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The present study examines how parent-emerging adults digital interactions relate to emerging adult perceptions of parental autonomy support. Specifically, this study tested whether digitally enacted parenting behaviors tapping engagement (as captured by texting frequency, monitoring (as captured by codes for parental solicitation, parental control, and emerging adult disclosure) and responsiveness (as captured by codes for parental warmth, emotional/esteem support, advice giving, and instrumental support provision) are associated with emerging adult perceptions of parental support for their autonomy. I hypothesized that those emerging adults whose mothers and fathers texted them more frequently would perceive that parent as less supportive of their autonomy. I further expected that those emerging adults whose mothers and fathers exhibited more responsiveness over text-message would perceive that parent as more supportive of their autonomy, whereas emerging adults whose mothers and fathers exhibited more monitoring over text-message would perceive that parent as less supportive of their autonomy. Finally, over and above the linear effects hypothesized above, I expected that a curvilinear pattern might best characterize these associations, such that a moderate amount of parent-emerging adult texting frequency, digital responsiveness, and monitoring would be associated with the highest perceived levels of parental support of autonomy. College students at an elite southeastern university (N = 267) contributed all their text messages (569,172 text messages) over two weeks. Text messages with designated mothers and fathers (27,739 text messages sent/received by N = 238 emerging adults) were qualitatively coded for indicators of monitoring and responsiveness. Participants also answered survey questions, including their own perceptions of how supportive their mothers and fathers were of their psychological autonomy.

In structural equation models I regressed emerging adult perceived mother and father support of autonomy (separately) on mother-emerging adult and father-emerging adult text frequency and coded indicators of monitoring and responsiveness. Results indicate that many dimensions of parent-emerging adult texting are unrelated to perceived parental support of autonomy, but that, at high levels of certain behaviors, emerging adults may find parent-emerging adult text messaging behaviors autonomy inhibiting. Results highlight that much of parent-emerging adult texting may not be perceived as intrusive or autonomy inhibiting.

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PARENT TEXT MESSAGE BEHAVIORS AND EMERGING ADULT PERCIEVED SUPPORT OF AUTONONMY

by

Morgan T. Brown

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DEDICATION

To my mother, without you and your love there is no way any of this would've been possible. To Ade, being supported by you has meant and continues to mean more than you will ever know.

Thank you.

APPROVAL PAGE

This thesis written by Morgan T. Brown has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I: INTRODUCTION

Parents and Emerging Adulthood

Emerging adulthood (usually thought to encompass ages 18 – 25; Arnett, 2000) is a unique life stage at the intersection of adolescence and adulthood. This time is characterized by multiple transitions and new experiences, as well as developmental tasks of increasing independence and self-reliance (Soenens et al., 2007). Emerging adult theory suggests that gaining autonomy from parents and making independent life choices is necessary for the health of emerging adults as well as a healthy transition into adulthood (Arnett, 2000). In this time period, many youths strive to strike a balance between increasing independence in how they think and act and maintaining an emotional connection with their parents (Van Petegam et al., 2013). Indeed, in the modern era, many emerging adults are still dependent on their parents for emotional, social, and financial support (Guan & Fuligni, 2016; Wightman et al., 2013).

Parenting of emerging adults likely requires making some adjustments to one's parenting behaviors used in adolescence, as beneficial parental behaviors (i.e., responsiveness, warmth, monitoring, control) must be balanced with autonomy-granting behaviors to support the emerging adult's increasing independence. We know from decades of research that parents are one of the most powerful influences on children and adolescents' social, psychological, and behavioral well-being (Collins et al., 2000). Although there is considerable empirical evidence that supports the importance of parental influences in children and adolescents, fewer studies have examined whether and how parental behaviors remain influential into emerging adulthood (Nelson et al., 2010).

Parental Support of Autonomy

Becoming autonomous is considered a universal psychological need that is required for healthy human development (Ryan & Deci, 2000). Autonomy represents the feeling of doing something because of one's own decision or initiative and can capture the extent to which people fully endorse the behaviors in which they engage (Ryan & Deci, 2000). More simply, autonomy is the need to feel control over one's actions. Youth who perceive themselves to be more autonomous tend to endorse better adjustment in emerging adulthood, including higher self-esteem and self-efficacy and lower levels of depressive symptoms (e.g., Cullaty, 2011; Lekes et al., 2010; Van der Gissen et al., 2014).

Self-determination theory posits that there are three universal psychological human needs: competence, relatedness, and autonomy (Deci & Ryan, 2000). Parents play a role in facilitating fulfillment of these needs, especially those of relatedness and autonomy. Most relevant to the current study is the role of parents in youth autonomy development. Self-determination theory highlights the importance of the social context, specifically focusing on the role of caregivers, who can either facilitate or undermine a child's progress towards self-determination and autonomy (Ryan & Deci, 2006).

Given that increasing independence and autonomy are key developmental tasks of the emerging adult period (Arnett, 2000), the ways in which parents can support effective autonomy development are of great interest (Kourous & Garber, 2014). Broadly, parental support of autonomy is defined as the parent's active support of the child's capacity to be self-initiating and independent (Ryan & Deci, 2006). Based mostly on research involving done with children and young adolescents, autonomy support has been operationalized to include parental behaviors such as providing rationale and explanation for behavioral requests, recognizing the feelings and

perspective of the child, offering choices, and encouraging initiative, and minimizing the use of controlling techniques (Ginott, 1969). Historically, parental promotion of autonomy included encouragement of youth distancing themselves from parents and embracing new roles and responsibilities (Soenens et al., 2009). Parents who promote autonomy tend to encourage their children to become increasingly self-reliant (Gray & Steinberg, 1999; Steinberg & Silk, 2002). These parents also often focus on understanding their children's perspectives, encouraging children's individuality, respecting differing opinions through validation, and encouraging self-expression and decision making to support independence (Silk et al., 2003; Barber, 2002). Parental behaviors that could impede the promotion of autonomy include fostering an environment where children feel reliant and dependent on their parents for a developmentally inappropriate amount of support (Steinberg & Silk, 2002). Thus, it is important to attend to how and how much parents are providing support to their emerging adult offspring and to consider whether high amounts of support (out of proportion to the developmental phase of the child) might actually be inhibiting healthy autonomy development.

Monitoring in Emerging Adulthood

Parents who are striving to support their emerging adult offspring's autonomy must navigate and balance how (and how much) to engage in traditional tasks of parenting such as provision of responsive, warm caregiving and engagement in monitoring and behavioral control/guidance of their child's behavior. This balance is best captured as the distinction between parental responsiveness and parental demandingness, which are considered the two main dimensions of parenting (Baumrind, 1965). Let us turn first to demandingness (along with related constructs of monitoring and behavioral control). Parental monitoring encompasses parental behaviors intended to keep tabs on children, and can include attention to their child's

location, friends, or activities (Dishion & McMahon, 1998). Today, consistent with Stattin and Kerr's (2000) reconceptualization, scholars realize that monitoring is not a one-sided endeavor, and comprises distinct parent behaviors (parent control and parent solicitation) and youth behaviors (disclosures), all of which contribute to parental knowledge of youth whereabouts and activities. It is important to attend both to what *parents do* (i.e., parent solicitation, when a parent actively asks their child for information, and parental control, when parents use rules and restrictions to direct and know about child behavior) alongside what *youth do* (i.e., youth disclosure, when the child voluntary offers information to their parent) when considering contributions to parent knowledge (Stattin & Kerr, 2000). Several studies with adolescents have suggested that youth disclosure may contribute more to parental knowledge than parental monitoring behaviors (Keijsers et al., 2010; Kerr & Stattin, 2000; Kerr et al., 2010). For example, when using longitudinal data, adolescent disclosure was determined to be the most useful predictor of later parental knowledge of adolescent behaviors and whereabouts (Kerr et al., 2010).

For the most part, parental monitoring (including solicitation, control, and disclosure) tends to be associated with more positive adolescent adjustment, but overall, less is known about monitoring in emerging adulthood (Dishion & McMahon, 1998; Steinberg et al., 1994; Yap et al., 2014). Low parental monitoring has been identified as a strong predictor of adolescent externalizing behaviors when compared to other parenting behaviors (Loeber & Stouthamer-Loeber, 1987; Bailey et al., 2009; Lopez-Tamayo et al., 2016). For instance, early adolescents who perceived higher levels of parental solicitation were less likely to exhibit antisocial behaviors a year later (Laird et al., 2010). Results from a meta-analysis suggested that teens with parents who exhibited moderate levels of parental control and monitoring were also less likely to

have internalizing symptomatology over time than those who exhibited lower levels of control and monitoring (Pinqaurt, 2017b). Monitoring in the online sphere also seems to be beneficial, as early adolescents who report higher levels of parental monitoring also report lower rates of online harassment (Khurana et al., 2015).

When considering findings among emerging adult samples, results from a latent profile analysis determined that there were no significant mean differences concerning delinquency and depression among emerging adults who frequently disclosed to mothers as compared to those who disclosed less. Among the same sample for fathers however, four classes emerged and those emerging adults who disclosed to their father less had higher levels of depression and delinquency (Son et al., 2021). In a different sample, parent profiles with the highest levels of control in mothers were associated with higher levels of depression in emerging adults, whereas with fathers who exhibited the highest levels of control emerging adults had the highest levels of delinquency and depression as compared to other profiles (Padilla-Walker et al., 2021). Other findings suggest that for both mothers and fathers, higher levels of psychological control in emerging adulthood were associated with elevated levels of risky behavior engagement and lower levels of self-esteem (Faherty et al., 2020). Overall, for emerging adults, higher levels of parental control seem not to be beneficial for their adjustment, whereas the results for disclosure are a bit more mixed.

In discussing parental monitoring, it is important to remember that all good things may be best in moderation. Despite the generally protective nature of parental monitoring in adolescence, *over* monitoring or *harsh* monitoring can become intrusive and thus hinder development for emerging adults (especially as emerging adults strive for increased independence; Barber et al., 2005). For teenagers, parents who are high in control may display

intrusive behaviors, use coercion to invalidate children's perspective, undermine their individuality, and overall deny adolescents' independence (Soenens et al., 2010). Harsh parental monitoring can negatively affect children's emotional well-being as it is associated with externalizing and internalizing behaviors during adolescence and can predict these behaviors over time (Pinquart, 2017a; Pinquart, 2017b). Findings seem to generalize to emerging adulthood, as those emerging adults who perceive their parents as more psychologically and behaviorally controlling had higher psychological distress and lower levels of psychological well-being (García Mendoza et al., 2019). High levels of parental control can also affect the parent-child relationship; early adolescent perceptions of over-control and privacy invasion are related to poorer parent and adolescent relationships (Hawk et al., 2008).

Responsiveness in Emerging Adulthood

Another important aspect of the parent-child relationship is the degree to which parents are warm, nurturing, and responsive to their child (Baumrind, 1965). Indeed, parents must also navigate deciding how (and how much) to provide these aspects of positive parenting to their children during their transition from adolescence to emerging adulthood. Warm and supportive parenting involves behaviors that are physically and emotionally affectionate, approving, loving, and caring (Openshaw et al., 1984). Warmth provides numerous benefits for children and adolescent adjustment and well-being (Meeus et al., 2005; Tubman & Lerner, 1994), as well as for emerging adults (Inguglia et al., 2015). A long body of research shows that adolescents whose parents express low levels of warmth and support are more likely to exhibit higher levels of internalizing and externalizing symptomatology and lower levels of life satisfaction (Parra et al., 2015; Garber et al., 1997; Gray & Steinberg, 1999).

Scholars have identified three distinct forms of parental support: emotional support, informational support, and tangible aid (House, 1981). Parental emotional support is support characterized by care, concern, esteem, trust, and listening (Brown et al., 2018). Informational/ advice-giving support is the provision of content from a parent that a child can use to cope with personal and environmental problems and can include advice, suggestions, or directives (Brown et al., 2018). Finally, parental tangible aid or instrumental support is defined as the provision of assistance to the child through methods such as labor, money, or time (Brown et al., 2018). Adolescents who perceive more parental support (emotional, informational, and tangible) tend to also experience more positive psychosocial outcomes, like lower level of stress, and have endorsing healthier relationships than those with less supportive parents (Rueger et al., 2008; Auerbach et al., 2011; Tubman & Lerner, 1994). Conversely, a lack of support has been linked to greater depression and more relationship strain in emerging adulthood (Gomez & McLaren, 2006). For emerging adults, parental financial and residential support seems to provide necessary scaffolds as the adolescent transitions into adulthood (Mortimer, 2012).

