

PARENTAL AUTONOMY SUPPORT AND EMERGING ADULT ANXIETY AND
DEPRESSION: DETERMINING DIRECTION OF EFFECTS

by

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DISSERTATION ABSTRACT

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Title: Parental Autonomy Support and Emerging Adult Anxiety and Depression:
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Current research suggests a correlation between parental autonomy support and positive child mental health, but few empirical studies have examined the causal relationship between these constructs over time and, specifically, with emerging adult children. The purpose of this study was to use an existing longitudinal data set to explore the direction of effects between parental autonomy support and emerging adult depression and anxiety over time.

The sample included emerging adults ($N = 999$) who were part of a randomized, multiwave, longitudinal intervention study, Project Alliance I data (Project Alliance 1 [PAL1]; DA07031). A cross-lagged model was used to examine the relationship between parental autonomy support and emerging adult depression and anxiety symptoms across two waves. Multiple group analyses were conducted to examine if different models provided a better fit for different groups: 1) ethnicity, 2) gender, 3) living situation, and 4) family financial support status.

Study results showed that parental autonomy support and emerging adult depression and anxiety symptoms were not significantly related over time for the full sample. The moderating effect of family financial support status was partially supported,

with emerging adults who received family financial support exhibiting more stable depression and father autonomy support over time. Implications for future research are discussed.

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CHAPTER I

INTRODUCTION

Emerging adulthood, the unique life stage between adolescence and adulthood (approximately ages 18-25) (Arnett, 2000), is a time of multiple transitions and new experiences. Such transitions, when negotiated successfully, have the potential to foster positive young adult development and health. In contrast, a young adult's inability to negotiate such transitions well increases his/her risk for negative health outcomes over time (e.g., Arnett, 2001, 2003; Facio & Micocci, 2003; Macek, Bejcek, & Wanickova, 2007; Mayseless & Scharf, 2003; Nelson, Badger, & Wu, 2004). Given that many parents today are likely to remain involved in the care of their emerging adult children (Arnett, 2000), parents may play a critical role in helping their children navigate such developmental transitions and attain greater autonomy and well being as they enter adulthood.

As young adults age, however, they face a major transition in the way their parents react to and support their increasing autonomy. Emerging adulthood theory purports that gaining autonomy from parents (Arnett, Ramos, & Jensen, 2001) and making independent decisions about relationships, work, and values (Arnett et al., 2001) is necessary for sustained positive mental health and adjustment during this life stage. The process of separating from, and redefining relationships with, family, friends, and community during emerging adulthood, however, can cause moderate stress for some individuals and crises for others (e.g., Henton, Lamke, Murphy, & Haynes, 1980; Margolis, 1981).

Expectations and norms for what parents and emerging adult children consider to be appropriate levels of autonomy at ages 18 to 25 are often very different and also change dramatically with social and economic changes in industrialized nations (Arnett, 2000). Parents face significant challenges figuring out how best to support their emerging adult children's autonomy development; this task is often complicated by the fact that their child may be dependent on them for finances, housing, or other needs (Aquilino, 2006). Similarly, young adults must negotiate the numerous life transitions and developmental tasks associated with increased autonomy while conversely relying on their parents for some needs.

As autonomy development has been linked to young adult health and well being (Chirkov and Ryan, 2001; Niemiec, Lynch, Vansteenkiste, Bernstein, Deci, & Ryan, 2006), an examination of how parents support their children during this life transition holds promise for better understanding how parents contribute to emerging adult mental health. One way in which parents may react to their children is with psychological control, which is often conceptualized on the opposite end of the spectrum of parental autonomy support (Schaefer, 1965; Soenens & Beyers, 2012) and is thought to create a vulnerability to internalizing problems in particular (Barber & Harmon, 2002). The theoretical corollary is that parental autonomy support may buffer young adults from internalizing problems over time. In fact, researchers have found that parental autonomy support predicts other types of positive outcomes, such as higher academic achievement, adjustment to school, and adaptive emotion regulation for children, adolescents, and emerging adults (e.g., Froiland, 2011; Joussemet, Koestner, Lokes, & Landry, 2005; Roth & Assor, 2012).

Parents' and children's successful negotiation of the young adult's need for increased autonomy is a process that merits better understanding. Yet, there is minimal extant empirical research examining how the parent-child relationship changes during emerging adulthood and the impact of those changes on emerging adult health outcomes. Of the limited extant literature, the majority of research on parental autonomy support and child outcomes is cross-sectional, precluding the examination of causal relationships.

The purpose of this study, therefore, was to examine the relationship and direction of effects between emerging adults' perception of parental autonomy support and the emerging adults' anxiety and depression over time. Examining the direction of effects between parental autonomy support and emerging adult internalizing problems better captures the dynamic and mutually influential parent-child relationship as conceptualized by modern developmental theorists (Lerner, 2004; Lytton, 1990; Reid, Patterson, & Sydnor, 2002; Scarr and McCartney, 1983).

This dissertation study was the first study to empirically examine the reciprocal effects between parental autonomy support and emerging adult mental health outcomes. We hope that this study contributes to the development of theory, assessments, and preventive intervention programs by increasing understanding of how parents and children affect and respond to each other over time and how those responses influence young adult mental health.

CHAPTER II

LITERATURE REVIEW

Contents of this literature review are presented in the following order. First, I define parental autonomy support and discuss the distinction between autonomy and independence. Then, I review the limited extant literature on the relationship between parental autonomy support and child mental health outcomes, discuss the theoretical underpinnings of this relationship, highlight gaps in the literature, and describe studies conducted with emerging adult samples. Next, I review relevant literature that addresses the direction of effects between parent behavior and emerging adult mental health outcomes. Lastly, I review the literature on individual and contextual variables that may affect the relationship between parental autonomy support and emerging adult mental health. These variables include parent gender, adolescent and emerging adult gender, ethnicity, emerging adult living situation, and emerging adult employment status.

Defining Parental Autonomy Support

Self-Determination Theory (SDT) asserts that, regardless of cultural and social backgrounds, humans have a basic and innate need to feel autonomous (Ryan and Deci, 2000). According to SDT, autonomy support is an essential component of nurturing relationships and promotes well-being and positive functioning (Ryan, 1995; Ryan & Deci, 2000). Additionally, parent-child relationships are thought to be particularly important to providing a foundation for self-expression, as parents are present and

influential during critical periods of development (Grolnick & Ryan, 1989; Joussemet, Landry, & Koestner, 2008).

Multiple definitions of parental autonomy support exist, and many considerations were made when choosing the following definition for this study:

Parental autonomy support is the degree to which parents encourage their children to take initiative, allow them to be active in solving problems, and empathize with the child's perspective (Grolnick, 2003).

Despite the intention to define autonomy support so that it is relevant across cultures, even individuals within the same culture interpret specific items on autonomy measures differently (e.g., Marbell and Grolnick, 2013). Such differences in interpretation underscore that autonomy support is often a subjective experience or construct. The definition of autonomy support used in this study thus includes more than one type of autonomy to capture two dimensions of autonomy support: 1) parental empathy for the child's own thoughts and feelings (Koestner et al., 1984; Reeve, 2006) and 2) behavioral autonomy, or building self-governance behaviors such as taking initiative and being active in solving one's problems (Grolnick, 2003).

Distinguishing between parental autonomy support, parental psychological control, and parental independence support.

Parental support for independence was not included in the present study's definition of autonomy. Some scholars have theoretically and empirically distinguished autonomy from independence. According to SDT, autonomy is a basic and primary need and is necessary for positive social and emotional functioning. Deci and Ryan (1987),

the creators of SDT, described *independence* as a “lack of reliance on others” and *autonomy* as “an inner endorsement of one’s actions, the sense that they emanate from oneself and are one’s own” (p. 1025).

Researchers have empirically shown that independence often has connotations that are different from autonomy and is sometimes viewed negatively for people from more collectivistic cultures (e.g., Marbell & Grolnick, 2013; Soenens, Vansteenkiste, Lens, Luyckx, Goosens, & Beyers, 2007). For example, the culture of Ghana has been described as collectivistic, with a strong emphasis on family connectedness and deference to elders (Hofstede, 2001; Hofstede, Hofstede, and Minkov, 2010; McGadney-Douglass and Douglass, 2008; Salm and Falola, 2002; Schwartz, 2006). In a study with a sample of 117 Ghanaian adolescents, results demonstrated differences in interpretations between independence and volitional functioning, a defining feature of autonomy support (Marbell & Grolnick, 2013). “My parents allow me to decide things for myself” was perceived by 32% of participants as autonomy supportive and positive (in which parents respect the child’s decisions), whereas 18% of participants interpreted this statement as independence promotion and negative (in which the parent does not offer helpful guidance).

Even within western samples, independence is thought to have some negative connotations for children. Schiffrin et al. (2013) theorized that, while autonomy support is generally helpful for children, children might react negatively to parental promotion of independence because they feel pressure to become independent when they want more support and guidance. Researchers also have found that *promotion of independence* (encouraging self-reliance and discouraging reliance on parents) and *promotion of*

volitional functioning (creating situations in which children feel agency in their decisions and actions) were perceived to be distinct constructs for 153 middle adolescents and 891 university students in Belgium (Soenens et al., 2007). Another consideration in defining parental autonomy support is that some scholars have described this construct as the opposite end of a spectrum from parental psychological control (Schaefer, 1965; Soenens & Beyers, 2012). Parental psychological control is a strategy used to indirectly control a child's behavior by manipulating the child's emotions and cognitions through inducing guilt and emotional insecurity (e.g., Barber 2002; Bean et al., 2006; Walling et al., 2007). Parental psychological control has been more widely studied than autonomy support with regards to child mental health outcomes, and findings from the associated literature could help inform our understanding of the autonomy support construct.

Most recently, researchers have systematically examined the associations between psychological control and autonomy support as diametrically opposed constructs (Soenens & Beyers, 2012). In fact, promotion of autonomy has been found empirically to be strongly and negatively associated with psychological control (Soenens et al., 2007). Promotion of independence was also examined by Soenens et al. (2007) and was found to be unrelated to parental psychological control, which underscores the importance of distinguishing between parental autonomy support and support for independence.

In sum, independence and autonomy support are theoretically and empirically distinct. The definition of autonomy support used for this study excludes independence and instead encompasses autonomy support dimensions identified as necessary to the transition to adulthood and relevant to diverse cultural groups around the world (Arnett, 2003; Barry & Nelson, 2005; Nelson, 2003).

Empirical Research on Parental Autonomy Support

For this literature review, the following were used as search terms: parent* autonomy support*, parent* autonomy promot*, and parent autonomy foster* within multiple databases (PsycINFO, Google Scholar, Web of Science, and Psychology and Behavioral Sciences Collection [EBSCO]). To the best of our knowledge, the research on parental autonomy support has been conducted predominantly with European Americans, children and adolescents, individuals with disabilities, and college students. Fewer studies exist on autonomy support with ethnic minorities, emerging adults in general, and especially emerging adults not attending college.

