



Parental Emotional Support and Health Problems: The Role of Social Support and Social Strain

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Abstract

A lack of emotional support from parents during childhood has been found to predict both physical and mental health problems (i.e., chronic health conditions, depression) during middle and older adulthood. Less research has examined the factors that may either buffer or amplify this association. Using the Midlife Development in the United States (MIDUS) national sample ($N = 7,108$; age = 20–75 years), the current study examined the moderating role of social support and social strain from three sources (i.e., family, friends, partner/spouse) on the association between early parental support and changes in chronic health conditions and depression. Poisson models indicated that low levels of early parental support were associated with greater health problems over time. However, the association between parental support and chronic health conditions was only significant for individuals with greater levels of friend strain. Additionally, the association between parental support and depression was only significant for individuals with low levels of support from a partner/spouse and high levels of strain from relationships with a partner/spouse. The current findings demonstrate the important role of source-specific social support and social strain in buffering individuals' risk for experiencing increased problematic outcomes in response to a lack of early parental support.

Keywords Parental support · Social support · Social strain · Chronic health conditions · Depression

Negative parenting practices exhibited during childhood, such as unsupportive parenting or parenting characterized by low levels of emotional support, have consistently predicted problematic physical and mental health outcomes among youth (Repetti et al., 2002). Children who receive a lack of parental support continue to remain at increased risk for experiencing chronic health conditions and depression later in life (Shaw et al., 2004). However, little is known about the social experiences that may buffer against or place individuals at greater risk for negative outcomes stemming from early reduced parental support. Social support and strain both influence individuals' likelihood of experiencing problematic health outcomes and mortality in response to other early negative experiences. For instance, greater social

support and less social strain protect against the negative long-term effects (i.e., mortality risk) of abusive parenting experienced earlier in life (Chiang et al., 2018). Thus, the primary goal of the current study was to examine whether social support and strain from three sources: family, friends, partner or spouse moderate the association between a lack of parental support during childhood and changes in chronic health conditions and depression during middle and older adulthood.

The importance of early familial experiences on physical and mental health problems has gained increasing attention in the literature (Chiang et al., 2018; Herrenkohl et al., 2016). However, the majority of this research has focused on very extreme negative experiences during childhood, such as parental loss or experiencing parental abuse. Although these early negative experiences predict greater problematic outcomes ranging from poor physical (i.e., general health) and mental (i.e., depression, anxiety) health, and increased mortality risk (Chiang et al., 2018; Herrenkohl et al., 2016), it remains important to examine the role of more common early negative familial experiences on later health outcomes. For instance, experiencing lower levels of emotional support

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from parents early in life is not considered abuse, but it can still have a lasting impact on individuals' physical and mental health throughout adulthood (Shaw, 2006; Shaw et al., 2004). Parental emotional support refers to acts of caring, acceptance, and assistance that are expressed by a parent toward a child (Shaw et al., 2004). This warm, supportive, and responsive parenting is consistently related to greater levels of adjustment and well-being throughout childhood and adolescence (e.g., Contreras et al., 2000; Zimmermann et al., 2008), whereas a lack of emotional support is associated with problematic outcomes, including poorer psychosocial functioning and health behaviors among children (Repetti et al., 2002).

Life-course theory suggests that different points of an individual's life are intimately connected with one another (Elder et al., 1996). Consistent with this idea, individuals who perceive lower levels of early parental emotional support are at greater risk for experiencing later problematic outcomes (e.g., depression, chronic health conditions, substance use, poorer emotion-regulation strategies; Moran et al., 2018; Shaw, 2006; Shaw et al., 2004). A lack of parental support experienced early in life may impair individuals' health-enhancing psychological resources, including self-worth and personal control throughout childhood and adolescence (Brown & Harris, 1978; Leondari & Kiosseoglou, 2002). However, these impairments are thought to persist into early adulthood and place these individuals at greater risk for experiencing physical and mental health problems later during adulthood, including greater depression, poorer self-reported health, and lower levels of recovery from illness (MacDonald & Martineau, 2002; Richman & Flaherty, 1986). Because a lack of emotional support received from parents early in life appears to place individuals at risk of long-term health problems, the current study examined the role of parental emotional support during childhood on both physical and mental health problems during adulthood.

Social Support as a Buffer

Despite the recent attention placed on understanding the long-term effects of early parental support (Moran et al., 2018; Shaw, 2006; Shaw et al., 2004), less emphasis has been placed on understanding the factors that may either buffer or amplify individuals' likelihood of experiencing the poor health trajectories that may result from a lack of early parental support. One factor that may decelerate the poor health trajectories set in motion by a lack of parental support during childhood is social support from sources other than parents. Social support, or receiving care, assistance, or understanding from others, is linked with greater psychological well-being and fewer physical health problems (Antonucci & Jackson, 1987; Schwarzer & Leppin, 1991).

It has been posited that forming positive relationships with others promotes well-being and may bolster an individual's determination to overcome illness and make more informed decisions about health-care services (Merrick et al., 2013; Zhao et al., 2010). Consistent with this idea, social support from various sources, including family members, friends, and a partner or spouse has been found to predict lower levels of depression, greater psychological well-being, fewer health problems, and better subjective health among several samples of middle-aged and older adults (Brooks et al., 2014; Okun & Keith, 1998; Walen & Lachman, 2000).

