Parent Work-Family Balance and Adolescent Psychosocial Well-Being During the COVID-19 Shutdown

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PARENT WORK-FAMILY BALANCE AND ADOLESCENT PSYCHOSOCIAL WELL-BEING DURING THE COVID-19 SHUTDOWN

by

Shailey Woodward

A thesis submitted in partial fulfillment of the requirements for the degree of

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in

Human Development and Family Studies

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ABSTRACT

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by

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Utah State University, 2022

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Department: Human Development and Family Studies

Purpose: Anchored in Erikson’s (1968) psychosocial theory of development, the purpose of this study was to observe the relationships between parent work-family balance, parenting satisfaction, and adolescent psychosocial well-being within the context of financial stress and the COVID-19 shutdown.

Method: 207 parent-adolescent dyads completed an online survey through Qualtrics panels to report their perceptions about the parent’s work-family balance, the adolescent’s psychosocial well-being, the parent’s annual gross income, and the parent’s experience balancing work and family during the COVID-19 shutdown.

Analysis: After establishing the correlational relationship of parent and adolescent perceptions using Pearson’s $r$, multiple linear regressions were used to show the nature of the relationships between parent work-family balance, parenting satisfaction, and adolescent psychosocial well-being (cognitive autonomy, emotional autonomy, and self-esteem). Multiple linear regression also showed the relationship between parent work-family balance, parenting satisfaction, financial strain, and parents’ experiences balancing work and family during the COVID-19 shutdown.
**Results:** Parent and adolescent perceptions about the parent’s work-family balance and parenting satisfaction were moderately to strongly correlated. Parents’ positive perceptions about their work-family balance and parenting satisfaction related to higher adolescent cognitive autonomy and self-esteem. However, when parents’ work interrupted home life, adolescents reported lower emotional autonomy. Parents experiencing financial strain reported more negative perceptions of their work family balance. And parents who had a worse experience balancing work and family during the COVID-19 shutdown were less satisfied with their parenting.

**Conclusion:** Parent and adolescent perceptions about the parent’s work-family balance were related to adolescent psychosocial well-being in this study. As parents reported better perceptions about their work-family balance and parenting satisfaction, their adolescents reported better psychosocial well-being. Additionally, financial strain and how parents experienced balancing work and family during COVID-19 affected their perceptions. It is important that, where possible, parents attend to their own needs to better meet the needs of their child.
Parents who work have many responsibilities to fulfill. They may encounter frustration and exhaustion, which can impact how well they parent. Experiences such as financial strain and the COVID-19 shutdown may further impact parenting. At the same time, adolescents are establishing identities and need attentive parents to help them develop healthy psychosocial well-being. Using Erikson’s (1968) psychosocial theory of development as a backdrop, the purpose of this study was to observe the relationships between parent work-family balance, parenting satisfaction, and adolescent psychosocial well-being within the context of financial stress and the COVID-19 shutdown. I found that parent and adolescent perceptions about the parent’s work-family balance and parenting satisfaction are moderately to strongly correlated. I also found parents’ positive perceptions about their work-family balance and parenting satisfaction related to higher reported adolescent cognitive autonomy and self-esteem. However, when parents’ work interrupted home life, adolescents reported lower emotional autonomy. Parents experiencing financial strain reported more negative perceptions of their ability to balance work and family. And parents who had a worse experience balancing work and family during the COVID-19 shutdown were less satisfied with their parenting. It is important that parents attend to their own needs to better meet the needs of their child.
ACKNOWLEDGMENTS

To Dr. Beckert. Thank you for time and dedication to this document and my growth as a researcher on adolescent development. I am a better researcher, student, and teacher because of you. I will carry your tutelage forward into my doctorate and career. It is a gift that I hope to utilize well and share with others. And through that I hope to honor your generosity towards me throughout this experience. Again, thank you.

To Tyler. You saw a lot of the back matter of writing a thesis. It was tough, I was often exhausted, and you had your own schooling and work to do. Your kindness and gentleness were a boon to me during difficult experiences. I am so grateful for your support. And alongside the tough stuff, we had fun. Thank you for moments of respite found in playing Halo or getting food together. We made memories I will look fondly on throughout life. I look forward to many more as we start our marriage and new adventure in Knoxville. I treasure life with you. I love you.

Shailey Woodward
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CHAPTER 1:
INTRODUCTION

The execution of parental responsibilities can be both joyful and overwhelming. While parents are generally satisfied with their role, parents rarely avoid challenges associated with parenting, particularly when it comes to balancing parenthood and work. For example, juggling activities like driving children to soccer practices and staying late at work to complete quarterly audits can be stressful. Maintaining a high commitment to multiple adult roles can lead to role-strain or feeling overwhelmed by too many responsibilities (O’Neil & Greenberger, 1994). With the addition of other unexpected external factors, such as a global pandemic or financial strain, parents may struggle to remain consistent in their parenting and to cope with life’s demands, which may take a toll on other family members (Demerouti et al., 2005; Van den Eynde et al., 2020).

As evidenced by Hoskins’ (2014) review of parenting behaviors and adolescent outcomes, consistent, quality parenting plays an important role in positive child development. But when parents are stressed by work obligations, it may affect their mood and lead to negative spillover at home (Polk, 2013; Polk, 2015), their parenting may become less consistent (Lippold et al., 2018), and the overall family emotional climate may be changed (Kapetanovic & Skoog, 2021). Over the past two years, parents could have experienced increased stress due to employment and financial changes related to the COVID-19 shutdown (Craig & Churchill, 2020; Parker et al., 2020). Evidence showing that increased stress due to the pandemic has taken a toll on parents’ family relationships continues to mount (Feinberg et al., 2021).
Because balancing work and family is uniquely complex for each parent, it is important to study the contexts in which parents make balance-related decisions. A parent’s finances, type of employment, and age of their children affect their ability to balance family and work. Balancing family and work with adolescent-aged children poses distinctive challenges for parents. It is during adolescence that children begin to have their own obligations and time constraints outside of their family. Adolescents begin to balance increased responsibilities such as part-time jobs, additional homework, and extracurricular school activities. This increase in adolescent activities often results in increased demands on parents’ time as they are expected to help with homework and provide transportation to activities.

It is during adolescence that children begin to explore in earnest their own autonomy by seeking opportunities to act and think for themselves as budding adults (Beckert, 2005). To aid in this developmental process, parents need to expend more time to guide their child’s development. Good parent-adolescent relationships and appropriate parental support may protect adolescents from negative outcomes (Crouter et al., 2004; Desha et al., 2011) and foster positive ones (Morris et al., 2017). Time spent with their children also increases opportunities for parents to model appropriate behavior, especially regarding work (Breevaart & Bakker, 2012; Wiese & Freund, 2011). It is important for parents to be aware of how they model work-family balance because their adolescents are old enough to understand the implications of what they observe in their parents’ behavior.

Currently, more information is needed about the ways parents’ work-family balance affects their adolescents. And research on how COVID-19 affects balance and relationship quality has only just begun (Bülow et al., 2021; Janssen et al., 2020). The
current study will add to the literature by exploring generational perspectives (both parent and adolescent) of the parent’s work-family balance. It will also add to the growing literature on the ways COVID-19 affected families. Understanding the differences between adolescent and parent perceptions can help researchers explain differences in adolescent outcomes.

**Theoretical Background**

Erik Erikson’s (1968) theory of psychosocial development provides a theoretical anchor for this study. According to this theory, adolescence represents a developmental stage where young people seek to establish their ego identity by balancing *Identity vs. Role Confusion*. During this time, adolescents are trying to establish their own identity by differentiating themselves from, and identifying with, important figures in their lives, such as their parents. Adolescents use these significant figures in their lives as models to explore the outcomes of chosen identities and behavior.

Erikson further contends that while adolescents are figuring out who they are as individuals, their parents are in a developmental stage where they are trying to resolve the conflict of *Generativity vs. Self-Absorption and Stagnation* (Erikson, 1968). Adults in this stage are often drawn to opportunities to give back to their communities, which is often accomplished through their career aspirations. Caring for children may also contribute to parents’ generativity. Interestingly, work can serve as a mean for parents to provide for and improve the lives of their children, which can complicate how parents balance work and family.
Study Purpose and Research Questions

In this study, I sought to learn how parents perceive their work-family balance and parenting self-esteem. I also explored how adolescents perceive their parent’s attempts at work-family balance and how they perceive their parent’s satisfaction with their parenting role. In tandem, I learned how parents’ perceptions associate with their adolescent’s psychosocial well-being. Finally, I looked at the role financial strain and the COVID-19 shutdown had on parent perceptions of their work-family balance and parenting satisfaction.

Continued focus on parent-adolescent relationships is important. The distinctiveness of this developmental period warrants continued scholarly consideration. Unlike younger children, adolescents can understand and articulate their perceptions about their parents. I maximized on this developmental shift by including the adolescent’s perspective. Equally valuable, I included the parent’s perceptions of their own behavior. Including intergenerational perspectives aides in understanding how other family members are affected by and perceive parents’ work-family balance (Kossek et al., 2012). Thus, the purpose of this study was three-fold: (a) to understand how parents perceive their work-family balance, how satisfied they are with their parenting, and study how the COVID-19 shutdown changed these perceptions, (b) to understand how adolescents perceive their parents’ work-family balance and satisfaction with parenting during this time, and (c) to understand how these perceptions relate to each other and the child’s psychosocial development. The following research questions guided this thesis:

RQ1: What are parent and adolescent perceptions of the parent’s work-family balance and parenting satisfaction, and how do they relate with each other?
RQ2: How do parent perceptions of their work-family balance and parenting satisfaction associate with their adolescent’s psychosocial well-being?

RQ3: Do contextual factors, such as financial strain or the COVID-19 shutdown, play a role in the parent’s perceptions of their work-family balance and parenting satisfaction?
CHAPTER 2: LITERATURE REVIEW

In this chapter, I situate the current study in the existing literature by reviewing what researchers have learned about parent work-family balance, parenting satisfaction, and adolescent psychosocial development. Woven throughout these topics, I will include research on how context, particularly financial strain and COVID-19, relates to parenting behaviors and how parenting behaviors associate with adolescent psychosocial development.

Nature of Parent Balance of Work and Family

Balancing Work and Family

The empirical study of how parents balance work and family is not new. Over the past few decades, research trends have shown that parents are overwhelmed by the obligations of multiple, conflicting roles. In 1985, Voydanoff observed when both parents in a two-parent family take on the roles of parent and employee, they experience role conflict. This conflict is associated with role strain—when parents feel they cannot meet all the demands from both family and work. About a decade later, O’Neil and Greenberger (1994) noted that parents who had a high commitment to both their parent role and work role experienced role strain. This trend of experienced role strain has persisted in more recent research. Nomaguchi and Milkie (2017) described how pressure continues to mount as modern parents struggle to provide for the financial needs of their family and balance the emergent, intensive parenting ideologies that lead many parents to feel like the time they spend with their children is never enough (Nomaguchi & Milkie, 2017).
A decade ago, Kossek et al. (2012) conceptualized that parents’ work-family balance is made up of three components: (a) a parent’s work-family identity, (b) cross-role interruptions, and (c) boundary control. Their idea is grounded in identity theory, which argues that the more salient a role is to someone, the more likely they are to engage in behaviors that benefit that role first (Thoits, 1991). For example, if a person’s identification with their parenting role is stronger than their identification as an employee, they are more likely to do things that benefit their parenting role over those that benefit their work.

Parents’ identifications also affect cross-interruptions into different roles. If a parent’s work identity is more salient to them, then they are more likely to allow their work to interrupt their personal life (Kossek et al., 2012). Work interrupting a parent’s personal life could include things like answering emails, phone calls, or video meetings on family vacations. Work interruptions might also include missing family activities, such as children’s school performances, for work meetings. If, on the other hand, their family identity is more salient to them, they will be more likely to allow family obligations to interrupt their work commitments (Kossek et al., 2012). Examples include small things like responding to their adolescent’s texts during a work meeting or more impactful things like cancelling a business trip to attend a child’s athletic event.

Finally, parents’ perceptions of their boundary control include the amount of control parents think they have over when they do work and when they parent (Kossek et al., 2012). For example, Milkie et al. (2010) found as parents’ number of work hours increased, their perceived success in balancing work and family decreased. Parent
perceptions can affect the quality of their parenting and, in turn, their satisfaction with their parenting role.

**Parenting Quality and Satisfaction**

Parenting quality can be affected by the emotional and physical resources at a parent’s disposal, as can be explained by Family Stress Theory (Hill, 1958). Work environments and obligations can affect parents’ mental, emotional, and financial resources. For example, poor working conditions and increased financial strain can lead to increased negative emotional outcomes (Breevaart & Bakker, 2012; Murry et al., 2018; Tulk et al., 2016). Work also constrains the amount of time parents have to spend with their children. Time spent with children is a key part of parenting quality because parents need time to model behavior and interact with their child. Parental time spent with children has been associated with a host of positive child outcomes including decreased bullying behavior and decreased depressive symptoms (Christie-Mizell et al., 2011, Desha et al., 2011). However, children are also perceptive to parental strain and hours spent at work (Morr Loftus & Droser, 2020; Strazdins et al., 2017). When children feel their parents do not spend enough time with them, they are at greater risk for negative outcomes such as anxiety (Polk, 2013). Most parents seek to avoid causing negative outcomes for their children. In fact, theorists, including Erikson (1968), have hypothesized that, generally, parents are motivated to give back to their children and seek satisfaction with their parenting role.

In Erikson’s (1968) theory, parents are in the developmental stage of adulthood and are seeking to resolve the crisis of *Generativity versus Self-Absorption and Stagnation*. In this stage, adults should learn how they can give back to their society,
otherwise they face feeling stuck, unproductive, and unfulfilled (Erikson, 1968). For adults who are parents, both their work role and parent role can contribute to feelings of generativity. Parents may have chosen a specific profession because they felt they could improve their community through it. Parents may also try to improve conditions for future generations by giving their children opportunities and amenities that they (the parent) did not have access to when they were children. Work can play an interesting role in generativity because it can be an endeavor that is intrinsically important for the parent and a means to provide a better future for their children. Likewise, work can detract from feelings of generativity to their children if it consumes the parent’s identity. How parents manage their work-family balance may have implications for this developmental crisis.

**Financial Strain and COVID-19**

The contexts in which work-family processes occur may alter the resources and abilities parents have to balance work and family effectively. Of major impact over the past two years, many families have experienced financial, emotional, and psychological strain together with time stressors associated with the COVID-19 shutdown. When parents experience economic downturn, they may feel compelled to take work when they can (McLaughlin & Muldoon, 2014). This may trigger parents to feel they have little control over balancing their work and family. When parents feel they do not have control over their life, they are more likely to misuse controlling parental behaviors (Lippold et al., 2018; Ohu et al., 2019). For example, Lawson et al. (2020) found there was greater risk for child psychological and physical abuse when parents lost their job due to the pandemic. Parents may also experience poor mental health due to their work environment and job insecurity (Minnotte & Yucel, 2018; Tulk et al., 2016).
During the COVID-19 pandemic shutdown, many parents were forced to work from home, or they were laid-off from their jobs entirely (Craig & Churchill, 2020). In 2020, the Pew Research Center found 71% of employed adults in the U.S. reported working from home due to the pandemic (Parker et al., 2020). Of those employees who are also parents, 50% reported that that it was difficult to get work done without interruption (Parker et al., 2020), which may increase stress and work-family conflict (Graham et al., 2021). Stress related to the pandemic also contributed to an uptick in negative emotions for parents and an overall deterioration in the quality of their family relationships (Feinberg et al., 2021; Janssen et al., 2020). The unprecedented stress of the pandemic, combined with ordinary work and parenting responsibilities, may take a high toll on the physical and emotional resources parents need to parent well and thus may negatively impact their work-family balance.

**Nature of Adolescent Psychosocial Development**

When children reach adolescence, Erikson (1968) theorized that they seek to resolve the crisis of *Identity vs. Role Confusion*. During this developmental stage, adolescents should explore various identities in order to commit to one (Erikson, 1968). A key aspect of this exploration is that adolescents are trying to differentiate themselves from, and conversely identify with, significant others, specifically their parents (Marcia et al., 1993). This differentiation and identification process requires increased autonomy. Adolescents need to be able to think and feel for themselves if they are going to consciously commit to an identity. Successfully navigating the exploration toward the commitment process also requires a high level of self-confidence and self-esteem.
Adolescent Autonomy

Autonomy in adolescence has been defined as a youth’s ability to act, think, and feel independently (Beckert, 2016). Researchers have argued that gaining autonomy is a central task in adolescence, particularly in the parent-adolescent relationship (Beckert, 2016; Sessa & Steinberg, 1991). Autonomy is typically conceptualized as having three parts: behavioral, cognitive, and emotional autonomy. Behavioral autonomy is the amount of independence and control adolescents have over their actions (Sessa & Steinberg, 1991). Cognitive autonomy is defined as adolescents’ ability to think independently without undue influence from others (Beckert, 2016). And emotional autonomy is an adolescents’ ability to feel and process their emotions themselves along with the de-idealization of parents and the individuation of the self (Steinberg & Silverberg, 1986).

Fostering autonomy in adolescence has a host of beneficial outcomes for psychosocial, academic, ideological, and occupational development. For example, Mullis et al. (2009), in a study on 234 high school students, found higher emotional autonomy was associated with higher scores on identity achievement. Likewise, Hafen et al.’s (2012) diverse, cross-sectional study showed that adolescents’ academic engagement increases when they perceive more autonomy in their classroom. This finding applied across academic subjects such as social studies and math (Hafen et al., 2012). Finally, Alonso-Stuyck et al. (2018) found that among 567 Spanish adolescents, those who were more autonomous in their decision making had higher self-esteem and higher commitment to their ideologies and occupations.
It is important to acknowledge the role that parents play in granting their adolescents autonomy. Indeed, parenting behaviors and practices can impact the previously listed benefits. For example, Brenning et al. (2015) found when adolescents perceived high maternal autonomy support, they had more adaptive emotion regulation. On the other hand, in a study of maternal control and adolescent autonomy in family and peer contexts, Hare et al. (2014) found that when mothers were more psychologically controlling, their adolescent child was less autonomous in interactions at home and with their friends.

Furthermore, adolescent autonomy can affect the parent-child relationship (Inguglia et al., 2018). Using a sample of 707 Belgian adolescents, Van Petegem et al. (2013) found adolescents in their study felt more connected to their parents when they had more psychological freedom. Later, Van Petegem et al. (2017) used vignettes to study adolescent responses to situations demonstrating parental autonomy support or parental control. They found when adolescents perceive parents as previously autonomy-supportive, they were more likely to describe using positive coping behaviors such as decreased defiance. However, Kapetanovic and Skoog (2021) found that if parents were in a negative emotional climate, they were more likely to be overly controlling and unable to discern their children’s needs for autonomy. Parental psychological control can lead to maladaptive adolescent behavior such as decreased emotion regulation (Morris et al., 2017).

As the research in this review indicates, more parents are having negative experiences with work due to financial strain (Tulk et al., 2016) and COVID-19 (Feinberg et al., 2021). These frustrating experiences may increase parents’
dissatisfaction with their parenting (Nomaguchi & Milkie, 2017). The increase in negative parental experiences can lead to more controlling parenting practices, which affects the child’s burgeoning autonomy. A goal of this study was to put parental experiences balancing work and family, parental satisfaction, and adolescent autonomy into one narrative. I wanted to see if unique relationships emerge when adolescent outcomes are considered in context with their parent’s experiences balancing work and family.

*Self-Esteem*

Self-esteem is often defined globally as how an individual feels about themselves (Harter, 1993). Self-esteem is an important psychosocial aspect in adolescence because adolescents with low self-esteem are more likely to experience adverse effects such as higher rates of depression and suicidal behavior (Orth et al., 2012; Plunkett et al., 2007; Soto-Sanz et al., 2019). On the other hand, high self-esteem can help youth be more resilient and protect them from negative outcomes (Zimmerman et al., 1997). Self-esteem is also related to adolescents’ identity. Chen (2019) found a positive correlation between identity achievement and self-esteem in adolescents from high school to college.

Parental support can be a secure foundation for adolescents to use while they develop psychosocial skills (Gecas & Schwalbe, 1986). Birndorf et al.’s (2005) findings support this assertion as adolescents in their sample reported higher self-esteem when their family engaged in positive communication. Harris et al. (2015) further evidenced this with a cross-sectional finding that demonstrated increased parent-child closeness correlated with an increase in the child’s self-esteem.
Healthy adolescent self-esteem can also protect adolescents from experiencing depression and antisocial behavior due to their parents’ psychological control (Huey et al., 2020; Hunter et al., 2015). This is interesting when connected with the literature on autonomy and how parents increasingly engage in more controlling behaviors when under duress (Hare et al., 2014; Kapetanovic & Skoog, 2021). It is important to continue to explore how adolescent self-esteem relates to parent behavior especially because of the effect it has on well-being and relationships. An aim of this study was to parse out how parent work-family balance relates to adolescent self-esteem.

