PARENTING AND DEPRESSIVE SYMPTOMS IN CHRONICALLY ILL YOUTH

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Abstract

Chronically ill youth experience higher rates of psychological problems, in particular, depression. In healthy youth, parenting behaviors including discipline, rejection, control aversiveness, withdrawal and over-involvement as well as lower levels of support and warmth are important risk factors for the development of depressive symptoms and disorders. However, generally there is a lack of research examining whether parenting behaviors predict depressive symptoms in youth with chronic illnesses. Some cross sectional research indicates that acceptance, support, warmth and criticism relate to levels of depressive symptoms. Yet, there is a dearth of longitudinal studies examining the relationship between parenting and depressive symptoms in chronically ill youth and many studies do not include a non-medically ill sample. In addition, parenting behaviors have largely been assessed using self-report measures and definitions of parenting behaviors vary widely across studies, limiting our understanding of these relationships. The current study examined whether parenting behaviors longitudinally predict depressive symptoms in chronically ill and healthy youth. The study also assessed whether health status moderates the effects of parenting behaviors on youth depressive symptoms. Parenting behaviors were observed in 295 parent-child dyads, 55 of whom had chronic illnesses. Self-reported depressive symptoms were assessed longitudinally over 12-months. Greater parental negative affect and conflict were predictive of higher depressive symptoms over time in chronically ill and healthy youth. Higher levels of parental positive affect and support predicted lower levels of depressive symptoms over time in healthy and chronically ill youth. Responsiveness and criticism did not relate to the emergence of depressive symptoms. No evidence was found suggesting that parenting behaviors differentially predict depressive symptoms in chronically ill youth compared to healthy controls. Findings suggest that affectively

related parenting behaviors (e.g., positive affect, negative affect) constitute a risk factor for the emergence of depressive symptoms in healthy and chronically ill youth. More research is needed to further elucidate these relationships, particularly in chronically ill youth.

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Introduction

Definition and Prevalence

Pediatric chronic illness has been defined as a disorder that occurs in youth 0 to 18 years of age, has a duration longer than three months (or has occurred three or more times in a one year period and will probably reoccur), and is not yet curable or is difficult to treat (Mokkink, van der Lee, Grootenhuis, Offringa & Heymans, 2008). In addition, chronic illnesses in youth typically require frequent medical care and may limit daily activities including school and other usual childhood activities (Compas, Jaser, Dunn & Rodriguez, 2012; Van Cleave, Gortmaker, & Perrin, 2010). Of those youth impacted by chronic illness, 66% meet criteria for a "mild condition" defined as not activity limiting, 29% for a "moderate condition" which limits some activities and 5% of children and adolescents fall under the definition of a "severe condition" or one which is a frequent bother and limits some activities (Barlow & Ellard, 2006).

In the past few decades, diagnosis and treatment efforts targeting chronic conditions have improved outcomes drastically, such that youth are surviving severe medical conditions at extensively higher rates (Halfon & Newacheck, 2010; Mokkink et al., 2008). As a result, chronic health conditions have become common problems for children and adolescents, affecting approximately 15-25% of youth or 15-18 million children and adolescents (Pinquart & Shen 2011a; Van Cleave et al., 2010; van der Lee, Mokkink, Grootenhuis, Heymans & Offringa, 2007). The number of youth affected by chronic illness has increased in the past forty years, and it is thought that the number of children impacted by chronic health conditions is still underestimated, making this a key group for research and intervention efforts (Lenton, Stallard, Lewis & Mastroyannopoulou, 2001; Perrin, Bloom & Gortmaker, 2007; Van Cleave et al., 2010).

Psychological Impact of Chronic Illnesses

Chronic illnesses have a wide-ranging impact on youth. The symptoms associated with these conditions vary greatly depending upon the type and severity of the illness, but have the capacity to interfere with activities of daily living, school attendance, academic functioning, as well as relationships with family members and peers (Barlow & Ellard, 2006; Pinquart & Shen, 2011b). Given the demands that a chronic illness places on children and adolescents, research has examined the rates of psychological problems in this population. Although the findings in this area have historically been mixed, generally data support the existence of higher rates of psychological problems in chronically ill children and adolescents compared with healthy youth (Barlow & Ellard, 2006; Pinquart & Shen, 2011a). While elevated rates of both internalizing and externalizing symptoms have been reported, research suggests that youth with chronic illnesses typically demonstrate higher elevations of internalizing symptoms compared to externalizing symptoms (Karsdorp, Everaerd, King & Mulder 2007; Lavigne & Faier Routman, 1992; LeBovidge, Lavigne, Donenberg, & Miller, 2005; McQuaid, Kopel & Nassau, 2001; Rodenburg, Stams, Meijer, Aldenkamp & Dekovic, 2005). In the internalizing domain, several studies have demonstrated higher rates of depressive symptoms and greater risk for depression in chronically ill children and adolescents than healthy youth (Barlow & Ellard, 2006; Key, Brown, Marsh, Spratt & Recknor, 2001; Pinquart & Shen, 2011b). Given the increased risk for depression in chronically ill youth, it is important to examine correlates and predictors of elevated symptoms in this population.

Correlates and Predictors of Elevated Depressive Symptoms: Parenting Behaviors

For healthy youth, parenting behaviors have emerged as important risk factors for subsequent depression. While the term varies in the research, behaviors toward a child, in this

paper referred to as parenting behaviors, encompasses a wide variety of dimensions including warmth, aversiveness, involvement, discipline, support, control and monitoring (Caron, Weiss, Harris & Catron, 2006; Hipwell, Keenan, Kasza, Loeber, Stouthamer-Loeber & Bean, 2008; McLeod, Weisz & Wood, 2007). In healthy youth, depression is related to harsh discipline, rejection, control, aversiveness, withdrawal and over-involvement as well as lower levels of warmth and support (Hipwell et al., 2008; Kim & Ge, 2000; McLeod et al., 2007; Stice, Ragan & Randall, 2004).

It is reasonable to consider that parenting behaviors may be correlates of depressive symptoms in chronically ill youth, as many theoretical models of adjustment to chronic illness in childhood recognize the influence that parents have. Specifically, the Transactional Stress and Coping Model conceptualizes chronic illness as a stressor to which both children and their families must adapt (Thompson, Gil, Burbach, Kieth & Kinney, 1993). Medical illness may make parenting more difficult for a variety of reasons. Parents most often bear the responsibility for the medical care of these children and adolescents, in addition to the regular demands of raising a child (Barlow & Ellard, 2006). Moreover, parents of medically ill youth may feel overwhelmed due to their child's illness, and may have financial difficulties that contribute to elevated overall stress levels (Drotar, 1992). These factors may promote the development of maladaptive parenting behaviors and attitudes that have the potential to disrupt the psychological functioning of these youth (Holmbeck, Johnson, Wills, McKernon, Rose, Erklin & Kemper, 2002). Moreover, parents of children with chronic illness have higher levels of depressive symptoms themselves compared to parents of healthy children, which has been related to decreased warmth and nurturance as well as poorer parent-child relationship quality (Lim, Wood & Miller, 2008).