Support received from one's family, friends, and partner or spouse, is consistently associated with fewer mental and physical health problems throughout adulthood. Social support received during adulthood may be especially beneficial for individuals who received a lack of emotional support early in life (Herrenkohl et al., 2016). Although it currently remains unclear how social support influences the association between early parental support and later physical and mental health outcomes, research has examined whether social support aggregated across various sources (i.e., family, friend, partner/spouse) buffers against the influence of childhood abuse on premature mortality (Chiang et al., 2018). Notably, childhood emotional abuse was associated with premature mortality for individuals with lower levels of social support, but not individuals with higher levels of social support. Similarly, in a separate study, social support from family and friends, assessed separately, was found to buffer the association between childhood sexual abuse and perceptions of loss (Murthi & Espelage, 2005). Taken together, social support may offset individuals' likelihood of experiencing health problems in response to negative experiences during childhood.

The majority of the research examining the role of social support on the association between early negative experiences and later health outcomes has aggregated across source of social support (i.e., support received from family, friends, and partner/spouse; Chiang et al., 2018; Herrenkohl et al., 2016). However, when examining the direct role of social support on health outcomes, there is evidence suggesting that specific sources of social support are differentially associated with various health problems. For instance, support received from one's partner or spouse has been found to be more strongly associated with psychological well-being and health compared to support received from other sources (i.e., family members, friends; Walen & Lachman, 2000). Additionally, strain from both family members and a partner/spouse predicted health problems over and above strain received from friends (Walen & Lachman, 2000). In order to understand whether source of social support also differentially influences the associations among early negative experiences and later health problems, the current study examined the role of family support, friend support, and partner/

spouse support as separate moderators of the association between early parental support and changes in chronic health conditions and depression during adulthood.

Social Strain as a Risk Factor

Researchers have also begun to stress the importance of examining the negative side of social exchanges, known as social strain, in addition to examining social support (Brooks et al., 2014). Notably, social strain is not simply the inverse of support, but instead is generally uncorrelated with support, suggesting that support and strain are independent constructs (e.g., Abbey et al., 1985; Okun & Keith, 1998). Social strain includes receiving demands, criticism, and being let down by others in one's social network causing the individual to experience psychological stress (Rook, 1992; Walen & Lachman, 2000). There is some evidence suggesting that unlike social support, social strain is associated with more health problems, such as poorer cardiovascular and immune functioning (Okun & Keith, 1998). Similarly, strain from one's family and partner or spouse was found to predict lower levels of subjective health (Walen & Lachman, 2000). Thus, it remains important to examine not only the role of social support on the association between a lack of early parental support and later health problems, but also the role of social strain. Because social strain has been associated with greater health problems among adults, it is possible that high levels of strain may exacerbate the negative association between early parental support and later chronic health conditions and depression. It may be important for practitioners to focus not only on increasing an individual's social support, but also decreasing social strain in order to best reduce an individual's risk for experiencing health problems as a result of low levels of early parental support.

The Current Study

The current study aimed to better understand the factors that may influence individuals' likelihood for experiencing increases in health problems in response to a lack of parental support experienced during childhood. The first aim was to examine whether the association between parental support and each change in health problems varied as a function of adults' overall social support and overall social strain, averaged across three sources (i.e., family, friends, partner/spouse). It was hypothesized that the negative association between parental support and changes in each health problem would be weaker for individuals with higher levels of social support, but stronger for individuals with higher levels of social strain. There is some evidence suggesting that the role of social support and

social strain on health problems during adulthood may vary depending on the source of support or strain (e.g., Brooks et al., 2014; Walen & Lachman, 2000). Therefore, the second aim of the current study was to examine the differential role of family, friend, and partner/spouse support and strain on the association between parental support and change in health problems. Because findings regarding the role of specific sources of support and strain on health outcomes have been mixed, aim three was exploratory and specific hypotheses were not made. However, it was generally expected that support and strain received from family members and a partner/spouse would influence the associations between a lack of early parental support and change in health problems more strongly than support and strain received from friends.

Method

Participants

Deidentified data were obtained from the National Survey of Midlife Development in the United States (MIDUS), which is an interdisciplinary longitudinal study examining midlife development (Brim et al., 2004). The goal of the MIDUS study was to recruit a sample of adults between the ages of 25 and 75 to better understand the process of midlife development. The first phase of the study (MIDUS I) included 7,108 non-institutionalized, English-speaking adults recruited from a national random digit dial subsample between the years of 1994 and 1996. Once potential participants consented to the study, they completed an approximately 30-min telephone survey and were mailed a battery of self-administered questionnaires that took approximately two hours to complete. Participants then sent the questionnaires back to the research study team. If surveys were not returned, participants were contacted and sent new questionnaires. The second phase (MIDUS II; Brim et al., 2004) occurred approximately ten years later, between 2004 and 2006 and retained about 75% of the original sample (adjusted for mortality). Participants completed a follow-up telephone survey and were mailed a battery of self-administered questionnaires.

Because the current study utilized full information maximum likelihood to estimate missingness, all 7,108 cases were used in analyses ($M_{\text{age}} = 46.38$ years, $SD = 12.98$; range = 20–75 years). Approximately half of the sample was female (51.6%) and 61.3% obtained a post-secondary education. The majority of participants self-identified as White or European American (90.1%), with a smaller portion (5.2%) identifying as Black or African American. Approximately 65.7% of the sample reported being married.