**Summary**

This study will focus on the perceived balance parents have of their work and family responsibilities. Parents may benefit from a satisfactory work-family balance (Kossek et al., 2012). And yet that balance can be complicated by constraining contexts such as financial strain and COVID-19. Parent work-family balance may also influence how satisfied parents are with their parenting. If satisfaction with and the quality of parenting decrease due to parents’ inability to balance work and family, adolescents’ psychosocial development may be impacted.

The purpose of this study was to observe the relationships between parent work-family balance, parenting satisfaction, and adolescent psychosocial well-being within the context of financial stress and the COVID-19 shutdown. This study was designed to explore how parents perceive their work-family balance and how satisfied they are with their parenting, to know how adolescent children perceive their parent’s work-family balance and satisfaction with parenting, and to understand how these perceptions relate to each other. This study also explored how parent perceptions relate to certain aspects of
adolescent psychosocial well-being including cognitive autonomy, emotional autonomy, and self-esteem.
Sample

For this study, I used extant data. The sample for this study included 207 parent-adolescent dyads from across the United States. These dyads were recruited to participate in a larger research endeavor called The Balancing Life and Family Project (Beckert & Woodward, 2020). For this thesis, only participants who were recruited through Qualtrics panels in Spring 2021, one year into the COVID-19 pandemic, were included. Criteria for study participation required that adult respondents who were full-time employees and were a parent of at least one child between the ages of 14 – 17. Parents in this sample pool ranged in age from 31-69 (\(M = 45.42, SD = 8.54\)) and identified primarily as Caucasian or White/non-Hispanic (83%). Other ethnicities reported by the parents included Asian (4%), Black or African American (5%), Latinx or Hispanic (6%), and mixed ethnicity (< 1%). Fifty-nine percent of the parents identified as male and 41% identified as female. These parents were mostly married (85%), with others reporting being divorced (7%), never married (4%), separated (2%), or widowed (1%). Most parents reported a household annual income between $75,000 and $149,000 (see Table 1 for more demographic details).

The mostly male (61%; 39% female) adolescents in this sample ranged in age from 14-17 (\(M = 15.47, SD = 1.09\)). They also primarily identified as White or Caucasian/non-Hispanic (80%). Other ethnicities adolescents identified themselves as were Asian (4%), Black or African American (6%), Latinx or Hispanic (7%), mixed
Most of these adolescents also reported receiving high grades (56% mostly A’s, 33% mostly B’s, 7% mostly C’s, and 3% mostly D’s and F’s; see Table 2 for more demographic details).

Table 1

<table>
<thead>
<tr>
<th>Parental Self-Reported Sociodemographic Characteristics</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
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<tr>
<td></td>
<td>$n = 201$</td>
<td>$n = 118$</td>
<td>$n = 83$</td>
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<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Married</td>
<td>171 (85.1%)</td>
<td>108 (91.5%)</td>
<td>63 (75.9%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>3 (1.5%)</td>
<td>0 (0%)</td>
<td>3 (3.6%)</td>
</tr>
<tr>
<td>Divorced</td>
<td>15 (7.5%)</td>
<td>7 (5.9%)</td>
<td>8 (9.6%)</td>
</tr>
<tr>
<td>Separated</td>
<td>4 (2%)</td>
<td>2 (1.7%)</td>
<td>2 (2.4%)</td>
</tr>
<tr>
<td>Never Married</td>
<td>8 (4%)</td>
<td>1 (0.8%)</td>
<td>7 (8.4%)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>10 (5%)</td>
<td>7 (5.9%)</td>
<td>3 (3.6%)</td>
</tr>
<tr>
<td>Asian</td>
<td>8 (4%)</td>
<td>5 (4.2%)</td>
<td>3 (3.6%)</td>
</tr>
<tr>
<td>Caucasian or White/non-Hispanic</td>
<td>167 (83.1%)</td>
<td>98 (83.1%)</td>
<td>69 (83.1%)</td>
</tr>
<tr>
<td>Latinx or Hispanic</td>
<td>13 (6.5%)</td>
<td>7 (5.9%)</td>
<td>6 (7.2%)</td>
</tr>
<tr>
<td>Mixed</td>
<td>1 (0.5%)</td>
<td>0 (0%)</td>
<td>1 (1.2%)</td>
</tr>
<tr>
<td>Age in Years</td>
<td>45.42 (8.54)</td>
<td>44.99 (8.42)</td>
<td>46.02 (8.71)</td>
</tr>
<tr>
<td>Annual Gross Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $10,000</td>
<td>1 (0.5%)</td>
<td>0 (0%)</td>
<td>1 (1.2%)</td>
</tr>
<tr>
<td>$10,000 - $24,999</td>
<td>6 (3%)</td>
<td>1 (0.8%)</td>
<td>5 (6%)</td>
</tr>
<tr>
<td>$25,000 - $49,999</td>
<td>16 (8%)</td>
<td>7 (5.9%)</td>
<td>9 (10.8%)</td>
</tr>
<tr>
<td>$50,000 - $74,999</td>
<td>30 (14.9%)</td>
<td>12 (10.2%)</td>
<td>18 (21.7%)</td>
</tr>
<tr>
<td>$75,000 - $99,999</td>
<td>34 (16.9%)</td>
<td>19 (16.1%)</td>
<td>15 (18.1%)</td>
</tr>
<tr>
<td>$100,000 - $149,000</td>
<td>83 (41.3%)</td>
<td>56 (47.5%)</td>
<td>27 (32.5%)</td>
</tr>
<tr>
<td>$150,000 - $199,999</td>
<td>22 (10.9%)</td>
<td>18 (15.3%)</td>
<td>4 (4.8%)</td>
</tr>
<tr>
<td>$200,000+</td>
<td>9 (4.5%)</td>
<td>5 (4.2%)</td>
<td>4 (4.8%)</td>
</tr>
</tbody>
</table>
Table 2

Adolescent Self-Reported Sociodemographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 201</td>
<td>n = 123</td>
<td>n = 78</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black or African American</td>
<td>12 (6%)</td>
<td>8 (6.5%)</td>
<td>4 (5.1%)</td>
</tr>
<tr>
<td>Asian</td>
<td>9 (4.5%)</td>
<td>5 (4.1%)</td>
<td>4 (5.1%)</td>
</tr>
<tr>
<td>Caucasian or White/non-Hispanic</td>
<td>161 (80.1%)</td>
<td>99 (80.5%)</td>
<td>62 (79.5%)</td>
</tr>
<tr>
<td>Latinx or Hispanic</td>
<td>14 (7%)</td>
<td>8 (6.5%)</td>
<td>6 (7.7%)</td>
</tr>
<tr>
<td>Mixed</td>
<td>3 (1.5%)</td>
<td>2 (1.6%)</td>
<td>1 (1.3%)</td>
</tr>
<tr>
<td>Age in Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.47 (1.09)</td>
<td>15.47 (1.10)</td>
<td>15.46 (1.08)</td>
</tr>
<tr>
<td>Grades</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly A’s</td>
<td>114 (56.7%)</td>
<td>62 (50.4%)</td>
<td>52 (66.7%)</td>
</tr>
<tr>
<td>Mostly B’s</td>
<td>67 (33.3%)</td>
<td>47 (38.2%)</td>
<td>20 (25.6%)</td>
</tr>
<tr>
<td>Mostly C’s</td>
<td>14 (7%)</td>
<td>10 (8.1%)</td>
<td>4 (5.1%)</td>
</tr>
<tr>
<td>Mostly D’s and F’s</td>
<td>6 (3%)</td>
<td>4 (3.3%)</td>
<td>2 (2.6%)</td>
</tr>
</tbody>
</table>

Data Collection

As mentioned previously, I used data that were collected as part of the second wave of The Balancing Life and Family Project (Beckert & Woodward, 2020). For this wave of data collection, Qualtrics Panels were used for sample recruitment. Qualtrics Panels is a professional service that follows ethical standards to collect data from online participants. After Beckert and Woodward (2020) created the survey, Qualtrics recruited participants (a panel) by contacting survey sites to which parent participants in the sample subscribed. Parents with adolescent children were notified of the survey and compensated the amount agreed upon from their survey site when the survey was
completed. Responding parents gave consent for themselves and assent for their adolescent children to participate. Their adolescents also gave their consent to participate in the survey.

**Procedures**

Parent and adolescent participants each completed a separate 40-minute portion of a multi-generational survey asking about parent and adolescent perceptions of the parent’s work-life balance. Parents completed their portion of the survey first. Parent participants reported some demographic information (age, ethnicity, gender, marital status, employment, and socioeconomic status), and answered questions about their perceptions of their work-family balance, their own satisfaction in parenting, and their adolescent’s psychosocial well-being. After parents completed their portion of the survey, they were instructed to allow their adolescent to complete the adolescent portion in privacy. Once the parent turned the survey over to their child, the adolescent then signed informed consent and took their portion of the survey. Adolescents were asked to provide some demographic information (age, ethnicity, gender, and grades), and indicate their perceptions of their parent’s work-family balance, their parent’s parenting satisfaction, and of their own psychosocial well-being.

**Measures**

*Balancing Work and Family Perspective Scale*. As part of the larger *Balancing Work and Family Project*, Beckert and Higgins (2015) created the *Balancing Work and Family Perspective Scale* designed to assess both generations’ views (parents and adolescents) of parents’ balance of work and family. This scale consists of five items
measuring how parents perceive their current ability to balance work and family. I removed the fifth question because it asked about the other person’s work-family balance (i.e., “My child/parent is good at balancing life and family demands). Each generation reported on parents’ experiences. For example, an item for parents read, “I am setting a good example of balancing work and family for my child.” The corollary item for adolescent respondents read, “My parent is setting a good example of balancing work and family for me.” Response options ranged from “Strongly disagree” to “Strongly agree” on a 5-point Likert-type scale. Cronbach’s alphas were low on scores for the items on this scale (.55 for parents and .55 for adolescents).

*Work Interrupting Non-Work Behaviors Scale.* To get a clearer picture of parent experiences when balancing work and family, two subscales from the *Work-Life Indicator* (Kossek et al., 2012) were used. The initial scale only measured adults’ work-family balance. For this study, adolescent versions of questions were designed, making questions on the subscales applicable to both generations. The first subscale, *Work Interrupting Non-Work Behaviors*, uses five items to measure perceptions of how frequently parents attend to work-related tasks when at home or spending time with their family. Items from this subscale were also presented to each generation. An example item for parents is “I respond to work-related communications (e.g., emails, texts, and phone calls) during my personal time away from work.” The adolescent’s version of this item read, “My parent responds to work-related communications (e.g. emails, texts, and phone calls) during family time at home.” Response options were a 5-point Likert type scale ranging from “Strongly disagree” to “Strongly agree.” Cronbach’s alphas were .82 for
parents and .83 for adolescents on scores for items on this subscale, demonstrating good reliability.

*Boundary Control Scale.* This is the second subscale of the *Work-Life Indicator* (Kossek et al., 2012) used in this study. It uses three items to measure perceptions of the control parents have over when they engage in work or personal activities. Both parents and adolescents responded to this subscale. An example item for parents is “I control whether I am able to keep my work and personal life separate.” The adolescent version read “My parent is able to keep their work and family life separate.” Response options are a 5-point Likert-type scale ranging from “Strongly disagree” to “Strongly agree.” Cronbach’s alphas were .78 for parents and .40 for adolescents on scores for this subscale. Low reliability for adolescent scores could be because its adaptation may not have captured their perceptions as well as initially hoped. It may also be that adolescents do not accurately perceive their parent’s work-family balance.

*Parenting Satisfaction Scale.* This scale is a subscale of the *Parenting Success Indicator* (*PSI*; Strom & Strom, 1998). The *PSI* contains sixty items that emphasize six dimensions of parenting. In this project, only the ten items measuring parental satisfaction were used. The *Parenting Satisfaction Subscale* identifies areas of parenting that bring satisfaction and reflect how positively parents feel about the way they parent their adolescent. It should be noted that this scale could also be conceptualized as measuring parent’s self-efficacy about their parenting. This scale was presented to both generations, but the versions were again worded differently to accommodate generational responses. An item example for parents was, “I am good at listening to my adolescent,” and for adolescents the same item read, “My parent is good at listening to me.” For each
item, there were four response options ranging from “Always,” “Often,” “Seldom,” or “Never.” Cronbach’s alphas for scores in this study were .85 for parents and .88 for adolescents, demonstrating good reliability for these scores as has been shown in previous studies (Strom et al., 2008; Woody & Woody, 2007).

Financial Strain. Potential financial strain was measured using eight categories of approximate annual gross income. These categories ranged from making less than $10,000 to making $200,000 or more per year. Financial strain occurs when parents feel they do not have the monetary resources to meet all their responsibilities which in turn leads to greater difficulty balancing work and family. In this study, financial strain was operationally defined by dichotomizing the income variable at the poverty line, much like Waldstein et al. (2016) did in their study. Only parents reported on this measure.

COVID-19 Experience. In the pandemic wave of data collection for The Balancing Life and Family Project (Beckert & Woodward, 2020) parental experience with COVID-19 was measured by asking “Over the past year, how has your work-life balance changed from prior to the pandemic?” There were 5 response categories ranging from “Significantly better”, to “Remained about the same”, to “Significantly worse.”

Cognitive Autonomy and Self-Evaluation Scale (CASE). The CASE inventory (Beckert, 2007) is a twenty-seven item, 5-point Likert-type scale that assesses cognitive autonomy in youth by measuring how they make decisions, voice opinions, evaluate thoughts, self-assess, and validate themselves compared to others. An item example is “When I disagree with others, I share my views.” Response options range from “Always” to “Never” or “Strongly agree” to “Strongly disagree,” depending on the type of question. Only adolescents reported on this scale. Cronbach’s alpha (.82) for scores from this
sample was good, as has been demonstrated previously in other samples (Michael & Attias, 2016).

*Emotional Autonomy Scale.* This scale is a subscale of the *Adolescent Autonomy Questionnaire (AAQ)* developed by Noom et al. (2001). This subscale consists of 5 items on a Likert-type scale with five response options, ranging from “Strongly agree” to “Strongly disagree”, that assess how stable an adolescent’s thoughts and feelings are when they are around others. An item example is “When I act against the will of others, I usually get nervous.” Only adolescents reported on this scale. Scores from international samples have shown good internal consistency for this scale (Graça et al., 2013). Cronbach’s alpha for scores from this study was .46. It may have demonstrated less desirable reliability in this sample because of the small number of items used in the scale.

*Rosenberg’s Self-Esteem Scale.* This is a ten item Likert-type scale with four response options (“Strongly agree”, “Agree”, “Disagree”, “Strongly disagree”) that assesses how adolescents feel about themselves and their abilities (Rosenberg, 1979). An item example is “I feel that I am a person of worth, at least on an equal basis with others.” Only adolescents reported on this scale. Cronbach’s alpha was .83 for scores from adolescents in this study as has been shown in previous studies (Orth et al., 2012; Plunkett et al., 2007).

*Covariates.* Adolescent age was included as a covariate in some analyses. Previous literature has indicated age differences in adolescent perceptions of autonomy (Inguglia et al., 2015). Hence, it is prudent to continue to explore potential age effects in adolescent outcomes.
The gender composition of the dyad (i.e., mother-daughter, mother-son, father-daughter, father-son) was also included in this study. There is evidence for perceived differences in parental autonomy support depending on the parent’s and adolescent’s gender (see Fousiani et al., 2014). There is also evidence of slight gender differences in self-esteem between adolescent males and females (Bachman et al., 2011). And that maternal and paternal emotional support, respectively, may have different effects on adolescent self-esteem (Boudreault-Bouchard et al., 2013). The organization of this covariate allowed for exploration into how the child’s gender associates with outcome variables and how the child’s gender interacts with their parent’s gender on outcome variables.

Research Questions and Hypotheses

The following research questions and hypotheses were addressed in this study:

RQ1: What are parent and adolescent perceptions of the parent’s work-family balance and parenting satisfaction, and how do they relate with each other?

H1: Parent and adolescent perceptions about the parent’s work-family balance and parenting satisfaction will be moderately related. Parent and adolescent perceptions about the parent’s work interrupting home life will have a stronger relationship.

RQ2: How do parent perceptions of their work-family balance and parenting satisfaction associate with their adolescent’s psychosocial well-being?

H2: Parent perceptions of better work-family balance, decreased work interrupting home life, better boundary control, and increased parenting
satisfaction will be associated with increased adolescent cognitive autonomy, emotional autonomy, and self-esteem.

RQ3: Do contextual factors, such as financial strain or the COVID-19 shutdown, play a role in the parent’s perceptions of their work-family balance and parenting satisfaction?

H3: Parents experiencing financial strain due to low income will have more negative perceptions about their work-family balance and their parenting satisfaction. Parents who report a more difficult experience with the COVID-19 shutdown will also report more negative perceptions about their work-family balance and parenting satisfaction.
CHAPTER 4: RESULTS

How Parent and Adolescent Perceptions Relate to Each Other

To answer the first research question, “What are parent and adolescent perceptions of the parent’s work-family balance and parenting satisfaction, and how do they relate with each other?” I used Pearson’s correlation coefficient (Pearson’s $r$) to discern how parent perceptions of work-family balance, work interrupting non-work behavior, boundary control, and parenting satisfaction related to adolescent perceptions of their parent’s work-family balance, work interrupting home life, boundary control, and parenting satisfaction. Pearson’s $r$ showed that across the studied variables, parent and adolescent perceptions had moderate ($r = 0.4$) to strong ($r = 0.7$), positive correlations.

Perceptions about the parent’s work-family balance were moderately correlated, $r(199) = .58$, $p < .001$ (Parent: $M = 3.43$, $SD = 0.63$; Adolescent: $M = 3.55$, $SD = 0.62$). Perceptions about the parent’s work interrupting non-work behavior were strongly correlated, $r(199) = .70$, $p < .001$ (Parent: $M = 2.71$, $SD = 0.92$; Adolescent: $M = 2.54$, $SD = 0.94$). Perceptions about the parents boundary control were moderately correlated, $r(199) = .46$, $p < .001$ (Parent: $M = 4.21$, $SD = 0.63$; Adolescent: $M = 3.92$, $SD = 0.63$). And perceptions about the parents parenting satisfaction were also moderately correlated, $r(199) = .64$, $p < .001$ (Parent: $M = 3.34$, $SD = 0.43$; Adolescent: $M = 3.43$, $SD = 0.47$; see Table 3).
To answer the second research question, “How do parent perceptions of parent work-family balance and parenting satisfaction associate with adolescent psychosocial development?” I used multiple linear regression. Analysis for this research question was accomplished using three separate multiple linear regressions. For each regression, I looked at one aspect of adolescent psychosocial well-being (cognitive autonomy, emotional autonomy, and self-esteem) separately.

### Cognitive Autonomy

For the first part of the second research question, I assessed how parent perceptions of their work-family balance, work interrupting home life, boundary control, and parenting satisfaction predicted adolescent cognitive autonomy while controlling for
the adolescent’s age and the gender composition of the parent-adolescent dyad. The initial, full model showed that only parent perceptions of their work-family balance ($p = .016$) and parenting satisfaction ($p < .001$) significantly associated with adolescent reported cognitive autonomy (see Table 4).

**Table 4**

*Full Cognitive Autonomy Model*

<table>
<thead>
<tr>
<th>Variable</th>
<th>B (SE)</th>
<th>$p$</th>
<th>Cohen’s $f^2$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Control Covariates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept</td>
<td>1.43 (0.40)</td>
<td>&lt; .001***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adolescent Age, years</td>
<td>.504</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyad Gender Composition</td>
<td>.710</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Work-Family Balance</td>
<td>0.10 (0.04)</td>
<td>.016*</td>
<td>0.04</td>
<td>[0.00, 0.12]</td>
</tr>
<tr>
<td>Parent Work Interrupting Non-Work</td>
<td>0.04 (0.03)</td>
<td>.156</td>
<td>0.01</td>
<td>[0.00, 0.07]</td>
</tr>
<tr>
<td>Parent Boundary Control</td>
<td>0.08 (0.04)</td>
<td>.054</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
<tr>
<td>Parent Parenting Satisfaction</td>
<td>0.39 (0.06)</td>
<td>&lt; .001***</td>
<td>0.46</td>
<td>[0.27, 0.70]</td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (4.1)*

To balance parsimony and generalizability, I conducted two reduced models: one included cognitive autonomy, parent work-family balance, and parenting satisfaction; the other included cognitive autonomy, parent work-family balance, parenting satisfaction, and boundary control. I used Likelihood Ratio Tests to determine if the reduced models were a better fit without hurting the model (balancing parsimony and generalizability). I
found that the best fitting model was one that included parent work-family balance, parenting satisfaction, and boundary control. Removing boundary control significantly hurt the model ($p = .048$; see Appendix, pg. 110).

Next, I ran standardized regression coefficients and Cohen’s partial $f^2$ on the reduced model. It showed that parent perceptions of their work-family balance had a significant ($p = .021$), though small ($f^2 = .04$) association with adolescent cognitive autonomy. Parent perceptions of their boundary control also had a significant ($p = .049$), yet small ($f^2 = .02$) association with adolescent cognitive autonomy. And parent’s parenting satisfaction had a statistically significant ($p < .001$), and large ($f^2 = .45$), association with adolescent cognitive autonomy. These results show that the more positively parents perceived their work-family balance, boundary control, and parenting satisfaction, the more cognitive autonomy their adolescent reported (see Table 5).

