

The Intersection of Childhood Maltreatment and Marriage: Implications for Adult's Health

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Abstract

Childhood maltreatment is associated with mental and physical health problems across the life course. Marriages may be a risk factor for continued mental and physical health problems or, alternatively, they could buffer the effects of maltreatment severity on adult health. Using data from the study of Midlife Development in the United States (MIDUS), we evaluated marital support and strain as moderators of child maltreatment and adults' subjective evaluations of physical and mental health in a sample of 760 married adults using the life course perspective. Results show that the interaction between childhood maltreatment severity and marital strain was associated with poorer physical health and was marginally associated with mental health. Marital support did not significantly interact with childhood maltreatment severity in predicting adult mental or physical health. Results suggest maltreatment and marital strain interact resulting in a greater accumulation of disadvantage leaving adults at risk for health problems.

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The effects of marriage on adult physical and mental health are well understood among clinicians, researchers, and policymakers (see Kiecolt-Glaser & Newton, 2001; Robles et al., 2014; Whisman & Baucom, 2011, for reviews). Family researchers contend that adult health outcomes are partially shaped by marital quality (Fincham et al., 2000), size of social networks (Smith & Christakis, 2008), and marital interactions (Walen & Lachman, 2000).

Marriages are inherently complex and are comprised of numerous domains including support, decision-making, strain, sexuality, and conflict among many others. Specifically, marital support, or perceptions of caring and understanding, and marital strain, defined by criticism, irritation, and a spouse being unreliable, have each been linked to adult physical and mental health (e.g., DeLongis et al., 2004; Walen & Lachman, 2000). Thoits (2011) suggested there are numerous mechanisms that link support and strain to mental and physical health and the mechanisms to mental and physical health are quite similar (Thoits, 2011). For example, adults who have healthier diet, exercise regularly, comply with prescribed medical regimens, and seek therapy, will experience both mental (e.g., positive affect) and physical health benefits (e.g., cardiovascular health; Thoits, 2011) and marital partners play an important role in understanding these health promotive behaviors. Emotional support from a partner during times of psychological distress can dampen physiological and psychological arousal, thereby increasing both mental and physical health. On the other hand, strain is associated with greater psychological and physiological reactivity (Levenson & Gottman, 1985; Levenson et al., 1994). More frequent marital strain can lead to maladaptive coping mechanisms (e.g., alcohol use) and erode physiological functioning over time (Robles et al., 2014). While many of the mechanisms are similar, one mechanism that differentiates mental and physical health outcomes is physiological functioning. In a meta-analytic review, Robles et al. (2014) found that marital quality is associated with physiological activation (e.g., cardiovascular, neuroendocrine, and immunological) that can influence physical health over time.

Research has identified child maltreatment, defined by physical, sexual, and emotional abuse as well as physical and emotional neglect, as a risk factor for marital problems as well as physical and mental health problems (Fitzgerald & Gallus, 2020; Wegman & Stetler, 2009). Maltreatment has a multidimensional impact on children's development, including impairment

in biological, social, emotional, and cognitive domains (D'Andrea et al., 2012). Children who experience more severe maltreatment make more negative attributions about other's behavior (Valle & Silovsky, 2002), demonstrate greater attachment insecurity (Baer & Martinez, 2006), and have poorer social skills (Burack et al., 2006), leaving adults at risk for more negative and fewer positive interactions in their marriage (Whisman, 2014). On the other hand, not all adults who were maltreated experienced poorer quality marriages. Adults who were maltreated in childhood but go on to have high quality and supportive marriages may not experience the negative health consequences associated with childhood maltreatment. In fact, marriages have been suggested to buffer the health-related consequences of childhood maltreatment (Whiffen et al., 2000). The role, however, of marriages in relation to adult mental and physical health among those who were maltreated remains understudied.

