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Parental Autonomy Granting and Depressive Symptoms in Adolescents with Chronic Conditions

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Abstract

There is currently a gap in literature regarding the transition from pediatric to adult healthcare for adolescents with chronic conditions, particularly relating to mental health and autonomy. This study aims to address this gap by looking specifically through the lens of parental autonomy-granting. This study uses data from 8,783 individuals in the Add Health dataset to identify whether parental autonomy-granting has a mediating role between chronic health conditions and depressive symptomology, and to measure if adolescents with chronic conditions reported higher levels of depressive symptoms than their healthy counterparts. Using a t-test, it was found that youth with chronic conditions in emerging adulthood were significantly more likely to experience higher levels of depressive symptoms. Parental autonomy did not play a mediating role between adolescent health conditions and depressive symptomology; however, having a chronic condition was significantly and positively associated with parental autonomy-granting, and autonomy-granting was negatively associated with depressive symptoms in emerging adulthood. A limitation of this dataset includes having limited chronic conditions available to measure. Parental autonomy-granting may help counteract mental health challenges from having a chronic health condition. There needs to be increased attention paid to mental health in the transition from adolescence to adulthood, particularly relating to autonomy and chronic conditions. This can be addressed in several places, including transition care for adolescents and mental health support for adolescents with chronic conditions in schools. Further study needs to be done on the effects of parental autonomy-granting and adolescents with chronic conditions to help improve long-term outcomes.

Keywords: chronic condition, adolescent, autonomy, parenting

Introduction

The World Health Organization estimates that about 7.5% of adolescents worldwide face some sort of chronic condition (Michaud et al., 2007). Additionally, they report that if other conditions such as mild asthma or vision conditions are included, the prevalence doubles to 15% (Michaud et al., 2007). Measures of prevalence in the United States vary between studies, but a systematic review of literature revealed that the average prevalence of chronic health conditions for children and adolescents in the United States is also around 15% (van der Lee et al., 2007). Other epidemiologic studies suggest that up to 15 to 18 million children under age seventeen have chronic health conditions (Compas et al., 2012). This prevalence makes adolescent chronic conditions particularly important to pay attention to.

According to the CDC, the broad definition of chronic conditions is that they "last 1 year or more and require ongoing medical attention or limit activities of daily living or both" (U.S. Department of Health and Human Services, 2019). Adolescents with chronic conditions face unique challenges in their day-to-day lives. There are many chronic conditions that adolescents may face such as diabetes, asthma, cancer, and chronic pain. Chronic conditions can affect every aspect of an adolescent's life including their cognitive and physical development, psychosocial development, their education, and their family system (World Health Organization, 2020). The combination of these stressors can create an environment where some adolescents may have trouble coping (Michaud et al., 2007).

Mental Health During Adolescence

There are many factors to mental health in adolescence including peer pressure, exploring sexual identity, technology, gender roles, home life, relationships, violence, and socioeconomic problems (World Health Organization, 2020). The effects of mental illness should not be

dismissed. According to the World Health Organization, in 2016 there were around 62,000 adolescents that died due to self-harm (2020). In a lifetime assessment of age of onset for mental illness, it was found that the median age for anxiety and impulse-control disorders to develop is 11 years, while the median age for substance use disorders was 20 years (Kessler et al., 2005). Additionally, those with any anxiety disorder are more likely to have a lower self-esteem (Maldonado et al., 2013).

Comorbidity for mental illness in young people with chronic conditions is around 20% while the rate for healthy teens is around 10% (Sawyer et al., 2007). Children and adolescents with chronic physical conditions are likely to internalize the effects of their chronic condition, which can lead to anxiety and depression (Pinquart & Shen, 2011). Pain can also have a considerable effect on mental health in adolescents with chronic conditions, particularly for younger adolescents as they don't have the abstract thinking to rationalize the pain and treatment that they are receiving (Friedrichsdorf, 2016).

