic relationship qualities may not be the only factors contributing to the participants' likelihood of engaging in problem behaviors. For example, traumatic experiences that occurred after the age of 18 could have an impact. Also, traumatic brain injuries (TBI) have the potential to damage neural pathways in the brain and affect one's engagement in problem behaviors (Pessar et al., 1992). This study also does not consider peer influence on problem behavior, which is generally accepted to have an impact (Brook, Nomura, & Cohen, 1989; Giordano et al., 2003; Maxwell, 2002; Mrug et al., 2014). Nevertheless, there were attempts to account for some potential confounds in the study. Analyses controlled for a baseline measurement of problem behavior, which was very highly correlated with our outcome measures. This means that any significant effects represented relative increases or decreases in problem behaviors over time. We also ran post-hoc analyses that controlled for negative conflict behaviors between the romantic partners, and the pattern of the results remained the same, which reduces the potential for the negative aspects of the relationship to explain the results. We also ran a post-hoc analysis to investigate the impact of relationship duration but found no significant effects of the length of the relationship on other variables. Nevertheless, future research should investigate the effect that other relationship qualities have on problem behavior; the effect that support had on aggressive, rule-breaking, and criminal behavior was unexpected, and it would be interesting to further examine whether the same pattern of results

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might be observed for other positive relationship factors. Regardless, the findings of this study provide valuable insight into the significance of forming supportive romantic relationships for individuals with a history of ACEs.

Overall, the results from the present study provide some support for the literature that identifies adult problem behavior as a negative effect of childhood trauma. Additionally, they introduce the idea that supportive romantic relationships may be able to protect against some of problem behaviors that are predicted by childhood trauma, but may potentially exacerbate others. By gaining a more thorough understanding of these effects, practitioners may be able to develop interventions and programs to educate youth on healthy relationships, especially in populations that have been identified as experiencing high levels of ACEs, potentially decreasing the likelihood that these individuals engage in deviant behavior in adulthood.

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Table 1

Regression values for the effects of adverse childhood experiences and instrumental support on peer-reported intrusive behavior.

	Peer-Report Intrusive Behavior		
	β final	ΔR^2	R ²
Step 1.			0.06
Gender	-0.2		
Income	0.12		
Step 2.		0.03	0.09
ACEs (27)	0.02		
Step 3.		0.04	0.13
Peer-Report Intrusive Behavior (18)	0.2*		
Step 4.		0.02	0.15
Obs. Instrumental Support (21)	-0.19*		
Step. 5		0.05	.20**
INT	-.23**		
ACEs (27)			
X Obs. Instr. Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

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Table 2

Regression values for the effects of adverse childhood experiences and instrumental support on peer-reported rule-breaking behavior.

	Peer-Report Rule Breaking Behavior		
	β final	ΔR^2	R ²
Step 1.			0.05
Gender	-0.18*		
Income	0.03		
Step 2.		0.09	0.14
ACEs (27)	0.01		
Step 3.		0	0.14
Peer-Report Rule Breaking Behavior (18)	.31***		
Step 4.		0.05	0.19
Obs. Instrumental Support (21)	-.23**		
Step. 5		0.13	.32**
INT	-.36**		
ACEs (27)			
X Obs. Instr. Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

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Table 3

Regression values for the effects of adverse childhood experiences and instrumental support on self-reported aggressive behavior.

	Self-Report Aggressive Behavior		
	β final	ΔR^2	R ²
Step 1.			0.02
Gender	0.02		
Income	-.04		
Step 2.		0.09	0.11
ACEs (27)	.33***		
Step 3.		0.11	0.22
Self-Report Aggressive Behavior (18)	.50***		
Step 4.		0.02	0.24
Obs. Instrumental Support (21)	-0.09		
Step. 5		0.07	.41**
INT	.21**		
ACEs (27)			
X Obs. Instr. Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 4

Regression values for the effects of adverse childhood experiences and instrumental support on self-reported rule-breaking behaviors.

	Self-Report Rule-Breaking Behavior		
	β final	ΔR^2	R ²
Step 1.			0.02
Gender	-.03		
Income	-.04		
Step 2.		0.07	0.09
ACEs (27)	0.05		
Step 3.		0.15	0.24
Self-Report Rule-Breaking Behavior (18)	.65***		
Step 4.		0	0.24
Obs. Instrumental Support (21)	-.06		
Step. 5		0.09	.35*
INT	.23*		
ACEs (27)			
X Obs. Instr. Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 5

Regression values for the effects of adverse childhood experiences and emotional support on self-reported rule-breaking behaviors.

