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Co-Parenting of Adolescent Children, Parenting Stress, Marital Problems, and Parents' Mental Health

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CO-PARENTING OF ADOLESCENT CHILDREN, PARENTING STRESS,
MARITAL PROBLEMS, AND PARENTS' MENTAL HEALTH

By
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To my strong, dedicated, motivated, and industrious self, to all my loved ones who have made me who I am today, to people who recognized my talent, and to the memory of my grandparents.

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TABLE OF CONTENTS

List of Tables	vi
List of Figures	vii
Abstract	viii
1. INTRODUCTION	1
2. BACKGROUND	3
3. METHODS	12
4. RESULTS	16
5. DISCUSSION	19
APPENDICES	33
A. TABLES.....	33
B. FIGURES	37
C. INSTITUTIONAL REVIEW BOARD APPROVAL FOR NOT HUMAN RESEARCH.....	39
References.....	41
Biographical Sketch	55

LIST OF TABLES

Table 1. Demographic information.	33
Table 2. Descriptive statistics and correlations among all variables	35

LIST OF FIGURES

Figure 1. Conceptual model for co-parenting of adolescent children, parenting stress, marital problems, and parents' mental health problems	37
Figure 2. Final model for co-parenting of adolescent children, parenting stress, marital problems, and parents' mental health problems	38

ABSTRACT

The purpose of this study is to answer the call for studies on the well-being of parents with adolescents and to gain further understanding of its influential mechanisms in family systems. Guided by family systems theory (S. Minuchin, 1974) and the ecological model of co-parenting (Feinberg, 2003), I proposed a conceptual path model linking co-parenting, parenting stress, marital problems, and parents' mental health problems. Using a sample of 116 parents of adolescents from cross-sectional data (Parenting and Adolescents' Well-Being project), I conducted Structural Equation Modeling to test the hypothesized model. Results supported my hypothesis that lower co-parenting quality was positively associated with parents' mental health problems through parenting stress and marital problems. This study contributed to the field by raising awareness of parents' psychological well-being, emphasizing the central role of co-parenting of adolescents in its relation to parents' mental health problems, and examining parenting stress and marital problems as essential linking mechanisms. The findings from the present study could inform clinicians and therapists regarding the design of prevention and intervention programs aiming to promote better psychological health of parents of adolescent children.

CHAPTER 1

INTRODUCTION

The prevalence of mental health problems in adults, especially parents, is concerning. In 2019, 20.6% of U.S. adults experienced mental illness according to the Substance Abuse and Mental Health Services Administration (SAMHSA, 2020). Among all the adults who have a psychological disorder, the majority were parents. It was documented that 18.2% of U.S. parents with children aged 18 or younger had a mental illness in the past year, and 3.8% of U.S. parents were with a severe mental illness (Stambaugh et al., 2017). Indeed, parents were more likely than their childless counterparts to face mental health problems (Gopalan et al., 2010; K. M. Nomaguchi, 2012). This recognition has fueled unprecedented research attention towards parents' psychological well-being, especially in the past decade (See meta-analysis by K. Nomaguchi & Milkie, 2020).

Despite the proliferation of research on parenthood and parental well-being, current knowledge concerning such a topic on parents of adolescent children, in particular, is fairly limited (e.g., Simon & Caputo, 2019). This research gap is striking because previous findings have indicated that this group of parents usually experience a higher level of depression than parents of preschoolers or younger children (Fischer et al., 2015; Meier et al., 2018; K. M. Nomaguchi, 2012). Without a deliberate effort to explore the antecedents of mental problems in parents of adolescents, subsequent negative outcomes may persist, such as adolescent maladjustment (Feinberg et al., 2007; Trondsen, 2012), adolescent psychological problems (Van Loon et al., 2014), and family dysfunction (Herring et al., 2006).

This study aims to answer scholars' call for research centered on the well-being of parents with adolescents (Nelson et al., 2014; K. Nomaguchi & Milkie, 2020) and to gain further understanding of underlying mechanisms that influence parents' mental health. Considering the tremendous impact of family on individual lives, I postulate that it is plausible to seek influential contributors for parents' psychological well-being in their family systems (Gregg et al., 2021; Somerville, 2020; Wu et al., 2020). In particular, adults' mental status was inferred in the past literature to be potentially related to their role as co-parents and their relationship with the

partner who shares common child-rearing responsibilities (Feinberg et al., 2016). When incongruency regarding parenting practice, effort, attitude, and goals exists or accumulates, one's parenting-related stress level and spousal relationship are likely shaken (Carr & Springer, 2010). Through this process, the association between co-parenting and mental health conditions is more likely to be revealed.

With the guidance of family systems theory (S. Minuchin, 1974) and the ecological model of co-parenting (Feinberg, 2003), I propose that poor co-parenting relationship could be a primary source of mental health problems for parents with teenagers, and that there exists an indirect connection between co-parenting incongruency and parents' mental impairment via parenting-centered stress and marital problems.

In the following chapters, I will first introduce the two theoretical foundations of my proposed study and review related literature on the family function process linking co-parenting and parents' mental health through parenting stress and marital problems. I then propose the hypotheses of my study based on the theoretical foundations and literature review. Using secondary cross-sectional data collected from parents of adolescents, I will next conduct statistical analysis with structural equation modeling (SEM). Following the model testing, I will present the results and explore the meanings of the findings. Next, the foreseeable applicability of this study in advancing understanding for future family research and practice will be stated. Finally, I will conclude with a discussion of the limitations and suggestions for future studies.

CHAPTER 2

BACKGROUND

Theoretical Perspectives and Literature Review

Family Systems Theory and the Ecological Model of Co-parenting

Family systems theory (FST; S. Minuchin, 1974) proposed a “holistic framework” that integrates various family concepts and interactions in family-strain-related studies (Bortz et al., 2019, p.544). This theory suggested that family members are interdependent rather than isolated. An individual could be involved in one or more distinct but interrelated subsystems (e.g., marital relationship, co-parental relationship, parent-child relationship, etc.; P. Minuchin, 1985). Subsequently, everyone in the family assumably takes on role-related responsibilities governed by unspoken rules in each subsystem. Throughout family development, subsystems are subjected to adapt, change, and develop (Allen & Henderson, 2016; P. Minuchin, 1985). Their constant and mutual interaction results in affairs “spillover” from one subsystem to another (Cox & Paley, 1997; De Luccie, 1995; Martin et al., 2017). This ripple effect, either positive or negative, may continue until every subsystem and individual is affected, especially when no intervention is applied (Goldenberg & Goldenberg, 2012).

Within this constant spillover process, each family member’s well-being and sense of self are created, improved, or challenged (Satir, 1988; Whitchurch & Constantine, 1993). If the spillover effect is positive, one’s mental status will remain healthy, thereby bringing more positive emotions such as joy, happiness, and life satisfaction. However, if the spillover effect is negative, it will likely magnify the existing daily life stressors and cause strains in all relationships, thus bring out more deleterious outcomes on individual well-being (Merrifield & Gamble, 2013). Therefore, FST has been widely adopted by psychologists, sociologists, and family scientists in the hope of appropriately addressing individuals’ emotional and behavioral problems (Allen & Henderson, 2016). In addition, Feinberg (2003) proposed a co-parenting-centered conceptual model that is rooted in the family systems theory (P. Minuchin, 1985; S. Minuchin, 2018)—the ecological model of co-parenting (EMC). This model brought co-parenting into the spotlight and posited the intercorrelation among co-parenting quality,

individual parent characteristics, overall interparental relationship, parental adjustment, and child outcomes.

In line with the spillover hypothesis in the FST and the EMC, the negative influence of low co-parenting quality on parents' psychological well-being is largely seen in contemporary transition-to-parenthood-related research (Don et al., 2013; Lu, 2006; Yalcintas & Pike, 2021). Unfortunately, existing literature linking co-parenting process with parents' well-being remains limited at other life stages (e.g., Solmeyer & Feinberg, 2011). In their most recent conceptual paper, Bortz and colleagues (2019) reinforced the integrative value of FST in studies of families with adolescents. Thus, I will focus on parents with teenage children in this study and propose their co-parenting quality to be related to their psychological well-being. During this pre-adulthood period, adolescent's sometimes strained relationships with parents (Lam et al., 2014), being rebellious to family rules (Meeus, 2018), and increased vulnerability to engagement in delinquency (Harris-McKoy & Cui, 2013) could elicit disagreement and conflicts in parents' co-parenting practice and strategies. Inability to reach a consensus in child-rearing decisions is likely to increase the chance for parents to have negative psychological reactions such as frustration, anxiety, annoyance, depression, stress, and so on through a process.

The theoretical foundations of this study indicated the elements of this process in several studies. That is, parenting stress and marital problems potentially serve as linking mechanisms within the overarching association between co-parenting and parents' mental health problems (Kwok et al., 2015; Merrifield & Gamble, 2013; Somerville, 2020). The spillover hypothesis would postulate that when parents hold different attitudes and incongruent strategies in the child-rearing practice, the increased disparity could predict higher levels of parenting stress. The differences in parenting practice and high parenting-related distress levels, in turn, may increase the risk of one having marriage issues. Frequent conflict and heightened tension in both the parenting domain and marital domain, in addition to daily hassles and parenting dissatisfaction, would subsequently predict worsened psychological well-being among these parents of adolescent children (Carr & Springer, 2010). Unfortunately, the problem persists that contemporary research primarily focused on families with smaller children (Kwok et al., 2015; Lu, 2006; Philipp et al., 2020), which resulted in the lack of information in families and parents with adolescents. This is surprising considering that parents were shown to face more

unprecedented challenges and stress in children's adolescent years than other times (Cui & Donnellan, 2009; Roeters & Gracia, 2016; Steinberg & Silverberg, 1987).

