The Protective Effects of Intimate Partner Relationships on Depressive Symptomatology among Adult Parents Maltreated as Children

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Abstract

Purpose—We examined whether intimate partner relationships in general, and satisfying and stable intimate partner relationships in particular, protect victims of child maltreatment from depressive symptoms during young adulthood.

Methods—Prospective, longitudinal data on 485 parents, 99 maltreated during childhood, were used. Longitudinal multilevel models (12 annual interviews, conducted from 1999 to 2010, nested in individuals) were specified to estimate the effects of relationship characteristics on depressive symptomatology by maltreatment status.

Results—Relationship characteristics operated as direct protective factors for maltreated and not maltreated individuals. Higher relationship satisfaction and stability were prospectively predictive of less depressive symptomatology. Models of inter and intra-individual variability were also consistent with significant direct protective effects. Between persons, a more satisfying and stable relationship was associated with fewer depressive symptoms. Within person, periods when an individual moved into a relationship, and periods of enhanced satisfaction and stability were associated with fewer depressive symptoms. Relationship satisfaction and stability operated as significant buffering protective factors for the effect of maltreatment on depressive symptoms in most models, suggesting that positive intimate partner relationships may reduce the risk that childhood maltreatment poses for adult depressive symptoms.

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Conclusions—The CDC identifies safe, stable, and nurturing relationships (SSNRs) as key in preventing maltreatment and its consequences. This study adds to the evidence on the protective role of SSNRs by identifying intimate partner relationship factors that may protect parents who were maltreated during childhood from depressive symptoms.

Child maltreatment, defined as "any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child",[1] is a major public health concern. In 2012 there were about 3.8 million (duplicate count) referrals of alleged maltreatment to state Child Protective Services (CPS) agencies in the U.S., 17.7 % of which (about 672,600) were identified as substantiated cases of maltreatment impacting 686,000 unique victims.[2] Numerous studies have linked maltreatment to serious mental and physical health problems across the life course.[3–6] Furthermore, total lifetime economic costs of new maltreatment cases in the U.S. in 2008 were estimated at $124 billion.[7] Clearly, child maltreatment is a prevalent and costly problem that requires efforts to prevent it, as well as efforts to develop and deliver services for its victims in order to prevent or attenuate its negative consequences.

Depression is one of the serious outcomes that can result from child maltreatment. A recent metaanalysis confirms that physical abuse, emotional abuse, and neglect increase risk for depressive disorders with respective pooled odds ratios of 1.54, 3.06, and 2.11.[4] Gilbert and colleagues describe child maltreatment as a terrifying ordeal that can lead to post-traumatic stress for the victim.[3] The toxic stress model provides an ecobiodevelopmental framework for understanding the long term effects of the stress produced by child maltreatment, and other adverse childhood experiences, on subsequent mental and physical health problems in adulthood.[8] Toxic stress results from substantial, frequent, and enduring activation of an individual's stress response system. When buffering systems to counteract this extreme stress are unavailable to a maltreatment victim, this stress can lead to extreme wear and tear on the body, referred to as allostatic load, which in turn results in unhealthy development and ultimately poor mental and physical health. Thus, there is both empirical evidence and theoretical support for a direct and harmful effect of child maltreatment on depression.

Intervention initiatives designed to prevent or reduce depression among victims of child maltreatment are clearly needed. Identification of protective factors that can mitigate the potential deleterious effect of maltreatment on the onset and escalation of depression is prerequisite to the development of effective interventions. In this context, protective factors can either reduce the likelihood of depression among maltreated individuals (i.e., a direct protective factor), attenuate the harmful effect of maltreatment on depression (i.e., a buffering protective factor) or both. The CDC has identified safe, stable, and nurturing relationships (SSNRs) as potential protective factors for victims of child maltreatment.[9] In line with the toxic stress model[8], when social supports are in place, an individual is better able to manage the stress produced by maltreatment victimization and therefore the stress is less likely to lead to allostatic load and subsequent ill health outcomes. Although SSNRs can come from many sources across the life course, in this study, we focus on a specific type of SSNR at a specific part of the life course -- an intimate partner relationship during early- to mid-adulthood. This is typically a central and salient relationship in a young adult's life.