Table 5
Reduced Cognitive Autonomy Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized $\beta$ (SE)</td>
<td>Multiple Linear Regression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td>$p$</td>
<td>Cohen’s $f^2$</td>
<td>95% CI</td>
</tr>
<tr>
<td>Parent Work-Family Balance</td>
<td>0.15 (0.04)</td>
<td>.021*</td>
<td>0.04</td>
<td>[0.00, 0.12]</td>
</tr>
<tr>
<td>Parent Boundary Control</td>
<td>0.13 (0.04)</td>
<td>.049*</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
<tr>
<td>Parent Parenting Satisfaction</td>
<td>0.44 (0.06)</td>
<td>&lt;.001***</td>
<td>0.45</td>
<td>[0.27, 0.69]</td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (4.2)
**Emotional Autonomy**

For the second aspect of adolescent psychosocial well-being, I looked at how parent perceptions of their work-family balance, work interrupting home life, boundary control, and parenting satisfaction predicted adolescent emotional autonomy while controlling for the adolescent’s age and the gender composition of the parent-adolescent dyad. The initial, full model showed that only parent’s perceptions of work interrupting their home life significantly ($p = .021$) associated with adolescent reported emotional autonomy (see Table 6).

**Table 6**

*Full Emotional Autonomy Model*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>$p$</td>
<td>Cohen’s $f^2$</td>
<td>95% CI</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.6 (0.67)</td>
<td>&lt;.001***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adolescent Age, years</td>
<td></td>
<td>.861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyad Gender Composition</td>
<td></td>
<td>.469</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Work-Family Balance</td>
<td>0.04 (0.07)</td>
<td>.530</td>
<td>0.01</td>
<td>[0.00, 0.07]</td>
</tr>
<tr>
<td>Parent Work Interrupting Non-Work</td>
<td>-0.10 (0.04)</td>
<td>.021*</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
<tr>
<td>Parent Boundary Control</td>
<td>0.09 (0.07)</td>
<td>.178</td>
<td>0.01</td>
<td>[0.00, 0.06]</td>
</tr>
<tr>
<td>Parent Parenting Satisfaction</td>
<td>0.14 (0.10)</td>
<td>.160</td>
<td>0.03</td>
<td>[0.00, 0.10]</td>
</tr>
</tbody>
</table>

*$p < .05$, **$p < .01$, ***$p < .001$. (5.1)*
I ran a Likelihood Ratio Test to discern if the reduced model, which removed five other predictors (adolescent age, the dyad’s gender composition, parent work-family balance, parent boundary control, and parenting satisfaction), was a better fit than the full model. I found that the reduced model, which only included parent perceptions of the work interrupting home life, was a better fit and so I used that model to satisfy parsimony and generalizability ($p = .121$; see Appendix, pg. 124).

Using the reduced model, I ran a standardized regression and Cohen’s partial $f^2$ to determine how much variability this model accounted for and if it was statistically significant. This analysis showed that parent perceptions of their work interrupting their personal life had a significant ($p = .024$), but small ($f^2 = .03$) association with adolescent emotional autonomy. The model showed that the more parents perceived their work interrupting their personal life activities, the lower emotional autonomy their adolescent reported (see Table 7).

### Table 7

*Reduced Emotional Autonomy Model*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
<th></th>
<th>Cohen’s $f^2$</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized β (SE)</td>
<td>$p$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Work Interrupting Non-Work</td>
<td>-0.16 (0.04)</td>
<td>.024*</td>
<td>0.03</td>
<td>[0.00, 0.09]</td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (5.2)*
For the third aspect of adolescent psychosocial well-being, I evaluated how parent perceptions of their work-family balance, work interrupting home life, boundary control, and parenting satisfaction predicted adolescent self-esteem while controlling for the adolescent’s age and the gender composition of the parent-adolescent dyad. The full, initial model showed that parent perceptions of their work-family balance \((p < .001)\) and parenting satisfaction \((p = .004)\) significantly associated with their child’s reported self-esteem (see Table 8).

**Table 8**

*Full Self-Esteem Model*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>(p)</td>
<td>Cohen’s (f^2)</td>
<td>95% CI</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.35 (0.54)</td>
<td>.013*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adolescent Age, years</td>
<td></td>
<td>.776</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyad Gender Composition</td>
<td></td>
<td>.776</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Work-Family Balance</td>
<td>0.33 (0.05)</td>
<td>&lt;.001***</td>
<td>0.24</td>
<td>[0.12, 0.41]</td>
</tr>
<tr>
<td>Parent Work Interrupting Non-Work</td>
<td>-0.04 (0.03)</td>
<td>.196</td>
<td>&lt;.001</td>
<td>[0.00, 0.05]</td>
</tr>
<tr>
<td>Parent Boundary Control</td>
<td>-0.01 (0.05)</td>
<td>.916</td>
<td>&lt;.001</td>
<td>[0.00, 0.01]</td>
</tr>
<tr>
<td>Parent Parenting Satisfaction</td>
<td>0.23 (0.08)</td>
<td>.004**</td>
<td>0.17</td>
<td>[0.07, 0.31]</td>
</tr>
</tbody>
</table>

\*\(*p < .05\). **\(p < .01\). ***\(p < .001\). (6.1)
I then ran a Likelihood Ratio Test to determine if the reduced model that included only the two significant predictors had a better fit than the full model. I found that the reduced model with only parent perceptions of their work-family balance and parenting satisfaction was a better fit ($p = .862$; see Appendix, pg. 137).

Using the reduced model, I ran a standardized regression and Cohen’s partial $f^2$ to determine the relationship between parent work-family balance, parenting satisfaction, and adolescent self-esteem. The reduced model showed that parent perceptions of their work-family balance had a significant ($p < .001$), but small ($f^2 = .24$) association with adolescent self-esteem. It also showed that parent perceptions of their parenting satisfaction had a significant ($p = .004$), though small ($f^2 = .17$) association with adolescent self-esteem. This model indicated the more positively parents perceived their work-family balance and parenting satisfaction, the higher self-esteem their adolescent reported (see Table 9).

### Table 9

**Reduced Self-Esteem Model**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standardized β (SE)</td>
<td>$p$</td>
<td>Cohen’s $f^2$</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Work-Family Balance</td>
<td>0.44 (0.05)</td>
<td>&lt; .001***</td>
<td>0.24</td>
</tr>
<tr>
<td>Parent Parenting Satisfaction</td>
<td>0.19 (0.07)</td>
<td>.004**</td>
<td>0.17</td>
</tr>
</tbody>
</table>

*p < .05. ** $p < .01. *** $p < .001. (6.2)
Financial Strain, COVID-19, and Parent Perceptions

To answer the third research question, “Do contextual factors, such as financial strain or the COVID-19 shutdown, play a role in the parent’s perceptions of their work-family balance and parenting satisfaction?” I conducted two linear regressions and looked at the interaction effects on the constructs of work-life balance and parenting satisfaction separately.

Perceptions of Work-Family Balance

I first examined how financial strain and experiences balancing work and family during the COVID-19 shutdown associated with parent perceptions of their work-family balance. For the purposes of this study, annual gross income was collapsed into two categories: parents who made less than $25,000 annually ($n = 7$) and parents who made more than $25,000 annually ($n = 194$).

The first regression model assessed how parent’s annual gross income, perceptions of their work-family balance during the COVID-19 shutdown, and the interaction between the two affected parent perceptions of their work-family balance. Analyses showed that only annual gross income ($p = .028$) significantly predicted parent perceptions of their overall work-family balance. There was no interaction between annual gross income and parent perceptions of their work-family balance during the COVID-19 shutdown ($p = .993$; see Table 10).

Next, I conducted a t-test to determine if there was a difference between parents in the two groups of annual gross income. The test showed a large ($d = .89$) and significant ($p = .021$) difference between parents who made less than $25,000 and those who made more than $25,000 annually. Parents who made less than $25,000 annually
Table 10

Associations of Annual Gross Income and COVID-19 Perceptions on Parent Work-Family Balance

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.42 (0.05)</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
</tr>
<tr>
<td>Annual Gross Income</td>
<td>-0.53 (0.24)</td>
</tr>
<tr>
<td>Parent Work-Family Balance During COVID-19</td>
<td>0.06 (0.04)</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.00 (0.22)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>t</strong></td>
<td><strong>p</strong></td>
</tr>
<tr>
<td>Intercept</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Annual Gross Income</td>
<td>-2.22</td>
</tr>
<tr>
<td>Parent Work-Family Balance During COVID-19</td>
<td>1.56</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001. (7.1)

reported more negative perceptions of their overall work-family balance (\(M = 2.89, SE = 0.66\)) than parents who made more than $25,000 annually (\(M = 3.45, SE = 0.61\); see Table 11).

Table 11

Group Differences Between Annual Gross Income Categories on Work-Family Balance

<table>
<thead>
<tr>
<th>Variable</th>
<th>t-test</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>t</strong></td>
<td><strong>p</strong></td>
</tr>
<tr>
<td>Intercept</td>
<td>3.45 (0.04)</td>
<td>&lt; .001***</td>
</tr>
<tr>
<td>Annual Gross Income</td>
<td>-0.56 (0.24)</td>
<td>.021*</td>
</tr>
</tbody>
</table>

*p < .05. **p < .01. ***p < .001. (7.2)
Perceptions of Parenting Satisfaction

To answer the second part of the third research question, I explored how financial strain and experiences balancing work and family during the COVID-19 shutdown associated with parent perceptions of their parenting satisfaction. To do this, I first ran a regression model with both predictors and their interaction. I found that parent’s experience balancing work and family during the COVID-19 shutdown was the only statistically significant association with their parenting satisfaction ($p = .003$). There was no statistically significant interaction between annual gross income and parent perceptions of their work-family balance during the COVID-19 shutdown ($p = .336$; see Table 12).

Because parent perceptions of their work-family balance during the COVID-19 shutdown was the only statistically significant association, I assessed how each category of work-family balance during COVID-19 associated with parenting satisfaction. The categories were “Significantly Better,” “Somewhat Better,” “Remained the Same,” “Somewhat Worse,” and “Significantly Worse.” Each category had a significant association with parenting satisfaction (see Table 13). After running this regression analysis and a pairwise comparison on this model, I determined it would be better to collapse “Somewhat Worse” and “Significantly Worse” into one “Worse” category (see Appendix, pg. 152).

I then ran another main effects model to discern if these four categories associated with parenting satisfaction. Each category had a significant association with parenting satisfaction (see Table 14). After this analysis I ran a pairwise comparison to determine if there were differences between these categories. I found a significant ($p = .019$), and
Table 12

*Associations of Annual Gross Income and COVID-19 Perceptions on Parenting Satisfaction*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Multiple Linear Regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
</tr>
<tr>
<td>Intercept</td>
<td>3.30 (0.03)</td>
</tr>
<tr>
<td>Independent Variables</td>
<td></td>
</tr>
<tr>
<td>Annual Gross Income</td>
<td>0.27 (0.16)</td>
</tr>
<tr>
<td>Parent Work-Family Balance During COVID-19</td>
<td>0.08 (0.03)</td>
</tr>
<tr>
<td>Interaction</td>
<td>-0.15 (0.15)</td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (8.1)

large (d = .65), difference between parents in the “Worse” category (M = 3.24, SE = 0.06) and parents in the “Significantly Better” category (M = 3.52, SE = 0.07; see Table 15). This finding indicates that parents who felt their work-family balance was somewhat or significantly worse during the pandemic were more likely to report lower parenting satisfaction than parents who felt their work-family balance during the pandemic was significantly better.
### Table 13

*Parenting Satisfaction and COVID-19 Perception Categories*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>t</td>
<td>p</td>
<td></td>
</tr>
<tr>
<td>Significantly Better/Intercept</td>
<td>3.52 (0.07)</td>
<td>50.36</td>
<td>&lt;.001***</td>
<td></td>
</tr>
<tr>
<td>Somewhat Better</td>
<td>-0.19 (0.09)</td>
<td>-2.14</td>
<td>.034*</td>
<td></td>
</tr>
<tr>
<td>Remained the Same</td>
<td>-0.19 (0.09)</td>
<td>-2.23</td>
<td>.027*</td>
<td></td>
</tr>
<tr>
<td>Somewhat Worse</td>
<td>-0.26 (0.10)</td>
<td>-2.65</td>
<td>.009**</td>
<td></td>
</tr>
<tr>
<td>Significantly Worse</td>
<td>-0.36 (0.18)</td>
<td>-2.07</td>
<td>.040*</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (8.2)*

### Table 14

*Parenting Satisfaction and Collapsed “Worse” Category*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Multiple Linear Regression</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE)</td>
<td>t</td>
<td>p</td>
<td></td>
</tr>
<tr>
<td>Significantly Better/Intercept</td>
<td>3.52 (0.07)</td>
<td>50.45</td>
<td>&lt;.001***</td>
<td></td>
</tr>
<tr>
<td>Somewhat Better</td>
<td>-0.19 (0.09)</td>
<td>-2.14</td>
<td>.033*</td>
<td></td>
</tr>
<tr>
<td>Remained the Same</td>
<td>-0.19 (0.09)</td>
<td>-2.23</td>
<td>.027*</td>
<td></td>
</tr>
<tr>
<td>Worse</td>
<td>-0.28 (0.10)</td>
<td>-2.94</td>
<td>.004**</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05. ** p < .01. *** p < .001. (8.3)*
### Table 15

*Group Differences between Collapsed COVID-19 Perception Categories and Parenting Satisfaction*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Pairwise Comparisons</th>
<th>Estimate (SE)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly Better: Somewhat Better</td>
<td></td>
<td>0.19 (0.09)</td>
<td>.143</td>
</tr>
<tr>
<td>Significantly Better: Remained the Same</td>
<td></td>
<td>0.19 (0.09)</td>
<td>.118</td>
</tr>
<tr>
<td>Significantly Better: Worse</td>
<td></td>
<td>0.28 (0.10)</td>
<td>.019*</td>
</tr>
<tr>
<td>Somewhat Better: Remained the Same</td>
<td></td>
<td>0.00 (0.08)</td>
<td>1.00</td>
</tr>
<tr>
<td>Somewhat Better: Worse</td>
<td></td>
<td>0.09 (0.09)</td>
<td>.753</td>
</tr>
<tr>
<td>Remained the Same: Worse</td>
<td></td>
<td>0.08 (0.08)</td>
<td>.739</td>
</tr>
</tbody>
</table>

* *p < .05, ** p < .01, *** p < .001. (8.4)
CHAPTER 5: DISCUSSION

The purpose of this study was to observe the relationships between parent work-family balance, parenting satisfaction, and adolescent psychosocial well-being within the context of financial stress and the COVID-19 shutdown. In this chapter I highlight key findings and implications for each of the three research questions and corresponding hypotheses. To some degree, all three of the hypotheses were confirmed. I found that parent and adolescent perceptions regarding parent work-family balance behaviors and parenting satisfaction were moderately to strongly correlated. I also found that parent work-family behaviors and parenting satisfaction related to adolescent psychosocial well-being. And finally, that contexts such as low annual gross income and low self-ratings of balancing work and family during the COVID-19 shutdown associated with parent perceptions of their work-family balance and parenting satisfaction.

Research Questions and Hypotheses

*Generational Perceptions of Parent Work-Family Balance*

Parent and adolescent perception congruence in this study was similar to trends other researchers have found. Generally, perception agreement between parents and adolescents has been reported, in this study and others, to be low to moderately correlated (De Los Reyes & Ohannessian, 2016; Korelitz & Garber, 2016). This has important implications in relation to Erikson’s theory of psychosocial development. For adolescents to have accurate information toward forming their identity, they need to have accurate perceptions of the important others—in this case parents—they observe, identify with, and differentiate from (Erikson, 1968; Marcia et al., 1993).
It should be noted that in the current study, there was a strong correlation for adolescent and parent perceptions of the parent’s work interrupting home life. It may be that it is easier for parents and adolescents to agree on the degree to which parents’ work interrupts activities at home because it is an observable behavior as opposed to an internal state. And while parents’ work interrupting home life may have initial negative correlations with adolescent outcomes, such as emotional autonomy, it may be fertile ground toward improving family functioning. For example, Human et al. (2016) found that when parents and adolescents both reported high levels of chaos and low levels of routines in their family environment, the adolescent also reported increased depressive symptoms. However, after a second wave of data collection, Human et al. (2016) found these negative perceptions weakened over time, leading these researchers to speculate that it may have been because the parents were aware of the problem and took steps to change it.

**Adolescent Psychosocial Well-Being**

In support of the second hypothesis, when parents’ positive perceptions of their work-family balance and parenting satisfaction increased, their adolescents reported increased cognitive autonomy. This lends evidence to previous research findings that parent perceptions about their work may impact family related processes (Demerouti et al., 2005; Lippold et al., 2018; Van den Eynde et al., 2020) and that parent behaviors affect their adolescent’s autonomy (Hare et al., 2014; Polk, 2013). Perhaps because these parents felt positively about their work-family balance, they may have felt better about their generativity (Erikson, 1968). These parents may have had their own needs met and thus could employ more autonomy supportive behaviors to their adolescent children.
(Mabbe et al., 2018). In other words, they may have had more time and energy to devote to parenting practices that encourage adolescent cognitive autonomy such as having conversations where their child can voice their own opinions (Beckert, 2007). Future researchers could consider a mediation model to determine if parent’s parenting satisfaction mediates the relationship between work-family balance and adolescent cognitive autonomy.

Likewise, when parents reported more negative perceptions of their work interrupting home life, their adolescent reported lower levels of emotional autonomy. This finding supports Kossek et al.’s (2012) finding that parents who had high cross-role interruptions were more likely to experience negative family outcomes. Perhaps parents who reported that their work interrupted their home life had fewer psychological resources and less time to encourage emotional autonomy in their child. Other researchers have reported that when parents report less control over when they work, parents were more likely to use coercive behavior (Matias & Recharte, 2021; Lippold et al., 2018; Van Der Kaap-Deeder et al., 2019). Also, the adolescents may have noticed a decrease in autonomy support when their parents attend to work, and thus may not have the scaffolding to process their emotions independently (see Inguglia et al., 2018; Sessa & Steinberg, 1991).

It is interesting to consider this finding in relation to Erikson’s (1968) theory and the strong correlation found in research question one for parent and adolescent perceptions of the parent’s work interrupting non-work. This finding may be unique when compared to the other psychosocial outcomes because the adolescents in this sample reported more accurate perceptions about their parent’s work interrupting home
life and thus may have perceived their parent’s decreased emotional autonomy because of these interruptions. And because adolescents identify with and differentiate from their parents (Erikson, 1968), they may reflect their parent’s decreased emotional autonomy in their own behavior and psychosocial well-being.

These findings should be viewed in relation to the effects of the global pandemic. Bülow et al. (2021) also found that both parents and adolescents reported declines in autonomy support since starting the COVID-19 shutdown. Those families who were able to maintain work-life boundaries saw more positive adolescent psychosocial outcomes compared to those for whom the pandemic encroached on those work-life boundaries. Though behavioral autonomy was not included in the variables for this study, it might be important for researchers to investigate how adolescents’ independence was affected by parent work-family balance and parenting satisfaction within the context of the COVID-19 pandemic and how adolescents perceived changes across all three domains of autonomy as the pandemic receded.

This study also showed that parents’ positive perceptions about their work-family balance and parenting satisfaction, related to their adolescent children reporting higher levels of self-esteem, further supporting the second hypothesis. Perhaps parents who are comfortable with their work-family balance may perceive having the time necessary to foster the closeness of their relationship with their child, which has been shown in previous studies to relate to an increase in self-esteem (Harris et al., 2015). These parents may also have had the time, energy, and confidence to emotionally support and listen to their adolescent, which in turn improved the child’s self-esteem (Birndorf et al., 2005; Boudreault-Bouchard et al., 2013). This finding has implications for adolescent identity
development (Erikson, 1968) because adolescent self-esteem may influence their identity achievement (Chen, 2019). An important next step in research might include investigating parent and adolescent perceptions on specific parenting mechanisms that improve adolescent self-esteem.

**Context: Financial Strain and COVID-19**

While most of the parents in this study reported income levels that would categorize them as middle or upper class, the few parents who reported annual gross incomes below $25,000 reported more negative experiences balancing their work and family. This finding partially supports the third hypothesis of this study. As Nomaguchi and Milkie (2017) claimed, parents often feel frustration when they do not have control over when they work (see also McLaughlin & Muldoon, 2014; Kossek et al., 2012). It stands to reason that this frustration could be enhanced when financial strain is high. Dealing with the uncertainties of a global pandemic under these pressures would limit balancing opportunities further, leaving parents feeling a lack of control across all areas in their lives. This lack of control could have contributed to parents feeling dissatisfied with their generativity. These parents may not have the resources to give back to their communities or their children in a way that fulfills them (Erikson, 1968), hence they reported more difficulties balancing work and family. Future research can investigate the complex developmental task parents have to be generative to both their community and family. There is much more to be done in research regarding work-family balance such as measurement refinement and theory development (Kossek & Lee, 2017).