In order to determine how parenting behaviors contribute to rates of depression in medically ill youth, it is necessary to understand whether the presence of a chronic illness impacts these constructs. Although a definitive consensus has not yet been reached regarding how parenting behaviors demonstrated by parents of healthy youth differ from those practices of parents of chronically ill youth, results from a meta-analysis indicate that parenting behaviors are less positive when youth have a chronic illness (Pinquart, 2013). Specifically, these parents show less warmth, are more controlling and demonstrate higher levels of over-protection compared with parents of healthy youth. However, these differences are small, and importantly, exist for some illnesses and not others (Pinquart, 2013). In contrast, other studies have provided evidence in support of the notion that the behaviors of chronically ill youths' parents are more positive than those of healthy youths' parents. Adolescents with heart disease rate their parents higher on responsiveness and regulation when compared with a control group (Luyckx et al., 2011) and rate their parents' behavior as more accepting and less controlling compared with healthy adolescents (Cohen, Mansoor, Gagin & Lorber, 2008).

Parenting Behaviors and Depressive Symptoms in Chronic Illness

Following the literature suggesting associations between parenting behaviors and depressive symptomatology in healthy youth and the studies that have examined differences in parenting in families of chronically ill and healthy youth, research has begun to examine how parenting behaviors may impact the development of depression in chronically ill youth. Within this literature, certain constructs have emerged as potentially protective against the development of depressive symptoms in chronically ill populations. Acceptance and support, two terms measuring very similar constructs, have been consistently associated with lower levels of depressive symptoms in chronically ill youth. For youth with visual impairment, parental support

was related to well-being; however, this relationship was stronger in a control group than in the visually impaired youth (Kef & Dekovic, 2004). Maternal acceptance measured through the Child Report of Parent Behavior Inventory was associated with lower depressive symptoms in youth with Type I Diabetes (Butler, Skinner, Gelfand, Berg & Wiebe, 2007). Finally, in a study comparing adolescents with heart disease to a control group, acceptance measured through the Parental Behavior Inventory was significantly, negatively associated with depression symptoms on the CES-D in chronically ill youth, while this relationship was a trend but did not reach significance in healthy youth (Cohen et al., 2008).

Parent behaviors including low warmth and criticism appear to be related to depressive symptoms in this population. Specifically, depression in youth with diabetes was associated with low warmth as assessed through the Alabama Parenting Inventory (Eckshtain, Ellis, Kolmodin & Naar-King, 2010). Critical parent behaviors, as assessed through the Eyeberg Child Behavior Inventory, have been related to problematic child behaviors in youth with Type I Diabetes as reported through the Diabetes Family Behavior Checklist (Sweenie, Mackey & Streisand, 2013).

To date, there is limited data on the relationship between parenting behaviors and depressive symptoms in medically ill youth. The findings suggest that parental acceptance and support may be associated with lower depressive symptoms in youth with chronic illness; low warmth and criticism have been linked with higher rates of depressive symptoms in this population. Importantly, the research done in this area has focused on specific medical disorders and has resulted in inconsistent findings. In addition, most studies have examined one parenting construct in their analyses, providing an incomplete picture of how parenting behaviors relate to depressive symptoms. This not only presents a challenge to our ability to draw conclusions regarding the impact of multiple parenting behaviors on depressive symptoms, but also limits our

understanding of how these constructs relate to one another for a wide range of youth with medical conditions. Additional research is needed to further elucidate this relationship as parent behaviors have been linked to depression in healthy youth and provide an area ripe for prevention or intervention efforts.

Areas for Future Study

Importantly, the contribution of the literature on parenting behaviors is hampered by a lack of longitudinal studies, preventing a critical understanding of how parenting behaviors may play a role in the development of depressive disorders over time. Additionally, most of the research conducted in this area has not included a non-medically ill sample. The omission of a healthy sample precludes our understanding of the similarities and differences in how parenting behaviors impact depression trajectories. If differences exist, this would suggest a need for more targeted intervention approaches for chronically ill youth.

Moreover, the majority of studies have focused on specific pediatric illnesses rather than examining chronically ill youth as a heterogeneous group. Although recent research in pediatric chronic illness has favored examining specific disorders (e.g., Butler et al., 2007; Davis et al., 2001; Eckshtain et al., 2010; Greenley et al., 2010; Noll, Kiska, Reiter-Purtill, Gerhardt & Vannatta, 2010), a non-categorical approach to chronic illness, or one examining a variety of chronic illnesses rather than specific disorders, may provide potential benefits. Despite obvious differences in the etiology and effects of various chronic illnesses, there are similarities across disorders including impacted activities of daily living, frequent doctor visits, a medical regimen, and altered relationships. Examining chronic illness non-categorically provides the potential to help more youth, as findings may be used to inform interventions that could be successful for a wide range of disorders (Sawyer, Drew, Yeo & Britto, 2007; Stein & Jessop, 1982). A multitude

of current research studies have chosen to examine chronic illness non-categorically, reflecting recognition that this approach is important in the field (e.g., Anthony, Gil, & Schanberg, 2003; Barlow & Ellard, 2006; Compas et al., 2012; Holmbeck et al., 2002).

Methodological issues have also limited the conclusions that can be made from existing studies on parenting behaviors and depressive symptoms in chronically ill youth. First, most studies utilize self-report measures including the Child Report of Parent Behavior Inventory (Schaefer, 1965) and the Alabama Parenting Questionnaire (Shelton, Frick & Wootton, 1996). Importantly, self-report measures of parenting may be prone to reporter bias, making them less desirable as a measurement method (Morsbach & Prinz, 2006) when used on their own. While some researchers have utilized observational protocols like the Family Process Assessment Protocol (Wood et al., 2008) or free play protocols, this is much less widely used in the research base than self-report measures (Morsbach & Prinz, 2006). Observational methods are crucial to providing a more accurate representation of parenting behaviors in order to understand their relationship to depressive symptoms.