From a life course perspective, as severity of childhood maltreatment increases so does the risk for mental and physical health problems in adulthood. The risk between childhood maltreatment and adult health will be buffer or exacerbated on numerous interceding factors. The risk between childhood adversity, including maltreatment, and adult mental and physical health issues may be heightened or mitigated based on the amount of marital support and strain (Umberson et al., 2014; Whiffen et al., 2000). A more strained marriage among adults who were maltreated in childhood may exacerbate the relationship between childhood maltreatment and adult health while having a more supportive relationship may buffer the effects. Thus, the purpose of the current study is to investigate marital support and marital strain as moderators of the associations between childhood maltreatment and adult's self-evaluated physical and mental health. Additionally, we'll investigate the interaction between support and strain because although they are related constructs, they also occur independently of one another and marital support and strain may interact to predict adult health (Walen & Lachman, 2000).

Literature Review

The life course perspective provides a theoretical background from which to understand how childhood maltreatment is linked to adult physical and mental health. The life course perspective suggests that greater childhood stress and adversity, such as maltreatment, alters children's developmental trajectory culminating in poorer mental and physical health in adulthood (Umberson et al., 2014). Because the life course theory operates under the assumption that development is a lifelong process, numerous processes will intercede to

link early adversity and adult mental and physical health and adult marriages have been suggested to be one such force (Whiffen et al., 2000). In the context of childhood maltreatment supportive marriages can offer a contrasting and corrective experience and buffer the negative effects by providing support, care, and sense of importance or “mattering” (Flett et al., 2016). Contrastingly, the concept of accumulated stress, also known as the culmination of disadvantage (Elder, 1998), suggests that experiencing early childhood adversity (e.g., maltreatment) leaves adults at increased risk for greater disadvantages in adulthood. Greater disadvantage in childhood coupled with disadvantage in adulthood leaves adults at risk for mental and physical health problems (Umberson et al., 2014). Adults who were maltreated and then experience high levels of marital strain are suggested to be at increased risk for mental and physical health problems.

Childhood maltreatment has cascading effects lasting long into adulthood. Children who were maltreated tend to have problems forming safe and secure relationships, have poorer emotional regulation, and demonstrate high levels of mental health problems (Riggs, 2010). These deficits can lead to mental, physical, and relational health problems in adulthood (Afifi et al., 2013; DiLillo et al., 2007). Research has found that adults who were maltreated in childhood are at increased likelihood for greater relationship instability (Colman & Widom, 2004), poorer-quality relationships (DiLillo & Long, 1999), and relationships that volatile, abusive, or characterized by infidelity (Testa et al., 2005). More severe childhood maltreatment has been linked to more strained relationships (Paradis & Boucher, 2010; Whisman, 2014) as well as less supportive relationships (DiLillo & Long, 1999; DiLillo et al., 2007; Whisman, 2014). Despite consistent findings that more severe childhood maltreatment negatively shapes adult marriages, only a select few (e.g., Whiffen et al., 2000) have investigated the mental health implications but have not considered the physical health implications.

Childhood maltreatment has been widely established to be a risk factor for mental health problems in adulthood. For example, childhood maltreatment has been linked to mental health problems including greater social anxiety (Fitzgerald & Gallus, 2020), depression (Nelson et al., 2017), alcohol and drug problems (Afifi et al., 2012), somatization (Spitzer et al., 2008), low self-esteem (Widom et al., 2018), and greater psychological distress (DiLillo et al., 2007). Given the breadth of outcomes associated with childhood maltreatment and symptoms that appear in several different psychological disorders (e.g., worry), shorter measures, including measure of adult subjective evaluations of their mental health have merit in assessing adult mental health (see Ahmad et al., 2014, for review).

Childhood maltreatment has also been linked to adult physical health. More severe childhood maltreatment has been associated with a variety of physical health issues including a greater number of diagnoses (e.g., cancer), greater health care utilization, and more negative subjective evaluations of physical health (Min et al., 2012). Regarding specific physical health conditions, research has noted that greater experiences of childhood maltreatment is associated with an increased risk for cardiovascular disease (Batten et al., 2004), arthritis, obesity, diabetes, hepatic disease, and gastrointestinal disease (Afifi et al., 2013). Additionally, maltreatment is greater allostatic load, which is a reflection of physiological dysregulation (Widom et al., 2015). For example, Hager and Runtz (2012) found that more severe childhood maltreatment was positively associated with more physical symptoms, greater health care utilization, and greater functional impairment. Due to the significant associations between childhood maltreatment and adult health, it is imperative to understand factors that may promote or hinder adult health and marriages has been documented as be one such factor (Robles et al., 2014; Walen & Lachman, 2000).