The idea that all good things are best in moderation may also apply to parental responsiveness, though, especially in emerging adulthood. There is rising concern (and increasing amounts of research) on the construct of "overparenting" or "helicopter parenting," which is characterized by a developmentally inappropriate amount of responsiveness (Segrin et al., 2013; Locke et al., 2012) and can include behaviors such as *excessive* advice, problem solving and the provision of abundant and unnecessary tangible aid (Segrin et al., 2012). Some, (though not all; Kwon et al., 2016; Joussemet et al., 2008) studies suggest that overparenting in emerging adulthood may be linked with poorer outcomes such as depression, anxiety, and perceived stress (LeMoyne & Buchanan, 2011; Schiffrin et al., 2014; Segrin et al., 2013).

Overparenting is also associated with increased levels of maladaptive traits relevant to autonomy and independence for emerging adults, such as entitlement and narcissism (Locke et al., 2012; Segrin et al., 2012).

Responsiveness, Monitoring and Parental Support of Autonomy in Emerging Adulthood

Although parenting has been researched less in emerging adulthood, research with adolescents gives us clues around how parenting behaviors (e.g., responsiveness and monitoring) may help or hinder youth autonomy development and youth perceptions of parental autonomy support. Historically, parental control and parental autonomy support were viewed as opposite ends of a single dimension (Barber et al., 2002; Silk et al., 2003), but the current understanding is that autonomy support and parental control are not mutually exclusive and can coexist as two distinct but related constructs (Benito-Gomez et al., 2020; Silk et al., 2003; Soenens et al., 2009). Although parents who frequently exert behavioral control may be less likely to support child autonomy, parents who are low in autonomy granting are not *necessarily* exhibiting higher levels of behavioral control; the absence of control does not imply autonomy granting behavior. While high levels of parental monitoring can be detrimental to child autonomy development, low levels of monitoring also negatively impact emerging adult development of autonomy and related constructs (LeMoyne & Buchanan, 2011). Thus, developmentally appropriate, moderate amounts of monitoring may help scaffold youth autonomy development (another instance of a potential "best in moderation" effect; Karabanova & Poskrebysheva, 2013).

Parental autonomy support and responsiveness also often co-occur within healthy parent-child relationships (Grolnick et al., 1991; Soenens et al., 2009). Interestingly, we also have some evidence that parental responsiveness may be best in moderation when it comes to child autonomy development. When parental responsiveness is *too high*, emerging-adult children

report higher levels of entitlement (or the extent to which they child endorses that others should solve their problems; Segrin et al., 2012), as well as lower self-efficacy (Bradley-Geist & Olson-Buchanan, 2014), both of which are related to the development of autonomy in youth. Further, chidren with "helicopter parents" (who engage in developmentally inappropiate levels of responsivness) are found to have lower levels of competence, as well as percieve their parents as less supportive of their autonomy (Schiffrin et al., 2014).

Importance of Digital Communication

Many emerging adults leave their family home for the first time during this period, and thus the use of digital communication as a form of parent-child contact at a distance is of interest. Over 90% of parents report using text messages to communicate with their adolescents (Rudi et al., 2015). Many parents report that the mobile phone is a useful tool in achieving parenting goals and that staying digitally connected with their children ultimately makes parenting easier (Walker & Rudi, 2014). Similarly, adolescents and emerging adults endorse positive attitudes about cell phone communications with parents (Campbell, 2006; Chen & Katz, 2009). Adolescents use both calls and text messages to engage in managerial communications with their parents as well as connect emotionally (Fletcher et al., 2018). There is also initial evidence that parents utilize digital communication to stay connected with their *emerging adult* children (Miller-Ott et al., 2014) but we still know little about what role digital devices play in the maintenance and evolution of emerging adult-parent relationships.

Co-construction theory asserts that online and offline behaviors often mirror and impact each other (Subrahmanyam et al., 2006), which is likely the case for digital and face-to-face parenting. Although there are few studies of digital parenting, those that do exist suggest that parenting practices remain consistent, whether face-to-face or digital. For instance, those parents

who engage in the most offline monitoring also report higher digital monitoring of their children (Rudi & Dworkin, 2018). We assume that the literature on traditional parenting practices reviewed above is likely still highly relevant to the online parenting environment, and thus we test whether our hypotheses based on face-to-face parenting studies hold true for digitally enacted parenting, using the rich content of digital communications that offer a unique window through which naturalistic parent and emerging adult interactions can be observed.

Studies suggest that more frequent parent-child digital interactions are associated with positive parent-child relationship qualities like satisfaction, support, and tangible aid (Ramsey et al., 2013). Additionally, emerging adults and parents who had more frequent phone calls demonstrated lower levels of parent-child conflict and perceived greater parental support (Weisskirch, 2011). Results from the same study also suggest that those children who sought support via digital communication tended to have parents who reported higher levels of parent-adolescent closeness. New research suggests that parent-youth phone contact can serve as a conduit for both the transmission of responsive, warm parenting behaviors (e.g., in the moment social support; Jensen et al., 2021b, Miller-Ott et al., 2014; Fletcher et al., 2018) as well for remote monitoring of youth (Foltz, 2011; Nielsen, 2017; Jensen et al., 2021b). Although some research suggests that the use of the phone in these ways can help parents provide support and guidance in-the-moment for youth who need it (Jensen et al., 2021b), the omnipresence of the mobile phone also opens the door to potentially intrusive parent contact at any hour of the day or night. Indeed, some emerging adults point out that their parent's use of the mobile phone to monitor and control their behaviors results in increased access to what was once considered personal time and space (Williams & Williams, 2005). When parents utilize digital communication in this way, adolescents report feelings of intrusiveness and privacy invasion

(Racz et al., 2017). More recent findings using the same sample have suggested that emerging adults who text more with their mothers (though not fathers) perceive higher levels of intrusiveness, pressure, and stress around contact with parents by phone or online (Jensen et al., 2021a). It is important to consider both the ways in which the mobile phone may serve as a vital lifeline to positive parent-youth interactions in emerging adulthood as well as the ways in which it may serve as a mechanism for potentially intrusive boundary crossings that restrict youth autonomy.

Present Study

The present study examines how parent and emerging adult dyadic text message interactions are associated with emerging adult perceptions of parental autonomy support. This study leveraged two weeks of observed parent-emerging adult text message conversations which have been coded for traditional features of parenting indexing monitoring and responsiveness. The present study sought to answer the following study questions and test the following specific hypotheses:

1. Is parent *texting frequency* tied to emerging adult perceptions of parental autonomy support?

   Hypothesis1a. Consistent with past studies suggesting that parent mobile phone contacts can be intrusive, I first hypothesized and tested a linear association, such that those emerging adults whose mothers and fathers texted them more frequently (as captured by the number of text messages received from the parent over the 2-week study period) would perceive their mothers and fathers as being less supportive of their autonomy.

Hypothesis1b. Second, consistent with research which suggests that both very low and very high amounts of parental engagement (including digital) can be unsupportive of emerging adult autonomy development, I hypothesized and tested a curvilinear association (a "best in moderation" hypothesis), such that those emerging adults whose mothers and fathers texted them at moderate frequency (as captured by the number of text messages received in the past 2 weeks) would perceive their mothers and fathers as more supportive of their autonomy (relative to those whose parents texted them only infrequently or at very high frequency).

2. Is parent *digital responsiveness* tied to emerging adult perceptions of parent autonomy support? Question 2 tested potential associations between mothers' and fathers' digital responsiveness and emerging adult perceptions of their autonomy support, over and above the (potential) associations with mother and father texting frequency from study question 1 above.

   Hypothesis 2a. First, consistent with research that suggests that low parental responsiveness is detrimental to emerging adult autonomy development, I hypothesized and tested a linear association, such that those emerging adults whose mothers and fathers exhibited more responsive text behaviors (as captured by the frequency of codes for warmth, emotional/esteem support, advice-giving, and tangible aid; over and above texting frequency) in their text message interactions would

report perceiving their mothers and fathers as more supportive of their autonomy.

Hypothesis 2b. Second, consistent with literature that suggests that helicopter parenting and overparenting can undermine emerging adult autonomy development, I hypothesized and tested a curvilinear association (a "best in moderation" hypothesis), such that that those emerging adults whose mothers and fathers exhibited moderate levels of digital responsiveness would perceive the highest levels of parental autonomy support relative to those whose parents exhibited very low levels of digital responsiveness and very high levels of digital responsiveness.

3. Is parent *digital monitoring* tied to emerging adult perceptions of parent autonomy support? Question 3 tested potential associations between mothers' and fathers' digital monitoring and emerging adult perceptions of their autonomy support, over and above the (potential) associations with parent texting frequency from study question 1 above.

   Hypothesis 3a. First, consistent with research which suggests that parent mobile phone contacts can be intrusive (especially when used for monitoring), I hypothesized and tested a linear association, such that those emerging adults whose parents exhibited more monitoring (as captured by codes for solicitation, control, and emerging adult disclosure) in their text message interactions would perceive their parents as less supportive of their autonomy.

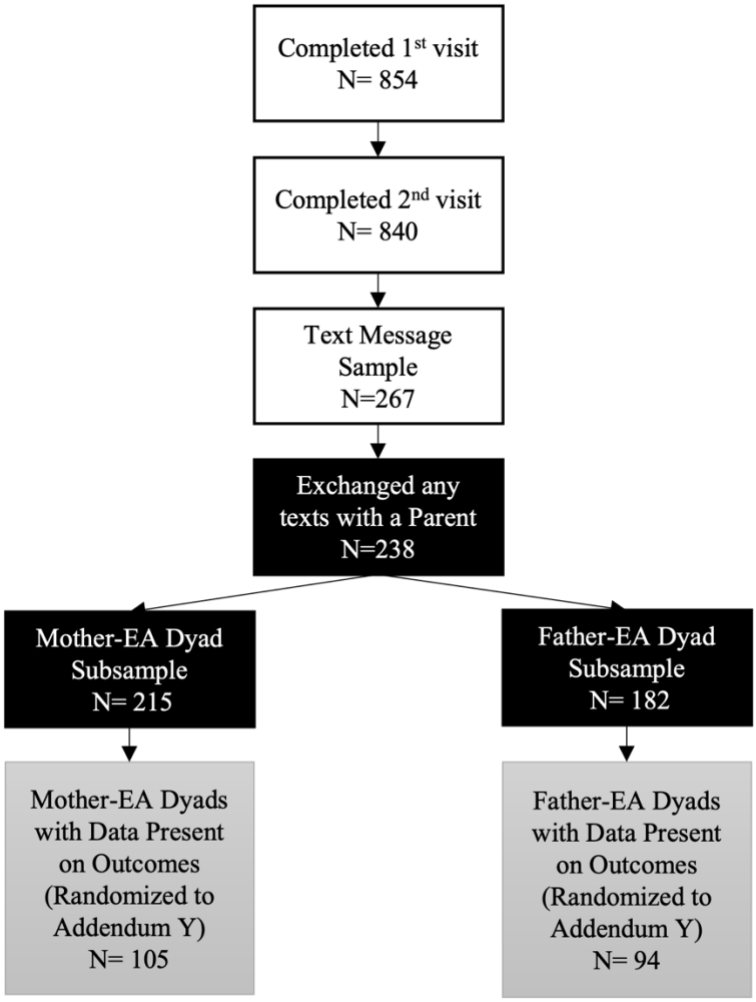
Hypothesis 3b. Second, consistent with literature which suggests that moderate levels of (developmentally appropriate) monitoring can actually facilitate emerging adult autonomy development, I hypothesized and tested a curvilinear association (a “best in moderation” hypothesis), such that those emerging adults whose mothers and fathers exhibited moderate levels of digital monitoring (as captured by frequency of codes for solicitation, control, and emerging adult disclosure) would report the highest perceived parental support for autonomy relative to those emerging adults whose parents exhibited very low levels of digital monitoring or very high levels of digital monitoring.