Noticeably, although bivariate associations were found in the existing literature, there remains a dearth of research that examined the relationship among all the variables. In addition, among studies that considered couple relationships and personal psychological health, very few treated parents of adolescent children as primary targets. With the guidance of FST and EMC, this study will examine an adjusted conceptual path model that's focused on adolescent' parents to address the existing research gap. In my model, main factors under examination that are supported by the theoretical perspectives are co-parenting, parenting stress (i.e., parenting and parental adjustment), marriage/partner relationship (i.e., overall interparental relationship), and parents' mental health (i.e., individual parent characteristics). The findings from this study are expected to add empirical evidence to the current literature and to provide practical implications to family-related interventions and therapies.

Co-parenting of Adolescent Children and Parents' Mental Health Problems

Following the introduction of family systems theory, co-parenting dynamics started to receive scholars' attention in the 1970s. Family scholars have increasingly recognized it as "the center about which family process evolves" (Weissman & Cohen, 1985, p. 24), which may closely link to an individual's life and well-being directly or through other mechanisms.

Even though co-parenting is a bridge between marital and parental relationships, previous research has demonstrated the importance of distinguishing co-parenting from other forms of couple relationship (e.g., Boričević Maršanić & Kušmić, 2013). Feinberg (2003) referred to co-parenting as "the ways that parents and/or parental figures relate to each other in the role of parent" (p. 96). This relationship is centered on child welfare, and it involves far more than childcare responsibilities (McHale et al., 2004). Several studies suggested vital elements of co-parenting relationships—partners' solidarity level, supportiveness or undermining in parenting practice, child-rearing agreement or dissonance, joint family management, and so on (Belsky et al., 1995; Feinberg, 2003; McHale, 1995). Accordingly, one's perceived co-parenting quality usually include the consideration of all these parenting-related aspects, which represents whether one sees their spouse as an alliance (i.e., cooperation) or an adversary (i.e., conflict) in sharing

parenting responsibility (Gable et al., 1994a; Teubert & Pinquart, 2011). Satisfying co-parenting is manifested by mutual support, understanding, cooperation, and communication, whereas antagonism and undermining are deemed harmful for this parental interplay (Teubert & Pinquart, 2010a).

Although attention was gradually drawn to co-parenting-related research, most studies have predominantly considered its influence on child-related outcomes (Palkovitz et al., 2012; Teubert & Pinquart, 2010a) or parent-child relationship (Martin et al., 2017; Riina & McHale, 2014). Limited research has considered and tested the influence of co-parenting relationships on parents' well-being. For example, in their research on parental adjustment during early parenthood, Solmeyer & Feinberg (2011) found a positive association between co-parenting undermining and parents' depressive symptoms, stress, and low self-efficacy. In contrast, co-parenting support was related to less stress and better parent adjustment. Along the same vein, Don and colleagues (2013) found that, for first-time parents, high co-parenting quality—manifested in parenting agreement—predicted better subsequent psychological health in both mother and father. Furthermore, several interventional studies have verified the usefulness of co-parenting-focused guidance for improving couple relationships and adults' well-being, specifically during the transition to parenthood (Acri & Hoagwood, 2015; Feinberg et al., 2016; Philipp et al., 2020).

Unfortunately, what is still notably lacking in current literature is the effort to sufficiently investigate the association between co-parenting relationships and the mental health of parents of adolescents (Nelson et al., 2014). Overlooking married or cohabiting parents of adolescents and the role of their co-parenting quality could hinder the advancement of family studies and obstruct the exploration of potential lynchpins in parents' mental problem interventions. Therefore, this study will take the first step of examining the process of such a possible correlation among parents of adolescents.

Co-parenting and Parenting Stress

Within the conceptual process model, I first propose that co-parenting relates to parents' mental health via parenting stress. Parenting stress is a distinctive form of stress evoked by one's negative appraisal of their parent role and responsibilities. It is an aversive psychological

reaction when one has difficulties meeting the demands and expectations of parenthood with limited resources (Abidin, 1992; Deater-Deckard, 2008; Holly et al., 2019).

With the lasting effect of the Great Recession on economic insecurity, deepened intensive child-centered parenting added more weight on parents' shoulders (Meier et al., 2018). Unavoidably, parents today are more readily to develop parenting-related stress than in prior decades (K. Nomaguchi & Milkie, 2020). However, some parents enjoyed their parenthood better and experienced less parenting stress than others (Nelson et al., 2014), and I postulate that an important reason for such a difference is whether or not to have an ally in the family. A harmonious co-parenting relationship can save both parents time and energy, thereby reducing non-necessary stress in child-rearing (Feinberg et al., 2016). Conversely, if one's perceived co-parenting quality is low, this relationship could create more chaos, argument, and frustration in addition to accumulated daily hassles, thus bring about the rise in parenting stress (Finegood et al., 2017; Merrifield & Gamble, 2013). Accordingly, I hypothesize a positive association between low co-parenting quality and parenting stress.

This expectation is in line with existing literature (Bronte-Tinkew et al., 2010; Delvecchio et al., 2015; Kang et al., 2020). For example, Schoppe-Sullivan and colleagues' (2016) study about emerging parents showed a negative correlation between quality co-parenting and parenting stress under a low parenting self-efficacy. In Margolin and colleagues' (2001) study of two-parent families, co-parenting quality served as a mediator of the association between marital conflict and parenting stress. Moreover, a recent study by Lau and Power (2020) about Chinese parents revealed the mediating effect of paternal parenting stress on the relation between co-parenting and fathers' authoritative parenting. Indeed, based on FST and EMC, one's feeling of partner's supportiveness or disproving could spill over to their appraisal of personal parenting ability, confidence in meeting parenting requirements, and parenting stress level (Weissman & Cohen, 1985). Eventually, the accumulation of parenting-related stress will likely extend to adults' mental distress, which was also supported in existing literature (deMontigny et al., 2020; Estes et al., 2009; Farmer & Lee, 2011).

Unfortunately, limited research about parents of adolescent children investigated the relation between co-parenting and parenting stress. This is unexpected considering a handful of

study has explored parents' surged parenting stress during children's teenage years (Meier et al., 2018; Small et al., 1988). Two studies suggested co-parenting conflict as a risk factor for parenting stress or negative parenting practice. One is by Martin and colleagues (2017), which revealed that co-parenting disagreements over adolescent children led to harsh parenting practices. Parenting harshness is potentially a representation of parenting stress, which ultimately points to the damaged parent-child attachment. The other study by Feinberg and colleagues (2016) showed that co-parenting conflict and parents' negativity towards adolescents were closely related. Similarly, parents' negativity can be a manifestation of parenting stress. This study will address this research gap by directly examining the unidirectional path from co-parenting quality to parenting stress.

Parenting Stress and Marital Problems

The other crucial relationship within a nuclear family is marriage. While co-parenting centers on shared child-rearing responsibilities, marital relationship is focused on various issues such as partner warmth and hostility (Song-Choi & Woodin, 2021), sex (Sánchez-Fuentes et al., 2014), or couple intimacy and attachment (Tavakol et al., 2017). Although co-parental subsystem and marriage subsystem are sometimes separated (e.g., see Boričević Maršanić & Kušmić, 2013), these two subsystems coexist in different forms in most families.

A harmonious and happy marriage accompanied by a supportive partner, joint decision making, mutual understanding, intimacy, and mutual love could have a tremendous impact on one's life satisfaction and eased feelings (Carr & Springer, 2010). When low-quality co-parenting exists and brings a higher probability for intensified parenting stress, this chain effect will likely link to the high risk of one having marital problems. This hypothesis is consistent with a body of literature that addressed the link between parenthood and marital problems (Durtschi et al., 2017; Kluwer & Johnson, 2007; Twenge et al., 2003). For example, using longitudinal couple data from the Fragile Families and Child Wellbeing Study, Berryhill and colleagues (2016) found that parenting stress reported by parents when children were three years old predicted lower perceived relationship quality at age 5. Similarly, Durtschi and colleagues (2017) used the same data and uncovered that supportive co-parenting and parenting stress significantly forecasted relationship quality. Another study with supportive results was conducted by Lavee

and colleagues (1996). This dyad research showed that parenting stress greatly affected both parents' mental well-being and perceived marital quality in intact households.

Previous research has indicated the processes linking co-parenting quality, parenting stress, and marital quality (e.g., Margolin et al., 2001; Morrill et al., 2010). With a family system view, Kwok and colleagues (2015) supported the positive spillover of positive factors in the parental subsystem (e.g., low level of parenting stress, co-parenting alliance, parenting self-efficacy) to spousal subsystem (e.g., marital satisfaction) among Chinese mothers. However, in spite of the richness of thinking on the association between parenthood and marital relationships, empirical investigations of such family function in households with adolescent children were still scarce. One representative example of such exploration was Cui and Donnellan's (2009) research. Using a prospective and longitudinal design, they elucidated a negative correlation between parents' adolescent-rearing conflict and marital satisfaction over four years. Although that research did not include parenting stress as a mediator, it still guided future research on parents of adolescents with a family function lens. In the overarching model of the current study, I will exclusively examine the direct path from parenting stress to marital problems with the data collected from parents of teenage children.

Marital Problems and Parents' Mental Health Problems

The last piece of the association within the complete conceptual model of this study is between marital problems and parents' mental health problems. This connection was the most supported by empirical evidence among all the associations in the current study (Fink & Shapiro, 2013; Goldfarb & Trudel, 2019; Peterson-Post et al., 2014). Some studies described low marital quality and marital conflicts as risk factors to maternal and paternal postnatal depression, anxiety, and stress (O'Hara & McCabe, 2013; Patel et al., 2012). Also, in their study exploring the uniqueness of marriage, Holt-Lunstad and colleagues (2008) revealed a positive relationship between high marital quality and low levels of psychological distress (e.g., stress and depression). Another study that examined older spouses' subjective well-being revealed a significant correlation between one's marital satisfaction and life satisfaction as well as momentary happiness, which can be viewed as high mental health status. In addition, a great number of studies also evidenced the potential mediational effect of marital relationship quality

within the broader connection between co-parenting and parents' mental health (Hirschberger et al., 2009; Tavakol et al., 2017).