Study Aims

The present study seeks to build on the current body of literature in several ways. First, this study will assess whether parenting behaviors longitudinally predict depressive symptoms in both healthy and chronically ill youth. Additionally, this study will examine whether parenting behaviors differentially predict depressive symptoms over time in chronically ill youth compared to healthy controls, that is, whether chronic illness status moderates the relationship between parenting behaviors and depressive symptoms. This study will seek to improve upon methodological issues in prior research by utilizing observational measurements of parenting behaviors and examining multiple parent behaviors, specifically positive affect, negative affect,

support, conflict, responsiveness and criticism, for a more comprehensive understanding of the impact of these behaviors on chronically ill youth. Finally, while this study seeks to examine chronic illness non-categorically, exploratory analyses will be conducted to examine whether such findings may differ for higher impact illnesses.

Hypotheses

1) Parenting behaviors will longitudinally predict depressive symptoms in both healthy and medically ill youth.

1a) Negative parenting behaviors (negative affect, conflict and criticism) will predict greater levels of depressive symptoms, while positive parenting behaviors (positive affect, responsiveness and support) will predict lower levels of depressive symptoms.

1b) Of the parenting behaviors, negative affect will be most predictive of depressive symptoms as this construct is involved in many parenting behaviors (e.g., harsh discipline, rejection, aversiveness and control) that have been shown to predict depressive symptoms in healthy youth (Hipwell et al., 2008; Kim & Ge, 2000; McLeod et al., 2007; Stice, Ragan & Randall, 2004). This hypothesis is tentative, given the limited research that has compared multiple parenting constructs within a single study.

2) Chronic illness status will moderate the relationship between parenting behaviors and depressive symptoms.

2a) Specifically, negative parenting behaviors will predict greater levels of depressive symptoms in chronically ill youth.

2b) Given the discrepancies in the literature regarding whether parenting behaviors are more or less positive in medically ill populations and how positive parenting constructs relate to depressive symptoms for these youth (Butler et al., 2007; Cohen et al., 2008; Kef

& Dekovic, 2004), there are no specific hypotheses about whether chronic illness status will moderate the relationship between positive parenting behaviors and depressive symptoms, and if so, the direction of this effect.

Method

Participants

Participants are 295 parent-child dyads from an ongoing, three-year, longitudinal study examining vulnerability factors for depression among children and adolescents in the 3rd, 6th and 9th grades at the initiation of the study. Fifty-five of the parent-child dyads have children with chronic medical conditions. The remaining parent-child dyads have healthy children and adolescents. Participants were recruited though letters sent to schools in New Jersey. Letters specified that the study was investigating genetic and environmental influences on child and adolescent mood and emotion. Children provided written assent and parents/guardians gave written consent for study participation. Children and parents were financially compensated for their involvement in the study. The National Institute of Mental Health and the Rutgers University Internal Review Board approved study protocols.

Procedures

Participants completed an initial assessment and thereafter participated in follow-up assessments every three months for a year. The initial assessment was conducted at the Tillet building on the Busch Campus of Rutgers, The State University of New Jersey (Piscataway, NJ). All follow-up evaluations were conducted over the phone. At the initial assessment, children completed questionnaires assessing psychological functioning. Parents provided demographic data and information regarding their children's physical health. Parents and children also

participated in an interaction task during which they were asked to discuss an important issue at home for five minutes. At follow-up assessments (3-, 6-, 9-, and 12-months), children completed questionnaires assessing psychological functioning.

Measures

Children's Chronic Illness

Parents reported on their children's chronic illnesses on the Child Physical Health questionnaire. The Child Physical Health questionnaire is a 42-item parent-report measure designed to assess children's global physical health and the presence of chronic illnesses currently or in the past. Questions assessing chronic illnesses are rated dichotomously regarding whether the child does or does not have each illness, and whether each illness is a past or current condition. For the purposes of this study, children were considered to have a chronic illness if their parent currently endorsed any of the following: sickle cell anemia, other anemia, asthma, bleeding problems, blindness, cancer, cerebral palsy, colitis, congenital defects, diabetes, epilepsy/seizures, hearing loss, heart murmur, other heart problems, irritable bowel syndrome, and migraines. These disorders were selected due to the existence of literature categorizing such condition as chronic illnesses (Greenley et al., 2010; Lavigne & Faier-Routman, 1992; MacLean, Perrin, Gortmaker & Pierre, 1991; Noll et al., 2010; Pinquart & Shen, 2011; Wolman, Resnick, Harris & Blum, 1994). Moreover, youth with milder chronic illnesses (e.g., asthma, migraines) or for whom the category was more vague (e.g., bleeding problems, heart condition) were required to either take medication or be under a doctor's care for the condition to ensure that the condition met criteria for having a chronic illness delineated in the literature. Chronic illnesses endorsed and numbers of youth with each condition can be found in Table 1.

Children's Depressive Symptomatology

Children reported their depressive symptoms on the Children's Depression Inventory (CDI; Kovacs, 1985, 1992). Children completed this measure at baseline and every three months for one year. The CDI is a 27 item self-report measure assessing depressive symptoms in children aged 7-17. Questions are rated on a 0-2 scale.

Parenting Behaviors

Parenting behaviors were measured through a parent-child interaction task that was completed at the baseline in-lab assessment. Parents and children were asked to complete the Issues Checklist, which includes various topics children and parents discuss (Robin & Foster, 1989). For each issue, parents and children rate how frequently they talk about the issue and how intense the discussions get. Each parent-child dyad was then asked to discuss the most intensely rated topic on the Issues Checklist for five minutes. The discussions were videotaped and coded by undergraduate research assistants and graduate students who received 20 hours of training. A subset of videos (20%) was double coded and inter-rater reliability was calculated. Intraclass correlation coefficients indicated adequate inter-rater reliability (ICC's > 0.70).

Parent positive affect, negative affect, support, criticism, responsiveness and conflict will be coded utilizing a standardized coding scheme developed for this protocol which was based off prior coding systems for interaction tasks (Melnick & Hinshaw, 2000). Positive and negative affect both involve three components: facial expressions, tone of voice, and body language. Positive affect is coded based on the frequency and intensity of positive facial expressions (e.g., smiles), tone of voice (e.g., warmth, terms of endearment), and body language (e.g., body openness). Similarly, negative affect is coded based on the frequency and intensity of negative facial expressions (e.g., frowning, eye rolls), negative tone of voice (e.g., harsh tone, lecturing,

yelling) and negative body language (e.g., tense body, folded arms). Support is coded based on the frequency and intensity of validation, explicit statements of praise and explicit statements of support. Criticism is coded based on the frequency and intensity of critical comments made by the parent. Responsiveness is coded based on the frequency of appropriate and prompt responding to the child, interruptions made to the child and distraction from the task at hand. Finally, conflict is coded based on the intensity and hostility of parents' disagreements with youth. When coding conflict, tone and intensity is salient rather than frequency or presence of disagreement.

