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Maternal and Paternal Psychological Well-Being and Child Behavior in Japan

Jared Poff

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Science

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ABSTRACT

Maternal and Paternal Psychological Well-Being and Child Behavior in Japan

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Master of Science

Understanding child behavioral outcomes is important because early behavioral issues can lead to negative outcomes that persist throughout the life course. One characteristic that can affect child behavioral outcomes is parental psychological well-being. While there have been many studies describing the effects of parental psychological well-being on child behavior in the US, the nature of this relationship in non-Western countries has yet to be thoroughly explored. There is also limited research that distinguishes between the effects of both maternal and paternal psychological well-being on child behavioral outcomes. Japan is an interesting area in which to examine this relationship due to unique contextual factors that might affect parental psychological well-being, such as Japanese-specific patterns of maternal and paternal involvement. Utilizing regression analysis, this study examines the relationship between paternal and maternal psychological health and child internalizing and externalizing behavioral outcomes using two complementary longitudinal datasets from Japan (JCPS and JHPS). I find that maternal and not paternal psychological well-being is associated with child internalizing and externalizing behavioral problems. This may be a product of fathers in Japan being less engaged in parenting or the intense relationship mothers are encouraged to develop with their children. Further research on this relationship can help in investigating the universality of Western findings related to paternal and maternal psychological health and child behavior.

Keywords: parent psychological well-being, child behavior, internalizing, externalizing

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INTRODUCTION

Child behavior problems are associated with a variety of negative outcomes, including poor cognitive development and poor academic performance during childhood (Basten et al. 2016; Turney and McLanahan 2015). Early childhood problems may also lead to further issues in adulthood which can negatively affect life chances, such as increased mortality risk, work incapacity, lower educational attainment, and earlier sexual initiation (Jokela, Ferrie, and Kivimäki 2009; Narusyte et al. 2017; Owens 2016; Skinner et al. 2015). As such, understanding early childhood problems is an essential step towards understanding the formation of various negative outcomes for individuals throughout the life course.

In examining child behavioral problems, distinctions are typically made within academic literature between internalizing and externalizing behavior problems. Internalizing behavior problems relate to difficulties in handling personal emotions and relating to others, while externalizing behavior problems relate to struggling with hyperactivity and acting in a socially inappropriate and positive manner (Goodman, Lamping, and Ploubidis 2010; McCarty et al. 2005). Distinguishing child behavioral problems in this manner is helpful in understanding behavioral outcomes that can persist throughout the life course (McCarty et al. 2005). In understanding both of these types of behavioral issues, families are of particular interest due to the early social and emotional development for children that takes place in the home (Dufur, Parcel, and McKune 2008; Fomby and Cherlin 2007; McCarty et al. 2005).

One important family characteristic that can affect child behavior is parent psychological well-being (Connell and Goodman 2002; Downey and Coyne 1990). While research on parent psychological health and child behavioral outcomes suggests this is an important factor in any family setting, the majority of studies examining this relationship focus on Western contexts.

Additionally, there is limited research that distinguishes between the effects of both maternal and paternal psychological well-being on child behavioral outcomes. Examining this relationship in a high-income non-Western nation would further our knowledge regarding how parent psychological well-being affects child behavior in cultures with differing expectations and practices of things like parental involvement.

In this paper, I use the only Japanese child panel study available (JCPS) to examine the impact of parental psychological well-being on child behavioral problems in a non-Western context. The findings suggest that unlike in other high-income Western nations, maternal but not paternal psychological well-being was significantly associated with child behavioral problems in Japan. This suggests that Japanese mothers exert a stronger influence on the behavioral outcomes of their children as well as the need for further research in non-Western locations, as the way in which parental psychological well-being affects child behavior may vary in contexts with differing family dynamics, child-rearing practices, and even occupational culture.

LITERATURE REVIEW

Theory: Ecological Model

In considering possible variations in the effect of father's and mother's psychological well-being on child behavior, it is important to understand differences in how social elements such as social networks and socioeconomic resources affect fathers and mothers. Cabrera and colleague's ecological model (2014) is based on the understanding that contextual factors affect fathers more strongly than mothers, as men report weaker socializing influences than women. This difference has important implications for fathers and the ways in which they affect their child's behavioral development. For example, variations in employment conditions and economic resources may affect fathers more strongly than mothers and complicate the degree to

which fathers affect their child's behavioral development, particularly given that fathers have historically been found to spend less time with their children than mothers (Pleck 2010).

Understanding the degree to which contextual factors may strengthen or weaken father's influence on their children is particularly important in investigating social environments with unique cultural elements that affect parental involvement. In Japan, an emphasis on father's dedicating themselves to their occupation and mother's bonding with their children may further mitigate the effect fathers have on their child's behavioral outcomes (Ishii-Kuntz 1994; Kawanishi 2009:108). In this way, contextual factors specific to Japan may provide interesting differences in the effects of maternal and paternal psychological well-being as compared to Western contexts. By considering Japan's distinct contextual environment and by using the only longitudinal dataset of its kind available, my study aims to investigate how the Japanese context may complicate the degree to which mothers and fathers affect the behavioral outcomes of their children and the implications this has for children.

Parental Psychological Well-Being

Various studies have shown an association between parental psychological well-being and child outcomes in the United States (US). Studies regarding parental psychological well-being have often focused on symptoms of depression and anxiety due to their prevalence amongst adults, with nearly 16% reporting at least one major depressive episode in their lifetime (Kessler et al. 2003). Symptoms relating to depression and anxiety are commonly used in considering parental psychological well-being because of their association with a variety of negative outcomes for families generally and child behavioral outcomes more particularly (Pace and Shafer 2013).

The effects of psychological distress on an individual's ability to parent are significant. Depressed parents have been found to give less emotional support and have lower levels of warmth towards their children (Shafer, Fielding, and Wendt 2017). This may be in part due to the lower self-esteem, higher levels of pessimism, and increased likelihood of withdrawal that is commonly associated with depression (Watson et al. 2014; Wilson and Durbin 2010). Depressed parents are more likely to use coercive parenting techniques (Waller et al. 2015), engage in less parental monitoring (Stattin and Kerr 2000), and use harsher disciplinary practices (Shafer, Fielding, and Holmes 2019). Research has shown that these challenges with parenting can lead to negative child outcomes, with the children of depressed parents having poorer health, worse academic performance, and more behavioral problems than the children of non-depressed parents (Connell and Goodman 2002; Downey and Coyne 1990).

Certain demographics are associated with decreased psychological well-being. Depressive symptoms for both men and women tend to reach their lowest levels at middle age, before steadily increasing in older ages (Mirowsky and Ross 1992). Lower educational attainment is associated with higher rates of depression, particularly amongst women (Ross and Mirowsky 2006). Furthermore, the risk of adults experiencing depressive symptoms more than doubles for those who are unemployed (Dooley, Catalano, and Wilson 1994).