Measures

Parental Emotional Support

Participants' retrospective report of parental support from their childhood was assessed using data from MIDUS I. Participants completed a single item rating their relationship with their mother or the woman who raised them and a single item rating their relationship with their father or the man who raised them on a 5-point scale ranging from 1 (*Poor*) to 5 (*Excellent*). Six additional items asked participants to indicate the extent to which their mother figure and father figure engaged in warm and supportive parenting behaviors (e.g., "How much did s/he understand your problems and worries?") on a 4-point scale ranging from 1 (*Not at all*) to 4 (*A lot*). The first item was multiplied by 0.75 to maintain continuity with the other six items. A mean score was created for support from mothers and support from fathers, separately. Internal reliability was 0.91 and 0.93 for mothers and fathers, respectively. Consistent with the previous work (e.g., An & Cooney, 2006; Moran et al., 2018; Rothrauff et al., 2009), a composite variable (i.e., parental support) was created by averaging the means of the maternal and paternal support scales. For participants who reported on only one parent (5% of participants), that single rating was used.

Social Support

Participants responded to 14 items to assess social support from family (excluding partner or spouse), friends, and partner or spouse on a 4-point scale ranging from 1 (*A lot*) to 4 (*Not at all*) at MIDUS II. Responses were reverse coded, such that higher scores indicated greater levels of support. Four similar items were asked for each source (e.g., "How much do they care about you?"; "How much do they understand the way you feel about things?"). Two additional items were asked to assess support from partner or spouse (i.e., "How much does he or she appreciate you?"; "How much can you relax and be yourself around him or her?"). A mean score was computed for each social support variable (i.e., family, friend, partner/spouse). Additionally, a total social support variable was computed by averaging the means of the family support ($\alpha=0.84$), friend support ($\alpha=0.88$), and partner/spouse support scales ($\alpha=0.91$). If participants did not have a partner or spouse, they had a missing value for partner support and strain.

Social Strain

Participants also responded to 14 items asking about the amount of social strain they receive from family members (excluding partner or spouse), friends, and partner or spouse

on a 4-point scale ranging from 1 (*Often*) to 4 (*Never*) at MIDUS II. Responses were reverse coded so that higher scores reflected greater social strain. Similar to social support, four similar items were asked for each source (e.g., "How often do they make too many demands on you?"; "How often do they criticize you?"). Two additional items were asked to assess strain from partner or spouse (i.e., "How often does he or she argue with you?"; "How often does he or she make you feel tense?"). A mean score was computed for each social strain variable (i.e., family, friend, partner/spouse). Additionally, a total social strain variable was computed by averaging the means of the family strain ($\alpha=0.79$), friend strain ($\alpha=0.79$), and partner/spouse strain scales ($\alpha=0.88$).

Chronic Health Conditions

To index total health burden, participants reported "yes" or "no" to assess whether they had experienced or been treated for any of the 29 listed conditions over the past 12 months (e.g., ulcers, diabetes, stroke). A count variable was constructed using both MIDUS I and MIDUS II data, with higher scores reflecting a greater number of chronic health conditions. This approach has been used in previous research on multimorbidity quantification (e.g., Fortin et al., 2005).

Depressed Affect

To capture depressed affect, participants who indicated that they were depressed for at least two weeks in the past year responded "yes" or "no" to seven questions about depressed affect during two weeks in the past 12 months (e.g., "Did you lose interest in most things?"; "Did you have more trouble falling asleep than usual?"; "Did you think a lot about death?") at MIDUS I ($\alpha=0.95$) and MIDUS II ($\alpha=0.95$). Participants who indicated that they were not depressed for at least two weeks in the past year were recoded as a 0, rather than missing, for depressed affect at each wave (MIDUS I $n=5264$, MIDUS II $n=3935$). A count variable from 0 to 7 was constructed, with higher scores indicating greater depressed affect.

Analytic Technique

Data were analyzed using Poisson models to test associations among parental support, chronic health conditions, and depressed affect moderated by social support and social strain. First, a Poisson model was estimated in which health outcomes (i.e., chronic health conditions, depressed affect) were specified as separate endogenous variables. Parental support was specified as an exogenous variable. Demographic characteristics (age, sex, race, education), as well as chronic health conditions and depressed affect at MIDUS

I were entered as covariates predicting chronic health conditions and depressed affect at MIDUS II, thus estimating change in chronic health conditions and depressed affect. In order to address research question 1, interaction terms were created between parental support and total social support (Parental Support X Total Social Support), as well as parental support and total social strain (Parental Support X Total Social Strain). Parental support, total social support, total social strain, and both interaction terms were examined as predictors of chronic health conditions and depressed affect at MIDUS II while controlling for demographic characteristics and MIDUS I health outcomes. To address research question 2, interaction terms were created between parental support and each specific source of social support and strain (Parental Support X Family Support, Parental Support X Family Strain, Parental Support X Friend Support, Parental Support X Friend Strain, Parental Support X Partner/Spouse Support, Parental Support X Partner/Spouse Strain) in order to address research question 3. A Poisson model was then estimated in which parental support, each source of social support and social strain, and each interaction term were entered as predictors of chronic health conditions and depressed affect at MIDUS II while controlling for demographic characteristics and health outcomes at MIDUS I. Chronic health conditions and depressed affect at MIDUS I and MIDUS II were specified as count variables, and thus, a Poisson model was estimated. In order to account for the large number of 0 scores on depressed affect, we also ran zero-inflated Poisson models to address all research questions. Because findings were entirely consistent with our initial models, we have presented findings from the Poisson models throughout the results for parsimony. With count variables, means, variances, and covariances are not sufficient statistics for model estimation, and thus, chi-square and related fit statistics are not computed (Muthén & Muthén, 1998–2012). In order to account for this issue, we also ran our models with our outcome variables specified as continuous variables to obtain fit statistics. The model was considered to fit the data well based on the following current recommendations: a significant chi-square value, comparative fit index (CFI) > 0.90, and root mean square error of approximation (RMSEA) < 0.08 (Kline, 2005).