Children and Adolescents

For children and adolescents, autonomy supportive parenting has been consistently associated with positive development, including higher well-being and life satisfaction (e.g., Grolnick and Ryan, 1989; Kenney-Benson and Pomerantz, 2005). Parental autonomy support also is important to children's well-being and academic motivation across nations, including Ghana, Russia, North America, and China (e.g., Chirkov & Ryan, 2001; Lokes, Gingras, Philippe, Koestner, & Fang, 2009; Marbell & Grolnick, 2013).

Traditional-aged College Students

Extant research findings with college students show positive correlations between parental autonomy support and college student well-being. Specifically, higher parental autonomy support has been correlated with improved academic outcomes for college

students, including academic adjustment, persistence, and achievement (e.g., Duchesne, Ratelle, Larose, & Guay, 2007; Ratelle et al., 2005); well-being (Chirkov and Ryan, 2001; Niemiec et al., 2006), adaptive emotion regulation (Roth & Assor, 2012), and autonomous behavior self-regulation (e.g., Ratelle, Guay, Larose, & Senecal, 2004; Ratelle et al., 2005; Vansteenkiste, Zhou, Lens, & Soenens, 2005). One correlational study from Belgium, conducted with a more heterogenous sample of emerging adults (not all participants were in college) (Kins, Beyers, Soenens, & Vansteenkiste, 2009), revealed a strong relationship between autonomy-supportive parenting and subjective well-being.

People with Disabilities

Scholars who have examined parental autonomy support and outcomes with adolescents and emerging adults with disabilities have also generally found significant correlations. Increased family support for the decision-making of young adults with intellectual disabilities has been associated with increased young adult safety and independence (Saaltink, MacKinnon, Owen, & Tardif-Williams, 2012). Emerging adults with motor disabilities who reported that their fathers fostered greater autonomy also scored higher on psychosocial maturity (Galambos, Magill-Evans, & Darrah, 2008). Finally, parental autonomy support has been associated with better self-care by adolescents with cystic fibrosis (Dashiff, Suzuki-Crumly, Kracke, Britton, & Moreland, 2013) and Type 1 Diabetes (Palmer, Berg, Wiebe, Beveridge, Korbel, Upchurch, Swinyard, Lindsay, & Donaldson, 2004).

Applying the Transactional Model to Emerging Adult Development

Scholars have found consistently positive associations between parental autonomy support and child outcomes. This extant body of research, however, has not yielded explanations for causation and direction of effects. The transactional model of development asserts that developmental outcomes are the product of a continuous dynamic interaction between the individual and the environment, with a particular focus on reciprocal effects (Gottlieb, 2007; Sameroff, 2009). According to the transactional model of development, parents and children reciprocally influence one another and contribute to child mental health outcomes (Sameroff & MacKenzie, 2003). The transactional model likely applies to emerging adults and their parents and parental autonomy support, but there is a lack empirical research on reciprocal effects within this dyad and on this construct to make a firm conclusion.

Empirical studies on other aspects of parenting have provided support for the transactional model. Reciprocal interactions between parents and children have been associated with the development of child internalizing problems such as feeling sad or worthless; experiencing stomachaches, headaches, or other somatic complaints; and preferring to be alone than with others and not getting along with other children (Fanti, Henrich, Brookmeyer, & Kuperminc, 2008). Reciprocal parent-child interactions also have been associated with child externalizing problems such as being disobedient, arguing, threatening others, and destroying things belonging to self or others (Gross, Shaw, & Moilanen, 2008; Zhang, Chen, Zhang, Zhou, & Wu, 2008).

This review of the literature focused on parental autonomy support and child mental health outcomes and yielded one study of parental autonomy support that

examined directions of effects. With a sample of 196 German adolescents, Seiffge-Krenke and Pakalniskiene (2011) examined the direction of effects between parental autonomy support and adolescent coping behaviors across four time points. Parental autonomy support significantly predicted adolescent coping behavior across one out of four time points. Child effects and reciprocal effects were not found. In other words, this study provided some support for a unidirectional effect of parents' behavior predicting the coping behaviors of their children, which is contrary to current theoretical assumptions of child development being a transactional process between parents and their children. The authors identified their small sample size and homogeneity as study limitations.

In sum, this review of the literature suggests that there is a significant relationship between parental autonomy support and child mental health outcomes. There is a dearth of research, however, with regard to directions of effects with emerging adults from diverse ethnic, socioeconomic, and other cultural backgrounds. Further research is thus warranted to build upon existing research to provide more a more conclusive understanding of the relationship between parental autonomy support and emerging adult mental health outcomes.

Study Contributions

Emerging adulthood is thought to be the most heterogeneous developmental phase in industrialized cultures because it is a transitional period leading to adulthood, and individuals reach adulthood at different ages (Arnett, 2000). For example, people vary in the degree of identity exploration they choose to pursue during their late teens and early

twenties in part because of varying cultural and socioeconomic backgrounds (Arnett, 2000). Given the heterogeneity of this developmental period, diverse samples are all the more important to use when conducting research.

Although a significant number of studies on parental autonomy support with emerging adults have been conducted, extant research findings are difficult to generalize because of the homogenous samples studied. It is important for scientists to better understand parental autonomy support with diverse samples of emerging adults to understand and support theory, build assessments that are helpful to families, and inform prevention and intervention efforts with this population. With the more complex dependencies between emerging adults and their parents, it is crucial that assessments and interventions that are relevant to those relationships be developed. It is hoped that present study findings contribute to the literature by identifying the direction of effects between parental autonomy support and young adult depression and anxiety over time with an ethnically and socioeconomically diverse community sample of young adults.

Potential Moderators in the Relationship between Parental Autonomy Support and Emerging Adult Internalizing Outcomes

Parenting is affected by sociocultural variables and contexts, such as parent and child gender, race, socioeconomic background, religion or spiritual practices, immigration status, etc. (e.g., Taylor, 2000). These contextual variables are especially important when studying parenting because age-bound stage theories, including emerging adulthood, may be ethnocentric and culturally biased (Hendry & Kloep, 2007). Although sociocultural influences have been demonstrated to have a significant impact on

parenting and child development, they have not been widely explored in the emerging adulthood literature (e.g., Buhl, 2007; Facio & Micocci, 2003; Fadjukoff, Kokko, Lanz, & Tagliabue, 2007).

Individual and contextual factors that may moderate the relationship between perceived parental autonomy support and emerging adult anxiety and depression were explored with this study. Specific moderators chosen were sociocultural factors that have been associated previously with emerging adult risk for depression and anxiety and autonomy from parents. These moderators include: (1) *financial support received*, (2) *living situation*, (3) *gender*, and (4) *ethnicity*.

Financial Support Received and Living Situation

The financial support young adults receive and their living situations have been associated with emerging adult healthy development. Examples of research on living situation conducted, to date, include the effects of moving away from home (Buhl, 2007; Kins, Beyers, Soenens, & Vansteenkiste, 2009; Kins, de Mol, & Beyers, 2014) and various living arrangements (i.e., whether the emerging adult lives at home, in the dorms, or in an apartment) on emerging adult well-being (Alquilino, 2006). Financial support received was important to include in the present study because it is directly related to financial independence from parents. Emerging adults have specifically identified financial independence from parents as necessary for adulthood (Arnett, 1998; Nelson & Barry, 2005). Emerging adult living situation was important to examine because it directly influences the amount of time emerging adults interact with and are influenced by their parents.

Gender

Parent Gender

Mother and father autonomy support were examined separately for the purposes of this study because researchers have found significant differences in how mothers and fathers parent their adolescent and emerging adult children, and researchers have focused primarily on mothers (Nelson et al., 2011). Disentangling the effects of maternal and paternal autonomy support on emerging adult mental health outcomes may yield important information about gender differences in parenting young adults and the role of each parent on their young adult's well-being.

Emerging Adult Gender

Multiple theoretical reasons exist to suggest that the longitudinal association between parental autonomy support and child internalizing problems may differ according to gender. Scholars have noted, for example, that mothers, fathers, daughters, and sons interact with each other in different ways (Steinberg, 2001); thus the differing interactions between each pair is likely to produce differences between parenting behaviors and child outcomes. Also, males and females have differing rates of internalizing problems. Females are at greater risk for internalizing problems than males (Petit et al., 2001), and women across the life span have generally been found to report higher levels of anxiety (Rapee, 2001) and depression (Kessler et al., 2003) than males.

To our knowledge, no research has been conducted on the moderating effect of gender between parental autonomy control and child outcomes. There is, however, a significant amount of research on the moderating effects of gender for parental

psychological control and child mental health outcomes, and findings have been mixed. Some scholars found longitudinal links between parental psychological control and adolescent internalizing problems for boys but not for girls (e.g., Conger, Conger, & Scaramella, 1997; Soenens, Luyckx, Vansteenkiste, Duriez, & Goosens, 2008) while other scholars found the opposite gender effects (e.g., Petit et al., 2001). In further contrast, other scholars found no group differences by adolescent gender (e.g., Loukas, 2009; Rogers, Buchanan, & Winchell, 2003; Van Zalk & Kerr, 2011). The moderating effect of gender is even less clear for emerging adults, specifically given the lack of research with this population.

Ethnicity

Although parental autonomy support has been found generally to have positive associations with child well-being, ethnic differences in these associations with U.S. samples have not been examined. There is a great need to examine ethnic differences in the relationships between parent psychological control and emerging adult health. Researchers have documented consistently that parenting is affected by larger sociocultural constructs, such as ethnicity (e.g., Taylor, 2000), but scholars continue to debate whether autonomy support across cultures promotes individual well-being (see Manzi et al., 2012; Soenens, Park, Vansteenkiste, & Mouratidis, 2012). The debate continues as so little empirical research exists examining ethnic and other cultural differences in the relationship between young adult autonomy and well-being.

Emerging adulthood may be more complex and difficult for African Americans because of existing racism in the United States (Arnett & Brody, 2008). They encounter

racism, marginalization, and discrimination in various forms, and are faced with having to reject and overcome negative stereotypes (Arnett and Brody, 2008). The additional stress of having to address racism as a part of emerging adulthood identity development suggests that other aspects of emerging adulthood, such as parental autonomy support during this time, may also be different for African Americans compared to European Americans.

No existing cross-cultural studies exist within the U.S. that focus on parental autonomy support. Extant research findings on a related construct, parental autonomy support, with African American youth are mixed. Parental psychological control was found to be significantly related to: (a) girls' depressive symptoms (but not boys') for a sample of 152 African American adolescents (Mandara & Pikes, 2008); and (b) psychosocial adjustment problems and risk behavior for a sample of 192 African American adolescents in single-mother families (Kincaid, Jones, Cuellar, & Gonzalez, 2011). On the other hand, there exist other studies in which investigators found no relationship between parental psychological control and African American youth mental health (e.g. Barber, Bean, & Crane, 2006; McWayne, Owsianik, Green, & Fantuzzo, 2008). The examination of ethnicity in this study was exploratory because so little is known about ethnicity as a moderator between parental autonomy support, related constructs, and young adult outcomes.