Maternal Psychological Well-Being

Due to gendered differences in parenting expectations as well as in reported rates of psychological distress, research has historically made distinctions between maternal and paternal psychological well-being (Shafer et al. 2017). As women tend to report higher rates of depression than men, the literature on maternal depression is particularly robust (Shafer and Pace 2015). Research has found that maternal psychological well-being works through parenting

behaviors to affect child behavioral outcomes (Deave et al. 2008; Petterson and Albers 2001). This has important implications for families because historically, mothers spend more time with children than fathers (Pleck 2010). Given this increased involvement, the effects of maternal depression on children are typically significant, with the children of depressed mothers more likely to experience unfavorable health, and greater internalizing and externalizing behavior problems (Aunola and Nurmi 2005; Turney 2011). Additionally, maternal depression has been shown to increase the likelihood of child psychiatric disorders (Pilowsky et al. 2014) and general psychopathology (Goodman et al. 2011).

Paternal Psychological Well-Being

Unfortunately, the effect of paternal psychological well-being on child behavior has not been as thoroughly examined (Pilowsky et al. 2014). However, the lack of research on this topic does not mean that paternal psychology does not impact child behavior. The research that has focused on paternal mental health has found that the children of depressed fathers have more frequent conflict with their fathers (Kane and Garber 2004) and are at higher risk for the development of psychiatric disorders (Ramchandani et al. 2008). Additionally, more recent research has linked paternal depression with increased child internalizing and externalizing behavior problems, showing similarities to findings regarding maternal psychological well-being and child behavior (Shafer et al. 2017).

Child Behavioral Outcomes

The literature on child behavioral problems in the US is robust. Research regarding child behavior has typically distinguished between internalizing behavior problems (whether a child has difficulties in handling their personal emotions, relating to others, etc.) and externalizing behavior problems (whether a child struggles with hyperactivity or conducting themselves in a

socially appropriate and positive manner, etc.). This distinction is important as each type of behavioral issue is associated with different negative outcomes, with internalizing problems more often associated with internal issues such as depression and anxiety and externalizing problems more often associated with outward issues such as physical aggression (McCarty et al. 2005).

Research has consistently shown a connection between parental psychological well-being and both internalizing and externalizing child behavioral problems (Connell and Goodman 2002; Downey and Coyne 1990). Maternal psychological distress is associated with higher rates of child internalizing (Connell and Goodman 2002) and externalizing (Goodman et al. 2011) behavior problems. The effects of paternal psychological distress—which are often neglected in mental health research—are similarly profound, with more recent research finding that the children of depressed fathers have worse internalizing and externalizing behavioral outcomes compared to other children (Shafer et al. 2017).

Differences by gender have been consistent, with females more likely to experience internalizing behavior problems and males being more likely to experience externalizing behavior problems (Rosenfield 2000). Age has also shown to be an important factor, as younger children show stronger associations with internalizing and externalizing behavior problems than older children (Mahoney, Jouriles, and Scavone 1997). While parental age is usually included in models investigating child internalizing and externalizing behavior problems (Shafer et al. 2017), its effects are not typically found to be significant.

Children in poorer households are more likely to struggle more with problematic behaviors such as disruptive behavior at school and delinquency regardless of their family structure, though reports of problematic behavior may disproportionately target disadvantaged

socioeconomic groups (Lamb 2012). Although findings regarding parental income have been consistent, studies looking at the effects of parental education on child behavior have been mixed (Dubow, Boxer, and Huesmann 2009), with more recent research showing that income might explain the effects of parental education (Lansford et al. 2019). On the other hand, parental employment has been shown to mitigate child behavioral problems inasmuch as employment leads to positive income gains (Dearing, McCartney, and Taylor 2006; Raver 2003). Furthermore, longer work hours have been tied to increased work-family conflict and increased child internalizing problems (Vahedi et al. 2018).

Parental Psychological Well-Being in Japan

Much of the research done on the relationship between parental psychological well-being and child behavioral problems has historically focused on Western social contexts, leaving non-Western social contexts underrepresented. While the findings from Western contexts are often presented as generalizable, differences between Western and non-Western cultures may lead to important distinctions in the nature of this association. Japan is a particularly interesting context in which to examine this relationship due to Japan's familial culture, which blends traditional social and familial roles with increasingly modern changes in family life.

Historically, Japanese conceptualizations of family life have been grounded in the centuries-old concepts of *Ie* and Confucianism. *Ie* literally translates to "family/household" and refers to a patriarchal system where fathers are the head of the household and inheritance is passed down through the eldest son (Kawanishi 2009:66). Unlike Western nations with similar patriarchal conceptualizations of traditional family life, in the *Ie* system, the basic social unit of society is the household rather than the individual (Kawanishi 2009:67). As such, family members within the *Ie* system have been allowed less individuality than in Western nations and

are more strictly bound to social roles. Japanese familial roles are heavily influenced by the Confucian concepts of subordination to one's superiors and filial piety, which remain important concepts in understanding Japanese social institutions (Kumagai 2008:2).

The *Ie* system and Confucian social ideals were not only foundational to Japan's culture but have also, at times, been codified into law. Although *Ie* had been present for centuries before, the Civil Code of 1898 enforced a stricter interpretation of the system upon all social classes and made all households directly subordinate to the Emperor, further eroding individuality and emphasizing conformity (Kumagai 2008:10). However, after the second World War, the new Civil Code of 1947 attempted to modernize and 'Westernize' the family by giving equal rights to husbands and wives and by adopting the married-couple family system in place of the direct-lineage family system (Kumagai 2008:10).

These changes in Japanese law reflect a broader pattern in Japan of combining traditional practices with more modern elements that reflect Western trends. While Japanese families were- and to an extent still are- culturally structured around traditional social roles where husbands are expected to dedicate themselves to work and wives are expected to dedicate themselves to children and household duties (Kumagai 2008:9), increasing trends in divorce, cohabitation, and more accepting views of non-traditional family structures show an institution in flux (Raymo et al. 2015). As such, Japanese families are best described as an interesting blend between tradition and modernity, where significant change is occurring externally even as internal social roles remain heavily influenced by cultural tradition (Kumagai 2008:25,26).

These cultural traditions have led to stark differences in the level of parental involvement by Japanese mothers and fathers. Research has found that Japanese fathers spend significantly less time with their children when compared to their American and Chinese counterparts because

of longer work hours and cultural expectations to prioritize work over family (Ishii-Kuntz 1994; Ito, Izumi-Taylor, and Zhou 2018). This has important implications for Japanese child behavioral outcomes. As fathers dedicate themselves more exclusively to their careers, mothers are encouraged to build strong bonds with their children that are intensely education-minded, with these relationships often becoming exclusionary to fathers and other important figures (Kawanishi 2009:108; Kumagai 2008:18). This difference in parental involvement is so extreme that Japanese fathers have been described as being psychologically absent from the lives of their children and even their spouses (Kumagai 2008:18), although emerging trends show a slow but promising trend toward increased father involvement in the lives of children (Ishii-Kuntz 2019).