Marital support and strain have been independently linked with numerous mental health outcomes. Marital support may affect mental health through higher self-esteem, feelings of being important to their spouse, and healthier behaviors, whereas strain undermines self-esteem, creates emotional distance and disconnection, and adults may use maladaptive strategies (e.g., substance use or emotional eating) to cope (Thoits, 2011). Regarding mental health, studies have found that emotional support in romantic relationships is associated with fewer mental health problems (e.g., Stafford et al., 2011; Walen & Lachman, 2000). A recent study found that emotional support in adult's cohabitating and marital relationship were longitudinally associated with fewer depressive symptoms and less severe social anxiety (Fitzgerald & Gallus, 2020). Another study found that among cancer patients, higher levels of marital support were associated with positive coping in response to the diagnosis and having a more optimistic view about fighting the cancer (Taniguchi et al., 2003). Like marital support, marital strain has also been found to have unique effects on adult mental health. In several studies, marital strain has been associated with greater psychological distress and diagnoses of anxiety, depression, and substance use (Garcia & Umberson, 2019; Kendler et al., 2005; Newsom et al., 2005; Schuster et al., 1990).

Like mental health outcomes, marital support and strain have also been associated with adult physical health (Robles, 2014). Research by Gottman and Levinson have consistently found that there is a physiologically based reactions to both supportive and strained interactions (e.g., Levenson & Gottman, 1985; Levenson et al., 1994). Thus, marital interactions are

associated with physical health through biological mediators (i.e., cardiac, endocrine, and immunological mechanisms; Robles et al., 2014). For example, when adults come home from a stressful day at work and are received with warmth, compassion, and understanding, it can promote emotional closeness and serve to dampen physiological arousal. Contrastingly, if spouses are critical, rejecting, or downplay the issues will either maintain or exacerbate the underlying physiological reactivity. There is a consistent, positive relationship between marital support and mental and physical health. The literature finds that higher levels of support results in increased well-being and decreased morbidity and mortality (Burman & Margolin, 1992; Cohen & Willis, 1985; Dehle et al., 2001; Kiecolt-Glaser & Newton, 2001; Power, 1988; Reblin & Uchino, 2008). On the other hand, marital strain is associated with greater physiological dysregulation and more frequent strain can erode adult's physical health over time (Robles et al., 2014; Umberson et al., 2006). Not surprisingly, studies have found that strain is associated with clinical endpoints including hypertension, inflammation, frequency of health conditions, difficulty completing daily activities, mortality, morbidity, and poor self-reported health (Geuvara & Murdock, 2019; Newsom et al., 2008; Robles et al., 2014; Yang et al., 2014).

The aforementioned discussion notes that support and strain have independent effects on adult mental and physical health. It has also been suggested that because support and strain are independent yet related constructs, and they both occur in all marriages (Goff et al., 2006; Rogge et al., 2017). According the stress buffering hypothesis (Cohen & Willis, 1985), experiencing support may buffer the effects of stain on mental and physical health. Thus, high levels of support may buffer the effects of marital strain on adult health. Although the life course theory would suggest there is an interaction between historical adversity (e.g., childhood maltreatment) and current marital functioning (e.g., support and strain), the interaction between support and strain may be a more proximal factor also contributing to adult health (DeLongis et al., 2004).

The Present Study

From a life course perspective, childhood maltreatment sets forth an altered developmental trajectory leaving adults at risk for mental and physical health problems. Marital support may buffer the associations between childhood maltreatment and adult mental and physical health whereas strain may exacerbate the associations. These propositions have been seldom tested (e.g., Whiffen et al., 2000) and examining the relationship can provide a more advanced understanding on the role marital support and strain plays in

understand health outcomes among adults with varying experiences of childhood maltreatment.