	Self-Report Rule Breaking Behavior		
	β final	ΔR^2	R ²
Step 1.			0.02
Gender	-0.04		
Income	-0.05		
Step 2.		0.07	0.09
ACEs (27)	0.15*		
Step 3.		0.15	0.24
Self-Report Rule Breaking Behavior (18)	0.54***		
Step 4.		0	0.24
Obs. Emotional Support (21)	0.02		
Step 5		0.14	.38***
INT	0.26***		
ACEs (27)			
X Obs. Emotional Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 6

Regression values for the effects of the interaction between adverse childhood experiences and emotional support on self-reported crimes against persons.

	Self-Report Crimes Against Persons		
	β final	ΔR^2	R ²
Step 1.			0.02
Gender	-0.05		
Income	-0.1		
Step 2.		0.01	0.03
ACEs (27)	0.16*		
Step 3.		0.16	.19*
Self-Report Crimes Against Persons (18)	0.59***		
Step. 4		0.09	0.28
Obs. Emotional Support (21)	0.15*		
Step. 5		0.14	0.42*
INT	0.2*		
ACEs (27)			
X Obs. Emotional Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 7

Regression values for the effects of the interaction between adverse childhood experiences and emotional support on self-reported aggressive behaviors.

	Self-Report Aggressive Behavior		
	β final	ΔR^2	R ²
Step 1.			0.02
Gender	0.01		
Income	-0.08		
Step 2.		0.18	0.2
ACEs (27)	0.33***		
Step 3.		0.1	0.3
Self-Report Aggressive Behavior (18)	0.45***		
Step 4.		0	0.3
Obs. Emotional Support (21)	0.09		
Step. 5		0.14	0.44***
INT	0.25***		
ACEs (27)			
X Obs. Emotional Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 8

Regression values for the effects of the interaction between adverse childhood experiences and perceived support on peer-reported rule-breaking behavior.

	Peer-Report Rule Breaking Behavior		
	β final	ΔR^2	R ²
Step 1.			0.05
Gender	-.13		
Income	0.03		
Step 2.		0	0.05
ACEs (27)	-.001		
Step 3.		0.09	0.14
Peer-Report Rule-Breaking Behavior (18)	.28**		
Step 4.		0.01	0.15
Perceived Support (21)	-.04		
Step. 5		0.06	.21*
INT	.23*		
ACEs (27)			
X Perceived Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 9

Regression values for the effects of the interaction between adverse childhood experiences and perceived support on self-reported crimes against persons.

	Self-Report Crimes Against Persons		
	β final	ΔR^2	R ²
Step 1.			0.03
Gender	-.05		
Income	-.06		
Step 2.		0.02	0.05
ACEs (27)	0.14		
Step 3.		0.23	0.28
Self-Report Crimes Against Persons (18)	.53***		
Step 4.		0.02	0.3
Perceived Support (21)	-.09		
Step. 5		0.08	.38*
INT	-.19*		
ACEs (27)			
X Perceived Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 10

Regression values for the effects of the interaction between adverse childhood experiences and perceived support on self-reported crimes not against persons.

	Self-Report Crimes Not Against Persons		
	β final	ΔR^2	R ²
Step 1.			0.04
Gender	-.1		
Income	-.1		
Step 2.		0.04	0.08
ACEs (27)	0.09		
Step 3.		0.18	0.26
Self-Report Crimes Not Against Persons (18)	.47***		
Step 4.		0.01	0.27
Perceived Support (21)	-.08		
Step. 5		0.05	.32**
INT	-.28**		
ACEs (27)			
X Perceived Support (21)			

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

TRAUMA, RELATIONSHIPS, AND PROBLEM BEHAVIOR

Table 11

Correlation coefficients for all primary variables.