Results

Preliminary Analyses

Preliminary analyses suggested that depressive symptoms exhibited a skew requiring a log transformation to satisfy the assumptions of normality. Parenting behavior variables required a square root transformation due to elevated levels of kurtosis. Means and standard deviations of all measures pre-transformations for the total sample, youth with chronic illnesses only and healthy youth only, are presented in Table 2. Table 3 contains the bivariate correlations between all study variables.

Given the longitudinal design of the study and the importance of considering missing data in longitudinal studies, we examined whether participants varied based on the number of follow-ups completed to determine whether data were missing completely at random. Approximately sixty-eight percent of participants completed all five assessments for the study, 18.3% missed one follow-up evaluation, 6.4% missed two follow-up evaluations and 7.1% missed three or more follow-up evaluations. Little's missing completely at random (MCAR) test was significant ($\chi^2 = 210.01$, $p < 0.001$), indicating that data were not missing *completely* at random (Little & Rubin, 1987). We then assessed whether completers differed significantly from

non-completers on our dependent variable, depressive symptoms and also tested whether interactions of our hypotheses with completer status were significant in study models. Completers did not differ significantly from non-completers on depressive symptoms (T = -1.50, p=0.14). No interactions of parenting behavior or chronic illness with completer status were significant in study models (p's > 0.008)[1]. As such, we were able to conclude that individuals who attended follow-up appointments did not differ significantly from individuals who did not attend follow-up appointments on any key study variables.

With regard to key study variables, 18.6% (n = 55) of the current sample met criteria for having a chronic illness. Approximately 6.8% (9.0% of chronically ill youth and 6.5% of healthy youth) had a depression score on the CDI of 19 or higher at baseline, indicating clinical levels of depression (Kovacs, 1981). Approximately 20% of youth (25.3% of chronically ill youth and 19% of healthy youth) reported subthreshold depression, defined as a CDI score greater than 12. Youth with chronic illnesses did not significantly differ from healthy youth on any key study variables. However, there was a trend for parents of healthy youth to demonstrate greater levels of positive affect (p = 0.09) and responsiveness (p = 0.08) compared to parents of chronically ill youth.

Do parenting behaviors predict depressive scores over time in healthy and chronically ill youth?

Multilevel modeling (MLM) using SPSS (Version 22.0) was used to test whether parenting behaviors at baseline predicted depressive scores over a one-year period. A random intercept (p's < 0.001) and random slope (p's < 0.05) were included in all analyses. The main predictor for our analyses was parenting behavior. Grade and gender were included as fixed

[1] The only finding that may have been vulnerable to missing at random was criticism (p<0.05), however, after accounting for multiple analyses (i.e., significance cut off at 0.008) this finding did not reach significance.

effects in the models. Time was also included as a fixed effect to determine whether the impact of parenting on depressive symptoms at baseline maintained over time (i.e., significant main effect for parenting behavior with time as a covariate). The dependent variable was depressive symptoms throughout the study.

Results for the final models are presented in Table 4. Data indicated that parenting behaviors significantly differed in their prediction of prospective depressive symptoms over a 12-month period. Specifically, children of parents exhibiting greater negative affect ($p < 0.05$) and conflict ($p < 0.001$) at baseline had higher levels of depressive symptoms, which maintained over time. Parents demonstrating greater positive affect ($p < 0.01$) and support ($p < 0.001$) at baseline had children with lower depressive symptoms that persisted for the 12-month duration of the study. Parental criticism ($p = 0.18$) and parental responsiveness ($p = 0.24$) at baseline were not significantly related to children's depressive symptoms throughout the study.

Next, we tested whether any parenting variables conferred unique risk for depressive symptoms. We carried out these analyses in two ways. First, we examined a simultaneous model with all significant parenting variables entered into a multiple regression model at the same time. Second, we compared effect sizes for the relation between parenting variables and depressive symptoms in independent models. The latter approach helps control against the likelihood of suppressor effects that may be present when testing the simultaneous model. With regard to the simultaneous model, only conflict remained as a significant predictor of prospective depressive symptoms ($p < 0.05$). As for the independent models, positive affect, ($R_{effect\ size} = .0.14$) and negative affect ($R_{effect\ size} = 0.15$) were above the recommended cutoff (Rice & Harris, 2005) for detecting a small effect and conflict ($R_{effect\ size} = 0.22$) and support ($R_{effect\ size} = 0.21$) were above the recommended cutoff for detecting a medium effect. Thus, there appears to be something

unique to conflict, and perhaps support, that relates to depressive symptoms above and beyond the contribution of other parenting behaviors. Results did not provide support for the hypothesis that negative affect would be most predictive of prospective depressive symptoms.

Does chronic illness status moderate the relationship between parenting behaviors and depressive symptoms?

Multilevel modeling (MLM) using SPSS (Version 22.0) was used to test whether chronic illness status at baseline moderated the relationship between parenting behaviors and prospective depressive symptoms in youth. A random intercept (*p's* < 0.001) and random slope (*p's* < 0.05) were included in all analyses. The main predictor for our analyses was parenting behavior. Grade, gender and time were included as fixed effects in the models. Finally, chronic illness status was also included as a fixed effect to see if the relation between parenting behavior and depressive symptoms varied based on chronic illness status (i.e., significant interaction between chronic illness status and parenting behavior). The dependent variable was depressive symptoms throughout the study.

Results for the final models are presented in Table 4. Results indicated that chronic illness status did not moderate the relationship between parenting behaviors and prospective depressive symptoms (*p's* > 0.05). Thus, the data did not provide support for the hypothesis that negative parenting behaviors predicted greater levels of depressive symptoms in chronically ill youth in the present sample. Similarly, the data did not support the hypothesis that chronic illness status moderated the relationship between positive parenting behaviors and depressive symptoms in the present sample of youth.

Discussion

Our results provided an examination of the impact of observable parenting behaviors on the emergence of depressive symptoms in healthy and chronically ill children over a twelve-month period. Broadly, this study found that negative parenting behaviors are associated with greater levels of depressive symptoms over time and positive parenting behaviors are associated with lower levels of depressive symptoms over time, with notable exceptions. In addition, this study did not find evidence to suggest that parenting behaviors are especially related to depressive symptoms for chronically ill youth (i.e., there was no interaction between parenting behavior and chronic illness status), though parenting behaviors still are important for the emergence of depressive symptoms in this population.

