PARENTING BEHAVIORS DURING ADOLESCENCE AND ASSOCIATIONS WITH EMERGING ADULT EDUCATIONAL ATTAINMENT AND MENTAL HEALTH

by

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DISSERTATION ABSTRACT

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Title: Parenting Behaviors During Adolescence and Associations with Emerging Adult Educational Attainment and Mental Health

Emerging adulthood is described as the life stage spanning from the end of adolescence to the initiation of young adulthood or assuming stable adult roles. This developmental period, typically spanning ages 18-29, is characterized by increased exploration and transitions across domains of work, education, and relationships. Although a large body of research has underscored the importance of positive parenting behaviors in childhood and adolescence, few studies have investigated the role of early parenting behaviors on emerging adult education and mental health outcomes. The proposed study tested for associations between observed indicators of parenting in adolescence and educational attainment, peer support and mental health in emerging adulthood. This study also examined convergent validity between observed and parent reported parenting behaviors. Existing data was utilized from Project Alliance 2, a large-scale family-centered intervention longitudinal trial. Participants (n = 160) were a subsample of 593 adolescents and their caregivers who participated in the Family Check-Up (FCU) and completed study measures in middle school, high school, and emerging adulthood. Results from path analyses revealed direct and significant pathways from observed parent growth support in adolescence to emerging adult mental health and from

observed parental monitoring in adolescence to emerging adult peer support. In addition, pro-social peer affiliation in adolescence was significantly associated with emerging adult educational attainment. Parent mental health was significantly and negatively associated with observed parental monitoring and problem solving. No gender differences were observed. This research highlights the importance of parenting on social and emotional outcomes in emerging adulthood and expands upon the parenting and emerging adult literature in several important ways.

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CHAPTER I

INTRODUCTION

Emerging adulthood is a theory of development described as the life stage spanning from the end of adolescence to the initiation of young adulthood or the assuming of stable adult roles. This developmental period, typically spanning ages 18-29, is characterized by increased exploration and transitions across domains of work, education, and relationships. These transitions and changes contribute to the overall instability and uncertainty that characterize this stage of development. Although the theory of emerging adulthood cannot be universally applied to all youth or to all domains of functioning, it offers a useful and broad perspective on the challenges and opportunities facing many young people during this time of life (Arnett, 2000; 2007; 2014).

The rise of emerging adulthood is connected to historical and social trends in American society including demographic shifts. In 2014, the average age of marriage in the U.S. was 27 for women and 29 for men compared to 1960 when the average ages were 23 and 20 for women and men, respectively (U.S. Bureau of the Census, 2014). Today, a higher portion of young people are attending college, with approximately 60% entering higher education after graduation from high school (Mogelonsky, 1996). Individuals often wait until after attaining higher education to assume enduring adulthood roles such as marriage and childbearing. After the Great Recession of 2008, less than favorable job markets and economic instability may have exacerbated the delay in initiating stable adult roles among those recently and currently in this stage of development. Indeed, individuals born in the late 1980's and early 1990's have been

impacted by unfortunate economic trends and are significantly more likely than the previous generation to live with and receive financial support from their parents (Davidson, 2014). For example, 60% of all young adults receive some form of financial support from their parents and one in five people in their 20's and early 30's currently reside with their parents (Davidson, 2014).

Psychologist Jeffery Arnett, who coined the term "emerging adulthood," notes that for this generation of young people, returning home is part of a centuries-long trend and represents a reasonable response to a strikingly distinct and confusing postindustrial economy (Davidson, 2014; Arnett, 2014). Within this economy, the task of gaining independence through educational attainment may be especially relevant. While national high school graduation rates are higher than ever before, 20% of high school students will not graduate (National Center for Education Statistics, 2013). Additionally, despite these shifts in high school graduation rates, there are large discrepancies in educational attainment when minority outcomes are compared to those of Whites; 24% of Latino/a students and 32% of Black and Native American students will not graduate from high school (National Center for Education Statistics, 2013). Some have argued that coping with the negative, lingering effects of the recession combined with the aforementioned changes in social roles, expectations, and structures has created a context for increased psychopathology among emerging adults (Schelenberg & Zarrett, 2006).

In fact, descriptive trends of psychopathology during the emerging adult years demonstrate that this developmental period consistently aligns with the onset of some serious mental illnesses including mood disorders, anxiety, and substance use (Riosa, Preyde, & Porto, 2015; Centers for Disease control and Prevention, 2013). During this

already vulnerable developmental period, emerging adults coming of age after the Great Recession may experience added stressors due to increasing economic instability. Challenges experienced during this critical time period appear to have lasting developmental impact on those emerging adults who face mental health problems (Vander Stoep, Davis, & Collins, 2000). Given the challenges of this developmental time period and the lasting impact of young adult educational attainment and mental health, the purpose of this study will be to better understand some of the processes that contribute to both educational attainment and mental health outcomes among this population.

One of the most important influences on young people is the parenting practices utilized by their parents or guardians (Brown et al., 1993; Wentzel, Feldman, & Weinberger, 1991). A large body of research has underscored the importance of positive parenting behaviors in childhood and adolescence. To date, however, few studies have investigated the role of early parenting behaviors on emerging adult education and mental health outcomes. Furthermore, existing research on parenting practices and youth outcomes has relied heavily on single-informant, self-report data. For example, the vast majority of research on parenting practices such as monitoring and support has relied heavily on retroactive parent-report and child perceptions of these behaviors rather than actual observed support or control behaviors. Additionally, self-report parenting measures are susceptible to systematic distortions and thus may not be accurate representations of parents' typical behavior (Morsbach & Prinz, 2006). The proposed study tested for associations between observed indicators of parenting in adolescence and educational attainment, peer support, and mental health in emerging adulthood.

Utilization of observational measures of parenting behaviors may provide a more nuanced understanding of parenting in adolescence and its longer term correlates.

Using Social Learning Theory and Lerner's Developmental Contextual Model of Development as the foundation, the emerging adulthood outcome variables of educational attainment and mental health symptoms were examined. In the section that follows, I describe Social Learning Theory, The Developmental Contextual Model of Development and define the constructs of interest for this study. I review the literature related to educational attainment for emerging adults and the literature linking specific parenting behaviors (monitoring, problem solving, and academic growth support) in adolescence with education outcomes. I then review the existing research on mental health symptom prevalence in emerging adulthood followed by the literature highlighting specific parenting behaviors in adolescence and their impact on mental health. Additionally, I describe how social support, pro-social peer affiliation, and parent mental health symptoms may be implicated in the outcomes of interest and, finally, I describe the purpose of the study and outline the hypothesized relationships among the proposed constructs.

Theoretical Frameworks

Social Learning Theory. Bandura's Social Learning Theory (1977) proposes that parents shape outcomes of their children through parenting behaviors. Indeed, this theory suggests that children and adolescents' behavior is shaped through real-life experiences; learning can occur through many methods including reinforcement and imitation. The parent-child relationship is the primary source of these experiences. Youth learn strategies for coping, resolving conflicts with others, and interacting with friends

through these experiences and carry them forward across contexts and throughout their development (Patterson, DeBaryshe, & Ramsey, 1989; O'Conner et al., 2013). From this perspective, parenting behaviors impact children's psychological adjustment and interpersonal skills (Feldman et al., 1998). Additionally, parents communicate to children, through these parenting behaviors, ideals about education. For example, children may learn from parents early on about the importance of education and how it will positively impact life later on. These positive attitudes and behaviors may contribute to greater educational attainment for emerging adults (Gordon & Cui. 2015). Social learning theory serves as a key theoretical frame for this study.

Developmental Contextual Model of Development. Lerner (1986, 1991, 1992) posits that, "The dynamic interactions between individuals and the multiple contexts within which they live comprise the process of human development" (Lerner 1986). Lerner's Developmental Contextual Model of Human Development incorporates relevant individual characteristics and pertinent contextual factors. While Social Learning Theory posits that an individual's behavior influences and is influenced by both the social world and personal characteristics, the Developmental Contextual Model adds more nuance and attention to ecology through postulating the existence of bi-directional influences between the child, developing within the context of the family of origin, and child's extra familial network (e.g., school, peers, work). Through the diverse interactions a child has with his or her parents, the child influences the parents, who are also influencing him or her. Therefore, the child is influencing a source of his or her own development. Within the family context, the parents play a crucial role in shaping the child or adolescent's environment in a way that fosters their development of knowledge, attitudes, and

behaviors required to functionally contribute to society (Lerner et al., 1995; Lerner, 1991; 1998). Parenting behaviors function within a larger context of societal and cultural influences. Historical changes, such as the Great Recession of 2008, can be conceptualized as "non-normative" historical changes that produce a variation across all levels in the system (Lerner, 1995). The present study seeks to examine pertinent individual characteristics (mental health status of parents and emerging adults, educational attainment) and relevant features of the larger context during adolescence (parenting behaviors, pro-social peer relations) all while considering the societal and cultural influences on these systems.

Given the focus of this study, I sought literature linking parenting behaviors and practices to youth and emerging adult mental health, social, and educational outcomes. Various search engines, including PsycNET, Google Scholar, ProQuest Social Science Journals, and the Prevention Science Institute database were used to identify existing research on parenting and emerging adult outcomes. A combination of search terms were used including the following: "parenting behaviors," "parental monitoring," "school involvement," "academic involvement," "academic support," "educational attainment," "family problem solving," "emerging adult mental health," "emerging adult social support," "peer support," "growth support," "parent mental health," "emerging adulthood," "observed parenting behaviors," "pro-social peer affiliation."

Educational Attainment in Emerging Adulthood

Exploring options and preparing for work through educational attainment is a central task in emerging adulthood (Arnett, 2000). The United States Census Bureau defines educational attainment as "the highest level of education that an individual has

completed." Data on educational attainment is typically gathered through a single question asking about the highest grade in school one has completed, or the highest degree an individual has received (U.S. Census Bureau, 2010). Extant research has demonstrated sizeable differences in economic and social outcomes between emerging adults who do not graduate from high school and those who obtain a post-secondary degree. There are potential large benefits for society and individuals across areas of employment, annual and lifetime earnings, and social issues (Kirsch, Sum, & Yamamoto, 2008; Center for Labor Market Studies, 2012). There also stark differences in earnings between those who obtain only a high school diploma compared to those who obtain postsecondary degrees. The US Department of Education National Center for Educational Statistics (NCES, 2010) reported that the median annual income for those only holding a high school diploma or equivalent was $30,000, compared to Bachelor's degree holders earning $46,000. While national high school graduation rates are higher than ever before, 20% of students still will not graduate (NCES, 2013). In 2013, 72% of 25-34-year-olds with a bachelor's degree or higher in the labor force had full time jobs, compared with 61% of high school graduates and 53% of those without a high school diploma (National Center for Education Statistics, 2013). A closer examination of these outcomes reveals wide discrepancies in educational attainment and unemployment rates among racial and ethnic minorities. For example, unemployment rates for Black individuals are almost double those of Whites, and Black men earn 72% of the average earnings of White men and 85% of the earnings of White women (Rodgers, 2008). Importantly, attaining more education has been tied to greater life satisfaction (Khattab & Fenton, 2009), less disruption to romantic relationships (Schoen et al., 2007) and

increased positive mental health (Paul & Moser, 2009). Given these implications, it is important to better understand processes that support educational attainment among emerging adults.

Several key parenting behaviors are explored in depth in subsequent sections. First, *Parental Monitoring* is defined as "The tracking and structuring of a child's activities and environments," (Venkatramen, Dishion, Kiesner, & Poulin, 2010, p. 3) specifically, within the child's home, community, and school contexts and observing the child across these environments. This construct, first described by Patterson (1982), has been widely researched and high levels of parental monitoring are consistently correlated with positive outcomes for youth (Racz & McMahon, 2011; Brown et al., 1993; Venkatramen et al., 2010). Conversely, low levels of parental monitoring are associated with development of antisocial behavior (Patterson & Stouthamer-Loeber, 1984), drug abuse (Dishion et al., 1988) and depressed mood (Buchanan, Maccoby & Dornbusch, 1996) in youth. Given these broad implications and the particular importance of parental monitoring during adolescence, this construct was selected for inclusion in the current investigation.

Secondly, *Academic Specific Growth Support* was selected as a parenting construct of interest given its relevance to pertinent educational and social outcomes. Academic specific growth support has also been termed "school-specific parental involvement" (Gordon & Cui. 2012) and involves multiple dimensions including direct tutoring and guidance, home-learning activities, and contact and communication with schools and teachers (Hill & Craft, 2003). Parental involvement in youth's education has been consistently associated with positive outcomes including improvements in school

behaviors (e.g., Izzo, Weissberg, Kasprow, & Frendrich, 1999), social competence and peer interactions (Fantuzzo et al., 1995; Marcon, 1999), and school performance (Gordon & Cui, 2012).

Finally, *Problem Solving* was selected given its relation to positive family interactions coupled with the limited research that has explored this construct's predictive validity. Modeling and implementing effective problem solving behaviors facilitates youth's cognitive, emotional, and autonomy development (Darling & Steinberg, 1993; Neitzel & Straight, 2004). These three specific parenting behaviors will be discussed both within the context of educational attainment and mental health in emerging adults.

Parenting Behaviors and Educational Attainment

Contextual and proximal factors in childhood have been demonstrated to be fundamental in the development of cognitive and self-regulation skills that are vital for academic success (Campbell & von Stauffenberg; Ladd, 1989; Lemelin et al., 2007; Brennan et al., 2013). Aspects of parenting during childhood have been consistently and positively associated with language development, academic skills, and school readiness (Brennan et al., 2013). Indeed, parenting quality is one of the most consistent predictors for school readiness in childhood (Brooks-Gunn, Rouse, McLanahan, 2007). A large body of research has demonstrated that parenting practices during early childhood are crucial in establishing cognitive and behavioral foundations for children to succeed in school (Cole, Michel, & Teti, 1994; Kochanska, Coy, & Murray, 2001; Brennan et al., 2013). This relationship appears to extend into the adolescent years; parenting processes are significantly associated with adolescents' academic outcomes (Steinberg, 2001; Gordon & Cui, 2012). A study conducted by Darling and Steinberg (1993) examined how

differential parenting styles were related to children's academic outcomes. They concluded that parents who align more with authoritative styles of parenting (i.e., warm and accepting relationship with children along with reasonable limit setting) were also more likely to actively participate in their child's education, and in turn their children had higher academic achievement (Steinberg et al., 1992). Parenting *styles* reflect the environment in which parents raise children and have been associated with adolescent outcomes across a variety of areas of functioning. However, parenting styles are not consistently predictive of outcomes across diverse racial or socioeconomic groups (Darling & Steinberg, 1993). Educational psychology research has highlighted the specific importance of parenting *behaviors* such as monitoring, praise, involvement, and problem solving for children and adolescents' academic development (Shelleby, Shaw, Gardner, Dishion, & Wilson, 2013; Domenech, Donovick, & Crowley, 2013). Specifically, higher parental involvement was associated with higher levels of overall academic achievement (Shelleby et al., 2013). One aim of the current study is to test for an association between specific observed parenting behaviors in adolescence and educational attainment in emerging adulthood.

Parental Monitoring. Parental monitoring has been described as "a set of parental behaviors encompassing attention to and tracking of a child's activities, friends, and whereabouts" (Dishion & McMahon, 1998, p. 61). There are four components that comprise monitoring (Racz & McMahon, 2011): knowledge (what parents know about their youth's life), control (the degree to which parents use rules and limits to curb youth's ability to engage in unsupervised activities), parental solicitation (parents ask youth or youth's friends for information) and youth disclosure (the youths tendency to

inform parents about their activities). Previous research has supported the notion that parenting reflecting a combination of support and behavioral control (monitoring) is associated with cognitive and academic wellbeing and functioning from early childhood through adolescence (Racz & McMahon, 2011; Brown et al., 1993). Jacobson and Crockett (2000) used an ecological framework to examine the associations between parental monitoring and variety of indicators of adolescent adjustment. Measuring adolescents' academic achievement through self-reported GPA, they found that higher levels of parental monitoring, measured through youth report, were associated with higher GPA. However, the authors used a cross-sectional design and bivariate correlations to examine the associations between parental monitoring and indexes of adolescent adjustment, which limits the ability to infer causal relations among variables.

Other research has linked parental monitoring to adolescent school functioning (e.g., MacDermid, McHale, & Perry-Jenkins, 1990; Brown et al., 1993) and suggested that the process of monitoring and staying apprised of youth's activities and whereabouts may impact their academic success. However, little research has focused on the long-term influence of parental monitoring on educational attainment in emerging adulthood.