The presence of strict cultural and social norms regarding family life creates a unique environment in which to study maternal and paternal psychological well-being. Despite relatively inflexible cultural expectations, reported rates of depression in Japan are surprisingly lower than in comparable Western nations (Kawakami 2007). However, some researchers believe that these rates should be viewed with skepticism, as rates of psychological distress in Japan might be severely underreported because of the widespread stigma and misunderstanding surrounding mental illness (Kawanishi 2009:54). Supporting this claim, research has found that only 14% of Japanese individuals who reported having depression had sought treatment from a psychiatrist (Kawakami 2007). Additionally, rates of suicide in Japan have been significantly higher than the OECD average for over two decades, which possibly suggests a high-risk environment for mental health problems (Jeon, Reither, and Masters 2016).

Past research regarding adult psychological well-being in Japan has found both unique differences and interesting similarities with results in Western nations. Research suggests that similar to Western nations, income has a large effect on the happiness of parents, as individuals

with lower incomes report worse health outcomes and higher rates of depressive symptoms (Fukuda and Hiyoshi 2012; Inaba et al. 2005; Kaufman and Taniguchi 2009; Raymo 2016). Conversely, unlike in Western nations, parental education has little to no association with rates of parental psychological distress (Inaba et. al 2005). The effects of employment have been of especially popular interest in Japan because of *Karoshi*, a Japanese term that refers to “death from overwork”. *Karoshi* has grown into a national health crisis that stems from Japan’s intense work culture and includes the negative physical and psychological health problems that occur from stress and consistent overtime work, including heart disease, depression, and even suicide (Hiyama and Yoshihara 2008). While it might seem that employed Japanese adults are at higher risk for psychological distress, research has shown that, similar to the US, Japanese individuals who are unemployed have an even higher prevalence of psychological distress than those who are employed (Fukuda and Hiyoshi 2012).

Currently, there is a significant lack of research that delineates the effects of both maternal *and* paternal psychological well-being within Japanese contexts. Given the unique mechanics of parental roles and expectations in Japan, differences in the effects of maternal and paternal psychology on child behavior may be profound. This study seeks to examine these potential differences and further clarify how Japanese mothers and fathers effect the behavioral outcomes of their children.

Child Behavioral Outcomes in Japan

Cultural elements in Japan provide an interesting environment in which to study child behavioral outcomes. Due to severe social expectations regarding personal achievement and academic success, Japanese children suffer intense internal and external pressures to succeed in school, extra-curricular activities, and in important relationships with teachers and parents

(Kawanishi 2009:111). The intensity of these pressures has led to the formation of unique behavioral problems in Japanese children, such as prolonged school avoidance, acute anxiety, and even violence towards parents (Kawanishi 2009:113). As such, Japanese children may be particularly prone to certain kinds of internalizing and externalizing behavioral problems as a result of substantial stress.

Studies looking at child behavior in Japan have generally focused on how characteristics such as gender, age, and income affect child behavior. Research observing the internalizing and externalizing behavioral outcomes of children in Japan has shown that while girls tend to score slightly higher on emotional symptoms, boys tend to have more frequent problematic behavior than girls, especially in regard to externalizing behavior (Matsuishi et al. 2008). Younger children tend to have higher rates of internalizing and externalizing behavior problems when compared to adolescents, as children in earlier school grades report higher rates of both types of behavioral issues (Matsuishi et al. 2008). Furthermore, Japanese children in low-income families are more likely to have lower educational achievement, worse health outcomes, and decreased well-being when compared to the children of higher income families (Oshio, Sano, and Kobayashi 2010). These trends and characteristics are similar to those in the US (Carlson and Corcoran 2001).

Contributions

While there is a large amount of literature examining the relationship between parent psychological well-being and child behavior in the U.S., non-Western social contexts are not as thoroughly explored. There is also limited research that distinguishes between the effects of both maternal and paternal psychological well-being on child outcomes. In this study, I use the Japan Child Panel Survey (JCPS) and the Japan Household Panel Survey (JHPS) to look at the effects

of both maternal *and* paternal psychological well-being on child internalizing and externalizing behavioral outcomes in Japan. By differentiating between paternal and maternal psychological well-being, this study is able to analyze the impact of mothers and fathers in a social context where parents have more restrictive social roles than in Western nations.

The JCPS is of special interest to this project due to its distinction as the first longitudinal study of children ever conducted in Japan on a national level. Comparing this study's results with previous research in the US can help clarify whether Western findings regarding parent psychological health and child internalizing and externalizing behavioral outcomes are applicable in non-Western contexts with differing familial and occupational cultures. Additionally, this study adds to the growing research examining differences between the effects of maternal *and* paternal psychological health and the implications this has for children.

Hypotheses

I hypothesize the following relationships in this study: 1) Due to an increased emphasis on maternal involvement in Japanese culture (Kawanishi 2009:108), I expect an association between maternal psychological well-being and both types of child behavior problems, even when controlling for such things as household income and parental work hours. 2) In contrast with findings in the West, I do not expect an association between paternal psychological well-being and either type of child behavioral problems due to the lower amount of paternal involvement in Japan (Kumagai 2008:18). 3) Given Cabrera and colleague's ecological model of fathers (2014), I expect that any effect of paternal psychological well-being on child behavioral problems will be largely explained by maternal psychological well-being.

DATA AND SAMPLE

Data in this study are taken from the Japan Household Panel Survey (JHPS) and its supplementary survey the Japan Child Panel Survey (JCPS). The JHPS captures parental responses which are measured yearly, while the JCPS captures child responses which are measured biennially. These surveys were conducted by the Panel Data Research Center at Keio University and samples for this study are nationally representative. In this study, I focus on Wave 3 responses for the JCPS and Wave 4 responses for the JHPS, as these are the latest waves available which correspond with each other. Children in the JCPS range from ages 6-15 in grades 1-9, and are members of the families studied within the JHPS ($N=493$). I use results from 2012 waves (the most recent year available) in all of the variables present within the analysis except for parental education and parental psychological well-being. Parental education was only available within Wave 1 of the JHPS, and Wave 2 parental psychological measures are used to measure the effect of parental psychological health during the formation of reported child behaviors.

Overall, there is relatively little missing data. Four variables have between 3-10% of values missing (father psychological well-being, father's age, father's education, and father's work hours). The variable for household income has slightly more than 11% of values missing, and the variable for mother's work hours has 31% of values missing (most likely due to the proportion of women who are unemployed). I employ listwise deletion for all other variables as they have less than 3% of values missing. Given the small sample size and the cumulative effect of missing values, I employ multiple imputation in order to retain as many cases as possible. Although 20 iterations is an acceptable threshold (Johnson and Young 2011), I perform 25 iterations to ensure confidence in the results. After this process, my analytic sample is 484.

Given that the JCPS is the only national longitudinal study of Japanese children with corresponding parental information, that the original sample size was 493, and that multiple imputation retained many of the missing cases, the analytic sample of 484 is justifiable.