Multiple steps were taken to account for the complex design. To account for non-independence introduced by nesting, a cluster variable was created, which represented individuals who were a part of either the twin sample (26.9%) or the sibling sample (13.4%), and thus, were nested within family. Regarding missing data, at MIDUS I, rates of missingness were 11.4% for parental support, 12.2% for family and friend support/strain, 34.5% for partner/spouse support/strain, 11.0% for chronic health conditions, and 0.2% for depression. At MIDUS II, rates of missingness were 43.5% for family support/strain, 43.7% for friend support/strain,

57.0% for partner support/strain, 43.1% for chronic health conditions, and 30.2% for depression. Additionally, to aid in missing data estimation due to the longitudinal nature of the study, we utilized FIML with robust standard errors to estimate missingness. All analyses were performed in *Mplus* version 8.

Results

Table 1 presents descriptive statistics and bivariate correlations among parental affection, social support/strain variables, and health outcomes. All main variables of interest were correlated with one another in the predicted directions. Specifically, parental support was associated negatively with both chronic health conditions and depressed affect at MIDUS II. Furthermore, total social support, as well as each source of social support (i.e., family, friend, partner/spouse) were associated negatively with MIDUS II chronic health conditions and depressed affect, whereas total social strain and each source of social strain were associated positively with MIDUS II chronic health conditions and depressed affect.

Primary Analyses

A Poisson model was estimated to test associations among parental support assessed as an observed variable at MIDUS I and change in health outcomes (i.e., chronic health conditions, depressed affect) assessed as observed variables at MIDUS II after accounting for age, sex, race, education, and health outcomes at MIDUS I. Model fit indices indicated that the model provided a good fit to the data: $X^2 = 18.58$, $p < 0.001$, CFI = 0.90, RMSEA = 0.049 (CI: 0.043, 0.054). Covariances were specified among parental support and age, sex, race, and education. Table 2 displays the standardized estimates, unstandardized estimates, and standard errors for this model. After accounting for demographic characteristics, MIDUS I chronic health conditions, and MIDUS I depressed affect, parental support was associated negatively with depressed affect, such that adults who reported lower levels of parental support during childhood reported greater levels of depressed affect during adulthood. Additionally, adults who reported lower levels of parental support during childhood reported a greater number of chronic health conditions during adulthood although this association was marginal ($p = 0.052$).

Next, a Poisson model was tested to examine whether the associations among parental support, change in chronic health conditions, and change in depressed affect varied by total social support and total social strain. Demographic characteristics (i.e., age, sex, race, education) and MIDUS I health outcomes were entered as covariates. Parental

Table 1 Descriptive statistics and correlations for key study variables

	M (SD)	Par aff	Total support	Total strain	Fam support	Fam strain	Friend support	Friend strain	Sp/Part support	Sp/Part strain	CHC	Dep affect
Par aff	2.94 (0.64)	-										
Total support	3.39 (0.48)	0.35***	-									
Total strain	2.08 (0.45)	-0.23***	-0.39***	-								
Fam support	3.43 (0.62)	0.39***	0.79***	-0.34***	-							
Fam strain	2.11 (0.61)	-0.25***	-0.32***	0.82***	-0.39***	-						
Friend support	3.23 (0.67)	0.19***	0.77***	-0.19***	0.39***	-0.14***	-					
Friend strain	1.93 (0.51)	-0.10***	-0.21***	0.76***	-0.17***	0.48***	-0.14***	-				
Sp/Part support	3.58 (0.57)	0.19***	0.65***	-0.43***	0.27***	-0.17***	0.19***	-0.12***	-			
Sp/Part strain	2.23 (0.62)	-0.18***	-0.43***	0.73***	-0.19***	0.30***	-0.15***	0.27***	-0.64***	-		
CHC (M2)	2.42 (2.53)	-0.09***	-0.10***	0.14***	-0.08***	0.14***	-0.05**	0.09***	0.11***	0.10***	-	
Dep affect (M2)	0.51 (1.60)	-0.13***	-0.12***	0.13***	-0.12***	0.13***	-0.06***	0.07***	-0.10***	0.21***	0.21***	-

Some variable names have been shortened

Par Aff Parental Affection, Fam Family, Sp/Part Spouse/Partner, CHC Chronic Health Conditions, Dep Affect Depressed Affect

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

support, total social support, total social strain, as well as two interaction terms (Parental Support X Total Support, Parental Support X Total Strain) were entered as predictors of chronic health conditions and depressed affect. Model fit indices indicated that the model provided a good fit to the data: $X^2 = 32.74$, $p < 0.001$, CFI = 0.98, RMSEA = 0.046 (CI: 0.042, 0.049). Covariances were specified among parental support and each demographic characteristic, as well as parental support and both interaction terms, total social support and the interaction between parental support and total social support, as well as total social strain and the interaction between parental support and total social strain. Table 2 displays the standardized estimates, unstandardized estimates, and standard errors for this model. Total social strain was associated positively with change in chronic health conditions. However, neither total social support nor total social strain were predictive of change in depressed affect. The associations between parental support and change in each health outcome were not moderated by total social support nor total social strain.