	Mean (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	47% Male	-													
2. Income	43,618	-.08	-												
	22,420														
3. Adverse Childhood Experiences	1.4	0.09	0.29**	-											
	1.9														
4. Perceived Support	59.9	0.09	-.02	-.03	-										
	36.8														
5. Observed Instrumental Support	2.4	-.08	-.03	-.03	-.11	-									
	1														
6. Observed Emotional Support	0.6	0.04	.22*	-.06	0.1	0.02	-								
	0.8														
7. Peer-Reported Aggressive Behavior	2.8	0.07	0.04	0.02	0.05	-.24*	-.08	-							
	3.9														
8. Peer-Reported Rule-Breaking Behavior	2.7	-.2*	0.05	-.006	0.17	-.19	-.05	.55***	-						
	3.2														
9. Peer-Reported Intrusive Behavior	1.8	-.25**	-.01	-.14	-.1	-.08	-.17	.54***	.51***	-					
	2.3														
10. Self-Reported Aggressive Behavior	3.9	0.08	-.12	.45***	-.03	-.05	0.03	.23**	-.06	.56***	-				
	3.9														
11. Self-Reported Rule-Breaking Behavior	3	-.14	0.01	.21*	-.06	-.02	0.04	0.13	.29**	-.06	.56***	-			
	3.4														
12. Self-Reported Intrusive Behavior	1.6	-.10	.18*	0.07	0.03	-.13	0.1	0.03	0.14	0	.34***	.39***	-		
	1.8														
13. Self-Reported Crimes Against Persons	2.2	-.05	-.17	.19*	-.06	-.07	0.05	.34***	.21*	.19*	.28**	.26**	.16*	-	
	0.8														
14. Self-Reported Crimes Not Against Persons	2.7	-.14	-.12	.24**	-.09	-.02	0.04	0.09	.21*	0.05	.27**	.236***	.22**	.50***	-
	0.9														

Note. * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Figure 1

Effects of the interaction between adverse childhood experiences and instrumental support on peer-reported intrusive behaviors.

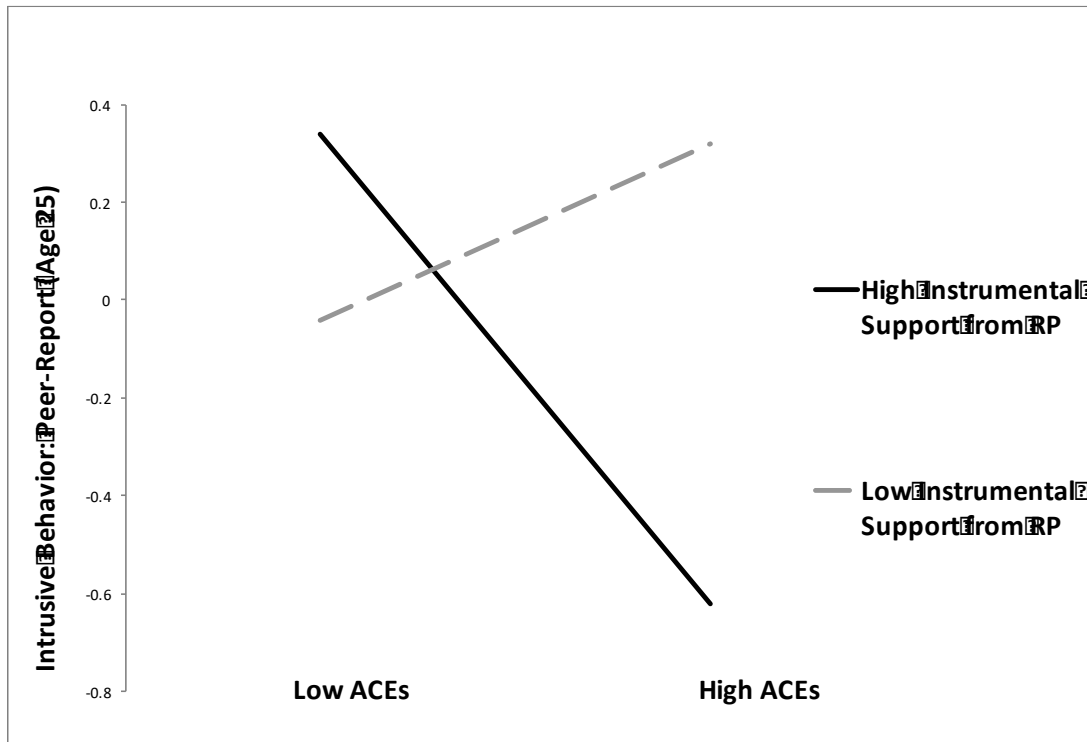


Figure 2

Effects of the interaction between adverse childhood experiences and instrumental support on peer-reported rule-breaking behaviors.