METHODS AND MEASURES

Dependent Variables

In the JCPS, questions relating to child internalizing and externalizing behavior problems are present as part of the Strengths and Difficulties Questionnaire (SDQ) within the parent-reported responses. Following Goodman, Lamping, and Ploubidis (2010), I create a scale for internalizing behavior problems using a set of 10 questions from the SDQ and a scale for externalizing behavior problems using a set of 15 questions from the SDQ. Answer choices for all questions range from “not true”, “somewhat true”, and “certainly true”. For internalizing problems, questions include 1) headaches/stomach-aches/sickness, 2) often feels worried, 3) often unhappy, 4) nervous or clingy in new situations, 5) many fears, easily scared, 6) tends to play alone, 7) picked on or bullied by other children, 8) gets on better with adults, 9) generally liked by other children, and 10) has at least one good friend. Responses to “generally liked by other children” and “has at least one good friend” are reverse coded to reflect negative social adjustment, with higher scores indicating more behavioral problems. The range for the internalizing scale is 10-26. The alpha reliability coefficient for this scale is good ($\alpha=0.70$).

For externalizing problems, questions include 1) restless, overactive, cannot stay still for long, 2) constantly fidgeting or squirming, 3) easily distracted, concentration wanders, 4) thinks things out before acting, 5) sees tasks through to the end, 6) often has temper tantrums, 7) generally obedient, 8) fights with or bullies other children, 9) steals from home, school,

elsewhere, 10) often lies or cheats, 11) considerate of other people's feelings, 12) shares readily with other children, 13) helpful if someone is hurt, upset or feeling ill, 14) kind to younger children, and 15) often volunteers to help others. Responses to eight measures are reverse coded to reflect negative behavior, with higher scores indicating greater externalizing behavior problems. The range for the externalizing scale is 15-39. The alpha reliability coefficient for this scale is also good ($\alpha=0.78$).

Independent Variables

In the JHPS, ten questions relating to parental psychological health are combined into composite measures for paternal and maternal psychological distress. Since I am analyzing child behavioral outcomes in 2012, I use measures of parent psychological health in 2010 (Wave 2) to capture the effects of parental psychological well-being during the formation of reported child behaviors. Respondents answered questions in relation to how often they experience the following conditions, on a scale of "never", "rarely", "sometimes", and "often". Questions include 1) tire easily, 2) often feel irritated, 3) trouble getting to sleep, 4) feel reluctant to meet other people, 5) cannot concentrate on work, 6) dissatisfied with present life, 7) feel anxiety over the future, 8) feel rather nervous and sensitive, 9) feel extremely depressed, and 10) feel depressed and gloomy. The questions in this scale are similar to those present in the Kessler Psychological Distress Scale (K10), which captures general psychological well-being. All measures are reverse coded so that higher scores reflect worse psychological well-being. The alpha reliability coefficients for these scales of paternal and maternal psychological distress are good (both at $\alpha=0.89$).

Control Variables

Several control variables are also included within the analysis as part of my full models for both internalizing and externalizing behavior. All control variables are from 2012 data except measures of parental education, as 2009 (Wave 1) was the only year with this information. Child and parental sex are measured dichotomously as “male” and “female”. Child and parental age are measured continuously, with children’s age ranging from six to fifteen, father’s age ranging from thirty to sixty-four, and mother’s age ranging from twenty-nine to fifty-four. Child grade is measured continuously and ranges from grades 1-9. Household income is reported in units of ten thousand yen and is measured continuously. Paternal and maternal education is measured categorically, with “High School or less” as the reference category and the remaining categories as “Junior College or Specialized School”, “University or Graduate School”, and “Other”. Maternal employment status is measured dichotomously as “unemployed” or “employed” based on respondent answers to a question regarding whether respondents “worked full-time”, “worked besides attending school”, “worked besides doing homework”, “was absent from work”, “looked for a job”, or “attended school/housework/others”. Paternal employment is not included in the analysis as only two fathers in the sample were not employed. Finally, paternal and maternal work hours are measured continuously in response to the question “Approximately how many hours did you work per week? (please include overtime work)”.

Analytic Strategy

I first report descriptive statistics for all variables present within my analysis (Table 1). Then, using regression analysis, I examine the effects of paternal and maternal psychological well-being separately on child internalizing and externalizing behavior problems (Table 2). Model 1 examines the effect of father’s psychological well-being while Model 2 examines the

effect of mother's psychological well-being. I then examine the relationship between parental psychological well-being and child behavior in both the parent and full model (Table 3). Model 3 examines the effects of both paternal and maternal psychological well-being on internalizing and externalizing behavior problems, and Model 4 examines this relationship with all control variables present for both types of behavior problems. This allows me to analyze the effect of paternal and maternal psychological health on child behavioral outcomes with and without other commonly cited factors.

[Table 1 about here]

RESULTS

Descriptive Statistics

Table 1 provides descriptive statistics for all variables used in my analysis. On average, children in the sample have higher scores on externalizing behavior problems than internalizing problems even when adjusting for differences in scale (23.87, 13.38). The average child in the sample is around eleven years old, and there are slightly more boys than girls (53% boys, 47% girls). The average respondent grade is 5th.

Fathers and mothers in the sample have relatively similar scores on measures of psychological well-being, with mothers having a slightly higher average score than fathers (22.45, 21.69). Fathers are on average, slightly older than mothers, at age 43 and 42 respectively. Fathers tend to report more years of education than mothers. Nearly half of mothers in the sample report their educational attainment as high school or less (45%), with fathers reporting 38% for the same category. More mothers attended a junior college or specialized school than fathers (31% and 12%, respectively), while more fathers attended university or graduate school than mothers (41% and 14%, respectively). A majority of mothers are employed (72%). Fathers

in our sample work on average 49 hours a week, while mothers work an average of 25 hours a week, suggesting that maternal employment is most likely part-time.

[Table 2 about here]

Child Behavior and Parental Psychological Well-Being

Table 2 shows the effects of paternal and maternal psychological well-being separately on child internalizing and externalizing behavior problems. In contrast to Hypothesis 2, we see that every one unit increase in paternal psychological well-being in Model 1 is associated with a 0.066 unit increase in internalizing behavior problems. However, paternal psychological well-being is not significantly associated with externalizing problems. In Model 2, we see that every one unit increase in maternal psychological well-being is associated with a 0.088 unit increase in internalizing behavior problems and has a marginally significant association ($p < 0.10$) with externalizing problems, providing evidence for Hypothesis 1.

[Table 3 about here]

Table 3 includes both parent model and full model results for internalizing and externalizing behavioral problems in Japanese children. In Model 3, we see that every one unit increase in maternal psychological well-being is associated with a 0.076 unit increase in internalizing behavior problems. The effects of maternal mental health on child externalizing behavior problems are also marginally significant ($p < 0.10$). On the other hand, paternal psychological well-being has a marginally significant association with internalizing behavior problems ($p < 0.10$) and no significant association with externalizing behavior problems. This provides evidence for Hypothesis 3, as the addition of maternal psychological well-being significantly weakened the effect of paternal psychological well-being.