The good news is that increased attention on parents of adolescent children—many of them are middle-aged—has fueled an incipient research interest in treating marital quality as a source for these parents' mental health. One reason for such an emerging interest could be the evidenced marital dissatisfaction for parents during children's teenage years. Particularly, several studies have found this period as a critical period for adults—a majority of them reported experiencing their lowest point for marital satisfaction in the family cycle (Gottman & Levenson, 2000; Hirschberger et al., 2009; Steinberg & Silverberg, 1987). Consequently, a handful of studies were seen to support the predicting effect of marital quality on parents' mental health in adolescents' families. For example, Beach and colleagues (2003) reported a longitudinal association between appraised low-quality marriage and depressive symptoms in parents of adolescent children. Similarly, another study by Keresteš and colleagues (2012) identified marital satisfaction as one critical attribute to parental psychological well-being in families with teenagers.

Although prior studies have dedicated efforts for this specific group of parents, most of these studies have been limited in that they merely examined the influence of marital relationships. For middle aged-parents, co-parenting discord also needs to be considered, along with its subsequent parenting stress. With the up-to-date empirical evidence, there are compelling reasons to posit that in families with adolescents, parents' marital problems may be associated with their impaired mental health. This bivariate correlation will be tested in the overall conceptual model in the current study.

The Present Study

Family systems theory stressed the impact of the family dynamic and the within- and between-subsystem interaction on individuals. Guided by such a holistic theoretical background and the co-parenting-centered ecological model posted by Feinberg (2003), I aim to address the limitations in previous literature by investigating the correlation between co-parenting, parenting stress, marital problems, and parents' mental health problems among parents of adolescent children. Specifically, drawing from family systems theory (S. Minuchin, 1974) and the

ecological model of co-parenting (Feinberg, 2003), I hypothesize that lower co-parenting quality is positively associated with parents' mental health problems through parenting stress and marital problems. Figure 1 illustrates the proposed model. In examining the hypothesis, I also control for several important demographic characteristics (i.e., parents' gender, age, race, ethnicity, number of children, religious affiliation, and family income), because past research suggested their association with co-parenting, parenting stress, marital problems, and/or mental health (e.g., Keresteš et al., 2012; Roeters & Gracia, 2016; Schoppe-Sullivan et al., 2016).

CHAPTER 3

METHODS

Sample and Procedures

This study used data from the Parenting and Adolescents' Well-Being (PAWB) project funded by Eunice Kennedy Shriver National Institute of Child Health & Human Development (NICHD). The original study was designed with the purpose of understanding parenting practice and its relation to adolescent development. High school students from grades 9 to 11 were recruited from several high schools in the Tallahassee area in 2018-2019. An online survey was completed by students who agreed to participate with written assent and parental consent. Upon completion of the survey, each participant was compensated with \$20. Primary parents of the students were also invited to participate in an online (parent) survey on their demographics, family and marital relationships, parenting, and health and well-being. Upon completion, each parent was compensated with a \$20 Amazon e-gift card. Because the focus of this study is on parents' own perceptions and psychological well-being, this study used the parent data from the parent survey.

A total of 181 parents participated in the original study. To ensure this study only target appropriate participants, I have set the exclusion criteria as (1) single parents who were never married, divorced, or widowed with no living partner (Egeren & Hawkins, 2004) and (2) respondents who failed to respond to two or more research variables. After the preliminary process, data from 116 parents was included in this study ($N = 116$). Table 1 provides the demographic information, almost all of the parents were in their middle adulthood. In particular, approximately half of the parents (57.8%) were in their 40s, and around a similar number of participants reported to be in their 40s (21.6%) and 50s (19.0%). Women accounted for the majority population (87.1%). Considering the small sample in the current study, race was categorized as White or non-White, and the majority of participants identified as White (62.1%). A small percent of the total population reported being Hispanic or Latino (12.9%). Participants' highest level of education ranged from less than high school (1.7%), high school graduate (8.6%), some college (25.9%), bachelor degree (36.2%), to post bachelor degree such as masters'

or doctoral degree (27.6%). The majority of included parents were married (85.3%) or cohabiting (9.5%), where 5.2% of them were remarried with a partner living together. An approximately equal number of parents indicated having one or two minor children in the household (39.7% and 37.1%, respectively), and the rest reported having three (20.7%) or more (2.6%) underaged children at home. For participants' religious affiliation, most reported being Christian (85.3%). Regarding family's total annual gross income, 4.3% reported below 25k, 15.5% reported between 25k to below 50k, 13.8% reported between 50k to below 75k, 25.0% reported between 75k to below 100k, 23.3% reported between 100k to below 150k, 12.9% reported between 150k to below 250k, and 5.2% reported 250k and above.

Measures

Co-parenting

Co-parenting quality was assessed using a modified scale from the Multidimensional Co-Parenting Scale for Dissolved Relationships (MCS-DR; Ferraro et al., 2018). As can be seen from the name of the original scale, it was first developed to examine co-parenting quality after divorce. In order to grasp a more general idea about parents-perceived co-parenting of adolescent children, researchers of PAWB projects selected four items of the original scale, adjusted the wording, and added three customized items to target their participants. The 7-item co-parenting scale covered co-parenting support (e.g., "we agree on general standards for our children's behavior"), cohesion (e.g., "we have similar rules and expectations for our child"), differences (e.g., "my spouse/partner and I practice different parenting which is difficult to compromise"), and conflict (e.g., "my spouse/partner and I argue about our differences in parenting ideas"). Each item was answered with a five-point Likert scale ranging from 1 = *Strongly disagree* to 5 = *Strongly agree*. Three additional items assessing negativity in co-parenting relationships were reverse coded so that a higher score represented a higher level of co-parenting quality. The reliability of the scale in the present study was good ($\alpha = .89$).

Parenting Stress

Parenting stress was measured using a modified parenting stress index (PSI; Abidin, 1995) suitable to adolescent children's parents. Nine items were included in the scale. Sample items included "I find myself giving up more of my life to meet my children's needs than I ever

expected” and “having children has caused more problems than I expected in my relationship with my spouse/partner.” The responses ranged from 1 = *Strongly Agree* to 5 = *Strongly Disagree*. The total score for each participant was calculated, with a higher score indicating more parenting stress. The reliability of the scale in the present study was good ($\alpha = .82$).

Marital Problems

Marital problems were assessed as a latent construct with three indicators. *Low Warmth* was evaluated by four items about the frequency of following behaviors by participants’ partner: “let you know he/she really cares about you,” “act loving and affectionate toward you,” “let you know that he/she appreciates you, and the ideas or the things you do,” and “help you do something that is important to you” (e.g., see Conger et al., 2000). Parents rated these items with a seven-point Likert scale ranging from 1 = *Never* to 7 = *Always*. All items were reverse-coded and summed up to represent appraised low-level partner warmth. Cronbach’s α was .94. *Hostility* was assessed with items regarding the partner’s hostile behavior frequency (e.g., see Cui & Conger, 2008). Sample items included “get angry at you” and “argue with you whenever you disagree about something.” Each item ranged from 1 = *Never* to 7 = *Always*. Scores for all five items were summed to represent partner hostility. Cronbach’s α was .82. *Low Relationship Quality* was measured by two straightforward questions asking how satisfied and how happy were they in their relationship with their spouse/partner. The response for both questions ranged from 1 = *Very Unsatisfied* to 5 = *Very Satisfied*, and the score for each question was reverse coded to represent relationship unhappiness and dissatisfaction respectively. The two scores were summed as a composite score of low relationship quality, such that a higher score indicates higher levels of marital problems.

Parents’ Mental Health Problems

Parents’ mental health problems was measured by a latent construct with two indicators—depressive and anxiety symptoms. *Depressive symptoms* were assessed by the 10-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). Participants reported how often did they have certain feelings in the previous week (e.g., “I had trouble keeping my mind on what I was doing” or “I felt lonely”). Responses categories of each item ranged from 1 = *rarely or none of the times (less than one day)* to 4 = *most or all the time (5-7*

days). Two items were reverse coded (i.e., “I felt hopeful about the future” and “I was happy”); total scores for all items were computed ($\alpha = .81$). *Anxiety symptoms* were evaluated by the 10-item Beck Anxiety Inventory (BAI; Beck et al., 1988). Parents were asked about the frequency of having bothersome feelings in the past month. Sample feelings were “unable to relax,” “terrified or afraid,” and “hot/cold sweats.” Participants reported level of frequency ranged from 1 = *not at all* to 4 = *severely—it bothered me a lot*. Response for each item was totaled with a higher score showing a greater level of anxiety ($\alpha = .93$).

Covariates

Parents’ gender was dichotomized as 1 = *Male* and 2 = *Female*. Age was coded from 1 = *Below 30* to 5 = *60 and above*. Race was coded as 1 = *White* and 2 = *non-White*. Ethnicity was coded as 1 = *Hispanics* and 2 = *non-Hispanics*. Answers for the number of minor children in the household included 1, 2, 3, and 4 or more. Parents were asked to report their religious affiliation as 1 = *Christian* or 0 = *Others*. Family SES was assessed by family income, ranging from 1 = *below 25k* to 7 = *250k and above*.

Data Analysis

First, I provide descriptive statistics and Pearson and Point-Biserial correlations. To test the hypothesis (Figure 1), I conduct structural equation modeling (SEM) in Mplus 8. The model fit is evaluated with the following indices: Chi-square (non-significance), the root mean square error of approximation (RMSEA < .05), the comparative fit index (CFI > .95), Tucker–Lewis index (TLI > .95), and the standardized root mean square residual (SRMR < .08) (Hu & Bentler, 1999). Participants provided information on all the variables of interest, so there were no missing data in the analyses. Bootstrapping approach for testing the significance of the indirect effects of parenting stress and marital problems is adopted. I expect the indirect effect from co-parenting to mental health through parent stress and marital problems to be significant. Covariates (i.e., parents’ gender, age, race, ethnicity, number of children, religious affiliation, and family income) are included in the initial model. For parsimony, only the covariates with a significant path to the endogenous variables are included in the final model.