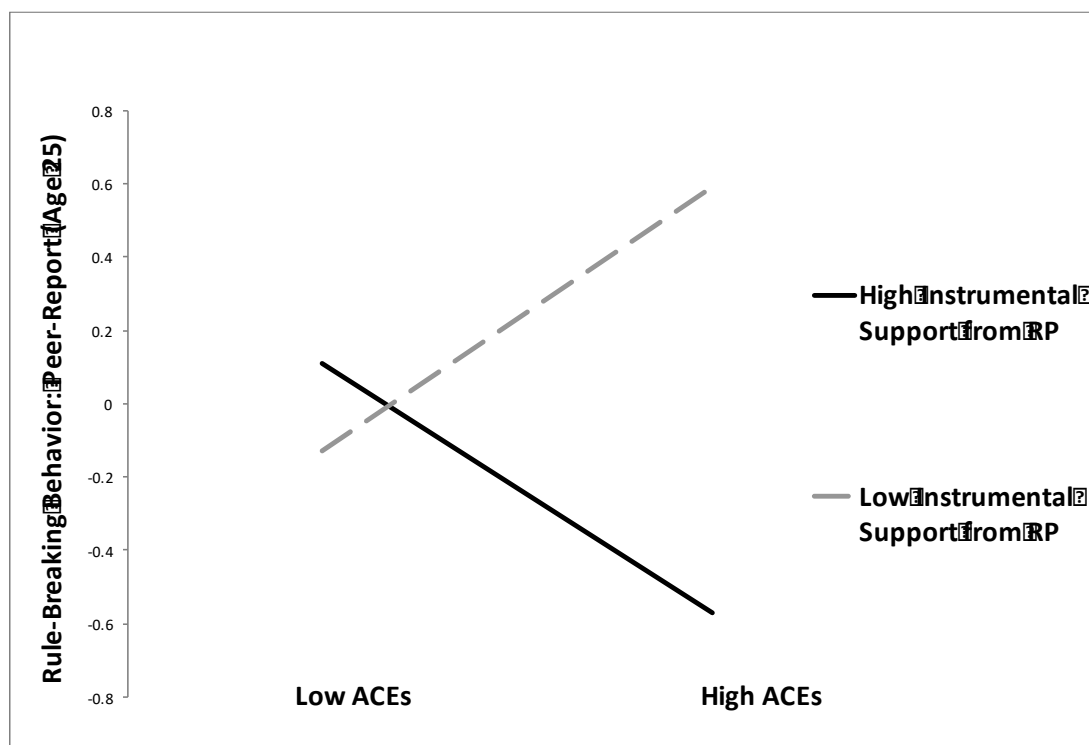


Figure 3

Effects of the interaction between adverse childhood experiences and instrumental support on self-reported aggressive behaviors.