With regard to negative parenting behaviors, negative affect and conflict were found to predict depressive symptoms in chronically ill and healthy youth. Previous research has found links between depression in healthy youth and higher levels of harsh discipline, rejection, aversiveness and withdrawal (Hipwell et al., 2008; Kim & Ge, 2000; McLeod et al., 2007; Stice, Ragan & Randall, 2004). In this study, the construct of negative affect was operationalized to include three domains: facial expressions, tone of voice and body language and was designed to detect the extent of negative affective tone in parent-child interactions. These variables (e.g., negative facial expression, negative tone of voice, negative body language) are likely a component of a number of behaviors previously found to relate to depressive symptoms in youth, particularly harsh discipline, rejection, aversiveness and withdrawal. In this way, our findings support this prior research, while also highlighting the potential importance of parents' affective presentation for the promotion of depressive symptoms.

In addition, while this definition of negative affect is distinct from mood, it may have captured some of the constructs that are prominent for parents who are experiencing mood disturbance of some kind (e.g., higher levels of negative affect, more negative facial expressions). Given the strong and well-researched relationship between depressive symptoms in parents and depression in children (Goodman, Rouse, Connell, Broth, Hall & Heyward, 2011; Sander & McCarty, 2006), it is not surprising that this study found a link between negative affect in parents and depression in children over time. Although we did not specifically examine parental depressive symptoms for the purpose of this study, it would be interesting to consider the role of parental psychological functioning and its impact on parenting behavior in future research.

Parental conflict was also found to be predictive of child depressive symptoms over time, both for healthy and chronically ill youth. Conceptually, conflict may be a precipitant for disciplinary action towards a child, and likely involves aversiveness and potentially a perceived rejection of the child and his or her thoughts and behaviors. Thus, our findings are consonant with literature demonstrating the association between higher rates of harsh discipline, aversiveness and rejection, and depression in healthy youth (Hipwell et al., 2008; Kim & Ge, 2000; McLeod et al., 2007; Stice, Ragan & Randall, 2004). Moreover, this finding is consistent with additional bodies of research demonstrating both a cross sectional (Sheeber, Davis, Leve, Hops & Tildesley, 2007) and longitudinal (Rice, Harold, Shelton & Thapar, 2006) relationship between parent-child conflict and depressive symptoms in youth. The construct of conflict was unique in our study; our definition targeted the hostility associated with arguments and disagreements rather than the content of conflict between parents and children. By operationalizing conflict in a way that focused less on the content of the conflict and more on the

intensity and hostility of the argument, this study builds on prior research by presenting evidence implicating the importance of the affective tone of conflict for promoting the emergence of depressive symptoms in healthy and chronically ill youth.

Notably, criticism was not found to have a significant relationship with prospective depressive symptoms in youth. This finding is in contrast to previous research indicating that criticism is related to depression in youth and even predictive of later onset of depressive episodes (McCarty, Lau, Valeri & Weisz, 2004; Silk et al., 2009). However, the construct of criticism used in several of these studies was more inclusive than our operational definition of providing criticism or disapproval of the child. These prior studies' conceptualizations also captured statements regarding a negative relationship with the child and hostile attitudes, in addition to criticism of the child. This discrepancy in operationalizing criticism may have contributed to our non-significant finding. Although our definition did at times place weight on the negative tone of criticism, our definition largely teased apart critical statements on their own from other negative affective, cognitive or behavioral components of criticism or the parent-child relationship. Thus, findings suggest that critical comments, on their own, do not pose as significant of a risk to the development of depressive symptoms as negativity and hostile attitudes.

Both parental positive affect and support were significantly related to depressive symptoms over time in healthy and chronically ill youth. Previous research has demonstrated a consistent link between parental warmth and depressive symptoms, such that greater parental warmth is related to fewer depressive symptoms in youth (Caron, Weiss, Harris & Catron, 2006) and implicating lower parental warmth with prospective youth depressive symptoms (Hipwell et al., 2008). Warmth in these studies was defined as either positive comments about the child,

affirmations and engagement in conversation with a child or was assessed using items from a parent rating scale. In our study, positive affect was operationalized to include three domains: facial expressions, tone of voice and body language. While not a direct overlap with warmth, much of the warmth constructs in prior research likely indirectly involved the domains captured through our positive affect variable. Thus, our study not only supports, but also complements this prior body of research by demonstrating a link between affective behavior, not just content of speech, and its relationship to lower depressive symptoms over time.

Parental support was also significantly related to prospective depressive symptoms in youth. Support was defined as comments that are supportive, including praise, engagement, nodding and agreement with the child. Moreover, support also included validating statements made by the parent. These findings are in concert with prior research indicating that youth perception of support is associated with depressive symptoms (Stice, Ragan & Randall, 2004) and that maternal and paternal support differentiates between depressed and non-depressed youth (Sheeber et al., 2007). In addition, the inclusion of validation in our definition of support builds on a model of emotional and mood difficulties suggesting a link between validation and emotional dysregulation (Linehan, 1993). Specifically, this model posits that greater invalidation leads to heightened emotional dysregulation over time (Linehan, 1993). Although not a complete overlap with depressive symptoms, difficulty with emotion regulation has been found to be significantly associated with levels of depressive symptoms (Campbell-Sills & Barlow, 2006; Kovacs, Joormann & Gotlib, 2008). Thus, our results lend indirect support for the importance of validation in reducing risk for depression in youth.

Interestingly, parental responsiveness was not related to the development of depressive symptoms in the current sample of youth. Prior research has demonstrated a link between

responsiveness and depressive symptoms (e.g., Boughton & Lumley, 2011). However, definitions of responsiveness traditionally have encompassed constructs such as "warmth." This construct was not included in our operational definition of responsiveness, which was defined as responding to the child's cues, promptness and appropriateness in responding, and engagement with the child. Although our definition also included appropriate affective responding, this element of the definition was not as prominent as behavioral responses to a child, and suggests that parental responsiveness for our study largely captured behavioral rather than affective responses. This may explain the discrepancy between current findings and prior research that examined affective components to responsiveness. Our findings suggest that a parent's behavioral responsiveness to a child, independent of affect, may not play as important of a role in the prevention or promotion of depressive symptoms in youth. This notion is consonant with our other findings highlighting the importance of affective components of parenting behaviors.