A final point which also lent partial support for the third hypothesis was that parent perceptions of their work-family balance during COVID-19 affected their
perceptions of their satisfaction in their parenting role. As previous research has indicated, parents have experienced an overall decrease in the quality of their relationships during the global pandemic (Bülow et al., 2021; Feinberg et al., 2021; Janssen et al., 2020). It is possible that the stress of the pandemic taxed parents’ psychological availability, thus, they may not have been able to connect with, and give to, their family in ways they previously did or hoped to, which decreased how positively they felt about their parenting (Erikson, 1968; Van Der Kaap-Deeder et al., 2019). While this finding applies specifically to the COVID-19 shutdown, there can be a lot of reasons for parents to work from home, maybe even more so in a post-pandemic workforce. Future researchers should explore the differences working from home, by choice or constraint, has on parenting satisfaction and work-life balance.

Limitations

This descriptive study was an important first step in understanding generational perceptions of balancing work and family. Nevertheless, it was not without limitations. A persistent limitation of this type of study is the use of a self-selected sample of convenience. Data collection was dependent on parents’ responding to marketing by the Qualtrics panel. Parents opted into the study and recruited the participation of their adolescent child. Additionally, Qualtrics panels are a relatively newer form of data collection. Thus, quality checks for data collected through Qualtrics panels are rudimentary at present.

One of the strengths of an online survey is that it can get to populations previously out of reach for most research teams. However, one limitation to using online surveys is that the research team cannot be present to ensure the study is completed as the
team designed. In this study specifically, there was no way to verify that parents let their adolescent child take the survey alone, without undue influence. The research team designed the survey such that each party should be able to answer freely without undue influence from the other. But online surveys render oversight impossible.

Using Qualtrics panels allowed the research team access to a broader and more diverse sample than may be possible without this service. While the sample in this study is not a homogeneous sample, it falls short of a nationally representative sample, presenting another limitation. According to the 2020 United States Census 61.6% of the population identified as White, 6% as Asian, 12.4% Black or African American, 18.7% identified as Latinx or Hispanic, and 2.9% as multiracial (Jones et al., 2021). The vast majority of the sample in this study identified as White (Parent = 83.1%, Adolescent = 80.1%), and thus care should be taken when generalizing these results. It was unfortunate that the sample for the current study was not more diverse in both ethnicity and socioeconomic status as recent evidence indicates that the effects of the pandemic were especially egregious in the United States for people of color and for the economically disadvantaged, as demonstrated in Maiya et al.’s (2021) pandemic study which concluded that COVID-19 related financial hardship poses a risk to adolescent school bonding.

A final limitation is that studying a once-in-a-century pandemic is difficult. There was no previous framework or theory for studying a pandemic such as COVID-19. Hence, I cannot be sure that the question asked about the pandemic truly captured parents’ and adolescents’ experiences balancing life and family when all of life (working, schooling, and living) was being done from home. It is my hope that this study will add to other researchers’ pandemic studies and help clarify what people experienced during
Conclusion

Erikson (1968) theorized that both parents and adolescents have developmental, psychosocial crises to overcome. For parents, that involves learning how to be generative. For adolescents, it is committing to an identity. Parents often need to balance their work and their family in a way that meets their psychosocial needs and provides for their child’s immediate needs. In this study, positive parent perceptions about their work-family balance and parenting satisfaction were related to positive outcomes in their adolescent’s cognitive autonomy and self-esteem. And often there are factors outside of parents’ control, like financial strain and COVID-19, that can constrain their resources to balance in a satisfactory way. This study provided support that when parents’ psychosocial needs are met through satisfactory work-family balance and parenting, adolescents’ psychosocial needs also get met.
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https://doi.org/10.1016/j.jadohealth.2004.08.012


https://doi.org/10.1111/sode.12107

https://doi.org/10.1016/j.adolescence.2013.05.002

https://doi.org/10.1037/dev0001208


https://doi.org/10.1007/s10964-016-0517-z

https://doi.org/10.1007/s10826-014-0050-1

https://doi.org/10.1007/s10804-014-9196-8

https://doi.org/10.1007/s11031-018-9702-6

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https://doi.org/10.1080/15295192.2018.1444131

https://doi.org/10.1111/jora.12653

https://doi.org/10.1007/978-1-4163-8330-7


https://doi.org/10.1002/casp.2183

https://doi.org/10.1016/j.adolescence.2016.01.008

https://doi.org/10.1111/j.1741-3737.2010.00768.x
https://doi.org/10.1007/s11205-017-1716-z


https://doi.org/10.1023/A:1010400721676

https://doi.org/10.1037/ocp0000145

https://doi.org/10.2307/352705

https://doi.org/10.1037/a0025558


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[https://doi.org/10.2307/1130361](https://doi.org/10.2307/1130361)


Appendix: R Code
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<td>81</td>
</tr>
<tr>
<td>WinNW Scale</td>
<td>82</td>
</tr>
<tr>
<td>Parent</td>
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<tr>
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<tr>
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Preparation

Libraries

```r
library(readxl)
library(dplyr)
library(ggplot2)
library(furniture)
library(tidyverse)
library(psych)
library(polycor)
library(janitor)
library(texreg)
library(rsq)
library(performance)
library(ppcor)
library(ltm)
library(tinytex)
```
Exploratory Data Analysis

Summary Statistics

Parents

This code produces Table 1 in the document.

df_wide %>%
  furniture::table1("Marital Status" = marstatus,
  "Ethnicity" = parent_ethnicity,
  "Gender of Child" = child_gender,
  "Age, years" = parent_age,
  "Annual Gross Income" = angrossinc,
  splitby = ~ parent_gender,
  na.rm = TRUE,
  total = TRUE,
  test = TRUE,
  digits = 2,
  caption = "Parental Demographics",
  output = "markdown")

Adolescent

This code produces Table 2 in the document.

df_long %>%
dplyr::filter(who == "child") %>%
  furniture::table1("Ethnicity" = ethnicity,
  "Age, years" = age,
  "Grades" = grades,
  splitby = ~ gender,
  na.rm = FALSE,
  total = TRUE,
  test = TRUE,
  digits = 2,
  caption = "Adolescent Demographics",
  output = "markdown")
Visualizations

Parent

Marital Status

df_long %>%
dplyr::filter(who == "parent") %>%
ggplot(aes(marstatus)) +
geom_bar() +
theme_bw() +
labs(x = "Marital Status of Parent",
y = "Frequency")

Figure 1: Distribution of Parent Marital Status
df_long %>%
dplyr::filter(who == "parent") %>%
dplyr::group_by(gender, marstatus) %>%
dplyr::tally() %>%
dplyr::group_by(gender) %>%
dplyr::mutate(per = 100*n/sum(n)) %>%
ggplot(aes(x = marstatus,
          y = per,
          fill = gender)) +
  geom_col(position = position_dodge()) +
  theme_bw() +
  labs(x = "Marital Status of Parent",
       y = "Percent",
       fill = "Parent Gender")

Figure 2: Distribution of Parent Marital Status by Gender
Age

```r
df_long %>%
  dplyr::filter(who == "parent") %>%
  ggplot(aes(age)) +
  geom_histogram(binwidth = 3) +
  facet_wrap(~ gender, ncol = 1) +
  theme_bw() +
  labs(x = "Parent Age",
       y = NULL)
```

**Figure 3: Distribution of Parent Age by Gender**
df_long %>%
  dplyr::filter(who == "parent") %>%
  ggplot(aes(ethnicity)) +
  geom_bar() +
  coord_flip() +
  theme_bw() +
  labs(x = "Parent Ethnicity",
       y = NULL)

Figure 4: Distribution of Parent Ethnicity
Gender

df_long %>%
dplyr::filter(who == "parent") %>%
ggplot(aes(gender)) +
geom_bar() +
theme_bw() +
labs(x = "Parent Gender",
     y = NULL)

![Distribution of Parent Gender](image)

*Figure 5: Distribution of Parent Gender*
Figure 6: Distribution of Gender Composition within Dyad
Annual Gross Income

df_long %>%
ggplot(aes(angrossinc)) +
geom_bar() +
coord_flip() +
theme_bw() +
labs(x = "Annual Gross Income",
y = NULL)

Figure 7: Distribution of Parent Annual Gross Income
Adolescent Ethnicity

Figure 8: Distribution of Adolescent Ethnicity
Grades

```
df_long %>%
  dplyr::filter(who == "child") %>%
  ggplot(aes(grades)) +
  geom_bar() +
  theme_bw() +
  labs(x = "Grades",
       y = NULL)
```

*Figure 9: Distribution of Adolescent Grades*
Gender

df_long %>%
dplyr::filter(who == "child") %>%
ggplot(aes(age)) +
geom_histogram(binwidth = 0.88) +
facet_wrap(~ gender, ncol = 1) +
theme_bw() +
labs(x = "Adolescent Age",
y = NULL)

Figure 10: Distributions of Adolescent Gender and Age
Alphas

BWF Scale

Parent

df_long %>%
dplyr::filter(who == "parent") %>%
dplyr::select(BWF1, BWF2R, BWF3R, BWF4) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55</td>
<td>0.56</td>
<td>0.54</td>
<td>0.24</td>
<td>1.3</td>
<td>0.052</td>
<td>3.4</td>
<td>0.63</td>
<td>0.21</td>
</tr>
</tbody>
</table>

lower alpha upper 95% confidence boundaries
0.45 0.55 0.65

Reliability if an item is dropped:

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
<td>0.47</td>
<td>0.46</td>
<td>0.38</td>
<td>0.22</td>
<td>0.86</td>
<td>0.063</td>
<td>0.042</td>
<td>0.20</td>
</tr>
<tr>
<td>BWF2R</td>
<td>0.48</td>
<td>0.51</td>
<td>0.46</td>
<td>0.26</td>
<td>1.04</td>
<td>0.065</td>
<td>0.042</td>
<td>0.20</td>
</tr>
<tr>
<td>BWF3R</td>
<td>0.50</td>
<td>0.55</td>
<td>0.48</td>
<td>0.29</td>
<td>1.20</td>
<td>0.062</td>
<td>0.031</td>
<td>0.22</td>
</tr>
<tr>
<td>BWF4</td>
<td>0.45</td>
<td>0.44</td>
<td>0.37</td>
<td>0.21</td>
<td>0.80</td>
<td>0.063</td>
<td>0.014</td>
<td>0.22</td>
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</table>

Item statistics

<table>
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<th>n raw.r</th>
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<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
<td>201</td>
<td>0.62</td>
<td>0.55</td>
<td>0.36</td>
<td>4.2</td>
</tr>
<tr>
<td>BWF2R</td>
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<td>0.71</td>
<td>0.43</td>
<td>0.34</td>
<td>3.1</td>
</tr>
<tr>
<td>BWF3R</td>
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<td>0.65</td>
<td>0.38</td>
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<td>BWF4</td>
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</table>

Non missing response frequency for each item

<table>
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<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
<td>0.01</td>
<td>0.02</td>
<td>0.08</td>
<td>0.54</td>
<td>0.34</td>
</tr>
<tr>
<td>BWF2R</td>
<td>0.07</td>
<td>0.28</td>
<td>0.22</td>
<td>0.32</td>
<td>0.10</td>
</tr>
<tr>
<td>BWF3R</td>
<td>0.20</td>
<td>0.38</td>
<td>0.25</td>
<td>0.15</td>
<td>0.02</td>
</tr>
<tr>
<td>BWF4</td>
<td>0.01</td>
<td>0.05</td>
<td>0.11</td>
<td>0.53</td>
<td>0.30</td>
</tr>
</tbody>
</table>
Adolescent

df_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(BWF1, BWF2R, BWF3R, BWF4) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55</td>
<td>0.56</td>
<td>0.58</td>
<td>0.24</td>
<td>1.3</td>
<td>0.05</td>
<td>3.6</td>
<td>0.62</td>
<td>0.3</td>
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</tbody>
</table>

lower alpha upper 95% confidence boundaries
0.45 0.55 0.64

Reliability if an item is dropped:

<table>
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<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
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<th>se</th>
<th>var.r</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
<td>0.42</td>
<td>0.39</td>
<td>0.36</td>
<td>0.18</td>
<td>0.65</td>
<td>0.042</td>
<td>0.294</td>
<td></td>
</tr>
<tr>
<td>BWF2R</td>
<td>0.32</td>
<td>0.38</td>
<td>0.43</td>
<td>0.17</td>
<td>0.62</td>
<td>0.088</td>
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</tr>
<tr>
<td>BWF3R</td>
<td>0.63</td>
<td>0.68</td>
<td>0.61</td>
<td>0.41</td>
<td>2.12</td>
<td>0.045</td>
<td>0.023</td>
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</tr>
<tr>
<td>BWF4</td>
<td>0.47</td>
<td>0.45</td>
<td>0.41</td>
<td>0.22</td>
<td>0.83</td>
<td>0.060</td>
<td>0.297</td>
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</tbody>
</table>

Item statistics

<table>
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<tr>
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<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
<td>201</td>
<td>0.67</td>
<td>0.74</td>
<td>0.66</td>
<td>0.42</td>
<td>4.3</td>
</tr>
<tr>
<td>BWF2R</td>
<td>201</td>
<td>0.81</td>
<td>0.74</td>
<td>0.59</td>
<td>0.48</td>
<td>3.3</td>
</tr>
<tr>
<td>BWF3R</td>
<td>201</td>
<td>0.53</td>
<td>0.47</td>
<td>0.17</td>
<td>0.15</td>
<td>1.23</td>
</tr>
<tr>
<td>BWF4</td>
<td>201</td>
<td>0.60</td>
<td>0.69</td>
<td>0.59</td>
<td>0.36</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>1 2 3 4 5 miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>BWF1</td>
</tr>
<tr>
<td>BWF2R</td>
</tr>
<tr>
<td>BWF3R</td>
</tr>
<tr>
<td>BWF4</td>
</tr>
</tbody>
</table>
WinNW Scale

Parent

df_long %>%
dplyr::filter(who == "parent") %>%
dplyr::select(WINWB1:WINWB5) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th></th>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0.82</td>
<td>0.82</td>
<td>0.8</td>
<td>0.47</td>
<td>4.5</td>
<td>0.021</td>
<td>2.7</td>
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</tr>
</tbody>
</table>

lower alpha upper 95% confidence boundaries
0.78 0.82 0.86

Reliability if an item is dropped:

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<th>S/N</th>
<th>ase</th>
<th>var.r</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>0.80</td>
<td>0.80</td>
<td>0.76</td>
<td>0.50</td>
<td>4.0</td>
<td>0.023</td>
<td>0.0057</td>
<td>0.50</td>
</tr>
<tr>
<td>WINWB2</td>
<td>0.78</td>
<td>0.79</td>
<td>0.74</td>
<td>0.48</td>
<td>3.7</td>
<td>0.025</td>
<td>0.0100</td>
<td>0.47</td>
</tr>
<tr>
<td>WINWB3</td>
<td>0.76</td>
<td>0.77</td>
<td>0.73</td>
<td>0.45</td>
<td>3.3</td>
<td>0.027</td>
<td>0.0052</td>
<td>0.46</td>
</tr>
<tr>
<td>WINWB4</td>
<td>0.78</td>
<td>0.78</td>
<td>0.75</td>
<td>0.48</td>
<td>3.6</td>
<td>0.025</td>
<td>0.0066</td>
<td>0.43</td>
</tr>
<tr>
<td>WINWB5</td>
<td>0.77</td>
<td>0.77</td>
<td>0.73</td>
<td>0.46</td>
<td>3.4</td>
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<td>0.0060</td>
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</tr>
</tbody>
</table>

Item statistics

<table>
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<th>Item</th>
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<th>raw.r</th>
<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>201</td>
<td>0.73</td>
<td>0.72</td>
<td>0.61</td>
<td>0.55</td>
<td>2.9</td>
<td>1.3</td>
</tr>
<tr>
<td>WINWB2</td>
<td>201</td>
<td>0.75</td>
<td>0.75</td>
<td>0.66</td>
<td>0.60</td>
<td>3.5</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB3</td>
<td>201</td>
<td>0.80</td>
<td>0.80</td>
<td>0.74</td>
<td>0.66</td>
<td>2.4</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB4</td>
<td>201</td>
<td>0.75</td>
<td>0.76</td>
<td>0.67</td>
<td>0.60</td>
<td>2.6</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB5</td>
<td>201</td>
<td>0.77</td>
<td>0.78</td>
<td>0.71</td>
<td>0.64</td>
<td>2.2</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>Item</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>0.18</td>
<td>0.24</td>
<td>0.19</td>
<td>0.26</td>
<td>0.12</td>
<td>0</td>
</tr>
<tr>
<td>WINWB2</td>
<td>0.08</td>
<td>0.15</td>
<td>0.13</td>
<td>0.48</td>
<td>0.15</td>
<td>0</td>
</tr>
<tr>
<td>WINWB3</td>
<td>0.30</td>
<td>0.32</td>
<td>0.14</td>
<td>0.18</td>
<td>0.05</td>
<td>0</td>
</tr>
<tr>
<td>WINWB4</td>
<td>0.21</td>
<td>0.31</td>
<td>0.16</td>
<td>0.28</td>
<td>0.04</td>
<td>0</td>
</tr>
<tr>
<td>WINWB5</td>
<td>0.34</td>
<td>0.34</td>
<td>0.14</td>
<td>0.15</td>
<td>0.02</td>
<td>0</td>
</tr>
</tbody>
</table>
Adolescent

def_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(WINWB1:WINWB5) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.83</td>
<td>0.83</td>
<td>0.82</td>
<td>0.5</td>
<td>5</td>
<td>0.019</td>
<td>2.5</td>
<td>0.94</td>
<td>0.46</td>
</tr>
</tbody>
</table>

lower alpha upper     95% confidence boundaries
0.8 0.83 0.87

Reliability if an item is dropped:

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>alpha</th>
<th>se</th>
<th>var.r</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>0.83</td>
<td>0.83</td>
<td>0.80</td>
<td>0.55</td>
<td>4.9</td>
<td>0.020</td>
<td>0.0083</td>
<td>0.55</td>
</tr>
<tr>
<td>WINWB2</td>
<td>0.81</td>
<td>0.81</td>
<td>0.78</td>
<td>0.52</td>
<td>4.4</td>
<td>0.022</td>
<td>0.0137</td>
<td>0.51</td>
</tr>
<tr>
<td>WINWB3</td>
<td>0.78</td>
<td>0.78</td>
<td>0.74</td>
<td>0.48</td>
<td>3.6</td>
<td>0.025</td>
<td>0.0041</td>
<td>0.46</td>
</tr>
<tr>
<td>WINWB4</td>
<td>0.79</td>
<td>0.79</td>
<td>0.75</td>
<td>0.48</td>
<td>3.7</td>
<td>0.025</td>
<td>0.0079</td>
<td>0.45</td>
</tr>
<tr>
<td>WINWB5</td>
<td>0.78</td>
<td>0.79</td>
<td>0.75</td>
<td>0.48</td>
<td>3.7</td>
<td>0.025</td>
<td>0.0091</td>
<td>0.44</td>
</tr>
</tbody>
</table>

Item statistics

<table>
<thead>
<tr>
<th>n</th>
<th>raw.r</th>
<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>201</td>
<td>0.70</td>
<td>0.57</td>
<td>0.53</td>
<td>2.8</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB2</td>
<td>201</td>
<td>0.74</td>
<td>0.64</td>
<td>0.59</td>
<td>3.1</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB3</td>
<td>201</td>
<td>0.81</td>
<td>0.77</td>
<td>0.69</td>
<td>2.1</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB4</td>
<td>201</td>
<td>0.81</td>
<td>0.75</td>
<td>0.68</td>
<td>2.4</td>
<td>1.2</td>
</tr>
<tr>
<td>WINWB5</td>
<td>201</td>
<td>0.81</td>
<td>0.76</td>
<td>0.69</td>
<td>2.3</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINWB1</td>
<td>0.15</td>
<td>0.32</td>
<td>0.18</td>
<td>0.25</td>
<td>0.09</td>
</tr>
<tr>
<td>WINWB2</td>
<td>0.12</td>
<td>0.21</td>
<td>0.21</td>
<td>0.37</td>
<td>0.09</td>
</tr>
<tr>
<td>WINWB3</td>
<td>0.37</td>
<td>0.35</td>
<td>0.10</td>
<td>0.35</td>
<td>0.03</td>
</tr>
<tr>
<td>WINWB4</td>
<td>0.28</td>
<td>0.33</td>
<td>0.15</td>
<td>0.20</td>
<td>0.04</td>
</tr>
<tr>
<td>WINWB5</td>
<td>0.34</td>
<td>0.31</td>
<td>0.14</td>
<td>0.16</td>
<td>0.05</td>
</tr>
</tbody>
</table>
BC Scale

*Parent*

df_long %>%
dplyr::filter(who == "parent") %>%
dplyr::select(BC1:BC3) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.78</td>
<td>0.78</td>
<td>0.72</td>
<td>0.55</td>
<td>3.6</td>
<td>0.027</td>
<td>4.2</td>
<td>0.63</td>
<td>0.58</td>
</tr>
</tbody>
</table>

lower alpha upper 95% confidence boundaries
0.73 0.78 0.83

Reliability if an item is dropped:

<table>
<thead>
<tr>
<th>BC1</th>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.73</td>
<td>0.73</td>
<td>0.58</td>
<td>0.58</td>
<td>2.7</td>
<td>0.038</td>
<td>NA</td>
<td>0.58</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BC2</th>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.75</td>
<td>0.75</td>
<td>0.60</td>
<td>0.60</td>
<td>3.0</td>
<td>0.035</td>
<td>NA</td>
<td>0.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BC3</th>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.63</td>
<td>0.64</td>
<td>0.47</td>
<td>0.47</td>
<td>1.8</td>
<td>0.051</td>
<td>NA</td>
<td>0.47</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Item statistics

<table>
<thead>
<tr>
<th>n</th>
<th>raw.r</th>
<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1</td>
<td>201</td>
<td>0.80</td>
<td>0.82</td>
<td>0.68</td>
<td>0.60</td>
<td>4.3</td>
</tr>
<tr>
<td>BC2</td>
<td>201</td>
<td>0.84</td>
<td>0.82</td>
<td>0.66</td>
<td>0.59</td>
<td>4.1</td>
</tr>
<tr>
<td>BC3</td>
<td>201</td>
<td>0.86</td>
<td>0.87</td>
<td>0.78</td>
<td>0.68</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>1 2 3 4 5 miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1</td>
</tr>
<tr>
<td>BC2</td>
</tr>
<tr>
<td>BC3</td>
</tr>
</tbody>
</table>
```r
Adolescent

df_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(BC1, BC2, BC3R) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.4</td>
<td>0.47</td>
<td>0.53</td>
<td>0.23</td>
<td>0.9</td>
<td>0.079</td>
<td>3.6</td>
<td>0.63</td>
<td>0.0079</td>
</tr>
</tbody>
</table>

lower alpha upper     95% confidence boundaries
0.24 0.4 0.55

Reliability if an item is dropped:

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>alpha</th>
<th>se</th>
<th>var.r</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1</td>
<td>-0.010</td>
<td>-0.011</td>
<td>-0.0053</td>
<td>-0.0053</td>
<td>-0.011</td>
<td>0.136</td>
<td>NA</td>
<td>-0.0053</td>
</tr>
<tr>
<td>BC2</td>
<td>0.015</td>
<td>0.016</td>
<td>0.0079</td>
<td>0.0079</td>
<td>0.016</td>
<td>0.133</td>
<td>NA</td>
<td>0.0079</td>
</tr>
<tr>
<td>BC3R</td>
<td>0.818</td>
<td>0.818</td>
<td>0.6915</td>
<td>0.6915</td>
<td>4.483</td>
<td>0.026</td>
<td>NA</td>
<td>0.6915</td>
</tr>
</tbody>
</table>

Item statistics

<table>
<thead>
<tr>
<th>n</th>
<th>raw.r</th>
<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1</td>
<td>201</td>
<td>0.75</td>
<td>0.81</td>
<td>0.7691</td>
<td>0.4180</td>
<td>4.1</td>
</tr>
<tr>
<td>BC2</td>
<td>201</td>
<td>0.74</td>
<td>0.80</td>
<td>0.7604</td>
<td>0.4060</td>
<td>4.1</td>
</tr>
<tr>
<td>BC3R</td>
<td>201</td>
<td>0.59</td>
<td>0.48</td>
<td>0.0019</td>
<td>0.0014</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC1</td>
<td>0.01</td>
<td>0.04</td>
<td>0.11</td>
<td>0.50</td>
<td>0.34</td>
</tr>
<tr>
<td>BC2</td>
<td>0.01</td>
<td>0.03</td>
<td>0.12</td>
<td>0.49</td>
<td>0.34</td>
</tr>
<tr>
<td>BC3R</td>
<td>0.20</td>
<td>0.39</td>
<td>0.20</td>
<td>0.16</td>
<td>0.04</td>
</tr>
</tbody>
</table>
```
PSI Scale

*Parent*

df_long %>%
dplyr::filter(who == "parent") %>%
dplyr::select(PSI1:PSI10) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.85</td>
<td>0.86</td>
<td>0.86</td>
<td>0.38</td>
<td>6.1</td>
<td>0.016</td>
<td>3.3</td>
<td>0.43</td>
<td>0.39</td>
</tr>
</tbody>
</table>

lower alpha upper     95% confidence boundaries
0.82 0.85 0.88

Reliability if an item is dropped:

<table>
<thead>
<tr>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>alpha</th>
<th>se</th>
<th>var.r</th>
<th>med.r</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI1</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
<td>0.37</td>
<td>5.4</td>
<td>0.017</td>
<td>0.0053</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI2</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
<td>0.37</td>
<td>5.4</td>
<td>0.017</td>
<td>0.0065</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI3</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.39</td>
<td>5.6</td>
<td>0.017</td>
<td>0.0064</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI4</td>
<td>0.83</td>
<td>0.84</td>
<td>0.84</td>
<td>0.37</td>
<td>5.2</td>
<td>0.018</td>
<td>0.0066</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI5</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.38</td>
<td>5.6</td>
<td>0.017</td>
<td>0.0063</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI6</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
<td>0.37</td>
<td>5.3</td>
<td>0.017</td>
<td>0.0061</td>
<td>0.38</td>
</tr>
<tr>
<td>PSI7</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.38</td>
<td>5.6</td>
<td>0.017</td>
<td>0.0059</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI8</td>
<td>0.83</td>
<td>0.84</td>
<td>0.84</td>
<td>0.36</td>
<td>5.1</td>
<td>0.018</td>
<td>0.0062</td>
<td>0.37</td>
</tr>
<tr>
<td>PSI9</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.38</td>
<td>5.6</td>
<td>0.017</td>
<td>0.0067</td>
<td>0.39</td>
</tr>
<tr>
<td>PSI10</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.39</td>
<td>5.7</td>
<td>0.017</td>
<td>0.0060</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Item statistics

<table>
<thead>
<tr>
<th>n raw.r</th>
<th>std.r</th>
<th>r.cor</th>
<th>r.drop</th>
<th>mean</th>
<th>sd</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI1</td>
<td>201</td>
<td>0.66</td>
<td>0.68</td>
<td>0.57</td>
<td>0.57</td>
</tr>
<tr>
<td>PSI2</td>
<td>201</td>
<td>0.67</td>
<td>0.68</td>
<td>0.58</td>
<td>0.62</td>
</tr>
<tr>
<td>PSI3</td>
<td>201</td>
<td>0.65</td>
<td>0.62</td>
<td>0.51</td>
<td>0.84</td>
</tr>
<tr>
<td>PSI4</td>
<td>201</td>
<td>0.70</td>
<td>0.72</td>
<td>0.63</td>
<td>3.5</td>
</tr>
<tr>
<td>PSI5</td>
<td>201</td>
<td>0.62</td>
<td>0.64</td>
<td>0.53</td>
<td>3.3</td>
</tr>
<tr>
<td>PSI6</td>
<td>201</td>
<td>0.67</td>
<td>0.69</td>
<td>0.58</td>
<td>3.5</td>
</tr>
<tr>
<td>PSI7</td>
<td>201</td>
<td>0.62</td>
<td>0.62</td>
<td>0.51</td>
<td>3.3</td>
</tr>
<tr>
<td>PSI8</td>
<td>201</td>
<td>0.74</td>
<td>0.75</td>
<td>0.72</td>
<td>3.5</td>
</tr>
<tr>
<td>PSI9</td>
<td>201</td>
<td>0.64</td>
<td>0.63</td>
<td>0.53</td>
<td>3.3</td>
</tr>
<tr>
<td>PSI10</td>
<td>201</td>
<td>0.63</td>
<td>0.61</td>
<td>0.51</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Non missing response frequency for each item

<table>
<thead>
<tr>
<th>1 3 4 miss</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSI1</td>
</tr>
<tr>
<td>PSI2</td>
</tr>
<tr>
<td>PSI3</td>
</tr>
<tr>
<td>PSI4</td>
</tr>
<tr>
<td>PSI5</td>
</tr>
<tr>
<td>PSI6</td>
</tr>
<tr>
<td>PSI7</td>
</tr>
<tr>
<td>PSI8</td>
</tr>
<tr>
<td>PSI9</td>
</tr>
<tr>
<td>PSI10</td>
</tr>
</tbody>
</table>
Adolescent

```r
df_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(PSI1:PSI10) %>%
psych::alpha()
```

Reliability analysis
Call: psych::alpha(x = .)

```
raw_alpha std.alpha G6(smc) average_r S/N  ase mean   sd median_r
0.88      0.89    0.89      0.45 8.2 0.012  3.4 0.47     0.44
```

lower alpha upper     95% confidence boundaries
0.86 0.88 0.91

Reliability if an item is dropped:
```
raw_alpha std.alpha G6(smc) average_r S/N alpha se  var.r med.r
PSI1 0.87      0.87    0.88      0.44 7.0    0.014 0.0061  0.43
PSI2 0.87      0.88    0.88      0.45 7.3    0.013 0.0065  0.43
PSI3 0.87      0.88    0.88      0.45 7.4    0.013 0.0079  0.44
PSI4 0.87      0.88    0.89      0.45 7.3    0.013 0.0081  0.44
PSI5 0.88      0.89    0.89      0.46 7.7    0.013 0.0080  0.45
PSI6 0.87      0.88    0.88      0.44 7.0    0.014 0.0060  0.43
PSI7 0.87      0.88    0.88      0.44 7.0    0.014 0.0061  0.44
PSI8 0.88      0.88    0.88      0.44 7.0    0.013 0.0074  0.44
PSI9 0.88      0.88    0.88      0.46 7.5    0.013 0.0073  0.44
PSI10 0.88     0.89    0.89      0.46 7.8    0.013 0.0075  0.45
```

Item statistics
```
n raw.r std.r r.cor r.drop mean   sd
PSI1 201 0.77  0.78  0.76   0.70  3.6 0.60
PSI2 201 0.71  0.73  0.70   0.64  3.6 0.53
PSI3 201 0.72  0.70  0.66   0.62  3.3 0.79
PSI4 201 0.71  0.72  0.68   0.64  3.6 0.55
PSI5 201 0.67  0.65  0.60   0.56  3.1 0.75
PSI6 201 0.75  0.77  0.74   0.68  3.6 0.59
PSI7 201 0.65  0.66  0.60   0.56  3.4 0.66
PSI8 201 0.76  0.77  0.75   0.69  3.5 0.63
PSI9 201 0.70  0.68  0.64   0.60  3.3 0.75
PSI10 201 0.67  0.65  0.59   0.56  3.2 0.76
```

Non missing response frequency for each item
```
n raw.r std.r r.cor r.drop mean   sd
PSI1 201   0.01 0.03 0.31  0.65   0
PSI2 201   0.00 0.01 0.33  0.65   0
PSI3 201   0.03 0.11 0.39  0.47   0
PSI4 201   0.00 0.02 0.30  0.68   0
PSI5 201   0.01 0.17 0.47  0.35   0
PSI6 201   0.00 0.04 0.30  0.65   0
PSI7 201   0.01 0.07 0.47  0.45   0
PSI8 201   0.01 0.04 0.41  0.53   0
PSI9 201   0.01 0.12 0.37  0.50   0
PSI10 201  0.02 0.16 0.45  0.37   0
```
CASE Inventory

Adolescent

df_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(CA1, CA2, CA3, CA4, CA5R, CA6, CA7, CA8, CA9, CA10, CA11, CA12, CA13, CA14R, CA15, CA16R, CA17, CA18, CA19R, CA20, CA21, CA22, CA23R, CA24, CA25, CA26R, CA27) %>%
psych::alpha()

Some items ( CA5R CA14R CA16R CA23R CA26R ) were negatively correlated with the total scale and probably should be reversed. To do this, run the function again with the 'check.keys=TRUE' option

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th></th>
<th>raw_alpha</th>
<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
<th>sd</th>
<th>median_r</th>
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<td>0.84</td>
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<td>0.017</td>
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<td>0.38</td>
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</table>

lower alpha upper 95% confidence boundaries
0.79 0.82 0.86

Reliability if an item is dropped:

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<th>Item</th>
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<th>std.alpha</th>
<th>G6(smc)</th>
<th>average_r</th>
<th>S/N</th>
<th>ase</th>
<th>mean</th>
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Item statistics

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Non missing response frequency for each item

|    |    |    |    |    |    |
|----|----|----|----|----|
| CA1| 0.02| 0.07| 0.28| 0.35| 0.26|
| CA2| 0.00| 0.03| 0.34| 0.32| 0.30|
| CA3| 0.01| 0.12| 0.31| 0.37| 0.18|
| CA4| 0.01| 0.07| 0.27| 0.38| 0.27|
| CA5R| 0.14| 0.33| 0.39| 0.11| 0.02|
| CA6| 0.00| 0.08| 0.29| 0.36| 0.26|
| CA7| 0.03| 0.13| 0.32| 0.32| 0.21|
| CA8| 0.00| 0.07| 0.30| 0.40| 0.22|
| CA9| 0.00| 0.04| 0.20| 0.47| 0.28|
| CA10| 0.00| 0.04| 0.30| 0.37| 0.29|
| CA11| 0.01| 0.10| 0.27| 0.31| 0.30|
| CA12| 0.02| 0.06| 0.23| 0.36| 0.32|
| CA13| 0.00| 0.03| 0.07| 0.50| 0.40|
| CA14R| 0.12| 0.36| 0.27| 0.19| 0.05|
| CA15| 0.00| 0.04| 0.12| 0.55| 0.28|
| CA16R| 0.09| 0.45| 0.29| 0.14| 0.02|
| CA17| 0.00| 0.04| 0.17| 0.49| 0.30|
| CA18| 0.00| 0.02| 0.09| 0.49| 0.39|
| CA19R| 0.06| 0.24| 0.24| 0.38| 0.08|
| CA20| 0.01| 0.02| 0.11| 0.39| 0.46|
| CA21| 0.00| 0.03| 0.13| 0.54| 0.29|
| CA22| 0.00| 0.01| 0.06| 0.49| 0.44|
| CA23R| 0.08| 0.28| 0.35| 0.22| 0.07|
| CA24| 0.00| 0.04| 0.13| 0.53| 0.29|
| CA25| 0.00| 0.04| 0.30| 0.43| 0.22|
| CA26R| 0.22| 0.47| 0.19| 0.10| 0.01|
| CA27| 0.00| 0.04| 0.17| 0.53| 0.25|
Emotional Autonomy

**Adolescent**

df_long %>%
dplyr::filter(who == "child") %>%
dplyr::select(EA1R, EA2R, EA3, EA4R, EA5R) %>%
psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

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<th>mean</th>
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<td>0.46</td>
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Reliability if an item is dropped:

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<th>mean</th>
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<th>median_r</th>
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Non missing response frequency for each item

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<td>0.26</td>
<td>0.44</td>
<td>0.23</td>
<td>0.03</td>
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Rosenberg Self-Esteem

Adolescent

df_long %>%
  dplyr::filter(who == "child") %>%
  dplyr::select(SE1, SE2, SE3R, SE4, SE5R, SE6, SE7, SE8R, SE9R, SE10R) %>%
  psych::alpha()

Reliability analysis
Call: psych::alpha(x = .)

<table>
<thead>
<tr>
<th>raw_alpha</th>
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<td>0.84</td>
<td>0.86</td>
<td>0.35</td>
<td>5.3</td>
<td>0.017</td>
<td>3.2</td>
<td>0.49</td>
<td>0.34</td>
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lower alpha upper  95% confidence boundaries
0.8 0.83 0.87

Reliability if an item is dropped:

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<td>0.84</td>
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<td>0.86</td>
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<tr>
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<td>0.82</td>
<td>0.84</td>
<td>0.34</td>
<td>4.7</td>
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<tr>
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Item statistics

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Non missing response frequency for each item

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RQ 1: Perceptions

Question: What are parent and adolescent perceptions of parental work-family balance and parenting satisfaction and how do they relate to each other? I will use Pearson’s correlation coefficient (Pearson’s r) to discern how parent perceptions of work-family balance, work interrupting non-work, boundary control, and parenting satisfaction relate to adolescent perceptions of their parent’s work-family balance, work interrupting non-work, boundary control, and parenting satisfaction.

Parent Variables
* parent_bwf_mean_no_5 Parent reported work-family balance
* parent_winwb_mean Parent perceptions of work interrupting non-work
* parent_bc_mean Parent perceptions of their boundary control
* parent.psi_mean Parent reported parenting satisfaction

Adolescent Variables
* child_bwf_mean_no_5 Adolescent reported work-family balance of their parent
* child_winwb_mean Adolescent perceptions of their parent’s work interrupting non-work
* child_bc_mean Adolescent perceptions of their parent’s boundary control
* child.psi_mean Adolescent reported perceptions of their parent’s parenting satisfaction
Correlation Tables

df_wide %>%
dplyr::select("Parent BWF" = parent_bwf_mean_no_5,
               "Parent WinNW" = parent_winwb_mean,
               "Parent BC" = parent_bc_mean,
               "Parent PSI" = parent_psi_mean,
               "Adolescent BWF" = child_bwf_mean_no_5,
               "Adolescent WinNW" = child_winwb_mean,
               "Adolescent BC" = child_bc_mean,
               "Adolescent PSI" = child_psi_mean) %>%
furniture::tableC()

<table>
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<td>-0.189 (0.007)</td>
<td>1.00</td>
</tr>
<tr>
<td>Parent WinNW</td>
<td>-0.324 (&lt;.001)</td>
<td>0.698 (&lt;.001)</td>
<td>-0.061 (0.388)</td>
</tr>
<tr>
<td>Parent BC</td>
<td>0.358 (&lt;.001)</td>
<td>0.01 (0.892)</td>
<td>0.384 (&lt;.001)</td>
</tr>
<tr>
<td>Parent PSI</td>
<td>0.356 (&lt;.001)</td>
<td>0.004 (0.958)</td>
<td>0.416 (&lt;.001)</td>
</tr>
<tr>
<td>Adolescent BWF</td>
<td>0.579 (&lt;.001)</td>
<td>-0.239 (&lt;.001)</td>
<td>0.259 (&lt;.001)</td>
</tr>
<tr>
<td>Adolescent WinNW</td>
<td>-0.324 (&lt;.001)</td>
<td>0.698 (&lt;.001)</td>
<td>-0.061 (0.388)</td>
</tr>
<tr>
<td>Adolescent BC</td>
<td>0.328 (&lt;.001)</td>
<td>0.111 (0.118)</td>
<td>0.459 (&lt;.001)</td>
</tr>
<tr>
<td>Adolescent PSI</td>
<td>0.261 (&lt;.001)</td>
<td>0.001 (0.993)</td>
<td>0.37 (&lt;.001)</td>
</tr>
</tbody>
</table>

1.00

0.196 (0.005) | 1.00
-0.063 (0.376) | -0.435 (<.001) | 1.00
0.416 (<.001) | 0.303 (<.001) | -0.06 (0.935) | 1.00
0.636 (<.001) | 0.308 (<.001) | -0.16 (0.023) | 0.485 (<.001) | 1.00
df_wide %>%
dplyr::select("Parent\nBWF" = parent_bwf_mean_no_5,  
"Parent\nWinW" = parent_winwb_mean, 
"Parent\nBC"  = parent_bc_mean, 
"Parent\nPSI"  = parent_psi_mean, 
"Ad\nBWF"   = child_bwf_mean_no_5,  
"Ad\nWinW"  = child_winwb_mean, 
"Ad\nBC"    = child_bc_mean, 
"Ad\nPSI"   = child_psi_mean) %>%
cor() %>%
corrplot::corrplot.mixed()

Figure 11: Parent and Adolescent Perceptions Correlation Plot
Means and SDs

**BWF**

#Parent BWF

```r
df_wide$parent_bwf_mean_no_5 %>% mean()
[1] 3.431592
```

```r
df_wide$parent_bwf_mean_no_5 %>% sd()
[1] 0.6294716
```

#Adolescent BWF

```r
df_wide$child_bwf_mean_no_5 %>% mean()
[1] 3.552239
```

```r
df_wide$child_bwf_mean_no_5 %>% sd()
[1] 0.6228021
```

**WinNW**

#Parent WinNW

```r
df_wide$parent_winwb_mean %>% mean()
[1] 2.706468
```

```r
df_wide$parent_winwb_mean %>% sd()
[1] 0.920439
```

#Adolescent WinNW

```r
df_wide$child_winwb_mean %>% mean()
[1] 2.541294
```

```r
df_wide$child_winwb_mean %>% sd()
[1] 0.935701
```

**BC**

#Parent BC

```r
df_wide$parent_bc_mean %>% mean()
[1] 4.208955
```

```r
df_wide$parent_bc_mean %>% sd()
[1] 0.6337783
```

#Adolescent BC

```r
df_wide$child_bc_mean %>% mean()
[1] 3.925373
```

```r
df_wide$child_bc_mean %>% sd()
[1] 0.6311037
```
PSI

#Parent PSI
df_wide$parent_psi_mean %>% mean()
[1] 3.342289
df_wide$parent_psi_mean %>% sd()
[1] 0.4307583

#Adolescent PSI
df_wide$child_psi_mean %>% mean()
[1] 3.427363
df_wide$child_psi_mean %>% sd()
[1] 0.4674372
Correlation Statistics

#Parent and Adolescent BWF

```r
cor.test(df_wide$parent_bwf_mean_no_5, df_wide$child_bwf_mean_no_5)
```

Pearson's product-moment correlation

data:  df_wide$parent_bwf_mean_no_5 and df_wide$child_bwf_mean_no_5
t = 10.02, df = 199, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
  0.4791049 0.6642598
sample estimates:
cor
0.5791019

#Parent and Adolescent WinW

```r
cor.test(df_wide$parent_winwb_mean, df_wide$child_winwb_mean)
```

Pearson's product-moment correlation

data:  df_wide$parent_winwb_mean and df_wide$child_winwb_mean
t = 13.747, df = 199, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
  0.6193387 0.7626458
sample estimates:
cor
0.6979131

#Parent and Adolescent BC

```r
cor.test(df_wide$parent_bc_mean, df_wide$child_bc_mean)
```

Pearson's product-moment correlation

data:  df_wide$parent_bc_mean and df_wide$child_bc_mean
t = 7.281, df = 199, p-value = 7.535e-12
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
  0.3419574 0.5614065
sample estimates:
cor
0.4586467

#Parent and Adolescent PSI

```r
cor.test(df_wide$parent_psi_mean, df_wide$child_psi_mean)
```

Pearson's product-moment correlation

data:  df_wide$parent_psi_mean and df_wide$child_psi_mean
t = 11.638, df = 199, p-value < 2.2e-16
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
  0.5460817 0.7120638
sample estimates:
cor
0.6363819
For the three parts of RQ 2, I will assess the main effects of a multiple linear regression. I am not including interactions in these models. For covariates, I will include the adolescent’s age and the gender composition of the parent-adolescent dyad. I am not including ethnicity because there is no compelling literature rationale and the cell sizes for those who identify an ethnicity other than “White” in this sample are not large enough for analysis. I am also not including marital status because the cell sizes for those who identify other than “Married” in this sample are not large enough.