CHAPTER 4

RESULTS

Descriptive Statistics

Table 2 shows the descriptive statistics of the sample with means or percentages, standard deviations, and correlations among all variables for hypotheses testing. The findings revealed several crucial insights. First, co-parenting was significantly correlated with both indicators of mental health problems—depressive symptoms ($r = .41, p < .01$) and anxiety symptoms ($r = .26, p < .01$), indicating a potential significant direct relationship between the two key variables of the study. Second, the correlation was significant and negative between the two observable variables—co-parenting and parenting stress ($r = -.51, p < .01$). Third, parenting stress was strongly and positively related to all three indicators for marital problems—low warmth, hostility, and low relationship quality ($r = .51, r = .42$, and $r = .42$, respectively, $p < .01$ for all). Meanwhile, co-parenting was significantly and negatively associated with low warmth ($r = -.63, p < .01$), hostility ($r = -.44, p < .01$), and low relationship quality ($r = -.62, p < .01$). Additionally, the relations between each indicator for marital problems and depressive symptoms—one manifestation of the latent variable of parents' mental health problems—were statistically significant. In particular, the correlation coefficients were .51, .38, and .47, respectively, between low warmth, hostility, low relationship quality and depressive symptoms ($p < .01$ for all). For correlations between marital problems and the other indicator of mental health issues—anxiety symptoms, both low warmth and low relationship quality were positively and significantly related to anxiety ($r = .24$ and $r = .18$, respectively, $p < .05$ for both). At the same time, there was no proof of a strong association between hostility and anxiety ($r = .15, ns$). Furthermore, although the relationship between parenting stress and depression was significant ($r = .40, p < .01$), the association between parenting stress and anxiety was much weaker ($r = .11, ns$).

Noteworthy, the correlation results in Table 2 also reinforced the decision to include two latent variables in the current study. Specifically, low warmth, hostility, and low relationship quality were highly correlated with one another, with correlation coefficients ranging from .56 to

.72 ($p < .01$ for all). This finding indicated that treating them as separate variables would not be rigorous; rather, using them to manifest marital problems as one latent variable would be appropriate. Similarly, the association between depressive symptoms and anxiety symptoms was revealed to be statistically significant ($r = .51, p < .01$). It suggested that treating mental health problems as a latent variable with these two indicators would be more suitable than viewing them as separate variables.

Finally, regarding the covariates, it was indicated in Table 2 that other than parents' age and ethnicity, no other demographic variables (i.e., gender, race, number of children, religious affiliation, and family income) were correlated with any of the endogenous variables of this study (i.e., parenting stress, marital problems, and mental health problems). In particular, age was significantly and positively related to low partner warmth ($r = .20, p < .05$), ethnicity was strongly and positively related to anxiety symptoms ($r = .20, p < .05$). Based upon these encouraging preliminary findings, I moved forward with the hypothesis testing using structural equation modeling (SEM; Kline, 2015).

Hypothesis Testing

This study utilized SEM in Mplus 8 for hypothesis testing. The results of the final model with standardized path coefficients are displayed in Figure 2. All covariates were included in the initial model testing, but only significant paths from covariates to endogenous variables were displayed in the final parsimonious model—parent's age and family income (Figure 2). Overall, the model displayed a good fit: $\chi^2(20) = 17.14, p > .05, CFI = 1.00, TLI = 1.00, RMSEA = .00, SRMR = .03$ (Hu & Bentler, 1999). There were several noteworthy findings. First, the coefficients revealed that co-parenting and parenting stress were significantly associated in an expected direction ($b = -.51, p < .01$). Second, parenting stress was positively correlated with the latent construct of marital problems ($b = .28, p < .01$). In addition, the model also displays a significant and positive correlation between the latent construct of marital problems and parents' mental health problems ($b = .49, p < .01$). Finally, co-parenting was negatively and strongly correlated with marital problems ($b = -.59, p < .01$).

Considering the examination of mediating effects, evidence in Figure 2 revealed that once parenting stress and marital problems were added into consideration, the significant and

direct correlation between co-parenting and parents' mental health problems showed in Table 2 no longer existed ($b = .05$, ns). Based on 1,000 bootstrapping resamples, results suggested that parenting stress and marital problems mediated the correlation between co-parenting and parents' mental health problems ($b = -.07$, $se = .04$, 95% CI [-0.251, -0.024]). For other indirect effects within the final model, parenting stress alone could not serve as a mediator between co-parenting and parents' psychological problems, giving that no significant direct association was found between parenting stress and mental health problems ($b = .11$, ns). The results from bootstrapping test further indicated this finding ($b = -.06$, $se = .07$, 95% CI [-0.231, 0.079]). However, the results indicated the partial mediating effect of marital problems between co-parenting and mental health problems ($b = -.29$, $se = .15$, 95% CI [-0.664, -0.078]). This means that other than its indirect mediating effect through parenting stress, marital problems also solely explained the relationship between co-parenting and parents' psychological problems. Additionally, the indirect correlation between co-parenting and marital problems via parenting was found to be significant ($b = -.14$, $se = .06$, 95% CI [-0.296, -0.052]). This finding means that although the direct relationship between co-parenting and marital problems remained significant ($b = .59$, $p < .01$), the effect of this direct correlation was significantly reduced by parenting stress.

For control variables, it was seen that the positive relationship between age and marital problems was statistically significant ($b = .15$, $p < .05$), which confirmed the finding in the correlation table (Table 2). This result indicated that the risk of having marital issues is higher for middle-aged parents who are older. Although family income was not shown to be highly correlated to any endogenous variables in the bivariate associations, it was shown as being positively and significantly related to marital problems in the final model ($b = .16$, $p < .05$), indicating parents from households with a higher income level reported more marital problems than parents reported lower family income. Considering the fairly small sample size, I did not test for moderating effects of covariates in this study.

CHAPTER 5

DISCUSSION

Parents tend to be overloaded, neglected, blamed for, or put under high expectations in contemporary society (Meier et al., 2018). It was suggested that parents of adolescent children (often middle-aged) have a high tendency to face challenges and stress when raising their adolescent children, and this possibly stormy period leaves the door open for undergirded psychological burdens among them (Meier et al., 2018; Pollmann-Schult, 2014). However, existing literature has primarily explored the negative effect of parents' mental problems on adolescents' outcomes or parent-child relationships while largely overlooked the factors of parents' mental health problems (Bennett et al., 2012; Loon et al., 2017). Failing to address such a research question may hinder the opportunity to promote parents' well-being and prevent subsequent detrimental outcomes in parents and adolescent children (Leijdesdorff et al., 2017; Price-robertson et al., 2017). Therefore, it is imperative and essential to identify potential sources of parents' impaired psychological well-being.

This study devoted attention to parents' mental health problems and examined the potential risk factors in the family systems. Guided by family systems theory (S. Minuchin, 1974) and the ecological model of co-parenting (Feinberg, 2003), I proposed an adult- and family-system-focused conceptual model linking co-parenting, parenting stress, marital problems, and parents' mental health problems together. This model was tested using a sample of 116 primary parents of adolescent children. The results from SEM analyses supported the hypothesis that low co-parenting quality is associated with parents' mental health problems through parenting stress and marital problems. Following, I will comment on the major findings of this study and the corresponding theoretical contribution.

Major Findings and Theoretical Contributions

Co-parenting and Parents' Mental Health Problems

The findings from this study supported the possibility of low co-parenting quality to be a critical source of risk for parents' mental health problems. Although little research effort has

been made with this consideration, especially for families with teenage children, this finding is still consistent with extant literature pointing to early parenthood (Majdandžić et al., 2012; Solmeyer & Feinberg, 2011). Co-parenting relationships in families with adolescent offspring could be critically influential to parents themselves. Before children's teenage years, the challenges and potential pain of parenthood may be buffered by the close parent-child relationship and the feeling of being needed (Kwan et al., 2015). The harmonious family relationship and rewarding experience may allow parents to both enjoy parenting and the marital relationship. However, as children become adolescents, they are likely to grow more distant and disengaged from home while enjoying time with peers (Feinberg et al., 2007; Richards et al., 2010). This unavoidably increases parents' time and chances of communication with each other.

During this period, concerned parents may be more worried about children's potential delinquency behavior than ever. Thus, it would be common for them to seek confirmation regarding parenting practice with their partners (Riina & Feinberg, 2018). Having a supportive and understanding parenting partner would greatly assist one to feel eased on parenting practice and daily stress, which allows them to maintain harmonious family relationships and, in turn, link to a healthy mind. However, if one constantly fails to receive positive, affirming, and concordant child-rearing feedback from their partner, such incongruity in the co-parenting relationship will likely spill over to other life aspects, eventually increase the possibility of damaged emotional health (Yalcintas & Pike, 2021).

The results of this study provided initial evidence for the relationship between perceived co-parenting disparity and psychological problems among parents of adolescents. As co-parenting-related research starts to mature, this study plays an important role in moving this research field forward by focusing on parents of teenage children, identifying the potential impact of the co-parenting relationship on parents' health, and investigating under what circumstances and through what mechanisms this effect functions.

Parenting Stress and Marital Problems as Mediators

The findings that parenting stress and marital problems were connecting mechanisms within the overarching relation between co-parenting and parents' mental health fit well within the theoretical guidance (i.e., FST and EMC) and extant body of literature (deMontigny et al.,

2020; Keresteš et al., 2012). Specifically, it was unveiled that the originally significant direct relationship between co-parenting and mental health problems (i.e., depressive and anxiety symptoms, see Table 2) became nonsignificant when parenting stress and marital problems were added into the framework as mediators (see Figure 2). This result indicated that parenting stress and problematic marriage fully explained how and why co-parenting quality might predict middle-aged parents' mental well-being. That is, for parents who sense a high level and frequency of disagreement, disparity, and conflict with partners regarding the adolescent-rearing practice, parenting may be extremely stressful and frustrating. The intense feeling of distress, anxiety, or anger for child-rearing, in turn, could spill over to one's marital life, represented by more argument regarding other daily hassles or marriage-related affairs. Eventually, this chain of processes may create loads of emotional baggage for parents of adolescent children, which may spread within and outside of family systems (Calvano et al., 2021; Marchand-Reilly, 2016).