This study also sought to understand which parenting behaviors are most strongly related to the development of depressive symptoms in healthy and chronically ill youth. Preliminary findings suggest that there may be something unique to conflict, and perhaps support, that relates to the development of depressive symptoms in youth. Conflict emerged as the sole significant predictor in a simultaneous regression model and both conflict and support had medium effect sizes on depressive symptoms in youth. As previously stated, there is considerable research that links conflict to depressive symptoms in youth. However, our definition of conflict was notable, given that it focused on the affective tone, rather than the content, of conflict. Moreover, bivariate correlations indicated a large and significant association ($r = .62$) between negative affect and conflict in our study, bolstering the notion that we captured the affective tone of conflict in our coding. The strong impact of this parenting behavior on depressive symptoms

above and beyond the contribution of negative affect provides an indication that hostile disagreement, rather than just disagreement or just negative affect on its own, may be key in promoting or preventing the emergence of depression in adolescents. It is important to note that the large correlations found between conflict, criticism and negative affect in our study suggest a possible lack of sensitivity in the observational coding system to distinguish between different negative parenting behaviors. As a result, any conclusions about the unique effects of conflict, as compared to other negative parenting behaviors, on youth depressive symptoms should be considered tentative.

Similarly, support has a strong research background indicating its relationship to lower levels of depressive symptoms in youth. Validation, in addition to supportive comments, praise, engagement, nodding and agreement with the child were prominent in our definition of support. However, the majority of behaviors coded for support involved non-verbal cues, such as nodding. Significant bivariate correlations between support and positive affect in our study suggest that positive affect is an important component of support. However, the salience of the impact of support, above and beyond the contribution of positive affect, on depressive symptoms points to the potential importance for validation and demonstrations of support to children in preventing and reducing depressive symptoms. This provides a foundation for understanding tangible ways that parents can alter their behavior towards their children in the service of reducing depressive symptoms. In addition, depression prevention efforts can target these specific parenting behaviors to gain the most impact on depressive symptoms in youth.

Taken together, these results on parent behavior and depressive symptoms in youth lend support to theories on risk for depression focused on interpersonal factors. This literature suggests that negative interactions between parents and children confer strong risk for the

emergence of depression (e.g., Rudolph, Flynn & Abaied, 2008). Specifically, theories of interpersonal risk for depression frequently cite literature indicating that family interactions high in conflict and low in support are associated with and predictive of depressive symptoms and depression in youth (Kane & Garber, 2004; Marmorstein & Iacono, 2004; Sheeber et al., 2007; Sheeber, Hops, Alpert, Davis & Andrews, 1997; Stice et al., 2004) The current findings, utilizing observational coding of a parent-child interaction task, are closely in line with these other studies. Taken together, these findings indicate that parental behaviors specifically, and parent-child relationships more broadly, are important risk factors for depression symptoms and disorders.

Uniquely, the findings from the current sample suggest that the affective aspects of the parent-child relationship are more salient in comparison to content of communication and behavioral relations between parents and children. The significant findings in this study involved variables that captured affective dimensions of parenting behavior, whereas non-significant relationships between parenting and depressive symptoms in youth involved non-affective variables (e.g., criticism, responsiveness). Specifically, as previously stated, positive and negative affect definitions in the present sample focus on facial expression, bodily expression and tone of voice rather than content of conversation. Similarly, conflict examined the hostility associated with arguments rather than the content of the conflict. While support did capture content of language, the majority of coded behaviors for support were for non-verbal cues, such as nodding. In contrast, criticism focused mainly on critical verbal comments made by parents. Responsiveness predominantly examined appropriate and timely responses to the child as well as verbal engagement in discussions. Although appropriate affective responsiveness was involved in our definition of responsiveness, it played a smaller role than behavioral responding.

These findings have potential implications for the depression prevention literature. Specifically, the results of the current study broadly lend support for the inclusion of parents in depression prevention initiatives. Given the impact that parenting behaviors have on youth depression, prevention programs aiming to alter specific parent behaviors would serve to prevent the emergence of depression in youth as this population makes the transition from childhood to adolescence. Moreover, interpersonally focused depression prevention programs should seek to especially target the affective component of interpersonal interactions between parents and youth in order to maximize impacts on depressive symptoms. The findings of this study may also have implications for the treatment of depression; however, the present sample was largely non-depressed. As a result, findings will need to be replicated in a clinical sample.

This study also sought to understand whether the relationship between parenting behaviors and depressive symptoms was stronger for chronically ill youth. Contrary to our hypotheses, we did not find evidence that chronic illness status moderated the relationship between parenting behavior and depressive symptoms in the present sample. It is important to note that the present findings do not indicate that parenting behaviors are not related to the emergence of depressive symptoms for chronically ill youth. Our models examining the relationships between parenting behavior and depressive symptoms included chronically ill youth and indicated that several parenting behaviors, namely positive affect, negative affect, support and conflict are related to depressive symptoms over time in both chronically ill and healthy youth. However, we do not have evidence to suggest that parenting behaviors are more or less important in predicting depressive symptoms for chronically ill youth compared to healthy youth.

Several factors may have played a role in this finding. First, our sample was not evenly distributed between chronically ill and healthy youth, which may have prevented our ability to detect whether parenting behaviors are more or less predictive of depressive symptoms for chronically ill youth by tipping the statistical balance in favor of healthy youth. Second, prior research suggesting a relationship between parenting and depressive symptoms for chronically ill youth typically involved a sample of youth experiencing one chronic illness. The present sample consisted of a heterogeneous group of youth with a variety of chronic illnesses, which may have limited our ability to detect whether chronic illness status moderated the relationship between parenting behaviors and youth depressive symptoms. Third, a number of these chronic illnesses had considerably discrepant impacts on functioning (e.g., cancer vs. asthma). Moreover, the majority of youth who were considered to have a chronic illness predominantly were diagnosed with chronic illnesses that have less significant impacts on daily functioning (e.g., asthma). Thus, it may be that more severely ill children elicit stronger differences in parenting behavior, which then differentially promotes the emergence of depressive symptoms compared to healthy youth. In the current sample, there was a tendency for parents of chronically ill youth to exhibit less positive affect and less responsiveness than parents of healthy youth. This suggests possible variance in parenting behaviors of these two groups and may provide preliminary support for the notion that illness severity could be related to the emergence of differing parenting behaviors. Importantly, very few youth in our study reported more moderate to severe chronic illnesses such as cancer, blindness, epilepsy, and sickle cell anemia (n = 10). As a result, the present sample may not have represented enough illness severity to accurately capture these parenting differences.