The possibility that positive aspects of intimate partner relationships can serve as protective factors that mitigate the impact of maltreatment on depressive symptomatology has, however, received scant attention. Consistent with this possibility though, a large literature provides evidence that qualities of intimate partner relationships and mental health are closely related in the general population. Much of this work is focused on the coupling of intimate partner relationship difficulties and depression.[10] The marital discord model of depression[11] provides a framework for understanding these effects; relationship distress in various forms leads to increased stress and decreased support, which in turn increases the risk for depression. It is reasonable to expect that the discord model would hold for victims of childhood maltreatment, though few studies on this topic have been conducted. A few studies have focused on the broader role of social support for maltreatment victims, unfortunately the evidence for the protective role of social support among maltreatment victims across studies is mixed.[12–16] Therefore, examination of the link between characteristics of intimate partner relationships and mental health outcomes among victims of child maltreatment is needed.

Examination of SSNRs among maltreatment victims may be particularly important given that maltreatment is associated with compromised intimate partner relationships in adulthood.[17] These findings are consistent with earlier studies on adult outcomes that focused on the impact of sexual abuse on marital satisfaction and disruption.[18–22] In addition, poor interpersonal relationships have been found to mediate the effect of childhood maltreatment on mental health outcomes[23–24].

To summarize, relatively little work has been conducted to understand the role of SSNRs in the relationship between childhood maltreatment and subsequent mental health outcomes. The vast majority of this work has focused on compromised interpersonal relationships as either an outcome of maltreatment or as a mediator that links maltreatment to poor mental health outcomes. More attention needs to be placed on understanding the role of SSNRs as protective factors for victims of child maltreatment. In this study, we use prospective data to consider the role of intimate partner relationships as potential sources of protection against the negative impacts of childhood maltreatment. We focus on two positive characteristics of these relationships -- satisfaction and stability -- to determine whether, when achieved, these aspects are protective against increased risks for depression. In doing so, we test three hypotheses:

1. On average, young adult parents who were maltreated during childhood will report more depressive symptoms, be less likely to be in a committed relationship, and, when in a committed relationship, have lower satisfaction and less stable relationships than their counterparts.

2. Committed relationship status, satisfaction, and stability with an intimate partner in adulthood will each be associated with less depressive symptomatology for parents maltreated as children as well as parents not maltreated as children (i.e., direct protective factors).

3. The harmful effect of maltreatment on depressive symptomatology will be attenuated when the individual is in a committed relationship and as relationship

satisfaction and relationship stability with an intimate partner increase (i.e., buffering protective factors).

Methods

Sample

We use data from companion longitudinal studies to test our hypotheses. The original study, the Rochester Youth Development Study (RYDS), began in 1988 and the intergenerational extension, the Rochester Intergenerational Study (RIGS), began in 1999. Detailed information about the methods of these studies is presented in the online appendix; a summary is provided here.

The original RYDS sample of 1,000 adolescents (referred to as G2; their primary caregiver is referred to as G1) is representative of the 7th and 8th grade public school population of Rochester, New York at the start of the study. Youth at high risk for problem behaviors were overrepresented by disproportionately stratifying on sex (73% males) and proportionately stratifying on residence in high-crime areas of the city. The RIGS selected G2's oldest biological child (2 or older) and added new firstborns as they turned 2 in each subsequent year. In Year 1 of RIGS, the average age of G2 participants was 25.3 (SD=.8). As of Year 12 of the study (the last year considered for the analyses presented here), 518 G2 participants and their first born child (G3) had participated in the study. Annual interviews of G2 and G3 have occurred since Year 1, though beginning in Year 9, interviews with the G2 participants were discontinued once G3 turned 18. The present analysis utilizes data from 485 G2 participants; all those who have complete data on the variables of interest for this study. Procedures were approved by the University at Albany's IRB.