Academic Growth Support. Another distinct parenting behavior relevant to educational achievement and academic outcomes is academic-specific growth support (Gordon & Cui, 2012). Academic specific growth support, or "school-specific parental involvement" (Gordon & Cui. 2012), involves parent tutoring and guidance, home-learning activities, and contact and communication with schools and teachers (Hill & Craft, 2003). Parents' involvement in promoting academic growth can operate in unique ways to influence a child or adolescents' educational success. For example, previous

investigations have documented that parents who are very involved in children's homework helped to motivate their children and subsequently this support was associated with greater academic achievement (Mo & Singh, 2008). Gordon and Cui (2012) demonstrated that school-specific parental involvement had a stronger effect than general parent support and parent expectations on adolescents' academic success. A qualitative study with 86 urban adolescents found that motivational support from teachers and family members was pivotal in promoting positive development (Smokowski, Reynolds, & Bezruczko, 2000). Rumberger and colleagues (1990) analyzed family characteristics of students who dropped out of high school and found that, compared to enrolled students, parents of dropouts were less engaged in their children's schooling and more likely to use negative emotions in response to their children's academic performance. Parents' involvement in school-specific issues may occur through direct tutoring or motivational conversations about academic goals and expectations; findings from a study by Turney and Kao (2009) suggest that this direct involvement may then promote adolescents' abilities to navigate the educational setting and persist through difficult tasks.

Problem Solving. Parents' ability to effectively address family conflicts plays a crucial role in effective parenting (Dishion, Forgatch, Van Ryzin, & Winter, 2012). Parents facilitate effective problem solving for youths through providing cognitive, emotional, and autonomy support (Darling & Steinberg, 1993; Neitzel & Straight, 2004). For example, parents can provide cognitive support by breaking down instructions into discrete tasks and helping to share information. Emotional support involves using a positive tone to share praise and encouragement towards a goal; however, when parents use criticism or blame in problem solving discussions they may reject youth's efforts to

participate. Parents can promote autonomy by encouraging independent problem solving (Neitzel & Straight, 2004). The previous effective problem solving behaviors have been linked to children's self-regulatory and academic achievement in school (Conner, Knight, & Cross, 1997; Pianta, Smith, & Reeve, 1991; Neitzel & Straight, 2004). However, limited research has examined how effective problem solving behaviors in adolescence relate to future academic outcomes. Additionally, previous research has documented that improved family problem solving is associated with reduced anti-social behaviors in adolescents. For example, one study found that greater problem solving abilities were associated with reductions in teacher's ratings of problem behaviors (DeGarmo & Fortgach, 2004). It may be that effective problem solving skills, as modeled and facilitated by parents, augment adolescent and emerging adults' abilities to adapt and adjust within the educational system.

While existing research has established the presence of relationships between the above parenting behaviors and educational outcomes across the elementary and secondary levels, fewer studies have examined these relationships beyond the adolescent years. An ethnographic study exploring the role of immigrant parent moral support lends evidence for how parenting practices impact emerging and young Latino/a adults; positive parenting behaviors may foster adolescents to mature into academically successful emerging and young adults with established learning habits and greater motivation to continue learning through education (Auerbach, 2006). Gordon and Cui (2012) conducted a study that examined the effect of three dimensions of parenting behaviors on academic achievement in adolescence and young adulthood. The authors looked specifically at school-specific involvement, general parent support, and parental

expectations and measured these constructs through target adolescent self-report questionnaires during wave one of data collection. They measured adolescent academic achievement through self-reported GPA. Academic achievement in young adulthood was assessed by asking the target participants to report the number of years in school they had completed. Regression analyses revealed that all three dimensions of parenting processes were significantly associated with adolescents' academic achievement, with school-specific involvement having the strongest effect. Additionally, all three parenting processes in adolescence were indirectly associated with young adult academic success; this was partially mediated through academic achievement in adolescence (Gordon & Cui, 2012). This study highlights how parenting processes in adolescence continue to play a crucial role in later educational attainment. However, to examine this relationship, the authors relied exclusively on self-report data from the target adolescent/young adult; a more complete and nuanced understanding of parenting behaviors may be gained through multi-informant reports and observational data.

In summary, prior studies have found support for the association between parenting processes and adolescent educational attainment. Specifically, parental monitoring, academic growth support, and problem solving may be instrumental in establishing foundations for youth to persist in education as they transition into adulthood. In the following sections I focus on another key outcome in emerging adulthood, mental health. During the transitional period from adolescence into adulthood, psychological adjustment is especially relevant as it fosters a trajectory of well-being and development for future adjustment as adults.

Mental Health in Emerging Adulthood

There may be a dark side of emerging adulthood that is missing from the work of Arnett and colleagues (Coté, 2006). Coté reasons that as social expectations become more ambiguous and institutional constraints have declined, there may be increased risk that vulnerable young adults make decisions that compromise rather than promote healthy development (Coté, 2006). For many emerging adults, the emotional-behavioral difficulty evident during childhood and adolescence attenuates, however, for others there is a consolidation of psychological problems, personality disturbance, and social problems during this transitional period (Schulenberg & Zarrett, 2006). In fact, prevalence rates of diagnosable mental health issues among adolescents approaching emerging adulthood have been described as "remarkable" (Riosa, Preyde, & Porto, 2015). One-half of all chronic mental illness originates by the age of 14 and three-quarters by the age of 24. Further, suicide is the second highest cause of death in youth and young adults ages 15-34 (Substance Abuse and Mental Health Services Administration, 2014). Data from the National Survey on Drug Use and Health highlights depression prevalence among this age group; from 2008 to 2010, more than 8% of emerging adults between the ages of 18 and 22 reported experiencing a major depressive episode in the previous year. Another national survey conducted by the American Psychological Association in 2013 found that 30% of young people aged 18-33 reported increased stress in the past year and were more likely to be diagnosed with an anxiety or depressive disorder compared to previous generations. This stress may be exacerbated by the high unemployment rates among this age group (i.e., 2013 unemployment rates among 18-29 year olds was 13%) and interview data supports this notion. The highest ranked source of stress among this

population aged 18-33 was work related (Harris Interactive for American Psychological Association, 2012). Individuals who experience mental health difficulties in early development could be at increased risk of developing a broad range of difficulties that persist into adulthood (Riosa, Preyde, & Porto, 2015; Davis, 2003; Davis & Vander Stoep, 1997).

Emerging adults struggling with mental illness are at risk for a myriad of other health concerns and experience numerous, long-lasting consequences. When compared to typically developing adults, those with mental health issues are more likely to experience homelessness, less likely to graduate from high school, less likely to find employment, more likely to have multiple pregnancies at a young age, and more likely to lose custody of their children (Vander Stoep, Davis, & Collins, 2000). The challenges experienced in this critical time period appear to have lasting developmental impact on those who face mental health problems. Mental health problems in emerging adulthood are associated with more difficulty transitioning through developmental milestones; longitudinal studies have shown that emerging adults with behavioral or emotional problems have less success progressing through the tasks associated with emerging adulthood (Vander Stoep et al., 2000). Given the many consequences associated with experiencing mental health difficulties, it is important to understand early factors that may promote wellbeing among emerging adults.

Parenting Behaviors and Mental Health Outcomes

Parents communicate to their children through parenting behaviors; through direct reinforcement and modeling, parents shape their children's behavior across contexts and situations (Achtergarde et al., 2015). Empirical research supports the concept of social

learning theory for numerous child and adolescent outcomes including mental health (Hutchings & Lane, 2005; Vostanis, Graves et al., 2006; Achtengarde et al., 2015). For example, parenting practices are one of the most reliable and strong predictors of externalizing and internalizing problems among children (Bayer, Hiscock, Ukoummunne, Price, & Wake, 2008). Adolescence represents a time of increased changes across biological and social realms during which youth develop and learn behaviors that may facilitate healthy development or impede adjustment in later life (Stormshak et al., 2011). Parenting behaviors during this transitional period may be especially relevant in reducing problem behaviors and promoting long-lasting positive emotional development. For example, authoritative parenting styles and open communication between family members contributed to adolescents' social competence and reduced the likelihood of mental health issues (Baumrind, 1991; Elgar, Craig, & Trites, 2013). A study by Conger and Conger (2002) found that nurturing and involved parenting behaviors (i.e., high affection, warmth, limit setting and monitoring and low levels of hostility) were associated with fewer emotional and behavioral problems during adolescence and greater competency as parents in early adulthood. Deficits or strengths across specific parenting behaviors have been linked to adolescent emotional wellbeing and mental health. In the following section I present findings supporting the association between the same three parenting behaviors (parental monitoring, academic growth support, and problem solving) and mental health.

Parental Monitoring. Parenting that reflects a combination of support and behavioral control (i.e., monitoring) has been linked to numerous indices of social, emotional, cognitive and academic well being and functioning from early childhood

through adolescence (Jacobson and Crockett, 2000). Parental monitoring has been associated with adolescents' well being, while lack thereof is related to higher rates of maladaptive behaviors. Barber and colleagues (1994) found that parental psychological control (i.e., parent behaviors that inhibit children's individuation process) was associated with adolescent internalizing problems while behavioral control (i.e., permissive parenting and lack of monitoring) was predictive of externalizing problems. Higher *parental monitoring* is associated with less adolescent risk behavior and less internalizing and externalizing behaviors (Jacobson and Crockett, 2000; DiClemente et al., 2001; Fröjd, Kaltiala-Heino, & Rimpelä, 2007; Willoughby & Hamza, 2011). Associations between parental monitoring and education outcomes are described earlier in this chapter.

Academic Growth Support. Other research has cited the importance of *academic growth support* and school-specific parental involvement as a strong predictor for youth development. Indeed, in addition to fostering academic involvement, parent educational support may serve as a crucial context for the development of adolescent mental health (Roeser, Eccles, & Sameroff, 2000; Wang, Brinkworth, & Eccles, 2013; Wang & Sheikh-Khalil, 2014). A study conducted by Wang and Sheikh-Khalil (2014) examined the effects of parent involvement in education through school-based involvement, home-based involvement, and academic socialization during 10th grade. The authors examined the effects of these parenting behaviors on academic achievement and depression one year later and concluded that parental involvement improved emotional functioning in addition to improving academic achievement. Parents' academic growth support may provide adolescents with the necessary confidence in their abilities to succeed while also modeling appropriate coping strategies to face challenges

associated with school and transitions (Wang & Sheikh-Khalil, 2014; Pomerantz, Moorman, & Litwack, 2007).

Problem Solving. Conflicts that occur during adolescence may serve as prime training opportunities for the development of sustainable interpersonal problem solving skills. Parents play an especially important role in helping adolescents to shape their own successful problem solving skills that are in turn related to a number of adjustment outcomes (Reuter & Conger, 1998). Some previous research has documented that improved family problem solving is associated with reduced anti-social behaviors in adolescents (i.e., DeGarmo & Forgatch, 2004), however, very limited research has explored observed indices of effective family problem solving and mental health outcomes. Increased ability to solve problems as modeled and facilitated by parents in adolescence may impact emerging adult mental health symptoms.

In summary, parents' use of monitoring in adolescence is related to less internalizing and externalizing behaviors among youth. Some research has also linked parent's academic support to improved emotional functioning among adolescents, while limited research has explored how family problem solving may relate to mental health outcomes in youth. While much research has demonstrated that parenting practices have a significant effect on adolescent functioning, fewer studies have examined the longitudinal impact of parenting behaviors in adolescence and continued functioning and wellbeing in emerging adulthood. One aim of the current study will be to examine the influence of observed parental academic growth support, monitoring, and problem solving in adolescence on emerging adult internalizing and externalizing mental health symptoms.

There is another important source of parental influence on adolescent and emerging adult mental health outcomes that should be considered here. Specifically, parents own wellbeing and mental health symptoms impact youth outcomes.

Parent Mental Health

A large body of research describes the negative impact of parental depression on child and adolescent outcomes. Compared to children of non-depressed mothers, children of depressed mothers have more difficulty achieving developmental milestones (Field, 1995), exhibit more negative affect, and have greater self-regulation deficits (Huang, Costeines, Kaufman, & Ayala, 2014; Tronick, 2006). Additionally, they are more likely to develop mental health problems (e.g., depression, anxiety, substance dependence), as well as medical and physical conditions that continue into adulthood (Timko et al., 2009; Valdez, Abegglen, & Hauser, 2012). Parents' mental illness has also been shown to have a powerful impact on youth's educational attainment. Farahati and colleagues (2003) used a sample drawn from the National Comorbidity Survey to investigate the effect of parent mental illness on the schooling of their children. They found that parents' mental illness increased the probability of high school dropout of children and that this impact had more consistent negative effects on girls compared to boys. The process through which parents' wellbeing is linked to child and adolescent problems is posited to occur through the disruption of parenting behaviors (i.e., lack of discipline, involvement, monitoring; Smith, 2004). For example, a parent who is experiencing depression may be preoccupied and withdrawn and thereby less able to communicate or actively engage with their child (Smith, 2004).

Given the evidence that parent's mental health influences parenting practices and youth outcomes I will examine the relationship between parent mental health and emerging adult mental health and educational attainment, as mediated by parenting behaviors in adolescence.

Peer Support in Emerging Adulthood

A substantial body of research has delineated the importance of peer support as a protective factor for emerging adults experiencing transitions (Hefner & Eisenberg, 2008). Peer support refers to "the perceived quality of social relationships with regard to providing various forms of assistance- both tangible (e.g., monetary) and intangible (e.g., emotional) during times of need" (Sarason et al., 1991; Lane & Fink, 2015). There are two mechanisms through which peer support is believed to be beneficial; through its capacity to mitigate stress during difficult situations (e.g., Ditzen et al., 2008) and by way of its contribution to wellbeing and physical health (Cohen, 2004). Indeed, quality of peer relationships has been differentially associated with adjustment and educational outcomes. Among college students, increased peer support predicts improved social, emotional, and personal adjustment (Friedlander, Reid, Shupak, & Cribbie, 2007). Other research has demonstrated that youth with poor peer relationships have higher rates of school dropout, academic difficulties, and failing grades (Ollindick, West, Borden, & Green, 1992; Park & Asher, 1987).

During emerging adulthood, friendships are increasingly characterized by closeness and often fulfill the roles of social integration needs and self-worth. To uphold positive peer relationships, social competence skills such as warmth and reciprocity are needed (Larson, Whitton, Hauser, & Allen, 2007). Further, as social learning theory

suggests, early parenting behaviors shape children's internal working models of relationships (Patterson, DeBaryshe, & Ramsey, 1989; Bandura, 1977). These models are suspected to stay relatively stable throughout development and affect relationships with significant others throughout the lifespan. Parenting impacts the degree to which children develop social competence skills (e.g., interpersonal, self-esteem) necessary to succeed in many peer relationships. Peer social competence is associated with various indices of positive functioning including greater self-esteem, educational attainment, and decreased psychological symptoms and delinquent behaviors in emerging adults (Larson et al., 2007). Based on this literature, it is plausible that parental growth support, modeling of effective problem solving, and monitoring in adolescence may contribute to positive peer support in emerging adulthood. As such, I will examine whether observed parenting behaviors in adolescence impact peer support in emerging adulthood.

Pro-Social Peer Affiliation

A related body of research delineates the positive outcomes associated with pro-social peer affiliation in adolescence. Research suggests that deviant and pro-social peer groups reinforce attitudes, behaviors and values consistent with those within the peer group (Piehler & Dishion, 2007; Laible et al., 2016). Specifically, adolescents who spend more time with pro-social peers are less likely to engage in drug use and other problem behavior than those who spent time with deviant peers (Sussman et al., 2007). These positive peer relationships, in turn, may promote psychological wellbeing and educational attainment. Indeed, existing research has consistently demonstrated strong positive associations between peer support and psychological wellbeing in youth and adults (Cheng et al., 2014; Hefner & Eisenberg, 2009). Research has also shown that children's

peer relationships impact academic outcomes, however less is known about the relationship between pro-social peer affiliation and educational attainment in emerging adulthood. Given this research, I will also explore whether pro-social peer affiliation in adolescence mediates the relationship between parenting behaviors in adolescence and emerging adult mental health symptoms and educational attainment.