Effects of Family Characteristics

In the full model results, we observe the effects of paternal and maternal psychological well-being on child behavior while statistically adjusting for other commonly cited factors. In support of Hypothesis 1, we find that maternal psychological well-being is significantly associated with both internalizing (0.077, $p \leq .001$) and externalizing behavioral problems (0.076, $p \leq .05$). In support of Hypothesis 2, paternal psychological well-being has no significant association with either internalizing or externalizing behavior. We also see the effects of various control variables in regard to both types of behavioral problems. As expected, girls have significantly lower rates of externalizing behavioral problems than their male counterparts (-1.700, $p \leq .001$). Higher household income is significantly associated with decreased internalizing problems (-0.002, $p \leq .01$). Furthermore, the paternal education category of “junior college or specialized school” has a significant association with externalizing behavior problems (1.388, $p \leq .05$), the paternal education category of “other” has a marginally significant association with externalizing problems ($p < 0.10$), and the maternal education category of “other” has a significant association with externalizing behavior problems (-1.553, $p \leq .05$).

In addition to these results, several sensitivity tests were also run throughout the analysis process, including models that use listwise deletion rather than multiple imputation. In all cases, the strength of the association between mother’s psychological well-being and child behavior was robust. Results regarding control variables remained consistent across these models as well. Several interactions were also conducted, although none were found to be significant.

DISCUSSION

Parental Psychological Well-Being

Research in the U.S. has consistently shown a strong relationship between parent psychological well-being and child outcomes (Connell and Goodman 2002; Downey and Coyne 1990). However, much of the research pertaining to this relationship has historically focused on Western social contexts and typically does not distinguish between the effects of both maternal and paternal psychological well-being, which may ignore how contextual factors effect fathers more strongly than mothers (Cabrera et al. 2014). Using Japanese data, I identify and highlight interesting differences in the relationship between maternal *and* paternal psychological well-being and child behavioral outcomes outside of Western social contexts.

Due to the more engaged role Japanese mothers play in the lives of their children, I expected the psychological well-being of mothers to be associated with both child internalizing and externalizing behavior problems. Additionally, given decreased levels of paternal involvement in Japan, I did not expect an association between paternal psychological well-being and either type of child behavior problems. These expectations were confirmed in my full model. My results show an important association between maternal psychological well-being and child internalizing and externalizing behavioral outcomes, even when statistically adjusting for other common explanatory variables such as income, education, and employment. Children whose mothers had higher negative scores on measures of psychological well-being were found to have an increased likelihood for both types of behavioral problems, while the effects of paternal psychological well-being were not significant for either type of behavior problems. Additionally, in support of Hypotheses 3, it appears that maternal psychological well-being significantly weakens the effect of fathers as shown across Tables 2 and 3.

The impact of maternal psychological well-being on children has been well-established in the U.S. (Goodman et al. 2011; Pilowsky et al. 2014). Some research in the U.S. has suggested that children are more heavily affected by maternal depression than paternal depression, particularly in regard to internalizing behavior problems (Connell and Goodman 2002). This appears to also be the case in Japanese families. However, research from the U.S. focusing on the impact of paternal psychological distress has found that fathers psychological well-being can also have important and influential effects on child internalizing and externalizing behavior problems (Shafer et al. 2017). In contrast to Shafer and colleagues' findings, my results suggest a uniquely intense mother-child relationship in Japan that mitigates the importance of paternal psychological well-being on child behavior.

Explanations for this difference in parental influence on child outcomes may be a result of singularities in Japanese families. In the Japanese context the effects of maternal psychological health on child behavior may be magnified by more intense mother-child relationships and gendered occupational work practices, with Japanese mothers being expected to dedicate themselves to their children's education and housekeeping rather than an occupation (Brinton 2010:14; Kumagai 2008:9). Also, the demanding work culture in Japanese companies could mitigate the impact of Japanese father's psychological wellbeing and create a disbalance in parental involvement, as fathers spend less time at home interacting with their children (Ishii-Kuntz 1994; Kumagai 2008:18).

Family Characteristics

Interestingly enough, neither maternal employment nor paternal/maternal work hours were found to be significant in the full model. Given the more intense occupational culture within Japan (Hiyama and Yoshihara 2008) and its subsequent effects on parental involvement

(Kawanishi 2009:108; Kumagai 2008:18), this lack of significance is surprising, particularly given that my findings illustrate how maternal psychological well-being explains away the effect of paternal psychological well-being. These findings imply that other factors not captured within this study may account for differences in the effects of maternal and paternal psychological well-being on child behavior. Further research would be needed to more fully capture cultural and familial influences that effect levels of parental involvement in Japan.

Within the full model, the effect of child gender on child behavior was profound. Japanese boys are significantly more likely than females to exhibit externalizing behavior problems. In fact, being male is one of the strongest indicators in the full model in regard to whether a child exhibits externalizing problems. These findings are in line with research in the U.S. and support similar research in Japan, revealing a surprising commonality in child behavioral patterns which may stem from gendered ways of reporting the behavior of boys and girls (Matsuishi et al. 2008; Rosenfield 2000). Household income is also an important indicator of whether children exhibit internalizing behavior problems. In the full model results, we see a significant association between lower household income and increases in child internalizing behavior problems. These results are similar to past research in the U.S. and Japan which highlight income as a key indicator of potential negative outcomes for children (Carlson and Corcoran 2001; Oshio et al. 2010), which may be a result of the stress associated with living in low-income conditions.

Limitations of the Study

As in all research, there are some limitations to the longitudinal datasets being used. Due to the JCPS being the first longitudinal study of children's academic and behavioral outcomes in Japan, the 2012 sample of children is relatively small, limiting the possibility of using more

complex forms of statistical analysis. Similarly, because this study examines how parent psychological health affects child behavior, the final sample of children whose parents are included in the JHPS and are observable with 2010 psychological data is smaller than hoped for. Finally, given the intense stigma surrounding mental health within Japanese society, there is a possibility that symptoms of psychological distress might be underreported by respondents.

Implications of the Study

My findings support Cabrera and colleagues' ecological theory of fathers (2014), which emphasizes the way contextual factors affect fathers more strongly than mothers and the subsequent implications this has for children. Given the presence of stricter social roles within Japanese society, Japanese families may be particularly prone to these kinds of maternal/paternal differences. Further research should continue to distinguish the effects of maternal and paternal psychological well-being on child behavior in non-Western contexts to investigate the universality of Western findings.

These results also suggest the need for continued initiatives to increase more balanced parental involvement in Japan as well as further research regarding the connection between Japanese parental psychological well-being and child behavior. Promising cultural trends towards more balanced parental relationships and governmental actions that encourage increased paternal involvement in the lives of children may have significant effects on Japanese children (Ishii-Kuntz 2019). Further research is needed to ascertain whether these trends will become a more permanent part of the Japanese cultural landscape and whether they will lead to more positive child behavioral outcomes. Future research should also examine these trends within similar non-Western contexts such as South Korea to further examine whether these findings are regional in nature or more specific to the Japanese context.