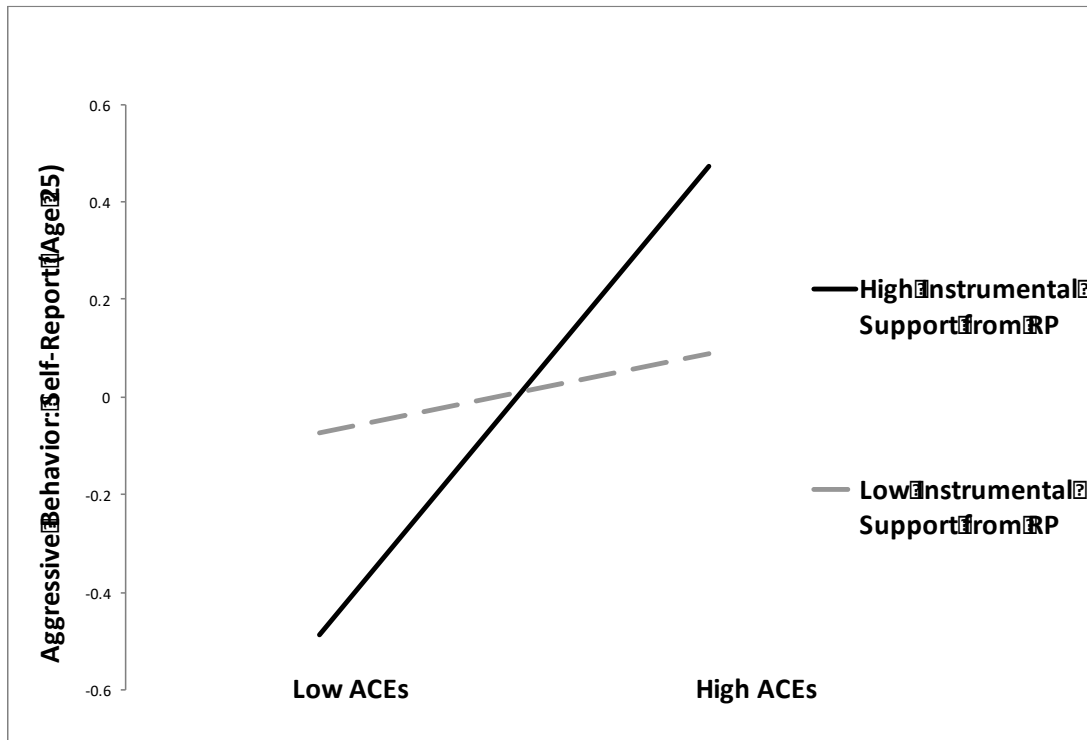


Figure 4

Effects of the interaction between adverse childhood experiences and instrumental support on self-reported rule-breaking behaviors.

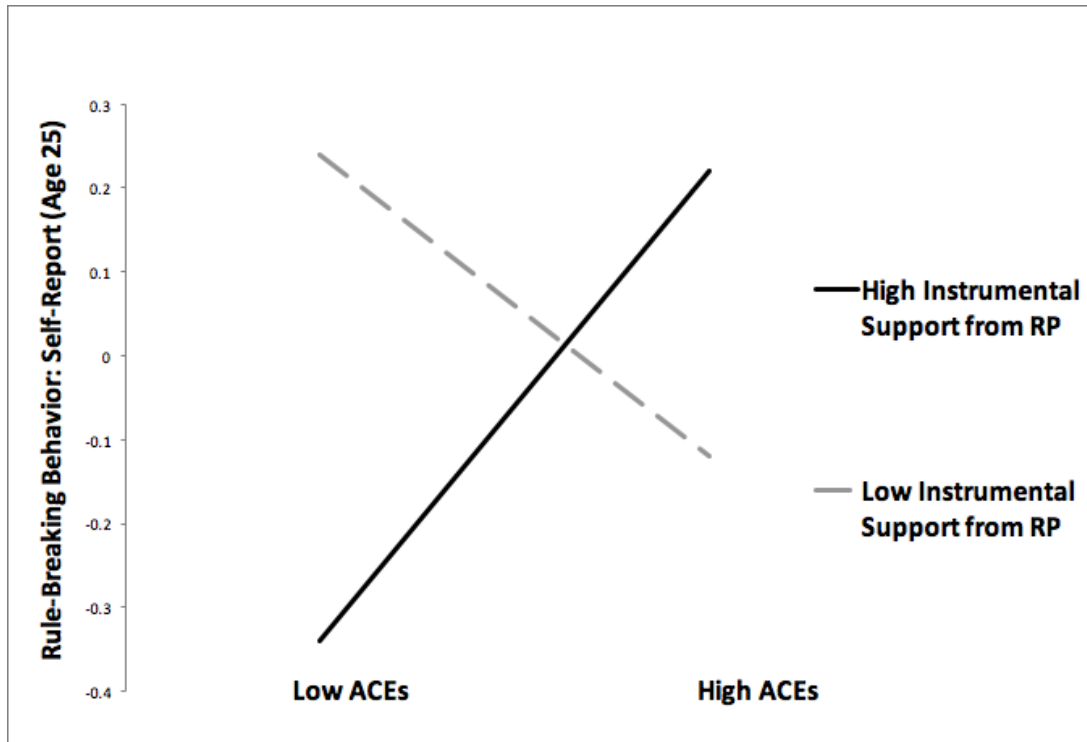


Figure 5

Effects of the interaction between adverse childhood experiences and emotional support on self-reported rule-breaking behaviors.