Finally, a Poisson model was tested to examine whether the associations among parental support, change in chronic health conditions, and change in depressed affect varied by specific social support (i.e., family, friend, partner/spouse) and specific social strain (i.e., family, friend, partner/spouse). Demographic characteristics (i.e., age, sex, race, education) and MIDUS I health outcomes were entered as covariates. Parental support, family support, family strain, friend support, friend strain, partner/spouse support, partner/spouse strain, as well as six interaction terms (Parental Support X Family Support, Parental Support X Family Strain, Parental Support X Friend Support, Parental Support X Friend Strain, Parental Support X Partner/Spouse Support, and Parental Support X Partner/Spouse Strain) were entered as predictors of chronic health conditions and depressed affect. Model fit indices indicated that the model provided a good fit to the data: $X^2 = 54.20$, $p < 0.001$, CFI = 0.90, RMSEA = 0.08 (CI: 0.076, 0.082). Covariances were specified among parental support and each demographic characteristic, as well as parental support and all interaction terms, each source of social support and the interactions between parental support and each source of social strain. Table 2 displays the standardized estimates, unstandardized estimates, and standard errors for this model. Family and partner/spouse strain were associated positively with change in chronic health conditions, whereas partner/spouse support was associated negatively with change in chronic health conditions. Additionally, the association between parental support and chronic health conditions was moderated by friend support and friend strain. Although the significance of the interaction term between parental support and friend support suggested that the simple

Table 2 Standardized estimates, unstandardized estimates, and standard errors of path model testing associations among parental affection and health outcomes moderated by social support and social strain

	MIDUS II CHC		MIDUS II Depressed affect	
	β	$B (SE B)$	B	$B (SE B)$
Model 1				
Age	0.14	0.01 (0.01)	- 0.10	- 0.03 (0.01)
Sex (0= Male, 1 =Female)	0.06	0.09 (0.03)	0.07	0.50 (0.10)
Race (0= White, 1 = Other)	0.04	0.14 (0.09)	- 0.02	- 0.36 (0.36)
Education	- 0.05	- 0.02 (0.01)	- 0.02	- 0.03 (0.03)
MIDUS I CHC	0.50	0.14 (0.01)	0.10	0.08 (0.02)
MIDUS I depressed affect	0.07	0.04 (0.01)	0.24	0.20 (0.02)
Parental affection	- 0.02	- 0.04 (0.02) +	- 0.07	- 0.35 (0.09)
R ²	0.23		0.13	
Model 2				
Total support	- 0.10	- 0.01 (0.05)	- 0.17	- 0.34 (0.22)
Total strain	0.38	0.18 (0.04)	0.14	0.32 (0.23)
Affection X total support	- 0.05	- 0.03 (0.06)	0.15	0.01 (0.20)
Affection X total strain	0.14	0.10 (0.06)	- 0.15	0.09 (0.25)
R ²	0.30		0.19	
Model 3				
Family support	0.01	0.01 (0.05)	- 0.02	- 0.19 (0.11)
Family strain	0.15	0.08 (0.03)	0.03	0.08 (0.10)
Friend support	- 0.03	- 0.06 (0.03)	- 0.03	- 0.18 (0.10)
Friend strain	0.02	0.02 (0.04)	- 0.01	- 0.13 (0.12)
Sp/Part support	- 0.16	- 0.23 (0.08)	- 0.16	- 0.68 (0.14)
Sp/Part strain	0.13	0.21 (0.06)	0.20	0.94 (0.10)
Affection X family support	0.03	0.05 (0.04)	0.04	0.04 (0.12)
Affection X family strain	0.01	0.01 (0.04)	- 0.02	- 0.03 (0.13)
Affection X friend support	- 0.14	- 0.10 (0.04)	- 0.01	- 0.07 (0.11)
Affection X friend strain	0.12	0.11 (0.04)	- 0.01	- 0.20 (0.15)
Affection X Sp/Part support	0.01	0.08 (0.08)	0.27	0.57 (0.16)
Affection X Sp/Part strain	0.01	0.09 (0.08)	0.21	0.60 (0.18)
R ²	0.33		0.29	

Some variable names have been shortened

Affection Parental Affection, *CHC* Chronic Health Conditions, *Sp/Part* Spouse/Partner

Bolded values denote statistical significance ($p < 0.05$); + $p < 0.06$

slopes significantly differed from one another, further examination of the simple slopes suggested that the association between parental support and chronic health conditions did not differ at high ($\beta = 0.01$, *ns*) and low levels of friend support ($\beta = - 0.06$, *ns*). However, examination of simple slopes suggested that parental support was associated negatively with change in chronic health conditions for individuals with high levels of friend strain ($B = - 0.18$, $p < 0.01$), but was not associated with change in chronic health conditions for individuals with low levels of friend strain ($B = 0.03$, *ns*; Fig. 1). With regard to depressed affect, parental support and partner/spouse support were associated negatively with change in depressed affect, whereas partner/spouse strain was associated positively with change in depressed affect. Additionally, the association between parental support and depressed affect was moderated by partner/spouse support

and partner/spouse strain. Specifically, the negative association between parental support and change in depressed affect was only significant for individuals with low partner/spouse support ($\beta = - 0.36$, $p < 0.01$; Fig. 2) and high partner/spouse strain ($\beta = - 0.17$, $p < 0.05$; Fig. 3). This association was not significant for individuals with high levels of partner/spouse support ($\beta = - 0.04$, *ns*) and low levels of partner/spouse strain ($\beta = 0.04$, *ns*).