CHAPTER II: METHODS

Sample and Procedures

The present study is a secondary data analysis of an existing sample of college students' text message communications and self-report survey data. Full details of study design and recruitment (Hussong et al., 2020) and text message coding procedures (Jensen et al., 2021a) can be found elsewhere. Participants completed two lab-based visits separated by two weeks during 2014-2015. Participants were recruited through e-mail invitations sent to 9,000 undergraduate students at an elite public southeastern university. Invitees were randomly sampled from all enrolled students aged 18–23, with oversampling for males and African Americans given their underrepresentation in the student body. To participate in the study, students had to report alcohol use in the past year. An additional 57 people contacted the study team directly asking to participate, resulting in a recruitment pool of 9,057, of whom 1,141 (17%) completed the prescreen survey. Overall, this sample was a majority White (60%), female (56%), and had parents who were highly educated. The participant flow diagram can be found in Figure 1.

Figure 1: Flowchart of Sample



Note. White Boxes indicate data collected but not utilized in the present study. Black boxes indicate the current analytic sample (all EAs who exchanged any texts with a parent) and subsamples (Mother-EA and Father-EA dyads). Grey boxes indicate data missing due to randomization to the "Y" battery, which will be handled using FIML.

The original study included two laboratory visits; A total of 854 students completed the first visit, and 840 completed both visits. At the second laboratory visit, participants were randomly assigned to one of two survey addendums (X or Y) that contained different sets of

survey measures. Items central to the present master's thesis (on parental support of autonomy) were included in addendum Y, which was administered to half the sample at random.

To be included in the current analysis, students had to successfully provide two weeks of text message data in a second study that occurred immediately at the end of the second visit. To be eligible for the text study, participants had to have an Android or iPhone with them (n = 780) and consent to participate (n = 531). Consenting students' text messages were downloaded using a secure software (MOBILedit Forensic Express) that allowed for the sole downloading of SMS text data (no other applications or content). Text data obtained included phone numbers, timestamps, and all texts sent and received during the past two weeks. Participants were asked to provide phone numbers for their mother, father, romantic partner, and up to three friends. Text message threads with other people were also captured and assigned a unique identifier (i.e., "Person 1," "Person 2").

This method was advantageous over providing study phones (as has been seen in other studies; Ackerman et al., 2019) because the text messages captured were not subject to nonreporting or self-censoring biases (e.g., changes in texting behavior resulting from being in a study). However, this method did require many software platform adjustments as OS and other updates rolled out throughout data collection. As a result, text data downloads were sometimes not successful, resulting in a 50.6% capture rate and 267 participants contributing text data. Despite this data capture rate, the text message subsample is comparable to the parent study sample and the student body population from which it was drawn but more ethnically diverse by design (62.2% White, 22.1% Black, 7.5% Asian, .7% American Indian, 6.4% Multi-Racial; 40.8% Male; Hussong et al., 2020).

As seen in Figure 1, 267 participants contributed to the text message sample. Of this 267-person text message sample, participants were excluded from the present analysis if they did not exchange at least one text message with a parent over the two-week period (a total of 21 (16.7%) participants never exchanged any text messages with either designated parent). Participants were also excluded from the present study if they solely communicated with their parents over the two-week period via group messages, leaving a sample of 215 mother-child dyads and 182 father-child dyads (Total Parent Text message Sample N = 238). Of note, of the 267 text message participants, 126 were randomly assigned to receive Addendum Y (yielding 105 mother-child dyads and 94 father-child dyads with complete data on the outcome of interest in the parent text-message sample). As missingness on Addendum Y measures (including parental support of autonomy) was missing completely at random, participants with missing data on this outcome variable will be retained using Full Information Maximum Likelihood (Enders, 2001).

Data Security

Phone numbers and contact names were automatically stripped from the text messages upon download and replaced with unique identifiers. Nonetheless, sensitive and private information could have been (and certainly was) still present in the content of the text messages themselves, and thus text message data were treated as highly sensitive and potentially identifiable. The master coder read through all 30,000 text messages prior to coding and removed explicit identifiers (e.g., full names, social security numbers mentioned in text). All study personnel were required to undergo data security training and be IRB-approved. Text messages were stored securely in compliance with the University's IRB procedures for identifiable data. Participants did not consent to making data freely available therefore we are unable to share aggregate data.

Parent-Child Text Interaction Coding Scheme (PCTICS)

All parent-child text messages were coded using the Parent-Child Text Interaction Coding Scheme, PCTICS (Jensen, 2017; Jensen et al., 2021a), which was developed for this study based on adaptations from existing coding schemes, including the Supportive Coding Protocol (Hussong, et al., 2001) and the Iowa Family Interaction Rating Scales (Melby et al., 1998). The manual included code definitions, general guidance, clarifications about specific codes (i.e., methods to distinguish similar codes from one another), and examples of each code. Qualitative micro-codes were assigned at the level of the text message and were neither mutually exclusive nor exhaustive. That is, a single text message could receive several codes (e.g., "Good morning sunshine! Are you ready for your test today?" would receive a code for *warmth* and *solicitation*) or could receive no codes at all if none of the coded text behaviors were present within the text content.

Table 1: Coded PCTICs Dimensions

N = 215 (Mother), 182 (Father).		IRR (K)	% Agreement
Digital Responsiveness			
Parent Advice Provision	Demonstrates provision of advice or guidance. Usually solicited, non-directive, or teaching.	.61	.96
Parent Instrumental Sup Prov	Discusses provision of tangible aid. May include favors, gifts, money. Occurs in the context of a need or instrumental support seeking.	.54	.96
Parent Em/Esteem Sup Prov	Discusses provision of emotional support or esteem support. Occurs in the context of a need or social support seeking.	.66	.98
Parent Warmth	Expressions of care, concern, support, or encouragement. Facilitates a positive connection. May include endearment, expressions of affection and love, warm greetings, and compliments.	.83	.96
Digital Monitoring			
Parent Control	Reminders of expectations and rules for behavior. Usually directive, actionable, and/or unsolicited.	.69	.97
Parent Solicitation	Asks questions about behavior, wellbeing, activities, relationships, whereabouts.	.82	.96
EA Disclosure	Discloses information about his/her behavior, wellbeing, activities, relationships, whereabouts.	.73	.87

Note. Parent Em./Esteem Sup Prov = Parent Emotional/Esteem Support Provision, Parent Instrumental Sup Prov = Parent Instrumental Support Provision, IRR= Interrater Reliability EA = Emerging Adult

The text message data were analyzed by a coding team consisting of an undergraduate research assistant who was trained by and under the supervision of a post-doctoral researcher who had developed the codebook and served as the master coder. The undergraduate coder was trained to an acceptable inter-rater reliability ($\kappa > .80$) with the master coder. The coding team's initial training included memorizing code criteria via reading, writing, flashcards, repeated testing of code knowledge, and repeated coding of written examples. Later training stages focused on intensive hands-on experiences, including the identification of codes from text message threads and repeated coding of text message threads. In conjunction with continuous reliability checks, coders meet weekly as a group to discuss the coding system, coding techniques, and any discrepancies. To monitor coder drift and evaluate reliability, 20% of

messages were double-coded. Codes, interrater reliabilities (kappas), and percent agreement among coders can be found in Table 1.

Measures

Demographic Covariates

All participants in the sample (N = 267) reported on their gender (59.2% female), emerging adult age (M = 19.85, SD = 1.39), and parent education computed as the highest of the mother's or the father's education (as a proxy for SES; response options included 1 = less than high school, 2 = high school graduate, 3 = some college or technical school, 4 = college graduate, 5 = some graduate, medical or professional school, and 6 = completed graduate, medical or professional school; M = 4.69, SD = 1.38).

These covariates were chosen because decades of research have suggested that parenting behaviors (including responsiveness and monitoring) and parental support of autonomy vary based on the age of the child (Inguglia et al., 2015), family socioeconomic status (Leyendecker et al., 2005; Roubinov & Boyce, 2017; Shi & Tan, 2020), and gender (McKee et al., 2007; Russell et al., 1998: Kawabata et al., 2011; Leaper, 2002; Bumpus et al., 2001), though gender differences have not been observed in all studies (Endendijk et al., 2016).

Parental Support of Autonomy

Participants who were randomly assigned to receive the "Y" battery were asked to complete six items based on the psychological autonomy granting scale developed by Steinberg and colleagues (1989; 1991, 1992). Questions asked how often each parent (mother and father separately) encouraged or discouraged the expression of their ideas or individuality. Sample items include "How often did your mother/father tell you that her/his ideas were correct and that you should not question them?" or "How often did your mother/father act cold and unfriendly if

you did something, she/he didn't like?" (for the full scale see appendix A). Participants were asked to respond to the six items on a 0-4 scale ranging from 'never' to 'very often.' Literature suggests that items are reliable in adolescents (α = .63; Steinberg et al., 1992). A confirmatory factor analysis of these six items in all of the larger study participants who completed the "Y" battery (where N=389 students reported on moms and 377 on dads) initially yielded poor fit for both mothers ($\chi2(9)$ =115.132, p <0.0001; RMSEA = 0.174 [0.147 to 0.203]; SRMR = 0.060) and fathers ($\chi2(9)$ = 90.405, p <.0001; RMSEA = 0.155 [0.127 to 0.185]; SRMR = 0.049). Item 6 ("If you did something she/he didn't like, how often did your mother/father react by not being in contact with you for a while?") appeared to contribute to misfit, and indeed the fit was acceptable once this item was removed for both mothers($\chi2(5)$ = 12.260, p = 0.031; RMSEA = .061 [0.017 to 0.105]; SRMR = 0.021) and fathers ($\chi2(6)$ = 10.850, p =0.054 ; RMSEA = 0.056 [<0.001 to 0.102]; SRMR = 0.021). Thus, mother and father support for autonomy are modeled here as latent variables with five indicators. Factor loadings are for these latent variables are reported in Table 2.

Table 2: Unstandardized (Standard Error) and Standardized Factor Loadings

Item	Mother Support of Autonomy	Father Support of Autonomy
Ideas were correct	0.778	0.807
"You'll understand when you get older"	0.764	0.797
Give into arguments	0.710	0.751
Shouldn't argue with adults	0.822	0.839
Cold and unfriendly	0.675	0.745

Text-Analysis Measures

Full details of the PCTICS coding scheme and procedures can be found elsewhere (Jensen et al., 2021a), and abbreviated definitions of the PCTICS codes can be found in Table 1. Each text message received a "1", for the presence of the code in the text message, or a "0", for the absence of the code in that text message. Codes were not mutually exclusive, and a text message could receive multiple codes. These text-message level codes were summed over the two-week period separately for both mother and father conversations, yielding counts of the total number of texts that evidenced each code within each dyad. Means and standard deviations of the frequency of occurrence for each code for both mother-emerging adult and father-emerging adult dyads can be found in Table 3.

Texting Frequency

The number of text messages exchanged between parents and emerging adults over the two weeks was computed directly from each dyad's captured sent and received text messages ($M_{\text{Mother Dyads}}$ = 87.75, *SD* =133.01; $M_{\text{Father Dyads}}$ = 28.40 *SD* = 46.33). As would be expected and consistent with the reciprocal nature of text messaging, the correlations were very high between sent and received messages ($r_{\text{Mother Dyads}}$ = .97 $r_{\text{Father Dyads}}$ = .94), and thus I use the total number of texts exchanged (sent + received) with mothers and fathers (separately) in all analyses here.

Digital Responsiveness

The present study will utilize the following coded parental digital behaviors reflective of parental responsiveness: *warmth, emotional/esteem support provision, instrumental support provision, and advice provision*. The codes were selected based on extensive literature highlighting the importance of supportive, caring, and responsive parental behaviors in adolescent mental health and well-being (e.g., Schaefer, 1965). *Warmth* was defined as messages

containing care, concern, support, or encouragement. Example texts include “love you!” or “good morning sunshine.” *Warmth* was a general code meant to encompass all friendly, kind, supportive interactions and did not have to occur in the context of a problem. *Emotional/esteem support provision* was defined as texts that discuss the provision of emotional support or esteem support. These messages had to occur in the context of the emerging adult experiencing a need, a stressor, negative emotions, or the emerging adult seeking support. Example text messages include “it’s going to be okay” or “Sending you happy thoughts!” *Instrumental support provision* was defined as messages that included the offer or provision of tangible aid, including favors, money, or other concrete things or services. Example messages are “I could talk to her for you” or “Go get your hair done, you can use my card.” *Advice provision* codes were assigned to messages where the parent provided guidance or advice. For example, if an emerging adult asked, “Should I get bangs?” a parental response of “No, I don’t think they would fit your face” would receive a code of *advice provision*.