Measures

We collected Child Protective Services records in Monroe County, New York, on all substantiated incidents of *child maltreatment*, from birth to age 18, in which our participants were the victims of maltreatment which includes neglect, physical abuse, sexual abuse, and emotional abuse. The maltreatment victimization variable was represented as a binary indicator in the analyses, comparing individuals with one or more substantiated cases of maltreatment victimization to individuals with no substantiated cases of maltreatment victimization. 60% of the incidents involved multiple types of maltreatment. We did not have adequate residence data to verify maltreatment status for 33 participants. All analyses presented in this manuscript were run with and without these participants, and the results were virtually identical. The results presented here exclude these 33 participants.

Depressive symptomatology was measured in each of the 12 annual interviews with the Centers for Epidemiological Studies Depression Scale (CES-D) long form.[25] All items were measured on a 5-point scale ranging from 1 (never) to 5 (always), with a higher score indicating more depressive symptoms (α = .88–.94 across time points).

At each annual interview, participant's intimate partner relationship was ascertained: 0=no partner; 1=married; 2=not married, but living with a partner; 3=long-term partner (6 months), but not married and not living with that partner; 4=new partner (<6 months). We

created a binary measure of *committed relationship status*: individuals who reported a 1, 2 or 3 were assigned a 1, individuals who reported a 0 or a 4 were assigned a 0. Individuals in a committed relationship completed a 5-item *relationship satisfaction scale* and a 3-item *relationship stability* scale. All items were measured on a 5-point scale ranging from 1 (never) to 5 (always), with a higher score indicating more satisfaction/stability (α = .85–.90 for satisfaction and .82–.93 for stability across time points).

We included a set of control variables that are likely to be causally prior to maltreatment victimization – the primary predictor of interest in this study: participant's sex and race/ethnicity, G1's years of education, G2's mother had first child before age 19, the arrest rate of the census tract of residence (the proportion of the tract's total population arrested the previous year based on Rochester Police Records) and the proportion of residents living in poverty (from U.S. Census Records). Descriptive statistics by maltreatment status for all control variables are presented in Table 1 and for all key variables (presented across interviews) in Table 2 (including intercorrelations for key variables).

Analysis

Analyses were estimated in SAS, Version 9.2. A random coefficients, multilevel model in which measurement occasions (Level 1 - up to 12 per participant) were nested in individuals (Level 2) was estimated. All presented models adjusted for time-varying measures of age and age-squared (including both fixed and random effects for each), as well as the control variables.

Nested factor models[26] were estimated to account for the fact that satisfaction and stability were only measured during years when the individual was in a committed relationship. For years when the individual was not in a committed relationship, his/her average satisfaction/stability score was substituted to serve as a place holder. Then, depressive symptomatology was regressed on the control variables, the binary indicator of committed relationship status, and a product term for satisfaction/stability and the binary indicator (i.e., satisfaction/stability*status). Thus, the product term "turned on" the effect of satisfaction/stability when the individual was in a committed relationship.

In the models for Hypotheses 2 and 3, maltreatment status and an interaction term between maltreatment status and the relationship characteristic of interest was added to the nested factor model. The interaction term allowed the effect of the relationship characteristic to be estimated for both groups. When significant, the effect of maltreatment status on depressive symptoms was probed at varying levels of the relationship characteristic to demonstrate buffering effects.

Results

In support of Hypothesis 1, a modest, but significant effect of maltreatment victimization on depressive symptoms was observed (*b*=.11, *SE*=.05, *p*<.05); maltreated individuals reported more depressive symptoms as compared to those who were not maltreated. However, maltreatment victimization was not associated with the log odds of being in a committed

relationship ($b=-.04$, $SE=.20$, NS), nor the level of relationship satisfaction ($b=.004$, $SE=.06$, NS) or relationship stability ($b=-.05$, $SE=.07$, NS).

To test Hypotheses 2 and 3, two sets of multilevel models were estimated. First, a lagged effects model for each relationship characteristic was specified. The results are presented in Table 3. Committed relationship status at time t-1 was not associated with depressive symptomatology at time t for either group. However, a significant direct protective effect of relationship satisfaction and stability on depressive symptomatology for both maltreated and not maltreated parents was observed.