Importance of Parenting During Adolescence

Parenting styles can largely affect the development of children and teens (Simons & Conger, 2007). There are considered to be four main parenting styles: authoritative, authoritarian, indulgent, and uninvolved. It is well researched that authoritative parenting, where parents have high responsiveness and demandingness, shows the most positive outcomes for children and adolescents (Simons & Conger, 2007). Having two authoritative parents is ideal for children, while having one parent who is authoritative is better than other combinations parenting styles (Simons & Conger, 2007). Additionally, the most negative child outcomes come from having two uninvolved parents (Simon & Conger, 2007). For adolescents with chronic conditions, it is particularly important for the children to feel supported through warm and firm

parenting to assist the coping process (Michaud et al., 2007). There have been cross sectional studies that suggest that adolescents with authoritative parenting that promotes better type-1 diabetes management and better glycemic control (Noser et al., 2018).

Indulgent and authoritarian parenting behaviors are also particularly interesting to look at in adolescence. Indulgent parenting is a parenting style where parents are known for over-nurturing their children or giving them too much independence. Indulgent parenting has a positive relationship to adolescent life satisfaction, body image, and health perceptions. However, one negative effect of indulgent parenting is decreased independence later in development (Coccia et al., 2012). Authoritarian parenting is a parenting style that has high levels of demandingness but little responsiveness. These parents value control over their children and provide little emotional support. For children with type-1 diabetes, there has been mixed literature on if authoritarian has effects on disease management in children (Noser et al., 2018).

Parents are also affected by their child's chronic condition. They may feel a similar sense of grief, guilt, anger, and depression that their child feels (Michaud et al., 2007). Parents may struggle to have a sense of control over the condition and may feel nihilistic in the management of the disease, both of which can have negative effects on the chronically ill child (Michaud et al., 2007, Noser et al., 2018). There may also be a pervasive sense of chronic sorrow, particularly in mothers, about the life they had wished their child to have. Other challenges to parents also include health care management and delays or lack of developmental milestones (Coughlin & Sethares, 2017)

Current Study

Adolescent chronic conditions and parental autonomy-granting are important to study because the intersection of these topics has not been explored, and is not completely understood.

In a time of rapid growth and change, the adolescent must go through not only the normal physical, emotional, cognitive, and social changes that accompanies puberty, but the transition to independence in chronic condition management. This transition, if not managed correctly, can not only cause disruption in the lives of all family members involved, but also the health and safety of the adolescent. By looking at the mental health component of adolescent chronic conditions and parental autonomy granting, we can better understand what the needs of the adolescent are during this time of rapid change.

Literature Review

Impact of Chronic Conditions on Adolescent Development

Adolescent chronic conditions are a commonly overlooked sector of the medical field. In pediatric medicine, there often seems to be an emphasis on childhood health (Brady et al., 2017), and then a reemergence of literature for older populations (Sawyer & Aroni, 2005, Brady et al., 2017). However, health during the adolescent years is particularly important because of the impact it can have on the growth and development of adolescents physically, emotionally, and socially.

Adolescence is a period that is marked by the maturation of sexual organs and the ability to reproduce, as well as the growth into a more adult-looking figure. These changes, along with advanced abstract reasoning development and increased autonomy leads to changes in self-esteem and self-image. In healthy adolescents, adolescence is a period of increased self-esteem (Yasemin & Urich, 2011). However, adolescents with chronic conditions have been found to have lower levels of self-esteem, particularly those with visible diseases (Pinquart & Shen, 2012). Several factors play a part in decreased self-esteem. Chronic conditions, particularly conditions that may contribute to malnutrition or chronic inflammation, commonly have delayed

growth and puberty (Michaud et al., 2007). Other conditions such as some autoimmune disorders and eating disorders can also lead to noticeable physical changes such as weight gain or loss. It is shown that adolescents with chronic conditions have lower body satisfaction than adolescents without chronic conditions, especially chronic conditions that have an effect on weight (Michaud et al., 2007). While this is just a brief sampling of ways that chronic conditions can impact self-esteem and does not represent all chronic conditions, it is important to note that the potential decrease in self-esteem can greatly affect overall happiness and quality of life.