Digital Monitoring

Monitoring was captured by three discrete codes: parent *solicitation*, parent *control*, and emerging adult *disclosures*. The codes were selected based on findings in the relevant literature that suggest that these are three discrete and important aspects of monitoring that contribute to parent knowledge (Stattin & Kerr, 2000). *Solicitation* was defined as the parent asking the emerging adult questions about their behavior and well-being (including health, sickness, mental health, sleep), activities, relationships, and whereabouts. Any queries about well-being, whereabouts, relationships, and behaviors are coded as a parental solicitation. Example texts of solicitation include “Did you eat today?” or “where is your boyfriend from?” *Disclosure* was defined as when the emerging adult disclosed information about his/her behavior, well-being

(including health, sickness, mental health, sleep, tiredness), activities, relationships, or whereabouts to the parent. Example text messages include “I made an A on my exam last week” or “My roommate and I just got into a huge fight!” *Control* was defined as a message from the parent to the emerging adult that served as a reminder of expectations and behavior rules. Example texts include “you shouldn’t post pictures like that on Instagram” or “make sure you call your uncle today.” These messages were usually directive, actionable, and/or unsolicited.

CHAPTER III: ANALYSES

Preliminary (Descriptive) Analyses

The frequency of text messaging and occurrence of text message PCTICS codes between emerging adults and their parents were computed separately for mother (n = 215) and father dyads (n = 182). The texting frequency within each dyad, the texting frequency of each PCTICS code, as well as descriptive statistics (i.e., mean, standard deviation, skew, kurtosis) are reported in Table 3. Zero order correlations were also computed among all study variables (as seen in Table 4).

Primary Analyses

The primary question of interest is whether parent-emerging adult dyads who engage in certain text message behaviors indicative of engagement, responsiveness, and monitoring (as captured by PCTICS codes) tend to perceive higher or lower autonomy support from their parent(s). To test this, as seen in Figure 1, I first regressed emerging adult perceptions of parental support of autonomy on parent-emerging adult texting frequency (separate models for mothers and fathers) and demographic covariates (gender, emerging adult age, and parent education as a proxy for SES). A significant negative linear association between parent digital texting frequency and perceived parental support of autonomy would be considered evidence of support for hypothesis 1a. That is, I hypothesized that those emerging adults who exchanged the most texts with their parent would also be the least likely to report that their parent is supportive of their autonomy.

Table 3: Descriptive Statistics for PCTICS Codes

	Mother-Emerging Adult Dyads (N = 215)						Father-Emerging Dyads (N = 182)					
	M	*SD*	*% with 0*	*Max*	*Skew*	*Kurtosis*	*M*	*SD*	*% with 0*	*Max*	*Skew*	*Kurtosis*
Parent-EA Texting Frequency	102.84	139.52	0	1012	3.14	13.37	34.93	49.19	0	501	5.32	44.58
Digital Responsiveness												
Par Advice Prov	2.50	5.88	54.4	49	3.78	18.14	0.79	2.11	78	13	3.66	15.26
Par Instrumental Sup Prov	2.59	4.18	36.7	31	2.80	9.82	0.74	1.58	64.8	11	4.04	21.03
Par Emotional/Esteem Sup Prov	2.09	5.93	59.5	58	6.03	42.40	0.38	1.41	86.8	10	5.14	29.57
Par Warmth	6.51	10.49	21.4	83	4.34	22.48	2.22	4.79	42.9	41	6.23	48.37
Digital Monitoring												
Par Control	2.98	6.20	44.7	49	4.06	20.32	0.95	2.55	69.2	15	4.10	18.02
Par Solicitation	8.53	13.03	15.8	118	4.29	24.31	2.29	2.93	35.2	17	2.13	6.56
EA Disclosure	19.33	27.84	13.0	177	2.85	9.70	5.57	6.57	17.6	29	1.51	1.65

Note. Means (M) and standard deviations (SD) reported across all dyads over the entire 2-week study period alongside the percent of the sample who evidenced no instances of the code (% w/0) and the maximum frequency of each code (Max) to capture the range. Par= Parent; EA= Emerging Adult; Prov=Provision; Sup = Support

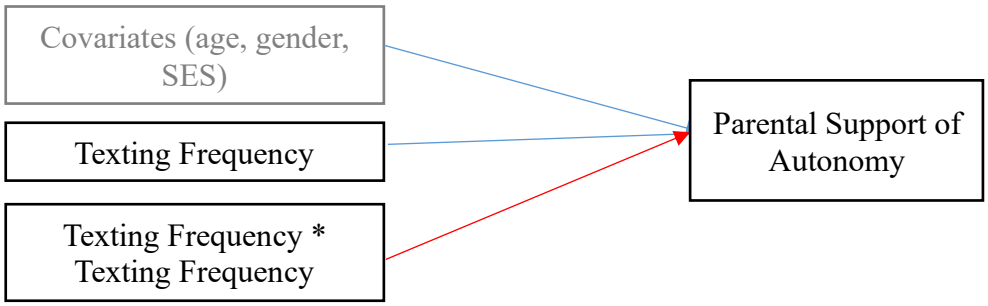
Table 4: Zero Order Correlations of Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Par Support of Autonomy	—	-.061	-.074	-.167	-.045	-.010	-.036	-.018	.183	-.015	-.037	.133
2. Par-EA Text Frequency	.016	—	.500*	.262*	.642*	.714*	.917*	.862*	.556*	.046	-.107	-.017
3. Par Advice Prov	.234*	.685*	.448*	.726*	.472*	—	.444*	.267*	.136	.069	-.081	-.075
4. Par Instrumental Sup Prov	.106	.704*	.702*	.364*	—	.690	.400*	.217*	.098	.181	-.018	.046
5. Par Em/Est Sup Prov	.247*	.682*	.657*	—	.182	.174	.432*	.291*	.028	.026	-.027	-.094
6. Par Warmth	.156	.737*	—	.336*	.222	.094	.621*	.705*	.582*	.129	-.055	-.104
7. EA Disclosure	.189	.926*	.774*	.757*	.691*	.758*	—	.843*	.477*	.129	-.092	-.048
8. Par Solicitation	.192	.807*	.864*	.580*	.749*	.473*	.861*	—	.676*	.064	-.125	-.024
9. Par Control	.218*	.739*	.716*	.573*	.609*	.524*	.854*	.841*	—	.038	-.028	.062
10. Par Education	.005	.134*	-.122	-.231*	.062	-.075	-.089	-.062	-.041	—	-.043	.097
11. EA Age	-.126	-.053	.083	-.074	-.011	-.121	-.080	-.151*	-.079	-.043	—	-.107
12. Gender	.101	-.093	-.102	.023	-.095	-.044	-.091	-.036	-.004	.097	-.107	—

Note. Mother sample (n = 215) correlations are below the diagonal and father sample (n = 182) correlations are above. $^{*}p < .05$. Par= Parent; EA= Emerging Adult; Sup= Support; Em/Est= Emotional/Esteem; Prov= Provision

Next, also seen in Figure 1, I tested for a potential curvilinear ("best in moderation") association between parent-emerging adult texting frequency and perceived parental support of autonomy (separate for mothers and fathers) by adding an interaction term (texting frequency * texting frequency) to the model. A significant curvilinear association (in an inverted U shape) between parent-emerging adult texting frequency and perceived support of autonomy would be considered evidence of support of hypothesis 1b.

Figure 2: Model for Hypotheses 1A and 1B



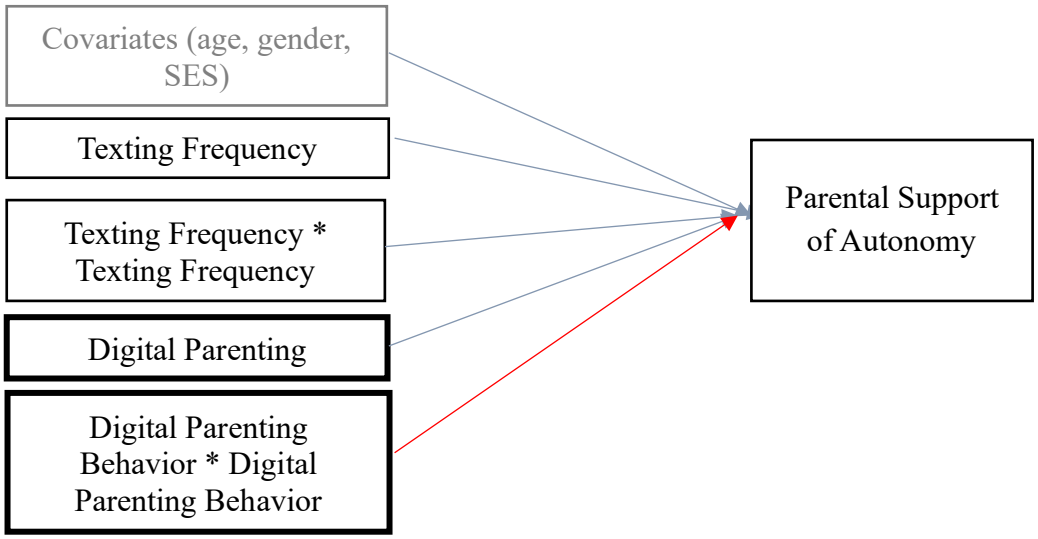
Note. Hypothesis 1a was tested in models in which parental support of autonomy was regressed on texting frequency controlling for demographic covariates (blue lines). Hypothesis 1b added in an additional predictor (the quadratic term for texting frequency; red line). Analyses were conducted separately for mother and father subsamples.

Second, in a model building approach, as seen in Figure 2, I then added to the above model each digital responsiveness code (separately; denoted by "Digital Parenting Behavior" in Figure 2), controlling for the parent-emerging adult texting frequency term from model 1. As shown in detail in the Results section below, I ultimately included only the linear texting frequency term (as the quadratic texting frequency term did not meet significance for mothers nor fathers in model 1b). Also as seen in Figure 2, I then tested a potential curvilinear ("best in moderation") association between digital responsiveness and perceived parental support of

autonomy (separate for mothers and fathers) by adding an interaction term (responsiveness * responsiveness) to the model. A significant curvilinear association between each indicator of digital responsiveness and perceived support of autonomy (in an inverted U shape) would be considered evidence of support of hypothesis 2b.

Finally, I added each digital monitoring code to model 1 (separately). As in model 2, based on the results from model 1, I only included the linear texting frequency terms (as the quadratic term did not meet significance for mothers or fathers). I then, as seen in Figure 2, tested for a potential curvilinear ("best in moderation") association between digital monitoring and perceived parental support of autonomy (separate for mothers and fathers) by adding an interaction term (monitoring * monitoring) to the model. A significant curvilinear association (in an inverted U shape) between each indicator of digital monitoring and perceived support of autonomy would be considered evidence of support of hypothesis 3b.

Figure 3: Model for Hypotheses 2A-3B



Note. Hypothesis 2a and 3a were tested in models in which parental support of autonomy was regressed on each digital parenting behavior (each code indicative of digital responsiveness and monitoring separately) controlling for demographic covariates (blue lines). Hypothesis 2b and 3b added in an additional predictor (the quadratic term for each digital parenting behavior; red line). Analyses were conducted separately for mother and father subsamples.

All primary analyses were conducted within the structural equation modeling framework in Mplus (Mplus version 8.2; Muthen & Muthen, 2017) with the MLR estimator, which is robust to non-normality through adjustment of standard errors. Predictors in curvilinear interaction terms were mean centered to allow for interpretation of potential quadratic associations (Aiken et al., 2001).

I am confident that this missing data ($n_{mothers}$ = 141 ; $n_{fathers}$ = 142) on my primary outcome of interest (parental support for autonomy) is missing completely at random (MCAR) and thus meets the assumptions of Full Information Maximum Likelihood (FIML) missing data handling. FIML is an efficient method of handling data that meet the assumption of at least

Missing at Random. FIML has been demonstrated to produce unbiased parameter estimates under a missing at random assumption (Enders & Bandalos, 2001).

CHAPTER IV: RESULTS

Primary Analyses

Results for primary analyses testing hypotheses 1-3 are summarized in Table 5 and 6.

Parent-EA Texting Frequency (hypotheses 1a and 1b)

As seen in the upper panels of Tables 4-5, and inconsistent with hypothesis 1a and 1b, parent-emerging adult texting frequency was not associated with emerging adult perceived parental support of autonomy (linearly or curvilinearly) for mothers or fathers.