Second, three persons-as-contexts[27] models were specified to determine the extent to which between-person differences and within-person fluctuations in the relationship characteristics were associated with depressive symptomatology. The total effect of each relationship characteristics was decomposed into a between-person and within-person component by creating two forms of each variable – the between-person form represented each individual's average score across all available measurement occasions and the within-person form represented the degree to which status/satisfaction/stability at a particular measurement occasion differed from the individual's average score. Because of the person-mean centering, within-person effects could only explain variability that was not due to stable, between-person differences, and thus, are less prone to confounding. The results are presented in Table 4.

Between persons, a significant direct protective effect of relationship satisfaction and stability for both maltreated and not maltreated parents was observed. Parents who had a higher average level of relationship satisfaction/stability across the study period reported less depressive symptomatology. Average time spent in a committed relationship was only associated with less depressive symptomatology for parents who were not maltreated. All within-person direct protective effects of the relationship characteristics were statistically significant for both groups -- movement into a committed relationship was associated with a downturn in depressive symptomatology, and during times when an individual's relationship satisfaction/stability was relatively higher, depressive symptomatology was lower.

Across the models tested for Hypothesis 2, several of the direct protective effects of the relationship characteristics were significantly larger for the maltreated group (see the difference coefficients in Tables 3 and 4). Each of these is indicative of a buffering protective effect (Hypothesis 3). This is more clearly understood by probing the interactions to assess the effect of maltreatment at varying levels of relationship stability/satisfaction. First consider the effect of lagged stability on depressive symptomatology. When lagged stability was low (2 on a scale from 1 to 5, where 1 is the least stable and 5 most stable) the difference in expected depressive symptoms between a maltreated and not maltreated individual was .24, ($SE=.08$), $p<.01$, this corresponds to about a 1/3 standard deviation difference (the standard deviation for depressive symptoms is .61). As relationship stability increased, the expected difference in subsequent depressive symptoms between maltreated and not maltreated individuals decreased. For example, when relationship stability was 3, the expected difference was .17, ($SE=.07$), $p<.05$, and when relationship stability was at the highest level (5), the expected difference was .03, ($SE=.06$), NS.

Next consider the models presented in Table 4 for within- and between-person effects of the relationship characteristics. In Model B, Table 4, both the within- and between-person effect of relationship satisfaction on depressive symptoms was larger for maltreated individuals. When average satisfaction (across the 12 years) was 4 but relationship satisfaction during a particular year was 5 (i.e., 1 unit higher than the individual's average), the expected difference in depressive symptomatology between a maltreated and a not maltreated parent was .03 (*SE*=.07), *NS*. When average satisfaction was 3 but relationship satisfaction during a particular year was 2 (i.e., 1 unit lower than the individual's average), the expected difference in depressive symptomatology between a maltreated and a not maltreated individual was .55 (*SE*=.15), *p*<.0001, nearly a 1 standard deviation difference. Last, in Model C, Table 4 the between-person effect of stability was similar across groups, but the within-person effect was larger for maltreated individuals. Holding the average stability score at 4, during times when stability increased to 5 (i.e., a 1 unit increase) there was no significant difference in depressive symptoms across groups (*b*=.02, *SE*=.06, *NS*); but during times when stability decreased to 3 (i.e., a 1 unit decrease), there was a significant difference in depressive symptoms across groups (*b*=.18, *SE*=.06, *p*<.01). It is clear from these estimates that when people were experiencing positive intimate relationships, there was little difference in depressive symptoms between maltreated and not maltreated individuals. However, when people were experiencing poor intimate relationships, maltreated individuals tended to report more depressive symptoms than individuals who weren't maltreated.