Hypotheses: Based on our literature review we hypothesize that more severe childhood maltreatment will be negatively associated with marital support, mental health, and physical health and positively associated with marital strain; marital support will be positively associated with mental and physical health whereas strain will be negatively associated with adult mental and physical health. Second, we expect that marital strain will moderate of the relationship between maltreatment severity and physical and mental health. Third, we expect that partner support will buffer the effects of maltreatment on adult's mental and physical health. Last, in accordance with Walen and Lachman (2000), we conceptualized support and strain as separate but related constructs and expect there will be an interaction between support and strain in predicting adult health.

Method

Procedure

Data are from the National Survey of Midlife Development in the United States (MIDUS). The first MIDUS study (MIDUS 1) is comprised of a nationally representative sample of 7,108 noninstitutionalized English-speaking adults conducted in 1995–1996. Data were collected via telephone interview and mailed self-administered questionnaire (SAQ). Following MIDUS 1, there was a follow-up study (MIDUS 2) conducted in 2004. MIDUS 2 mirrored data collection methods and questionnaires of MIDUS 1. Of the original sample, 4,963 participants provided data at MIDUS 2. In addition to the telephone interview and SAQ, the MIDUS 2 included a biomarker follow-up project. The biomarker study comprised a subset of participants who completed both telephone interview and SAQ in MIDUS 1 and 2 ($n = 1,054$) as well as a new subsample of racial minorities ($n = 201$), totaling 1,255 participants. The biomarker project also provided additional self-administered scales collected between 1 and 60 months following MIDUS 2. Data in the current study were used from both the MIDUS 2 telephone interview, MIDUS 2 SAQ, and the biomarker project.

Participants

Participants were included in the study if they participated in the MIDUS 1, MIDUS 2, and MIDUS biomarker study and were married at the time of

MIDUS 2. The final number of participants was 760 (49.9% male). Participants were an average of 55.22 years old ($SD = 11.52$) and reported an average income of \$47,579.79. Education varied across participants; 1 (0.1%) participant reported only attending grade school, 6 (0.8%) reported finishing middle school, 18 (2.4%) reported some high school, 5 (0.7%) reported earning a GED, 150 participants (19.7%) reported graduating high school, 163 (21.4%) participants reported some college but no degree, 54 (7.1%) reported a two year college degree, 183 (24.1%) reported a college degree from a four year institution, 33 (4.3%) reported some graduate school, 112 (14.7%) had a masters, and 32 (4.2%) reported a professional degree such as a PhD or MD. A majority of the sample identified as White (94.1%).

Measures

Childhood maltreatment: Childhood maltreatment was assessed using the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 2003). The CTQ is a 28-item scale assessing childhood maltreatment prior to the age of 18. Items were scored on a five-point Likert scale, ranging from 'Never' (1) to 'Very Frequently' (5). Example items included "Felt that someone in my family hated me," "Someone tried to make me do sexual things or watch sexual things," and "My parents were too drunk or high to take care of me." The CTQ has been found to have construct validity and criterion-related validity, and the range test-retest value for the CTQ is 0.80–0.97 (Bernstein et al., 2003). Childhood maltreatment was operationalized for this study by summing the emotional, physical, and sexual abuse and emotional and physical neglect subscales together for an overall indicator of maltreatment severity. Greater scores reflect greater maltreatment. Cronbach's α for the current study was 0.839.

Subjective rating of physical health: The health status of participants was assessed with a one-item index of subjective physical health status. The item asked, "In general, would you say your physical health is excellent, very good, good, fair, or poor?" The validity of self-rated health has been established in prior research (Umberson et al., 2006) and is predictive of future morbidity and mortality (Idler & Benyamini 1997; Kiecolt-Glaser & Newton, 2001). The item was coded such that higher scores reflect better physical health.

Subjective rating of mental/emotional health: Participant's mental health was assessed using a single-item indicator of mental/emotional health. The item asked, "In general, would you say your emotional/mental health is 1 (Poor) to 5 (Excellent)?" The use of subjective evaluations of mental health

has been increasing since 1980 and is associated with mental health diagnoses and clinical utilization (Ahmad et al., 2014).