Noteworthy, parenting stress was explicitly examined and supported as one of two mediators between co-parenting and parents' well-being in this study. This approach was rarely found in the existing empirical literature, despite scholars' implicit attempts to use parenting stress while reasoning for the correlation between co-parenting and marital satisfaction (Merrifield & Gamble, 2013) or mental health problems (Yalcintas & Pike, 2021). Therefore, it may encourage future research to deliberately consider parenting stress as one mechanism when studying the relationship between co-parenting and parents' mental disorders.

Additionally, the indirect relationship between co-parenting and parents' mental health problems solely through marital problems was also statistically significant. Even though some researchers have investigated bivariate relationships among these three concepts, few attempts have been made to link them altogether in one conceptual framework (Yalcintas & Pike, 2021). Besides, such research attempts primarily targeted parents of infants and small children, with scarce resources available about parents of teenagers (Cui & Donnellan, 2009). Thus, the current study contributes to the extant literature by addressing such a research gap.

Altogether, this study provided the first empirical evidence illustrating the interactional process within intact family systems and how it relates to adults' psychological well-being, especially for parents of adolescent children. Specifically, it uncovered two potential linking

mechanisms that mediate the negative impact of low co-parenting quality on parents' psychological problems—parenting stress and marital problems. These findings greatly helped encourage researchers to further explore the leading factors of parents' mental disorders during children's adolescent years. They also advanced our understanding of the process through which perceived co-parenting disagreement may function as a fundamental predicting factor.

Co-parenting and Parenting Stress

The finding that co-parenting and parenting stress were negatively related gave credence to FST (S. Minuchin, 1974). Previous research has illustrated that at any stage of child development, the perceived high-level co-parenting agreement and similarity with one's parental partner is beneficial for the family, such as help alleviate one's stress corresponding to parenting (Martin et al., 2017; Morrill et al., 2010). Especially during children's adolescent years, effectively and cooperatively addressing children's desire for autonomy is a central task for both parents (K. M. Nomaguchi, 2012). This is also a crucial period when parents are under pressure due to concerns about their own parenting ability and skills (Teubert & Pinquart, 2010b).

The result of this study indicated the possibility that parents of adolescents face less parenting stress when having a supportive co-parenting partner. Conversely, perceived co-parenting disagreements could be harmful. Some parents who fail to see their partner as an alliance regarding cooperative parenting may be infuriated and consider the partner selfish and inconsiderate. They may experience high parenting stress due to a sense of competitiveness and a strong will to prove their own ability. Co-parenting conflicts may signal to other parents that their partners lack confidence in their ability to provide guidance and care for children. This interpretation may make them feel disappointed, self-doubt, and frustrated for not doing enough or being a "good parent," thus more likely to report parenting pressure (Don et al., 2013).

This finding contributed to the contemporary literature on that it targeted parents of teenagers, while other studies mostly examined first-time parents (Kang et al., 2020). Although parents of adolescent children were reported to experience more parenting stress than parents of small children (K. M. Nomaguchi & Milkie, 2020), scarce literature provided empirical evidence on the potential risk factors (Nelson et al., 2014). The current research addressed such a research gap by relating low co-parenting quality to parenting stress in households with teenagers, and the

result supported this hypothesis.

Parenting Stress and Marital Problems

Parenting stress and marital problems were positively correlated, which is in line with previous research (Rogers & White, 1998; Williams & Parra, 2019). For example, guided by EMC, Durtschi and colleagues (2017) found that supportive co-parenting (i.e., high co-parenting quality) and father's low parenting stress forecasted higher marital quality in both parents during the transition to parenthood. Similarly, this can be expected in households with adolescents. Irritated parents who experience a high level of co-parenting disagreement and parenting stress may, in turn, view their partner as a competitor or rivalry. They may be less likely to feel happy, loved, and attracted to their spouse. Comparatively, unconfident parents may feel hurt and unsupported because of co-parenting disparity since it could be a manifestation of partners' doubt towards their parenting ability. Subsequently, they may be more likely to suffer parenting stress, and potentially grow apart from the spouse by feeling less intimate and trusting in the relationship.

This finding advanced the contemporary literature in that it brought the long-neglected element—parenting stress—back into the family-system-related investigation and offered empirical evidence on the influential role of parenting stress in predicting marital problems. What is more important is that by focusing on parents of adolescent children, this study linked these three commonly reported midlife experiences (i.e., co-parenting conflict, parenting stress, and marital dissatisfaction) together in a single process model (Gottman & Levenson, 2000; Meier et al., 2018).

Marital Problems and Parents' Mental Health Problems

Marital problems were found to be positively linked to parents' mental health problems. This finding suggested the spillover effect in the family system that when a parent believes they are experiencing a great number of marital problems, there is a higher chance for them to feel vulnerable to mental health problems (Miller et al., 2013; Robles, 2014). This association is reasonably sound because parents who were emotionally connected to children before are more likely to shift attention to their partners when children become teenagers, where any disharmony

within the couple relationship could be magnified during this period (Keresteš et al., 2012). Marital relationships polluted by co-parenting incongruency and parenting stress may be filled with conflicts, arguments, and alienation. This, in turn, could place heavy psychological burdens on middle-aged parents and increase the odds of reported mental health problems such as depression or anxiety (Fischer et al., 2015; Silverberg & Steinberg, 1990).

This study expanded on the previous literature by targeting parents of teenagers when investigating the direct relationship between marital problems and parents' psychological problems. Although this was not the first research considering such a potential correlation (Beach et al., 2003), it still can be deemed one of the field's incipient studies with empirical evidence, which promoted the exploration of possible predictors of middle-aged parents' psychological health problems. The result of this study was promising, which encouraged other scholars in the field to consider investigating similar or other influential factors in intact families. In addition, the current study extended the bivariate relationship between marital problems and parents' impaired psychological health to a more holistic conceptual model, which included parenthood-related elements (i.e., co-parenting and parenting stress) as potential predictors.

Co-parenting and Marital Problems

The finding that was not hypothesized was that co-parenting was directly related to marital problems beyond what was accounted for by parenting stress. This finding, however, was not surprising and potentially explained why parenting stress was not commonly investigated in previous research, as mentioned before. Indeed, marital problems may not be merely prompted by the subsequent parenting-related stress from co-parenting incongruity. Other triggers, such as feeling unsupported and doubted or when children are involved in the triangulation by picking sides, may directly influence the marital relationship (Margolin et al., 2001; Twenge et al., 2003). This direct correlation was increasingly examined following the blossom of family system research in the past three decades (Morrill et al., 2010), and the result has been consistent as what was documented in this study. That is, co-parenting quality and marital problems are negatively associated (Cui & Donnellan, 2009; Gable et al., 1994b; Philipp et al., 2020)

It is worth mentioning that the majority of research considered this correlation in the opposite direction and provided evidence that marital satisfaction predicts co-parenting quality

(Christopher et al., 2015; Ronaghan, 2020). This traditional direction choice was logically sound in research targeting expectant parents, given that this is a transitional period where the co-parenting relationship is newly established, typically after the marriage relationship. However, since I give special attention to parents of adolescents, using co-parenting to predict marital health was more reasonable. Children are often seen as a unique and critical bond between couples. Soon after the baby's birth, the co-parenting relationship may take the lead in the family relationship and come prior to the couple's marital relationship (Morrill et al., 2010).

This way of thinking is consistent with EMC (Feinberg, 2003) and echoed what Weissman & Cohen (1985) have proposed—co-parenting is the center of family function. Although other scholars recently started to examine the reciprocal association between these two variables (McHale & Sirotkin, 2019; Merrifield & Gamble, 2013), the sample of this study does not grant the opportunity for similar research. Considering the absence of an approach to examining marital problems as a mediator between co-parenting and parents' mental health problems, this study advanced the existing literature in this aspect, and the result supported this expectation.

Age and Family Income as Covariates

Age and family income were two covariates in this study that were significantly related to marital problems. The result showed that older parents and parents in more wealthy households reported more perceived marital problems with their partners. For age, our finding was consistent with previous research that age and marital problems are positively correlated, especially during children's teenage years (Cui & Donnellan, 2009; Gottman & Levenson, 2000; Hirschberger et al., 2009). For family income, the existing evidence was discrepant. For example, some research has illustrated that families with low income or socioeconomic status are more likely to experience marital dissatisfaction (Tavakol et al., 2017). Other research supported the risk factor of financial conflict for poor marital functioning in high-income households (Papp et al., 2009; Schramm & William Harris, 2011). The remaining research has shown no relationship between income level and marital satisfaction. This study does not offer sufficient evidence for a conclusive result, giving that the relationship between income and marital problems was borderline significant (i.e., $p = .045$). At the same time, the low power due to the small sample

also needs to be considered. Nevertheless, in the current thesis, these two covariates did not show any statistically significant associations with other endogenous variables.

The Overall Conceptual Path Model

Overall, this study advanced family system study in the field by focusing on adolescents' parents and supporting that low co-parenting quality is associated with parents' mental health problems via parenting stress and marital problems. It reinforced the vital role of co-parenting in influencing family functions and individual outcomes in intact families with teenagers (Margolin et al., 2001; McHale et al., 2004), especially for parents' psychological well-being. Meanwhile, it provided a comparatively new and inclusive way of thinking about family processing. The findings revealed the potential challenges that parents—the often-neglected people group—face in their midlife. It can be inferred from the result that for parents of adolescents, a perceived discord co-parenting relationship is associated with a greater likelihood of intensified parenting stress, related to the possible wedge within the marital relationship, and linked to a heightened possibility of adults' reported psychological issues (K. M. Nomaguchi, 2012; Williams, 2018).

Practical Contributions

In addition to the encouraging findings and theoretical contributions to the contemporary literature, this study also has tremendous implications for future prevention or intervention studies or practices. First of all, the whole study was under the axiological assumption that parents' mental health condition is crucial and worthy of evaluation. Mental health studies proposed that many mental health issues, such as the most common disorders—depression and anxiety, are manageable or treatable (Anxiety and Depression Association of America, 2013). However, despite the large proportion of parents “known” to have mental illness in this demanding society, parents are still less likely to seek or receive professional help (Acri & Hoagwood, 2015). In fact, only 19.2% of adults had received some form of mental health treatment in a year, leaving the majority of adults unadvised for the battle with their own mental illness (Terlizzi, 2020).