CONCLUSION

In conclusion, my results suggest an important association between maternal psychological well-being and child internalizing and externalizing behaviors in Japan. Similar to other studies regarding maternal psychological well-being in the US (Aunola and Nurmi 2005; Turney 2011), I find that children whose mothers experience higher amounts of psychological distress are more likely to exhibit behavioral problems. This relationship seems particularly strong in Japan because, unlike in Western contexts, maternal psychological well-being appears to explain the effects of paternal psychological well-being. Using Cabrera and colleague's ecological theory of fathers (2014), I also hypothesized that contextual factors such as employment conditions and economic resources work to mitigate the effect of paternal psychological well-being. However, as my full model results did not find conclusive results regarding these variables, further research would be needed to ascertain what specific factors lead to the preeminence of maternal psychological well-being. These results also suggest the need for further research regarding parental roles and involvement in Japan more generally, particularly given emerging trends of increased father involvement in Japan (Ishii-Kuntz 2019).

As my findings suggest, Western-centric findings are not necessarily universal and are often insufficient for describing non-Western contexts. While research on parental psychological well-being and child behavior outcomes is plentiful in Western contexts, there is a consistent lack of research regarding this relationship in places like Japan. Further research is needed in these contexts to better understand how factors unique to non-Western social environments affect parent-child relationships.

REFERENCES

- Aunola, Kaisa and Jari-Erik Nurmi. 2005. "The Role of Parenting Styles in Children's Problem Behavior." *Child Development* 76:1144-1159.
- Basten, Maartje, Henning Tiemeier, Robert R. Althoff, Rens van de Schoot, Vincent W. V. Jaddoe, Albert Hofman, James J. Huzdiak, Frank C. Verhulst, and Jan van der Ende. 2016. "The Stability of Problem Behavior Across the Preschool Years: An Empirical Approach in the General Population." *Journal of Abnormal Child Psychology* 44(2):393-404.
- Brinton, Mary C. 2010. *Lost in Transition: Youth, Work, and Instability in Postindustrial Japan*. New York, NY: Cambridge University Press.
- Cabrera, Natasha J., Hiram E. Fitzgerald, Robert H. Bradley, and Lori Roggman. 2014. "The Ecology of Father-Child Relationships: An Expanded Model." *Journal of Family Theory and Review* 6(4):336-354.
- Carlson, Marcia J. and Mary E. Corcoran. 2001. "Family Structure and Children's Behavioral and Cognitive Outcomes." *Journal of Marriage and Family* 63(3):779-772.
- Connell, Arin M. and Sherryl H. Goodman. 2002. "The Association Between Psychopathology in Fathers Versus Mothers and Children's Internalizing and Externalizing Behavior Problems: A Meta-Analysis." *Psychological Bulletin* 128(5):746-773.
- Dearing, Eric, Kathleen McCartney, and Back A. Taylor. 2006. "Within-Child Associations Between Family Income and Externalizing and Internalizing Problems." *Developmental Psychology* 42(2):237-252.

- Deave, Toity, Jon Heron, Jonathan Evans, and Alan Emond. 2008. "The Impact of Maternal Depression in Pregnancy on Early Child Development." *BJOG: An International Journal of Obstetrics and Gynaecology* 115(8):1043-1051.
- Dooley, David, Ralph Catalano, and Georjeanna Wilson. 1994. "Depression and Unemployment: Panel Findings from the Epidemiologic Catchment Area Study." *American Journal of Community Psychology* 22(6):745-765.
- Downey, Geraldine and James C. Coyne. 1990. "Children of Depressed Parents: An Integrative Review." *Psychological Bulletin* 108(1):50-76.
- Dubow, Eric F., Paul Boxer, and L. Rowell Huesmann. 2009. "Long-term Effects of Parents' Education on Children's Educational and Occupational Success: Mediation by Family Interactions, Child Aggression, and Teenage Aspirations." *Merrill-Palmer Quarterly (Wayne State University Press)* 55(3):224-249.
- Dufur, Mikaela J., Toby L. Parcel, and Benjamin A. McKune. 2008. "Capital and Context: Using Social Capital at Home and at School to Predict Child Social Adjustment." *Journal of Health and Social Behavior* 49(2):146-161.
- Fomby, Paula and Andrew J. Cherlin. 2007. "Family Instability and Child Well-Being." *American Sociological Review* 72(2):181-204.
- Fukuda, Yoshiharu and Ayako Hiyoshi. 2012. "Influences of Income and Employment on Psychological Distress and Depression Treatment in Japanese Adults." *Environmental Health and Preventive Medicine* 17(1):10-17.
- Goodman, Anna, Donna L. Lamping, and George B. Ploubidis. 2010. "When to Use Broader Internalising and Externalising Subscales Instead of the Hypothesized Five Subscales on

- the Strengths and Difficulties Questionnaire (SDQ): Data from British Parents, Teachers and Children.” *Journal of Abnormal Child Psychology* 38(8):1179-1191.
- Goodman, Sherryl H., Matthew H. Rouse, Arin M. Connell, Michelle Robbins Broth, Christine M. Hall, and Devin Heyward. 2011. “Maternal Depression and Child Psychopathology: A Meta-Analytic Review.” *Clinical Child and Family Psychology Review* 14(1):1-27.
- Hiyama, T. and M. Yoshihara. 2008. “New Occupational Threats to Japanese Physicians: Karoshi (Death Due to Overwork) and Karojisatsu (Suicide Due to Overwork).” *Occupational and Environmental Medicine* 65(6):428-429.
- Inaba, Akihide, Peggy A. Thoits, Koji Ueno, Walter R. Gove, Ranae J. Evenson, and Melissa Sloan. 2005. “Depression in the United States and Japan: Gender, Marital Status, and SES Patterns.” *Social Science and Medicine* 61(11):2280-2292.
- Ishii-Kuntz, Masako. 1994. “Paternal Involvement and Perception Toward Fathers' Roles: A Comparison Between Japan and the United States.” *Journal of Family Issues* 15(1):30-48.
- Ishii-Kuntz, Masako. 2019. “Japanese Child Caring Men (Ikumen) and Achieving Work-Life Balance.” Pp. 177–98 in *Family Life in Japan and Germany: Challenges for a Gender-Sensitive Family Policy*, edited by U. Meier, M. Motozawa, and A. Schad-Seifert. Wiesbaden, Germany: Springer VS.
- Ito, Yoko, Satomi Izumi-Taylor, and Nianli Zhou. 2018. “Chinese and Japanese Perspectives of Fathering.” *Early Child Development and Care* 188(12):1764-1772.
- Jeon, Sun Y., Eric N. Reither, and Ryan K. Masters. 2016. “A Population-Based Analysis of Increasing Rates of Suicide Mortality in Japan and South Korea, 1985-2010.” *BCM Public Health* 16(1):1-9.