Support: Marital support was assessed using a six-item scale. All items were answered on four-point Likert-type scale ranging from ‘A Lot’ (1) to ‘Not at All’ (4). We recoded items so that higher scores indicated higher levels of support. Example items included, “How much does your spouse or partner really care about you,” “How much does he or she understand the way you feel about things,” and “How much does he or she appreciate you.” Items were summed together for an overall index of support. The current sample demonstrated good internal consistency (Cronbach Alpha = 0.887).

Strain: Strain from the participant’s spouse was assessed using a six-item measure rated on a four-point Likert type scale ranging from ‘Often’ (1) to ‘Never’ (4). Example items included, “How often does your spouse or partner make too many demands on you,” “How often does he or she make you feel tense,” and “How often does he or she argue with you.” Items were summed together for an overall index of strain. The current sample demonstrated good internal consistency (Cronbach Alpha = 0.868).

Control variables: We controlled for income, education, age, gender, parental history of depression, a history of receiving welfare, and race. Sociodemographic variables such as race, gender, income, being on welfare, and education have been linked to adult physical and mental health outcomes (Kessler et al., 2012; Kessler & Bromet, 2013; Regier et al., 1993; Umberson et al., 2006). Maternal and paternal depression were included in the model because childhood maltreatment often occurs in the context of parental mental health problems (i.e., depression) and may partially attenuate the association between maltreatment and adult health. Further, maternal paternal depression is a crude indicator for genetic heritability of mental health problems. Income was entered into the model as a continuous variable and included wages, social security, pension, and any other forms of income. Education was used as an ordinal variable ranging from 1 (No school or some grade school) to 12 (PhD, MD, JD, or other professional degree). Age of respondents was entered as a continuous variable. Gender was coded as dichotomous variable (male/female). Race was also coded as a dichotomous variable (white/minority). Maternal depression, paternal depression, living with an alcoholic in childhood, and ever being on welfare were coded as dichotomous variables (yes/no).

Statistical Analysis

To test the associations between childhood maltreatment, marital support and strain, and adult’s mental and physical health, we used hierarchical

Table 1. Correlations, means, and standard deviations among study variables.

	1	2	3	4	<i>M</i>	<i>SD</i>
1. Maltreatment	–				36.77	13.18
2. Support	-.21**	–			21.79	3.12
3. Strain	0.19**	-.66**	–		12.96	3.64
4. Physical Health	-.21**	-0.03	0.03	–	3.99	0.86
5. Mental Health	-.22**	0.10**	-.16**	0.47**	2.73	.93

Note: ** $p < .01$.

regression. We first conducted correlations among child maltreatment, marital support and strain, and physical and mental health. We then used hierarchical regression in IBM SPSS 25.0 using a stepwise procedure set forth by Cohen et al., (2014) for testing moderation. We used a stepwise process for entering in our variables (Cohen et al., 2014). In the first step, we entered in control variables including age, living with an alcoholic in childhood, maternal and paternal depression during childhood, ever being on welfare, gender, race, education, and income. In the second step, we included a mean-centered term for childhood maltreatment, marital support, and marital strain. Entering control variables in the first step and independent variables in the second step provides a test to determine whether independent variable(s) account for a significant proportion of variance in the outcome variable above and beyond the contributions of control variables. In the third step, we entered the three interaction terms including support by strain, childhood maltreatment by support, and childhood maltreatment by strain, which again provides a test to determine whether interaction terms account for a significant amount of variance. We present only unstandardized results for ease of interpretation (Cohen et al., 2014).

Results

Results of bivariate correlations, means, and standard deviations can be seen in Table 1. Next, we used hierarchical regression to test moderation using two separate models: one for mental health and one for physical health. Additionally, because multicollinearity can occur when testing moderation (Cohen et al., 2014), we tested for multicollinearity prior to examining results and found no problems. Variance inflation factor (VIF) were all below 3.9 and tolerance were above 0.254 indicating no multicollinearity according to the guidelines put forward by Bowerman and O'connell (1990).

Table 2. Unstandardized results of hierarchical multiple regression testing childhood maltreatment and marital support and strain on adult’s health outcomes.