Parent Digital Responsiveness (hypotheses 2a and 2b)

As seen in the middle panel of Table 5 and 6, most codes indexing digital responsiveness were not significantly associated with perceived parental support of autonomy among mother-EA or father-EA dyads, with two exceptions. Parent emotional/esteem support provision was associated with perceived parental support of autonomy among both mother-EA and father-EA dyads, though in different directions. For fathers, those who engaged in more frequent digital emotional/esteem support provision were perceived as *more* supportive of emerging adult autonomy (a significant linear association in support of hypothesis 2a). Among mothers, in contrast, significant a quadratic term revealed that (as depicted in Figure 4), as mothers engaged in more digital emotional/esteem support provision, their emerging adult children tended to report perceiving them as *less* supportive of their autonomy, with this association growing stronger at higher levels of digital mother emotional/esteem support provision. For mother-EA dyads (but not father-EA-dyads) digital parental advice provision was linearly associated with perceived parental support of autonomy, where those EAs who received higher levels of digital advice provision tended to report perceiving less mother autonomy support.

Table 5: Linear Associations between EA Perceived Parental Support of Autonomy and Digital Parenting Behaviors

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Emerging Adult Age	.086	.069	.209	.117	.003	.065	.966	.004
Gender	-.213	.225	.344	-.101	-.278	-.243	.253	-.140
Parental Education	.117	.095	.218	.157	.105	.100	.293	.137
Parent-EA Texting Frequency (Hypothesis 1a)	-.025	.128	.843	-.035	.001	.003	.722	.054
Digital Responsiveness (Hypothesis 2a)								
Parent Advice Provision	**-.058**	**.022**	**.009**	**-.334**	.026	.053	.618	.063
Parent Instrumental Support	.010	.032	.749	.042	.076	.080	.342	.153
Parent Emotional/Esteem Support Provision	**-.037**	**.013**	**.004**	**-.216**	**.121**	**.054**	**.025**	**.149**
Parent Warmth	-.008	.011	.484	-.079	-.054	.070	.441	-.230
Digital Monitoring (Hypothesis 3a)								
Parent Control	-.036	.026	.177	-.215	**-.160**	**.055**	**.004**	**-.374**
Parent Solicitation	-.010	.011	.339	-.132	-.094	.104	.369	-.734
Emerging Adult Disclosure	-.013	.010	.176	-.352	-.026	.033	.420	-.354

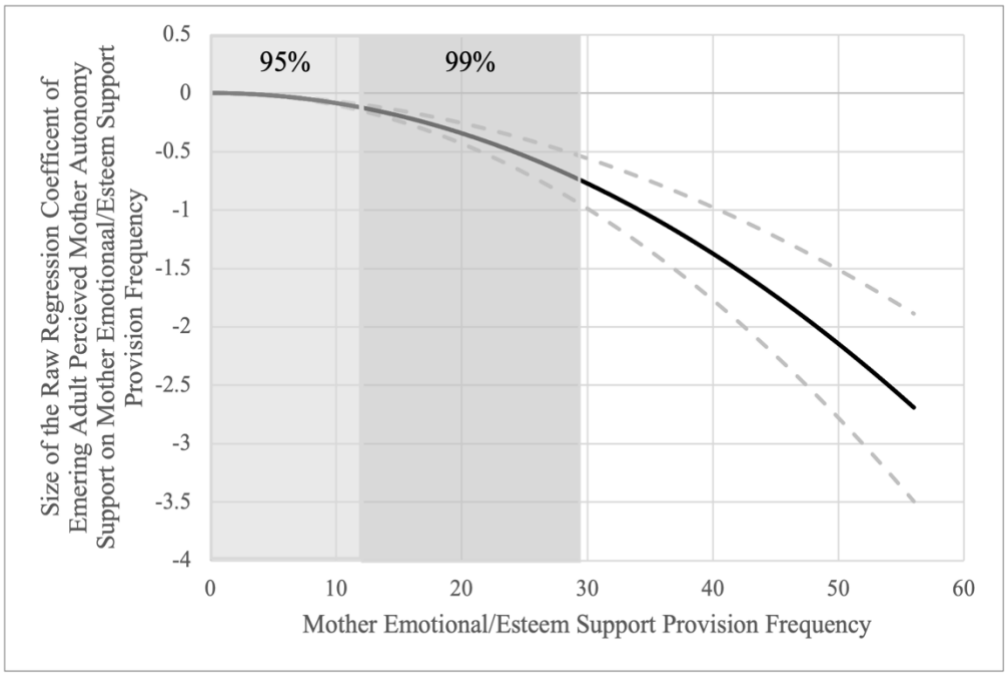
Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (***b***), standard errors (***SE***), *p* values (bolded when $p < 0.05$), and standardized regression coefficients (***β***) presented.

Table 6: Quadratic Associations between EA Perceived Parental Support of Autonomy and Digital Parenting Behaviors

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Emerging Adult Age	.091	.069	.192	.123	.007	.064	.914	-.007
Gender	-.185	235	431	-.088	-.258	.243	.289	-.095
Parental Education	.114	.095	.229	.154	.118	.099	.231	.113
Parent-EA Texting Frequency (Hypotheses 1a and 1b)								
Parent Texting Frequency Linear	-.025	.128	.843	-.035	-.001	.003	.722	-.076
Parent Texting Frequency Quadratic	-.013	.016	.416	-.099	.605	.470	.198	.735
Digital Responsiveness (Hypotheses 2a and 2b)								
Parent Advice Provision Linear	-.024	.035	.483	-.139	.139	.098	.155	.328
Parent Advice Provision Quadratic	-.001	.001	.132	-.224	-.014	.008	.086	-.448
Parent Instrumental Support Provision Linear	.010	.032	.749	.042	**.268**	**.115**	**.020**	**.534**
Parent Instrumental Support Provision Quadratic	<.001	.002	.847	-.025	**-.038**	**.013**	**.005**	**-.664**
Parent Emotional/Esteem Support Provision Linear	**.**029	.037	.431	.171	.237	**.**191	.214	.291
Parent Emotional/Esteem Support Provision Quadratic	**-.001**	**.001**	**.038**	**-.311**	-.015	.020	.449	-.129
Parent Warmth Linear	-.008	.011	.484	-.079	-.066	.085	.437	-.279
Parent Warmth Quadratic	<.001	<.001	.390	-.133	.003	.011	.800	.323
Digital Monitoring (Hypotheses 3a and 3b)								
Parent Control Linear	-.036	.147	.142	-.215	-.008	.120	.949	.019
Parent Control Quadratic	.001	.001	.515	.100	-.017	.009	.006	-.385
Parent Solicitation Linear	-.010	.143	.335	-.132	-.090	.105	.390	-.332
Parent Solicitation Quadratic	<.001	<.001	.662	-.045	-.002	.017	.915	-.700
Emerging Adult Disclosure Linear	-.379	.969	.696	-.105	-5.30	4.08	.194	-.109
Emerging Adult Disclosure Quadratic	**-.986**	**.461**	**.032**	**-.242**	34.68	28.741	.228	.986

Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (*b*), standard errors (*SE*), *p* values (bolded when $p < 0.05$), and standardized regression coefficients (β) presented.

Figure 4: Quadratic Plot for Mother Emotional/Esteem Support Provision

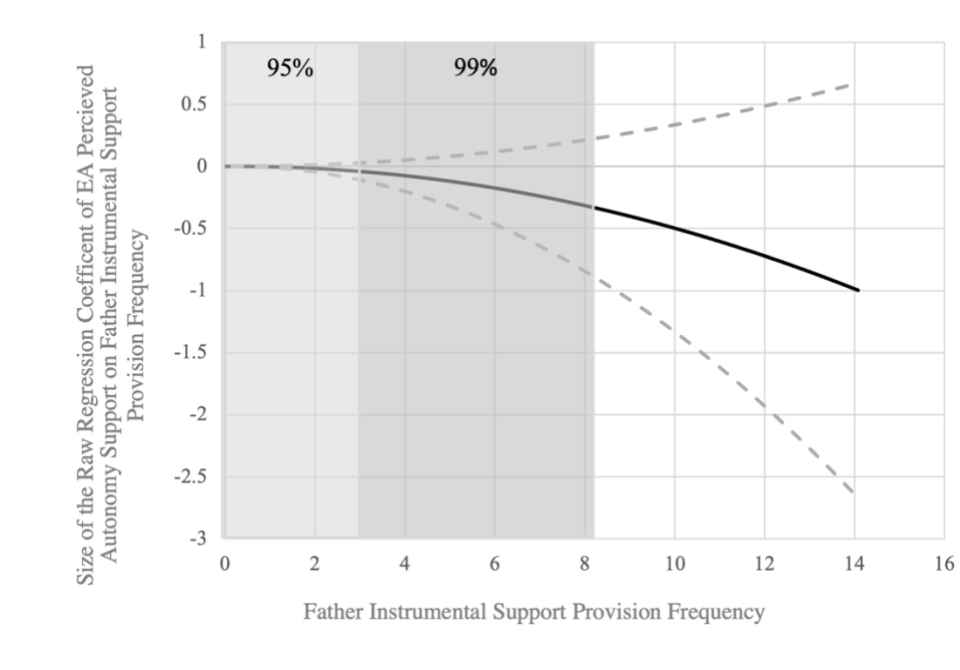


Note. Quadratic regions of significance plot depicts the slope of the coefficient for mother emotional/esteem support provision (dark solid line) predicting emerging adult perceived mother autonomy support (Y-axis) cross the entire observed range of mother emotional/esteem support provision (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Finally, among father-EA dyads, there was a significant linear association between father instrumental support provision and perceived father support for autonomy, and a significant quadratic association (depicted in Figure 5), such that the association between father digital instrumental support frequency and perceived father support of autonomy grew more strongly negative at higher levels of father digital instrumental support frequency. Notably, across the entire range of father digital instrumental support provision the confidence intervals span zero, and thus, despite the apparent curve of the line, associations between father digital instrumental

support frequency and perceived father support of autonomy were never statistically significant and thus observed differences may have occurred by chance.

Figure 5: Quadratic Plot for Father Instrumental Support



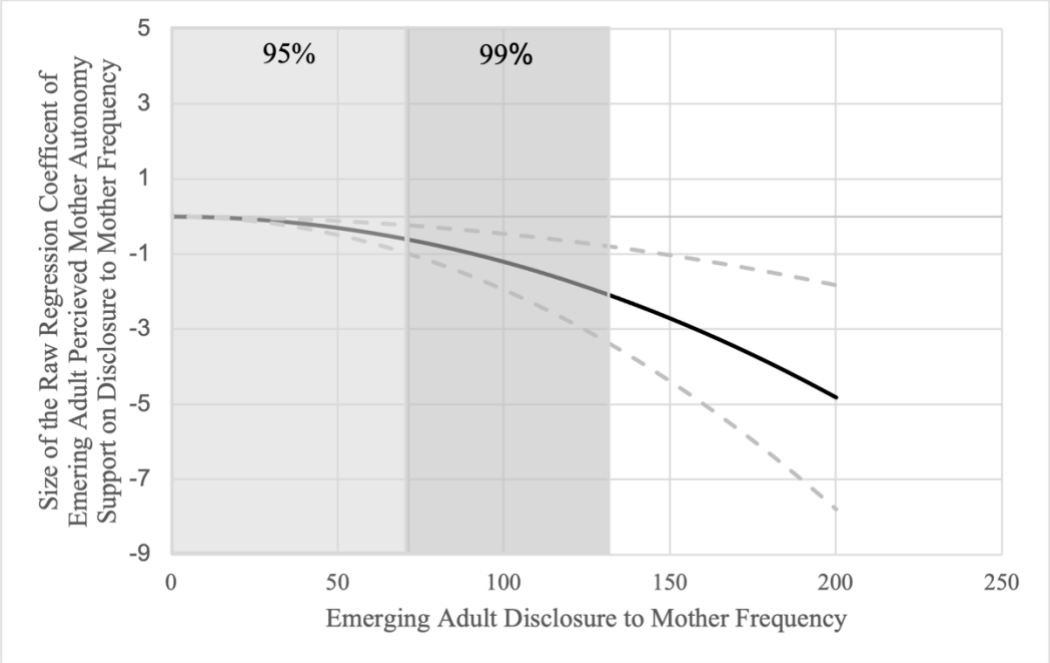
Note. Quadratic regions of significance plot depicts the slope of the coefficient for father instrumental support provision (dark solid line) predicting emerging adult perceived father autonomy support (Y-axis) across the entire observed range of father instrumental support provision (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Parent Digital Monitoring (hypotheses 3a and 3b)

As seen in the bottom panel of Table 5, the frequency of parental digital solicitations was not significantly associated with emerging adult perceived support of autonomy among mother or father dyads. Digital parental control in mother-EA dyads was not significantly associated with perceived support of autonomy, however for father-EA dyads there was a negative linear

association between father digital control and perceived support of autonomy. That is, in partial support of hypothesis 3a, those emerging adults whose fathers enacted more digital control behaviors tended to perceive their fathers as less supportive of their autonomy. In partial support of hypothesis 3b, among mother-EA dyads, although there was not a significant linear association between EA disclosure to mothers and perceived mother support for autonomy, there was a quadratic association (depicted in Figure 6), such that the association between the frequency of emerging adult digital disclosures to mothers and perceived mother support of autonomy grew more strongly negative at higher frequencies of emerging adult disclosures to mother, with those emerging adults who engage in the most frequent disclosures to mothers also perceiving their mothers as the least supportive of their autonomy.