The Current Study

The aim of this study was to examine the relationship and direction of effects between parental autonomy support and emerging adult depression and anxiety using

existing prospective, longitudinal data collected with a large, ethnically and socioeconomically diverse community sample of young adults. Theorists generally are in agreement that parents and children engage in reciprocal interactions that contribute to child mental health outcomes. Despite this theoretical assertion, few studies provide longitudinal empirical evidence for such reciprocal effects. Of the few studies that have been conducted with emerging adults, samples have included primarily college students, who represent a small proportion of emerging adults living in the United States (Hamilton & Hamilton, 2006). It is hoped that study findings will contribute to science by enhancing our understanding of parenting during emerging adulthood and how the dynamic nature of the parent-child relationship affects emerging adult mental health.

Study Aims

Study Aim I: Examine if a significant relationship exists between emerging adults' perceptions of received parental autonomy support and concurrent self-reported depression and anxiety. It was hypothesized that: (a) higher levels of perceived mother and father psychological autonomy support at age 22 would be associated with lower levels of emerging adult depression and anxiety at age 22; and (b) higher levels of perceived mother and father autonomy support at age 23 would be associated with lower levels of emerging adult depression and anxiety at age 23 (see Figures 1 and 2).

Study Aim II: Identify the direction of effects between parent autonomy support and emerging adult depression and anxiety over time. It was hypothesized that: (a) higher perceived mother and father autonomy support at age 22 would predict lower emerging adult depression and anxiety at age 23; and (b) higher emerging adult

depression and anxiety at age 22 would predict lower perceived mother and father autonomy support at age 23 (see Figures 1 and 2).

Study Aim III: Explore whether the relationship between perceived mother and father autonomy support and emerging adult depression and anxiety varies by emerging adult gender, ethnicity, family financial support received, and living situation. The testing of these moderators was exploratory as they have not been examined previously in studies on parental autonomy support and child health outcomes (see Figures 1 and 2).

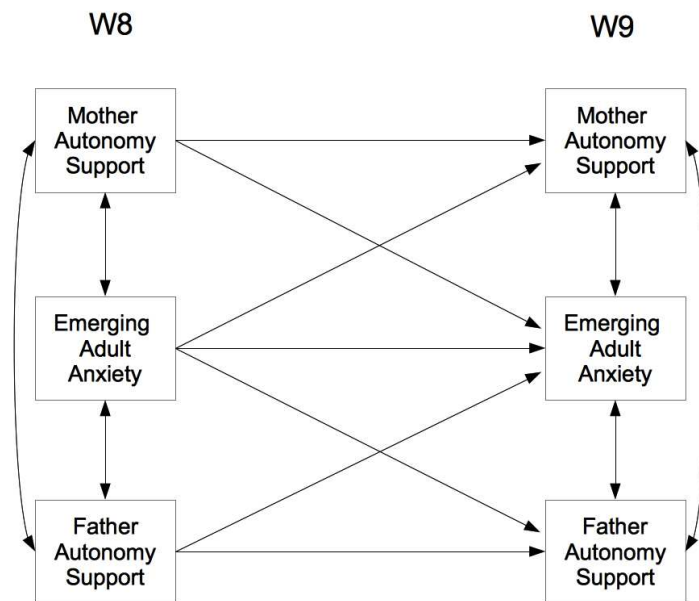


Figure 1. Overall Theoretical Cross-Lagged Model testing the association between mother autonomy support, father autonomy support, and emerging adult anxiety for the full sample.

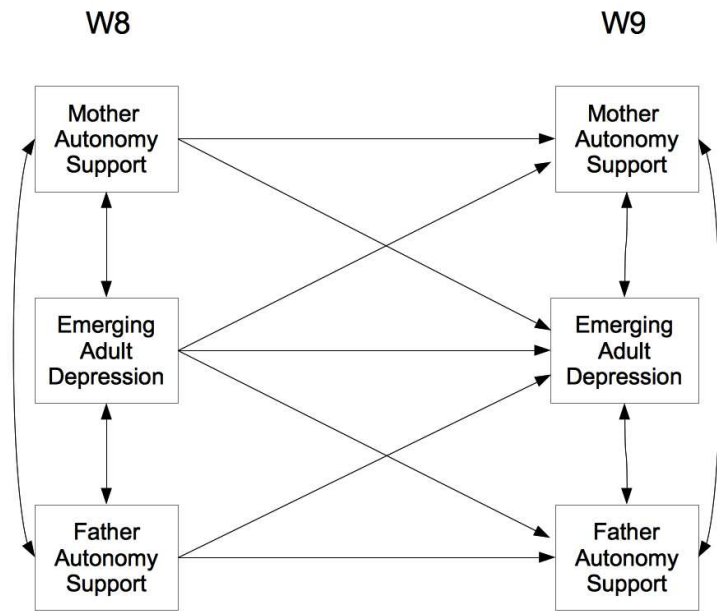


Figure 2. Overall Theoretical Cross-Lagged Model testing the association between mother autonomy support, father autonomy support, and emerging adult depression for the full sample.

CHAPTER III

METHODOLOGY

Participants

This study involved secondary data analysis of Project Alliance I data (Project Alliance 1 [PAL1]; DA07031). PAL1 is a randomized, multiwave, longitudinal intervention study. Participants included 998 early adolescents and their families who were recruited during the sixth grade from three middle schools in Portland, Oregon, USA. Parents of all sixth grade participants were approached for participation, and approximately 90% agreed to do so. Participants have been followed for 15 years and are now 23 years of age. PAL1 has maintained 80% participant retention.

Demographic Information

Participants provided demographic information about their age, gender, ethnicity, living situation, current work, education, income, and relationship with parents. Young adult participants were asked to identify their mothers as one of the following: “adoptive mom,” “bio mom,” “foster mom,” “step mom,” “other female mother figure.” Young adult participants were asked to identify their fathers as one of the following: “adoptive dad,” “bio dad,” “foster dad,” “step dad,” “other male father figure.”

PAL1 data across two waves were examined for the present study. At Wave 8 (W8), participants were on average 22.3 ($SD = 7.4$) years old, and at Wave 9 (W9) participants were on average 23.3 ($SD = 7.7$). The sample was evenly distributed at W8 by gender (49% female) and also included an ethnically diverse distribution of

participants at W8 who identified as European American (42%), African American (29%), Latino (7%), Asian American (5%), Native American (2%), Pacific Islander (1%), multiracial (8%), and “other” (2%). The median annual household income range at W8 was \$30,000 to \$40,000, with 25.3% of families earning less than \$20,000 per year and 12.7% earning more than \$90,000. At W8, 91% of participants reported having had contact with their mothers in the last three months while 70% of participants reported having had contact with their fathers. With regard to retention, 82.4% of the original sample participated at W8, 86.2% of the original sample participated at W9, and 79.4% of the original sample completed both W8 and W9.

Measures

Parental Autonomy Support

Parental autonomy support was assessed using an adapted version of the parental fostering of autonomy subscale from the Parental Attachment Questionnaire (PAQ; Kenny, 1987). The parental autonomy support measure, which determines the amount of parental autonomy support as perceived by emerging adults, was a predictor variable.

During the development and factor analysis of the PAQ, parental fostering of autonomy was identified as a subscale (Kenny, 1987). The parental fostering of autonomy subscale has been determined to be internally consistent with additional data collection. With a sample of 159 predominantly European American (90%) college seniors, Cronbach’s alpha for maternal fostering of autonomy was calculated as $\alpha = .88$ (Kenny, 1990). More recently, the parental fostering of autonomy subscale was used as a formal subscale with 14 items and administered to fathers (Kenny & Gallagher, 2002).

With a sample of 172 predominantly white (92%) 10th and 12th grade students attending a suburban high school, the internal consistency alpha for maternal fostering of autonomy was calculated as $\alpha = .78$ and $\alpha = .87$ for paternal fostering of autonomy. With a sample of 146 emerging adults age 20-30, 50% of whom identified as having a disability, Galambos and colleagues calculated internal consistency reliability for the maternal fostering of autonomy subscale as $\alpha = .88$, and $\alpha = .88$ for paternal fostering of autonomy (Galambos, Magill-Evans, & Darrah, 2008).

Multiple components of autonomy are included in the PAQ parental fostering of autonomy subscale, which increases the construct validity of the measure (Marbell & Grolnick, 2013). Given that children in the US are represented by diverse cultural backgrounds, it is particularly important that multiple components of autonomy promotion be included in the parental fostering of autonomy measure. Provision of choice has been associated with perceived autonomy in the US (e.g., Cordova and Lepper, 1996; Zuckerman et al., 1978). Within the PAQ parental fostering of autonomy subscale, provision of choice is represented by, “provided me with the freedom to experiment and learn things on my own,” “encouraged me to make my own decisions,” and, “gave me advice whether or not I wanted it.” Allowing criticism and encouraging independent thinking encourages open dialogue so that children can express their opinions and feel heard. Allowing criticism and encouraging independent thinking is represented in the PAQ by, “was a person to whom I could express differences of opinion on important matters” and “respected my judgment and decisions, even if different from what he/[she] would want.” A final type of autonomy promotion that is included in the PAQ is parental empathy for the child’s own thoughts and feelings. Empathy for the

child is represented by lack of negatively worded items, “was critical of my behavior” and “imposed his[/her] ideas and values on me.”

The 14-item parental parental fostering of autonomy subscale was adapted for the PAL study. The wording of each question was changed to ask participants about their experience of parents in the past three months. The original scale asks participants about their experience of parents with no time frame restriction. For the present study, participants rated each parent on a scale ranging from 0 (not at all) to 4 (very much). The items started with the statement: “In the past 3 months, my mother [or father]...” Examples of items include: “...respected my privacy,” “...tried to restrict my freedom,” and “...took my opinions seriously.” Negative items such as “...tried to restrict my freedom” were reverse-scored to reflect higher parental autonomy support with higher numbers.

Internalizing Symptoms

Emerging adult internalizing symptoms were assessed using the self-report Anxiety and Depression Scales of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). Normative data for the BSI were collected with an adult community sample ($N = 719$) from a single county in one of the large eastern states, a psychiatric adult out-patient sample ($N = 1002$) who presented for initial evaluation at one of four treatment facilities, and an in-patient adult sample ($N = 310$) who were admitted into Johns Hopkins Hospital (Derogatis & Melisaratos, 1983). The Depression scale consists of six items that assess for symptoms of depression, including dysphoric affect and mood, withdrawal from activities, and feelings of hopelessness. The Anxiety scale consists of

six items that assess for symptoms of anxiety, including restlessness, nervousness, and tension. With a sample of 1002 outpatients, an internal consistency alpha of $\alpha = .81$ and a two-week test-retest reliability coefficient of $\alpha = .79$ were calculated for the Anxiety scale (Derogatis & Melisaratos, 1983). With the same sample, an internal consistency alpha of $\alpha = .85$ and a two-week test-retest reliability coefficient of $\alpha = .84$ were calculated for the Depression scale (Derogatis & Melisaratos, 1983).