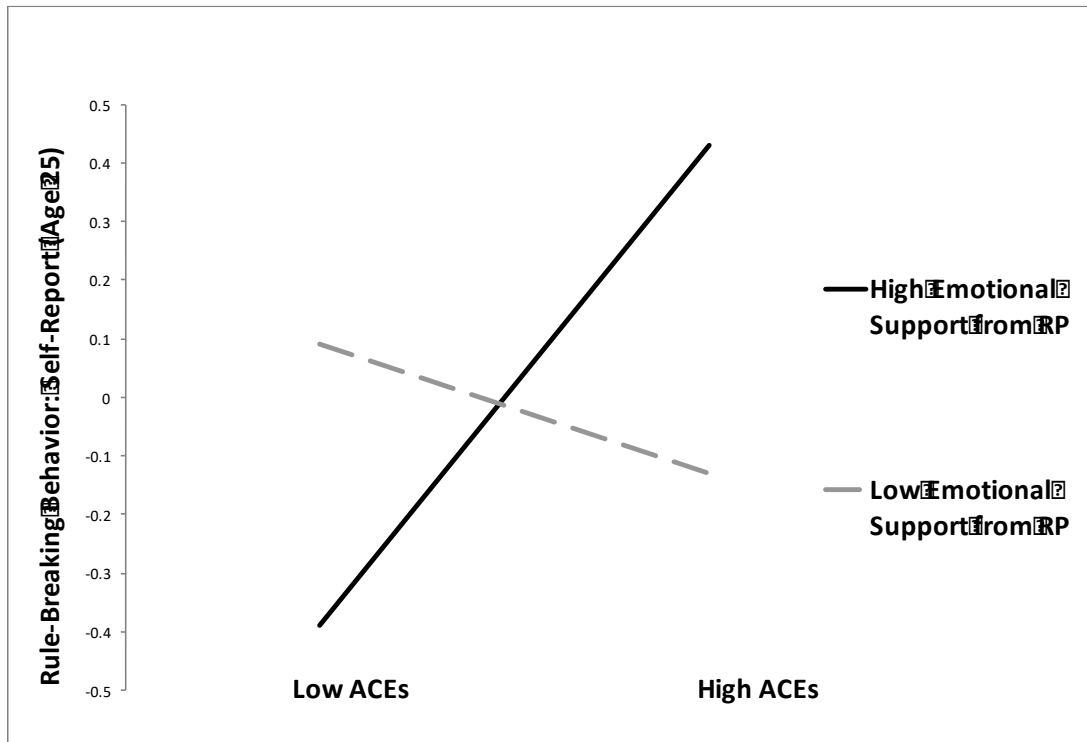


Figure 6

Effects of the interaction between adverse childhood experiences and emotional support on self-reported crimes against persons.

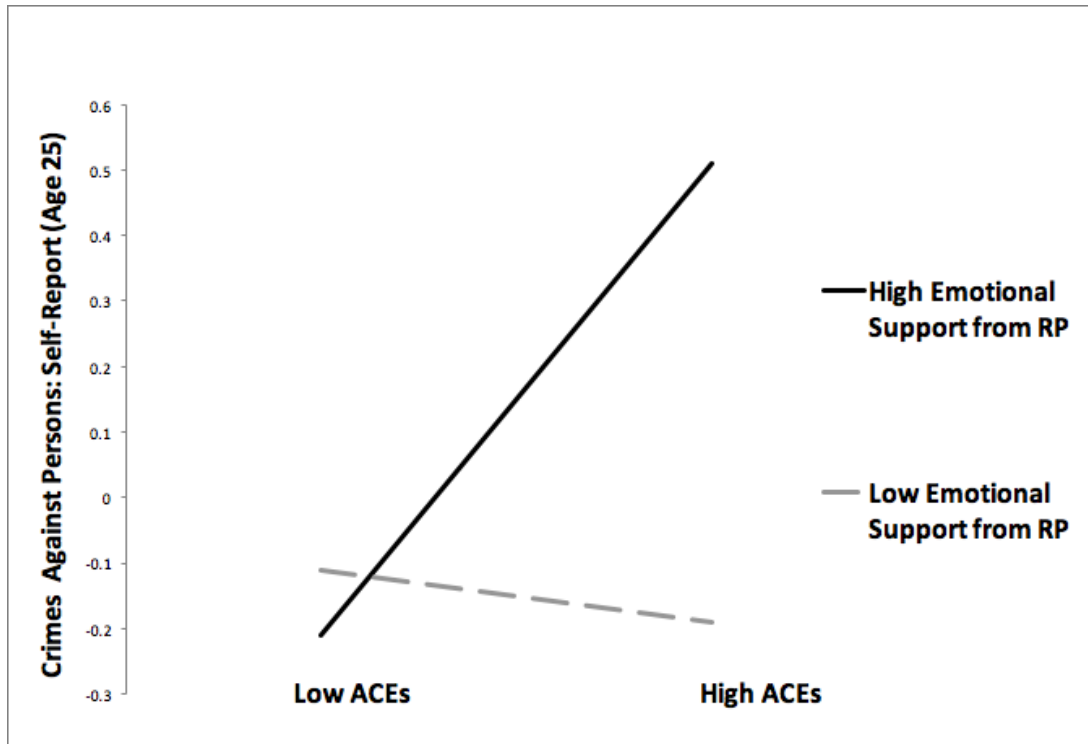


Figure 7

Effects of the interaction between adverse childhood experiences and emotional support on self-reported aggressive behaviors.