Discussion

A growing body of research has examined the role of parental support during childhood on physical and mental health problems experienced during adulthood. Such research suggests that individuals who experienced lower

Fig. 1 Standardized Values for Parental Affection X Friend Strain Predicting Chronic Health Conditions

EMOTIONAL SUPPORT AND HEALTH PROBLEMS

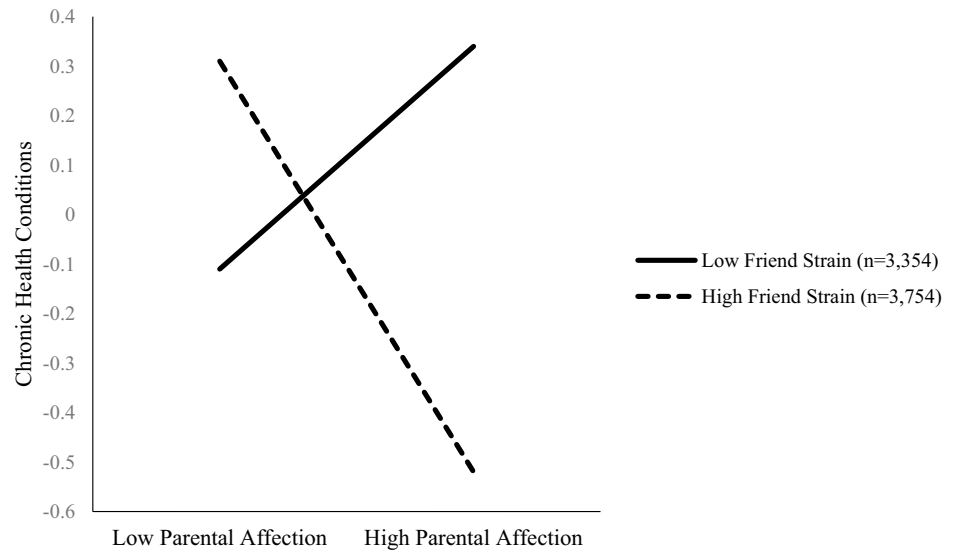
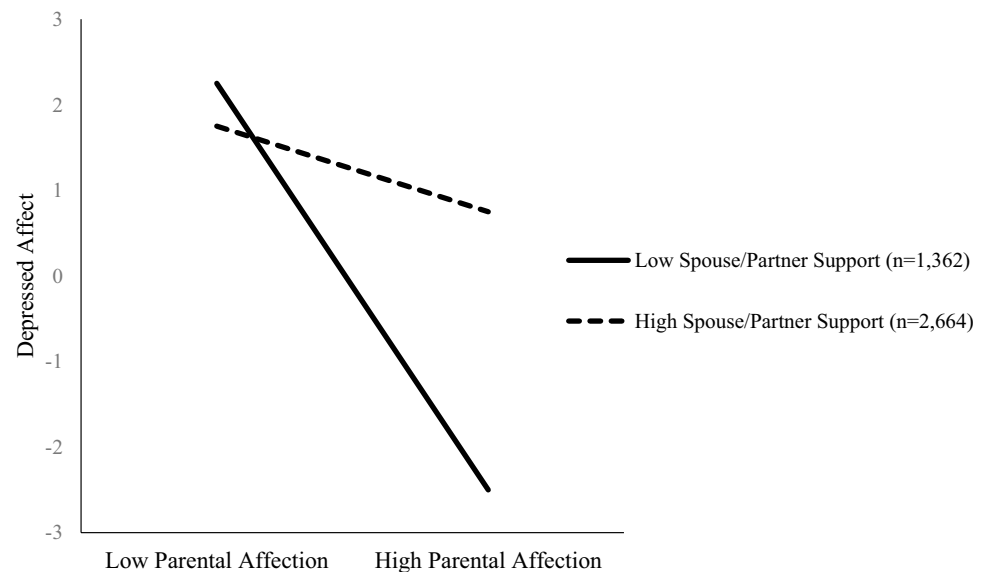


Fig. 2 Standardized Values for Parental Affection X Spouse/Partner Support Predicting Depressed Affect

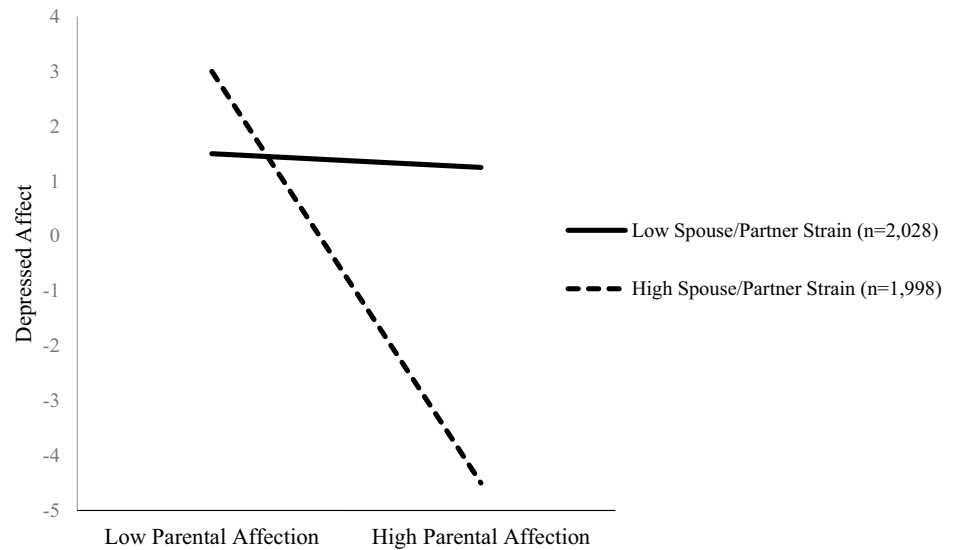


levels of parental support during childhood are at greater risk for experiencing problematic outcomes during adulthood (Moran et al., 2018; Shaw et al., 2004). However, less research has examined the factors that protect individuals against or place individuals at greater risk for experiencing health problems in response to a lack of parental support early in life. The current findings shed light on the moderating role of social support and social strain experienced from three sources (i.e., family, friends, partner/spouse) on the association between early parental support and change in later physical and mental health problems. Although a lack of early parental support was associated with increased chronic health conditions during adulthood, the nature of this association depended on individuals' level of friend