Adolescent chronic conditions are also likely to effect socialization. Adolescents with chronic conditions are "more likely than their healthy peers to miss school due to their condition or to the treatment they need" (Michaud et al., 2007, p.4). Additionally, pain and fatigue can cause teens to have a disruption from their regular environment and feel isolated from their peers (Michaud et al., 2007). Adolescents with chronic conditions are also more likely to experience peer rejection than their healthy peers (Sandstrom & Schanberg, 2004). Social stigma can be high for adolescents with chronic conditions, which can cause a psychosocial burden (Sawyer et al., 2007). It is particularly important to pay attention to the rapid acute change and high stress that adolescents may be going through after being diagnosed with a chronic condition. For example, an adolescent diagnosed with type 2 diabetes will have to quickly change their lifestyle, diet, and learning to cope with a life-long condition (Butner et al., 2009). The combination of these changes and normal adolescent stressors may create additional stressors for the adolescent with a chronic condition.

Autonomy and Parental Autonomy-Granting

Adolescence is a time of increased autonomy and independence. While autonomy has been studied by many, researchers have had a hard time clearly conceptualizing what autonomy

really means in adolescence, and how to study it (Petegem et al., 2013). For example, some researchers have conceptualized autonomy as increased independence, while others have conceptualized it as increased volition (Petegem et al., 2013). Ryan and Lynch point out that researchers must be critical in the definition of autonomy as to not confuse it with detachment from the parents (1989). This lack of definition creates unclear standards of how to measure autonomy in adolescence.

In recent literature, parental autonomy-granting has been more closely defined as parents giving up control and allowing adolescents to make decisions and perform actions independently. This is often a process that is assumed and taken for granted in healthy adolescents (Akre & Suris, 2014). Autonomy does not have a clear definition in literature relating to chronic health conditions, but is often considered to comprise of control, risk behaviors, decision-making, independence, and self-determination (Spear & Kulbok, 2004). For an adolescent with a chronic condition autonomy-granting can be more complicated, as there can be severe health effects if autonomy is granted too quickly or slowly, such as medication not being properly managed (Michaud et al., 2007). For example, one of the biggest issues for doctors of adolescents with chronic conditions is that adolescents often have trouble sticking with a treatment long-term as they may not yet have the abstract thinking skills to realize why the treatment is necessary. (Sawyer & Aroni, 2005).

According to the CDC, only 1 in 6 adolescents with a mental, behavioral, or developmental disorder received the transition care from childhood to adult care that they require (Centers for Disease Control and Prevention, 2020). There is a significant lack of resources in transitional programming for adolescents developed by professionals (Michaud et al., 2007). Practical applications in autonomy granting in health care recommends gradual transition to self-

management that is controlled by the adolescent (Michaud et al., 2007). Adolescents who have high perceived behavioral autonomy have lower depressive symptoms. This supports the idea that parents who grant their child more autonomy may be seen as less coercive (Eagleton et al., 2016).

In a study by David, Lo, and Langer (2018), they looked at the difference between level of actual involvement in treatment and level of desired involvement for parents and focused on the relationship between parent and adolescent medical decision making. Parents and adolescents who wanted to participate in medical decision making had more actual participation. Adolescents who perceived themselves as being more involved in medical decision making experienced less decisional conflict in treatment decisions. Additionally, there were also positive correlations between valuing involvement in medical decision making, the perception of involvement and valuing involvement in medical decision making, and level of health consciousness (David et al.). Parental involvement in medical decision making is an important part of autonomy granting in the transition from pediatric to adult health care.

