MOTHERS' PARENTING STRESS IN CHINESE IMMIGRANT FAMILIES: THE ROLE
OF FATHERS' INVOLVEMENT AND SOCIAL SUPPORT

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This study investigated the association between Chinese immigrant mothers' reports of parenting stress and two sources of parenting support: fathers' support and social support. Five independent-samples *t*-tests were first computed to examine whether there were discrepancies between Chinese immigrant mothers' and fathers' perceptions of fathers' involvement across five domains of fathers' involvement in early child care: (1) fathers' warmth and attunement; (2) control and process responsibility; (3) emotional involvement; (4) indirect care; and (5) positive engagement. Then regression analyses were conducted to understand how and to what extent the five domains of father involvement reported by mothers and mothers' perceived social support influenced Chinese immigrant mothers' parenting stress. In addition, an indirect effects of mothers' self-efficacy on the relation between fathers' involvement and mothers' parenting stress was also tested. The results showed that Chinese mothers reported significantly greater level of fathers' emotional involvement than the same type of involvement reported by Chinese immigrant fathers. This study also found that fathers' emotional involvement reported by Chinese immigrant mothers was a significant predictor of Chinese immigrant mothers' parenting stress. However, mothers' perceived social support was a stronger predictor, accounting for more variance in their parenting stress than their reports of fathers' involvement across all the five dimensions. Mothers' self-efficacy did not account for the association between Chinese immigrant mothers' reports of fathers' involvement across five dimensions and mothers' parenting stress.

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MOTHERS' PARENTING STRESS IN CHINESE IMMIGRANT FAMILIES: THE ROLE OF FATHERS' INVOLVEMENT AND SOCIAL SUPPORT

Introduction

Children's health during early developmental periods is influenced by various factors, such as nutrition, environment, social culture, parent behavior, and parenting (Pem, 2015). Among potential risk factors, the effects of the parenting stress on children's well-being have received much attention (Ha & Granger, 2016; Louie, Cromer, & Berry, 2017). Parenting is an exciting process but also a challenging experience for parents (Murkli, 2011; Putnick et al., 2008). Nearly all parents experience stress, even though some of them have higher levels of education and good income (Deater-Deckard, Chen, & El Mallah, 2013).

A newborn will bring lots of changes to a family (Harmon & Perry, 2011). These changes may be challenging or positive, but both may generate stress (Palkovitz, 2002). Deater-Deckard (2004) defined parenting stress as parents' negative psychological reaction during parenthood. Previous studies demonstrated that parenting stress is related to undesirable parenting, unhealthy family functions, and poor children's well-being outcomes, such as harsh parenting, low levels of marital satisfaction, and children's externalizing problems (Dubois-Comtois, Moss, Cyr, & Pascuzzo, 2013; Epifanio, Genna, De Luca, Roccella, & La Grutta, 2015; Jackson & Choi, 2018; Walker, 2000). Mothers, often viewed as primary caregivers of children, have reported higher levels of parenting stress than fathers (Musick, Meier, & Flood, 2016). Mothers' parenting stress, either prenatally or postnatally, can have long-term negative effects on children's growth (Aizer, Stroud, & Buka, 2016). For example, mothers' experiences of stress after birth have been related to children's later insecure attachment and behavioral problems (Ok, 2007; Tharner et al., 2012). Given that the negative consequences of mothers' parenting stress on family functioning and

children's development, it is crucial to explore factors influencing mothers' experience of parenting stress. Studying the association between the risk factors and mothers' parenting stress not only expands the knowledge about mothers' mental health but also promotes healthy development in families and prevents potential negative effects influencing children' growth in the first years of life.

Previous studies examined some maternal factors given that historically mothers are most often viewed as primary caregivers of children. Specifically, mothers' personality, as well as postnatal depression, are key factors that influence their parenting stress (Leigh & Milgrom, 2008; Mulsow, Caldera, Pursley, Reifman, & Huston, 2002). In addition to these factors, mothers' insecure attachment, antenatal attachment, and poor dyadic adjustment are risk factors that increase new mothers' parenting stress (Mazzeschi, Pazzagli, Radi, Raspa, & Buratta, 2015). Even though maternal risk factors of parenting stress are well investigated, paternal factors have received less attention. Unlike mothers, fathers in families are traditionally viewed as financial providers rather than prominent caregivers in parenting (Lamb & Tamis-LeMonda, 2004; Marsiglio, Amato, Day, & Lamb, 2000). Fathers' involvement has been reported as an important multidimensional factor when examining mothers' parenting stress in infancy (Kalil, Ziol-Guest, & Coley, 2005). The first model of father involvement, which was originally proposed by Lamb, Pleck, Charnov, and Levine (1985), includes three dimensions: fathers' direct engagement in children' activities, availability to children, and responsibility to children in childcare and adequate resources. Unmarried adolescent mothers have reported that insufficient fathers' direct engagement, availability, and responsibility during infancy are related to high levels of mothers' parenting stress (Kalil et al., 2005). However, a later study focusing on low-income White and African American married mothers found fathers' emotional support, but not fathers' direct