	Physical Health		Mental Health	
	B (SE)	R ² Change	B (SE)	R ² Change
<i>Step 1</i>				
Intercept	2.801 (0.797)***	0.078	2.307 (0.749)**	0.118*
Age	-0.001 (0.006)		0.004 (0.006)	
Lived with Alcoholic	0.037 (0.157)		0.095 (0.147)	
Maternal Depression	-0.070 (0.134)		0.138 (0.126)	
Paternal Depression	-0.068 (0.170)		0.481 (0.160)**	
Ever on Welfare	0.201 (0.234)		-0.584 (0.220)*	
Gender	-0.393 (0.139)**		0.108 (0.131)	
Race	-0.411 (0.325)		0.473 (0.305)	
Education	-0.008 (0.030)		0.084 (0.028)**	
Income	0.001 (0.000)**		0.001 (0.000)	
Step 2		0.058*		0.125***
Maltreatment	-0.015 (0.005)**		-0.017 (0.005)*	
Support	0.067 (0.038)		0.011 (0.036)	
Strain	0.036 (0.025)		-0.076 (0.023)**	
Step 3		0.042**		0.051**
Maltreatment X Support	-0.003 (0.002)		0.002 (0.002)	
Maltreatment X Strain	-0.004 (0.001)*		-0.003 (0.001) ⁺	
Support X Strain	-0.009 (0.006)		-0.009 (0.006)	
Total R ²		0.178		0.294

Note: + = $p < .06$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Regarding physical health, control variables in step one accounted for 7.8% of variance in adult physical health (see Table 2). Gender ($b = -0.393$, $p < .01$) and income ($b = 0.001$, $p < .01$) were the only significant predictors. Specifically, women and adults who reported greater income tended to report better physical health. In the second step, childhood maltreatment was associated lower levels of physical health ($b = -0.015$, $p < .01$) while marital support ($b = 0.067$, $p > .05$) and strain ($b = 0.036$, $p > .05$) were not. Step two accounted for an additional 5.8% of variance in physical health. In step three, the strain by maltreatment interaction terms was statistically significant ($b = -0.004$, $p < .05$) and the plot can be seen in Figure 1. When strain was low (1 SD below the mean) in adults’ marriage, the association between childhood maltreatment and adult physical health was relatively constant; however, when marital strain was high (1 SD above the mean),

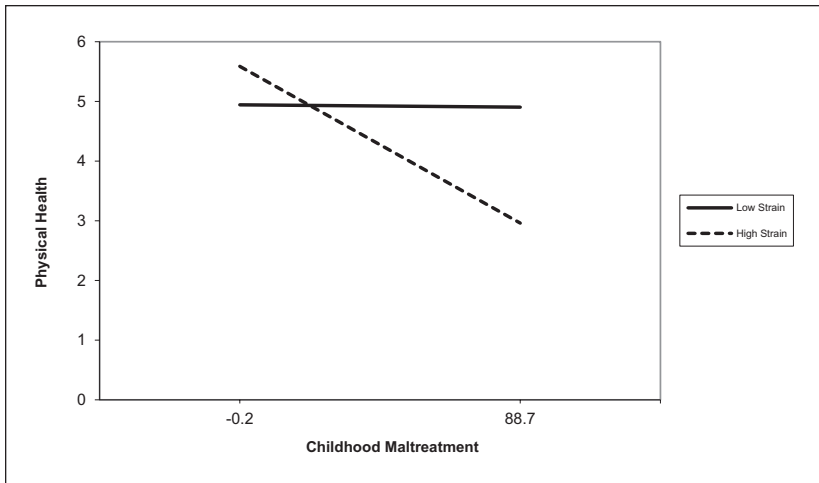


Figure 1. Interaction plot between childhood maltreatment and marital strain on adult's physical health.