Figure 6: Quadratic Plot for Emerging Adult Disclosure to Mother



Note. Quadratic regions of significance plot depicts the slope of the coefficient for emerging adult disclosures to mothers (dark solid line) predicting EA perceived mother autonomy support (Y-axis) across the entire observed range of emerging adult disclosures to mother (X-axis).

Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Sensitivity Analyses

Two post hoc sensitivity analyses were conducted.

Excluding Parent-EA Texting Frequency as a Covariate

First, for models 2a through 3b above, I removed texting frequency as a covariate, as associations (both linear and quadratic) between parent-emerging adult text frequency and perceived parental support for autonomy were not statistically significant for mothers nor fathers. This was done with the thought that parental text frequency and parental digital behaviors are inextricably intertwined and thus a great extent of variance within those coded parental digital behaviors may be lost once the linear text frequency term is included, and that more parsimonious models (without covarying out text frequency) might uncover associations that were obscured in primary analyses.

Results for this analysis are summarized in Table 7 and 8 (quadratic associations depicted in Figures 7-9) and are largely consistent with results from the primary analyses presented above, with two exceptions. First, the previously significant quadratic association between maternal digital emotional/esteem support provision and perceived maternal support for autonomy disappeared once mother-EA texting frequency was no longer adjusted for, though the linear association remained (in the same direction, such that those mothers who texted more instances of emotional/esteem support tended to be perceived as less supportive of their EA's autonomy). Second, a new quadratic association emerged: There were significant linear and quadratic associations between parental digital control among father-EA dyads, where higher levels of

digital control by fathers were associated with lower levels of perceived paternal support of autonomy (depicted in Figure 9). Given that substantive interpretations were largely unchanged when texting frequency was removed, the more rigorous primary models (in which texting frequency was controlled for, consistent with past research in this sample; Jensen et al., 2021a) are interpreted in the Discussion to follow.

Table 7: Linear Association between EA Perceived Parental Support of Autonomy and Digital Parenting Behaviors (Text Frequency Not Included)

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Digital Responsiveness (Hypothesis 2a)								
Parent Advice Provision	**-.048**	**.018**	**.006**	**-.227**	.028	.044	.519	.067
Parent Instrumental Support	-.020	.022	.363	-.081	.065	.069	.345	.131
Parent Emotional/Esteem Support Provision	**-.037**	**.011**	**.001**	**-.218**	**.118**	**.049**	**.016**	**.145**
Parent Warmth	-.014	.008	.081	-.141	-.027	.054	.620	-.115
Digital Monitoring (Hypothesis 3a)								
Parent Control	-.032	.017	.058	-.193	**-.130**	**.061**	**.034**	**-.303**
Parent Solicitation	-.006	.015	.679	-.022	-.022	.053	.682	-.194
Emerging Adult Disclosure	-.183	.004	.099	-.183	<.001	.016	.980	-.005

Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (***b***), standard errors (***SE***), *p* values (bolded when $p < 0.05$), and standardized regression coefficients (***β***) presented.

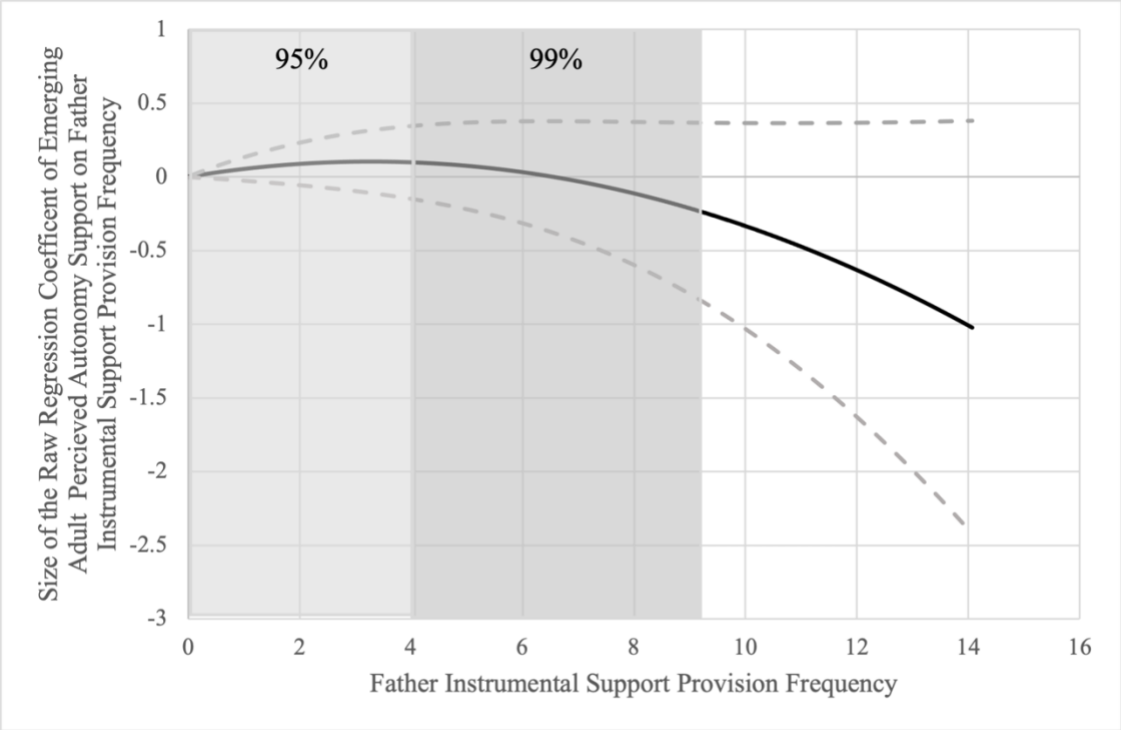
Table 8: Quadratic Associations between EA Perceived Parental Support of Autonomy and Digital Parenting Behaviors (Text Frequency Not Included)

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Digital Responsiveness (Hypotheses 2a and 2b)								
Parent Advice Provision Linear	-.017	.032	.589	-.099	.135	.091	.138	.318
Parent Advice Provision Quadratic	-.001	.001	.119	-.242	-.014	.008	.089	-.444
Parent Instrumental Support Provision Linear	-.008	.039	.844	-.031	**.268**	**.115**	**.020**	**.534**
Parent Instrumental Support Provision Quadratic	-.001	.002	.696	-.051	**-.035**	**.013**	**.007**	**-.625**
Parent Emotional/Esteem Support Provision Linear	.007	.037	.850	.042	.220	.117	.215	.269
Parent Emotional/Esteem Support Provision Quadratic	-.001	.001	.135	-.242	-.014	.019	.478	-.116
Parent Warmth Linear	-.001	.023	.949	-.015	-.031	.068	.649	-.113
Parent Warmth Quadratic	<.001	<.001	.483	-.031	.001	.010	.919	.125
Digital Monitoring (Hypotheses 3a and 3b)								
Parent Control Linear	.047	.033	.156	-.284	.055	.101	.589	.131
Parent Control Quadratic	.001	.001	.541	.094	**-.020**	**.008**	**.014**	**-.456**
Parent Solicitation Linear	-.009	.013	.487	-.119	-.019	.054	.721	-.103
Parent Solicitation Quadratic	<.001	<.001	.746	-.037	-.001	.019	.945	-.722
Emerging Adult Disclosure Linear	.076	.049	.121	.021	-2.163	2.737	.429	-.050
Emerging Adult Disclosure Quadratic	**-.813**	**.260**	**.002**	**-.200**	31.88	29.48	.280	1.027

Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (***b***), standard errors (***SE***), *p* values (bolded when $p < 0.05$), and standardized regression coefficients (***β***) presented.

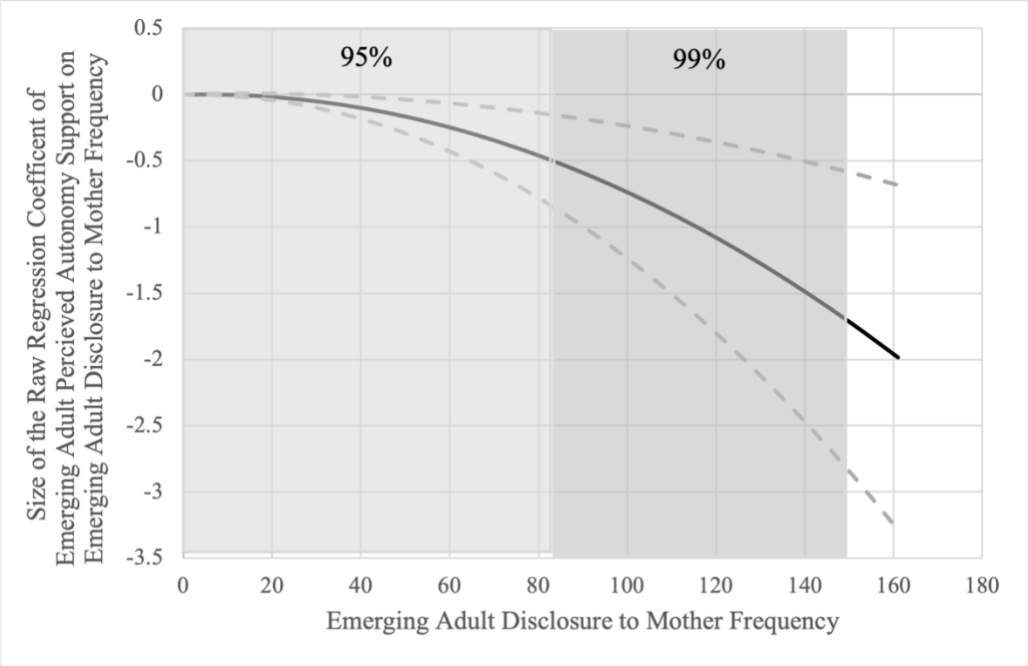
.