Discussion

Across all individuals, we observed a modest harmful effect of child maltreatment on depressive symptomatology during adulthood; maltreated parents reported more depressive symptoms. However, contrary to previous literature[17], we did not observe an effect of maltreatment status on any of the relationship characteristics. That is, in this sample, maltreatment did not compromise the formation of intimate partner relationships among parents, nor the quality of relationships formed in terms of satisfaction and stability.

Congruent with previous work[10–11], relationship satisfaction and stability each prospectively predicted lower depressive symptomatology (Table 2, Models B and C), and this effect was significant for maltreated and not maltreated parents. In addition, movement into a committed relationship, as well as upswings in relationship satisfaction and stability, were associated with downswings in depressive symptoms for both groups. Importantly for Hypothesis 3 though, the lagged effect for stability, the between-person effect for satisfaction, and the within-person effects for satisfaction and stability were all significantly larger for maltreated parents. This interaction between a risk (maltreatment) and protective (SSNRs) factor defines a buffering protective effect. As satisfaction and stability in intimate partner relationships increased, the difference in depressive symptoms between maltreated and not maltreated individuals was significantly reduced.

It is beyond the scope of the present study to identify the mechanisms by which relationship satisfaction/stability matter more for those with a history of maltreatment. Some evidence suggests that maltreatment victims tend to have poorer interpersonal skills and difficult

intimate relationships during adulthood[12] so one possible explanation is that when they do establish better quality relationships they simply matter more. In this approach, which is the approach we took in this paper, positive relationships are thought of as factors that protect individuals from depressive symptoms. An alternative perspective is that the coupling of intimate partner relationship characteristics and depressive symptoms is indicative of vulnerability – that is, an adult is vulnerable to depression if mental health is dependent on relationship characteristics.[28] This is an important distinction because the implications for prevention are different. In the former, initiatives to assist maltreated parents develop and maintain healthy relationships are warranted; while in the latter, initiatives to assist maltreated parents to maintain positive mental health irrespective of what is happening with their intimate partner relationship are warranted. Clearly, one needed avenue for future research is to unpack the mechanisms that account for the relationships we have identified here.

Our results offer several implications for practice. During adulthood, depressive symptoms are prevalent, often chronic and disabling, and have high direct and indirect societal costs. Although studies indicate that depression is associated with a higher utilization of medical services[29], depressive disorders are often under recognized and undertreated.[30,31] Our study points to a number of strategies that may be useful in responding more effectively to this issue. First, although child maltreatment increases the risk for depression, many child victims do not receive appropriate services[2], including services to prevent depression. Additional efforts are needed to increase diagnosis, treatment, and prevention of depressive disorders in maltreatment survivors. Second, there are differences in clinical characteristics of depression-related illness in those with and without maltreatment histories and there is some evidence that treatment strategies for depression may differ across groups.[32] We identified relationship satisfaction and stability as important protective factors that are associated with reduced levels of depressive symptomatology and do so significantly more powerfully for individuals with histories of child maltreatment. Thus, programmatic efforts that focus on improving the quality and duration of positive intimate relationships may be particularly helpful in responding to this issue. The presence of a healthy intimate partner relationship in the life of an adult who was maltreated as a child may work to counteract the toxic stress that resulted from the victimization.

The present study certainly has limitations. For example, only official measures of maltreatment are available and the study is based in a single city at a particular time point. Second, relationship variables and depressive symptomatology were self-reported. Third, because we had to rely on data from the RIGS, we can only be confident that the results generalize to parents. Fourth, our focus here is on the potential influence of relationship characteristics on depressive symptoms and we do not model the reciprocal nature of the relationship between depressive symptoms and relationship characteristics. Fifth, our focus in this study was to model variability in depressive symptoms over the course of twelve years, and we did not aim or attempt to diagnose depression. Still, in light of these limitations, by following a representative community sample over a substantial period of the life course, we were able to provide important information about the mental health consequences of child maltreatment, and the way in which both the quality and stability of

intimate partner relationships can intervene to weaken the link between maltreatment victimization and depressive symptoms among adult parents.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

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Implications and Contribution

Child maltreatment and its consequences present a major public health burden. This study demonstrates that a satisfying and stable intimate partner relationship during young adulthood is associated with less depressive symptomatology among victims of child maltreatment. Programs and policies aimed at promoting these relationships should be examined as potential intervention strategies.