Note: High strain is defined by 1 standard deviation above the mean and low strain defined by one standard deviation below the mean.

adults reported significantly lower levels of physical health. The support by maltreatment ($b = -0.003, p > .05$) and support by strain ($b = -0.009, p > .05$) interaction terms were not significant. The third step accounted for a significant proportion of variance (4.2%). Overall, the model accounted for 17.8% of the variance in subjective evaluations of physical health

In a separate model, we tested adult's mental health. In relation to subjective evaluations of mental health, paternal depression ($b = 0.481, p < .01$), ever being on welfare ($b = -0.584, p < .05$), and education ($b = 0.084, p < .01$) were significant predictors. Based on the coding of the variables, results indicate that adults who did not have a depressed father, who reported higher levels of education, and had never been on welfare reported better mental health. Overall, the first step accounted for 11.8% of the variance in adult mental health. In the second step, childhood maltreatment ($b = -0.017, p < .05$) and strain ($b = -0.076, p < .01$) were associated with poorer mental health, indicating that greater levels of maltreatment and greater perceptions of marital strain were associated with lower levels of mental health. Marital support was not a significant predictor of adult mental health ($b = 0.011, p > .05$). Step two accounted for 12.5% of the variance in adult mental health. In step three, the interaction terms between maltreatment and support, maltreatment and strain,

and support and strain were entered. The childhood maltreatment by marital strain interaction was marginally significant ($b = -0.003$, $p = .059$); however, the interaction term between maltreatment and support ($b = 0.002$, $p > .05$) and support by strain ($b = -0.009$, $p > .05$). Overall, the model accounted for 29.4% of the variance in adult's mental health.

Discussion

Childhood maltreatment is well understood risk factor for poor physical and mental health in adulthood (Afifi et al., 2012, 2013; Bonomi et al., 2008; Cougle et al., 2010). Life course theory suggests that adults who were maltreated in childhood experience an altered developmental trajectory over the life course, leaving them at-risk for greater accumulation of disadvantage (D'Andrea et al., 2012; Elder, 1998). The marital relationship can either be a source of great distress, thereby increasing risk for health problems, or a protective factor, offering psychosocial resources buffering health problems (Whiffen et al., 2000). These propositions have been rarely examined and consequently the goal of the current study was to examine marital support and strain as moderator of the relationship between the severity of childhood maltreatment and adult mental and physical health. We found that childhood maltreatment demonstrated a direct link with adults' subjective evaluations of physical and mental health such that greater maltreatment was associated with more negative evaluations of both physical and mental health. Marital strain was associated with poorer mental health but not physical health. Further, we found an interaction between childhood maltreatment and marital strain where the relationship between childhood maltreatment and physical health was relatively constant when there were low levels of marital strain; however, adults who reported more severe childhood maltreatment and high levels of marital strain, reported significantly worse physical health. Regarding mental health, the interaction term was marginally significant. Interestingly, marital support was unrelated to adult's mental or physical health nor did it buffer the effects of maltreatment on mental or physical health.

We found several significant main effects. Adults who experienced more severe childhood maltreatment reported worse physical health. Research established the childhood maltreatment is associated with altered physiological functioning and that those alterations can influence adult physical health (Afifi et al., 2013; D'Andrea et al., 2012; Widom et al., 2018; van der Kolk, 2003; Yang et al., 2014). Childhood maltreatment, but not marital support or strain, was positively associated with adult physical health. Prior research has noted a more consistent pattern of associations between support, strain, and physical health (e.g., Walen & Lachman, 200) but these results suggest that

when considering maltreatment, the impact of support and strain is reduced. Although the life course perspective suggests development is continual, results of the current study suggest maltreatment in childhood, particularly in developmentally crucial stages such as infancy and adolescence, can potentiate health issues in middle adulthood (Widom et al., 2015; 2018).

Regarding mental health, marital strain, but not marital support, were associated with adult mental health, which is consistent with a large body of research (Newsom, et al., 2005; Walen & Lachman, 2000). The negative effects model suggests that strain, compared to support, is a stronger predictor of adult mental health and this may be due to negative interactions occurring less often, so when they do occur, they are more jarring and have a greater impact (Ingersoll et al., 1997). Adults who were maltreated in childhood may be particularly sensitive to negative interaction such as conflict, criticism, and their partner being unreliable. Surprisingly, support was not a factor for either mental or physical health. Although it was contrary to our predictions, marital support may operate differently among adults who were maltreated. Marital support may be helpful in understanding the day-to-day experiences, but adults who are maltreated often carry residual shame, guilt, stigmatization, and hopelessness (Finkelhor & Browne, 1985) and if those underlying feelings go unresolved then adults may continue to experience mental health problems. Additionally, prior research examining marital support have not considered the role of marital strain (e.g., Whiffen et al., 2000). By investigation of both support and strain, these current findings suggest marital processes in the context of maltreatment adult mental health are more nuanced than previously thought.