One of the reasons may be the lack of literacy on what mental illness is, who is affected, and the deleterious effects of adults' untreated mental illness on family and individuals (Hurley et al., 2018). Another possible reason may be stigma or fear of knowing, revealing, facing, or

treating psychiatric problems (Conner et al., 2010; Latalova et al., 2014). Although researchers have explored this alarming and emerging topic, less information was transferred to the real world. Thus, it is also important for parents and their families to gain literacy regarding mental illness's potential triggers and risk factors in coping with daily hassles and family-related struggles (Beardslee, 2009). This literacy training could be done by non-profit organizations such as the National Alliance on Mental Illness (NAMI), researchers, clinicians, family doctors, or professional psychologists through lectures, psycho-educational programs, or classes. Meanwhile, policymakers should consider this issue and promote mental health awareness nationwide.

Concurrently, in addition to the establishment of mental health literacy among parents and families, approaches for prevention need to be broadcasted. The conceptual model in this study could be utilized as a guide for clinicians, professionals, educators, and audiences. It promotes the idea that co-parents' mutual effort in communication, collaboration, and adaption is positively linked to low levels of parenting stress, related to the increased possibility of experiencing a harmonious marriage or satisfaction with one's partner, and correlated with a strong mental state. This information would be beneficial for both parents such that they would be attentive to their role as parents, co-parents, and spouses and family-related elements that deserve extra attention.

Evidence-based family interventions for parents' mental health problems have verified the value and practicability of co-parenting or couple relationship training in generating promising results. Specifically, co-parenting support was frequently examined in family interventions as a protective factor to improve well-being for first-time parents (Feinberg, 2002; Feinberg et al., 2016; Philipp et al., 2020). For example, a pilot intervention research on expectant parents verified that couples who have received guidance with vital co-parenting skills had improved relationship quality post-intervention (Philipp et al., 2020). However, these experiments mainly focused on expectant parents or child-related outcomes.

Also, as scholars have mentioned, partners of the mentally ill parents were seldomly involved in the treatment process, even in family support interventions (Afzelius et al., 2018). The result of this study highlighted the potential role a partner plays in promoting one's

psychological health, especially in families containing adolescents. Children's teenage year is one of the most crucial periods that parents need each other as allies—be supportive to each other on child-rearing responsibilities and in marital relationships. Therefore, clinicians, family therapists, parent educators could primarily target elements mentioned in this study in helping psychologically burdened parents in their middle adulthood. As limited evidence about the pragmatic approaches in addressing parents' psychological problems exists, Aciri & Hoagwood's (2015) research provided wonderful suggestions on how parents could benefit from related services during child treatment and interventions.

Limitation and Future Research

First, the term “marital problems” used in this study was not intended to exclude unmarried parents but rather an umbrella term for married, cohabiting, and remarried parents with living partners. However, single parents who did not live with a partner were excluded from this study as relationship problems (along with co-parenting), though may still exist, could not be readily assessed. As a result, the sample is limited in its generalizability to parents with other living arrangements.

Second, theoretically, this study was not conducted to support the proposed conceptual model as the one and only model for parents of adolescents. As the abovementioned potential bi-directional relationship between co-parenting and marital problems, the path model involving targeted variables of this study could be way complicated, just as Feinberg's (2003) depiction in his ecological model of co-parenting. In fact, family systems theory (S. Minuchin, 1974) did not hint which family subsystem is before others or what element in the family should be considered a predictor or outcome. All subsystems and individuals are mutually influential to others. Thus, as researchers, we must be creative and open-minded when hypothesizing with family elements, associations, and directions. This study took a first step and provided one possible mechanical path model to depict the whole family process, therefore potentially inspires more ways of thinking on what may affect middle-aged parents' lives and mental health.

Third, this study did not examine the contexts and conditions of vulnerability and resilience factors, therefore cannot address the point that not every parent of adolescent children will go through this process. Specifically, the findings from this study do not state that all parents

with teenagers experience poor co-parenting quality, surged parenting stress, intense marriage relationship, and diminished mental health condition. Likewise, by no means would this study suggests that all teenagers' parents are burnt out and surrounded by negative experiences; it simply cannot address these issues. Instead, I intended to illuminate the underlying mechanisms that possibly influence parents' mental health in a family setting—specifically couple relationships (i.e., co-parenting and marriage) as well as parenting-related stress. This approach may help explain the inconsistent findings of parents' happiness and well-being in their middle adulthood—that is, some parents experience internalizing problems while others do not (Pollmann-Schult, 2014).

Finally, this study contains several methodological limitations. First, overlap may exist between measurements of parenting stress and general mental health problems. Indeed, considering that these are both measures for impaired psychological well-being, it is almost impossible to ensure the complete separation between them. However, parenting stress specifically focuses on the stress generated through child-rearing practice and is strictly limited to it. General mental health problems are, in contrast, based on daily-based experience, which could be related to any affairs such as daily hassle, marital conflict, financial pressure, etc. Meanwhile, it was evidenced from Figure 2 that the correlation between parenting stress and parents' mental health problems was statistically insignificant ($b = .11, p > .05$). Therefore, these two concepts were still largely distinctive in the current study.

The second limitation is related to the nature of the cross-sectional data; therefore, causal inferences cannot be made. Granted, cross-sectional studies often received critiques regarding credibility, reliability, and validity (Levin, 2006; Solem, 2015). Meanwhile, this indicates that cautions needed to be taken to interpret the directions of the observed patterns, as the abovementioned opposite directions among variables or a bidirectional process may exist. However, with the available data, the nature of the study could not be managed or changed. Nevertheless, this secondary dataset was of great value regarding the type of the questions, reliability of measures, and targeted participant group of my special interest. As my study took the first step in examining and linking several potential family-related risk factors for parents' psychological problems, this dataset was still unique, suitable, and beneficial. In the future, researchers could consider conducting longitudinal studies to investigate parents with adolescent

children, also deliberately explore antecedents of parents' mental health problems and the directions within the process chain.

Third, the study also has limitations regarding the small sample size and lack of diversity in the sample, which potentially undermined the power and reliability of the result (Button et al., 2013). In particular, the sample focused on parents from intact families who were predominately non-Hispanic or Latino White females. Therefore, the result may lack generalizability to the broader parent populations. As this line of research moves forward, it would be beneficial to replicate or advance this study using a larger and diverse sample that is more generalizable.

Moreover, what was accompanied by the lack of sample diversity was the homogeneity of this sample. Overall, the results depicted a comparatively happy participant group with a low level of family or psychological problems. For example, the mean co-parenting quality was 27.86, while the highest score was 35. This indicated that the majority of participated parents reported being satisfied with their co-parenting quality. Similarly, the mean score for the depressive and anxiety symptoms were 15.97 and 14.67, separately. Both scores were much lower than the possible highest score, which was 40 for both. This limitation echoed the abovementioned point that not all parents of teenagers would suffer mental distress and unharmonious marriage or co-parenting relationships. It was hard to distinguish the reason behind this sample homogeneity—either because the participants of the current study were genuinely satisfied and happy or because of the response bias related to social desirability (Grimm, 2010). Regardless, this limitation potentially affected the generalizability of the sample and embedded bias into the result. To address this limitation, future researchers may consider using a more heterogeneous sample (e.g., including multiple geographic locations or participants from diverse communities) when conducting similar research. Also, adopting different research methods, such as observation or diary survey, would be encouraged to reach a more bias-reduced result.

Fourth, this study only contained self-reported data by one parent, with no information collected from participants' spouses and children. The lack of dyad data was often criticized by previous scholars that when considering "relationships," collecting data from one individual is insufficient considering the potential disparity between the couple's perceived relationship

quality (Durtschi et al., 2017; Williams, 2018). However, rather than actual or partner perceived relationship quality, individual perceived parenting agreement may be more crucial for studying an individual's own health condition (Don et al., 2013). Considering that my research interest was on how parents perceived relationship quality and parenting stress influence their personal mental health, it was appropriate to prioritize individual data in this study. Future scholars could consider the dyadic approach combined with a longitudinal study on this topic and investigate the actor-partner effects between the couple. Meanwhile, it may be plausible to include triad data to extend our conceptual framework and further examine adolescents' role as a possible predictor of parents' psychological condition. However, this was not the primary focus of the current study, and this task awaits future research.

Finally, the absence of evidence that gender serves as a covariate needed further examination. Previous literature has revealed a potential gender difference in couple relationships and parent outcomes (Ge et al., 1995; Steinberg & Silverberg, 1987). Nevertheless, the results are mixed. For example, in the past, assumed that mothers were more vulnerable to mental distress, the majority of research primarily examined the influence of mother-perceived co-parenting quality, parenting stress, and marital conflicts (Don et al., 2013; Kang et al., 2020; Williams, 2018). Recent studies started to turn fathers' well-being into the spotlight and emphasized paternal parenting stress, depression, marital satisfaction predicted by father-perceived co-parenting congruency (Kwan et al., 2015; Marchand-Reilly, 2016; Schoppe-Sullivan et al., 2016).

Additionally, while most studies highlighted the heightened parenting stress, weakened mental health condition, and worsened marital relationship among middle-aged mothers (e.g., Roeters & Gracia, 2016), other studies also indicated the tendency for both parents to suffer emotionally and mentally during children's adolescent years (Chang et al., 2004; Keresteš et al., 2012; Meier et al., 2018). Although it might be possible that gender differences do not exist for the targeted endogenous variables, the fact that females accounted for more than two-thirds of the sample population still could have affected the results obtained. Therefore, when attempting to replicate or advance the current study, scholars should consider including a sample with a comparatively equal number of males and females in the future, so that gender as a potential control variable could be more appropriately investigated.