Question: How do parent perceptions of parent work-family balance, work interrupting non-work, boundary control, and parenting satisfaction associate with adolescent reported cognitive autonomy?

DV - Outcome of interest
* child_ca_mean Adolescent reported cognitive autonomy

IV - Predictors of highest interest
* parent_bwf_mean_no_5 Parent reported work-family balance
* parent_winwb_mean Parent perceptions of work interrupting non-work
* parent_bc_mean Parent perceptions of their boundary control
* parent.psi_mean Parent reported parenting satisfaction

Covariates - Controlling for
* child_age Child reported age
* dyad_gender Gender composition of the parent-adolescent dyad
Pairwise Correlations

First, I conducted pairwise correlations and made visual plots to understand how cognitive autonomy associated with each parent variable.

df_wide %>%
dplyr::select("Adolescent CA" = child_ca_mean,
                "Parent PSI"   = parent_psi_mean,
                "Parent BWF"   = parent_bwf_mean_no_5,
                "Parent WinNW" = parent_winwb_mean,
                "Parent BC"    = parent_bc_mean) %>%
furniture::tableC()

<table>
<thead>
<tr>
<th></th>
<th>[1]</th>
<th>[2]</th>
<th>[3]</th>
<th>[4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent CA</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent PSI</td>
<td>0.547 (&lt;.001)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent BWF</td>
<td>0.353 (&lt;.001)</td>
<td>0.356 (&lt;.001)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Parent WinNW</td>
<td>0.06 (0.401)</td>
<td>0.004 (0.958)</td>
<td>-0.189 (0.007)</td>
<td>1.00</td>
</tr>
<tr>
<td>Parent BC</td>
<td>0.352 (&lt;.001)</td>
<td>0.384 (&lt;.001)</td>
<td>0.358 (&lt;.001)</td>
<td>0.01 (0.892)</td>
</tr>
</tbody>
</table>

1.00
```r
df_wide %>%
dplyr::select("Ad\nCA" = child_ca_mean,
"Parent\nPSI" = parent_psi_mean,
"Parent\nBWF" = parent_bwf_mean_no_5,
"Parent\nWinNW" = parent_winwb_mean,
"Parent\nBC" = parent_bc_mean) %>%
cor() %>%
corrplot::corrplot.mixed()
```

*Figure 12: Cognitive Autonomy and Parent Perceptions Correlation Plot*
df_wide %>%
ggplot(aes(x = parent_bwf_mean_no_5,
y = child_ca_mean)) +
labs(x = "Parent Work-Family Balance",
y = "Adolescent Cognitive Autonomy") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")

Figure 13: Cognitive Autonomy and Work-Family Balance Correlation
df_wide %>%
  ggplot(aes(x = parent_winwb_mean,
            y = child_ca_mean)) +
  labs(x = "Parent Work Interrupting Non-Work Behavior",
       y = "Adolescent Cognitive Autonomy") +
  geom_point() +
  theme_bw() +
  geom_smooth(method = "lm")

Figure 14: Cognitive Autonomy and Work Interrupting Non-Work Correlation
df_wide %>%
  ggplot(aes(x = parent_bc_mean,
            y = child_ca_mean)) +
  labs(x = "Parent Boundary Control",
       y = "Adolescent Cognitive Autonomy") +
  geom_point() +
  theme_bw() +
  geom_smooth(method = "lm")

Figure 15: Cognitive Autonomy and Boundary Control Correlation Plot
df_wide %>%
ggplot(aes(x = parent_psi_mean, 
y = child_ca_mean)) +
labs(x = "Parent Parenting Satisfaction", 
y = "Adolescent Cognitive Autonomy") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")

Figure 16: Cognitive Autonomy and Parenting Satisfaction Correlation Plot
Regression Models

Models

*fit_lm_cca_0* Blank model with cognitive autonomy and the covariates

*fit_lm_cca_psi* Model with cognitive autonomy, covariates, and parenting satisfaction

*fit_lm_cca_bwf* Model with cognitive autonomy, covariates, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cca_both* Full model with cognitive autonomy, covariates, parenting satisfaction, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cca_reduce* Model with cognitive autonomy, parenting satisfaction, work-family balance, and boundary control

*fit_lm_cca_reduce2* Model with cognitive autonomy, parenting satisfaction, and work-family balance

After running the full model, I ran “reduced” models that do not include non-significant predictors. I wanted to see if this significantly changed the models, $R^2$, and parsimony of the models.
fit_lm_cca_0 <- lm(child_ca_mean ~ dyad_gender + child_age, 
                     data = df_wide)

fit_lm_cca_psi <- lm(child_ca_mean ~ parent_psi_mean + dyad_gender + child_age, 
                     data = df_wide)

fit_lm_cca_bwf <- lm(child_ca_mean ~ parent_bwf_mean_no_5 + parent_winwb_mean + 
                      parent_bc_mean + dyad_gender + child_age, 
                     data = df_wide)

fit_lm_cca_both <- lm(child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + 
                       parent_winwb_mean + parent_bc_mean + dyad_gender + child_age, 
                       data = df_wide)

fit_lm_cca_reduce <- lm(child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + 
                         parent_bc_mean, 
                         data = df_wide)

fit_lm_cca_reduce2 <- lm(child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5, 
                         data = df_wide)

texreg::knitreg(list(fit_lm_cca_0, 
                   fit_lm_cca_psi, 
                   fit_lm_cca_bwf, 
                   fit_lm_cca_both, 
                   fit_lm_cca_reduce), 
                   custom.model.names = c("Covar Only", 
                                           "Covar + PSI", 
                                           "Covar + BWF", 
                                           "Full", 
                                           "Reduced"), 
                   caption = "Linear Regression Parameters for Adolescent Cognitive 
                              Autonomy", 
                   caption.above = TRUE, 
                   float.pos = "bh")
<table>
<thead>
<tr>
<th></th>
<th>Covar Only</th>
<th>Covar + PSI</th>
<th>Covar + BWF</th>
<th>Full</th>
<th>Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>3.58 ***</td>
<td>1.92 ***</td>
<td>2.14 ***</td>
<td>1.43 ***</td>
<td>1.73 ***</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.37)</td>
<td>(0.42)</td>
<td>(0.40)</td>
<td>(0.20)</td>
</tr>
<tr>
<td>dyad_genderFather-Daughter</td>
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<td>-0.02</td>
<td>-0.07</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.06)</td>
<td>(0.07)</td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Daughter</td>
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<td>-0.08</td>
<td>-0.05</td>
<td>-0.05</td>
<td></td>
</tr>
<tr>
<td></td>
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<td>(0.06)</td>
<td>(0.07)</td>
<td>(0.06)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Son</td>
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<td>-0.07</td>
<td>-0.05</td>
<td>-0.06</td>
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</tr>
<tr>
<td></td>
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<td>(0.06)</td>
<td>(0.07)</td>
<td>(0.06)</td>
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<tr>
<td>child_age</td>
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<td></td>
</tr>
<tr>
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<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td>(0.02)</td>
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</tr>
<tr>
<td>parent.psi_mean</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>(0.06)</td>
<td>(0.06)</td>
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<tr>
<td>parent.bwf_mean_no_5</td>
<td></td>
<td>0.17 ***</td>
<td>0.10 *</td>
<td>0.09 *</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
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<tr>
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<td>0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent.bc_mean</td>
<td></td>
<td></td>
<td>0.15 ***</td>
<td>0.08</td>
<td>0.08 *</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>R^2</td>
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<td>0.20</td>
<td>0.35</td>
<td>0.34</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>-0.01</td>
<td>0.29</td>
<td>0.17</td>
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<td>0.33</td>
</tr>
<tr>
<td>Num. obs.</td>
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<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
</tr>
</tbody>
</table>

***p < 0.001; **p < 0.01; *p < 0.05
summary(fit_lm_cca_both)

Call:
lm(formula = child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
    parent_winwb_mean + parent_bc_mean + dyad_gender + child_age,
data = df_wide)

Residuals:
   Min     1Q Median     3Q    Max
-0.95738 -0.19527  0.00668  0.19208  0.81962

Coefficients:
                 Estimate Std. Error t value Pr(>|t|)
(Intercept)     1.43369    0.39661   3.615 0.000384 ***
parent_psi_mean 0.38880    0.05756   6.755 1.66e-10 ***
parent_bwf_mean_no_5  0.09677    0.03995   2.422 0.016364 *
parent_winwb_mean  0.03605    0.02528   1.426 0.155509
parent_bc_mean    0.07656    0.03944   1.941 0.053674 .
dyad_genderFather-Daughter -0.03799    0.06342  -0.599 0.549941
dyad_genderMother-Daughter -0.05288    0.05952  -0.888 0.375463
dyad_genderMother-Son      -0.06468    0.06065  -1.067 0.287510
child_age              0.01389    0.02073   0.670 0.503740

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3116 on 192 degrees of freedom
Multiple R-squared:  0.3546,    Adjusted R-squared:  0.3277
F-statistic: 13.19 on 8 and 192 DF,  p-value: 4.111e-15
summary(fit_lm_cca_reduce)

Call:
  lm(formula = child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
    parent_bc_mean, data = df_wide)

Residuals:
          Min        1Q  Median        3Q       Max
-1.056111 -0.20740  0.02042  0.19886  0.78242

Coefficients:                 Estimate Std. Error t value Pr(>|t|)
(Intercept)              1.72558    0.19743  8.7405 1.02e-15 ***
parent_psi_mean          0.39257    0.05713  6.8721 8.14e-11 ***
parent_bwf_mean_no_5     0.08976    0.03866  2.3221  0.0212 *
parent_bc_mean           0.07683    0.03886  1.9769  0.0494 *

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3109 on 197 degrees of freedom
Multiple R-squared:  0.3409,    Adjusted R-squared:  0.3309
F-statistic: 33.97 on 3 and 197 DF,  p-value: < 2.2e-16

summary(fit_lm_cca_reduce2)

Call:
  lm(formula = child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5, data = df_wide)

Residuals:
          Min        1Q  Median        3Q       Max
-1.060391 -0.20753  0.01608  0.21234  0.82018

Coefficients:                 Estimate Std. Error t value Pr(>|t|)
(Intercept)              1.87074    0.18461 10.1341 < 2e-16 ***
parent_psi_mean          0.42578    0.05500  7.7410 4.95e-13 ***
parent_bwf_mean_no_5     0.10935    0.03764  2.9052  0.00409 **

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3132 on 198 degrees of freedom
Multiple R-squared:  0.3278,    Adjusted R-squared:  0.321
F-statistic: 48.28 on 2 and 198 DF,  p-value: < 2.2e-16
I conducted a Type III sum-of-squares F-test to get a single, omnibus p-value for the 4 levels of the `dyad_gender` variable.

```r
anova(fit_lm_cca_both)
```

Analysis of Variance Table

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>1</td>
<td>8.6429</td>
<td>8.6429</td>
<td>88.9991</td>
<td>&lt; 2.2e-16 ***</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>1</td>
<td>0.8279</td>
<td>0.8279</td>
<td>8.5248</td>
<td>0.003923 **</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>1</td>
<td>0.2547</td>
<td>0.2547</td>
<td>2.6222</td>
<td>0.107017</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>1</td>
<td>0.3402</td>
<td>0.3402</td>
<td>3.5034</td>
<td>0.062764 .</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>3</td>
<td>0.1344</td>
<td>0.0448</td>
<td>0.4614</td>
<td>0.709541</td>
</tr>
<tr>
<td>child_age</td>
<td>1</td>
<td>0.0436</td>
<td>0.0436</td>
<td>0.4487</td>
<td>0.503740</td>
</tr>
<tr>
<td>Residuals</td>
<td>192</td>
<td>18.6455</td>
<td>0.0971</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```r
effectsize::cohens_f_squared(fit_lm_cca_both, partial = TRUE, ci = .95, alternative = "two.sided")
```

# Effect Size for ANOVA (Type I)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f^2 (partial)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>0.46</td>
<td>[0.27, 0.70]</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>0.04</td>
<td>[0.00, 0.12]</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>0.01</td>
<td>[0.00, 0.07]</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>7.21e-03</td>
<td>[0.00, 0.03]</td>
</tr>
<tr>
<td>child_age</td>
<td>2.34e-03</td>
<td>[0.00, 0.04]</td>
</tr>
</tbody>
</table>
Likelihood Ratio Tests

I used Likelihood Ratio Tests to compare how the full and reduced models compared to each other. A p-value less than .05 means the full model fits significantly better and should be used. A p-value greater than .05 means the additional (non-significant) variables of the full model add unnecessary noise and the reduced model should be used in favor of parsimony.

Regarding cognitive autonomy, I found removing the 3 non-significant variables of the full model (child age, gender composition of the dyad, and work interrupting non-work) does hurt the model.

```r
anova(fit_lm_cca_both, fit_lm_cca_reduce, test = "LRT")
```

<table>
<thead>
<tr>
<th>Res.Df</th>
<th>RSS</th>
<th>Df</th>
<th>Sum of Sq</th>
<th>Pr(&gt;Chi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>192</td>
<td>5</td>
<td>-0.3951</td>
<td>0.5396</td>
</tr>
</tbody>
</table>

However, if we further reduce the model and remove boundary control, the fit is affected, meaning it is important to keep boundary control.

```r
anova(fit_lm_cca_reduce, fit_lm_cca_reduce2, test = "LRT")
```

```
Analysis of Variance Table

Model 1: child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + parent_winwb_mean + parent_bc_mean + dyad_gender + child_age
Model 2: child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + parent_bc_mean

<table>
<thead>
<tr>
<th>Res.Df</th>
<th>RSS</th>
<th>Df</th>
<th>Sum of Sq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>197</td>
<td>-5</td>
<td>-0.37778</td>
</tr>
<tr>
<td>2</td>
<td>198</td>
<td>-1</td>
<td>-0.37778</td>
</tr>
</tbody>
</table>

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```
Effect Size

**Standardized Betas**

```r
fit_lm_cca_reduce %>%
  lm.beta::lm.beta() %>%
  summary()
```

Call:
`lm(formula = child_ca_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
    parent_bc_mean, data = df_wide)`

Residuals:
```
  Min     1Q   Median     3Q    Max
-1.05611 -0.20749  0.02042  0.19886  0.78242
```

Coefficients:
```
                              Estimate Standardized Std. Error  t value Pr(>|t|)
(Intercept)               1.72558        0.00000    0.19743   8.740  1.02e-15 ***
parent_psi_mean       0.39257        0.44493    0.05713   6.872  8.14e-11 ***
parent_bwf_mean_no_5  0.08976        0.14867    0.03866   2.322   0.0212 *
parent_bc_mean        0.07683        0.12812    0.03886   1.977   0.0494 *
```

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.3109 on 197 degrees of freedom
Multiple R-squared:  0.3409, Adjusted R-squared:  0.3309
F-statistic: 33.97 on 3 and 197 DF,  p-value: < 2.2e-16

**Cohen’s Partial f-squared**

Cohen (1992) recommended using f^2 to determine effect size using the following effect size interpretations:
small = .02,
medium = .15,
and large = .35.

```r
effectsize::cohens_f_squared(fit_lm_cca_reduce, partial = TRUE, ci = .95, alternative = "two.sided")
```

# Effect Size for ANOVA (Type I)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f2 (partial)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>0.45</td>
<td>[0.27, 0.69]</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>0.04</td>
<td>[0.00, 0.12]</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
</tbody>
</table>
RQ 2.2: Emotional Autonomy

Question: How do parent perceptions of parent work-family balance, work interrupting non-work, boundary control, and parenting satisfaction associate with adolescent reported emotional autonomy?

DV - Outcome of interest
* child_ea_mean Adolescent reported emotional autonomy

IV - Predictors of highest interest
* parent_bwf_mean_no_5 Parent reported work-family balance
* parent_winwb_mean Parent perceptions of work interrupting non-work
* parent_bc_mean Parent perceptions of their boundary control
* parent_psi_mean Parent reported parenting satisfaction

Covariates - Controlling for
* child_age Child reported age
* dyad_gender Gender composition of the parent-adolescent dyad
**Pairwise Correlation**

First, I conducted pairwise correlations and made visual plots to understand how emotional autonomy associated with each parent variable.

```r
df_wide %>%
dplyr::select("Adolescent EA" = child_ea_mean,
               "Parent PSI" = parent.psi_mean,
               "Parent BWF" = parent_bwf_mean_no_5,
               "Parent WinNW" = parent_winwb_mean,
               "Parent BC" = parent_bc_mean) %>%
furniture::tableC()
```

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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<td></td>
<td></td>
</tr>
<tr>
<td>Parent PSI</td>
<td>0.162 (0.022)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Parent BWF</td>
<td>0.159 (0.024)</td>
<td>0.356 (&lt;.001)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent WinNW</td>
<td>-0.159 (0.024)</td>
<td>0.004 (0.958)</td>
<td>-0.189 (0.007)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Parent BC</td>
<td>0.169 (0.017)</td>
<td>0.384 (&lt;.001)</td>
<td>0.358 (&lt;.001)</td>
<td>0.01 (0.892)</td>
<td>1.00</td>
</tr>
</tbody>
</table>
```r
df_wide %>%
dplyr::select("Ad\nEA" = child_ea_mean,
               "Parent\nPSI"    = parent_psi_mean,
               "Parent\nBWF"    = parent_bwf_mean_no_5,
               "Parent\nWinNW"  = parent_winwb_mean,
               "Parent\nBC"    = parent_bc_mean) %>%
cor() %>%
corrplot::corrplot.mixed()
```

*Figure 17: Emotional Autonomy Pairwise Correlation Plot*
df_wide %>%
ggplot(aes(x = parent_bwf_mean_no_5, 
y = child_ea_mean)) +
labs(x = "Parent Work-Family Balance", 
y = "Adolescent Emotional Autonomy") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")

Figure 18: Emotional Autonomy and Work-Family Balance Correlation Plot
df_wide %>%
  ggplot(aes(x = parent_psi_mean,
    y = child_ea_mean)) +
  labs(x = "Parent Parenting Satisfaction",
    y = "Adolescent Emotional Autonomy") +
  geom_point() +
  theme_bw() +
  geom_smooth(method = "lm")

Figure 19: Emotional Autonomy and Parenting Satisfaction Correlation Plot
Figure 20: Emotional Autonomy and Work Interrupting Non-Work Correlation Plot
df_wide %>%
ggplot(aes(x = parent_bc_mean,
          y = child_ea_mean)) +
labs(x = "Parent Boundary Control",
     y = "Adolescent Emotional Autonomy") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")

Figure 21: Emotional Autonomy and Boundary Control Correlation Plot
Regression Models

Models

*fit_lm_cea_0* Blank model with emotional autonomy and the covariates

*fit_lm_cea_psi* Model with emotional autonomy, covariates, and parenting satisfaction

*fit_lm_cea_bwf* Model with emotional autonomy, covariates, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cea_both* Full model with emotional autonomy, covariates, parenting satisfaction, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cea_reduce* Model with emotional autonomy and work interrupting non-work