With present study PAL participants at age 23 (W9), a reliability coefficient of $\alpha = .85$ was calculated for the Depression scale, and a reliability coefficient of $\alpha = .81$ was calculated for the Anxiety scale. Items started with the statement, “During the past week, how much were you bothered by...” Response options were on a 5-point Likert scale, ranging from 0 (*not at all*) to 4 (*very much*). The Depression and Anxiety scores were calculated by summing across all items, with higher total scores indicating higher levels of depression and anxiety.

Living Situation

Participants were given 18 response options for living situation, including an open-ended “other” option in which a written response could be included. Examples of other response options included, “Live alone,” “Live with parent(s),” and “Live with friend(s).” For this study, living situation was categorized as a binary variable, with “live with parents” = 2 and all other response options grouped as “not with parents” = 1.

Financial Support Status

Financial support received from family members was asked as a series of 11 yes/no questions. Some examples include, “In the past 3 months, did a parent or other family member (other than spouse or partner) make a significant financial contribution towards...” “...your car insurance,” “...your health insurance,” and “...your school tuition”? Financial support received was categorized as a binary variable with yes = 1 if the participant received any financial support from family members (responded, “yes,” to at least one of the 11 original questions), and no = 0 if the participant received no family financial support (responded, “no,” to all of the 11 original questions). Participant living situations and financial support received from family members at both waves are reported in Table 1.

TABLE 1
Participant Living Situation and Financial Support Status at Waves 8 and 9

Group membership	Valid Percent (n)	
	W8	W9
Live with parents	31.9% (259)	32.6% (279)
Does not live with parents	68.1% (553)	67.4% (576)
Live alone	6.0% (49)	8.0 (68)
Live with relatives	8.4% (68)	7.8 (67)
Live with my children only	3.8% (31)	5.3 (45)
Live with partner	18.8% (153)	21.5 (184)
Live with family of partner	3.3% (27)	2.1 (18)

Group membership	Valid Percent (n)	
	W8	W9
Live with friends	9.2% (75)	8.3 (71)
Live in college campus housing	4.2% (34)	.8 (7)
Live with other roommates	10.8% (88)	8.2 (70)
Live in group home	.1% (1)	.2 (2)
Live in military	.4% (3)	.2 (2)
Homeless	.4% (3)	.1 (1)
Live in correction center	1.4% (11)	1.5 (13)
Live in other	1.2% (10)	3.3 (28)
Family financial assist-no	27.5% (219)	27.9% (236)
Family financial assist-yes	72.5% (578)	72.1 (609)
Family financial assist-car expense	22.1% (180)	18.2% (155)
Family financial assist-car insurance	25.5% (207)	23.0% (196)
Family financial assist-health insurance	25.0% (204)	18.8% (160)
Family financial assist-school supplies	15.1% (122)	9.5% (81)
Family financial assist-school tuition	20.9% (170)	12.2% (104)
Family financial assist-food	43.5% (354)	37.4% (318)

Group membership	Valid Percent (n)	
	W8	W9
Family financial assist-housing	31.4% (256)	27.4% (234)
Family financial assist-bills	28.9% (236)	26.6% (226)
Family financial assist-travel	17.1% (139)	14.4% (123)
Family financial assist-clothing	16.3% (132)	11.5% (98)
Family financial assist-services	42.2% (343)	40.7% (347)

Procedures

The Project Alliance I project is a randomized trial of the Family Check-Up (FCU; Dishion & Kavanagh, 2003), a brief intervention based on Motivational Interviewing. During 1996 and wave 1, participants were randomly assigned to the control group or the FCU intervention condition. The intervention was a three-session ecological assessment and feedback process, which was followed by support consisting of empirically validated family management strategies such as parental monitoring, positive behavior support, and limit setting. For the present study, the data were explored to determine if intervention group assignment affected study findings. At waves 8 and 9, data were collected through survey assessments with individual emerging adult participants. Compensation was given to families at wave 1 (\$200) and to individual emerging adults at waves 8 and 9 (\$125).

Data Analyses

I examined the direction of effects over time between perceived parental autonomy support and emerging adult depression and anxiety with a full cross-lagged longitudinal design. Preliminary data analyses were conducted prior to main study analyses. All preliminary analyses to model testing were conducted using SPSS 21.0 for Mac OS (IBM SPSS 21.0). First, I examined data for significant outliers and missing data to determine if any test assumptions of multivariate normality have been violated. Second, I assessed the nature of, and addressed, any missing data. Third, I ran descriptive statistics to describe the sample. Fourth, I listed frequencies, means, and standard deviations for all variables and measures in tables. Finally, I calculated inter-correlations between variables and display them in a correlation matrix.

Research hypotheses were tested using a two-wave, three-variable cross-lagged structural equation model (SEM) via Mplus 6.12 software (Muthen & Muthen, 2010b). A cross-lagged longitudinal design allows for direct comparison between the three extant models of parent-emerging adult effects: parent effects, child effects, and reciprocal effects. This type of analysis was chosen as it allows for examination of the cross-lagged paths while controlling for cross-time stability of each of the variables. The ability to control for autocorrelation improves accuracy when predicting the direction of effects among constructs (Berrington, Smith, & Sturgis, 2006). As shown in Figure 1, the cross-lagged paths were estimated after controlling for stability and cross-sectional covariances. A maximum likelihood analysis provided unbiased estimates for the cases of missing data. In addition to testing these paths, the following moderators were added and examined

separately: parent gender, emerging adult gender, ethnicity, living situation, and employment status.

CHAPTER IV

RESULTS

Results of study findings are organized in the following order. First, the identities of mothers and fathers were determined across study waves. Second, the reliability of the parental autonomy support measure was calculated. Third, results of data screening procedures and how missing data were addressed are presented. Fourth, effects of intervention group assignment, descriptive information, and tests of statistical assumptions are provided. Finally, bivariate correlations and the results of cross-lagged SEM model testing and multiple group analyses are detailed.

Determining Mother and Father Identity Across Waves

To ensure that mothers and fathers did not change across waves 8 and 9, mother or father autonomy support data were excluded when: (a) the identity of both parents changed from wave 8 to wave 9 ($n = 3$ participants excluded) or (b) the identity of one parent changed from wave 8 to wave 9 ($n = 39$ participants had parent data for one parent excluded). Data for wave 8 mother support, wave 8 father support, and wave 9 father support were excluded for 20 participants and wave 9 mother support data were excluded for 19 participants. The total sample size after these exclusions was $N = 996$.

Data Screening and Missing Data

Data were screened to ensure that data for each variable were within the possible score ranges, and missing data were examined. After excluding data for parents who

changed identity over time (total $n = 39$), 27.2% of data were missing for mother autonomy support at wave 8 and 23.4% were missing at wave 9. In comparison, 43.5% of father data were missing at wave 8 and 42.6% of father support data were missing at wave 9. Percentages of data missing for all study variables at both time points are shown in Table 2.

TABLE 2
Percentage of Missing Data and Data Included per Variable

Variable (wave)	% Missing data (<i>n</i> missing)	<i>n</i> for data included
1) Father Autonomy support (8)	43.5 (433)	563
2) Father Autonomy support (9)	42.6 (424)	572
3) Mother Autonomy support (8)	27.1 (271)	725
4) Mother Autonomy support (9)	23.4 (233)	763
5) Gender (1)	0.2 (2)	994
6) Ethnicity (1)	0.2 (2)	994
7) Anxiety (8)	18.9 (189)	807
8) Anxiety (9)	14.8 (148)	848
9) Depression (8)	19.2 (192)	804
10) Depression (9)	15.3 (153)	843
11) Living Situation (8)	18.7 (187)	809
12) Living Situation (9)	14.4 (144)	852
13) Financial Support From Family (8)	18.7 (187)	809
14) Financial Support From Family (9)	14.4 (144)	852

Little's Test was used to determine whether the data were missing completely at random (MCAR). The test was significant with $p = .00$, and thus the data were not MCAR. To explore further, missing indicators were created for emerging adult anxiety, emerging adult depression, mother autonomy support, and father autonomy support. Missing indicators were created by dummy coding depression, anxiety, mother support, and father support data at each wave. Missing scores were set to 0 and all other scores were set to 1. These indicators were correlated with gender and ethnicity to identify patterns of missingness according to group membership.

Missing data for all variables at both waves were significantly different for male and female young adult participants. Because labels were set as 1 = Male and 2 = Female, the negative correlations indicated that significantly more data were missing for males. Bivariate Pearson correlations are presented in Table 2. Missing values for father autonomy support at waves 8 ($\beta = .28, p < .05$) and 9 ($\beta = .27, p < .05$) were significantly different for African Americans and European Americans. Because labels were set as 1 = European American, 2 = African American, the positive correlations indicated that significantly more father autonomy support data were missing for African American participants. There were also significantly more missing wave 8 mother autonomy support data for African Americans than for European Americans ($\beta = .10, p < .05$) (See Table 3).

TABLE 3

Bivariate Pearson Correlations between Missing Indicators and Emerging Adult Ethnicity and Gender

Missing Indicators	Ethnicity	Gender
Wv8 depression indicator	.07	-.10*
Wv8 anxiety indicator	.06	-.10*
Wv9 depression indicator	.00	-.08*
Wv9 anxiety indicator	-.01	-.09*
Wv 8 father support indicator	.28*	-.09*
Wv 9 father support indicator	.27*	-.09*
Wv 8 mother support indicator	.10*	-.08*
Wv 9 mother support indicator	.07	-.08*

Emerging adult ethnicity coded: 1 = European American, 2 = African American.
 Emerging adult gender: 1 = Male, 2 = Female. * $p < .05$

In sum, significantly different amounts of data were missing for the following groups and interpretation of main study analyses will be considered more critically given potential bias associated with the following missing data patterns: (a) more father support data for African American participants were missing compared to European Americans; (b) more data for male participants were missing compared to female participants and (c) more wave 8 mother autonomy support data for African American participants were missing compared to European American participants.

Statistical Assumptions

The measured variables were examined for multivariate normality and linearity for SEM (Kline, 2005) as well as skewness and kurtosis. These statistics are presented in Table 4. Skew was examined using cutoffs from -3.0 to 3.0. Kurtosis statistics were based on a below 10.0 cutoff (Kline, 2005). Skewness and kurtosis results and a visual inspection of histograms revealed that data distributions for anxiety and depression at both waves were positively skewed, but within acceptable ranges. Distributions for mother and father autonomy support were normal.