engagement, was related to low levels of mothers' parenting stress (Harmon & Perry, 2011). Although the family systems theory and previous studies emphasize the contributions of fathers' involvement in both mothers' and children's well-being, research regarding the association between fathers' contributions in childcare and mothers' experience of parenting stress is limited and not comprehensive (Franck & Buehler, 2007; Harmon & Perry, 2011; Nomaguchi, Brown, & Leyman, 2017). Specifically, most of the relevant studies relied on one or two dimensions of father involvement and primarily sampled American-born mothers (Harmon & Perry, 2011; Xu, Wang, Ahn, & Harrington, 2018). The research examining factors determining parenting stress of foreign-born mothers living in country other than their own has been limited (Xu et al., 2018). Accordingly, due to the inconsistent findings and the absence of relevant studies, it is reasonable to further explore whether levels of early fathers' involvement across multiple dimensions impact foreign-born mothers' parenting stress.

Differences have been reported in how foreign-born mothers may experience parenting. For example, foreign-born mothers living in the United States are likely to have limited social resources, receive less partner support, and experience higher levels of parenting stress than mothers born in and living in the United States (Harmon & Perry, 2011). Moreover, foreign-born mothers from different nationalities have found to experience different degrees of parenting stress (Eo & Kim, 2017). Compared to the non-U.S. born mothers from Korea and Vietnam, Filipino mothers had a higher level of parenting stress (Eo & Kim, 2017). From a family systems perspective, it would be important to determine differences in the impact of fathers' involvement on mothers' experiences of stress across families with different racial backgrounds.

The United States is the most popular immigrant countries in the world. To date, although the immigrant population is very diverse, the major race of immigrants in the United States are

single-race White and Asian (Batalova, Blizzard, & Bolter, 2020). The growth of the Asian immigrants is faster than the others that it tends to become the largest immigrant group in the U.S. (Asian Population 2020, 2020). Mothers living in the United States from Asian countries have reported more parenting stress than Hispanic mothers (Xu et al., 2018). Among Asian immigrants, Chinese Americans emerged as the largest group within the Asian Americans cohort in the United States (López, Ruiz, & Patten, 2017). However, studies on the parenting stress of Chinese immigrant mothers are scarce. In other words, how well findings in studies of U.S. born mothers and non-U.S. born mothers from Korea, Vietnam, and Filipino can be generalized to Chinese immigrant mothers is unclear.

Another limitation of most research examining fathers' involvement in early childcare is that the research reports fathers' involvement based on mothers' reports, with no reports from fathers directly (Hernandez & Coley, 2007). When research does include perceptions of fathers' involvement based on mothers' and fathers' reports, discrepancies in perceived levels of fathers' support have been found. (Coley & Morris, 2002; Charles et al, 2018; Mikelson, 2008). For example, in low-income minority families, fathers reported higher levels of father involvement than did mothers (Coley & Morris, 2002). Likewise, in fragile families, i.e., families at high risk of living in poverty or greater risk of parents being unmarried, fathers reported greater degrees of providing support in childcare than the level of fathers' support reported by mothers (Mikelson, 2008). Moreover, Charles and colleagues (2018) examined fathers' accessibility, engagement, and responsibility in childcare, and their findings were consistent with prior research in that fathers from low-income minority families reported a higher level of involvement in parenting than was reported by mothers. These researchers also mentioned that mothers and fathers reported levels of fathers' involvement differently for different domains. This introduced the

potential importance of accessing not only level of support solely, but the type of support provided by fathers' involvement.

On the basis of the traditional model of Lamb et al. (1985), Pleck (2010) proposed a more nuanced conceptualization of father involvement to help understand how and to what extent fathers were involved with their children in different domains. This model includes five broader dimensions of involvement: positive engagement activities (i.e., direct interact with children in childcare), behavioral warmth and responsiveness (i.e., hugging children), control (i.e., setting rules to children), indirect care (i.e., arranging doctor's appointment and selecting schools for children), and process responsibility (i.e., monitoring what needs to be done). To further improve Pleck's model (2010), Singley, Hammer, Molloy, & Rowell (2018) identified another dimension of fathers' involvement named emotional involvement. Singley and colleagues also conceptualized fathers' control and process responsibility as one dimension through a series of factor analyses. By comparing to the traditional model of father involvement, the new model developed by Singley and his colleagues (2018) comprehensively reflects modern fathers' role in parenting. Therefore, the current study applied this comprehensive model of father involvement to further explore the association between early fathers' involvement across multiple domains and Chinese immigrant mothers' parenting stress. Investigating the relation between these dimensions of fathers' involvement in parenting and mothers' stress helps determine what types of involvement are most supportive of mothers' parenting activities.