After running the full model, I ran a “reduced” model that did not include non-significant predictors. I wanted to see if this significantly changed the models, $R^2$, and parsimony of the models.
fit_lm_cea_0 <- lm(child_ea_mean ~ dyad_gender + child_age,
                   data = df_wide)
fit_lm_cea_psi <- lm(child_ea_mean ~ parent_psi_mean + dyad_gender + child_age,
                     data = df_wide)
fit_lm_cea_bwf <- lm(child_ea_mean ~ parent_bwf_mean_no_5 + parent_winwb_mean +
                     parent_bc_mean + dyad_gender + child_age,
                     data = df_wide)
fit_lm_cea_both <- lm(child_ea_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
                      parent_winwb_mean + parent_bc_mean + dyad_gender + child_age,
                      data = df_wide)
fit_lm_cea_reduce <- lm(child_ea_mean ~ parent_winwb_mean,
                        data = df_wide)

texreg::knitreg(list(fit_lm_cea_0,
                      fit_lm_cea_psi,
                      fit_lm_cea_bwf,
                      fit_lm_cea_both,
                      fit_lm_cea_reduce),
                      custom.model.names = c("Covar Only",
                      "Covar + PSI",
                      "Covar + BWF",
                      "Full",
                      "Reduced"),
                      caption = "Linear Regression Parameters for Adolescent Emotiona
                      l Autonomy",
                      caption.above = TRUE,
                      float.pos = "bh")
<table>
<thead>
<tr>
<th></th>
<th>Covar Only</th>
<th>Covar + PSI</th>
<th>Covar + BWF</th>
<th>Full</th>
<th>Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>3.18 ***</td>
<td>2.46 ***</td>
<td>2.84 ***</td>
<td>2.59 ***</td>
<td>3.48 ***</td>
</tr>
<tr>
<td></td>
<td>(0.55)</td>
<td>(0.62)</td>
<td>(0.65)</td>
<td>(0.67)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>dyad_genderFather-Daughter</td>
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<td>0.14</td>
<td>0.15</td>
<td></td>
</tr>
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<td>(0.11)</td>
<td>(0.11)</td>
<td>(0.11)</td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Daughter</td>
<td>-0.00</td>
<td>0.00</td>
<td>-0.02</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.10)</td>
<td>(0.10)</td>
<td>(0.10)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Son</td>
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<td>-0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.10)</td>
<td>(0.10)</td>
<td>(0.10)</td>
<td></td>
</tr>
<tr>
<td>child_age</td>
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<td>0.00</td>
<td>-0.01</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td></td>
</tr>
<tr>
<td>parent_psi_mean</td>
<td>0.21 *</td>
<td></td>
<td></td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td></td>
<td></td>
<td>(0.10)</td>
<td></td>
</tr>
<tr>
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<td>0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td>(0.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>-0.10 *</td>
<td>-0.10 *</td>
<td>-0.09 *</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td>(0.04)</td>
<td>(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>0.12</td>
<td>0.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td>(0.07)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>0.01</td>
<td>0.04</td>
<td>0.07</td>
<td>0.08</td>
<td>0.03</td>
</tr>
<tr>
<td>Adj. R^2</td>
<td>-0.01</td>
<td>0.01</td>
<td>0.04</td>
<td>0.04</td>
<td>0.02</td>
</tr>
<tr>
<td>Num. obs.</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
</tr>
</tbody>
</table>

***p < 0.001; **p < 0.01; *p < 0.05
summary(fit_lm_cea_both)

Call:
  lm(formula = child_ea_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
      parent_winwb_mean + parent_bc_mean + dyad_gender + child_age,
      data = df_wide)

Residuals:
   Min     1Q Median     3Q    Max
-1.28936 -0.39527  0.02685  0.27760  1.43689

Coefficients:                Estimate Std. Error t value Pr(>|t|)
(Intercept)                 2.590220   0.669996   3.866 0.000151 ***
parent_psi_mean             0.137309   0.097232   1.412 0.159517
parent_bwf_mean_no_5        0.042489   0.067494   0.630 0.529754
parent_winwb_mean          -0.099642   0.042714  -2.333 0.020694 *
parent_bc_mean              0.089976   0.066621   1.351 0.178423
dyad_genderFather-Daughter  0.149560   0.107144   1.396 0.164362
dyad_genderMother-Daughter -0.023653   0.100555  -0.235 0.814289
dyad_genderMother-Son      -0.010217   0.102449  -0.100 0.920667
child_age                  -0.006146   0.035023  -0.175 0.860876
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5264 on 192 degrees of freedom  
Multiple R-squared:  0.0801,    Adjusted R-squared:  0.04177  
F-statistic:  2.09 on 8 and 192 DF,  p-value: 0.03858

summary(fit_lm_cea_reduce)

Call:
  lm(formula = child_ea_mean ~ parent_winwb_mean, data = df_wide)

Residuals:    Min     1Q Median     3Q    Max
  -1.45636 -0.33075 -0.00057  0.31102  1.56224

Coefficients:                Estimate Std. Error t value Pr(>|t|)
(Intercept)        3.47953    0.11686  29.774  <2e-16 ***
parent_winwb_mean -0.09299    0.04089  -2.274    0.024 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5264 on 192 degrees of freedom  
Multiple R-squared:  0.0801,    Adjusted R-squared:  0.04177  
F-statistic:  2.09 on 8 and 192 DF,  p-value: 0.03858
I conducted a Type III sum-of-squares F-test to get a single, omnibus p-value for the 4 levels of the `dyad_gender` variable.

```r
anova(fit_lm_cea_both)
```

Analysis of Variance Table

<table>
<thead>
<tr>
<th></th>
<th>Df</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>1</td>
<td>1.517</td>
<td>1.51703</td>
<td>5.4739</td>
<td>0.02033 *</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>1</td>
<td>0.685</td>
<td>0.68467</td>
<td>2.4705</td>
<td>0.11765</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>1</td>
<td>1.143</td>
<td>1.14280</td>
<td>4.1235</td>
<td>0.04367 *</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>1</td>
<td>0.575</td>
<td>0.57544</td>
<td>2.0764</td>
<td>0.15123</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>3</td>
<td>0.705</td>
<td>0.23491</td>
<td>0.8476</td>
<td>0.46941</td>
</tr>
<tr>
<td>child_age</td>
<td>1</td>
<td>0.009</td>
<td>0.00854</td>
<td>0.0308</td>
<td>0.86088</td>
</tr>
<tr>
<td>Residuals</td>
<td>192</td>
<td>53.211</td>
<td>0.27714</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```r
effects::cohens_f_squared(fit_lm_cea_both, partial = TRUE, ci = .95, alternative = "two.sided")
```

# Effect Size for ANOVA (Type I)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f2 (partial)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>0.03</td>
<td>[0.00, 0.10]</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>0.01</td>
<td>[0.00, 0.07]</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>0.02</td>
<td>[0.00, 0.08]</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>0.01</td>
<td>[0.00, 0.06]</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>0.01</td>
<td>[0.00, 0.05]</td>
</tr>
<tr>
<td>child_age</td>
<td>1.60e-04</td>
<td>[0.00, 0.02]</td>
</tr>
</tbody>
</table>
Likelihood Ratio Test
For emotional autonomy, I found removing the 5 non-significant variables of the full model (child age, gender composition of the dyad, parent work-family balance, parenting satisfaction, and boundary control) does not hurt the model.

```r
anova(fit_lm_cea_both, fit_lm_cea_reduce, test = "LRT")
```

### Analysis of Variance Table

<table>
<thead>
<tr>
<th>Res.Df</th>
<th>RSS</th>
<th>Df</th>
<th>Sum of Sq</th>
<th>Pr(&gt;Chi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>53.211</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>56.379</td>
<td>-7</td>
<td>-3.168</td>
<td>0.1209</td>
</tr>
</tbody>
</table>

### Effect Size

**Standardized Beta**

```r
fit_lm_cea_reduce %>%
  lm.beta::lm.beta() %>%
  summary()
```

Call:

```r
lm(formula = child_ea_mean ~ parent_winwb_mean, data = df_wide)
```

Residuals:

```
Min       1Q   Median       3Q      Max
-1.45636 -0.33075 -0.00057  0.31102  1.56224
```

Coefficients:

```
Estimate Standardized Std. Error t value Pr(>|t|)
(Intercept)        3.47953      0.00000    0.11686  29.774   <2e-16 ***
parent_winwb_mean -0.09299     -0.15915    0.04089  -2.274    0.024 *
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.5323 on 199 degrees of freedom
Multiple R-squared:  0.02533,   Adjusted R-squared:  0.02043
F-statistic: 5.172 on 1 and 199 DF,  p-value: 0.02403

**Cohen’s Partial f-squared**

```r
effectsize::cohens_f_squared(fit_lm_cea_reduce,
  partial = TRUE,
  CI = .95,
  alternative = "two.sided")
```

# Effect Size for ANOVA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f2</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_winwb_mean</td>
<td>0.03</td>
<td>[0.00, 0.09]</td>
</tr>
</tbody>
</table>
RQ 2.3: Self-Esteem

Question: How do parent perceptions of parent work-family balance, work interrupting non-work, boundary control, and parenting satisfaction associate with adolescent reported self-esteem?

DV - Outcome of interest
* child_se_mean Adolescent reported self-esteem

IV - Predictors of highest interest
* parent_bwf_mean_no_5 Parent reported work-family balance
* parent_winwb_mean Parent perceptions of work interrupting non-work
* parent_bc_mean Parent perceptions of their boundary control
* parent_psi_mean Parent reported parenting satisfaction

Covariates - Controlling for
* child_age Child reported age
* dyad_gender Gender composition of the parent-adolescent dyad
Pairwise Correlation

First, I conducted pairwise correlations and made visual plots to understand how cognitive autonomy associated with each parent variable.

df_wide %>%
  dplyr::select("Adolescent SE" = child_se_mean,
                 "Parent PSI"   = parent_psi_mean,
                 "Parent BWF"   = parent_bwf_mean_no_5,
                 "Parent WinNW" = parent_winwb_mean,
                 "Parent BC"    = parent_bc_mean) %>%
  furniture::tableC()

<table>
<thead>
<tr>
<th></th>
<th>[1]</th>
<th>[2]</th>
<th>[3]</th>
<th>[4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent SE</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent PSI</td>
<td>0.345 (&lt;.001)</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent BWF</td>
<td>0.507 (&lt;.001)</td>
<td>0.356 (&lt;.001)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Parent WinNW</td>
<td>-0.152 (0.032)</td>
<td>0.004 (0.958)</td>
<td>-0.189 (0.007)</td>
<td>1.00</td>
</tr>
<tr>
<td>Parent BC</td>
<td>0.222 (0.002)</td>
<td>0.384 (&lt;.001)</td>
<td>0.358 (&lt;.001)</td>
<td>0.01 (0.892)</td>
</tr>
</tbody>
</table>

1.00
Figure 22: Self-Esteem Pairwise Correlation Plot
df_wide %>%
ggplot(aes(x = parent_bwf_mean_no_5,
          y = child_se_mean)) +
labs(x = "Parent Work-Family Balance",
     y = "Adolescent Self-Esteem") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")

Figure 23: Self-Esteem and Work-Family Balance Correlation Plot
```r
df_wide %>%
  ggplot(aes(x = parent_psi_mean,
            y = child_se_mean)) +
  labs(x = "Parent Parenting Satisfaction",
       y = "Adolescent Self-Esteem") +
  geom_point() +
  theme_bw() +
  geom_smooth(method = "lm")
```

*Figure 24: Self-Esteem and Parenting Satisfaction Correlation Plot*
```r
df_wide %>%
ggplot(aes(x = parent_winwb_mean,
y = child_se_mean)) +
labs(x = "Parent Work Interrupting Non-Work Behavior",
y = "Adolescent Self-Esteem") +
geom_point() +
theme_bw() +
geom_smooth(method = "lm")
```

**Figure 25: Self-Esteem and Work Interrupting Non-Work Correlation Plot**
df_wide %>%
ggplot(aes(x = parent_bc_mean,
          y = child_se_mean)) +
labs(x = "Parent Boundary Control",
     y = "Adolescent Self-Esteem") +
  geom_point() +
  theme_bw() +
  geom_smooth(method = "lm")

Figure 26: Self-Esteem and Boundary Control Correlation Plot
Regression Models

Models

*fit_lm_cse_0* Blank model with self-esteem and the covariates

*fit_lm_cse_psi* Model with self-esteem, covariates, and parenting satisfaction

*fit_lm_cse_bwf* Model with self-esteem, covariates, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cse_both* Full model with self-esteem, covariates, parenting satisfaction, and work-family balance, work interrupting non-work, and boundary control

*fit_lm_cse_reduce* Model with self-esteem, parenting satisfaction and work-family balance

After running the full model, I ran a “reduced” model that does not include non-significant predictors. I wanted to see if this significantly changed the models, $R^2$, and parsimony of the models.
fit_lm_cse_0 <- lm(child_se_mean ~ dyad_gender + child_age, 
data = df_wide)

fit_lm_cse_psi <- lm(child_se_mean ~ parent_psi_mean + dyad_gender + child_age, 
data = df_wide)

fit_lm_cse_bwf <- lm(child_se_mean ~ parent_bwf_mean_no_5 + parent_winwb_mean + parent_bc_mean + dyad_gender + child_age, 
data = df_wide)

fit_lm_cse_both <- lm(child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + parent_winwb_mean + parent_bc_mean + dyad_gender + child_age, 
data = df_wide)

fit_lm_cse_reduce <- lm(child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5, 
data = df_wide)

texreg::knitreg(list(fit_lm_cse_0, 
fit_lm_cse_psi, 
fit_lm_cse_bwf, 
fit_lm_cse_both, 
fit_lm_cse_reduce), 
custom.model.names = c("Covar Only", 
"Covar + PSI", 
"Covar + BWF", 
"Full", 
"Reduced"), 
caption = "Linear Regression Parameters for Adolescent Self-Esteeem", 
caption.above = TRUE, 
float.pos = "bh")
<table>
<thead>
<tr>
<th></th>
<th>Covar Only</th>
<th>Covar + PSI</th>
<th>Covar + BWF</th>
<th>Full</th>
<th>Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Intercept)</td>
<td>2.84 ***</td>
<td>1.48 **</td>
<td>1.76 ***</td>
<td>1.35 *</td>
<td>1.29 ***</td>
</tr>
<tr>
<td></td>
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<td>(0.54)</td>
<td>(0.53)</td>
<td>(0.54)</td>
<td>(0.25)</td>
</tr>
<tr>
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<td>-0.02</td>
<td>-0.02</td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.09)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Daughter</td>
<td>-0.09</td>
<td>-0.08</td>
<td>-0.08</td>
<td>-0.08</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.09)</td>
<td>(0.08)</td>
<td>(0.08)</td>
<td></td>
</tr>
<tr>
<td>dyad_genderMother-Son</td>
<td>-0.05</td>
<td>-0.06</td>
<td>-0.01</td>
<td>-0.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.09)</td>
<td>(0.08)</td>
<td>(0.08)</td>
<td></td>
</tr>
<tr>
<td>child_age</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>parent.psi_mean</td>
<td>0.39 ***</td>
<td>0.23 **</td>
<td>0.22 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(0.08)</td>
<td>(0.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent.bwf_mean_no_5</td>
<td>0.37 ***</td>
<td>0.33 ***</td>
<td>0.34 ***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.05)</td>
<td>(0.05)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent.winwb_mean</td>
<td>-0.04</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>parent.bc_mean</td>
<td>0.04</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.05)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>0.01</td>
<td>0.13</td>
<td>0.27</td>
<td>0.30</td>
<td>0.29</td>
</tr>
<tr>
<td>Adjusted R^2</td>
<td>-0.01</td>
<td>0.10</td>
<td>0.24</td>
<td>0.27</td>
<td>0.28</td>
</tr>
<tr>
<td>Num. obs.</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
<td>201</td>
</tr>
</tbody>
</table>

***p < 0.001; **p < 0.01; *p < 0.05
summary(fit_lm_cse_both)

Call:
  lm(formula = child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5 +
      parent_winwb_mean + parent_bc_mean + dyad_gender + child_age,
     data = df_wide)

Residuals:          Min       1Q      Median       3Q      Max
    -1.2662  -0.2220   0.0083   0.2789   1.0461

Coefficients:          Estimate Std. Error t value  Pr(>|t|)
(Intercept)             1.349976   0.535680   2.520   0.01255 *
parent_psi_mean         0.225050   0.077740   2.895  0.00423 **
parent_bwf_mean_no_5    0.328528   0.053963   6.088 6.1e-09 ***
parent_winwb_mean       -0.044320   0.034151  -1.298  0.19592
parent_bc_mean          -0.005626   0.053265  -0.106  0.91599
dyad_genderFather-Daughter -0.007231   0.085664  -0.084  0.93282
dyad_genderMother-Daughter -0.081230   0.080397  -1.010  0.31359
dyad_genderMother-Son   -0.019339   0.081911  -0.236  0.81360
child_age               0.007994   0.028002   0.285  0.77558

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4209 on 192 degrees of freedom
Multiple R-squared:  0.2973,    Adjusted R-squared:  0.268
F-statistic: 10.15 on 8 and 192 DF,  p-value: 8.641e-12

summary(fit_lm_cse_reduce)

Call:
  lm(formula = child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5,
     data = df_wide)

Residuals:          Min       1Q      Median       3Q      Max
    -1.27439  -0.25011   0.01345   0.26862   1.06476

Coefficients:          Estimate Std. Error t value  Pr(>|t|)
(Intercept)             1.28836    0.24595   5.238 4.13e-07 ***
parent_psi_mean         0.21502    0.07328   2.934  0.00374 **
parent_bwf_mean_no_5    0.34388    0.05015   6.858 8.72e-11 ***

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4172 on 192 degrees of freedom
Multiple R-squared:  0.2973,    Adjusted R-squared:  0.268
F-statistic: 40.03 on 2 and 198 DF,  p-value: 2.506e-15
I conducted a Type III sum-of-squares F-test to get a single, omnibus p-value for the 4 levels of the dyad_gender variable.

```r
anova(fit_lm_cse_both)
```

Analysis of Variance Table

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Df</th>
<th>Sum Sq</th>
<th>Mean Sq</th>
<th>F value</th>
<th>Pr(&gt;F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>1</td>
<td>5.752</td>
<td>5.7518</td>
<td>32.4665</td>
<td>4.504e-08 ***</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>1</td>
<td>8.186</td>
<td>8.1865</td>
<td>46.2094</td>
<td>1.306e-10 ***</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>1</td>
<td>0.243</td>
<td>0.2429</td>
<td>1.3708</td>
<td>0.2431</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>1</td>
<td>0.001</td>
<td>0.0008</td>
<td>0.0044</td>
<td>0.9472</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>3</td>
<td>0.195</td>
<td>0.0651</td>
<td>0.3677</td>
<td>0.7764</td>
</tr>
<tr>
<td>child_age</td>
<td>1</td>
<td>0.014</td>
<td>0.0144</td>
<td>0.0815</td>
<td>0.7756</td>
</tr>
<tr>
<td>Residuals</td>
<td>192</td>
<td>34.015</td>
<td>0.1772</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```r
effectsize::cohens_f_squared(fit_lm_cse_both, partial = TRUE, ci = .95, alternative = "two.sided")
```

# Effect Size for ANOVA (Type I)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f2 (partial)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>0.17</td>
<td>[0.07, 0.31]</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>0.24</td>
<td>[0.12, 0.41]</td>
</tr>
<tr>
<td>parent_winwb_mean</td>
<td>7.14e-03</td>
<td>[0.00, 0.05]</td>
</tr>
<tr>
<td>parent_bc_mean</td>
<td>2.29e-05</td>
<td>[0.00, 0.01]</td>
</tr>
<tr>
<td>dyad_gender</td>
<td>5.74e-03</td>
<td>[0.00, 0.03]</td>
</tr>
<tr>
<td>child_age</td>
<td>4.24e-04</td>
<td>[0.00, 0.02]</td>
</tr>
</tbody>
</table>
Likelihood Ratio Test
For self-esteem, I found removing the 4 non-significant variables of the full model (child age, gender composition of the dyad, work interrupting non-work, and boundary control) does not hurt the model.