Table 1

Descriptive statistics for control variables by maltreatment status

	Not Maltreated N=386		Maltreated N=99	
	$\underline{M}$*	SD	M*	SD
Control Variables (measured during participant's childhood)				
Male	66.8%		51.5%	
Black	72.5%		77.8%	
Hispanic	15.5%		7.1%	
Mother had first birth < 19	55.0%		69.3%	
Primary caregiver years of education	11.30	2.04	10.93	1.84
Neighborhood arrest rate	4.30	2.04	4.54	2.03
Neighborhood poverty	0.33	0.14	0.35	0.13

*
Percentage is presented for categorical variables

Table 2

Descriptive statistics for key variables by survey year and maltreatment status

	Not Maltreated (N=386)				Maltreated (N=99)			
	M*	SD	*r* with depressive symptoms	*r* with relationship satisfaction	M*	SD	*r* with depressive symptoms	*r* with relationship satisfaction
Year 1 (263/72)†‡								
In committed relationship	70.3%		−0.06		77.8%		−0.02	
Relationship satisfaction	4.29	0.66	−0.49		4.31	0.67	−0.48	
Relationship stability	4.16	0.96	−0.44	0.72	4.15	0.83	−0.43	0.70
Depressive symptoms	1.95	0.52			2.13	0.61		
Year 2 (289/79)†‡								
In committed relationship	72.3%		−0.06		67.1%		−0.05	
Relationship satisfaction	4.30	0.67	−0.33		4.39	0.55	−0.53	
Relationship stability	4.15	0.91	−0.41	0.64	4.15	0.85	−0.44	0.57
Depressive symptoms	1.97	0.57			2.05	0.60		
Year 3 (301/81)†‡								
In committed relationship	67.8%		−0.03		71.6%		−0.19	
Relationship satisfaction	4.39	0.65	−0.42		4.43	0.56	−0.53	
Relationship stability	4.30	0.88	−0.40	0.69	4.24	0.90	−0.40	0.69
Depressive symptoms	1.88	0.61			2.01	0.65		
Year 4 (296/82)†‡								
In committed relationship	66.2%		−0.14		62.2%		0.09	
Relationship satisfaction	4.40	0.67	−0.53		4.27	0.78	−0.35	
Relationship stability	4.28	0.91	−0.47	0.73	4.13	0.88	−0.44	0.66
Depressive symptoms	1.78	0.60			1.89	0.66		
Year 5 (302/82)†‡								
In committed relationship	67.9%		−0.03		70.7%		−0.05	
Relationship satisfaction	4.33	0.64	−0.39		4.44	0.72	−0.63	
Relationship stability	4.33	0.82	−0.42	0.64	4.33	0.84	−0.50	0.60
Depressive symptoms	1.72	0.64			1.70	0.68		