TABLE 4
Normality for Continuous Measured Variables

Variable (wave)	Skew	Kurtosis
Father Autonomy support (8)	0.59	0.25
Father Autonomy support (9)	0.75	0.71
Mother Autonomy support (8)	0.59	0.31
Mother Autonomy support (9)	0.89	0.75
*Anxiety (8)	1.92	3.75
*Anxiety (9)	2.03	4.20
*Depression (8)	1.69	2.70
*Depression (9)	1.68	2.96

Note. * = positively skewed.

Bivariate Correlations

Spearman and Pearson correlations were examined to ensure that Pearson correlations were not affected by data that were skewed for several variables. The results of the Spearman correlations matched with those of the Pearson correlations. Differences were not substantial, thus only the Pearson correlations are presented in Table 5. All correlations were significant and in the expected direction. The correlations between parent support and emerging adult anxiety and depression were significant at $p = .05^*$, but generally small and ranged between $r = -.09^*$ and $r = -.28^*$. The correlations between all other variables were much larger in comparison. Sample descriptive data are also included in Table 5.

Intervention Group Assignment

To determine whether or not intervention group assignment affected present study findings, Pearson correlations were run between intervention condition and mother and father autonomy support and emerging adult anxiety and depression outcomes. Correlations were non significant between intervention condition and other study variables, which suggests that there were no significant differences between the intervention and control groups with regard to mother and father autonomy support and emerging adult anxiety and depression outcomes. Results are presented in Table 5.

The possible effects of intervention group assignment were tested again by including intervention group assignment as a moderator during the testing of the depression and anxiety models. Because the analysis of intervention group assignment

TABLE 5

Bivariate Correlations Among Measured Variables and Descriptive Data for Full Sample

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. W8 depression	–												
2. W9 depression	.48*	–											
3. W8 anxiety	.70*	.44*	–										
4. W9 anxiety	.39*	.64*	.54*	–									
5. W8 father support	-.20*	-.14*	-.12*	-.14*	–								
6. W9 father support	-.11*	-.13*	-.09*	-.15*	.61*	–							
7. W8 mother support	-.28*	-.20*	-.15*	-.14*	.51*	.30*	–						
8. W9 mother support	-.20*	-.25*	-.13*	-.15*	.38*	.47*	.66*	–					
9. Intervention condition	.03	-.04	.00	-.03	-.03	-.04	-.02	-.01	–				
10. Gender	.13*	.11*	.24*	.26*	-.02	-.04	-.01	.00	.02	–			
11. Ethnicity	.05	.00	.03	-.01	-.17*	-.10*	-.13*	-.11*	.03	.02	–		

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
12. W8 Financial support	.05	.03	.05	.02	.00	-.03	-.01	.02	.02	.06	.02	–	
13. W8 Living situation	-.02	-.01	-.05	-.04	-.06*	-.09*	-.19*	-.14*	.04	-.06	.07*	.11*	–
N	804	843	807	848	557	563	726	763	994	994	711	814	809
M	58.90	58.82	58.76	58.56	16.27	15.24	16.87	16.24	1.50	4.32	1.41	.72	1.32
SD	5.02	4.88	4.91	4.86	0.86	0.84	0.83	0.79	.50	3.50	.49	.45	.47
Range	55-80	55-80	55-80	55-80	0-52	0-53	0-48	0-50	1-2	1-8	1-2	0-1	1-2

Note. Possible score ranges: Depression and Anxiety = 0-20; Mother and Father Support = 55-80; Financial Support = 0-1 Living Situation = 1-2. * $p < .05$.

was an additional analysis that deviates from the main study purpose, the results and discussion of results are presented separately in Appendix A.

Model Testing

Research hypotheses were tested using a two wave, three-variable cross-lagged structural equation model (SEM) via Mplus 6.12 software (Muthen & Muthen, 2010b). A maximum likelihood analysis provided unbiased estimates for the cases of missing data.

Main Effects: Models 1d-4d and 1a-4a

Initial testing included two groups of four models for a total of eight models. The relationships between mother and father autonomy support and emerging adult depression were explored using the first group of four models (Model 1d, Model 2d, Model 3d, and Model 4d). The models were compared to determine if adding the cross-causal paths increased model fit for the full sample. This same process was repeated with emerging adult anxiety, instead of depression as the outcome variable, using a second group of four models (Model 1a, Model 2a, Model 3a, Model 4a). These models were defined as follows:

1. Model 1d and Model 1a were the stability-only models, and as such were tested without any cross-causal paths.
2. Model 2d and Model 2a tested paths from emerging adult depression or anxiety to mother and father autonomy support.
3. Model 3d and 3a tested paths from mother and father autonomy support to emerging adult depression or anxiety.
4. Model 4d and 4a included all of the stability and cross-lagged paths.

For all eight models, standard measures of fit were used, including chi-square (χ^2), comparative fit index (CFI), non-normed or Tucker-Lewis index (TLI), and root-mean squared error of approximation (RMSEA). CFI/TLI values greater than 0.95, RMSEA values less than .05, and a non-significant χ^2 indicated good fit (Hu & Bentler, 1999).

The paths by which emerging adult anxiety predicted mother and father support and the paths by which mother and father autonomy support predicted emerging adult anxiety did not provide significant increases in the quality of model fit over the stability only model. We were thus able to infer that mother and father autonomy support did not predict emerging adult anxiety, and emerging adult anxiety did not predict mother and father autonomy support. These paths were not explored further. Figure 3 shows the standardized effects for the stability only model for anxiety.

Similarly, depression Model 2d and Model 3d did not provide a significant increase in the quality of fit over the stability model, thus we were able to infer that mother and father autonomy support did not predict emerging adult depression and emerging adult depression did not predict mother and father autonomy support. Figure 4 shows the standardized effects from the stability only model. The comparisons of all models are presented in Table 6.

Moderators

Exploratory multiple group analyses were conducted to examine if different models provided a better fit for different groups (e.g., males versus females). These analyses were conducted with the stability-only models for depression and anxiety,

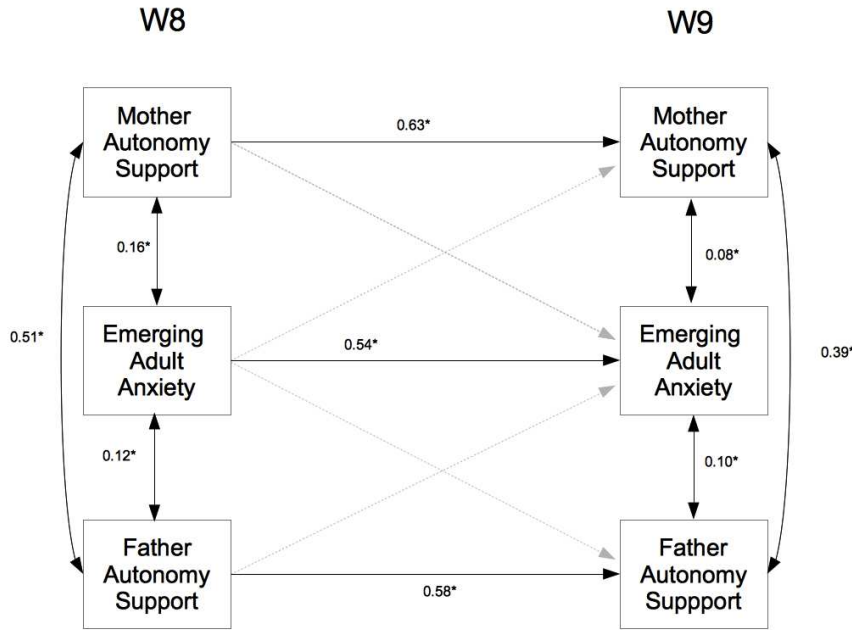


Figure 3. Model 1a. Stability Only Model with Causal Path of Emerging Adult Anxiety Predicting Mother and Father Autonomy support with standardized parameter estimates, * $p < .05$.

which were found to be significant from main effects analyses. The following potential group moderators were examined: a) emerging adult gender, b) emerging adult ethnicity, c) emerging adult living situation, d) emerging adult financial support received, and e) intervention condition.

Model 5: Potential Moderating Effect of Gender

To determine if gender was a significant moderator of the stability-only model with depression over time, a model in which all paths were constrained for males and females was compared to a model in which all paths were freely estimated. Of the total sample, 523 emerging adults were males and 471 were females. The model in which all

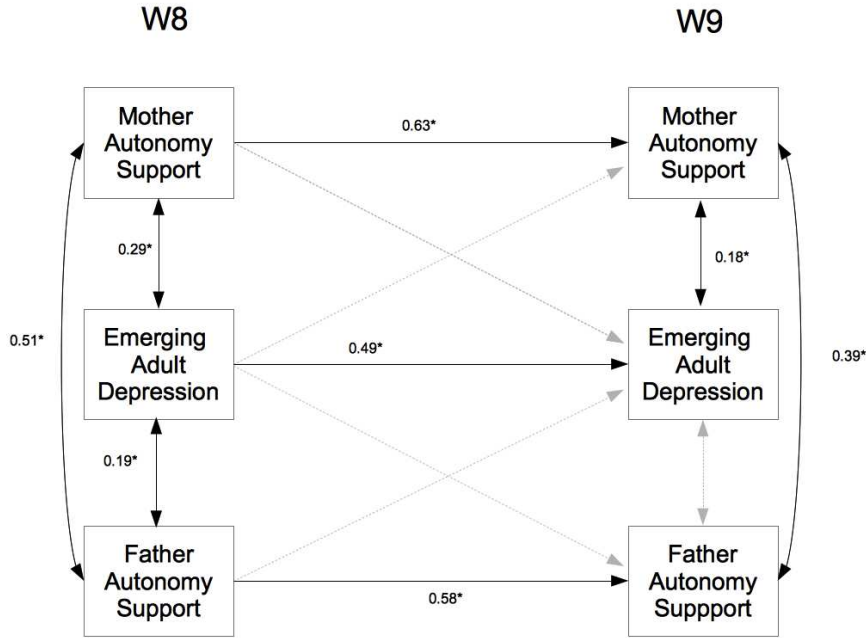


Figure 4. Model 1d. Stability Only Model with Emerging Adult Depression and Mother and Father Autonomy support with standardized parameter estimates, * $p < .05$.

paths were constrained to be equal for males and for females did not fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 1.28$, suggesting no systematic differences between males and females with regard to stability of mother autonomy support, father autonomy support, and emerging adult depression over time.

This exploration was repeated with the stability-only anxiety model. Similarly, the model in which all paths were constrained to be equal for males and for females did not fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 1.55$, suggesting no systematic differences between males and females with regard to stability of mother autonomy support, father autonomy support, and emerging adult anxiety over time.