strain. Specifically, parental support was only associated with increased chronic health conditions for individuals with higher levels of friend strain, but this association was not significant for individuals with lower friend strain. Similarly, early parental support was associated negatively with change in later depression. However, this association was only significant for individuals with lower levels of partner/spouse support and higher levels of partner/spouse strain. Generally, findings suggest that having lower levels of strain from friends may protect individuals from experiencing increased chronic health conditions. Additionally, having greater partner/spouse support and less partner/spouse strain may place individuals at less risk for experiencing increased depression in response to a lack of parental support during childhood.

Fig. 3 Standardized Values for Parental Affection X Spouse/ Partner Strain Predicting Depressed Affect

EMOTIONAL SUPPORT AND HEALTH PROBLEMS



Our findings indicated that individuals with lower levels of early parental support reported increased levels of chronic health conditions and depression during adulthood. These findings replicate previous research demonstrating that the current physical and mental health of adults is influenced by parenting behaviors experienced early in life (Shaw et al., 2004). However, current findings suggest that adults' contemporaneous strain from friends, as well as support and strain from a partner/spouse may either lessen or amplify an individual's likelihood for experiencing increased in health problems in response to a lack of early parental support. These findings are generally consistent with hypotheses and with the previous research, which suggests that social support promotes individuals' psychological well-being and protects against physical health problems (Antonucci & Jackson, 1987; Schwarzer & Leppin, 1991), whereas social strain is associated with greater psychological stress and physical health problems (Okun & Keith, 1998; Walen & Lachman, 2000). The observed findings are also consistent with research examining the role of social support on the association between adversity, such as parental abuse, and problematic outcomes experienced early in life (Muller et al., 2000; Tajima et al., 2011). However, this previous research suggests that buffering processes (i.e., social support) occur at the same time as these early negative experiences. The present study expands on this research by suggesting that social support experienced decades after experiencing early negative parenting buffers the negative impact of these experiences. That is, social resources, including increased social support and low levels of social strain, experienced later in life can decelerate the poor health trajectories that may occur in response to a lack of early parental support. If replicated in future research, the current

findings have important potential implications for intervention, as strengthening social relationships may help offset the physical and mental health risks associated with negative parenting early in life.

Consistent with the previous research, which suggests that social strain is not simply the inverse of social support (Abbey et al., 1985; Okun & Keith, 1998), the current findings place emphasis upon the importance of examining both social support and social strain separately. Although the association between early parental support and change in chronic health conditions did not vary by friend support, it was found to vary by friend strain. This finding provides further evidence for the importance of examining these constructs, separately. Thus, focusing on increasing support in social relationships may not be fully adequate, as individuals may still be at increased likelihood of experiencing increased chronic health conditions in response to a lack of early parental support if they are also experiencing high levels of social strain. It may be important for interventions to incorporate strategies both for increasing social support as well as decreasing social strain.

Findings also illustrate the importance of considering the source of social support and strain when examining the role of social relationships on early negative parenting and later physical and mental health problems. Specifically, friend strain influenced the association between parental support and chronic health conditions over and above the influence of family support and strain, friend support, and partner/spouse support and strain. It is possible that strained relationships with friends may lead directly to increased chronic health conditions through decreased immune functioning and heart attack risks (Cohen, 2004), as well as through decreased engagement in leisure activities with friends

(Pressman et al., 2009). Individuals with friendships characterized by high levels of social strain may be less likely to engage in various leisure activities with friends, which has been associated with lower levels of recovery from stress (Pressman et al., 2009) as well as greater chronic health conditions (Hutchinson & Nimrod, 2012).

With regard to depression, partner/spouse support and strain influenced the association between parental support and change in depression over and above support and strain received by family members and friends. The important role of partner/spousal support on change in depression later in life may be explained by socioemotional selectivity theory, which suggests that an awareness of time limitations leads individuals to prioritize emotionally meaningful social partners (Carstensen, 1992; Carstensen et al., 2003; Carstensen et al., 1999). Because social networks become smaller across the lifespan due to decreased social engagement, an individual's spouse or partner may become even more important. Thus, receiving support from a partner or spouse is thought to buffer against increased depression. However, because there may be an increased emphasis on the spouse/partner relationship, receiving strain from this individual may increase depressive symptoms. Specifically, adults may be disappointed by the strain they are receiving from an important social partner, which may negatively influence their coping and depressive symptoms (Choi & Ha, 2010).