Factors influencing mothers' parenting stress are various and complex. Another aspect of support received by mothers is that of social support from multiple resources other than children's fathers. Social support has been reported to be negatively correlated with parenting stress. For instance, Cardoso, Padilla, & Sampson (2010) found that less social support was

associated with higher parenting stress among Hispanic and non-Hispanic mothers. Interestingly, Mexican immigrant mothers reported that social support was more helpful than fathers' support in reducing their parenting stress (Cardoso et al., 2010). It was proposed that this difference in support based on source of support is related to how Mexican American families divide labor on the basis of gender; and mothers in these families are viewed as the primary caregivers on child rearing (Dumka, Gonzales, Bonds, & Millsap, 2009). Similarly, foreign-born Mexican mothers stated that they were more likely to rely on support from their mothers, female friends, and communities, although they received financial support from their husbands (Ornelas, Perreira, Beeber, & Maxwell, 2009). Mexican immigrant mothers' experience is helpful to understand the association between different sources of support and mothers' parenting stress in immigrant families, but it is unclear whether Chinese immigrant mothers report more benefit from support from relatives and friends than support from fathers.

In addition to the direct associations between levels and types of support and mothers' parenting stress, there are potential confounding variables that might play a mediating role between fathers' participation and mothers' parenting stress. According to the study of Xu et al. (2018), 639 non-U.S. born mothers reported that the changes in the level of fathers' involvement were not related to the changes in mothers' parenting stress. As a result, Xu et al. suggested that future research should pay attention to potential mediating effects between fathers' involvement and mothers' parenting stress. Specifically, fathers' involvement might indirectly influence mothers' parenting stress through a third variable, such as mothers' self-efficacy. Bandura (1986) explained that high self-efficacy plays a positive role in the reduction of negative emotions, such as stress and depression. Moreover, Cohen, Holloway, Domínguez-Pareto, & Kuppermann (2015) pointed out that mothers' parenting self-efficacy was positively influenced by emotional

support from their families. Emotional support is one of the dimensions of fathers' involvement (Gutman & Huth-Bocks, 2015). Therefore, in order to understand the limited research findings regarding the association between fathers' involvement and mothers' parenting stress in previous studies, it is reasonable to assume that effective fathers' involvement can strengthen mothers' self-efficacy in parenting, which in turn reduce mothers' parenting stress.

Present Study

According to the foregoing discussions, the current study applied the new paternal involvement scale proposed by Singley et al. (2018) to fill the gap by examining whether there were discrepancies between Chinese immigrant mothers' and fathers' perceptions of fathers' involvement across the following five domains of early child care: 1. fathers' warmth and attunement, 2. fathers' control and process responsibility, 3. fathers' emotional involvement, 4. fathers' indirect care, and 5. fathers' positive engagement.

With the findings from the comparisons of mothers' and fathers' reports of fathers' involvement, another purpose of this study was to further investigate how and to what extent fathers' involvement across the five dimensions reported both by mothers and fathers, as well as mothers' perceived social support, predict Chinese immigrant mothers' parenting stress. Specifically, variances in Chinese immigrant mothers' parenting stress associated with these sources of support are examined in relation to the potentially different contributions that each makes to mothers' stress. Moreover, the current study highlights the indirect relationship between fathers' involvement and mothers' parenting stress through the mediating factor of mothers' self-efficacy. The findings will be helpful to comprehensively understand the association between different sources of support and mothers' parenting stress in immigrant families.

Research Questions

Research Question 1

Do Chinese immigrant mothers and fathers report similar levels of fathers' involvement as measured by the five dimensions on the Paternal Involvement with Infants Scale (PIWIS)?

It was hypothesized that Chinese immigrant mothers would report statistically significantly lower levels of fathers' involvement among all five dimensions of the PIWIS in comparison to fathers' reports of their levels of involvement.

Research Question 2

How well do mothers' reports of paternal involvement across the five dimensions of the PIWIS, fathers' reports of paternal involvement across the same five dimensions, and mothers' perceived social support predict mothers' parenting stress?