Limitations in Existing Research

While a large body of research has investigated parenting behaviors in childhood and their influence on adolescent outcomes, limited previous research has examined the impact of parenting processes on educational attainment, peer support, and mental health in emerging adults. Most research examining the impact of parenting behaviors on adolescent/young adult outcomes has relied on single-source, self-report data (Liem, Cavell, & Lustig, 2010). A study that addresses parenting behaviors or styles may provide a more complete picture by collecting data from both parents and children (Gordon & Cui, 2012). Very limited research has utilized observational data that may provide a more nuanced picture of parenting during adolescence. Previous research has also overly relied on White samples thereby limiting the generalizability and accurate understanding of parenting and emerging adult outcomes across diverse socioeconomic and racial populations. Much research has explored parenting processes in early childhood and childhood outcomes, however, cross sectional designs limit the ability to understand relationships over time. While existing research demonstrates the relationship between parenting and adolescence and a host of outcomes for young adults, less emphasis has been placed on this crucial transitional period of emerging adulthood.

Present Study

For the current investigation, I utilized a diverse sample of emerging adults and their parents to examine how observed parenting behaviors during adolescence impacted educational attainment, peer support, and mental health in emerging adults. I assess the relationship between parent mental health and emerging adult mental health and educational attainment as mediated by parenting behaviors in adolescence. I also examine the potential mediating influence of pro-social peer affiliation in adolescence to gain a thorough understanding of how contextual factors impact educational attainment and mental health of emerging adults. This study addresses gaps in the literature in several crucial ways. A unique and important strength of this study is the use of observational data to measure parenting behaviors in adolescence. Additionally, I use both parent report and observed parenting behaviors to investigate the convergent validity of the parenting behavior measures. Given that parenting behaviors, unlike other risk factors, may be shaped and changed through intervention, this research has important implications for policy, intervention and prevention work. Figures 1-5 depict models 1-5, representing the hypothesized relationships in conjunction with the following study aims.

Aims and Research Questions

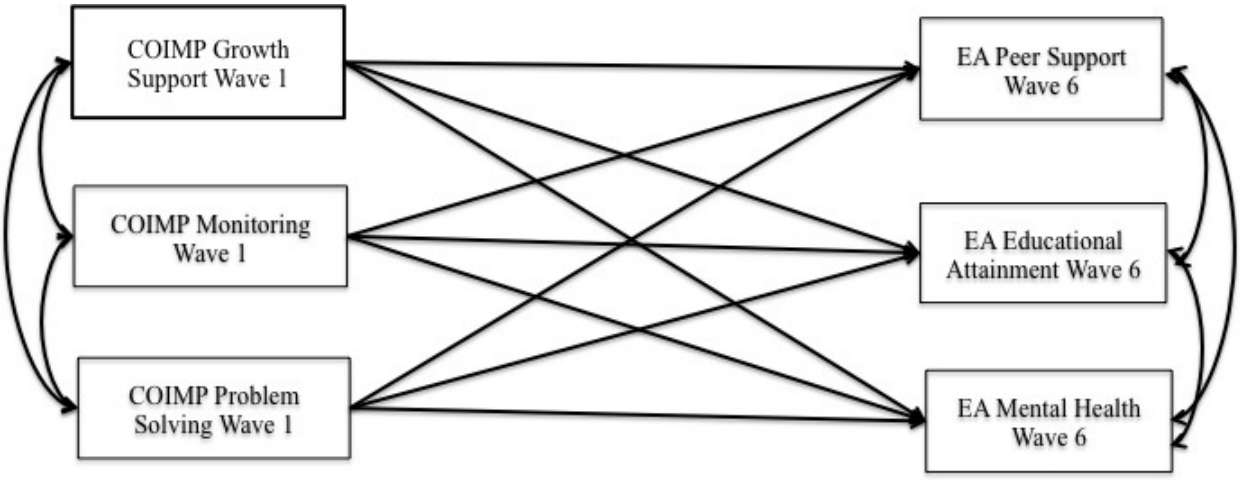
The following aims and research questions were addressed in the present study:

1. Aim 1: To examine convergent validity between observed parental monitoring and academic growth support and parent reported monitoring and academic growth support exhibited during adolescence.

    a. Research question 1: What is the degree of convergence between observed parenting constructs in adolescence and parent-reported parenting behaviors during adolescence?

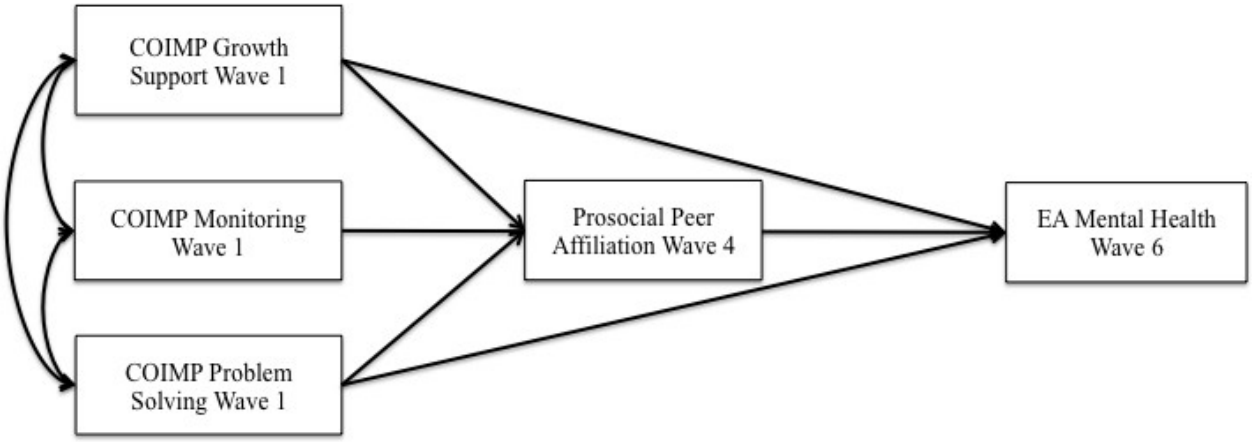
2. Aim 2: To examine associations between three observed parenting behaviors in adolescence and emerging adult reported mental health, education, and peer support.
    a. Research question 2: Do observed parenting behaviors (academic growth support, parental monitoring, problem solving) exhibited in adolescence predict emerging adult reported mental health, educational attainment, and peer support in emerging adulthood?
        i. I hypothesized that observed parenting behaviors (academic growth support, parental monitoring, problem solving) will be positively associated with emerging adult reported educational attainment and peer support and negatively associated with emerging adult mental health (see Figure 1).

Figure 1. Hypothesized Model 1 predicting emerging adult mental health, educational attainment, and peer support from observed parental monitoring, growth support and problem solving.



3. Aim 3: To identify pathways through which observed parenting behaviors exhibited in adolescence influence emerging adult outcomes.
    a. Research question 3: Do observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) impact emerging adult mental health as mediated by pro-social peer affiliation?
        i. I hypothesized that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) will predict mental health outcomes in emerging adulthood via direct pathways and that pro-social peer affiliation will mediate these relationships (see Figure 2).

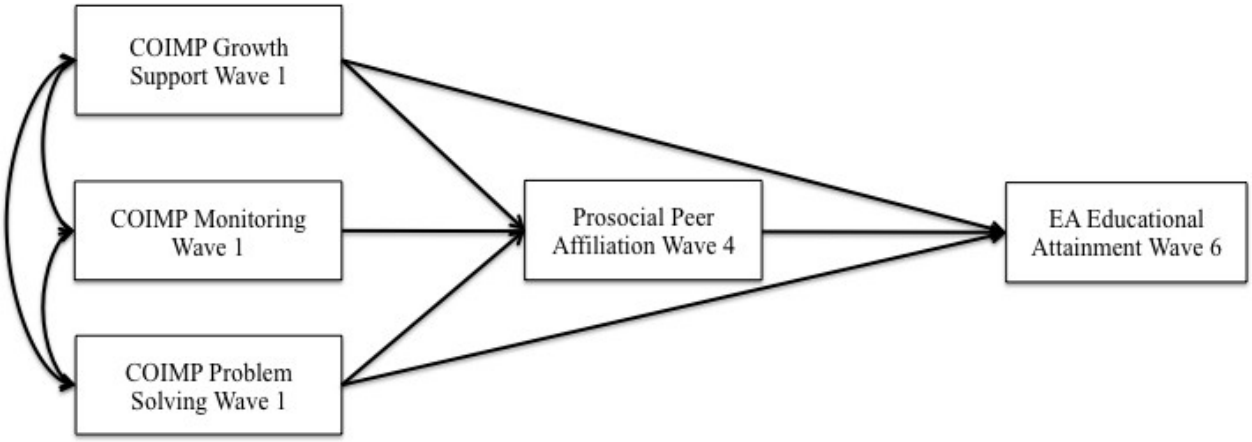
Figure 2. Hypothesized Model 2 predicting associations between observed parenting behaviors in adolescence and emerging adult mental health as mediated by pro-social peer affiliation.



b. Research question 4: Do observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) impact emerging adult educational attainment as mediated by pro-social peer affiliation?

    i. I hypothesized that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) will predict educational attainment in emerging adulthood via direct pathways and that pro-social peer affiliation will mediate these relationships (see Figure 3).

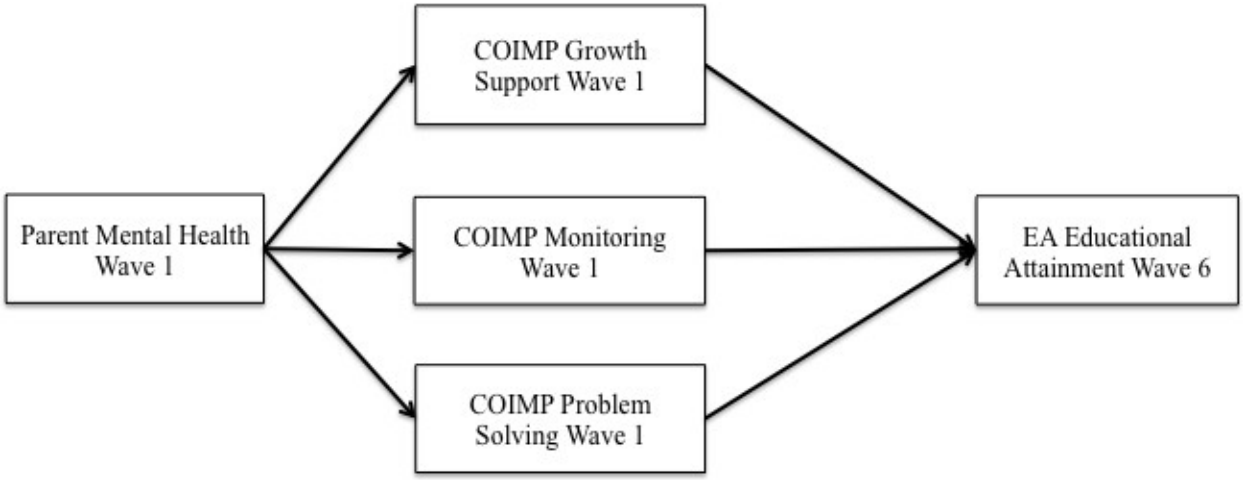
Figure 3. Hypothesized Model 3 predicting associations between observed parenting behaviors in adolescence and emerging adult educational attainment as mediated by pro-social peer affiliation.



c. Research question 5: Does parent mental health impact emerging adult educational attainment as mediated by observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving)?

    i. I hypothesized that parent mental health will predict emerging adult educational attainment via direct pathways and that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) will mediate this relationship (see Figure 4).

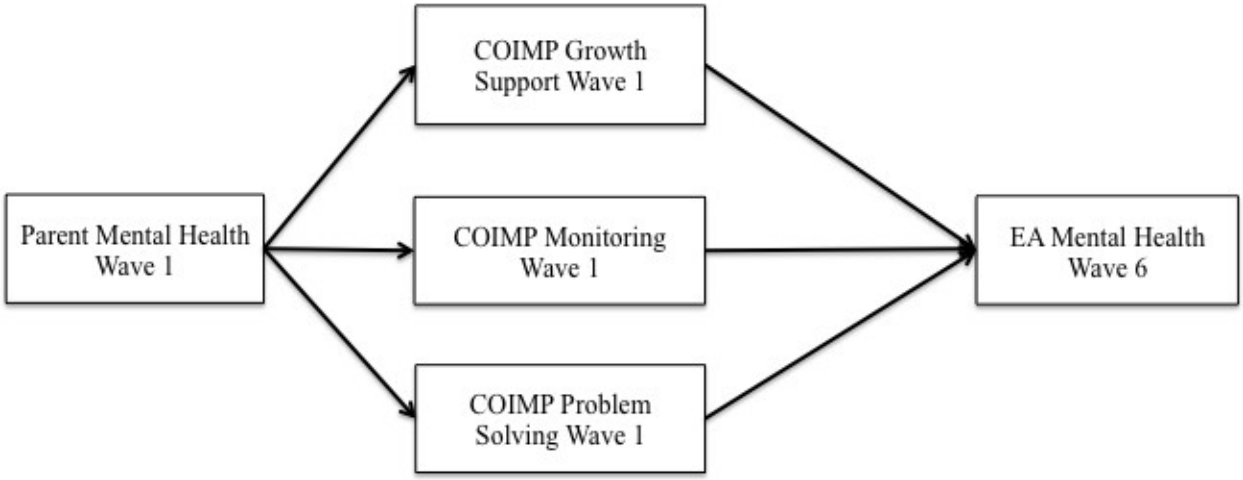
Figure 4. Hypothesized Model 4 predicting associations between parent mental health and emerging adult educational attainment as mediated by observed parenting behaviors in adolescence.



d. Research question 6: Does parent mental health impact emerging adult mental health as mediated by observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving)?

    i. I hypothesized that parent mental health will predict emerging adult mental health via direct pathways and that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) will mediate this relationship (see Figure 5).

Figure 5. Hypothesized Model 5 predicting associations between parent mental health and emerging adult mental health as mediated by observed parenting behaviors in adolescence.



CHAPTER II

METHOD

For the current study data was utilized from Project Alliance 2 ([PAL2]; DA 018374; PI Dr. Elizabeth Stormshak), a large-scale family-centered intervention longitudinal trial. This intervention was designed to prevent problem behaviors in youth through providing support to families during the transition from childhood to adolescence. Families were recruited from three socioeconomically and ethnically diverse middle schools in the Pacific Northwest and followed longitudinally into emerging adulthood with 83% retention.

Procedures

Families of 6th grade students were recruited (mean age = 11.87) from three middle schools in the Pacific Northwest region of the United States. Parents actively consented to participate in the study and students provided assent on the day of assessment administration. Consent forms were mailed to families or sent home with students. IRB approval was obtained prior to recruitment. In the spring of each academic year beginning in 2006 through 2010 (grades 6 through 10), youth and caregivers who were enrolled in the study completed self-report questionnaires. School personnel administered the paper and pencil questionnaires in school, unless a student relocated or was absent. In those cases, assessments were mailed to participants. During baseline (Wave 1) of data collection parents and caregivers completed self-report surveys focused on adolescent risk, health, and social behaviors and parenting behaviors. Families randomized to the intervention condition were invited to participate in a series of video

recorded family interaction tasks, which took place in family's homes or the project office, depending on family preference.

Data was gathered across four time points throughout middle and high school. Families who moved were tracked and followed, via mailed surveys and phone interviews. Participants were re-contacted at age 19 and invited to participate in a 6th Wave of data collection assessing emerging adult behavior outcomes. This study will utilize data from Waves 1, 4, and 6 collected from the subsample of emerging adults who completed the observational tasks at baseline and young adult questionnaires at Wave 6.

Participants

For the current study, participants (n = 160) were a subsample of the 593 ethnically diverse adolescents and their caregivers who participated in a school-based, family-centered, intervention targeting substance-use prevention called the Family Check-Up (FCU) and had observational data available from Wave 1. Parents of all 6th grade students were invited to participate in the study, and 82% of all parents agreed to do so. During the 6th grade year, 386 families (65%) were randomly assigned to the intervention condition, and 207 families (35%) were randomly assigned to the control condition in which families experienced "business as usual" at school without access to any of the intervention services available to families in the intervention condition. Only participants who were randomly assigned to the intervention condition (n = 386) were invited to complete the observational tasks in Wave 1. Participation was completely voluntary. All participants were compensated $20 USD for each year an assessment was completed. Demographic data was based on the subsample of emerging adults and their caregivers that completed family interaction tasks during Wave 1 and had data available

at Wave 6 (n = 160), 53.5% of emerging adult participants identified as male and 46.5% identified as female. The ethnic composition of the emerging adult sample was as follows: 37.5% European American (*n* = 60), 23.1% multiethnic (*n* = 37), 13.8% African American/Black (*n* = 22), 20.6% Hispanic/Latino (*n* = 33), 1.9% Asian/Asian American (*n* = 3), 1.3% Native American/American Indian (*n* = 2), and 1.9% Pacific Islander (*n* = 3). Of this sample, 95% of primary caregivers identified as female (*n* = 152) and 5% as male (*n* = 8). A total of 85.6% of primary caregivers were biological parents (biological mother *n* = 132, biological father *n*=5), 3.8% were adoptive parents (adoptive mother *n* = 4, adoptive father *n*=2), 6.2% were grandparents (*n* = 10), 1.3% were "another relative" (*n* = 2), and the remaining 3.1% of caregivers were step parents or foster parents (*n* = 5).