Akre and Suris (2014) breaks down parents of chronically ill teens' views of autonomy into four parts: autonomy acquisition, giving or taking on autonomy, shared management of treatment, and the child's future. This study focused primarily on the parent's views, and the difference between how mothers and fathers gave autonomy. One of the most interesting observations was that when giving and taking autonomy for adolescents, there were three main areas of hardship: child having trouble with autonomy, parent having trouble with autonomy or both. Mothers were also more frequently involved in the adolescent's life, and the fathers more often had the philosophy of letting the child make mistakes (Akre & Suris). Another study done on parental autonomy dyads looked at chronic condition management in adolescents with type 1

diabetes. The results suggest that responsibility of care needs to be shared, rather than one-sided. Another key result included that as adolescence progressed, there was no association with age progression on autonomy sharing (Hanna et al., 2012).

Depressive Symptomology, Health, and Parenting

Depression is the fifteenth cause of illness and disability in 10–14-year-olds, and the fourth leading cause in 15–19-year-olds (World Health Organization, 2020). Data from the National Survey on Drug Use and Health shows that major depression affected 18.1% of adolescents aged 12-17 in 2016 (Lu, 2019).

While depressive signs and symptoms can vary for individuals, the National Institute of Mental Health (2018) states that an individual may be suffering from depression if they suffer from some of the signs and symptoms for at least 2 weeks. The symptoms include:

> Persistent sad, anxious, or empty mood. Feelings of hopelessness, or pessimism. Irritability. Feelings of guilt, worthlessness, or helplessness. Loss of interest or pleasure in hobbies and activities. Decreased energy or fatigue. Moving or talking more slowly. Feeling restlessness or having trouble sitting still. Difficulty concentrating, remembering, or making decisions. Difficulty sleeping, early-morning awakening, or oversleeping. Appetite and/or weight changes. Thoughts of death or suicide, or suicide attempts. Aches or pains, headaches, or digestive problems without a clear physical cause and/or that do not ease with treatment (section 2).

Depressive symptoms vary from adolescent to adolescent based on many factors, including gender, parental marital status, and parenting style. Parent and family acceptance and adolescent self-esteem is associated with lower depressive symptoms (Eagleton et al., 2016). Adolescents in single-mother households are more likely to have depression (Lu, 2019).

Additionally, adolescents who live in households who are less authoritative are more likely to be susceptible to depression. This may be because authoritative parents are more likely to be responsive to the adolescent (Lu, 2019). However, there is no data on how other specific parenting styles affect depressive system in adolescents (Lu, 2019).

Those with adolescent chronic conditions are more likely to have higher levels of depressive symptoms, with varying levels depending on condition, gender, etc. (Pinquart & Shen, 2011). Previous literature has shown that females with chronic conditions are more likely than their healthy peers to have depressive symptoms, while males with chronic conditions were not (Suis et al., 1996). Additionally, studies have shown that increased levels of depressive symptoms and anxiety are predictors of poor disease management control in diseases such as type 1 diabetes and asthma. (Delamater et al., 2017, Herzer & Hood, 2010, Peters & Fritz, 2011)

Current Study

Guided by the following research questions, the current study aimed to look at parental autonomy granting to adolescents with chronic conditions, and how that correlated with depressive symptoms in these adolescents:

Research question 1. Do adolescents with a chronic condition report higher depressive symptom across the transition to adulthood than youth without a chronic condition? Based on pervious literature, it is hypothesized that adolescents would report higher depressive symptoms across the transition into adulthood.

Research question 2. Does parental autonomy-granting during adolescence mediate the link between having a chronic condition and depressive symptomology during the transition to adulthood? It is hypothesized that parental autonomy-granting during adolescence will at least

partially, if not fully mediate the link between having a chronic condition and depressive symptomology during the transition to adulthood.

Previously, other studies have not looked at the relation between mental health and autonomy granting. Much of the literature is specifically parent or adolescent focused but does not make the connection for how the parental behavior affects the adolescent.