TABLE 6

Model Fit and Chi Square Difference Tests for Full Sample

Model	Model comparison	df	χ^2	Difference test	χ^2 <i>p-value</i>	CFI	RMSEA	TLI
1d		6	7.76		0.26	1.00	0.02	1.00
2d	M1d vs M2d	4	5.07	$\Delta\chi^2(2) = 2.69$	0.28	1.00	0.02	1.00
3d	M1d vs M3d	4	3.62	$\Delta\chi^2(2) = 4.14$	0.46	1.00	0.00	1.00
4d	M1d vs M4d	2	2.26	$\Delta\chi^2(2) = 5.50$	0.32	1.00	0.01	1.00
1a		6	7.49		0.28	1.00	0.02	1.00
2a	M1a vs M2a	4	5.31	$\Delta\chi^2(2) = 2.18$	0.26	1.00	0.02	1.00
3a	M1a vs M3a	4	4.20	$\Delta\chi^2(2) = 3.29$	0.38	1.00	0.01	1.00
4a	M1a vs M4a	4	5.56	$\Delta\chi^2(4) = 1.93$	0.23	1.00	0.02	1.00

Note. Models 1a, 2a, 3a, and 4a refer to models with anxiety. Models 1d, 2d, 3d, and 4d refer to models with depression. Models 1d and 1a include only stability paths across time points and correlational paths at each time point. Models 2d and 2a include only casual paths from mother or father autonomy support to emerging adult anxiety or depression. Models 3d and 3a included only causal paths from emerging adult depression or anxiety to mother and father autonomy support, respectively. Models 4d and 4a included the full cross-lagged models. * $p < .05$

Model 6: Potential Moderating Effect of Ethnicity

To determine if ethnicity was a significant moderator of the stability-only model with depression over time, a model in which all paths were constrained for African Americans and European Americans was compared to a model in which all paths were freely estimated. Of the total sample, 421 emerging adults were European American and 290 were African American. The model in which all paths were constrained to be equal for African Americans and for European Americans did not fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 1.28$, suggesting no systematic differences between ethnicities with regard to stability of mother autonomy support, father autonomy support, and emerging adult depression over time.

This exploration was repeated with the stability-only model with anxiety. The model in which all paths were constrained to be equal according to ethnicity did fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 8.39$, suggesting that the models were significantly different by ethnicity. Moderation of individual paths was explored to identify the specific significant path(s); however, none of the paths were found to be significantly moderated by ethnicity: $\Delta\chi^2(1) = 3.63$ for emerging adult anxiety, $\Delta\chi^2(1) = 3.53$ for father autonomy support, and $\Delta\chi^2(1) = 2.11$ for mother autonomy support. Although the omnibus test was significant, none of the individual paths alone were significant, suggesting no systematic differences between ethnicities with regard to stability of mother autonomy support, father autonomy support, and emerging adult anxiety over time.

Model 7: Potential Moderating Effect of Living Situation

Although Living Situation was measured at both waves 8 and 9, data from wave 8 were used rather than the data from wave 9 because we wanted to know how earlier living situation would moderate later anxiety and depression outcomes. Of the total sample at wave 8, 258 emerging adults lived with their parents and 551 did not.

For the stability-only model with depression, a model in which all paths were constrained to be equal for emerging adults living with their parents and independently from their parents did not fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 2.37$, suggesting no systematic differences between living situation with regard to stability of mother autonomy support, father autonomy support, and emerging adult depression over time.

This exploration was repeated with the stability-only model with anxiety. A model in which all paths were constrained to be equal for emerging adults living with their parents and independently from their parents did not fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 1.89$, suggesting no systematic differences between living situation with regard to stability of mother autonomy support, father autonomy support, and emerging adult anxiety over time.

Model 8: Potential Moderating Effect of Financial Support Received

Although Financial Support Received was measured at both waves 8 and 9, data from wave 8 were used rather than the data from wave 9 because we wanted to know how earlier financial support received would moderate later anxiety and depression

outcomes. Of the total sample, 590 emerging adults received financial support from family members and 224 did not.

For the stability-only model with depression, a model in which all paths were constrained to be equal for emerging adults receiving financial support from family members and those not receiving financial support did fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 12.37$, suggesting that the models were significantly different by financial support status. Moderation of individual paths was then explored to determine which were significant. The constrained paths for depression [$\Delta\chi^2(1) = 7.02$] and father autonomy support [$\Delta\chi^2(1) = 5.07$] did fit significantly differently than the freely estimated model, thus the stability of depression and father autonomy support over time differed according to financial support status. The constrained path for mother autonomy support did not fit significantly differently than the freely estimated model [$\Delta\chi^2(1) = 0.94$], thus there is no evidence of a moderating effect for mother autonomy support by financial support status.

For the stability-only model with anxiety, a model in which all paths were constrained to be equal for emerging adults receiving financial support from family members and those not receiving financial support did fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 7.93$, suggesting that the models were significantly different by financial support status. Moderation of individual paths was then explored to determine which were significant. The constrained path for emerging adult anxiety did not fit significantly differently than the freely estimated model [$\Delta\chi^2(1) = 2.05$], thus there is no evidence of a moderating effect for emerging adult anxiety by financial support status.

The stability paths for mother and father autonomy support did not change for the depression and anxiety models. Given that financial support significantly moderated the constrained path for father autonomy support in the depression model, $\Delta\chi^2(1) = 5.07$, we knew that the financial support status would also moderate father autonomy support in the anxiety model. We concluded that the stability of father autonomy support over time differs according to financial support status. Similarly, because financial support status did not moderate the mother autonomy support path in the stability model with depression, $\Delta\chi^2(1) = 0.94$, we assumed that this was also the case for this model with anxiety.

Higher coefficients indicated that continuity in young adults' depression and father autonomy support was significantly more stable for emerging adults who were receiving financial support from family members: With depression, a $\beta = 0.53$ was calculated for emerging adults receiving financial support and a $\beta = 0.37$ for emerging adults not receiving financial support. With father autonomy support, $\beta = 0.62$ for emerging adults receiving financial support and $\beta = 0.45$ for emerging adults not receiving financial support. Repeated Measures ANOVA analyses were conducted to determine if depression and father autonomy support increased or decreased over time according to group membership. The main effects for this analysis with depression was not significant, $F(1) = .45, p = .51$, which means that neither group significantly increased or nor decreased in depression over time. Similarly, the main effects for this analysis with father autonomy support was not significant, $F(1) = .48, p = .49$, which means that neither group significantly increased or nor decreased in father autonomy support over time.

In sum, trajectories for depression and father autonomy support did not significantly increase nor decrease over time. They remained moderately stable, and trajectories were more stable across wave 8 and wave 9 for participants who received financial support from family members compared to those who did not.

Results Summary

Study results showed that (a) mother autonomy support, emerging adult depression, and emerging adult anxiety were not significantly related over time, and so we can conclude that these variables were not causally related to one another; (b) stability for all study variables across time; (c) financial support status significantly moderated model results such that receiving financial support from family members was associated with more stable young adult depression symptoms and father autonomy support over the course of one year.

CHAPTER V

DISCUSSION

The purpose of this study was to use an existing, longitudinal data set and cross-lagged analyses to examine the direction of effects between mother and father autonomy support and emerging adult depression and anxiety. Overall, study results showed that mother and father autonomy support were not associated with young adult depression and anxiety symptoms over time. The study hypothesis that wave 8 parental autonomy support would predict parent autonomy support one year later was supported by study results. Similarly, results supported the hypothesis that emerging adult anxiety and depression at wave 8 would predict anxiety and depression one year later. With regard to moderating effects, the hypothesis that family financial support would moderate model paths was supported for young adult depression, but not anxiety. Additionally, financial support status significantly moderated model paths for father but not mother autonomy support; that is depression and father autonomy support paths were significantly more stable over time for emerging adults who received family financial support compared to those who did not. There were no significant moderating effects found for gender, ethnicity, and living situation for this sample.

Emerging Adult Mental Health and Parental Autonomy Support

Study results did not provide evidence for causal relationships between mother and father autonomy support and emerging adult depression and anxiety symptoms. This finding is in contradiction with existing empirical findings from unidirectional analyses

showing that increased parental autonomy support predicts well-being for children, adolescents, and emerging adults (e.g., Froiland, 2011; Joussemet, Koestner, Lokes, & Landry, 2005; Roth & Assor, 2012; Seiffge-Krenke & Pakalniskiene, 2011).

One explanation for our finding is related to the *stability of study variables* over a 12-month time period only. This time frame may not have been long enough to detect influences over time, particularly when the study variables had low correlations within time points. Correlations between parental autonomy support and emerging adult internalizing symptoms ranged from nonsignificant to $r = .29^*$. Emerging adult participants reported few changes in contextual factors of living situation and financial support received over time as well. At age 22, 32% reported living with their parents and 28% reported living with their parents at age 23. With regard to financial support received from family members, 61% of participants reported receiving family financial support at age 22 and 59% at age 23. Given that these personal and contextual factors appear to be stable during the one year period of emerging adulthood measured, increasing the time span over which a study like this is conducted may be necessary to identify important changes in the lives of emerging adults and capture causal relationships between variables.

One possible explanation for the *low correlations between study variables* is that parental autonomy support was assessed using one total score. It may be that some subcomponents of parental autonomy support are more directly related to emerging adult internalizing symptoms than others. Parental autonomy support can include support for behavioral autonomy, emotional autonomy, and autonomous thinking. Measuring parental autonomy support as a global construct, without examining the multiple

dimensions of this variable, may have prevented the detection of significant relationships between parental autonomy support and young adult depression and anxiety (e.g., Jung and Wickrama, 2008; Wray-Lake et al., 2011).

A second possible explanation for the insignificant study findings is that measurement of study variables at two time points can only capture a *linear trajectory* of change and influence, and the relationship between emerging adult depression and anxiety and parental autonomy support may not be linear. Emerging adulthood is considered to be the most heterogeneous developmental period (Arnett, 2000; Schulenberg, Sameroff, & Cicchetti, 2004). Emerging adults have greater latitude than adolescents to choose their own paths, and they have greater social permission than older adults to try new experiences, fail, and experiment with relationships and diverse aspects of their identities. According to Frye and Liem (2011), “these characteristics allow emerging adults unprecedented opportunities to reinterpret their roles in the context of new or nonexistent institutional structures and the chance to deliberately reframe their circumstances and experiences” (p. 572). Although study variables were stable across the two time points, data suggest that these observations were only moderately stable rather than highly stable, thus a nonlinear trajectory might be a better representation of emerging adult development: $\beta = 0.63$ for mother autonomy support, $\beta = 0.58$ for father autonomy support, $\beta = 0.54$ for emerging adult anxiety, and $\beta = 0.49$ for emerging adult depression.