Figure 7: Quadratic Plot for Father Instrumental Support Provision (Text Frequency Not Included)



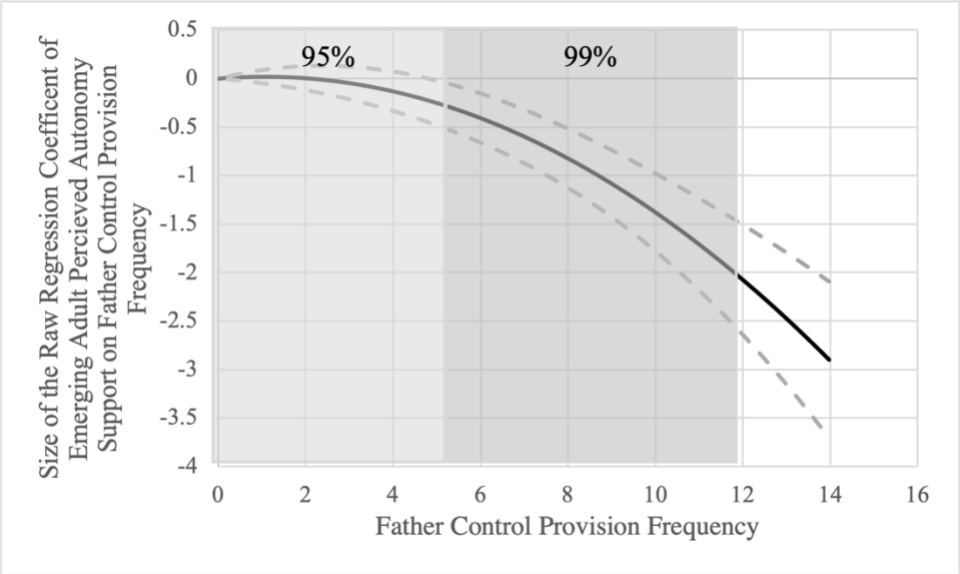
Note. Quadratic regions of significance plot depicts the slope of the coefficient for father instrumental support provision (dark solid line) predicting emerging adult perceived father autonomy support (Y-axis) across the entire observed range of father instrumental support provision (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Figure 8: Quadratic Plot for Emerging Adult Disclosure to Mother (Text Frequency Not Included)



Note. Quadratic regions of significance plot depicts the slope of the coefficient for emerging adult disclosures to mother (dark solid line) predicting emerging adult perceived mother autonomy support (Y-axis) across levels the entire observed range of emerging adult disclosures to mother (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Figure 9: Quadratic Plot for Father Control (Text Frequency Not Included)



Note. Quadratic regions of significance plot depicts the slope of the coefficient for father control (dark solid line) predicting emerging adult perceived father autonomy support (Y-axis) across levels of the entire observed range of father control (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Parent Digital Texting Behaviors and Texting Frequency Winsorized

A second sensitivity analysis acknowledged that there was considerable variability across parent-EA dyads (with some notable outlying dyads) for both parental texting frequency and digital behaviors indicating responsiveness and monitoring. The potential impact of these outliers was explored by winsorizing outlying cases that fell three or more standard deviations above the mean. Winsorization lowers the influence of outliers by assigning an outlier a lower weight (Dixon & Tukey, 1968). Other than the inclusion of winsorized scores rather than raw scores, these analyses were equivalent to model 1a through 3b above in the primary analyses. I

hypothesized that the findings might be less robust for these analyses given that the range was being artificially restricted.

Results for the winsorized analyses are summarized in Table 9 and 10. As seen in the upper panel of Table 9 and 10, parent-EA texting frequency was not associated with emerging adult perceived parental support of autonomy (linearly or curvilinearly) for mothers or fathers. As seen in the middle panel of Table 9 and 10, no codes indexing digital responsiveness were significantly associated with perceived parental support of autonomy among mother-EA or father-EA dyads. In the bottom panel of Table 9 and 10, for mother-EA dyads, there were significant linear and quadratic association between parental solicitation and perceived EA support of autonomy such that the association between the frequency of mother solicitation and perceived mother support of autonomy grew more strongly negative at higher frequencies of emerging adult disclosures to mother (as depicted in figure 10). Also, there was a quadratic (but no linear) association for emerging adults' disclosure to mothers, where emerging adults perceived their mother as more supportive of their autonomy at higher frequencies of disclosures (as seen in figure 11). For both mother solicitation as well as emerging adult disclosures it is important to note that across the entire range of both of these texting behaviors the confidence intervals span zero, and thus, despite the apparent curve of the line, associations between these mother emerging-adult texting interactions and perceived mother support of autonomy were never statistically significant and thus observed differences may have occurred by chance. Given that outlying values here are *real data* (objectively collected and thus not subject to self-reporting biases or exaggeration that sometimes drive outlying survey responses), I will consider in the discussion the ways in which it is important to interpret my results here in light of the fact that extremely high outlying dyads may be driving some of the results.

Table 9: Linear Associations between EA Perceived Parental Support of Autonomy and Winsorized Digital Parenting Behaviors

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Parent-EA Texting Frequency (Hypothesis 1a)	<.001	.001	.408	.066	-.002	.003	.565	-.060
Digital Responsiveness (Hypothesis 2a)								
Parent Advice Provision	.010	.024	.691	-.053	.050	.055	.364	.084
Parent Instrumental Support	-.002	.025	.944	-.008	.059	.074	.421	.092
Parent Emotional/Esteem Support Provision	**.**017	.027	.527	.087	.065	**.**114	.571	.053
Parent Warmth	.002	.013	.885	.020	-.065	.055	.237	-.187
Digital Monitoring (Hypothesis 3a)								
Parent Control	-.018	.032	.584	-.104	-.112	.077	.148	-.208
Parent Solicitation	-.012	.010	.231	-.208	-.009	.001	.418	-.070
Emerging Adult Disclosure	-.009	.009	.326	-.286	-.013	.033	.702	-.087

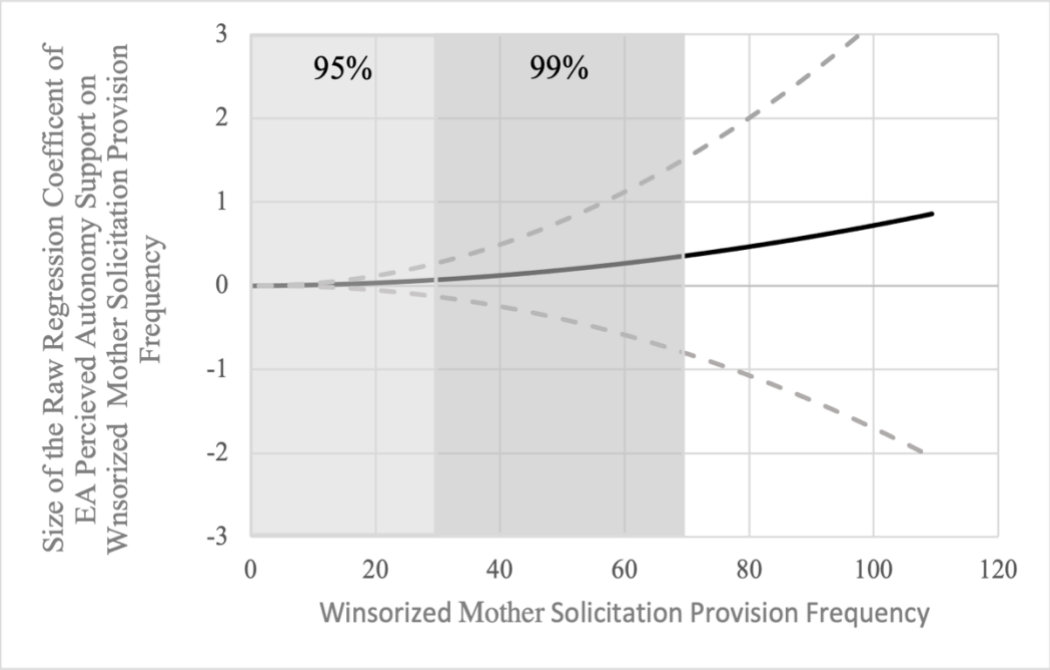
Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (***b***), standard errors (***SE***), *p* values (bolded when ***p*** < 0.05), and standardized regression coefficients (***β***) presented.

Table 10: Quadratic Association between EA Perceived Parental Support of Autonomy and Winsorized Digital Parenting Behaviors

	Emerging Adult Perceived Mother Support of Autonomy (N = 215)				Emerging Adult Perceived Father Support of Autonomy (N =182)			
	b	*SE*	*p*	*β*	*b*	*SE*	*p*	*β*
Parent-EA Texting Frequency (Hypotheses 1a and 1b)								
Parent-EA Texting Frequency Linear	-.076	.132	.567	-.115	-.275	.429	.522	-.102
Parent-EA Texting Frequency Quadratic	**.**045	.035	.194	.195	.161	.601	.789	.052
Digital Responsiveness (Hypotheses 2a and 2b)								
Parent Advice Provision Linear	<.001	.001	.777	.038	.108	.158	.495	.181
Parent Advice Provision Quadratic	.001	,003	.812	.047	-.011	.026	.665	-.100
Parent Instrumental Support Linear	-.059	.052	.261	-.271	.186	.158	.239	.288
Parent Instrumental Support Quadratic	.009	.006	.149	.338	-.035	.029	.228	-.229
Parent Emotional/Esteem Support Provision Linear	.007	.065	.916	.035	-.052	.312	.868	.042
Parent Emotional/Esteem Support Provision Quadratic	.001	.004	.825	.055	.040	.104	.699	.096
Parent Warmth Linear	-.013	.021	.539	-.140	.001	.003	.676	.052
Parent Warmth Quadratic	.001	.001	.231	.184	<.001	.011	.971	-.008
Digital Monitoring (Hypotheses 3a and 3b)								
Parent Control Linear	-.059	.063	.343	-.346	.087	.140	.536	.163
Parent Control Quadratic	.003	.003	.259	.252	-.037	.025	.133	-.378
Parent Solicitation Linear	**-.043**	**.019**	**.026**	**-.665**	-.019	.075	.800	.145
Parent Solicitation Quadratic	**.001**	**<.001**	**.032**	**.814**	-.001	.002	.703	-.196
Emerging Adult Disclosure Linear	-1.758	.961	.067	-.566	-.011	.043	.792	-.078
Emerging Adult Disclosure Quadratic	**1.872**	**.936**	**.045**	**.341**	<.001	.003	.952	-.022

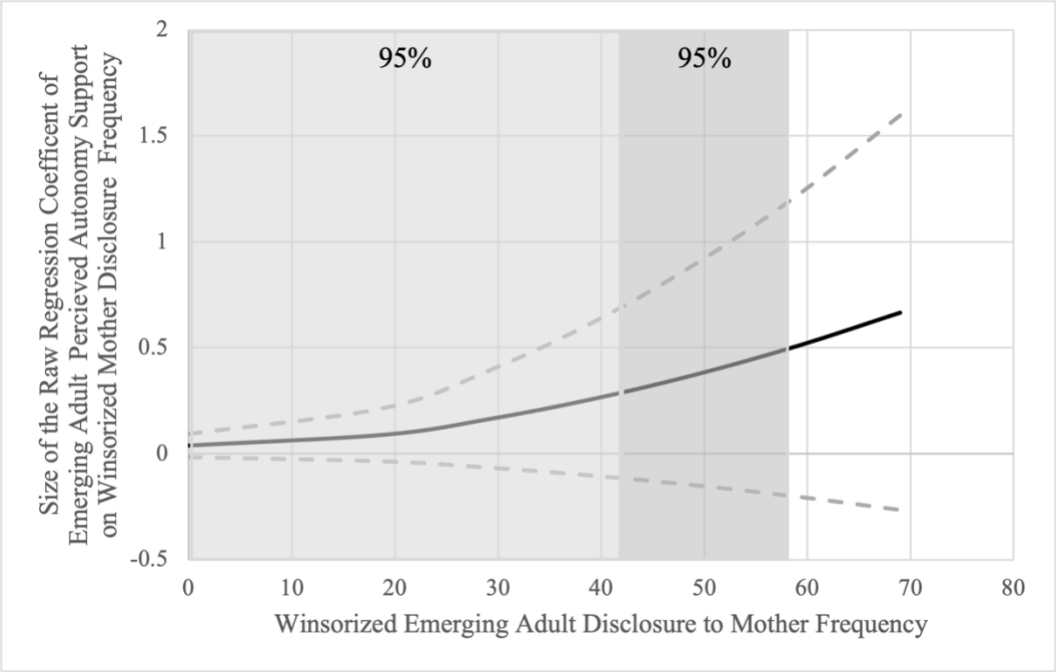
Note. Each model contained a parental digital code alongside covariates (gender, parental education as a proxy for SES, and emerging adult age) and parent-Emerging Adult texting frequency (Models 2 and 3). Raw regression coefficients (***b***), standard errors (***SE***), *p* values (bolded when $p < 0.05$), and standardized regression coefficients (***β***) presented.

Figure 10: Quadratic Plot for Winsorized Mother Solicitation



Note. Quadratic regions of significance plot depicts the slope of the coefficient for mother solicitation (dark solid line) predicting emerging adult perceived mother autonomy support (Y-axis) across the entire observed range of mother solicitation (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

Figure 11: Quadratic Plot for Winsorized Emerging Adult Disclosure to Mother



Note. Quadratic regions of significance plot depicts the slope of the coefficient for emerging adult disclosures to mother (dark solid line) predicting emerging adult perceived mother autonomy support (Y-axis) across the entire observed range of winsorized emerging adult disclosures to mother (X-axis). Dashed lines represent bounds of the 95% confidence interval. The light grey and dark grey shading represent the range within which most of the data fall (the 95th and 99th percentiles, respectively).