Furthermore, it is possible that individuals who received a lack of early parental support may have learned that family members are unsupportive. Thus, influence from friends and a partner or spouse may be especially important for these individuals who may rely on these individuals for disclosure, validation, and security that they did not receive in their relationship with their parents during childhood (Lansford et al., 2003). Previous research examining the moderating role of social support and social strain on early negative familial experiences (i.e., abusive parenting) and later problematic health outcomes and mortality has aggregated across source of support and strain (i.e., family, friends, partner/spouse; Chiang et al., 2018; Herrenkohl et al., 2016). Aggregating across source of support and strain may be one reason explaining null findings from previous research that has examined the role of social support on the association between early parental abuse and physical and mental health problems experienced during adulthood (Herrenkohl et al., 2016). It is possible that the role of social support from specific sources (i.e., friend, partner/spouse) was being masked by other sources of support that may not influence this association (i.e., family). Our findings provide further support for this notion. Specifically, social support and social strain aggregated across source did not influence the association between early parental affection and change in chronic health conditions and depression later in life. Our findings related to source specificity suggest that simply

incorporating strategies to facilitate positive social relationships and reduce negative social relationships may not be enough to reduce health problems related to early negative parenting experiences. Instead, it may be important for practitioners to focus on increasing social support and reducing social strain from particular sources depending on which types of health problems an individual is experiencing.

Limitations and Future Directions

The present study's findings should be interpreted in light of several limitations. Participants in the current sample were primarily White, older, and college educated. Although we statistically controlled for these demographic variables in the current analyses, it is possible that the results may not generalize to other racial, ethnic, age, or education groups. Additionally, parental support was measured by asking adults between the ages of 25 and 74 to recall events that occurred during childhood. It is possible that this passage of time may have influenced participants' memory of the parental support that they received during childhood. Although there is concern over the accuracy of retrospective recall of early childhood experiences, there is evidence that bias in recalling experiences may not be as strong as initially assumed (e.g., Bernstein et al., 1994). With regard to parenting in particular, research has shown that adults' retrospective ratings of their parental support experienced during childhood was consistent with reports from participants' parents (Parker et al., 1979). Furthermore, because participants' report of early parental support was only gathered at baseline, it is possible that an individual's health problems (i.e., chronic health conditions, depression) may influence how they respond to questions about their early parental support, leading to confounding between parental support and health problems. Without multiple waves of data, we are unable to understand the direction of the association between report of early parental support and later chronic health conditions and depression. Thus, future research should aim to examine these associations in more diverse samples with regard to race, ethnicity, age, and education, as well as assess both parental support and later health problems at multiple time points.

The measures used to assess health outcomes (i.e., chronic health conditions, depression) are somewhat limited. The current study relied on a self-report measure, rather than an objective measure of chronic health conditions. Although the study is limited by using only a self-report measure, research has found that self-reports of chronic health conditions are strongly associated with a physician's diagnosis of such health conditions (Henderson et al., 2009). Depression was assessed by asking only participants who indicated that they were depressed either all day long or most of the day everyday or almost everyday to indicate whether they have

experienced seven different symptoms of depression for two weeks in the past 12 months. Because only participants who indicated that they were depressed within the past year were asked to report on their depressive symptoms, the majority of the participants in the current study did not complete the depression measure. Future research should address these limitations by utilizing objective measures of chronic health conditions, such as physician's report, in addition to self-report measures of such health problems. Furthermore, future research should utilize additional measures of depression that will allow for more variability.

An important future research question concerns the potential mechanisms responsible for the associations between early parental support and change in health outcomes later in life. Although we chose to focus on the role of social support and social strain as individual difference factors or moderators that place individuals at more or less risk for experiencing change in health problems, it is also possible that social support/strain may mediate the associations among early support and change in health problems. For instance, individuals who experience negative parenting behaviors have been found to have poorer peer relationships later in life (i.e., adolescence, young adulthood), which may serve as a marker for less peer social support and greater peer social strain (Allen et al., 2002; Mayseless & Scharf, 2007). Because social support and social strain in turn have implications for later psychological well-being and physical health outcomes (Antonucci & Jackson, 1987; Schwarzer & Leppin, 1991), it is possible that early parenting may be indirectly associated with change in later health outcomes through social support and social strain. However, because not all individuals who experience early negative parenting in turn experience negative outcomes (Chiang et al., 2018; Murthi & Espelage, 2005), we chose to identify potential factors (i.e., social support, social strain) that explain individuals' differential risk for experiencing these outcomes in response to early parental support, which is imperative for informing intervention.

The limitations of the current study are balanced with several strengths, including the use of a large, national sample that includes participants representing a wide age range of adults, the use of multiple waves of data, and the novel nature of the research questions asked. Although it is not possible to change individuals' experiences with early negative parenting once they are in adulthood, the current findings provide evidence suggesting that practitioners could alter the social factors that an individual experiences during adulthood to offset the negative health trajectories set in motion by early negative parenting.

The current findings have potentially important clinical implications for targeting social support and social strain from specific sources in therapeutic treatments for chronic health conditions and depression. A lack of parental support

was not associated with chronic health conditions for individuals with lower levels of friend strain or depression for individuals with higher levels of partner/spouse support and lower levels of partner/spouse strain. Therefore, it may be important for practitioners to encourage individuals suffering from these health conditions in response to a lack of early parental support to form positive social relationships characterized by high levels of support and low levels of strain to potentially reduce such health conditions. Furthermore, it may be important to incorporate promoting positive social relationships into treatment of problematic outcomes when working with children or adolescents experiencing a lack of parental support in order to potentially prevent these youth from experiencing the health problems (i.e., chronic health conditions, depression) later in life that are associated with a lack of early parental support.

Author Contributions KR conceived of the study. KR wrote the introduction, methods, results, and discussion sections of the paper. NT and AM made substantial intellectual and conceptual contributions to the design of the project, collaborated with the writing of the paper, and edited the final manuscript.

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Declarations

Conflicts of Interest The authors declare that they have no conflict of interest.

Ethical Approval In conducting this research, the accepted principles of ethical and professional conduct have been followed. The current study was exempt from ethical approval due to the use of publicly available data.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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