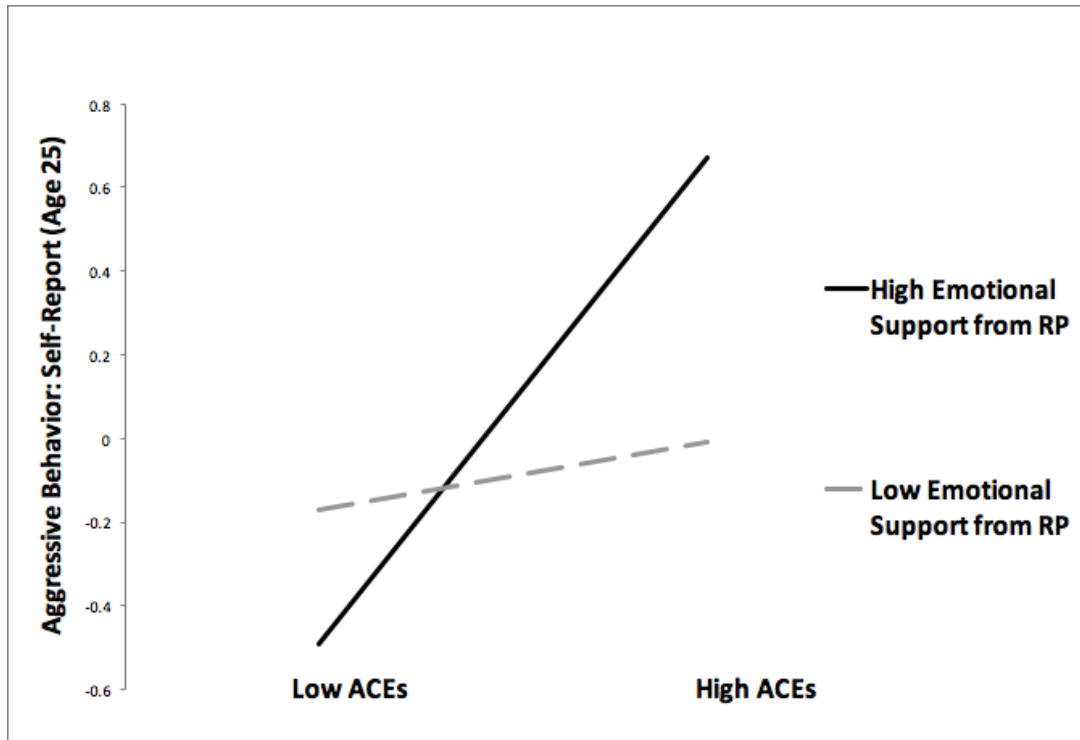


Figure 8

Effects of the interaction between adverse childhood experiences and perceived support on peer-reported rule-breaking behavior.