Thirdly, I considered that *missing data* may have contributed to the lack of significance between parental autonomy support and emerging adult internalizing symptoms over time. There was significantly more father autonomy support data missing

compared to mother data, thus the analyses for father data had less power. The standardized betas for the cross lagged paths were quite small (they ranged from $\beta = .02$ to $\beta = .05$), however, so more father support data would unlikely have helped make the paths significant.

A fourth possibility is that the insignificant paths between parental autonomy support and emerging adult depression and anxiety are explained by the use of a gross measure of anxiety and depression with a sample that had low levels of symptoms. The BSI for depression and anxiety included only 6 items each, which measured a narrow range of symptoms. Using measures for depression and anxiety that included more items that could capture a wider range of depression and anxiety symptoms may have increased the possibility of capturing significant relationships between these symptoms and parental autonomy support over time.

A last consideration of the insignificant cross-lagged paths is related to the cultural and social identities of the participants. Given we know that autonomy promotion, emotional support, and monitoring are some examples of parenting factors that are generally accepted to be important for healthy child development, the insignificance of parental autonomy support to predict the depression and anxiety symptoms in this study may be because other parenting factors were significantly more important to the mental health of this sample. Although parental autonomy support has been found to be important to the well-being of emerging adults, samples in previous research with emerging adults have typically been with European American college students. In contrast, this sample is socioeconomically and ethnically diverse, and it is likely that the sample in this study includes more individuals who have grown up in

impoverished neighborhoods with lower quality education, fewer social outlets for children such as parks and libraries, and greater physical danger. One parenting factor that has been demonstrated to be particularly important to the healthy development of children who live in higher risk neighborhoods is parental monitoring (Neumann, Barker, Koot, & Maughan, 2010). It may be that, in comparison to factors like parental monitoring, autonomy support contributes very little of the variance that explains depression and anxiety symptoms of emerging adults for children who grew up in impoverished areas.

These dissertation study results are in line with existing depression research conducted with emerging adults; that is, *depression trajectories are stable over time* during this developmental period (e.g., Galambos & Krahn, 2008). Other research findings suggest that depression trajectories are more stable over time for emerging adults with low rates of depression (Frye & Liem, 2011). The present study sample reported low levels of depression and moderate stability of depression symptoms over time. The stability of anxiety during emerging adulthood has less been less widely examined; however, present dissertation results are congruent with the limited, extant research showing that *anxiety tends to be stable over time for adolescents and emerging adults* (e.g. Crocetti, Klimstra, Keijsers, Hale, & Meeus, 2009; Nes, Røysamb, Reichborn-Kjennerud, Harris, & Tambs, 2007). Most research with emerging adults has been conducted with European American college students. The present study involved a community sample of ethnically and socioeconomically diverse young adults. Present study results provide further confirmation that depression and anxiety at low levels is

stable over time for a sample of emerging adults that is more representative of the US population.

The finding that *parental autonomy support remained stable across time* was surprising and inconsistent with expectations that parental autonomy support would increase over time. Child development is a bidirectional process according to the transactional model of development (Sameroff & MacKenzie, 2003), thus it was expected that parental behaviors would significantly change over time as parents are responding to their emerging adults' natural increases in autonomy. Additionally, longitudinal studies with adolescents and emerging adults up to age 20 have shown that autonomy support in the family steadily but gradually increases during late childhood and early adolescence and then rises dramatically after the age of 15 (Daddis & Smetana, 2005; Gutman & Eccles, 2007; Wray-Lake et al., [2010](#)).

It may be that, despite the many ways in which emerging adult autonomy increases over time, the changes to parent autonomy support are relatively slow and insignificant compared to similar changes during adolescence. The present study examined change in parental autonomy support over the course of age 22-23, which may not have been enough of a time span to capture changes in trajectory. Evidence to support this possibility is that, within this sample, life situations that have been significantly associated with emerging adult autonomy, such as living situation and financial support received (Alquilino, 2006), did not change much from age 22 to 23. Thus, parents in this sample may not have had many young adult autonomy changes to respond to in different ways during the 12 month period of this study.

It is also possible that parental autonomy support did not increase over time because changes in parental autonomy support during emerging adulthood are not linear. Parental autonomy support for adolescents has been found to increase in a quadratic pattern (Gutman & Eccles, 2007). The present study design did not allow for examination of non-linear trajectories, thus future studies examining parental autonomy support trajectories would benefit from examining more than two time points.

Multiple Group Analyses: Gender, Ethnicity, Living Situation, and Family Financial Support

Given the importance of considering how parenting and human development are affected by sociocultural and contextual factors, multiple group analyses were conducted to determine if different models provided a better fit according to group membership. Emerging adult gender, ethnicity, living situation, and family financial support received were examined as potential moderators of the stability only models for depression and anxiety.

Family Financial Support Status

The hypothesis that participants' financial support status (group 1 = received financial support, group 2 = did not receive financial support) would moderate the relationships between emerging adult depression and anxiety at baseline and depression and anxiety one year later was partially confirmed. Although both groups reported similar levels of depression and father autonomy support from wave 8 to wave 9, emerging adults who received financial support from family members had less variability

in their depression and anxiety over time compared to the group who did not receive financial support. Those who did not receive family financial support, on the other hand, included more individuals who increased and decreased in depression and father autonomy support over time. It is possible that participants who did not receive financial support were more vulnerable to positive and negative contextual changes that could impact one's financial situation such as losing a job, receiving a negative work evaluation, increasing school tuition, winning a scholarship, and getting a job promotion. On the other hand, emerging adults and their fathers may be less reactive to such changes when the emerging adult's finances are buffered by family financial support.

Receipt of financial support did not significantly moderate mother autonomy support or emerging adult anxiety over time. In past studies, mother and father autonomy support were found to be highly correlated (Grolnick & Ryan, 1989) as they were in this study; however, most of this extant research on parental autonomy support is about the mother's style or a composite of parents' styles. Little is known about how mothers and fathers differ with regards to the autonomy support that they offer (Guay, Ratelle, & Chanal, 2008). Present study results underscore the importance of separately examining mother and father autonomy support and examining the impact of each on emerging adult anxiety and depression.

Gender

Results from multiple group analyses did not provide evidence to support a moderating effect of emerging adult gender. Extant research findings on gender differences in young adult depression trajectories are mixed. Some previous research has

yielded no significant gender differences in adolescent and young adult trajectories of depression (e.g., Loukas, 2009; Rogers, Buchanan, & Winchell, 2003; Van Zalk & Kerr, 2011). In contrast, Frye and Liem (2011) found significant gender differences in depression trajectories for adolescents with low levels of depression. In addition, researchers have found that adolescent boys' depressive symptom trajectories were more stable compared to girls' greater increases in depression over time (Cole et al., 2002; Garber et al., 2002; Ge, Lorenz, Conger, Elder, & Simons, 1994). Emerging adult women, in contrast, have been found to have decreasing depressive symptoms relative to emerging adult men (Galambos, Barker, & Krahn, 2006). To our knowledge, this dissertation is the first study to examine gender differences in emerging adult anxiety trajectories.

Results from cross sectional studies about gender differences in parental autonomy support with adolescent samples have also been mixed. Findings from this study are consistent with research conducted with adolescent samples that also resulted in no differences between boys' and girls' experiences of parental autonomy support (Smetana, 2000; Smetana et al., 2004). In other studies, parents have expected increased autonomy for boys at earlier ages than for girls (Daddis & Smetana, 2005). Other literature suggests that girls experience greater decision-making autonomy than boys (Bumpus, Crouter, & McHale, 2001; Flanagan, 1990). In one longitudinal study of adolescent autonomy, girls' autonomy increased from ages 13-19, with a steep rise from 15-17, whereas boys' autonomy increased steadily from 13-17 and was stable afterwards (Gutman & Eccles, 2007). As far as we are aware, there are no studies that examine emerging adult gender differences for parental autonomy support trajectories. It is

important for scholars to continue to examine how parents support autonomy differently for emerging adult men and women. These differences should be examined over time to understand the impact on child and young adult development, parenting, and family health.

Ethnicity

Results from multiple group analyses did not provide evidence to support a moderating effect of emerging adult ethnicity. Significant differences were expected based on extant research showing that African Americans experience disproportionately high rates of depression and face systemic oppression and discrimination in the United States (Brown et al., 2007; Wight et al., 2005). The PAL sample was comprised of 29% African American young adults and 25% other ethnic minorities who were living in high-risk neighborhoods in the Portland urban area. It was a welcomed surprise to find that the African American emerging adults in this PAL sample did not report higher rates of depression. Whether or not individual trajectories of young adult depression, anxiety, and parental autonomy support differ according to race is less clear. To our knowledge, there are no studies that examine ethnic differences in trajectories of parental autonomy support and emerging adult anxiety.

Living Situations

Results from multiple group analyses did not provide evidence to support a moderating effect of emerging adult living situation. This finding is surprising because living situation has been associated with other changes in the parent-child relationship.

More specifically, emerging adults have reported an improved relationship with their parents when they move away from home (Arnett, 2004) and lower rates of depression (Galambos, Krahn, & Harvey, 2008). A possible explanation for the insignificance of living situation as a moderator is that the binary measure of living situation (1 = with parents and 2 = not with parents) used in this study did not capture the diversity of living situations that emerging adults actually have. In fact, emerging adults have reported living in a broad array of living situations, which have been found to fit into three distinct groups through latent class analysis: (1) with parents, (2) independent of parents, and (3) semiautonomous living (Kins et al., 2009). Future research would benefit from including at least a third option to capture the heterogeneity of emerging adult living situations.

In sum, mother and father autonomy support were not associated with young adult depression and anxiety symptoms over time. Parental autonomy support at wave 8 did predict parent autonomy support one year later and emerging adult anxiety and depression at wave 8 predicted anxiety and depression, respectively, one year later. Family financial support moderated model paths for young adult depression and father autonomy support. In the following section, study limitations are presented that may account for some of the study findings.

Study Limitations

Although the present study revealed a number of interesting findings, some limitations require consideration when interpreting the findings. First, this study used only emerging adults' self-report of depression, anxiety, and parental autonomy support. This is a valid approach according to the developmental systems perspective (Lerner,

2004), which purports that a child's interpretation of a parent's behaviors is a critical part of the process that shapes parent-child interactions and child outcomes. At the same time, using only emerging adult self-report of parental autonomy support increases the possibility that relationships found between variables were inflated due to shared method variance. Future research should include multiple informants and data collected via multiple methods to examine the relationship between parental autonomy support and emerging adult depression and anxiety over time.

A second limitation was that binary measures of living situation and family financial support status were used and may not have captured important nuances in these study variables. Including multiple living situation options that capture a greater diversity of young adult autonomy levels may yield more information about the relationships examined with this study. Also, measuring parent financial support specifically rather than family financial support would be more appropriate as a moderator for the relationship between parental autonomy support and emerging adult internalizing symptoms. Future research may benefit from also measuring emerging adults' attitudes towards their financial and living situations and the degree to which they experienced volition with making those situational decisions. There is theoretical and empirical evidence to suggest that living situation itself may be less associated with emerging adult well-being than emerging adults' attitudes toward and satisfaction with their living situations (Kins, et. al., 2011; Ryan & Deci, 2000).