Caregiver reported yearly income at Wave 1 was the following: 19.4% earned $90,000 or more (*n* = 31), 13.8% earned between $60,000-90,000 (*n* = 27), 27.5% between $30,000-60,000 (*n* = 44), 25.0 % between $10,000-30,000 (*n* = 40), and 8.2% earned $10,000 or less (*n* = 13).

Measures

Self-report questionnaires and observational coder impressions forms including all parenting behavior items are found in Appendix A. For all measures, internal consistency was tested using Cronbach's alpha, with $a > .70$ considered to be acceptable and $a > .80$ is considered to be good Zimmerman, Zumbo, & Lalonde, 1993). Reliability analyses were conducted using SPSS version 22.0 for Mac (IBM Corp, 2013).

Demographic Questionnaire. At wave one, primary caregivers completed a packet of questionnaires that included demographic items pertaining to their own age, gender, educational attainment, household income, ethnicity, family structure (i.e., single

parent), and the primary language spoken at home. They also answered questions about their adolescent's age, gender, and ethnicity. Gender was treated as a dichotomous variable coded one for males and zero for females. Ethnicity was coded categorically, with 1 = European American, 2 = Native American/American Indian, 3 = African American, 4 = Hispanic/Latino, 5 = Asian American, 6 = Pacific Islander, 8 = multiethnic, and 9 = unknown. Caregivers also responded to one item regarding yearly income by selecting the option which best reflected their earnings. Responses ranged from 1 (*$4,900 or less*) to 13 (*$90,000 or more*). Primary caregivers and emerging adults responded to demographic questions at wave six of data collection. Caregivers reported their age, educational attainment, household income and employment status while emerging adults reported their age, how often they had moved, their current living situation, and whether they were married or had children.

Parental monitoring. At Wave 1, youth's primary caregivers completed a 10-item parental monitoring scale (Stormshak, Caruthers, & Dishion, 2006b) in which they reported how often they knew with whom their child spent unsupervised time, where their child spent free time, and how the child was doing in school. They responded using a 5-point Likert scale (1 = *Never or Almost Never* - 5 = *Always or Almost Always*). Sample items include "*Where she/he goes when she/he is out with friends"* "*If she/he does something bad outside the home*" and "*How she/he does in different subjects in school*." A mean score was calculated with higher scores indicating higher parental monitoring (M = 3.96, SD = .75). This measure has been observed to have adequate criterion validity. Specifically, in previous research utilizing this scale, parental monitoring was found to be associated with decreases in youth problem behavior over

time, a finding consistent with past literature exploring the construct of parental monitoring (Fosco, Stormshak, Dishion, & Winter, 2012; Barrera et al., 2001; Dishion et al., 1991; Hoeve et al., 2009). It is important to note that evidence of criterion validity by authors (Fosco et al., 2012) is derived from the larger data set from which the present sample is drawn. This scale has demonstrated adequate reliability in previous research with adolescents and parents (α=.82; Fosco et al., 2012). Reliability of the 10-item scale within this sample was also good (α=.82; see Table 1).

Table 1
Means, Standard Deviations, and Reliability of Study Variables

Wave	Variable	α	M	SD	Range
1	SR Parent Monitoring	.82	3.96	.75	1.10-5
1	SR Growth Support	.64	1.20	.56	0-2.38
1	COIMP Growth Support	.82	4.87	1.06	1.88-7.25
1	COIMP Parent Monitoring	.82	5.42	1.36	2-8.5
1	COIMP Problem Solving	.83	6.26	1.0	3.33-9
4	Pro-Social Peer Affiliation	.75	2.87	1.0	0-4
1	PC Depression	.88	8.77	8.46	6-43
6	EA Peer Support	.75	3.87	.82	1.14-5
6	EA MH	.88	51.31	11.46	25-77

Note. COIMP = Observational, SR = Self-reported, PC = Primary Caregiver, EA = Emerging Adult, MH- Mental Health, α = Cronbach's α.

Academic growth support. At Wave 1, parents completed an 8-item questionnaire assessing their involvement in their youth's school. Items were developed by the principal investigators for the purpose of this longitudinal study and were designed to assess frequency of concrete behaviors associated with involvement in the child's schooling. Respondents reported how often in the past year they had engaged in parent teacher conferences, attended organizational meetings, or communicated with their youth's teacher. They responded using a 5-point Likert scale (1 = *Not at All* - 5 = *Weekly or More*). Sample items include "*Called TC's teacher for any reason"* "*Stopped by to talk to a teacher at the school*" and "*Attended a parent-teacher conference or open house*." A mean score was calculated with higher scores indicating more academic involvement (M = 1.20, SD = .56). No validity data is available for this scale as it was developed by the principal investigators for the purpose of the intervention study. However, it was included in the current study on the basis of face validity (the correspondence of the items with the definition of "school specific parental involvement" as established by Gordon and Cui, 2012) and the fact that items assess specific, concrete behaviors. This measure demonstrated low reliability at .64 (see Table 1), suggesting that responses to items were not strongly correlated. This will be considered in the discussion.

Observational data; Family assessment task (FAST). Youth and caregivers participated in the FAST (Dishion & Kavanagh, 1997), which is a structured 43-minute videotaped interaction task during which the target youth and their caregiver(s) were given prompts to encourage 5-minute discussions on seven designated topics. The seven different topics included: school expectations, parental monitoring, family culture, discrimination, problem solving, substance use, and planning a fun family activity. Each

section lasted 5 minutes, except the substance use task, which lasted 8 minutes. These observational assessments were conducted in families' homes or in project offices, depending on the family preference. The tasks utilized in the present study include the school expectations, parental monitoring, and problem solving tasks (see below for a full review of prompts for each task). Following the tasks, families were debriefed and given the opportunity to ask questions about the observational tasks.

Coder impressions questionnaire FAST coding. Coders then completed a 79-item Coder Impressions Questionnaire while reviewing videotapes (COIMP; Dishion & Kavanagh, 1997; Dishion, Hogansen, Winter, & Jabson, 2004) to assess various aspects of family management and problem solving. Each FAST task was coded by 2 research assistants who were trained extensively by a coding specialist who was a contributing author to the development of the coding system. Coders were trained and tested for reliability on the COIMP until they consistently demonstrated their reliability with other coders; to be considered reliable and fully trained coders need to demonstrate 85% response reliability. Coders met as a group on a bi-weekly basis with the coding supervisor to discuss and resolve coding discrepancies. This coding system has been used in a number of studies such as, Fosco, Carauthers, and Dishion, 2012; Van Ryzin and Dishion, 2013; and Shelleby et al., 2014. Several parenting constructs were captured within the various questions that comprised the COIMP. The following constructs are relevant to this study and were used to measure observed parenting behaviors: *academic growth support, monitoring, and problem solving*. See Appendix A for specific items that comprise each construct.

Observed academic growth support.

To assess *academic growth support* families completed the school expectations task during which they were given these instructions by a research assistant:

> (To the Teen): "I'd like you to talk about how important attendance, homework and grades are to you. Then please talk about your hopes and plans for your academic future." (To the Parent): "When (TC) has finished please talk about your expectations about attendance, homework and grades and what you do to support those expectations. Then please talk about your hopes and plans for your son/daughters academic future."

Families were given five minutes to discuss the questions before being instructed to move to a different task. Using a 9-point scale (9 = *Very much* – 1 = *Not at All*), coders rated families on a total of 8 items that are hypothesized to comprise this construct and were combined to create an *academic growth support* score. Coders rated how true each statement was of the primary caregiver (PC; example: "Does the parent focus on positive behaviors that could be increased?") and alternate caregiver (AC) if an alternate is present. In all cases in which an alternate caregiver was present, the mother was identified as the PC. No reliability or validity information for this measure is reported in the literature. A mean score was computed with higher scores indicating higher levels of academic growth support ($M = 4.87$, $SD = 1.06$). Reliability of this scale was good (Cronbach's alpha = .82, see Table 1).

Observed parental monitoring.

To assess *parental monitoring* families completed the monitoring task during which they were given the following instructions:

> (To the teen): "It is common for teens to spend more and more time with friends when adults aren't around. Please talk about a time in the last month when you spent at least an hour with friends without an adult around. Go into as much detail as you'd like, starting from the beginning and going to the end, describing where you were, who you were with and what you were doing."
>
> (To the parents/caregivers) "Please first listen to (TC) and then comment or gather any other information you may be interested in."

Using a 9-point scale (9 = *Very much* – 1 = *Not at All*), coders then rated a series of statements pertaining to the family's interactions during this task; 6 of these statements are hypothesized to comprise the *parental monitoring* construct (example: "Does this parent seem to be monitoring what the child is doing when outside of adult supervision?") A mean score was computed with higher scores indicating greater parental monitoring ($M = 5.42$, $SD = 1.36$). Similar to parent report of parental monitoring, the items in this measure have face validity for measuring the construct of parental monitoring. Specifically coders rated knowledge (what parents know about their children's lives; Everri, et al., 2015; Racz & McMahon, 2011). Additionally, Carauthers, Van Ryzin and Dishion (2014) report this scale has adequate predictive validity. Reliability of this scale was good (Cronbach's alpha = .82, see Table 1).

Observed problem solving.

To assess *problem solving* families completed the problem solving task in which they were given the following instructions:

> (To the family) "You have identified_____as a problem that you'd like to work on. I'd like you to talk about what the problem is and to come up with at least one solution. You can come up with more than one solution if you'd like. It may be hard to solve this problem in the next five minutes so just do the best you can to make progress."

Using a 9-point scale (9 = *Very much* – 1 = *Not at All*), coders then rated a series of statements involving the family's interaction and how true each statement was for the adolescent (TC), primary caregiver (PC) and alternate caregiver (AC). Six of these statements are hypothesized to comprise the *problem solving* construct (example: "Are suggestions constructive or positive ideas toward problem resolution?") No validity evidence is available for this scale. Using a different sample, authors Dishion, Forgatch, Van Ryzin, and Winter (2012) hypothesized that the duration of conflict during the family problem solving task would discriminate between three developmental patterns of antisocial behavior. The mean duration of conflict bouts was the only interaction that discriminated the three groups. For the current study, a mean score was calculated with higher scores indicating higher problem solving ability (M = 6.26, SD = 1.00). Reliability of this scale was good (Cronbach's alpha = .83, see Table 1).

Parent Mental Health.

Center for Epidemiological Studies Depression Inventory (CES-D). Parent mental health was evaluated at Wave 1 using the Center for Epidemiological Studies Depression

Inventory (CES-D; Radloff, 1977). Parents responded to statements that assessed mood such as, "I felt that I could not shake off the blues, even with help from my family and friends." Responses to each of the 20 items in this measure were recorded on a 4-point Likert scale ranging from 0 to 3. Anchor points, in terms of days per week, ranged from "rarely or none of the time (less than 1 day)" to "most of the time (5-7 days)." The final score ranged from 0 to 60 with higher scores indicating larger impairment (M = 8.77, SD = 8.46). A cutoff score of 16 is indicative of "significant" or "mild" depressive symptomatology. The CES-D has excellent internal consistency with alphas of .88-.91 for the general population and good convergent validity with the SF-36 Mental Health subscale (Pearson's r = .75; Miller, Anton, & Townson, 2008). Reliability of this scale was good (Cronbach's alpha = .87, see Table 1).

Parent Educational Attainment.

Parent/caregiver educational attainment was measured by asking parents to report the highest level of education they had completed. The 9 response options ranged from no formal schooling to graduate professional training/Graduate degree. The majority of the sample had completed some college (27.2 %), 16% reported having graduated from high school or received a GED, 9% reported having an Associate's degree, 15% had a college degree, 14% had a graduate or professional training degree, 7% of this sample had completed at least one year of high school, 4% completed junior high, 6% completed 7th grade or less, and 1% had no formal schooling.

Pro-social Peer Affiliation.

Pro-social peer affiliation was measured at Wave 4. Teens answered 4 questions regarding how many of their peers engaged in pro-social activities in the past month

using a using a 4-point Likert scale (0 = *None of them* – 4 = *All of them*). Sample items included: "*How many of your friends in the past month have done well in school*?" and "*How many of your friends in the past month participated in team activities*?" A mean score was derived from these items with higher scores indicating greater affiliation with pro-social peers and lower scores indicating lower levels of pro-social peer affiliation (*M* = 2.87, *SD* = 1.00). No validity evidence is available for this scale. However, face validity indicates that items in this scale are associated with the definitions of pro-social peer affiliation used by previous researchers (Walden et al., 2004; Kaufmann, Wyman, Forbes-Jones, & Barry, 2007). Reliability for this scale was good (Cronbach's alpha = .75, see Table 1).

Emerging Adult Measures at Wave 6.

Emerging Adult Mental Health. To capture mental health symptoms in emerging adults, the Adult Self Report (ASR; Achenbach & Rescorla, 2003) was administered at Wave six of data collection. Emerging adults completed this 126-item self-report questionnaire that assessed aspects of adaptive functioning and problems. Emerging adults rated themselves for how true each item is currently or was for them in the past six months across three anchors (0 = *Not true, 1 = Somewhat or Sometimes true*- 2 = *Very True or Often*). The questionnaire provides scores for syndrome and DSM- oriented scales. Additionally, total internalizing and externalizing problems can be computed by summing scores across relevant syndrome scales. For the purpose of the current study, emerging adult mental health was assessed using the broad Total Problems scale, which is yielded by summing the scores for internalizing (39 items), externalizing (34 items), thought problems (9 items), attention problems (15 items), and other problems (21 items).

The final score was a T-score which ranged from 25 to 82. Higher scores indicate higher problem levels (M = 51.31, SD = 11.46). The ASR has demonstrated good internal consistency across the empirically based problem scales (.83), for the DSM- oriented scales (.78) and for the broad Total problems scale (.97; Achenbach & Rescorla, 1997) and previous research has shown that the ASR is a valid measure of mental health problems among this emerging adults (Rescorla & Achenbach, 2004). Reliability of this scale was good (Cronbach's alpha = .88, see Table 1).

Educational Attainment. Educational attainment was measured by asking emerging adults to report the highest level of education they had completed. The 8 response options ranged from 7th grade or less to Graduate professional training/Graduate degree. Additionally, they were asked whether they graduated from high school or received their GED. Respondents then reported whether they were currently enrolled in an educational or training program, and if not, whether they had future plans to return to school. Forty seven percent of this sample had completed at least one year of college. Two percent had completed junior high, 4.4% had completed some high school, 27% completed their high school degree or GED, 34.6% had some college (e.g., completed their Associate's degree, at least 1 year of specialized training), and 0.6% had completed a 4-year college degree (see Table 2). Given that approximately half the sample had an education equally high school or beyond, this variable was also used as a dichotomous variable (0= high school or less, 1= some college or more).

Table 2
Educational Attainment for Caregivers and Emerging Adults

Education Level	*n*	(%)
Emerging Adult Education (*n* = 109)		
Junior high	3	1.9
Some high school	7	4.4
High school degree (or GED)	43	27.0
Some college	54	34.0
Associate's degree	1	0.6
College degree	1	0.6
Missing	50	31.4
Caregiver Education (*n* = 159)		
7th grade or less	15	9.4
Junior high	5	3.1
Partial high school	8	5.0
High school degree (or GED)	26	16.3
Some college	41	25.6
Associate's degree	12	7.5
College degree	30	18.8
Graduate degree	22	13.8
Missing	1	0.6

Peer Support. Emerging adult peer support was gathered through a self-report questionnaire administered at Wave 6. This measure was developed by the principal investigators for the purpose of this longitudinal study and was designed to assess peer support in emerging adulthood. Emerging adults responded to seven questions where they were instructed to think about the peers who they felt closest to and the degree to which they trust, confide in, and feel supported and respected by these peers. Emerging adults responded using a 5-point Likert scale (1 = *Not at All* - 5 = *A lot*). Sample items include "*How much do you trust your peers to follow through with commitments and take your needs and future seriously regardless of their own problems or interest?"* and "*To what extent would you seek or accept advice or guidance from your peers?*" and "*Are your peers people that you enjoy being with and like to go places and do things with?*" No validity evidence is available for this measure. A mean score was derived from these items with higher scores indicating higher levels of perceived peer support and lower scores indicating lower levels of peer support (M = 3.87, SD = .82). Reliability of this scale was good (Cronbach's alpha = .75, see Table 1).