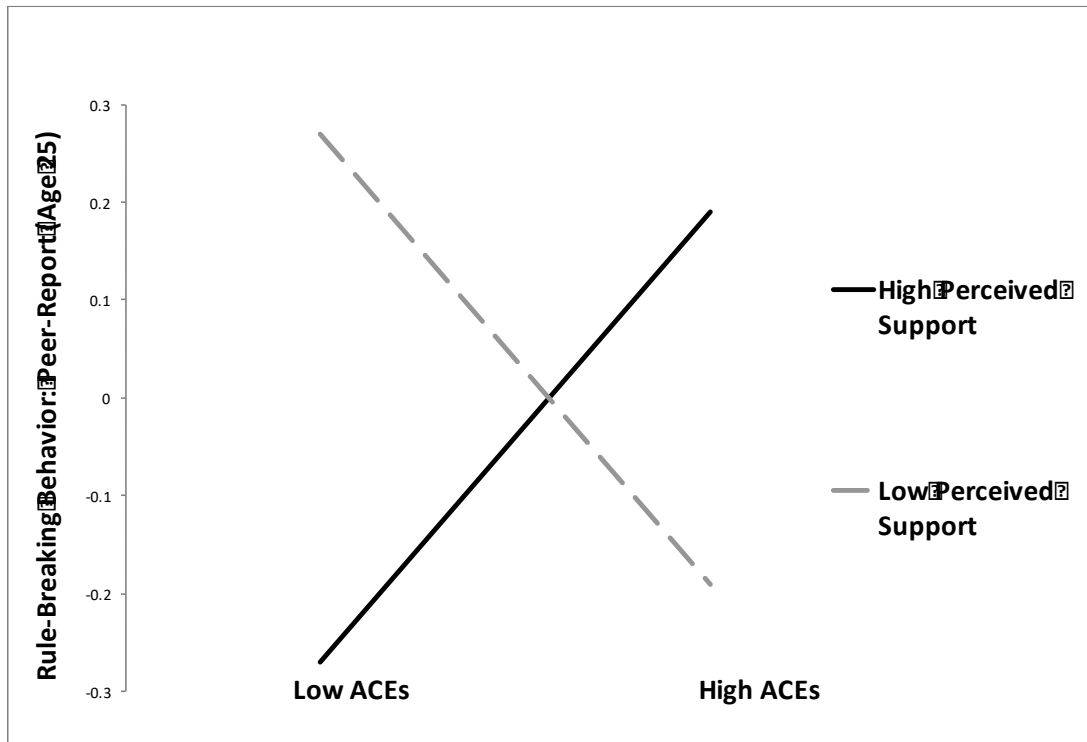


Figure 9

Effects of the interaction between adverse childhood experiences and perceived support on self-reported crimes against persons.

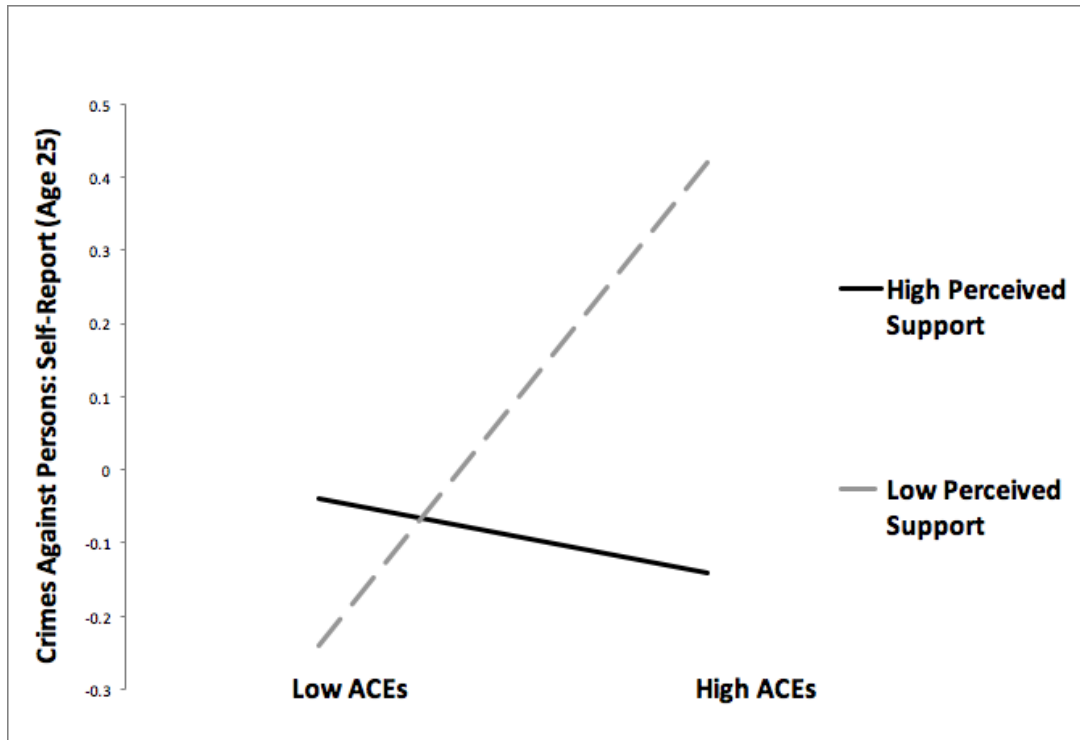


Figure 10

Effects of the interaction between adverse childhood experiences and perceived support on self-reported crimes not against persons.