Prior research has predominantly examined the impact of parenting behavior and depressive symptoms in chronically ill youth without a healthy comparison group. This literature has suggested that acceptance and support are cross-sectionally associated with lower depressive symptoms (Butler et al., 2007) and that reduced levels of support and greater criticism are linked to higher rates of depressive symptoms in chronically ill youth (Eckshtain et al., 2010; Sweenie et al., 2007). The few studies that did include a control group suggest that the relationship between parenting behaviors and depressive symptoms exists for both chronically ill and healthy youth. Specifically, one study found that acceptance was associated with lower depressive symptoms in both chronically ill youth and controls, but more strongly so for healthy youth (Kef & Dekovic, 2004). Another study found a significant relationship between acceptance and lower depressive symptoms in ill youth, whereas the relationship between acceptance and lower depressive symptoms reached a trend level in the healthy control group (Cohen et al., 2008). The present findings align with these studies and seem to indicate that parenting behaviors may have a similar impact on depressive symptoms for chronically ill and healthy youth.

Our study was not sufficiently powered to examine of the relationship between parenting behavior and depressive symptoms in chronically ill youth alone. However, the present study provides support for the importance of several parenting behaviors in impacting depressive symptoms in chronically ill youth. Specifically, our findings that positive affect and support are predictive of lower depressive symptoms are consistent with previous research. Although the present study did not directly replicate the finding that criticism is related to depressive symptoms in chronically ill youth, negative affect was significantly predictive of depressive symptoms, and is likely involved in the delivery of criticism to children. Our findings also

furthered this body of research by suggesting that hostile conflict may also be an important predictor of depressive symptoms in youth with chronic illnesses.

Limitations

Although there were notable strengths in the present study including a longitudinal study design, the inclusion of a healthy and chronically ill sample, and the use of observational measures of parenting, there are several notable limitations to our research. This study examined only six parenting behaviors and coded parenting behavior from a five-minute interaction. While this procedure is utilized in many studies examining parent behavior, this may not have accurately captured true parenting behavior as it exists outside of a laboratory paradigm. Moreover, this study only assessed parenting behavior at one time-point, preventing our knowledge of how parenting behaviors may change over time. This data would provide a more robust understanding of the impact of parenting on depressive symptoms in youth, as well as the transactional relationship between parenting behavior and depressive symptoms.

The present study did not include a measure of parental psychopathology in our models. Given the strong connection between parent psychopathology and youth depression, the lack of inclusion of this measure may prevent an accurate understanding of the contribution of parenting behavior to the development of youth depression above and beyond parental psychopathology. In addition, this study included a small sample of chronically ill youth diagnosed with a variety of illnesses, which may have limited our ability to discern the differential impact of parenting on depression in chronically ill youth. Furthermore, our sample was a community sample of youth rather than a sample designed to focus on chronic illnesses. Thus, we may not have truly represented the population of children with chronic illnesses, and as a result, were unable to accurately understand the relationship between parenting and depressive symptoms for these

youth. Finally, given that the present sample was a community sample of youth, participants did not have particularly elevated depressive symptoms. Thus, we are unable to understand the impact of parenting on the emergence of depressive disorders or more significant levels of depressive symptoms.

Future Directions

The present research suggests several avenues for future research. First, research should examine parenting behaviors longitudinally in order to understand the transactional influences between mood and parent-child interactions and also to capture changing parent-child relationships during the critical transition to adolescence. Moreover, research should consider the impact of parental psychopathology on parenting behaviors and on the relationship between parenting and depressive symptoms in youth. The specific results of this study also point to a need for research further examining the differential impacts of behavioral and affective components of parenting behavior to refine our understanding of the impact of parenting on depressive symptoms in youth and to shape intervention efforts targeting parent behaviors. In addition, this research should be replicated in clinical samples to provide a more comprehensive understanding of how certain types of parenting behavior predicts or prevents the emergence of more significant depressive symptoms or depressive disorders.

In addition, with regard to chronic illness, studies should recruit samples with more severe chronically ill youth or conduct longitudinal research utilizing observational measures of several parenting behaviors with a sample experiencing one type of chronic illness in order to clarify whether the relationship between parenting behaviors and depressive symptoms is more or less important for youth with chronic illnesses. While the rates of youth with chronic illnesses in our study was reflective of the general population, future studies may need to oversample

chronically ill youth and match healthy youth and chronically ill youth on certain important demographic characteristics. In addition, this sample should include more severely chronically ill youth to understand how illness severity impacts the parenting behaviors of this population and further clarify the relationship between parenting and depressive symptoms.

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Appendices

Table 1
Frequency of Youth Endorsing Chronic Illnesses

Chronic Illness	*N*
Asthma	29
Migraines	10
Heart Murmur	5
Epilepsy	4
Hearing Problem	4
Sickle Cell Anemia	4
Diabetes	2
Bleeding Problem	2
Other Heart Condition	2
Irritable Bowel Syndrome	2
Cancer	1
Thyroid Condition	1
Blindness	1

Note: Several youth endorsed multiple chronic illnesses.

Table 2
Means (and Standard Deviations) of Study Variables for Total Sample, Healthy Youth Only and Chronically Ill Youth Only

Measure	Total Sample	*N*	Chronically Ill	*N*	Healthy	*N*	*p value*
CDI							
Baseline	7.59 (6.30)	295	8.59 (6.66)	55	7.36 (6.20)	240	0.21
3 Months	5.11 (4.96)	264	5.82 (5.00)	49	4.95 (4.94)	215	0.28
6 Months	4.74 (4.84)	251	5.91 (6.28)	48	4.46 (4.41)	203	0.13
9 Months	4.09 (4.52)	248	4.93 (5.20)	44	3.90 (4.35)	204	0.23
12 Months	3.75 (4.65)	251	3.85 (3.43)	46	3.73 (4.88)	205	0.85
Parenting Behaviors							
Positive Affect	3.41 (0.85)	295	3.23 (0.90)	55	3.45 (0.84)	240	0.09
Negative Affect	1.99 (0.71)	295	2.03 (0.66)	55	1.98 (0.73)	240	0.62
Support	2.82 (0.94)	295	2.70 (0.88)	55	2.85 (0.95)	240	0.26
Criticism	2.39 (0.98)	294	2.35 (0.97)	55	2.40 (0.98)	239	0.73
Responsiveness	4.35 (0.78)	295	4.15 (0.93)	55	4.39 (0.74)	240	0.08
Conflict	2.31 (0.69)	295	1.67 (0.85)	55	1.65 (0.88)	240	0.89

Note: CDI = Children's Depression Inventory (Kovacs, 1992); Parenting Behaviors = Observationally coded from parent-child interaction task; Total Sample = Healthy and chronically ill youth; Chronically Ill = Youth meeting criteria for having a chronic illness; *p value* = t-test significance comparing healthy and chronically ill youth.