Consistent with life course theory which suggests that greater accumulated adversity over time will adversely affect adult mental and physical health (Elder, 1998; Umberson et al., 2014), the primary contribution of the current study was documenting that marital strain was a potential moderator of association between childhood maltreatment and adult physical health. Further, the marginally significant interaction term regarding mental health suggests there may also be an impact on mental health. These findings indicate that adults who experienced more severe maltreatment, and then subsequently experienced greater strain in their marriage, reported lower levels of physical health. This, however, was not the case for adults who reported lower strain, where the association between maltreatment severity and physical health remained relatively consistent. Prior research has noted that childhood adversity is linked to poorer health through accumulated disadvantage (Edler, 1998; Umberson et al., 2014) and specifically found that strain, relative to support, has a more detrimental effect on adult physical health over time (Umberson et al., 2006). Consistent with previous studies, the current study documented

that childhood maltreatment severity is an important form of early adversity to consider when understanding adult physical health (Afifi et al., 2013). Childhood maltreatment has been associated with negative neurobiological sequelae and these problems can last into adulthood, thereby causing physical health problems (D'Andrea et al., 2012; Widom et al., 2015).

One of the more compelling findings of our study is that partner support did not buffer the effects of childhood maltreatment on adult mental or physical health. One potential reason is that although subjective evaluations are valid measures of health (Ahmad et al., 2014; Kiecolt-Glaser & Newton, 2001), support may emerge as predictor of specific syndromes or symptom clusters. For example, Whiffen et al. (2000) found that intimacy within adult's intimate relationship moderated the relationship between sexual abuse and depressive symptoms. It could also be that marital support could be perceived as smoothing, overbearing, intrusive, or an attempt to control the person (Kahn & Antonucci, 1980) and adults who are maltreated may be particularly sensitive to others being intrusive or attempting to control their behavior. Alternatively, adults who receive high levels of emotional support may end up continuing to engage in poor health behaviors (e.g., poor diet, exercise, alcohol use) or become codependent (Antonucci et al., 2013). Finally, greater severity of childhood maltreatment has been linked to less emotional support in adult's marriages (Whisman, 2014) and it may be that support does not protect against health problems simply because there is less perceived support within the marriage. More specifically, adults who were maltreated are at increased risk to be in a relationship with partners who are unfaithful, emotionally unavailable, and violent (Testa et al., 2005) and in marriages that are more unstable (Colman & Widom, 2004). Consequently, there may be fewer opportunities for supportive behavior within the relationship. Prior research has noted that adults who were maltreated also provide less emotional support to their partners (Fitzgerald, Hamstra, & Lederman, 2020), thus there would be more negative cycles of interaction characterized by strain and fewer positive cycles of interaction characterized by support.

Limitations and Future Directions

Despite the strengths of the study, including the use of a large sample of married men and women, use of a comprehensive measure of childhood maltreatment, and being among the first to explore the marital relationship as a protective factor in understanding child maltreatment and adult mental and physical health, the study is not without limitations. First, the study is cross-sectional, therefore directionality of the marital support, strain, and health outcomes cannot be established. It is plausible that the relationship between

support and strain and health is bi-directional where poor health leads to more strain and less support which, in turn, leads to poorer health. Second, although we investigated maltreatment severity, we cannot discern if specific forms of childhood abuse and neglect play a more or less prominent role in understanding adult's physical and mental health. Third, our study investigated adult's subjective evaluations of their overall mental and physical health and, although there is validity to these measures, investigating specific mental and physical health problems would be a positive next step. Further, although research has investigated marital strain as a predictor for poor health, chronic conditions such as diabetes may leave adults vulnerable to more strain or perhaps more support while developed physical health conditions (i.e., heart attack) may shape marital interactions differently. Prospective research identifying the development of medical conditions over time could prove to be valuable given the physical health problems associated with childhood maltreatment.


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