A third limitation is that the study design allowed for examination of changes over the course of only one year and two time points. Results from the current study suggest that emerging adults did not change much over the course of one year. Future

research would benefit from expanding data collection beyond two time points and one year to allow for examination of non-linear trajectories, which is likely to be the case for emerging adult internalizing problems.

A fourth limitation is the low correlations between parental autonomy support and emerging adult internalizing symptoms within time points. In the future, researchers should examine how multiple and different dimensions of parental autonomy support are related to young adult depression and anxiety over time. Researchers who use the same measure of parental autonomy support used in this study may benefit from conducting a factor analysis to determine if some subcomponents of parental autonomy support are more highly correlated with emerging adult internalizing outcomes than others. Past studies on autonomy support have found that some aspects of parental autonomy support have been significantly associated with adolescent and emerging adult well being while others were not (Manzi et al., 2011; Marbell & Grolnick, 2013).

A fifth study limitation is that there was a significant amount of missing data based on group membership. There were: (1) more missing African American father autonomy support data than European American father autonomy support data at waves 8 and 9, (2) more missing male emerging adult participant data compared to female participant data for both waves, and (3) more missing African American mother autonomy support data compared to European American mother autonomy support data at wave 8. Missing data can lead to an inaccurate representation of relationships between variables. The absence of information from these participants may have resulted in a sampling bias in which those who dropped out of the study may have shared common

reasons for dropping out (e.g., high risk status). Excluding data for groups of people reduces the validity of study findings.

A final limitation is that responses from participants with same-sex parents were not considered during data collection. The parental autonomy support questionnaires included a “mother section” and a “father section.” The option to report about same-sex parents was not offered, thus research findings with this measure are not generalizable to such individuals in the population. Future research would benefit from asking participants to identify the gender of the parent about whom they are reporting.

Strengths, Implications, and Research Recommendations

Several strengths of the current study and implications for theory, assessment, and intervention are noteworthy. A strength of this dissertation study is the use of longitudinal data when very few studies have tested the longitudinal association between parental autonomy support and mental health outcomes for emerging adults. The use of a longitudinal data set and the study design have allowed for examination of causal relationships and developmental trajectories. Study findings contribute to the limited extant research about developmental trajectories during emerging adulthood. The high socioeconomic and ethnic diversity of the sample used in the current study is also an exception in the emerging adulthood literature. Most research about emerging adults has been with college students and European Americans. Although SES was not directly measured in this sample, other data about income and education suggested high socioeconomic diversity. The median household income range was \$30,000 to \$40,000, with 25% of families earning less than \$20,000 per year and 13% earning more than

\$90,000. With regard to level of education at age 23, 15.6% of participants had their college degrees, 28.3% had completed some college, and 27.0% had high school diplomas or GEDs. The high socioeconomic and educational diversity of this sample and the examination of individual and contextual moderators allows for present study results to be generalized to a wider range of emerging adults than most previous studies.

The separate examination of mother and father autonomy support is not frequently incorporated in the study of parental autonomy support, but the importance of examining mother and father data separately has been confirmed (Smetana, 1995; Smetana et al., 2004). Although mother and father autonomy support were highly correlated, separating the measures allowed us to capture mother and father differences in autonomy support provision according to whether or not their emerging adult children were receiving financial support from family members. As far as we know, there is no existing empirical literature about the trajectories of mother and father autonomy support during emerging adulthood. Our findings suggest that mother and father autonomy support can vary according to contextual factors, and future research would benefit from continuing to examine mothers and fathers separately.

Another recommendation for future research is related to the financial support measure. The financial support status measure assessed financial support received from family members rather than parents only. Financial support provided by other family members may not necessarily affect the parent-child relationship so directly. Future studies would benefit from looking at financial support from parents and other family members separately.

Yet another recommendation for future research on the effects of parental autonomy support on child mental health is to take greater consideration of the social and cultural identities of the sample to help inform research design and data analysis. For instance, the present study sample included more individuals who grew up in impoverished neighborhoods with greater physical dangers compared to samples from previous studies of emerging adults. Future research with this sample would benefit from examining if the relationship between autonomy support and emerging adult mental health are different based on participant neighborhood risk.

A final recommendation for future research is for scholars to consider the effects of autonomy support provided by other important people during emerging adulthood. Although autonomy support from parents was not predictive of young adult depression and anxiety in this study, other research suggests that it remains an important consideration in emerging adult development. At the same time, many young adults spend most of their time away from parents and are consequently highly influenced by other mentor figures, friends, and romantic relationships (Ratelle et al., 2013). With adolescents, peers have been shown to gain greater influence over psychosocial functioning over time (Laursen, Wilder, Noack, & Williams, 2000), and adolescents are more likely to discuss relational stress with peers than with their parents (Nomaguchi, 2008; Smetana, Campione-Barr, & Daddis, 2006). Additionally, the association between autonomy support provided by friends and emerging adult well-being has been found to have the same effect size as the association between parental autonomy support and emerging adult well-being (Ratelle et al., 2013). Examination of autonomy support from others, in addition to support by parents, may be beneficial to gaining a clearer picture of

what relationships most affect emerging adult autonomy, depression, and anxiety. More research is necessary to explore the possibility that autonomy support from other relationships may impact emerging adult mental health outcomes as much or more than parental autonomy support.

Conclusion

The unique developmental period of emerging adulthood merits targeted interventions that include contextual and cultural considerations. Results from the present study contribute to our understanding of emerging adult mental health by adding to the sparse literature base on developmental trajectories of mother and father autonomy support and emerging adult depression and anxiety. Overall, study results provide support for the moderating effect of family financial support to emerging adult depression and to father autonomy support trajectories over time. Study results confirm existing literature that mother autonomy support, father autonomy support, and depression and anxiety, especially at low levels, remain stable during emerging adulthood. The findings also support literature that suggests the importance of examining mothers and fathers separately to capture differences in parenting styles, especially within an ecological framework. Study findings are more widely generalizable than most existing research on emerging adulthood because of the ethnic and socioeconomic diversity of this study's sample.

Increasing the number of time points and length of time over which data are collected is important to better capture the heterogeneity that defines this developmental period. Using a more nuanced approach to measuring parental autonomy support is also

warranted. Currently, emerging adults are grouped into the same category as other adults with regard to assessments and mental health treatment. Clinical interventions with emerging adults are individually-focused or focused on the emerging adult's nuclear family (romantic partner and children), while child and family interventions are created for families with children up to adolescence. Few prevention and intervention programs that are tailored to emerging adult needs exist outside of college campuses. More research with diverse samples is necessary to understand the effects of parental autonomy support on emerging adult internalizing issues and to help improve theory and assessments and inform intervention and prevention efforts targeted to improving emerging adult mental health.

APPENDIX

RESULTS AND DISCUSSION: MULTIPLE GROUP ANALYSIS OF
INTERVENTION GROUP ASSIGNMENT

Results: Potential Moderating Effect of Intervention Group Assignment

Intervention group assignment was analyzed as a moderator to determine whether participation in the Family Check-Up intervention (FCU; Dishion & Kavanagh, 2003), when participants were in the 6th grade, would affect study findings. Of the total sample, 499 emerging adults were in the intervention group and 495 were in the control group. For the stability-only model with depression, a model in which all paths were constrained to be equal for emerging adults receiving financial support from family members and those not receiving financial support did fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 25.12$, suggesting that the models were significantly different by intervention group assignment. Moderation of individual paths was then explored to determine which were significant. The constrained path for depression did fit significantly differently than the freely estimated model, $\Delta\chi^2(1) = 8.23$, thus emerging adults differed in the stability of their depression trajectories according to intervention group assignment. The constrained paths for father autonomy support [$\Delta\chi^2(1) = 1.80$] and mother autonomy support [$\Delta\chi^2(1) = 0.69$] did not fit significantly differently than the freely estimated model, thus there is no evidence of a moderating effect for mother or father autonomy support by intervention group assignment.

For the stability-only model with anxiety, a model in which all paths were constrained to be equal for emerging adults in the intervention group and those in the control group did fit significantly worse than the freely estimated model, $\Delta\chi^2(3) = 16.45$, suggesting that the models were significantly different by intervention group assignment. Moderation of individual paths was then explored to determine which were significant. The constrained path for emerging adult anxiety did fit significantly differently than the

freely estimated model, $\Delta\chi^2(1) = 12.29$, thus intervention group assignment significantly moderated young adult anxiety. Because intervention group assignment did not moderate the mother or father autonomy support paths in the stability model with depression, we assumed that this was also the case for this model with anxiety as the stability paths would be the same.

The higher coefficients for intervention group data, compared to data for emerging adults in the control group, indicate that those who received the FCU intervention were more stable in their depression and anxiety symptoms over time: With depression, $\beta = 0.56$ for emerging adults in the intervention group and $\beta = 0.41$ for those in the control group. With anxiety, $\beta = 0.63$ for emerging adults in the intervention group and $\beta = 0.44$ for those in the control group. Repeated Measures ANOVA analyses were conducted to determine if depression and anxiety increased or decreased over time according to intervention group assignment. The main effects for this analysis with anxiety was not significant, $F(1) = 2.93, p = .09$, which means that neither group significantly increased or nor decreased in depression over time. Similarly, the main effects for this analysis with father autonomy support was not significant, $F(1) = 1.45, p = .23$, which means that neither group significantly increased or nor decreased in father autonomy support over time.

In sum, trajectories for anxiety and depression did not significantly increase nor decrease over time. They remained moderately stable, and trajectories were more stable across wave 8 and wave 9 for participants in the FCU intervention group compared to those in the control group.

Discussion: Potential Moderating Effect of Intervention Group Assignment

The hypothesis that intervention group assignment would moderate the stability paths for the depression and anxiety models was partially supported. Results indicated that young adults who received the FCU intervention had more stable anxiety and depression over time than those in the control group. Intervention status had no moderating effect on mother or father autonomy support over time. We suspect that the FCU may have had a protective effect on intervention group participants and that intervention group participants were less emotionally reactive to positive and negative contextual changes that could impact their depression and anxiety. Indeed, existing research on longitudinal effects of the FCU revealed increased self-regulation of affect and behavior in participants at 6th grade (the same year the FCU was implemented), 7th grade, and 8th grade (Stormshak, Fosco, & Dishion, 2010).

Another implication that we can draw from these results is that they point to the importance of examining control and intervention groups separately in future studies that use PAL 1 data given that the two groups were found to be significantly different. Additionally, results suggested that family-based interventions, like the Family Check-Up can have lasting impact on mental health of children.

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