Method

Sample

With Institutional Review Board approval (exempt), data for this study was collected as part of the National Longitudinal Study of Adolescent to Adult Health. Add Health is a large, nationally representative sample of youth who, with a reporting parent, answered a variety of health and lifestyle questions during adolescence (ages 12-20) at Wave 1 (1994/1995) and Wave 2 (1996), emerging adulthood (ages 18-26) at Wave 3 (2001/2002), and young adulthood (ages 24-32) at Wave 4 (2007/2008). In-school surveys and in-home interviews were conducted with youth, families, siblings, friends, romantic partners, peers, and school administrators drawn from 132 schools. The full Add Health sample at Wave 1 includes 20,745 adolescents in grades 7-12 and 17,670 reporting parents. Data collection instruments contain a comprehensive battery of questions related to physical, mental, and social health and development. The full sample was limited to youth with complete data on key health variables, which reduced the study sample to 8,783 individuals.

Measures

Individual characteristics. At Wave 1, age, youth self-reported their ***age*** (calculated by date of birth and interview date), ***gender*** (1=female; 0=male), and ***race/ethnicity***. Race/ethnicity

was dummy coded into the following categories: Caucasian, African American, Hispanic, Asian American, Native American, and Other.

Parent marital status. Parents self-reported their marital status at Wave 1 as single/never married, married, widowed, divorced, or separated (recoded as married=1, not married=0).

Socioeconomic hardship status. Family economic hardship was assessed at Wave 1 by parents' responses of "yes" (1; no=0) to receiving public assistance, such as welfare.

Chronic condition. Having chronic condition was measured at Wave 1. Youth were identified as having a chronic health condition if their parent answered "yes" (1; no=0) to the adolescent having any of the following conditions: Obesity, migraines, allergies, asthma, diabetes.

Depressive symptoms. Nine items from the CES-D (Radloff, 1991) were asked across Waves 1-4 measuring depressive symptomology. Participants responded with how often each internalizing symptom occurred within the past week (e.g., "I was bothered by things that usually don't bother me. I felt that everything I did was an effort. My sleep was restless."). Responses ranged from Rarely/None of the time (0) to Most/All the time (3). This measure had good reliability in previous Add Health research (α = .81 - .84, across waves; Williams et al., 2019).

Parental autonomy-granting. Adolescents responded to seven items at Wave 2 indicating how much autonomy they are granted by their parents. Sample items include: "Do your parents let you make your own decisions about how much television you watch? Do your parents let you make your own decisions about people you hang around with? Do your parents let you make your own decisions about what you eat?" Responses were coded as yes (1) or no (0) and summed across items to create a continuous scale ranging from 0 (no autonomy) to 7

(highest autonomy). A similar measure of parental autonomy-granting has been used with good reliability in previous research (Eagleton et al., 2016).

Plan of Analysis

First, correlations among all study variables were examined using IBM SPSS v. 26. Then, to address the first research questions, independent sample t-test analysis was used to identify significant differences in depressive symptomology (Waves 1-4) between adolescents reporting at least one chronic condition and those who reported none (Wave 1). Next, multiple regression analysis was used to identify links between chronic health conditions during adolescence and depressive symptoms in emerging and young adulthood. Parental autonomy-granting during adolescence (Wave 2) was explored as a potential mediator (Baron & Kenny, 1986) in the link between Wave 1 chronic conditions and Waves 3 and 4 depressive symptoms (controlling for Waves 1-2 depressive symptoms). To account for potential confounds, analyses controll for age, gender, race/ethnicity, parents' marital status, and socioeconomic hardship status. Analyses using depressive symptoms as an outcome controlled for prior wave depressive symptoms.

Results

Descriptive statistics about the sample are reported in Table 1. The age range of the sample was 11 through 19 years. The average age of these students was 15.21 (*SD* = 1.59) and 54.6% (n=4,799) of the sample was female. The majority of the sample was white (n=5,334, 60.7%), and 71.3% (n=6,263) of the sample had parents who were married. Less than 10% of the sample (8.6%, n=755) reported receiving public assistance. Mean perceived autonomy was 5.43 on a scale from .00 to 7.00 (*SD* = 1.51). Depressive symptomology was measured at each of the four waves on a scale from .00 to 15.00. The average at each wave was Wave 1 (*M* = 2.50, *SD* = 2.50), Wave 2 (*M* = 2.48, *SD* = 2.50, Wave 3 (*M* = 2.47, *SD* = 2.55), and Wave 4 (*M* =2.99, *SD*

=2.61). Over half of the sample (52.4%, n = 4,604) reported having at least one chronic condition.