Table 3
Correlation Table between Fixed Effects in Study

	1	2	3	4	5	6	7	8	9	10
1-CDI Baseline										
2-Positive Affect	-0.13*									
3-Negative Affect	0.22**	-0.32**								
4-Support	-0.19**	0.28**	-0.27**							
5-Criticism	0.16**	-0.17**	0.45**	-0.35**						
6-Responsiveness	0.01	0.36**	-0.28**	0.26**	-0.13*					
7-Conflict	0.26**	-0.28**	0.62**	-0.38**	0.48**	-0.15**				
8-Ethnicity	-0.70	-0.00	0.11*	0.08	0.16**	-0.11	0.08			
9-Gender	0.42	0.01	0.03	0.05	0.16**	0.01	0.08	1.00**		
10-Grade	0.19**	-0.08	0.19**	-0.03	0.09	-0.03	0.27**	1.00**	1.00**	

Note: CDI Baseline = Children's Depression Inventory (CDI; Kovacs, 1992); Ethnicity = Participant's Ethnicity; Gender = Participants Sex (Male = 0, Female =1); Grade = Participant's academic grade; Positive Affect = Parent's positive affect score; Negative Affect = Parent's negative affect score; Support = Parent's support score; Criticism = Parent's criticism score; Responsiveness = Parent's responsiveness score; Conflict = Parent's conflict score; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4
Multilevel Model Outcomes for Depressive Symptoms

Model	**Parameter**	***T***	***Df***	$\mathbf{R}_{\text{effect Size}}$
Negative Affect (NA)				
	Intercept	3.12**	282.77	
	Time	-13.27***	324.72	
	Gender	0.13	284.16	
	Negative Affect	2.50*	282.73	0.15†
	Grade	4.84***	285.37	
Positive Affect (PA)				
	Intercept	5.87***	285.34	
	Time	-13.32***	326.93	
	Gender	0.28	283.40	
	Positive Affect	-2.55*	284.01	0.14†
	Grade	5.21***	284.32	

Table 4-Continued

Support				
	Intercept	7.49***	284.92	
	Time	-13.35***	326.96	
	Gender	0.40	283.41	
	Support	-3.56***	284.21	0.21†
	Grade	5.37***	284.43	
Criticism				
	Intercept	4.45***	285.27	
	Time	-13.35***	327.72	
	Gender	-0.02	282.76	
	Criticism	1.42	282.31	0.08
	Grade	5.25***	283.88	
Responsiveness				
	Intercept	3.75***	290.87	
	Time	-13.33***	328.51	
	Gender	0.26	283.19	
	Responsiveness	-0.99	290.10	0.06
	Grade	5.34***	284.43	
Conflict				
	Intercept	3.92***	287.54	
	Time	-13.29***	325.87	
	Gender	-0.15	284.60	
	Conflict	3.97***	286.01	0.22†
	Grade	4.22***	284.73	
Simultaneous Model				
	Intercept	3.49**	281.90	
	Time	-13.31***	324.50	
	Gender	0.07	281.41	
	Conflict	2.16*	282.04	
	Positive Affect	-1.19	280.38	
	Negative Affect	0.01	278.61	
	Support	-1.90	280.65	
	Grade	4.39***	282.30	
Moderation Model: PA				
	Intercept	1.48	277.73	
	Time	-13.32***	327.30	
	Gender	0.33	281.79	
	Grade	5.01***	282.57	
	PA	-0.33	276.50	
	Chronic Illness	0.08	278.65	
	PA x Chronic Illness	-0.23	277.73	

Table 4-Continued

Moderation Model: NA			
	Intercept	0.67	280.00
	Time	-13.27***	325.37
	Gender	0.22	282.49
	Grade	4.65***	283.67
	NA	0.73	280.57
	Chronic Illness	0.02	280.07
	NA x Chronic Illness	-0.25	280.55
Moderation Model: Support			
	Intercept	2.00	279.84
	Time	-13.34***	327.36
	Gender	0.47	281.85
	Grade	5.16***	282.60
	Support	-0.71	279.55
	Chronic Illness	-0.20	279.71
	Support x Chronic Illness	0.01	279.93
Moderation Model: Criticism			
	Intercept	1.54	277.07
	Time	-13.35***	328.24
	Gender	0.08	281.19
	Grade	5.03***	282.14
	Criticism	0.12	278.66
	Chronic Illness	-0.46	277.62
	Criticism x Chronic Illness	-0.19	278.84
Moderation Model: Responsiveness			
	Intercept	0.42	280.04
	Time	-13.33***	329.23
	Gender	0.32	281.46
	Grade	5.15***	282.61
	Responsiveness	0.52	279.26
	Chronic Illness	0.61	282.84
	Responsiveness x Chronic Illness	-0.76	282.13

Table 4-Continued

Moderation Model: Conflict			
	Intercept	1.96	283.60
	Time	-13.29***	326.51
	Gender	-0.03	282.92
	Grade	3.90***	283.07
	Conflict	0.14	285.63
	Chronic Illness	-1.02	283.37
	Conflict x Chronic Illness	0.71	285.34

Note: Gender = Participants Sex (Male = 0, Female =1); Grade = Participant's academic grade; Time = Baseline and Follow-up assessments (0-5); Chronic Illness = Participant's chronic illness status; Positive Affect = Parent's positive affect score; Negative Affect = Parent's negative affect score; Support = Parent's support score; Criticism = Parent's criticism score; Responsiveness = Parent's responsiveness score; Conflict = Parent's conflict score; Simultaneous Model = Model ran with all parenting behaviors (Positive Affect, Negative Affect, Support, Criticism, Responsiveness, Conflict); Moderation PA = Model ran testing moderation of chronic illness status on depressive symptoms and positive affect; Moderation NA = Model ran testing moderation of chronic illness status on depressive symptoms and negative affect; Moderation Support = Model ran testing moderation of chronic illness status on depressive symptoms and support; Moderation Criticism = Model ran testing moderation of chronic illness on depressive symptoms and criticism; Moderation Responsiveness = Model ran testing moderation of chronic illness status on depressive symptoms and responsiveness; Moderation Conflict = Model ran testing moderation of chronic illness status on depressive symptoms and conflict; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; † = Small effect size.