CHAPTER III

RESULTS

Overview of Data Analyses

All analyses were conducted using IBM SPSS version 22.0 for Windows (IBM corp, 2013) and MPlus version 7.4 (Muthén & Muthén, 1998-2015). Data was inspected to assure it met the assumptions for data analyses. Data was screened for patterns of missingness; Little's Missing Completely at Random (MCAR) test was used to assess whether missing items are missing completely at random. Data was checked for outliers, using Cook's D, to ensure appropriate assumptions were met. The means, standard deviations and range of mean item scores, and internal consistencies for all continuous variables were computed. Estimations of skewness and kurtosis (using a cutoff value of +/-3.00) were examined for assumptions of normality. Bivariate correlations were conducted to examine the relationships between all study variables and to inform whether to exclude and variables for the proposed models. Power analysis for mediation in path modeling was tested using MedPower (Kenny, 2017). To minimize Type I error, alpha was set at .05.

Path analyses were used to examine the direct and indirect effects between observed parenting behaviors in adolescence and emerging adult outcomes using MPlus version 7.4 (Muthén & Muthén, 1998-2015). As all path models were just-identified (i.e., zero degrees of freedom), goodness of fit indices were not used as metrics in these analyses (Kline, 2010). Standard errors were adjusted in all models to account for the dependence among parents' and emerging adults' scores by using maximum likelihood estimation with robust standard errors (MLR) which is calculated with a sandwich

estimator comparable to the Yuan-Bentler T2* statistic (Muthén & Satorra, 1995). MLR estimates a likelihood function for each data point based on the variables that are present in order to effectively utilize all available data. In other words, MLR utilizes a mathematical log-likelihood function that estimates values for the missing data. Additionally, path modeling uses an overall variance/covariance matrix to estimate all path estimates, rather than each individual data point, and does not diminish the sample size. Despite missing data in the current sample, the n remained 159 for each of the path models in research questions 2-6 (Newson, 2017).

To address research question one, I examined the convergent validity using a multi-trait multi-method matrix to compare observed parenting constructs of parental monitoring and academic growth support and the parallel self-report parenting constructs in the Wave one data (Campbell & Fiske, 1959). This method is appropriate to understand the strength of the relationship between the scores obtained from two different measurement procedures. The strength of the relationship between the observed parenting behaviors and the self-reported parenting behaviors was assessed through calculating a correlation between the two scores.

In path model 1 (RQ 2), the association of observed parenting behaviors in adolescence and emerging adult mental health, educational attainment, and peer support was examined. The next series of path models examined the relationship between observed parenting behaviors in adolescence and mental health and educational attainment outcomes in emerging adulthood as mediated by pro-social peer affiliation. In model 2, the relationship between parenting behaviors and emerging adult mental health with pro-social peer affiliation as a mediator was examined (RQ 3). In model 3, the

relationship between parenting behaviors and emerging adult educational attainment as mediated by pro-social peer affiliation was examined (RQ4). The final series of path models examined the relationship between parent mental health and emerging adult educational attainment and mental health as mediated by observed parenting behaviors (Model 4 and Model 5, respectively).

Descriptive Statistics

Missing data analyses were conducted using Little's missing completely at random (MCAR) test. Missingness met the assumption for missing completely at random for all variables X^2 (51) = 54.16, p = .36, p > .05. The proportion of data available for each of the study variables ranged from 62% to 99% with the lowest covariance coverage available for participants who completed questionnaires about pro-social peer affiliation at Wave 4 with emerging adult educational attainment and young adult mental health outcomes. While it is recommended that the proportion of available data approaches 80% (Brown, 2015), the majority of covariance coverage was approximately 70% or higher which was sufficient for analyses. 160 participants had data available for the variables across all three waves (Waves 1, 4 and 6).

Means, standard deviations, and reliability of each scale were calculated and are presented in Table 1. Examination of skewness and kurtosis statistics (using a cutoff value of +/-3.00) in addition to visual inspection of histograms suggested that distributions for most study variables approximated normal, with one exception, specifically, the distribution of one study variable was positively skewed: Parental Depression (1.7) Positive skew in Parental Depression suggests most parents in this sample are reporting sub threshold levels of depression. The data for one other variable

was negatively skewed: parent-reported parental monitoring (-1.4) suggesting that parents reported higher levels of parental monitoring. Using Kline's (1998) identified threshold values for skew (+/-3.00) and kurtosis (+/-10.00), the data for these variables does not substantially depart from normality so as to pose problems for path analyses. Path models are also known to be robust to violation of normality in samples larger than 100 (Tabachnick & Fidell, 2001).

Power Analysis

As several research questions in this study examine mediating factors in emerging adult development, power analysis for mediation in path modeling was tested using MedPower (Kenny, 2017). Given that the sample size of these existing data was 159, power was tested using the existing sample size rather than estimating sample size given the preferred level of power. Using the magnitude of bivariate correlations as an indicator of possible path estimates, the effect of each mediating pathway was estimated at Beta 0.10 while direct paths were estimated at Beta 0.30. Results indicated that the current study was adequately powered for estimating direct effects (power 0.95) and overall model effects (power 0.98), but insufficiently powered for testing mediating relationships (power 0.24 to 0.27). Despite low power, models were tested with mediating variables given the potential contribution that this research could make to the understanding of parenting effects on early adult outcomes.

Correlations

Consistent with all aims and research questions, bivariate correlations were conducted to examine associations between self-reported and observational parenting variables ($p < .05$), and between all study variables (see Table 3).

Table 3. Bivariate Correlations of Observational and Self-report Parenting Behaviors, Parent Mental Health, Emerging Adult Education, Peer, and Mental Health Outcomes

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. COIMP Growth Support	-	.49*	.32*	.18*	.13	.15	.08	.14	.02	-.18*	-.09
2. COIMP Parent Monitoring		-	.37**	.18*	.20*	-.01	.29**	.16	.02	-.20*	.14
3. COIMP Problem Solving			-	.21*	.09	-.07	-.02	.14	-.02	-.21**	.01
4. SR Growth Support				-	.29**	.02	-.00	.18	.15	-.12	.14
5. SR Parent Monitoring					-	-.12	.12	.15	.04	-.16	-.13
6. EA Mental Health						-	-.10	.03	-.17	-.08	-.05
7. EA Peer Support							-	.05	.05	-.16	-.13
8. EA Education Attainment								-	.23*	-.22*	-.19*
9. Pro-Social Peer Affiliation									-	.00	.06
10. PC Depression										-	.06
11. TC Gender											-
N	158	157	157	155	134	109	155	109	128	156	158

Note. COIMP = Observational, SR = Self- Report, EA = Emerging Adult, PC = Primary Caregiver, TC = Target Child. * $p < .05$, ** $p < .01$, *** $p < .001$.

Convergent Validity

Research Question 1. Consistent with research question 1, correlations between observed and parent-reported parenting variables were conducted to examine convergence between these two distinct forms of measurement. Self-reported parental monitoring was moderately and positively associated with self-reported academic growth support (r = .25) and observed parental monitoring (r = .20). Self-reported academic growth support was positively associated with observed academic growth support (r = .18), observed parental monitoring (r = .18), and observed parental problem solving (r = .21). Observed academic growth support was strongly and positively associated with observed parental monitoring (r = .49), and observed problem solving (r = .32). Observed parental monitoring was strongly and positively significantly associated with observed problem solving (r = .37). Results revealed low levels of convergence between observed and parent-reported parenting behaviors. Correlations were higher between constructs using the same form of measurement (e.g., self-report, observational) than constructs measuring the same parenting behaviors through different methods. Thus, convergent validity between the two types of measures was not supported.

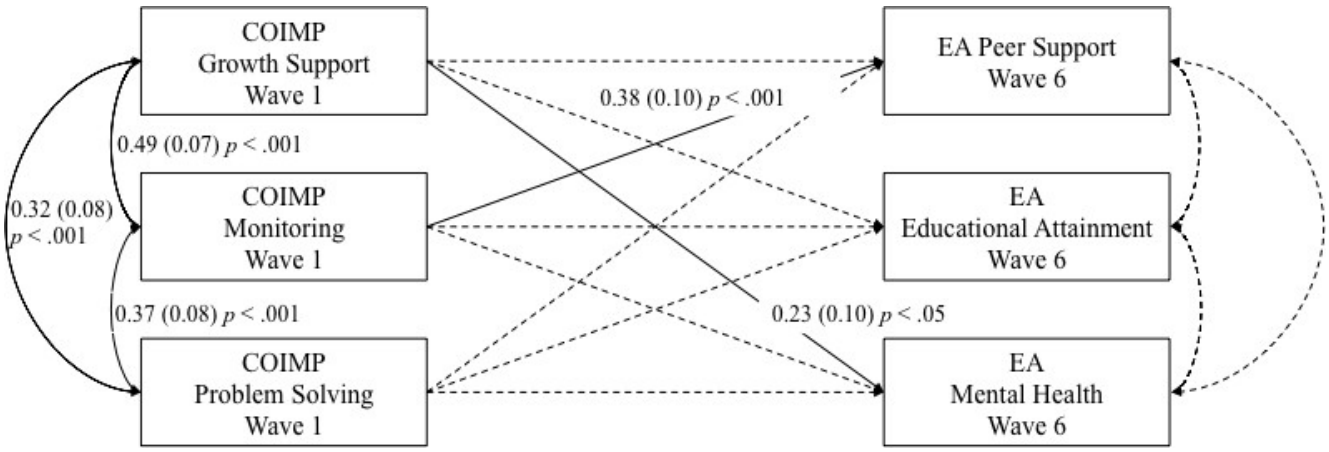
Path Modeling

Research Question 2. I hypothesized that observed parenting behaviors (academic growth support, parental monitoring, problem solving) would be positively associated with emerging adult reported educational attainment and peer support and negatively associated with emerging adult mental health. Examination of the correlation matrix revealed that many of the expected bivariate correlations were not significant. Neither observed academic growth support nor observed problem solving was significantly related to emerging adult educational attainment, peer support, or mental health, and observed parental monitoring was not significantly associated

with emerging adult educational attainment or mental health. Observed parental monitoring was positively and significantly associated with emerging adult peer support (r = .29).

Results of testing model 1 indicated that all three observed parenting variables significantly covaried (see Figure 6). Specifically, there was a positive covariance between academic growth support and parental monitoring (r= 0.49, SE=0.07, p < .001), between academic growth support and problem solving (r= 0.32, SE=0.08, p < .001) and between parental monitoring and problem solving (r= 0.37, SE=0.08, p < .001). Academic growth support was significantly and positively associated with emerging adult mental health (r= 0.23, SE=0.10, p < .001). Observed parental monitoring was significantly and positively associated with emerging adult peer support (r= 0.38, SE=0.10, p < .001). No other observed parenting behaviors were significantly associated with emerging adult outcomes, and the model did not account for a significant proportion of variance in the outcome variables. As examination of the emerging adult educational attainment data suggested that respondent's data were "clumped in" one of two categories (High School or less (33.3%) and Some College or more (35.2%) models were all analyzed treating educational attainment as a dichotomous variable.

Figure 6. Model 1 testing emerging adult mental health, educational attainment, and peer support from observed parental monitoring, growth support and problem solving.

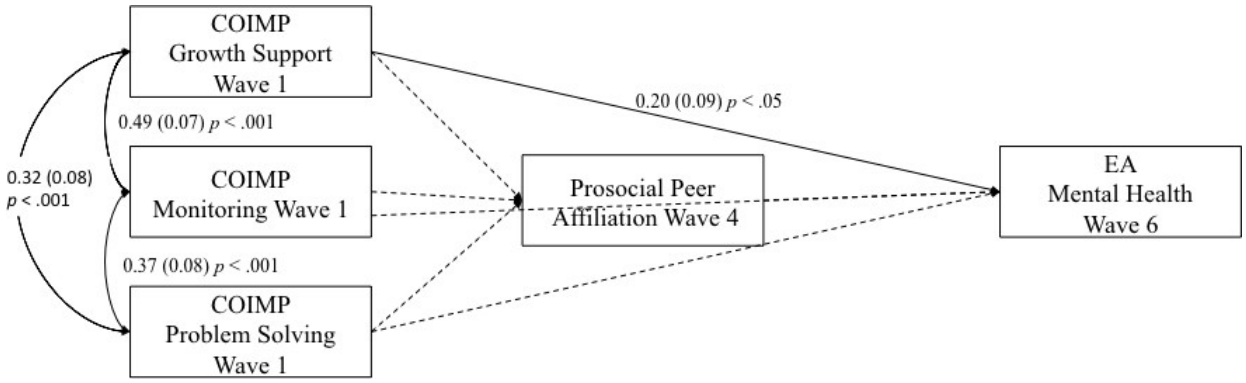


Note. N = 159. Values reflect standardized parameter coefficients. Hypothesized paths that were not significant are shown with dashed lines. COIMP = observational. EA = Emerging Adult. Solid lines indicate significance ($p < .05$).

Research Question 3. I hypothesized that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would predict mental health outcomes in emerging adulthood via direct pathways and that pro-social peer affiliation would mediate these relationships. Contrary to hypotheses, examination of the correlation matrix revealed that none of the observed parenting behaviors were significantly associated with emerging adult mental health. Pro-social peer affiliation was not significantly associated with emerging adult mental health or any of the observed parenting behaviors. These findings were also inconsistent with hypotheses.

Results of testing model 2 indicated that all three observed parenting variables significantly covaried, a finding that was consistent with my hypotheses (see Figure 6). Academic growth support was significantly and positively associated with emerging adult mental health (r= 0.20, SE=0.09, $p < .05$). No other pathways were significant and the model did not account for a significant proportion of variance in the outcome variable (see Figure 7).

Figure 7. Model 2 testing associations between observed parenting behaviors in adolescence and emerging adult mental health as mediated by pro-social peer affiliation

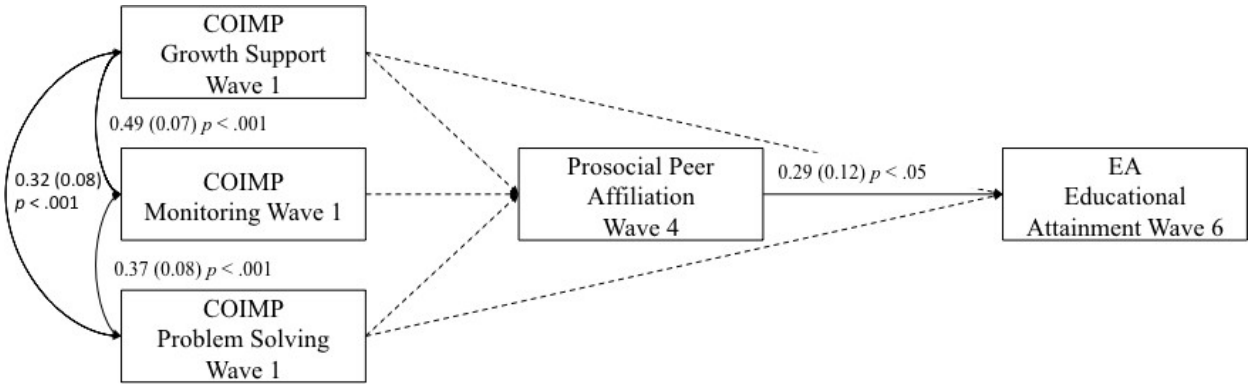


Note. N = 159. Values reflect standardized parameter coefficients. Hypothesized paths that were not significant are shown with dashed lines. COIMP = observational. EA = Emerging Adult. Solid lines indicate significance (p <.05).

Research Question 4. I hypothesized that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would predict educational attainment in emerging adulthood via direct pathways and that pro-social peer affiliation would mediate these relationships. Bivariate correlations were partially consistent with this hypothesis. None of the observed parenting behaviors were significantly associated with emerging adult educational attainment. Consistent with hypotheses, pro-social peer affiliation was significantly and positively associated with emerging adult educational attainment (r = .23).

Results of testing model 3 indicated that all three observed parenting variables significantly covaried, a finding that was consistent with my hypotheses (see Figure 6). Pro-social peer affiliation at Wave 4 was significantly and positively associated with emerging adult educational attainment (r= 0.29, SE=0.12, p < .05). No other pathways were significant and the model did not account for a significant proportion of variance in the outcome variable (see Figure 8).