	Not Maltreated (N=386)				Maltreated (N=99)			
	M*	SD	r with depressive symptoms	r with relationship satisfaction	M*	SD	r with depressive symptoms	r with relationship satisfaction
Year 6 (314/90)†‡								
In committed relationship	69.1%		0.01		68.9%		−0.13	
Relationship satisfaction	4.33	0.69	−0.40		4.37	0.64	−0.56	
Relationship stability	4.43	0.78	−0.44	0.65	4.32	0.82	−0.57	0.63
Depressive symptoms	1.68	0.62			1.77	0.65		
Year 7 (314/83)†‡								
In committed relationship	67.2%		−0.03		65.1%		−0.21	
Relationship satisfaction	4.37	0.66	−0.34		4.47	0.63	−0.40	
Relationship stability	4.42	0.82	−0.38	0.72	4.62	0.71	−0.41	0.68
Depressive symptoms	1.67	0.58			1.75	0.66		
Year 8 (326/82)†‡								
In committed relationship	67.2%		−0.12		67.1%		−0.04	
Relationship satisfaction	4.37	0.66	−0.39		4.31	0.64	−0.55	
Relationship stability	4.46	0.88	−0.44	0.66	4.33	0.90	−0.59	0.81
Depressive symptoms	1.71	0.60			1.76	0.63		
Year 9 (303/75)†‡								
In committed relationship	66.0%		−0.24		66.7%		−0.23	
Relationship satisfaction	4.44	0.63	−0.51		4.40	0.77	−0.33	
Relationship stability	4.52	0.79	−0.43	0.65	4.37	1.00	−0.42	0.71
Depressive symptoms	1.75	0.59			1.79	0.61		
Year 10 (300/67)†‡								
In committed relationship	69.7%		−0.11		64.2%		−0.11	
Relationship satisfaction	4.48	0.56	−0.38		4.56	0.49	−0.53	
Relationship stability	4.45	0.79	−0.39	0.65	4.55	0.57	−0.60	0.56
Depressive symptoms	1.70	0.57			1.77	0.63		
Year 11 (288/60)†‡								
In committed relationship	68.4%		−0.09		60.0%		−0.09	
Relationship satisfaction	4.42	0.65	−0.45		4.44	0.74	−0.43	

	Not Maltreated (N=386)				Maltreated (N=99)			
	M*	SD	*r* with depressive symptoms	*r* with relationship satisfaction	M*	SD	*r* with depressive symptoms	*r* with relationship satisfaction
Relationship stability	4.48	0.82	−0.43	0.78	4.46	0.84	−0.47	0.85
Depressive symptoms	1.69	0.56			1.80	0.68		
Year 12 (254/58)‡								
In committed relationship	71.3%		−0.24		60.3%		−0.20	
Relationship satisfaction	4.47	0.61	−0.47		4.49	0.65	−0.31	
Relationship stability	4.54	0.74	−0.45	0.67	4.36	0.93	−0.26	0.77
Depressive symptoms	1.74	0.53			1.89	0.63		

*
Percentage is presented for categorical variables;

‡
yearly sample size for not maltreated and maltreated groups;

r=correlation; satisfaction, stability and depressive symptoms range from 1 to 5

Table 3

Lagged effects (*t*-1) of intimate partner relationship characteristics on depressive symptoms

	Model A Relationship Status			Model B Relationship Satisfaction			Model C Relationship Stability		
	Est	*SE*		*Est*	*SE*		*Est*	*SE*	
Not maltreated	0.03	0.02		−0.06	0.02	***	−0.03	0.01	*
Maltreated	−0.02	0.04		−0.11	0.03	***	−0.09	0.02	***
Difference	−0.05	0.04		−0.04	0.04		−0.07	0.03	*

All models control for age at interview (and age-squared), time elapsed since last interview, sex, race/ethnicity, mother's first birth <19, primary caregiver's level of education, and neighborhood arrest and poverty rate when participant was a child.

***
= p<.001,

**
=p<.01,

*
p<.05

Table 4

Within- and between- person associations of intimate partner relationship characteristics and depressive symptoms

	Model A Relationship Status			Model B Relationship Satisfaction			Model C Relationship Stability		
	Est	*SE*		*Est*		*SE*	*Est*	*SE*	
Within-person Effect									
Not maltreated	−0.08	0.02	***	−0.17	0.02	***	−0.13	0.01	***
Maltreated	−0.12	0.04	***	−0.32	0.03	***	−0.21	0.03	***
Difference	−0.04	0.04		−0.15	0.04	***	−0.08	0.03	**
Between-person Effect									
Not maltreated	−0.28	0.08	***	−0.46	0.04	***	−0.37	0.03	***
Maltreated	−0.05	0.17		−0.67	0.10	***	−0.45	0.06	***
Difference	0.23	0.19		−0.21	0.10	*	−0.08	0.07	

All models control for age at interview (and age-squared), sex, race/ethnicity, mother's first birth <19, primary caregiver's level of education, and neighborhood arrest and poverty rate when participant was a child.

*** = p<.001,

** =p<.01,

* p<.05