TABLE 1

Table 2 lists correlations between all study variables. Results from the independent samples t-test (Research Question 1) shows that mean levels of depressive symptoms were significantly different between youth with and without a chronic health condition. Specifically, youth with chronic conditions at Wave 3 (M = 2.52, SD = 2.59) compared to youth without chronic conditions at Wave 3 (M = 2.40, SD = 2.50). Youth with chronic conditions at Wave 3 were significantly more likely to experience higher levels of depressive symptoms $t(8{,}781) = -2.25$, $p < .025$.

TABLE 2

To address the second research question of whether parental autonomy plays a mediating role in the link between chronic health condition and later mental health, multiple regression analysis was used following Baron and Kenny's (1986) four-step approach to test mediation (controlling for demographic factors and prior wave depressive symptoms). Chronic health condition was only significantly associated with depressive symptoms at Wave 3 (b=.13, p<.05), so Wave 3 depressive symptoms were used to test mediation of parental autonomy-granting. Chronic condition was significantly and positively associated with parental autonomy-granting (b=.10, p<.01) and autonomy-granting was negatively associated with Wave 3 depressive

symptoms (b=-.05, p<.01). However, parental autonomy-granting did not mediate the link between chronic conditions and depressive symptoms as both predictor variables (chronic health and parental autonomy-granting) remained significantly associated with Wave 3 depressive symptoms when entered together in the model. Independent of parental autonomy-granting and all other control variables, having a chronic condition in adolescence (Wave 1) significantly increased depressive symptoms in emerging adulthood (b=.14, p<.01). Parental autonomy-granting during adolescence (Wave 2) was associated with significantly lower depressive symptoms (b=-.05, p<.01).

TABLE 3

Discussion

The present study aimed to address whether adolescents with chronic conditions report higher depressive symptoms in the transition to adulthood than youth without a chronic condition. This study found that adolescents with chronic conditions were more likely to experience higher levels of depressive symptoms than their healthy peers, which supports the first study hypothesis. This was evident at Wave 3, when participants were emerging adults transitioning from adolescence to young adulthood.

It was particularly interesting that this trend emerged during this transition into adulthood, rather than across the entire span of adolescence. When looking broadly at the changes during adolescence, the transition from adolescence to adulthood includes planning for the future and having a chronic condition can exacerbate this stress from this change. This aligns with previous literature relating to the transition to young adulthood and chronic conditions. In a

study on Type 1 diabetes, specific stressors in the transition to college included higher stress in interpersonal relationships including romantic partnerships, higher everyday stress levels due to disease management, and stress over long-term complications (Ersig, 2019). It is also important to note that poorer disease management was predicted by increased depressive symptoms in adolescents with chronic conditions such as asthma and type 1 diabetes. (Delamater et al., 2017, Herzer & Hood, 2010, Peters & Fritz, 2011) This indicates a cyclical pattern in disease management and depressive symptomology that needs to be further studied. The significant relationship between adolescent chronic conditions and depressive symptoms also aligns with previous literature (Pinquart & Shen, 2010). There is little established literature on the transition from adolescence to adulthood with chronic conditions, so these individual stressors need to be further studied.