Figure 8. Model 3 testing associations between observed parenting behaviors in adolescence and emerging adult educational attainment as mediated by pro-social peer affiliation

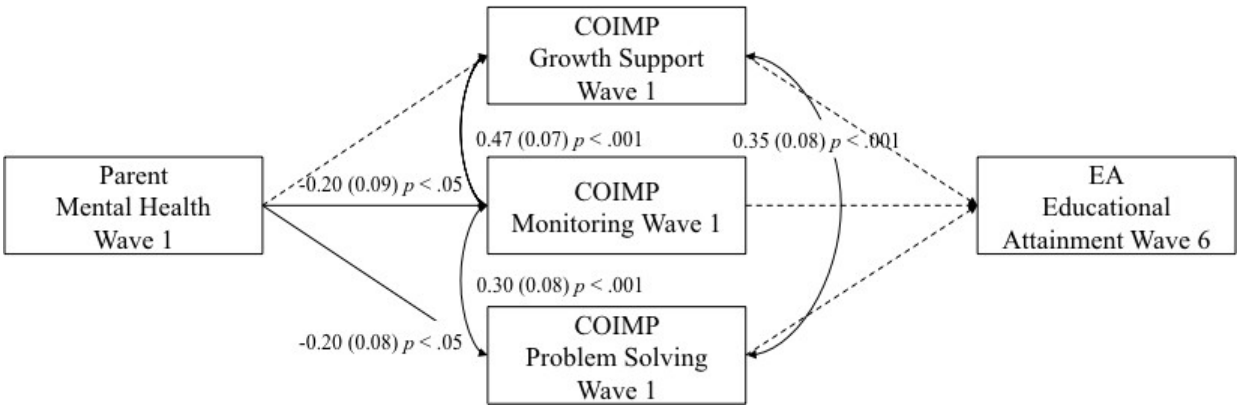


Note. N = 159. Values reflect standardized parameter coefficients. Hypothesized paths that were not significant are shown with dashed lines. COIMP = observational. EA = Emerging Adult. Solid lines indicate significance (p <.05).

Research Question 5. I hypothesized that parent mental health would predict emerging adult educational attainment via direct pathways and that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would mediate this relationship. Examination of the correlation matrix revealed that parent mental health was negatively and significantly associated with emerging adult educational attainment (r = -.22), a finding that was consistent with hypotheses. Consistent with hypotheses, each of the observed parenting behaviors was negatively and significantly associated with parent mental health.

Results of testing model 4 indicated that all three observed parenting variables significantly covaried, a finding that was consistent with my hypotheses (see Figure 6). Parent mental health was significantly and negatively associated with parental monitoring (r= -0.20, SE=0.09, p < .05) and problem solving (r= -0.20, SE=0.08, p < .05; see Figure 9). No other pathways were significant and the model did not account for a significant proportion of variance in the outcome variable (see Figure 9).

Figure 9. Model 4 testing associations between parent mental health and emerging adult educational attainment as mediated by observed parenting behaviors in adolescence.

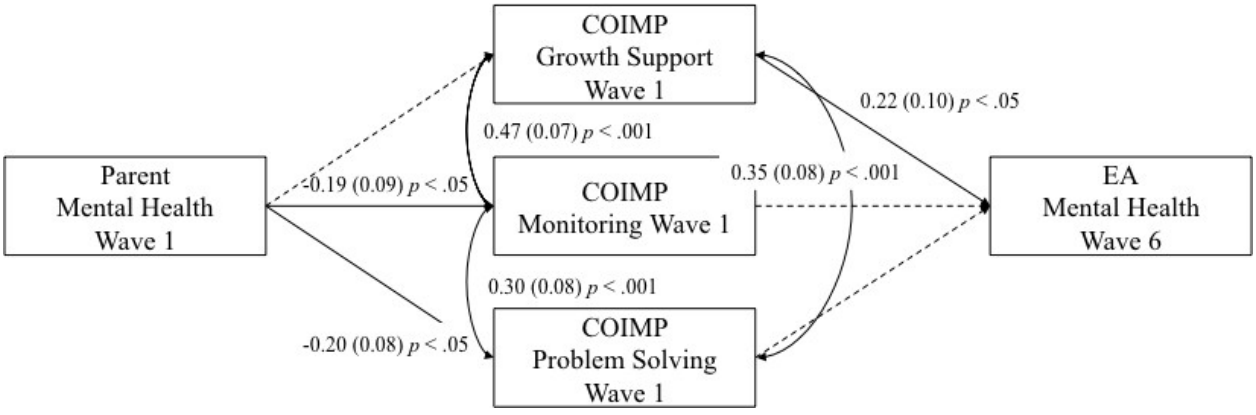


Note. N = 159. Values reflect standardized parameter coefficients. Hypothesized paths that were not significant are shown with dashed lines. COIMP = observational. EA = Emerging Adult. Solid lines indicate significance (p <.05).

Research Question 6. I hypothesized that parent mental health would predict emerging adult mental health via direct pathways and that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would mediate this relationship. Inconsistent with hypotheses, examination of the correlation matrix revealed that parent mental health was not significantly associated with emerging adult mental health.

Results testing model 5 indicated that all three observed parenting variables significantly covaried, a finding that was consistent with my hypotheses (see Figure 6). Parent mental health was significantly and negatively associated with parental monitoring (r= -0.19, SE=0.09, p < .05) and problem solving (r= -0.20, SE=0.08, p < .05). Observed growth support was positively and significantly associated with emerging adult mental health (r= 0.22, SE=0.10, p < .05; see Figure 10).

Figure 10. Model 5 testing associations between parent mental health and emerging adult mental health as mediated by observed parenting behaviors in adolescence.



Note. N = 159. Values reflect standardized parameter coefficients. Hypothesized paths that were not significant are shown with dashed lines. COIMP = observational. EA = Emerging Adult. Solid lines indicate significance (p <.05).

No other pathways were significant and the model did not account for a significant proportion of variance in the outcome variable.

Post Hoc Analyses

As the Family Check-up is an intervention study, the intervention group was compared to the control group to determine if the intervention impacted outcome variables in the present study. A chi-square test was conducted to determine whether participants in the control group differed from participants in the intervention group on educational attainment outcomes. The chi-square test revealed no significant differences between participants in the control versus intervention group on educational attainment outcomes $\chi^2(1, N = 415) = 0.04$, $p > .05$. There were no statistically significant differences between participants in the control versus intervention group on mental health outcomes $F(1, 411) = 1.54$, $p = .22$, or on peer support outcomes in emerging adulthood $F(1, 413) = 1.53$, $p = .15$.

Summary

Results of bivariate correlations revealed weak associations between observed and parent-reported behaviors. Therefore, only observed parenting variables were used in the series of path analyses examining the impact of parenting during adolescence on emerging adult mental health, educational attainment, and social outcomes. Five path models were tested to address research questions two through six. Path model 1, which examined associations between observed parenting behaviors in adolescence and emerging adult mental health, educational attainment and peer support, revealed a significant positive pathway from observed parental monitoring to emerging adult peer support, consistent with hypotheses. Inconsistent with proposed hypotheses, observed academic growth support significantly predicted emerging adult mental health. Path model 2, which examined associations between observed parenting behaviors

in adolescence and emerging adult mental health as mediated by pro-social peer affiliation, yielded a direct and significant pathway from observed academic growth support to emerging adult mental health. Path model 3 examined associations between observed parenting behaviors in adolescence and emerging adult educational attainment as mediated by pro-social peer affiliation. Consistent with hypotheses, pro-social peer affiliation was significantly associated with emerging adult educational attainment. Path model 4 examined associations between parent mental health and emerging adult educational attainment as mediated by observed parenting behaviors in adolescence. Consistent with hypotheses, parent mental health was significantly and negatively associated with parental monitoring and problem solving. The final path model (5), which examined associations between parent mental health and emerging adult mental health as mediated by observed parenting behaviors in adolescence, also yielded a significant path from parent mental health to parental monitoring and problem solving. Again, observed growth support was positively and significantly associated with emerging adult mental health. No other pathways were significant and the model did not account for a significant proportion of variance in the outcome variable.

CHAPTER IV

DISCUSSION

The present study utilized a diverse sample of young people and their parents to examine associations between specific observed parenting behaviors during adolescence and three different outcomes in emerging adults: educational attainment, peer support, and mental health. Social Learning Theory and Lerner's Developmental Contextual Model of Development served as foundational theoretical frameworks for examining the complex relationships between parenting and emerging adult outcomes. This theoretical lens attends to the well-established links between parenting and youth outcomes, and dynamic social interactions at multiple systemic levels that influence youth development.

Specifically, the present study examined how observed parenting behaviors during adolescence predicted educational attainment, peer support, and mental health in emerging adults. Additionally, the influence of pro-social peer affiliation in adolescence was examined as a mediator to better understand how contextual factors impact educational attainment and mental health of emerging adults. Given the consistent effects of parent mental health on youth outcomes, I also tested whether observed parenting behaviors in adolescence would mediate the relationship between parent mental health and emerging adult mental health and educational attainment. In the following sections I discuss findings related to each hypothesis in the context of current literature.

Convergence of Observational and Parent-report Parenting Behaviors

The first aim of the study was to examine the convergence between observed and parent-reported measures of parental monitoring and academic growth support during adolescence. No hypotheses were put forth as research on convergent validity of parenting constructs has reported

mixed findings. Results demonstrated low correlations between parent report and observed parenting behaviors, suggesting that observed measures of parenting behaviors during adolescence were not closely related to parent's own perception of their behavior. These results were somewhat unsurprising in light of results from previous research on convergence between observational and self-report measures of parenting constructs that have found low to modest levels of convergence (Patterson, Reid, & Dishion, 1992; Deater-Deckard, Dodge, Bates, & Pettit, 1996).

The weak relationship between parent-report and observed parenting variables could mean a number of things. First, it may be that these observational and parent-report measures are tapping into qualitatively separate constructs. For example, the self-report academic growth support construct appears to reflect parent instrumental behaviors that promote academic success (e.g., attending parent-teacher conferences). In contrast, the observational construct appears to capture parent behaviors towards their adolescents (e.g., the extent to which the parent focuses on encouraging the adolescent to increase positive academic behaviors), which are aimed to model and reinforce academic success.

Existing research on parenting has relied heavily on parent self-report of their behavior; however, self-report parenting measures are susceptible to systematic distortions and thus may not be accurate representations of parents' typical behavior (Morsbach & Prinz, 2006). Previous research indicates that self-report measures are prone to recall bias (Alonso, 2015; Morsbach & Prinz, 2006; Stone & Shiffman, 2002). Parents may place disproportionate emphasis or placement on recent events or emotionally salient events (Zaslow et al., 2006). Additionally, parents may rely on their emotional state during the encoding and retrieval of information and behaviors (Mehl et al., 2001). Parent mental health symptoms have also been shown to relate to

informant discrepancies. For example, mothers with depressive symptoms show a negative reporting bias that distorts judgments of others and their own behavior (i.e., depression-distortion hypothesis; Chi & Hinshaw, 2002; Richters, 1992). Thus, it is possible that observed behaviors are less susceptible to distortion.

It is also important to acknowledge the time periods used to capture parenting data through these distinct measurement methods. The observational assessments used in this investigation relied on capturing a measurement of behavior over 5 minute periods, whereas the parent-report asked parents to recall their general behaviors over the last school year (academic growth support) or in general, without time specification (parental monitoring). High cognitive burden, possibly prompted by questions asking parents to estimate frequently occurring behaviors across long periods of time, has been associated with decreases in accuracy of self-reports (Tourangeau, Rips, & Rasinski, 2000). Conversely, observational data allows researchers to directly view overt and often automatic behaviors that unfold within social interactions, and such nuanced details would be difficult for individuals to access through self-report (Gardner, 2000).

Observational measures of parenting behaviors can address many of the previously mentioned methodological disadvantages by having objective raters report parenting data (Locke & Prinz, 2002; Alonso, 2015). Research utilizing both self-report and observational data may provide a more nuanced understanding of parenting in adolescence. However, few studies have examined the degree of convergence between observational and self-report parenting constructs, and findings have been inconsistent, perhaps owing to the reasons discussed. In the current study, the magnitude of correlations between parent-report and observational parenting constructs with emerging adult outcomes were very similar. Given the relative novelty of

utilizing observational parenting measures and robust evidence that observational techniques allow for reliable and consistent assessment of behaviors compared to self-report, observational measures were utilized as predictors, representing a unique contribution of the current study. Future validity studies should examine observational and self-report parenting measures with greater qualitative overlap to gain a more nuanced representation of convergent validity between the two forms of measurement.

Pathways Between Parenting Behaviors and Educational Attainment in Emerging Adulthood

Each of the observed parenting behaviors in adolescence, including academic growth support, monitoring and problem solving, were hypothesized to be positively associated with emerging adult reported educational attainment. Contrary to hypotheses, none of the observed parenting behaviors in adolescence were associated with emerging adult educational attainment.

One explanation of null findings may be that parenting behaviors in adolescence may not significantly impact youth as they transition into adulthood. It is possible that as youth transition from adolescence to emerging adulthood, distal factors such as parenting become less impactful in their educational attainment and decisions to pursue higher education. A large body of research has demonstrated that parenting practices during early childhood are crucial in establishing cognitive and behavioral foundations for children to succeed in school (Cole, Michel, & Teti, 1994; Kochanska, Coy, & Murray, 2001; Brennan et al., 2013). Research has also supported the notion that this relationship extends beyond early childhood into the adolescent years (Steinberg, 2001; Gordon & Cui, 2012). Perhaps for those emerging adults who entered a higher education environment after high school, access to additional supports such as career counseling and academic assistance equalizes the impact of previous parenting factors on

their educational attainment. Future studies might consider measuring other educational supports in addition to contributions of parenting to better understand the relative impact of each on emerging adult educational attainment.

Another explanation for the present findings may be that the timing of measurement precluded the ability to see significant differences in educational attainment or the influences of earlier parenting. Importantly, the mean age of emerging adults in this sample was 19-years-old, on the younger end of the development period, which is postulated to span from ages 18-29. It is likely that many participants in this sample are not done obtaining education; it is plausible that some are taking time off before beginning education beyond high school. Previous research examining the impact of school specific parental involvement in adolescence on educational attainment has included emerging adults in their mid-20's (Gordon & Cui, 2012). Examining educational attainment of older emerging adults, who have had more time to complete, or save money to continue their education, may be more fruitful in identifying differences in educational obtainment impacted by earlier family factors. In the current study, there was less variation in educational attainment, reducing the potential to predict outcomes. Future research should pursue this question of assessment timing as it pertains to exploring the impact of parenting on educational attainment in emerging adults.

Another explanation for the present findings may be that parenting behaviors that have been consistently linked with academic achievement outcomes (e.g., parental warmth, general parent support, parental expectations) were not included in the current study. For example, a study conducted by Darling and Steinberg (1993) examined how different parenting styles related to children's academic outcomes. They concluded that parents who aligned more with authoritative styles of parenting (i.e., warm and accepting relationship with children along with

reasonable limit setting) were also more likely to actively participate in their child's education, and in turn their children had higher academic achievement (Steinberg et al., 1992). General parenting climates, and the impact of such climates on parenting behaviors that foster youth educational attainment were not examined, and thus should be pursued by future research.

In the present study, I further hypothesized that observed parenting behaviors in adolescence would predict educational attainment in emerging adulthood via direct pathways, and that adolescent pro-social peer affiliation would mediate these relationships. While no significant associations were observed between parenting behaviors and emerging adult educational attainment, pro-social peer affiliation in Wave 4 predicted educational attainment in emerging adulthood. This finding is consistent with previous literature highlighting the numerous positive outcomes linked with association with pro-social peers (Kaufmann et al., 2007). Positive peer relations and low aggressive behavior are predictors of successful graduation from high school (Risi, Gerhardstein, & Kitstner, 2003) and educational attainment in early adulthood (Magnusson, 1988). Students who develop high interpersonal competence may possess both the aptitude and the resources needed to excel in education and career settings as young adults (Csikszentmihalyi & Schneider, 2000). Further, characteristics of peer groups and perceived values of peers have been linked to academic achievement (LeCroy, & Krysik, 2008). Perceptions that peers place high value on educational attainment has been associated with greater expectancy for academic success, greater personal value placed on education, and greater effort and persistence in school (Dupper, 2006; Goodenow & Grady, 1993). One study by LeCroy and Krysik (2008) investigated factors that predicted academic achievement and school attachment among Latinx 7th and 8th grade students. Results indicated that for Latinx adolescents,

association with pro-academic peers and more supportive parent relationships were associated with higher GPA and greater attachment to school.