- Johnson, David R. and Rebekah Young. 2011. "Toward Best Practices in Analyzing Datasets with Missing Data: Comparisons and Recommendations." *Journal of Marriage and Family* 73(5):926-945.
- Jokela, Markus, Jane Ferrie, and Mika Kivimäki. 2009. "Childhood Problem Behaviors and Death by Midlife: The British National Child Development Study." *Journal of the American Academy of Child and Adolescent Psychiatry* 48(1):19-24.
- Kane, Peter and Judy Garber. 2004. "The Relations Among Depression in Fathers, Children's Psychopathology, and Father-Child Conflict: A Meta-Analysis." *Clinical Psychology Review* 24:339-360.
- Kaufman, Gayle and Hiromi Taniguchi. 2009. "Gender and Marital Happiness in Japan." *International Journal of Sociology of the Family* 35(1):69-87.
- Kawakami, Norito. 2007. "Epidemiology of Depressive Disorders in Japan and the World." *Nihon Rinsho. Japanese Journal of Clinical Medicine* 65(9):1578-1584.
- Kawanishi, Yuko. 2009. *Mental Health Challenges Facing Contemporary Japanese Society*. Kent, U.K.: Global Oriental.
- Kessler, Ronald C., Patricia Berglund, Olga Demler, Robert Jin, Doreen Koretz, Kathleen R. Merikangas, A. John Rush, Ellen E. Walters, Philip S. Wang, National Comorbidity Survey Replication. 2003. "The Epidemiology of Major Depressive Disorder: Results from the National Comorbidity Survey Replication (NCS-R)." *Journal of the American Medical Association* 289(23):3095-3105.
- Kumagai, Fumie. 2008. *Families in Japan: Changes, Continuities, and Regional Variations*. Lanham, MD: University Press of America.

- Lamb, Michael E. 2012. "Mothers, Fathers, Families, and Circumstances: Factors Affecting Children's Adjustment." *Applied Developmental Science* 16(2):98-111.
- Lansford, Jennifer E., Patrick S. Malone, Sombat Tapanya, Liliana Maria Uribe Tirado, Arnaldo Zelli, Liane Peña Alampay, Suha M. Al-Hassan, Dario Bacchini, Marc H. Bornstein, Lei Chang, Kirby Deater-Deckard, Laura Di Giunta, Kenneth A. Dodge, Paul Oburu, Concetta Pastorelli, Ann T. Skinner, Emma Sorbring, and Laurence Steinberg. 2019. "Household Income Predicts Trajectories of Child Internalizing and Externalizing Behavior in High-, Middle-, and Low-Income Countries." *International Journal of Behavioral Development* 43(1):74-79.
- Mahoney, Annete, Ernest N. Jouriles, and Joel Scavone. 1997. "Marital Adjustment, Marital Discord Over Childrearing, and Child Behavior Problems: Moderating Effects of Child Age." *Journal of Clinical Child Psychology* 26(4):415-423.
- Matsuishi, Toyojiro, Miki Nagano, Yuko Araki, Yoshiyuki Tanaka, Mizue Iwasaki, Yushiro Yamashita, Schinichiro Nagamitsu, Chiho Iizuka, Takashi Ohya, Kunihiko Shibuya, Munetsugu Hara, Kentaro Matsuda, Akira Tsuda, and Tatsuyuki Kakuma. 2008. "Scale Properties of the Japanese Version of the Strengths and Difficulties Questionnaire (SDQ): A Study of Infant and School Children in Community Samples." *Brain and Development* 30(6):410-415.
- McCarty, Carolyn, Frederick J. Zimmerman, David L. Diguseppe, and Dimitri A. Christakis. 2005. "Parental Emotional Support and Subsequent Internalizing and Externalizing Problems Among Children." *Journal of Developmental & Behavioral Pediatrics* 26(4):267-275.

- Mirowsky, John and Catherine E. Ross. 1992. "Age and Depression." *Journal of Health and Social Behavior* 33(3):187-205.
- Narusyte, Jurgita, Annina Ropponen, Kristina Alexanderson, and Pia Svedberg. 2017. "Internalizing and Externalizing Problems in Childhood and Adolescence as Predictors of Work Incapacity in Young Adulthood." *Social Psychiatry and Psychiatric Epidemiology* 52(9):1159-1168.
- Oshio, Takashi, Shinpei Sano, and Miki Kobayashi. 2010. "Child Poverty as a Determinant of Life Outcomes: Evidence from Nationwide Surveys in Japan." *Social Indicators Research* 99(1):81-99.
- Owens, Jayanti. 2016. "Early Childhood Problems and the Gender Gap in Educational Attainment in the United States." *Sociology of Education* 89(3):236-258.
- Pace, Garrett T. and Kevin Shafer. 2013. "Parenting and Depression: Differences Across Parental Roles." *Journal of Family Issues* 36(8):1001-1021.
- Petterson, Stephen M. and Allison Burke Albers. 2001. "Effects of Poverty and Maternal Depression on Early Child Development." *Child Development* 72(6):1794-1813.
- Pilowsky, Daniel J., Priya Wickramaratne, Ernest Poh, Mariely Hernandez, Lisa A. Batten, Martine F. Flament, Jonathan W. Stewart, Pierre Blier, and Myrna M. Weissman. 2014. "Psychopathology and Functioning Among Children of Treated Depressed Fathers and Mothers." *Journal of Affective Disorders* 164:107-111.
- Pleck, J. H. 2010. "Parental Involvement: Revised Conceptualization and Theoretical Linkages with Child Outcomes." Pp. 58-93 in *The Role of the Father in Child Development*, edited by M. E. Lamb. Hoboken, NJ: Wiley.

- Ramchandani, Paul G., Alan Stein, Thomas G. O'Connor, Jon Heron, Lynne Murray, and Jonathan Evans. 2008. "Depression in Men in the Postnatal Period and Later Child Psychopathology: A Population Cohort Study." *Journal of the American Academy of Child & Adolescent Psychiatry* 47(4):390-398.
- Raver, C. Cybele. 2003. "Does Work Pay Psychologically as Well as Economically? The Role of Employment in Predicting Depressive Symptoms and Parenting Among Low-Income Families." *Child Development* 74(6):1720-1736.
- Raymo, James M. 2016. "Single Motherhood and Children's Health and School Performance in Japan." *Marriage and Family Review* 52(1):64-88.
- Raymo, James M., Hyunjoon Park, Yu Xie, and Wei-jun Jean Yeung. 2015. "Marriage and Family in East Asia: Continuity and Change." *Annual Review of Sociology* 41:471-492.
- Rosenfield, Sarah. 2000. "Gender and Dimensions of the Self: Implications for Internalizing and Externalizing Behavior." Pp. 23-36 in *Gender and its Effects on Psychopathology*, edited by E. Frank. Washington, DC: American Psychiatric Publishing, Inc.
- Ross, Catherine E. and John Mirowsky. 2006. "Sex Differences in the Effect of Education on Depression: Resource Multiplication or Resource Substitution?" *Social Science & Medicine* 63(5):1400-1413.
- Shafer, Kevin, Brandon Fielding, and Erin K. Holmes. 2019. "Depression, Masculine Norm Adherence, and Fathering Behavior." *Journal of Family Issues* 40(1):48-84.
- Shafer, Kevin, Brandon Fielding, and Douglas Wendt. 2017. "Similarities and Differences in the Influence of Paternal and Maternal Depression on Adolescent Well-Being." *Social Work Research* 41(2):85-96.