```r
anova(fit_lm_cse_both, fit_lm_cse_reduce, test = "LRT")

Analysis of Variance Table

Model 1: child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5 + parent_winwb_mean +
        parent_bc_mean + dyad_gender + child_age
Model 2: child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5

  Res.Df RSS Df Sum of Sq Pr(>Chi)
1    192 34.015
2    198 34.468  -6  -0.45348   0.8617
```
Effect Size

**Standardized Beta**

```r
fit_lm_cse_reduce %>%
  lm.beta::lm.beta() %>%
  summary()
```

```r
call:
  lm(formula = child_se_mean ~ parent_psi_mean + parent_bwf_mean_no_5,
      data = df_wide)

residuals:
  Min  1Q Median  3Q Max
-1.27439 -0.25011  0.01345  0.26862  1.06476

coefficients:
                  Estimate  Standardized  Std. Error   t value     Pr(>|t|)
(Intercept)   1.28836      0.00000    0.24595   5.238 4.13e-07 ***
parent_psi_mean       0.21502      0.18827    0.07328   2.934  0.00374 **
parent_bwf_mean_no_5  0.34388      0.43999    0.05015   6.858 8.72e-11 ***
---
signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

residual standard error: 0.4172 on 198 degrees of freedom
multiple r-squared: 0.2879, adjusted r-squared: 0.2807
f-statistic: 40.03 on 2 and 198 df, p-value: 2.506e-15
```

**Cohen’s Partial f-squared**

```r
effectsize::cohens_f_squared(fit_lm_cse_reduce,
  partial = TRUE,
  ci = .95,
  alternative = "two.sided")
```

```r
# effect size for ANOVA (Type I)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Cohen's f2 (partial)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_psi_mean</td>
<td>0.17</td>
<td>[0.07, 0.31]</td>
</tr>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>0.24</td>
<td>[0.12, 0.40]</td>
</tr>
</tbody>
</table>
```
RQ 3.1: Parent Work-Family Balance

For both parts of RQ 3, annual gross income was adjusted to have two categories, parents who made less than $25,000 and those who made more.

Question: Does financial strain and the COVID-19 shutdown play a role in the parent’s perceptions of their work-family balance?

DV - Outcome of interest
*parent_bwf_mean_no_5 Parent reported work-family balance

IV - Predictors of highest interest
*parent_angrossinc_lowest Categories of parent reported annual gross income
*parent_wkbalpan_num Categories of parent reported work-family balance during the COVID-19 shutdown
Violin Graphs

First, I visualized how the different categories of parents’ annual gross income and experiences balancing during the COVID-19 shutdown associated with their general work-family balance.

```r
df_wide %>%
dplyr::mutate(angrossinc_lump = angrossinc %>%
  forcats::fct_lump_lowfreq(other_level = "< $25,000")) %>%
ggplot(aes(x = angrossinc_lump,
    y = parent_bwf_mean_no_5)) +
labs(x = "Annual Gross Income with < $25,000 Category",
    y = "Parent Work-Family Balance") +
geom_violin() +
geom_boxplot(width = .25) +
stat_summary() +
theme_bw() +
coord_flip()
```

![Figure 27: Parent Work-Family Balance and Annual Gross Income Categories](image.png)
Figure 28: Parent Work-Family Balance and Parent Work-Family Balance During COVID-19
Regression Models

Interaction

I first determined if there was an interaction between `parent_angrossinc_lowest` and `parent_wkbalpan_num` when regressing onto parent work-family balance.

```r
fit_rq3_bwf_lm_int <- lm(parent_bwf_mean_no_5 ~ parent_angrossinc_lowest*parent_wkbalpan_num, data = df_wide)
summary(fit_rq3_bwf_lm_int)
```

Call:
`lm(formula = parent_bwf_mean_no_5 ~ parent_angrossinc_lowest * parent_wkbalpan_num, data = df_wide)`

Residuals:
```
     Min      1Q  Median      3Q     Max
-1.92479 -0.36034  0.01077  0.35714  1.57521
```

Coefficients:
```
            Estimate Std. Error t value
(Intercept)       3.424787   0.047704  71.793
parent_angrossinc_lowest -0.531930   0.239813  -2.218
parent_wkbalpan_num     0.064447   0.041286   1.561
parent_angrossinc_lowest:parent_wkbalpan_num -0.001947   0.223685  -0.009
```

Pr(>|t|)
```
(Intercept)                                    <2e-16 ***
parent_angrossinc_lowest                       0.0277 *
person_wkbalpan_num                            0.1201
parent_angrossinc_lowest:parent_wkbalpan_num   0.9931
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6218 on 197 degrees of freedom
Multiple R-squared:  0.03884,   Adjusted R-squared:  0.02421
F-statistic: 2.654 on 3 and 197 DF,  p-value: 0.04978
**Low Income Only**

Because work-family balance during the COVID-19 shutdown and the interaction of the last model were non-significant, they will not be included in the remaining analyses for RQ 3.1.

This model shows that parents who made less than $25,000 scored approximately 0.56 points lower in parenting satisfaction than parents who made more.

```r
fit_rq3_bwf_lm_inc <- lm(parent_bwf_mean_no_5 ~ parent_angrossinc_lowest, 
                          data = df_wide)

summary(fit_rq3_bwf_lm_inc)
```

```r
Call: 
  lm(formula = parent_bwf_mean_no_5 ~ parent_angrossinc_lowest, 
      data = df_wide)

Residuals: 
   Min     1Q Median     3Q    Max 
-1.9510 -0.4510  0.0489  0.2989  1.5489

Coefficients: 
                         Estimate Std. Error t value Pr(>|t|)
(Intercept)                3.4510     0.0447   77.20   <2e-16 ***
parent_angrossinc_lowest  -0.5582     0.2395   -2.33   0.0208 *
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6226 on 199 degrees of freedom 
Multiple R-squared:  0.02656,   Adjusted R-squared:  0.02167
F-statistic:  5.43 on 1 and 199 DF,  p-value: 0.0208
```
Cohen’s d

I used a t-test to determine if the means of parents in the lowest income category (< $25,000) were significantly different from the rest of the parents in the sample. After finding significance, I calculated Cohen’s d to determine effect size.

def_wide %>%
  t.test(parent_bwf_mean_no_5 ~ parent_angrossinc_lowest,
    data = .,
    paired = FALSE,
    var.equal = TRUE)

  Two Sample t-test

  data:  parent_bwf_mean_no_5 by parent_angrossinc_lowest
  t = 2.3303, df = 199, p-value = 0.0208
  alternative hypothesis: true difference in means between group 0 and group 1 is not equal to 0
  95 percent confidence interval:
  0.08582346 1.03052411
  sample estimates:
  mean in group 0 mean in group 1
  3.451031        2.892857

def_wide %>%
  furniture::table1(parent_bwf_mean_no_5,
    splitby = ~ parent_angrossinc_lowest,
    total = TRUE,
    test = TRUE,
    digits = 3)

<table>
<thead>
<tr>
<th>parent_angrossinc_lowest</th>
<th>Total</th>
<th>0</th>
<th>1</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>parent_bwf_mean_no_5</td>
<td>201</td>
<td>194</td>
<td>7</td>
<td>0.021</td>
</tr>
<tr>
<td></td>
<td>3.432</td>
<td>3.451</td>
<td>2.893</td>
<td>(0.629) (0.621) (0.659)</td>
</tr>
</tbody>
</table>

(3.451031 - 2.892857)/.629

[1] 0.887399
RQ 3.2: Parenting Satisfaction

Question: Does financial strain and the COVID-19 shutdown play a role in the parent’s perceptions of their parenting satisfaction?

DV
*parent_psi_mean

IV - Predictors of highest interest
*parent_angrossinc_lowest Categories of parent reported annual gross income
*parent_wkbalpan_num Categories of parent reported work-family balance during the COVID-19 shutdown
Violin Graphs

First, I visualized how the different categories of parents’ annual gross income and experiences balancing during the COVID-19 shutdown associated with their parenting satisfaction.

```
df_wide %>%
dplyr::mutate(angrossinc_lump = angrossinc %>%
  forcats::fct_lump_lowfreq(other_level = "< $25,000")) %>%
ggplot(aes(x = angrossinc_lump,
            y = parent_psi_mean)) +
labs(x = "Annual Gross Income",
     y = "Parenting Satisfaction") +
geom_violin() +
geom_boxplot(width = .25) +
stat_summary() +
theme_bw() +
coord_flip()
```

Figure 29: Parent Satisfaction Across Gross Annual Income Categories
df_wide %>%
  dplyr::mutate(parent_wkbalpan = parent_wkbalpan %>%
                forcats::fct_rev()) %>%
  ggplot(aes(x = parent_wkbalpan,
            y = parent_psi_mean)) +
  labs(x = "Parent Pandemic Work-Family Balance",
       y = "Parenting Satisfaction") +
  geom_violin() +
  geom_boxplot(width = .25) +
  stat_summary() +
  theme_bw()

Figure 30: Parent Satisfaction and Parent Work-Family Balance During COVID-19
Regression

Interaction

I first determined if there was an interaction between `parent_angrossinc_lowest` and `parent_wkbalpan_num` when regressing onto parent parenting satisfaction.

```r
fit_rq3_lm_int <- lm(parent_psi_mean ~ parent_angrossinc_lowest*parent_wkbalpan_num, data = df_wide)
summary(fit_rq3_lm_int)
```

Call:
`lm(formula = parent_psi_mean ~ parent_angrossinc_lowest * parent_wkbalpan_num, data = df_wide)`

Residuals:
```
  Min     1Q Median     3Q    Max
-1.0837 -0.2999  0.0163  0.3163  0.8678
```

Coefficients:
```
              Estimate  Std. Error t value     Pr(>|t|)
(Intercept)          3.29989    0.03239 101.894 < 2e-16 ***
parent_angrossinc_lowest  0.27154    0.16281   1.668    0.09693 .
parent_wkbalpan_num      0.08382    0.02803   2.990    0.00314 **
parent_angrossinc_lowest:parent_wkbalpan_num -0.14632    0.15186  -0.964    0.33646
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4221 on 197 degrees of freedom
Multiple R-squared:  0.05404,  Adjusted R-squared:  0.03964
F-statistic: 3.752 on 3 and 197 DF,  p-value: 0.01187
Main Effects

After determining that the interaction was non-significant, I ran a main effects model.

```R
fit_rq3_lm_main <- lm(parent_psi_mean ~ parent_angrossinc_lowest + parent_wkbalpan_num,
                      data = df_wide)
summary(fit_rq3_lm_main)
```

```
Call:
  lm(formula = parent_psi_mean ~ parent_angrossinc_lowest + parent_wkbalpan_num,
     data = df_wide)

Residuals:
       Min        1Q  Median        3Q       Max
-1.08075 -0.30192  0.01925  0.31925  0.85575

Coefficients:                 Estimate Std. Error t value Pr(>|t|)
(Intercept)                  3.30192    0.03231 102.192  < 2e-16 ***
parent_angrossinc_lowest    0.26951    0.16276   1.656  0.09934 .
parent_wkbalpan_num         0.07883    0.02754   2.862  0.00466 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4221 on 198 degrees of freedom
Multiple R-squared:  0.04959,   Adjusted R-squared:  0.03999
F-statistic: 5.165 on 2 and 198 DF,  p-value: 0.006506
```
This graph shows that the data for < $25,000 (7 people) is too sparse to use in this analysis. It will be dropped from all RQ 3.2 analyses going forward. All forthcoming models will only have 'wkbalpan'.

```
interactions::interact_plot(model = fit_rq3_lm_main,
    pred = parent_wkbalpan_num,
    modx = parent_angrossinc_lowest,
    interval = TRUE,
    int.type = "confidence",
    int.width = .68) +
    scale_x_continuous(breaks = -2:2,
        labels =
        rev(levels(df_wide$parent_wkbalpan))) +
    theme(legend.position = "bottom")
```

Figure 31: Differences Between Parent Satisfaction and COVID-19 BWF Across Income Categories
Pandemic Balance with all Categories

The cell sizes for the 5 response options for `wkbalpan` have varying sizes. This model helped me determine if any categories needed to be collapsed.

```r
fit_rq3_lm_cat <- lm(parent_psi_mean ~ parent_wkbalpan,
                      data = df_wide)
summary(fit_rq3_lm_cat)
```

Call:
`lm(formula = parent_psi_mean ~ parent_wkbalpan, data = df_wide)`

Residuals:
```
            Min       1Q   Median       3Q      Max
-1.11892 -0.32424 -0.01892  0.28108  0.84286
```

Coefficients: 
```
            Estimate Std. Error t value Pr(>|t|)
(Intercept)                  3.51892    0.06988  50.360  < 2e-16 ***
parent_wkbalpanSomewhat better -0.19346    0.09037  -2.141  0.03353 *
parent_wkbalpanRemain same     -0.19468    0.08729  -2.230  0.02687 *
parent_wkbalpanSomewhat worse  -0.26336    0.09950  -2.647  0.00879 **
parent_wkbalpanSignificantly worse -0.36178    0.17519  -2.065  0.04023 *
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.425 on 196 degrees of freedom
Multiple R-squared:  0.04587,    Adjusted R-squared:  0.0264
F-statistic: 2.356 on 4 and 196 DF,  p-value: 0.05516
### fit_rq3_lm_cat

```r
emmeans::emmeans(pairwise ~ parent_wkbalpan)
```

**$emmeans**

<table>
<thead>
<tr>
<th>parent_wkbalpan</th>
<th>emmean</th>
<th>SE</th>
<th>df</th>
<th>lower.CL</th>
<th>upper.CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly better</td>
<td>3.52</td>
<td>0.0699</td>
<td>196</td>
<td>3.38</td>
<td>3.66</td>
</tr>
<tr>
<td>Somewhat better</td>
<td>3.33</td>
<td>0.0573</td>
<td>196</td>
<td>3.21</td>
<td>3.44</td>
</tr>
<tr>
<td>Remain same</td>
<td>3.32</td>
<td>0.0523</td>
<td>196</td>
<td>3.22</td>
<td>3.43</td>
</tr>
<tr>
<td>Somewhat worse</td>
<td>3.26</td>
<td>0.0708</td>
<td>196</td>
<td>3.12</td>
<td>3.40</td>
</tr>
<tr>
<td>Significantly worse</td>
<td>3.16</td>
<td>0.1606</td>
<td>196</td>
<td>2.84</td>
<td>3.47</td>
</tr>
</tbody>
</table>

Confidence level used: 0.95

**$contrasts**

<table>
<thead>
<tr>
<th>contrast</th>
<th>estimate</th>
<th>SE</th>
<th>df</th>
<th>t.ratio</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly better - Somewhat better</td>
<td>0.19346</td>
<td>0.0904</td>
<td>196</td>
<td>2.141</td>
<td>0.2072</td>
</tr>
<tr>
<td>Significantly better - Remain same</td>
<td>0.19468</td>
<td>0.0873</td>
<td>196</td>
<td>2.230</td>
<td>0.1730</td>
</tr>
<tr>
<td>Significantly better - Somewhat worse</td>
<td>0.26336</td>
<td>0.0995</td>
<td>196</td>
<td>2.647</td>
<td>0.0660</td>
</tr>
<tr>
<td>Significantly better - Significantly worse</td>
<td>0.36178</td>
<td>0.1752</td>
<td>196</td>
<td>2.065</td>
<td>0.2395</td>
</tr>
<tr>
<td>Somewhat better - Remain same</td>
<td>0.00121</td>
<td>0.0776</td>
<td>196</td>
<td>0.016</td>
<td>1.0000</td>
</tr>
<tr>
<td>Somewhat better - Somewhat worse</td>
<td>0.06990</td>
<td>0.0911</td>
<td>196</td>
<td>0.767</td>
<td>0.9397</td>
</tr>
<tr>
<td>Somewhat better - Significantly worse</td>
<td>0.16831</td>
<td>0.1706</td>
<td>196</td>
<td>0.987</td>
<td>0.8610</td>
</tr>
<tr>
<td>Remain same - Somewhat worse</td>
<td>0.06869</td>
<td>0.0881</td>
<td>196</td>
<td>0.780</td>
<td>0.9362</td>
</tr>
<tr>
<td>Remain same - Significantly worse</td>
<td>0.16710</td>
<td>0.1690</td>
<td>196</td>
<td>0.989</td>
<td>0.8600</td>
</tr>
<tr>
<td>Somewhat worse - Significantly worse</td>
<td>0.09841</td>
<td>0.1756</td>
<td>196</td>
<td>0.561</td>
<td>0.9805</td>
</tr>
</tbody>
</table>

P value adjustment: tukey method for comparing a family of 5 estimates
After running the regression and pairwise tests, I decided it would be best to collapse the categories “Significantly Worse” and “Somewhat Worse” into one “Worse” category.

```r
fit_rq3_lm_cat %>%
  emmeans::emmeans(~ parent_wkbalpan) %>%
data.frame() %>%
dplyr::mutate(parent_wkbalpan = parent_wkbalpan %>%
  forcats::fct_rev()) %>%
ggplot(aes(x = parent_wkbalpan,
y = emmean,
group = 1)) +
geom_errorbar(aes(ymin = emmean - SE,
  ymax = emmean + SE),
  width = .3) +
geom_point() +
geom_line() +
theme_bw() +
labs(x = "Parent's Reported Work-Family Balance During Pandemic",
y = "Parent's Reported Parenting Satisfaction Index")
```

Figure 32: Parenting Satisfaction and COVID-19 Work-Family Balance Categories
Pandemic Balance with ‘Worse’ Category

```r
fit_rq3_lm_cat4 <- lm(parent_psi_mean ~ parent_wkbalpan_cat4,
data = df_wide)
summary(fit_rq3_lm_cat4)
```

Call:
lm(formula = parent_psi_mean ~ parent_wkbalpan_cat4, data = df_wide)

Residuals:
  Min      1Q  Median      3Q     Max
-1.11892 -0.32424 -0.01892  0.28108  0.76047

Coefficients:                         Estimate  Std. Error    t value  Pr(>|t|)
(Intercept)                             3.51892    0.06975   50.448  < 2e-16 ***
parent_wkbalpan_cat4Somewhat better    -0.19346    0.09022   -2.144  0.03322 *
parent_wkbalpan_cat4Remain same        -0.19468    0.08714   -2.234  0.02660 *
parent_wkbalpan_cat4Worse              -0.27938    0.09514   -2.936  0.00372 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4243 on 197 degrees of freedom
Multiple R-squared:  0.04434,   Adjusted R-squared:  0.02979
F-statistic: 3.047 on 3 and 197 DF,  p-value: 0.02987
fit_rq3_lm_cat4 %>%
  emmeans::emmeans(pairwise ~ parent_wkbalpan_cat4)

$emmeans

<table>
<thead>
<tr>
<th>parent_wkbalpan_cat4</th>
<th>emmean</th>
<th>SE</th>
<th>df</th>
<th>lower.CL</th>
<th>upper.CL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly better</td>
<td>3.52</td>
<td>0.0698</td>
<td>197</td>
<td>3.38</td>
<td>3.66</td>
</tr>
<tr>
<td>Somewhat better</td>
<td>3.33</td>
<td>0.0572</td>
<td>197</td>
<td>3.21</td>
<td>3.44</td>
</tr>
<tr>
<td>Remain same</td>
<td>3.32</td>
<td>0.0522</td>
<td>197</td>
<td>3.22</td>
<td>3.43</td>
</tr>
<tr>
<td>Worse</td>
<td>3.24</td>
<td>0.0647</td>
<td>197</td>
<td>3.11</td>
<td>3.37</td>
</tr>
</tbody>
</table>

Confidence level used: 0.95

$contrasts

<table>
<thead>
<tr>
<th>contrast</th>
<th>estimate</th>
<th>SE</th>
<th>df</th>
<th>t.ratio</th>
<th>p.value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significantly better - Somewhat better</td>
<td>0.19346</td>
<td>0.0902</td>
<td>197</td>
<td>2.144</td>
<td>0.1428</td>
</tr>
<tr>
<td>Significantly better - Remain same</td>
<td>0.19468</td>
<td>0.0871</td>
<td>197</td>
<td>2.234</td>
<td>0.1177</td>
</tr>
<tr>
<td>Significantly better - Worse</td>
<td>0.27938</td>
<td>0.0951</td>
<td>197</td>
<td>2.936</td>
<td>0.0193</td>
</tr>
<tr>
<td>Somewhat better - Remain same</td>
<td>0.00121</td>
<td>0.0775</td>
<td>197</td>
<td>0.016</td>
<td>1.0000</td>
</tr>
<tr>
<td>Somewhat better - Worse</td>
<td>0.08592</td>
<td>0.0864</td>
<td>197</td>
<td>0.995</td>
<td>0.7526</td>
</tr>
<tr>
<td>Remain same - Worse</td>
<td>0.08471</td>
<td>0.0832</td>
<td>197</td>
<td>1.019</td>
<td>0.7387</td>
</tr>
</tbody>
</table>

P value adjustment: tukey method for comparing a family of 4 estimates
```r
fit_rq3_lm_cat4 %>%
  emmeans::emmeans(~ parent_wkbalpan_cat4) %>%
data.frame() %>%
dplyr::mutate(parent_wkbalpan_cat4 = parent_wkbalpan_cat4 %>%
  forcats::fct_rev()) %>%
ggplot(aes(x = parent_wkbalpan_cat4,
y = emmean,
group = 1)) +
geom_errorbar(aes(ymin = emmean - SE,
  ymax = emmean + SE),
  width = .3) +
geom_point() +
geom_line() +
theme_bw() +
labs(x = "Parent's Reported Work-Family Balance During Pandemic",
y = "Parent's Reported Parenting Satisfaction Index")
```

Figure 33: Parenting Satisfaction and COVID-19 Work-Family Balance Collapsed Categories

Cohen’s d

```r
df_wide$parent_psi_mean %>% sd()
[1] 0.4307583
.27928/.4307583
[1] 0.648345
```