While much research has confirmed that affiliation with pro-social peers in adolescence impacts adolescent's academic achievement and positive outcomes, less research has explored how and if peer relationships continue to impact emerging adult's level of educational attainment. Findings from the present study highlight that the positive influence of associating with pro-social peers extends even into emerging adulthood. It makes sense that associating with friends who have positive attitudes towards school and stay out of trouble would encourage school engagement or that more engaged youth would select peers who are similar to themselves, which may promote attaining more education. Future studies should look at higher risk samples and also emerging adults in their mid 20's to determine if these outcomes and links remain stable over time.

Pathways Between Parenting Behaviors and Emerging Adult Mental Health

To identify pathways through which observed parenting behaviors exhibited in adolescence might influence emerging adult outcomes, I further hypothesized that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would predict mental health outcomes in emerging adulthood via direct pathways, and that pro-social peer affiliation in Wave 4 would mediate these relationships. Results did not support these hypotheses. Upon examining relationships between observed parenting behaviors and emerging adult mental health symptoms, parent academic growth support in adolescence was the only significant predictor, but not in the hypothesized direction. Specifically, greater levels of academic growth support predicted more mental health symptoms in emerging adults.

The direction of the relationship between growth support and emerging adult mental health symptoms was somewhat surprising. One possible explanation for these findings is that parents may be providing more academic support and structure for their children who they see as more at risk for emotional challenges or who are already exhibiting emotional difficulty. Previous research has explored this idea of reverse causality to understand whether parents' behaviors could be conceptualized as precipitants or reactions to adolescent adjustment. Kerr and Stattin (2003) surmised that parenting behaviors linked to youth delinquency could be reactions to or initiators of the youth's delinquent behavior. Results from their longitudinal investigation revealed that youth delinquency was linked with less parental control and increased negative responses to youths' communication over time. Parenting behaviors did not predict changes in delinquency over time, suggesting that parenting behaviors were reactions to youth delinquency rather than precipitants. This literature is consistent with the notion that parents in the current study may have been implementing more support for their children in response to perceived risk behaviors of their children.

Other research supports that caregivers change their behaviors in response to children's actions; Harris (1995; 2011) posited that parents in Western cultures adopt authoritative parenting practices due to over-reigning cultural norms. While parents have no reason to alter these parenting practices with children who exhibit few behavioral problems, for children who present with more challenges, parents may need to utilize more controlling and less democratic behavior to manage their children's behavior. In the current study, it seems highly possible that the link between parenting and emerging adult mental health could be due in part to the impact of youth behaviors on parenting. Unfortunately, the current study did not examine the potential influence of youth internalizing and externalizing symptoms on the relationship over time

between academic growth support and emerging adult mental health. Future research should explore the directionality of parent-child behaviors, dynamic interactions of these behaviors, and how they influence emerging adult mental health over time.

Findings that neither parental monitoring nor parental problem solving in adolescence were associated with emerging adult mental health problems could be accounted for by a number of factors. Previous research has outlined numerous longitudinal predictors of emerging adult mental health that were not included in the current study. For example, literature has supported the link between childhood and adolescent mental illness as a key risk factor for later psychiatric problems. Externalizing behavior problems and indicators of cumulative cognitive skills in childhood are known to broadly forecast adult adjustment (Masten et al., 2005). It is also important to highlight that the sample of emerging adults in the present study were not experiencing clinically significant mental health problems overall. Future research should examine contributions of well-established predictors on later mental health in higher risk emerging adult samples, and potential interactions between parenting behaviors and factors such as adolescent cognitive skills.

Another explanation for the current findings may be that proximal factors may be more robust predictors of emerging adult mental health. Arnett and colleagues (2014) noted that some adjustment challenges encountered by emerging adults might surface directly as a result of positive or negative experiences during this transition from adolescence to emerging adulthood (Schulenberg, Sameroff, & Cicchetti, 2004). While early experiences such as exposure to different parenting behaviors are critical and worthy of substantial empirical attention, these earlier influences on later psychopathology have also been shown to be mediated and sometimes reversed by later experiences (Cicchetti & Tucker, 1994; Curtis & Cicchetti, 2003; Sroufe,

Carlson, Levy, & Egeland, 1999; Sroufe, Egeland, & Kreutzer, 1990). In light of past research, and given the null findings from the current study, future research should devote further empirical inquiry to more developmentally proximal influences on emerging adult mental health (Cairns, 2000; Lewis, 1999; Schulenberg, Maggs, & O'Malley, 2003).

Pathways Between Parenting Behaviors and Emerging Adult Peer Support

Pathways between the three observed parenting behaviors in adolescence and emerging adult peer support were also examined. It was hypothesized that parental monitoring, problem solving and growth support would each be positively associated with emerging adult peer support. This hypothesis was partially supported. Of the three parenting behaviors, only observed parental monitoring predicted peer support in emerging adulthood, where higher levels of monitoring was associated with higher levels of perceived peer support. This finding is quite consistent with previous literature that has supported the importance of parental monitoring in adolescence to various positive social outcomes for youth. Given the longitudinal nature of this study, the present findings bolster the notion that parenting during adolescence indeed has a long-term impact on social success. The present results suggest that parents' knowledge of youth's whereabouts and activities in adolescence relates to emerging adults' perceived levels of peer support.

Social learning theory provides a solid basis for understanding how parenting behaviors directly impact peer relationships. As social learning theory postulates, early parenting behaviors shape children's internal working models of relationships (Patterson, DeBaryshe, & Ramsey, 1989; Bandura, 1977). These models are theorized to remain stable and impact youths' relationships with others throughout the lifespan. Parenting is likely impacting children's acquisition of social competence skills necessary to thrive in social relationships. Indeed,

previous research has confirmed that parenting practices impact social outcomes for youth and adolescents. Several studies have identified parental monitoring in adolescence as protective against various risk behaviors and deviant peer affiliations (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006; Pettit, Bates, Dodge, & Meece, 1999). Results from the current study suggest that parental monitoring in adolescence is also associated with pro-social outcomes later in youths' developmental trajectories. These findings align with previous literature demonstrating positive parental monitoring strategies, centered on open child-parent communication and appropriate control, are linked to the development of adaptive peer relationships (Everri, Mancini, & Fruggeri, 2015).

Contrary to hypotheses, no other observed parenting constructs were associated with emerging adult peer support. It is plausible that parenting behaviors not included in the current study, or the way through which parental monitoring, problem solving, and academic growth support are enacted over time rather than an observed 5 minute activity may be salient predictors of emerging adult peer support.

Research on parenting and peer relationships has outlined and explored how harsh discipline has been shown to predict peer outcomes, including delinquent peer affiliation in adolescence (Allen, Hauser, O'Conner & Bell, 2002; Dishion et al., 1991). Other studies utilizing diverse samples have shown that fathers' acceptance, involvement and open communication with their male children was positively associated with level of intimacy in adolescent friendships for European American youth only (Updegraff, Madden-Derdich, Estrada, Sales, & Leonard, 2002). In this same study, acceptance by mothers and fathers was significantly associated with adolescent friendship intimacy levels in European and Latina 5th and 6th grade girls (Updegraff et al., 2002). In the present study, the parenting constructs previously associated

with peer support outcomes were not explored. Additionally, a majority of the caregiver sample in the current investigation was comprised of mothers. Perhaps, as research outlined above suggests, paternal parenting has a differential impact on emerging adult peer relationships. In fact, research has suggested that fathers may play an important parenting role in youth autonomy and social development, as associations have been documented between fathers' parenting and youth externalizing behavior and aggression (Bjoerkqvist, Oesterman, & Kaukiainen, 1992; Phares & Compas, 1992).

Another plausible explanation for null results is that observed parent problem solving and academic growth support during adolescence has a negligible impact on peer support in emerging adulthood. Future research should include samples comprised of fathers and mothers to examine how parenting behaviors implemented by male and female caregivers may differentially impact emerging adult social functioning

Parent Mental Health and Emerging Adult Outcomes

The final research questions examined whether parent mental health impacted emerging adult educational attainment and mental health symptoms as mediated by observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving). It was hypothesized that parent mental health would predict emerging adult educational attainment and mental health symptoms via direct pathways and that observed parenting behaviors in adolescence (academic growth support, parental monitoring, problem solving) would mediate these relationships. The results of the test of this model indicated that parent mental health did not directly predict emerging adult educational attainment or mental health symptoms. One explanation for these findings is that parents' mental health symptoms at Wave 1 have a negligible impact on educational attainment in emerging adulthood. Research on the impact of

maternal depression on youths' cognitive development has shown that maternal depression is linked with compromised cognitive functioning only when the depression occurs within the first year of the child's life (Cogill, Caplan, Alexandra, Robson, & Kumar, 1986). Perhaps parental depression and behavioral sequelae in early adolescence has less of a direct impact on factors such as cognitive functioning that are associated with academic success. Additionally, given the longitudinal nature of the current study, perhaps the impact of parent's mental health symptoms is lessened over time, or neutralized by other supports offered within the higher education context.

Consistent with hypotheses, path models revealed parent mental health was negatively associated with observed parental monitoring and problem solving. Specifically, parents reporting higher symptoms of depression were observed as demonstrating less parental monitoring and ability to problem solve. A large body of research has described the negative impacts of parent depression on child and adolescent outcomes (Huang, Costeines, Kaufman, & Ayala, 2014; Weinberg, Olson, Beeghly & Tronick, 2006). The process through which parents' wellbeing is linked to child and adolescent problems is posited to occur through the disruption of parenting behaviors (i.e., lack of discipline, involvement, monitoring; Smith, 2004). For example, a parent who is experiencing depression may be preoccupied and withdrawn and thereby less able to communicate or actively engage with their child (Smith, 2004). Results from the current study confirm that parent's mental health symptoms are associated with their implementation of low levels of monitoring and problem solving, at least as measured by direct observation in this study. This finding is consistent with past literature demonstrating that parent's mental health disrupts parenting behaviors (Smith, 2004). In a meta-analysis of 46 observational studies Lovejoy, Graczyk, O'Hare and Neuman (2000) assessed the strength of the

association between depression and parenting behavior. They found that the association between depression and parenting was most strong for negative maternal behavior. The effects of negative maternal behaviors were moderated by the timing of the depressive episode, with current depression having the largest effects. The Center for Epidemiological Studies Depression Inventory (CES-D; Radloff, 1977) used in the current study assesses symptoms sad mood, loss of interest, fatigue, energy, poor concentration, and changes in appetite. Based on these symptoms it is logical that parents would exhibit difficulties responding effectively to youth's educational needs or demonstrating knowledge of youth's whereabouts, or effectively problem solve in response to family concerns.

In the current literature, less emphasis has been placed on how parent depression (mental health) impacts observed parent behaviors such as problem solving, monitoring and academic growth support in adolescence. This study extended on past research by looking at observed parenting behaviors and focusing on less studied behaviors such as academic support and problem solving. Given that the extent to which parent mental health impacts outcomes largely depends on the age of the child, it may be that the timing of the parent's depression may differentially impact risk of their children. Future research should pursue these questions with longitudinal designs.

Limitations and Future Directions

While this study expands upon existing literature on the impact of parenting in adolescence on emerging adult social, emotional and educational outcomes, there are several notable limitations. First, none of the tested models accounted for a significant portion of the variance in the outcome variables. In order to sharpen the focus of each model on the central theme of the research questions, the models did not include other key variables that have been

previously associated with peer support, mental health, and educational attainment such as biological variables, parenting in childhood and childhood internalizing and externalizing symptoms. Knowing that the magnitude of the association between observed parenting behaviors and emerging adult outcomes across eight years was fragile, the variables included in each model were as parsimonious as possible to preserve the available variance and focus of the research on parenting and outcomes. The power analysis indicated that there was not enough power to detect mediating effects, but it is also the case that bivariate correlations were non-significant or of small magnitude. Despite low power, models were tested with mediating variables given the potential contribution that this research could make to the extant literature on parenting and emerging adult outcomes. The set of predictors included in the study models did not account for a significant portion of the variance in outcomes for emerging adults.

Second, the small sample size used in each path model (N = 159) may have impacted the ability to detect significant relationships among the study constructs, especially considering the magnitude of the association between predictors and outcomes was very small. When data are collected longitudinally, it is expected that some participants will drop out of a study before data collection is complete across time points. Participants from the current sample were retained at a high rate; 83% from Wave 1 to Wave 6. Nonetheless, the small sample size may have been a factor in the lack of significant findings.

Another limitation of this study is that the analyses did not account for a bi-directional nature of the parent-youth relationship. Research suggests that parents may change their parenting strategies for children who present with more challenges. In the current study, it seems highly possible that the link between parenting and emerging adult mental health could be due in part to the impact of youth behaviors on parenting. Unfortunately, the current study did not

examine the contributions of childhood internalizing and externalizing symptoms on the relationship between parenting behaviors and emerging adult mental health. Future research should explore the directionality of parent-child behaviors, interactions of these behaviors, and how they influence emerging adult mental health.

It is also important to consider that the method through which parenting behaviors are enacted over time rather than through a brief observed activity, may in fact yield more robust associations with emerging adult outcomes. Future research should examine contributions of parenting behaviors implemented over time to emerging adult outcomes. This was beyond the scope of the current study.

Finally, the timing of measurement may have precluded the ability to see significant differences in educational attainment in emerging adulthood or the influences of earlier parenting. Importantly, the mean age of emerging adults in this sample was 19-years-old, on the young end of the development period, which is postulated to span from ages 18-29. Utilizing samples of emerging adults in their mid-20s may be more fruitful for identifying predictors of educational attainment.

Strengths

The present study contributes to the emerging adult and developmental literature in important ways. This study utilized observational measures of theoretically derived parenting behavior constructs in adolescence to longitudinally assess their impact on emerging adult outcomes. Very limited research has utilized observational data that may provide a more nuanced picture of parenting during adolescence and its impact on emerging adult outcomes.

Furthermore, the use of a longitudinal design, which followed young people up to 8 years after baseline measurement, presents a unique contribution the emerging adult and parenting

literature. While existing research has documented the relationship between parenting and adolescence and a host of outcomes for young adults, less emphasis has been placed on this crucial transitional period of emerging adulthood. Much research has explored parenting processes in early childhood related to childhood outcomes, however, cross sectional designs limit the ability to understand relationships over time. This study utilized data from parents and youth over time to provide a more complete picture of parenting behaviors and associated outcomes. This study benefited from the strength of a longitudinal design through the assessment of the impact parenting behaviors in adolescence on emerging adult outcomes, as opposed to effects at a single time point. The use of this longitudinal research design allowed for the representation of developmental processes among study participants. The findings show longitudinal predictions from observed academic growth support in adolescence to mental health in emerging adulthood and from observed parental monitoring in adolescence to emerging adult peer support.

The current sample was limited to intervention participants who voluntarily decided to participate in observational tasks at Wave 1. Chi-square tests revealed no significant differences between participants in the control versus intervention group on educational attainment outcomes. Additionally, no significant differences were observed between participants in the control versus intervention group on peer support or mental health outcomes. The use of a longitudinal research design was an important strength of the present study given that it allowed for observations of the developmental impact of parenting into emerging adulthood.

Previous research has also overly relied on White samples thereby limiting the generalizability and accurate understanding of parenting and emerging adult outcomes across diverse socioeconomic and racial populations. The present study utilized a racially and

socioeconomically diverse sample of emerging adults, including non-college attending individuals. The use of a diverse sample contributes to the generalizability of the results.

Conclusion

The present study examined associations between parenting behaviors in adolescence and emerging adult social, psychological, and educational outcomes in a diverse sample of emerging adults and their caregivers. Findings from this study underscore the long-term impact of parenting all the way into emerging adulthood, specifically, observed academic growth support in adolescence predicted mental health symptoms in emerging adulthood and observed parental monitoring in adolescence predicted peer support in emerging adulthood. These findings suggest that earlier parenting indeed impacts domains that are central to emerging adult functioning such as mental health and peer support. Given that several parenting behaviors during adolescence were not associated with emerging adult outcomes, the research also suggests that effects of earlier parenting may be buffered by later life experiences by emerging adulthood. Future research should examine relative contributions of parenting and other life experiences on emerging adult educational attainment, social functioning and mental health.