Despite these limitations, this study, to the best of my knowledge, was still the first to explore the association between co-parenting of adolescent children, parenting stress, marital problems, and parents' mental health problems in light of the growing awareness and concern about parents' psychological health. As research continuously matures, it would be exciting to see more work on parents' mental health as an outcome in the future. There is also a need for multidisciplinary scientists to contribute different viewpoints in this field (e.g., sociology, adult development, family science, psychology) and make better use of EMC with the consideration of variables that are out of the family system, such as work-and-family-related concepts (Carlson et al., 2006; Grzywacz & Bass, 2003). Undoubtedly, more research needs to be done to promote parents' psychological well-being in households with adolescents.

Conclusion

In summary, this study utilized a sample of parents of adolescents to examine the predicting effect of perceived low co-parenting quality on parents' mental health problems via parenting stress and marital problems. A hypothesized conceptual model was tested and supported with SEM. Using FST, EMC, and extant literature as guidance for my assessments and analyses, this study moved beyond anecdotal observations to show the fundamental influence of co-parenting on couple relationships and parents' mental well-being. With the promising findings, this study expanded upon the current understanding of family system functioning and stressed the urgency and importance of research in investigating contributing factors of the psychological well-being of parents with teenagers.

Furthermore, this study was the first to link co-parenting, parenting stress, marital problems, and mental health problems in a single conceptual framework. It suggested the positive association between low co-parenting quality and parents' mental health problems, with parenting stress and marital problems being the mechanisms within. Most importantly, this study has tremendous practical implications. It not only highlighted adults' mental health but also encouraged the public and professionals to consider potential approaches in helping parents-in-need strive through their middle adulthood. As a well-known psychoanalyst John Bowlby has proposed, "If we value our children, we must cherish their parents" (Bowlby, 2010).

APPENDIX A

TABLES

Table 1. Demographic Information

Variable	N	Percent
Gender	116	
Male	15	12.9%
Female	101	87.1%
Age	116	
Below 30	1	0.9%
30-39	25	21.6%
40-49	67	57.8%
50-59	22	19.0%
60 and above	1	0.9%
Race	116	
White	72	62.1%
Non-White	44	37.9%
Ethnicity	116	
Hispanic or Latino	15	12.9%
Not Hispanic or Latino	101	87.1%
Educational level	116	
Less than high school	2	1.7%
High school graduate	10	8.6%
Some college	30	25.9%
Bachelor degree	42	36.2%
Post bachelor degree (e.g., master's degree, doctoral degree, etc.)	32	27.6%
Marital Status	116	
Not married, but living with a partner (Cohabiting)	11	9.5%
Married, living together	101	85.3%
Remarried, living together	6	5.2%
Number of Children	116	
1	46	39.7%
2	43	37.1%
3	24	20.7%
4 or more	3	2.6%
Religious Affiliation	116	
Christian (e.g., Protestant, Catholic, Evangelical, Methodist, Adventist, etc.)	99	85.3%
Others	17	14.7%

Table 1 - continued

Variable	N	Percent
Family Income	116	
Below 25k	5	4.3%
25k to below 50k	18	15.5%
50k to below 75k	16	13.8%
75k to below 100k	29	25.0%
100k to below 150k	27	23.3%
150k to below 250k	15	12.9%
250k and above	6	5.2%

Note. $N = 116$.

Table 2. Descriptive statistics and correlations among all variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Co-parenting	-													
2. Parenting Stress	-.51**	-												
3. Low Warmth	-.63**	.51**	-											
4. Hostility	-.44**	.42**	.58**	-										
5. Low Relationship Quality	-.62**	.42**	.72**	.56**	-									
6. Depressive Symptoms	-.41**	.40**	.51**	.38**	.47**	-								
7. Anxiety Symptoms	-.26**	.11	.24*	.15	.18*	.51**	-							
8. Gender	.06	.04	.02	.04	.14	.01	.13	-						
9. Age	.01	.05	.20*	.15	.16	.03	-.05	-.05	-					
10. Race	.01	-.04	.04	.02	-.11	.05	.16	.02	.10	-				
11. Ethnicity	-.08	-.10	.05	-.12	.08	.13	.20*	.08	.06	.02	-			
12. Children	.10	-.05	-.09	-.05	-.07	-.02	.06	.06	-.38**	-.22*	.06	-		
13. Religious Affiliation	.05	.04	-.06	.06	-.02	-.03	.06	.06	.09	.06	-.09	-.01	-	
14. Income	.06	-.11	.15	.14	.02	.08	.07	.24**	.24**	.30**	.20	-.03	.03	-
Mean or %	27.86	19.06	10.66	12.40	3.56	15.97	14.67	12.9%	2.97	37.9%	12.9%	1.87	14.7%	4.07
S. D.	5.35	6.21	5.46	4.26	1.77	4.79	5.61		.69			.34		1.54

Table 2 - continued

Note. Gender: 1 = *Male*, 2 = *Female*. Age: 1 = *Below 30*, 2 = *30-39*, 3 = *40-49*, 4 = *50-59*, 5 = *60 and above*. Race: 1 = *White*, 0 = *Others*. Ethnicity: 1 = *Hispanic or Latino*, 2 = *Not Hispanic or Latino*. Children: 1 = *1*, 2 = *2*, 3 = *3*, 4 = *4 or more*. Religious Affiliation: 1 = *Christian*, 0 = *Others*. Income: 1 = *Below 25k*, 2 = *25k to below 50k*, 3 = *50k to below 75k*, 4 = *75k to below 100k*, 5 = *100k to below 150k*, 6 = *150k to below 250k*, 7 = *250k and above*.

N = 116.

** $p < .01$; * $p < .05$

APPENDIX B

FIGURES

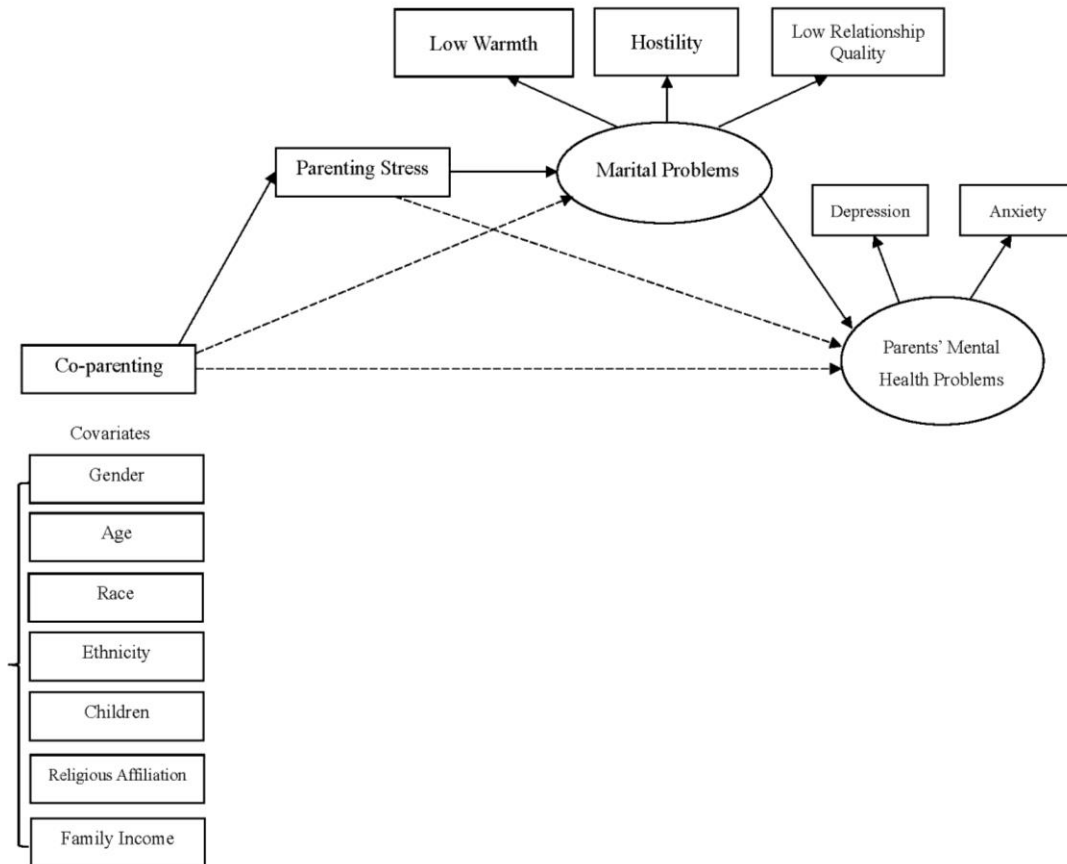


Figure 1 Conceptual model for co-parenting of adolescent children, parenting stress, marital problems, and parents' mental health problems ($N = 116$)

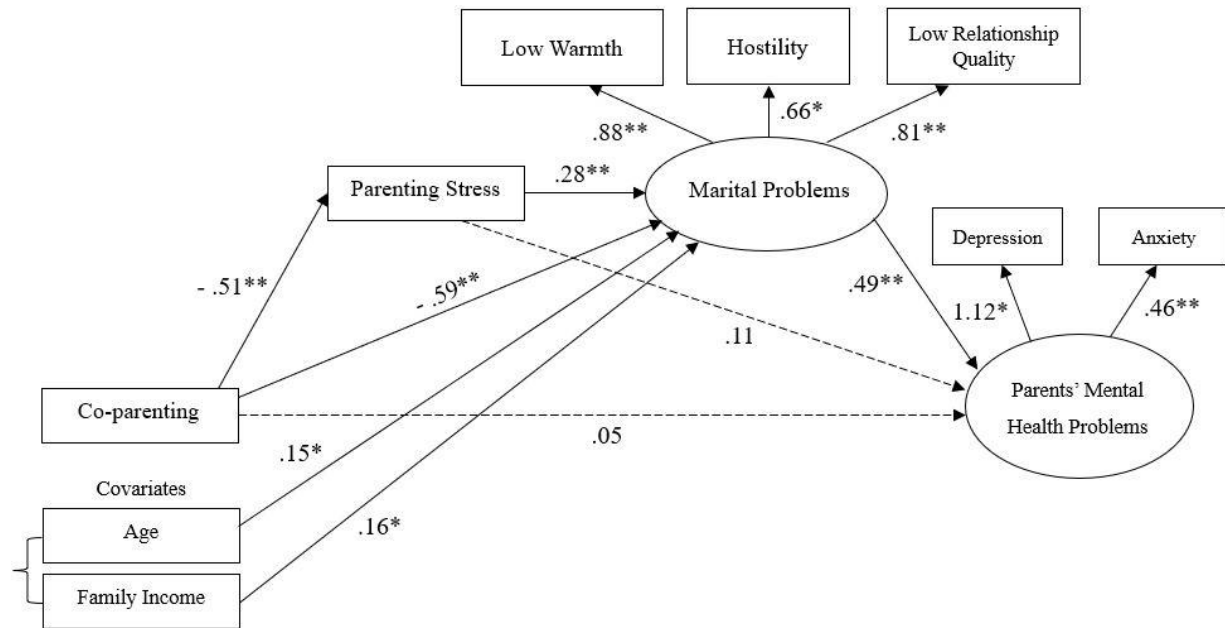


Figure 2 Final model for co-parenting of adolescent children, parenting stress, marital problems, and parents' mental health problems ($N = 116$)