The other primary goal of this study was to identify if parental autonomy-granting during adolescence mediated the link between having a chronic condition and depressive symptomology during the transition to adulthood. The mediation link would indicate that there was a complete intervention of parental autonomy-granting that would prevent chronic conditions from affecting depressive symptomology. The results indicated that parental autonomy-granting was independently important for depressive symptoms, alongside having a chronic condition; thus, no mediation was observed. This means that, while parental autonomy-granting was hypothesized to mediate the link between chronic physical health conditions and mental health and did not do so, it was still an important factor in the lives of teens living with chronic conditions. Chronic conditions were associated with significantly higher depressive symptoms during the transition from adolescence to adulthood, while also having a positive correlation with parental autonomy granting. In turn, parental autonomy granting had a negative effect on

depressive symptoms. If the link between having a chronic condition and depressive symptomology had diminished or become non-significant after parental-autonomy granting was accounted for, mediation would have been found. In the data, there was virtually no change in the association between chronic conditions and mental health when parenting was considered. These results suggest that parental-autonomy granting may act as an independent counterbalance to mental health challenges stemming from having a chronic condition.

There are several limitations to this study that warrant consideration. First, Add Health is a secondary dataset, which addresses many topics, but limits the variables available and how they were assessed. Add Health was not specifically designed to focus solely on measures of parental autonomy-granting and chronic conditions; thus, those measures are less complex. There are only a few questions measuring parental autonomy-granting and they do not specifically address items such as perceived control over disease management, and level of parental involvement in care. Additionally, the Add Health dataset only measures a few chronic conditions (obesity, migraines, allergies, asthma, diabetes), which is not a comprehensive measure of all chronic conditions (common or less common) that affect adolescents. Lastly, the experience of living with a chronic condition as an adolescent and continuing to learn to manage it during the transition to adulthood, is something that needs to be studied qualitatively, as well as quantitatively.

Future research is important in this area. For adolescents with chronic conditions, it is crucial to pay attention to the relationship with parents. There is little literature on how specifically parental autonomy-granting impacts mental health. With the increased stressors that adolescents with chronic conditions face, there needs to be studies on the amount and kind of support that takes place in the family system. There also needs to be studies done with a wider

variety of chronic conditions to obtain a wider scope of how adolescents with these conditions are affected.

While posing a few limitations, the use of Add Health is also a strength of this study. This data is nationally representative, generalizable, longitudinal, and allows for modeling parenting variables with chronic health variables to predict long-term mental health. This is particularly important, as no known studies have addressed the impacts of parental autonomy-granting on mental health outcomes in adolescents with chronic conditions. Previous studies have addressed the link between chronic illness and mental health, and chronic illness and parental autonomy-granting, but not the link between all three.

Attention needs to be paid to adolescents with chronic conditions due to their increased risk for higher levels of depressive symptoms. High school guidance counselors should pay particular attention and reach out to provide extra support to these students. By adding this buffer, they may be able to reduce depressive symptoms. Additionally, parents of adolescents with chronic conditions should be informed of the increased risk of depressive symptoms and the buffer that parental autonomy-granting adds in preventing the onset of depression. This could be addressed during the adolescent's appointments with their primary care physician or with a specialist. By informing parents, they may be able to identify and address this problem at home in the future. Autonomy in adolescence is considered of several factors: control, risk behaviors, decision-making, independence, and self-determination (Spear & Kulbok, 2004). If parents are educated on the different aspects of autonomy, such as how to assist in healthy decision making, this may act as a buffer for long-term mental health problems.

There also needs to be systemic changes in healthcare to address adolescent transition care. Currently, only 1-in-6 adolescents are getting the transition care that they require (Centers

for Disease Control and Prevention, 2020). There is a significant lack of resources in transitional programming for adolescents developed by professionals (Michaud et al., 2007). Professionals recommend that there be transitional programming offered in healthcare for adolescents, and that the programming should be led by the adolescent, rather than by the adult in order to maximize care (Michaud et al., 2007).