APPENDIX

MEASURES

Project Alliance 2 Coder Impressions (COIMP)

FAMILY ID_____ **CODER ID**_____ **Today's Date**_____/_____/ _____

Wave: ☐ **1** ☐ **2**

Family Members Present:

TC: ☐ **Female** ☐ **PC** _____

☐ **Male** ☐ **AC** _____

Family Assessment Setting: ☐ **Home** ☐ **Lab** ☐ **Unknown**

Trial 1: School Expectations (encouraging growth) educational growth

1. Does the parent focus on positive behaviors that could be increased?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

2. Does the parent clearly specify expectations, or behavior change goals?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

3. Does the parent discuss goals or expectations that seem realistic and achievable for this child?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

4. Does the parent talk about how he/she could encourage positive change?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1

AC: 9 8 7 6 5 4 3 2 1

5. Does the parent state a plan for checking on progress of the behavior?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

6. Does the parent mention the use of incentives to build motivation for developing good habits?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

7. Does the parent ask the child for suggestions for incentives?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

8. Does the parent communicate confidence that the child can be successful?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

9. Does it seem that the parent is effective in using encouragement to promote positive behavior with the child?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

10. What percentage of time does the family discuss school expectations?

Whole time				Some of the time				None of the time
9	8	7	6	5	4	3	2	1

Trial 2: Monitoring

1. What is the situation?

What? _____

Where? _____

With whom? _____

2. Does it seem that the child spends time away from adult supervision?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

3. Does the child indicate being with friends in settings without adult supervision?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

4. Does there seem to be a lack of adult involvement in this child's daily life?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

5. Is there a lack of structure or lax rules with respect to this child's daily routine?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

6. Is there any mention of the child's peers planning or engaging in deviant behaviors?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

7. Does the child volunteer important information about activities and companions?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

8. Does the child do or say anything to indicate avoidance of adult supervision?

Very Much				Somewhat			Not at All	
9	8	7	6	5	4	3	2	1

9. Does the parent display a look of shock or surprise in response to the child's description ofthe event?

	Very Much				Somewhat			Not at All	
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

10. Does this parent seem to be monitoring with whom the child spends time?

	Very Much				Somewhat			Not at All	
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

11. Does this parent seem to be monitoring where the child spends time?

	Very Much				Somewhat			Not at All	
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

12. Does this parent seem to be monitoring what the child is doing when outside of adult supervision?

	Very Much				Somewhat			Not at All	
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

13. Does the parent listen to the child?

	Very Much				Somewhat			Not at All	
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

14. Does the parent effectively gather important information about the child's activities?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

15. Do family members indicate any rules or guidelines that facilitated parents' monitoring?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

16. Does the parent indicate involvement in the child's activities, such as planning, discussing, participating or providing transportation?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

17. Does the parent seem to know about the child's friendships, knowing the friends by names and their family situations?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

18. Does the parent control his/her own reactions to allow the child to finish talking?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

19. What percentage of time does the family talk about the child's activities?

Whole time				Some of the time				None of the time
9	8	7	6	5	4	3	2	1

Trial 5: Problem Solving

1. What problem is discussed? _____

If a second problem is mentioned, please fill it in: _____

a. How clearly was the problem specified?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

b. Was the problem stated in a neutral or positive tone (e.g., no blaming or criticism)?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

2. Do family members offer solutions in a positive tone?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

3. Do family members propose clear and specific solutions?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

4. Are suggestions constructive or positive ideas toward problem resolution?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

TC:	9	8	7	6	5	4	3	2	1

5. Are family members actively involved in problem solving?

	Very Much							Not at All
			Somewhat					
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

6. Are alternative solutions discussed by the family?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

7. Is a solution selected or decided on that seems acceptable to the family?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

8. Is the family likely to follow a solution that they all agreed on?

Very Much				Somewhat				Not at All
9	8	7	6	5	4	3	2	1

9. Do family members seem flexible and open to trying new ways to solve a problem?

	Very Much							Not at All
			Somewhat					
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

10. Does any one family member dominate the problem solving discussion?

	Very Much							Not at All
			Somewhat					
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1
TC:	9	8	7	6	5	4	3	2	1

11. Does the parent consider and include the child's interests and concerns in the discussion?

	Very Much				Somewhat				Not at All
PC:	9	8	7	6	5	4	3	2	1
AC:	9	8	7	6	5	4	3	2	1

12. What percentage of time does the family discuss the problem?

Whole time				Some of the time				None of the time
9	8	7	6	5	4	3	2	1

Wave 1 Parent Report Academic Growth Support

These are questions about your involvement in *(TC's)*_____school.

During the LAST SCHOOL YEAR, how often on average have you done the following?

(INTERVIEWER: Give parent card #8 for this section.)

	Not at all	Once	2-3 times	Monthly	Weekly or more
1. Called *(TC's)*_____ teacher for any reason	○	○	○	○	○
2. Written a note or email to a teacher	○	○	○	○	○
3. Stopped by to talk to a teacher at the school	○	○	○	○	○
4. Attended a special event at your *(TC's)*_____ school	○	○	○	○	○
5. Attended an organized activity or sporting event with *(TC)*_____	○	○	○	○	○
6. Attended a parent-teacher conference or open house	○	○	○	○	○
7. Attended parent-teacher organizational meetings	○	○	○	○	○
8. Met with the parent consultant housed in the family resource center at *(TC's)*_____ school	○	○	○	○	○

Wave 1 Parent Report Parental Monitoring

The following questions are about supervising *(TC)*_____.

Here's a card. (Card #12)

	Never or Almost never	Sometimes	About half the time	Often	Always or Almost always
1. How often do you call to talk with parents of *(TC's)*_____ friends?	○	○	○	○	○

How often do you know the following?

	Never or Almost never	Sometimes	About half the time	Often	Always or Almost always
2. What she/he does during his/her free time	○	○	○	○	○
3. Who she/he hangs out with during his/her free time	○	○	○	○	○
4. If she/he does something bad outside the home	○	○	○	○	○
5. How she/he does in different subjects at school	○	○	○	○	○
6. Where she/he goes when she/he is out with friends at night	○	○	○	○	○
7. Where she/he goes and what she/he does after school	○	○	○	○	○
8. What she/he is doing when she/he is away from home	○	○	○	○	○
9. If she/he keeps secrets from you about what she/he does during his/her free time	○	○	○	○	○
10. She/he keeps information from you about what she/he does during nights and weekends	○	○	○	○	○

Wave 1 Parent Mental Health (*Center for Epidemiological Studies Depression Inventory - CES-D)*

These questions are about your mood.

I am going to read a list of statements. Please use this card (card #19) to indicate how often you felt this way in the PAST WEEK.

	Rarely or none of the time (0-1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	○	○	○	○
2. I did not feel like eating; my appetite was poor.	○	○	○	○
3. I felt that I could not shake off the blues, even with help from my family or friends.	○	○	○	○
4. I felt that I was just as good as other people.	○	○	○	○
5. I had trouble keeping my mind on what I was doing.	○	○	○	○
6. I felt depressed.	○	○	○	○
7. I felt that everything I did was an effort.	○	○	○	○
8. I felt hopeful about the future.	○	○	○	○
9. I thought my life had been a failure.	○	○	○	○
10. I felt fearful.	○	○	○	○
11. My sleep was restless.	○	○	○	○
12. I was happy.	○	○	○	○
13. I talked less than usual.	○	○	○	○
14. I felt lonely.	○	○	○	○
15. People were unfriendly.	○	○	○	○
16. I enjoyed life.	○	○	○	○
17. I had crying spells.	○	○	○	○
18. I felt sad.	○	○	○	○
19. I felt that people disliked me.	○	○	○	○
20. I could not get going.	○	○	○	○

Wave 1 Youth Report Parental Monitoring

These questions ask about your parents and family.

1. How often does at least one of your parents...

	Never or Almost Never	Some-times	About half the time	Often	Always or Almost Always
a. Know what you do during your free time?	○	○	○	○	○
b. Know who you hang out with during your free time?	○	○	○	○	○
c. Find out if you do something bad outside of the home?	○	○	○	○	○
d. Know how you do in different subjects at school?	○	○	○	○	○
e. Know where you go when you are out with friends at night?	○	○	○	○	○
f. Know where you go and what you do after school?	○	○	○	○	○
g. Know what you are doing when you are away from home?	○	○	○	○	○
h. Know where you are after school?	○	○	○	○	○
i. Have a pretty good idea about your plans for the coming day?	○	○	○	○	○
j. Have a pretty good idea about your interests, activities, and whereabouts?	○	○	○	○	○

Wave 4 Pro Social Peer Affiliation

2. It is common to change your friends from time to time. Think about the friends that you have spent the most time within the last month. In the PAST MONTH, how many of them have...

	None	1	2	3	4 or more
a. ...done well in school?	○	○	○	○	○
b. ...participated in team activities?	○	○	○	○	○
c. ...helped out around the house?	○	○	○	○	○
d. ...religious or spiritual beliefs?	○	○	○	○	○

Wave 6 Emerging Adult Mental Health Adult Self Report (ASR; Achenbach & Rescorla, 2003)

C. Adult Self-Report

Below is a list of items that describe people. For each item, please fill in the circle *0, 1, or 2* to describe yourself *over the past 6 months*. Please answer all items as well as you can, even if some do not seem to apply to you.

0=Not True 1=Somewhat or Sometimes True 2=Very True or Often

0	1	2		0	1	2	
○	○	○	1. I am too forgetful	○	○	○	30. My relations with the opposite sex are poor
○	○	○	2. I make good use of my opportunities	○	○	○	31. I am afraid I might think or do something bad
○	○	○	3. I argue a lot				
○	○	○	4. I work up to my ability	○	○	○	32. I feel that I have to be perfect
○	○	○	5. I blame others for my problems	○	○	○	33. I feel that no one loves me
○	○	○	6. I use drugs (other than alcohol and nicotine) for nonmedical purposes (describe):_____	○	○	○	34. I feel that others are out to get me
				○	○	○	35. I feel worthless or inferior
				○	○	○	36. I accidentally get hurt a lot
				○	○	○	37. I get in many fights
○	○	○	7. I brag	○	○	○	38. My relations with neighbors are poor
○	○	○	8. I have trouble concentrating or paying attention for long	○	○	○	39. I hang around people who get in trouble
○	○	○	9. I can't get my mind off certain thoughts (describe):_____	○	○	○	40. I hear sounds or voices that other people think aren't there (describe):_____
○	○	○	10. I have trouble sitting still	○	○	○	41. I am impulsive or act without thinking
○	○	○	11. I am too dependent on others	○	○	○	42. I would rather be alone than with others
○	○	○	12. I feel lonely	○	○	○	43. I lie or cheat
○	○	○	13. I feel confused or in a fog	○	○	○	44. I feel overwhelmed by my responsibilities
○	○	○	14. I cry a lot	○	○	○	45. I am nervous or tense
○	○	○	15. I am pretty honest	○	○	○	46. Parts of my body twitch or make nervous movements (describe):_____
○	○	○	16. I am mean to others				
○	○	○	17. I daydream a lot				
○	○	○	18. I deliberately try to hurt or kill myself				_____
○	○	○	19. I try to get a lot of attention	○	○	○	47. I lack self-confidence
○	○	○	20. I damage or destroy my things	○	○	○	48. I am not liked by others
○	○	○	21. I damage or destroy things belonging to others	○	○	○	49. I can do certain things better than other people
○	○	○	22. I worry about my future	○	○	○	50. I am too fearful or anxious
○	○	○	23. I break rules at work or elsewhere	○	○	○	51. I feel dizzy or lightheaded
○	○	○	24. I don't eat as well as I should	○	○	○	52. I feel too guilty
○	○	○	25. I don't get along with other people	○	○	○	53. I have trouble planning for the future
○	○	○	26. I don't feel guilty after doing something I shouldn't	○	○	○	54. I feel tired without good reason
				○	○	○	55. My moods swing between elation and depression
○	○	○	27. I am jealous of others				
○	○	○	28. I get along badly with my family				56. Physical problems *without known medical cause*:
○	○	○	29. I am afraid of certain animals, situations, or places (describe):_____	○	○	○	a. Aches or pains (*not* stomach or headaches)
				○	○	○	b. Headaches
				○	○	○	c. Nausea, feel sick

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0=Not True 1=Somewhat or Sometimes True 2=Very True or Often

0	1	2		0	1	2	
○	○	○	d. Problems with eyes (not if corrected by glasses) (describe):_____	○	○	○	81. My behavior is very changeable
				○	○	○	82. I steal
				○	○	○	83. I am easily bored
○	○	○	e. Rashes or other skin problems	○	○	○	84. I do things that other people think are strange (describe):_____
○	○	○	f. Stomachaches				
○	○	○	g. Vomiting, throwing up				
○	○	○	h. Heart pounding or racing	○	○	○	85. I have thoughts that other people would think are strange (describe):
○	○	○	i. Numbness or tingling in body parts				
○	○	○	57. I physically attack people				
○	○	○	58. I pick my skin or other parts of my body (describe):_____	○	○	○	86. I am stubborn, sullen, or irritable
				○	○	○	87. My moods or feelings change suddenly
				○	○	○	88. I enjoy being with other people
○	○	○	59. I fail to finish things I should do	○	○	○	89. I rush into things without considering the risks
○	○	○	60. There is very little that I enjoy				
○	○	○	61. My work performance is poor	○	○	○	90. I drink too much alcohol or get drunk
○	○	○	62. I am poorly coordinated or clumsy	○	○	○	91. I think about killing myself
○	○	○	63. I would rather be with older people than with people of my own age	○	○	○	92. I do things that may cause me trouble with the law (describe):
○	○	○	64. I have trouble setting priorities				
○	○	○	65. I refuse to talk				
○	○	○	66. I repeat certain acts over and over (describe):_____	○	○	○	93. I talk too much
				○	○	○	94. I tease others a lot
				○	○	○	95. I have a hot temper
○	○	○	67. I have trouble making or keeping friends	○	○	○	96. I think about sex too much
○	○	○	68. I scream or yell a lot	○	○	○	97. I threaten to hurt people
○	○	○	69. I am secretive or keep things to myself	○	○	○	98. I like to help others

○	○	○	70. I see things that other people think aren't there (describe):_____	○	○	○	99. I dislike staying in one place for very long
				○	○	○	100. I have trouble sleeping (describe):
○	○	○	71. I am self-conscious or easily embarrassed				
○	○	○	72. I worry about my family	○	○	○	101. I stay away from my job even when I'm not sick and not on vacation
○	○	○	73. I meet my responsibilities to my family				
○	○	○	74. I show off or clown	○	○	○	102. I don't have much energy
○	○	○	75. I am too shy or timid	○	○	○	103. I am unhappy, sad, or depressed
○	○	○	76. My behavior is irresponsible	○	○	○	104. I am louder than others
○	○	○	77. I sleep more than most other people during day and/or night (describe):	○	○	○	105. People think I am disorganized
				○	○	○	106. I try to be fair to others
				○	○	○	107. I feel that I can't succeed
○	○	○	78. I have trouble making decisions				
○	○	○	79. I have a speech problem (describe):	○	○	○	108. I tend to lose things
○	○	○	80. I stand up for my rights	○	○	○	109. I like to try new things

0=Not True 1=Somewhat or Sometimes True 2=Very True or Often

0	1	2		0	1	2	
○	○	○	110. I wish I were of the opposite sex	○	○	○	117. I have trouble managing money or credit cards
○	○	○	111. I keep from getting involved with others				
○	○	○	112. I worry a lot	○	○	○	118. I am too impatient
○	○	○	113. I worry about my relations with the opposite sex	○	○	○	119. I am not good at details
				○	○	○	120. I drive too fast
○	○	○	114. I fail to pay my debts or meet other financial responsibilities	○	○	○	121. I tend to be late for appointments
				○	○	○	122. I have trouble keeping a job
○	○	○	115. I feel restless or fidgety	○	○	○	123. I am a happy person
○	○	○	116. I get upset too easily				

Wave 6 Emerging Adult Peer Support

Social Support

Think about the **last 3 months** and the peers who you felt closest to - those who stood by you, helped take care of you if you needed it, and/or cared about how you were doing. Please answer the following questions in reference to those peers.

	Not at All 1	2	3	4	A Lot 5
13. How much would you miss your peers if you didn't see them for awhile?	○	○	○	○	○
14. How much do you trust your peers to follow through with commitments and take your needs and future seriously regardless of their own problems or interests?	○	○	○	○	○
15. How much do you respect yours peers and care about what they think?	○	○	○	○	○
16. To what extent would you seek or accept advice or guidance from your peers?	○	○	○	○	○
17. Do your peers pay attention to what you are doing, care about your activities, ask questions about your life and monitor how you are doing?	○	○	○	○	○
18. Do you tell your peers the truth about your life and behavior, trusting what they do with the information and how they react?	○	○	○	○	○
19. Are your peers people that you enjoy being with and like to go places and do things with?	○	○	○	○	○

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