- Shafer, Kevin and Garrett T. Pace. 2015. "Gender Differences in Depression across Parental Roles." *Social Work* 60(2):115-125.
- Skinner, S. Rachel, Monique Robinson, Michael A. Smith, Spring Chenoa Cooper Robbins, Eugen Mattes, Jeffrey Cannon, Susan L. Rosenthal, Jennifer L. Marino, Martha Hickey, and Dorota A. Doherty. 2015. "Child Behavior Problems and Age at First Sexual Intercourse: A Prospective Birth Cohort Study." *Pediatrics* 135(2):256-263.
- Stattin, H. and M. Kerr. 2000. "Parental Mentoring: A Reinterpretation." *Child Development* 71(4):1072-1085.
- Turney, Kristin. 2011. "Maternal Depression and Childhood Health Inequalities." *Journal of Health and Social Behavior* 52(3):314-332.
- Turney, Kristin and Sara McLanahan. 2015. "The Academic Consequences of Early Childhood Problem Behaviors." *Social Science Research* 54:131-145.
- Vahedi, Andisheh, Isabel Krug, Matthew Fuller-Tyszkiewicz, and Elizabeth M. Westrupp. 2018. "Longitudinal Associations Between Work-Family Conflict and Enrichment, Inter-Parental Conflict, and Child Internalizing and Externalizing Problems." *Social Science and Medicine* 211:251-260.
- Waller, Rebecca, Frances Gardner, Daniel S. Shaw, Thomas J. Dishion, Melvin N. Wilson, and Luke W. Hyde. 2015. "Callous-Unemotional Behavior and Early-Childhood Onset of Behavior Problems: The Role of Parental Harshness and Warmth." *Journal of Clinical Child & Adolescent Psychology* 44:655-667.
- Watson, Kelly H., Jennifer P. Dunbar, Jennifer Thigpen, Michelle M. Reising, Kelsey Hudson, Laura McKee, Rex Forehand, and Bruce E. Compas. 2014. "Observed Parental Responsiveness/Warmth and Children's Coping: Cross-Sectional and Prospective

Relations in a Family Depression Preventive Intervention.” *Journal of Family Psychology* 28:278-286.

Wilson, Sylvia and C. Emily Durbin. 2010. “Effects of Parental Depression on Fathers’ Parenting Behaviors: A Meta-Analytic Review.” *Clinical Psychology Review* 30(2):167-180.

TABLES

Table 1. Variable Descriptions and Descriptive Statistics

Variable	Description	Mean	SD
Dependent Variables			
Internalizing	Row totals of SDQ subscales <i>Emotional Symptoms</i> and <i>Peer Problems</i> ; point totals range from 10 to 26	13.38	2.98
Externalizing	Row totals of SDQ subscales <i>Hyperactivity</i> , <i>Conduct Problems</i> , and <i>Prosocial Behavior</i> ; point totals range from 15 to 39	23.87	4.50
Independent Variables			
*Father psychological well-being	Row totals of ten questions relating to psychological well-being; point totals range from 10 to 38	21.69	5.98
*Mother psychological well-being	Row totals of ten questions relating to psychological well-being; point totals range from 10 to 39	22.45	6.24
Child age	Current age in years; ranges from 6 to 15	10.67	2.55
Child grade	Grades 1-9	4.90	2.51
Girl	Male = 0 Female = 1	0.47	--
Household income	25-1550 in ten thousand yen	489.00	212.80
Father age	Current age in years; ranges from 28 to 64	43.39	5.89
*Father education	0 = High School or less 1= Junior College or Specialized School 2= University or Graduate School 3= Other	0.38 0.12 0.41 0.09	-- -- -- --
Father work hours	Hours worked per week including overtime; ranges from 8 to 120	48.74	18.71
Mother age	Current age in years; ranges from 28 to 57	41.56	5.08
*Mother education	0 = High School or less 1= Junior College or Specialized School 2= University or Graduate School 3= Other	0.45 0.31 0.14 0.10	-- -- -- --
Mother employment	Not working = 0 Working = 1	0.72	--
Mother work hours	Hours worked per week including overtime; ranges from 3 to 100	25.15	16.03

*Notes: All measures are from 2012 data except for 2010 measures of parent psychological well-being and 2009 measures of paternal/maternal education

Table 2. Parent Psychological Well-Being and Child Internalizing and Externalizing Behavioral Problems

	Model 1		Model 2	
	Internalizing	Externalizing	Internalizing	Externalizing
Father psychological well-being	0.066** (0.023)	0.025 (0.035)		
Mother psychological well-being			0.088*** (0.021)	0.060† (0.033)
Constant	11.942*** (0.511)	23.319*** (0.780)	11.399*** (0.497)	22.522*** (0.762)
N	484	484	484	484

Notes: †p ≤ 0.10, *p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001

Table 3. Results of Parent Model and Full Model for Internalizing and Externalizing Behavioral Problems

	Model 3		Model 4	
	Internalizing	Externalizing	Internalizing	Externalizing
Father psychological well-being	0.043 [†] (0.024)	0.008 (0.036)	0.036 (0.024)	0.000 (0.036)
Mother psychological well-being	0.076*** (0.022)	0.058 [†] (0.034)	0.077*** (0.023)	0.076* (0.034)
Child age			0.485 (0.321)	-0.171 (0.487)
Child grade			-0.473 (0.325)	0.103 (0.493)
Girl			0.286 (0.268)	-1.700*** (0.406)
Household income			-0.002** (0.001)	-0.001 (0.001)
Father age			-0.009 (0.041)	0.047 (0.061)
Father junior college or specialized school			0.746 (0.458)	1.388* (0.706)
Father university or graduate school			0.193 (0.350)	0.178 (0.530)
Father other education			0.371 (0.532)	1.491 [†] (0.819)
Father work hours			.002 (0.008)	0.006 (0.011)

Mother age			-0.028	-0.107
			(0.048)	(0.073)
Mother junior college or specialized school			-0.406	-0.691
			(0.325)	(0.492)
Mother university or graduate school			0.060	-0.742
			(0.439)	(0.668)
Mother other education			-0.748	-1.553*
			(0.507)	(0.772)
Mother employment			-0.462	-0.508
			(0.306)	(0.463)
Mother work hours			-0.012	-0.002
			(0.010)	(0.017)
Constant	10.743***	22.407***	10.873***	27.408***
	(0.614)	(0.944)	(2.299)	(3.466)
N	484	484	484	484

Notes: †p ≤ 0.10, *p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001