Conclusion

This study aimed to address the relationship between parental autonomy-granting, chronic conditions in adolescence, and depressive symptomology. Adolescents with chronic conditions are an understudied group, and have more needs, physically and emotionally, than their healthy peers. Adolescents with chronic conditions are more likely to experience depressive symptoms, but this was partially mediated and positively correlated with parental autonomy-granting. Adolescents with chronic conditions need to receive higher levels of transition care, and parents need to be further educated on parental autonomy-granting and how this can act as a buffer for depression. Further research needs to be done on a broader selection of chronic conditions and needs to include the full impact of parental autonomy-granting on the family system.

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Table 1. Sample descriptive statistics (n=8,783).

Variable	%	M	SD	Possible Range
W1 Age		15.21	1.59	11-19
11	0.0			
12	3.3			
13	14.0			
14	17.3			
15	20.2			
16	21.3			
17	16.9			
18	6.1			
19	0.8			
W1 Female	54.6			
W1 Race/Ethnicity				
White	60.7			
Black	20.5			
Hispanic	10.7			
Asian	5.2			
American Indian/Alaska Native	1.7			
Other	1.2			
W1 Parents Married	71.3			
W1 Public Assistance	8.6			
W1 Chronic Condition	52.4			
W2 Perceived Autonomy		5.43	1.51	0-7
Wave 4 Depressive Symptoms		2.99	2.61	0-15
Wave 3 Depressive Symptoms		2.47	2.55	0-15
Wave 2 Depressive Symptoms		2.48	2.51	0-15
Wave 1 Depressive Symptoms		2.50	2.50	0-15

Table 2. Bivariate correlations among study variables for the full sample (n=8,783).

Variables	1	2	3	4	5	6	7	8	9	10	11
1. W1 Chronic Condition	----										
2. W2 Parental Autonomy	.032**	----									
3. W4 Depressive	.020	-.042***	----								
4. W3 Depressive	.024*	-.037***	.353***	----							
5. W2 Depressive	.001	-.012	.276***	.297***	----						
6. W1 Depressive	.003	-.002	.254***	.268***	.483***	----					
7. W1 Age	.002	.296***	-.002	-.001	.090***	.129***	----				
8. W1 Female	-.120	.000	.106***	.117***	.119***	.136***	-.058***	----			
9. W1 Race/Ethnicity	-.011	.140	.005	.014	.042***	.022*	.001	.005	----		
10. W1 P Married	-.013	-.048***	-.063***	-.051***	-.065***	-.071***	-.004	-.012	-.003	----	
11. W1 Public Asst.	.000	-.024*	.810***	.052***	.077***	.075***	-.008	.033**	-.020	-.280***	----

*p<.05, **p<.01, ***p<.001

Table 3. Unstandardized regression coefficients (with standardized coefficients) and standard errors for mediation model (Baron & Kenny, 1986) of chronic health conditions (W1), parental autonomy-granting (W2), and depressive symptoms (W3), controlling for all other study variables. (n=8,783).

Variables	B(***b***)	**SE**
STEP 1: Chronic Condition (W1) → Depressive Symptoms (W3)	.13 **(.**03)*	.05
STEP 2: Chronic Condition (W1) → Parental Autonomy-Granting (W2)	.10 **(.**03)**	.03
STEP 3: Parental Autonomy-Granting (W2) → Depressive Symptoms (W3)	-.05 (-.03)**	.02
STEP 4: Chronic Condition (W1) & Parental-Autonomy-Granting (W2) → Depressive Symptoms (W3)		
Chronic Condition (W1)	.14 (.03)**	.05
Parental Autonomy-Granting (W2)	-.*0*5 (-.03)**	.02
Control Variables (W1) → Depressive Symptoms (W3)		
Age	-.05 (-.03)*	.05
Female	.33 (.06)***	.05
Race/Ethnicity (reference group is White)		
Black	.*19* (.03)**	.07
Hispanic	.22 (.03)*	.09
Asian	.21 (.02)	.12
Native American	.26 (.01)**	.20
Parents Married	-.09 (-.02)	.06
SES/Public Assistance	.11 (.01)	.10
R^2	*.34*	

*p<.05, **p<.01, ***p<.001; Analyses controlled for prior wave depressive symptoms.