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL FOR NOT HUMAN RESEARCH

FLORIDA STATE UNIVERSITY
OFFICE of the VICE PRESIDENT for RESEARCH



NOT HUMAN RESEARCH

August 10, 2021

Aosai Liu
850-644-5260

Dear Aosai Liu:

On 8/10/2021, the IRB staff reviewed the following submission:

Title of Study:	Co-parenting of adolescent children, parenting stress, marital problems, and parent's mental health
Investigator:	Aosai Liu
Submission ID:	STUDY00002526
Study ID:	STUDY00002526
Funding:	None
IND, IDE, or HDE:	None
Documents Reviewed:	<ul style="list-style-type: none">• Aosai Liu_IRB HRP-503d - Determination Form 2021, Category: IRB Protocol;• Original IRB approval for the secondary data, Category: IRB Protocol;

The IRB staff determined that the proposed activity is not research involving human subjects as defined by DHHS and/or FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving human subjects in which the organization is engaged, please submit a new request to the IRB for a determination. You can create a modification by clicking **Create Modification / CR** within the study.

COVID-19 Information for Research Involving Human Subjects: Note that the U.S. is operating under the national emergency [Proclamation 9994](#) concerning the COVID-19 pandemic and that this national emergency remains in effect until rescinded or terminated

by the President of the U.S. (go [here](#) for the Proclamation letter). Conditions are dynamic and related policies or guidance evolve accordingly; as applicable, refer to the U.S. Centers for Disease Control and Prevention [website](#) specific for universities or refer to our COVID-19 and Human Research Studies [web page](#) to learn more about how you should or may protect persons (whether vaccinated or unvaccinated) involved in any of your in-person research activities.

Sincerely,

Human Subjects Research Office
humansubjects@fsu.edu

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BIOGRAPHICAL SKETCH

Aosai Liu

Department of Human Development and Family Science
College of Health and Human Sciences

EDUCATION

08/2020-	M.S./Thesis in Family & Child Science, Florida State University GPA: 4.00/4.00 Expected to graduate in Fall 2021 Relevant Coursework: Advanced Child development, Method of Research, Family in Crisis, Theories of Family Sciences, Applied Research in Human Sciences
09/2016-05/2018	M.A. in Media & Information, Michigan State University GPA: 3.95/4.00 Specializations in Media and Information Management
09/2011-06/2015	B.A. in Radio & TV Editing and Directing, Nanjing Normal University GPA: 3.63/4.00 Ranking: 3/73

RESEARCH INTERESTS

Parenting; Adult development; Child development; Family system; Intercultural, Cross-cultural, and Multi-racial families; Technology and family; Families in crisis; Family intervention; Animal-human bond; Animal-assisted intervention; Positive psychology; Fatherhood; Teen pregnancy

PUBLICATIONS

Liu, A., Manchiraju, S., Beutell, N.J., Gopalan, N., Middlemiss, W., Srivastava, S., & Grzywacz, J.G. (in press). Connecting multidisciplinary family-work literature with regulatory focus

theory: regulatory focus, family-work interface, and adult life success. *Journal of adult development*.

PRESENTATIONS

Liu, A., Jiao, C., Feng, Q., Cui, M., & Darling, C. (2021, November). *The role of indulgence parenting in linking marital relationship and parenting stress*. Poster to be presented at the annual conference of the National Council on Family Relations (NCFR). Baltimore, MD. (virtual conference due to COVID-19)

Liu, A., Manchiraju, S., Beutell, N.J., Gopalan, N., Middlemiss, W., Srivastava, S., & Grzywacz, J.G. (2022, April). *Connecting multidisciplinary family-work literature with regulatory focus theory: regulatory focus, family-work interface, and adult life success*. Paper submitted to the Society for Study of Human Development (SSHD) 2021-2022 Conference.

Feng, Q., Jiao, C., **Liu, A.**, Cui, M., & Darling, C. (2021, November). *An investigation of parents' and adolescents' perceptions of indulgent parenting*. Poster to be presented at the annual conference of the National Council on Family Relations (NCFR). Baltimore, MD. (virtual conference due to COVID-19)

Hong, P., Chen, L., **Liu, A.**, Wheeler, D., & Cui, M. (2021, November). *A cross-cultural qualitative study of college students' experience of parental overparenting*. Paper to be presented at the annual conference of the National Council on Family Relations (NCFR). Baltimore, MD. (virtual conference due to COVID-19)

Hong, P, Cui, M., Chen, L., & **Liu, A.** (2021, November). *Overparenting behaviors and emerging adult children's grit: A cross-cultural mixed-methods study*. Paper submitted to the 10th Conference of the Society for the Study of Emerging Adulthood (SSEA).

PROFESSIONAL EXPERIENCE

2021 Research Assistant for Project "Cultural Variation in Work and Family Balance" led by Dr. Joseph Grzywacz.

2017-2018 Research Assistant for Project "Intra-Organizational Boundary Spanning" led by

Dr. Wietske van Osch and Dr. Charles Steinfield from Michigan State University

2017-2018 Research Assistant for Project “WeChat vs. Facebook: Influence of Culture on Design and Use of Social Media Sites for External Communication”

EMPLOYMENT AND EXPERIENCE

05/2020-	Graduate Research Assistant Florida State University College of Health and Human Sciences Department of Human Development and Family Science <ul style="list-style-type: none">• Participated in coding, data analysis, and served as the second author for qualitative work-family balance research;• Trained to draft a work and family life-related quantitative manuscript as the first author.
09/2018-06/2020	Facebook Marketing Specialist DTN Management Company, East Lansing, MI <ul style="list-style-type: none">• Created engaging Facebook posts and facilitated leasing marketing primarily targeting families with young adults.
03/2018-05/2018	Search Engine Marketing (SEM) & Pay-Per-Click (PPC) Marketing Specialist Michigan State University College of Communication Arts and Sciences <ul style="list-style-type: none">• Assisted in MSU digital cinema high school camp and social media marketing;• Communicated with parents/caregivers of adolescents through a search engine.
03/2018-05/2018	Research Assistant Michigan State University College of Communication Arts and Sciences <ul style="list-style-type: none">• Analyzed enterprise social media data;• Conducted a literature review and drafted the section for a manuscript.
09/2017-05/2018	Social Media Manager & Social Media Marketing Specialist East Lansing Film Festival, East Lansing, MI <ul style="list-style-type: none">• Developed a social media marketing plan;• Conducted data analysis.
05/2017-09/2017	Search Engine Marketing (SEM) & Pay-Per-Click (PPC) Marketing Specialist

NAMI Michigan, Lansing, MI

- Revised search engine marketing plan with Google AdWords and Analytics;
- Promoted the relevancy of search engine advertisements to people's lives.

06/2015-05/2016 **Team Leader**

Gap Inc, Nanjing, Jiangsu, China

- Strengthened leadership and communication skills.

01/2014-06/2014 **Post Production Editor**

Jiangsu Broadcasting Corporation, Nanjing, Jiangsu, China

- Edited trailers or promotion videos for each weekly episode of the TV program "Super Brain."

06/2013-05/2014 **Post Production Editor**

Nanjing Golden Exclamation Mark Advertising Industrial Co., Nanjing, Jiangsu, China

- Acquired film-making-related knowledge about Adobe Premiere, Adobe After Effects, etc.

HONORS AND AWARDS

07/2021	Betty N. Griffith Scholarship award, Florida State University
04/2018	Outstanding MA Student Scholar , Department of Media and Information, Michigan State University
04/2017	Scholarship award, Department of Media and Information, Michigan State University
05/2015	Outstanding Graduate award, Nanjing Normal University
05/2014	2nd Level Scholarships for Comprehensive Performance, Department of News and Broadcasting, Nanjing Normal University
05/2013	2nd Level Scholarships for Comprehensive Performance, Department of News and Broadcasting, Nanjing Normal University
05/2012	3rd Level Scholarships for Comprehensive Performance, Department of News and Broadcasting, Nanjing Normal University
05/2012	Awarded the Title of " Merit Student ," Department of News and Broadcasting, Nanjing Normal University

- 10/2012 **3rd Prize of Excellent Reports** for Alumni Visits in 2012, Department of News and Broadcasting, Nanjing Normal University
- 10/2012 **Advanced Individual** in Alumni Visits in 2012, Department of News and Broadcasting, Nanjing Normal University
- 05/2012 **Excellent Spokesperson** in School Press Spokesman Competition, Department of News and Broadcasting, Nanjing Normal University

EXTRACURRICULAR AND VOLUNTEER EXPERIENCE

- 09/2017-05/2018 Social media marketing specialist, East Lansing Film Festival
- 06/2016 Volunteer, Michigan State University Global Festival
- 11/2016 Chinese teacher, Post Oak Elementary School
- 07/2012 Volunteer, Nanjing Metro Station