CHAPTER V: DISCUSSION

When considering the developmentally salient tasks of emerging adults (i.e., increasing independence and self-reliance; Deci & Ryan, 2000), intersections between parenting and autonomy development are especially relevant. As emerging adults are seeking during this time to balance their increasing independence and emotional connections with their parents, parents of emerging adults are still influential forces for their emerging adult children's development. Specifically, parents can engage in behaviors that either inhibit or promote autonomy development. For this study, I was interested in both the quantity (how much are parent and emerging adult dyads interacting) and the quality (what types of interactions are occurring) of digital parent-emerging adult text message interactions. These types of digital interactions may be particularly salient during emerging adulthood, as this is often the first-time parent and emerging adult dyads are living away from home; indeed, 96% of students in this college student sample reported away from their parents (only 10 of the 238 students in the parent text message sample reported residing currently with a parent). More and more emerging adults are using calls and text messages to not only engage with their parents during day-to-day tasks, but also for emotional communications. Therefore, the present study extends existing literature (some of which utilizes the same sample: Jensen et al, 2021a) that suggests that the mobile phone is an important avenue to understand parent-emerging adult interactions (Fletcher et al., 2018; Rudi & Dworkin, 2018).

For the most part, neither the quantity (frequency of parent-EA texts) nor the quality (frequency of parent-EA texts evidencing digital responsiveness or monitoring) was consistently associated with EA perceptions of maternal or paternal support of EA autonomy, and I did not see much evidence to suggest that our "best in moderation" hypothesis was correct. When

significant associations did emerge, however, they tended to support the overparenting/helicopter parenting hypothesis that high levels of some monitoring-related and some indicators of responsiveness-related text messages could potentially be perceived as unsupportive of EA autonomy. Specifically, as seen in the significant linear associations, those EAs whose mothers provided more advice via text message and those fathers who exerted more control via text message tended to perceive those mothers/fathers as less supportive of their autonomy. Those quadratic associations which emerged largely supported this same pattern, as seen in findings wherein those EAs who received more mother texts providing emotional/esteem support and who engaged in more digital disclosures to their mothers tended to perceive their mothers as less supportive of their autonomy (especially among those dyads characterized by the highest levels of emotional/esteem support and disclosure).

Overall, most findings here are inconsistent with traditional parenting literatures (largely based on adolescence) that have suggested that responsiveness and monitoring behaviors are *beneficial* for adolescent psychosocial outcomes (Rueger et al., 2008; Auerbach et al., 2011; Tubman & Lerner, 1994), as most responsiveness dimensions showed no statistical associations with perceived parental autonomy support, and those that did emerge tended to point towards a potentially maladaptive role of over-responsiveness and over-monitoring in inhibiting autonomy. However, it must be highlighted that one of the most interesting take aways from this series of analyses is that emerging adults did not usually perceive their parents as less supportive of their autonomy until the parents engaged in many of the text message behaviors at very high levels. These findings are inconsistent with previous findings suggesting that *moderate* levels of parental digital behaviors are most beneficial for emerging adult autonomy development (Karabanova & Poskrebysheva, 2013), but are somewhat aligned with the overparenting and

helicopter parenting literatures which suggest that high levels of parental digital behaviors negatively impact the emerging adult adjustment (Schriffin et al., 2014; Kourous et al., 2016; Padilla-Walker et al., 2012). These findings contribute to the over- and helicopter parenting literature by offering support for the hypothesis that developmentally inappropriate levels of digital parenting can be inhibiting of emerging adult autonomy development, but perhaps only when these behaviors reach excessive levels. It is worth mentioning that, although the sensitivity analysis suggested that outlying families were heavily influencing the results, I do not think that those analyses which retained outlying families (i.e., the primary analysis) are invalid; rather, this might point to these parent and emerging adult dyads characterized by the highest levels of certain parental digital behaviors as being of particular interest to developmental and educational researchers, and indeed to be potential targets of prevention and intervention aimed at promoting developmentally appropriate levels of supportive parenting.

An interesting finding is that of emerging adult disclosure to their mothers. For the primary and sensitivity analysis that excluded text frequency the findings suggested that emerging adults who disclose at the highest rates perceived their parent as less supportive of their autonomy. However, in the winsorized sensitivity analysis the results changed, in that emerging adults who disclosed to their mothers at higher frequencies actually perceived their parents as *more* supportive of their autonomy. This then means that there may be something unique about those winsorized, very heavy disclosing emerging adult-parent dyads that needs exploration in future research. Indeed, it may be that, for most parent-EA dyads, more EA disclosures could be indicative of a more autonomy-supportive dynamic, but that those extremely heavily disclosers (who were winsorized in sensitivity analyses) have a unique parent-EA dynamic around autonomy. As disclosure is a child-driven behavior, there is intriguingly

potentially a portion of overparenting that might be driven by the emerging adult child rather than intrusive parent-driven behaviors in isolation. Future studies should take a more nuanced approach in understanding the child's role and the implications of that for parents and their children.

One exception to this overall overparenting pattern of findings was that, within father-EA dyads, those fathers who provided higher levels of emotion support via text message tended to be perceived as *more* supportive of EA autonomy (whereas mothers who conveyed more emotional/esteem support via text message were perceived as less autonomy supportive). Here I offer several possible explanations for this finding. One, it is important to note that mothers and fathers are enacting emotional/esteem support at considerably different absolute levels; the maximum frequency of emotional/esteem support provision over the two-week span for mothers was 53 (M = 2.09, SD = 5.93; 60 percent of mothers never texted to convey emotion support), whereas the maximum frequency for fathers was 10 (M =.36, SD =1.20; 80 percent of fathers never texted to convey emotion support). Thus, it is possible that objectively higher levels of emotional/esteem support could lead emerging adult children to perceive the emotional/esteem support from their mothers as a threat to their autonomy development, but to perceive these same types of emotionally supportive texts (albeit in lower quantities) as autonomy promoting when they come from fathers. Another related explanation concerns traditional gender roles, as mothers are often expected to be more emotionally supportive, whereas fathers tend to not be prescribed the role of emotional support person (Matthewson et at., 2011; García-Mendoza et al., 2022). As a result, emerging adults may perceive fathers who provide emotional and esteem support as more remarkable, and even as supporting their autonomy. It is also worth noting that, as emotional/esteem support is not a common text message behavior amongst most dyads, there

could be some other unmeasured distinguishing factor about those dyads that *do* engage in emotion supportive conversations via text that is driving observed associations here (e.g., that those dyads who have existing strong, cohesive father-EA relationships may be both more likely to exchange emotionally supportive texts and to be see high levels of support for autonomy). Future research is needed to help to illuminate what process may be driving the differences among mothers and fathers around emotion support and support for autonomy.

Limitations and Future Directions

The present study used a novel method (qualitative coding of the content of real-time exchanges between parents and emerging adults) to examine intersections between parental digital behaviors (indexing overall text frequency, responsiveness, and monitoring) and emerging adult perceptions of parental support for emerging adult autonomy development. There are, however, some limitations which merit consideration. First, the cross-sectional nature of this sample makes it impossible to determine the direction of effects. That is, I cannot know for certain whether the significant findings are due to parental digital behaviors impacting emerging adult perceptions of autonomy support, if emerging adult perceptions of parental support of autonomy in some way shape parental digital behaviors, or if there is some third variable (e.g., pre-existing parent-emerging adult relationship quality) driving both. Future research should utilize methods where causation can be better inferred, like the use of longitudinal, experimental, or quasi-experimental designs.

Second, participants were not asked to report their family structure, which could be impactful for the perceptions of parental digital behaviors (e.g., emotional/esteem support provision might be perceived differently for a single father versus one where the mother is present). The current study also utilizes a heteronormative approach in the survey prompts and text message

designations which assumed a mother-father family structure. Emerging adults that come from single parent homes, same sex couples, or who are being raised by other family members were not fully captured in this study's design and may have different norms or cultural values that cause them to perceive their family's digital behaviors in differing ways. Future studies should more comprehensively inquire about family structure to better understand the implications for emerging adult perceived parental support of autonomy.

Third, there was variability in the interrater reliability amongst the different PCTICS codes. Although most codes demonstrated strong interrater reliability on the individual code level, other codes, like *instrumental support provision* ($\kappa < .55$) were lower and in the moderate range. However, when considering interrater reliability at the level of parent-emerging adult dyad, (the two coders' reliability across text message interaction over the entire two-weeks; the level of analysis in the present study), correlations between raters were extremely high (>.98) and thus this concern is ameliorated.

A fourth limitation of the present study is that power and sample size limitations inhibit our ability to test for potential subgroup (especially racial/ethnic) differences that are likely relevant in the study of digital parenting and autonomy support. In particular, cultural differences on factors like individualism, collectivism, and familism values could shape the extent to which autonomy is seen as normative in emerging adulthood, and the extent to which parental digital behaviors are perceived as supportive of autonomy (Benito-Gomez et al., 2020). Similarly, parental monitoring and parental responsiveness behaviors can also differ based on a family's race and ethnicity (Magariño et al., 2021). An important direction for future research will be investigation of these processes in larger, more diverse samples better equipped to test potential moderation by race/ethnicity and cultural values. A fifth, and related, limitation is that this

study's operationalization of autonomy support (which, consisted with past research, I treat as a unidimensional construct; Steinberg et al., 1992) diverges somewhat from multi-dimensional operationalizations that have been used in some recent studies (García Mendoza et al., 2019; Costa et al., 2018) which distinguish between promotion of independence and promotion of volitional functioning (Soenes et al., 2007). Recent research suggests that promotion of independence (which most closely aligns with our measure) may be most prevalent in White families, whereas promotion of volitional functioning seems to be more universal (Benito-Gomez et al., 2020). Future research on this topic would be strengthened by taking a bi-dimensional approach to assessing parental autonomy support in diverse families.

Finally, it is possible that, instead of individual digital parenting behaviors having the most impact on emerging adult perceived support of autonomy, it could instead be that the interplay amongst parental digital behaviors shapes perceptions of autonomy support. Examining profiles of digital parenting behaviors is an important direction for future research.

Conclusion

The present study helped to answer the question of *how* parents may be supporting or undermining emerging adult autonomy development via mobile phone, with implications both for future research and practice. Methodologically, this study suggests that it is valuable to move beyond self-report data to methods that offer a window into naturalistic parent-emerging adult interactions. Ultimately, it seems that virtual parent-emerging adult connections are increasingly normative and being integrated into the daily context of family life. Given that the primary analyses did not suggest that most parents who were engaging in more or fewer parental digital behaviors were perceived as more or less supportive of their emerging adult child's autonomy, parents should feel encouraged that text messaging with their child at low to moderate levels is

unlikely to be perceived as autonomy inhibiting. However, some results did suggest that there were some digital parental behaviors which were tied to less perceived parental support for autonomy, especially among a small minority of parent-emerging adult dyads which saw very high levels of certain types of texts. Thus, I might encourage those parents who are very highly engaged with their emerging adult child via text message to convey control or extreme levels of support to possibly consider tempering this type of interaction or consider alternate methods of communication. Importantly, the vast majority of parents were not enacting these behaviors at such high levels, and thus I must also consider that other special features in these dyads (e.g., pre-existing parent-emerging adult dynamics) might be driving observed associations. Taken together, results suggest that clinicians and higher education professionals might do well to recognize that overparenting and helicopter parenting may not be very relevant to most emerging adults with whom they work, though a small minority might warrant additional support to help facilitate developmentally appropriate parent-emerging adult connections during the transition from adolescence to adulthood.

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APPENDIX A: PARENTAL ENCOURAGMENT OF AUTONOMY SCALE

Instructions: Please answer the following questions about your mother/mother figure or father/father figure. How often did the following occur during the past year?

Response Scale: 0 = Never, 1 = Rarely, 2 = Sometimes, 3 = Often, 4 = Very Often

Items

1. **How often did your mother/father tell you that her/his ideas were correct and that you should not question them?**
2. **How often did your mother/father answer your arguments by saying something like 'You'll understand when you get older'?**
3. **How often did your mother/father say that you should give in on arguments rather than make people angry?**
4. **How often did your mother/father emphasize that you shouldn't argue with adults?**
5. **How often did your mother/father act cold and unfriendly if you did something she/he didn't like?**
6. **If you did something she didn't like, how often did your mother/father react by not being in contact with you for a while?**