Fathers' indirect care behaviors, such as selecting children's school and taking children to see a doctor, may logically not have happened frequently. As a result, fathers' less frequent indirect care behaviors might not always reflect a lower level of father involvement (Singely et al., 2018). Accordingly, it was hypothesized that (a) Chinese immigrant mothers' reports of paternal involvement across all five dimensions, (b) fathers' reports of paternal involvement across the five dimensions, and (c) mothers' reports of perceived social support would contribute differently to mothers' parenting stress. Specifically, it was hypothesized that mothers' reports of fathers' involvement across all dimensions of involvement other than indirect care would be stronger predictors of mothers' parenting stress than will fathers' self-reports of fathers' involvement across the same four dimensions of PIWIS. Mothers' perceived social support would be a stronger predictor, accounting for more variance in mothers' parenting stress than both mothers' and fathers' reports of fathers' involvement across all the five dimensions of the PIWIS.

Research Question 3

To what extent does mothers' self-efficacy mediate the relationship between mothers' reports of fathers' involvement as measured by the five dimensions on the PIWIS and mothers' parenting stress?

It was hypothesized that mothers' self-efficacy would mediate the relationship between mothers' reports of fathers' involvement as measured by the five dimensions on the PIWIS and mothers' parenting stress.

Research Question 4

To what extent does mothers' self-efficacy mediate the relationship between fathers' reports of fathers' involvement as measured by the five dimensions on the PIWIS and mothers' parenting stress?

It was hypothesized that mothers' self-efficacy would mediate the association between fathers' reports of fathers' involvement as measured by the five dimensions on the PIWIS and mothers' parenting stress.

Methodology

Participants

Participants were Chinese immigrant parents of newly born to 24-month-old infants, who were Chinese immigrant parents of newly born to 24-month-old infants, who were recruited through an online invitation posted in public libraries and WeChat parent groups. Inclusion criteria for this study were that both participant mothers and their partners (1) were born in Mainland China (2) were from Mainland China, (3) were older than 18 years of age, (4) spoke English, (5) had a child between 0-24 months of age, (6) lived with their partner and child in the United States, and (7) had a target child who was of average health. A total of 467 people completed the online survey. However, 213 responses were not qualified for the current study. One participant signed "would not like to participate", and 56 participants did not complete all

questions in the survey. As a result, these participants were not included in the final analyses ($n = 270$). The total sample ($N = 197$) included 152 Chinese immigrant mothers and 45 fathers (Table 1) resulting in power of .80 for the analyses completed.

Table 1

Characteristics of Participants and Their Children (N = 197)

Characteristics	Categories	<i>n</i>
Parent gender	Female	152
	Male	45
Parent age	18 to 24	3
	25 to 34	149
	35 to 44	44
	45 to 54	1
Educational level	Less than high school	1
	High school graduate	3
	Some college credit, no degree	2
	Bachelor's degree	46
	Master's degree	106
	Professional degree	3
	Doctorate	36
	Student	11
Employment	Retired	1
	Unemployed not looking for work	45
	Unemployed looking for work	13
	Employed part time	20
	Employed full time	107
Child gender	Female	87
	Male	110
Child age	Birth to 3 months	66
	4 months to 7 months	43
	8 months to 11 months	19
	12 months to 15 months	21
	16 months to 19 months	14
	20 months to 24 months	34

Mothers and fathers were not recruited as dyads, but individual participants. Participants' ages ranged from 18 to 54 years with 1.5% ranging from 18 to 24 years, 75.6% ranging from 25 to 34 years, 22.3% ranging from 35 to 44 years, and 0.5% ranging from 45 to 54 years. Of participating parents, more than 50% had a master's degree ($n = 106$) and 18.3% reported a doctoral degree ($n = 36$). In terms of employment, 54.3 % parents were full-time employees ($n = 107$), 22.8% were unemployed not looking for work ($n = 45$), and 10.2% had part-time jobs ($n = 20$). Children's ages ranged from birth to 24 months ($M = 2.9$, $SD = 1.9$) with 55.8% identified as infant boys whereas 44.2% as infant girls

Procedures

Following the approval of the research by the institutional review board at a university located in the southwest United States, participants were recruited in the following steps: (Step 1) Informing Chinese immigrant mother-father dyads of the current study; (Step 2) Screening the eligible participants; (Step 3) Completing the online informed consent form; (Step 4) completing online surveys; and (Step 5) Prize drawing.

Step 1. Informing Chinese Immigrant Parents of the Current Study

With the approval of two local public libraries in urban areas in the southwest, flyers introducing the study were posted on the information board. The flyers introduced the current study and invited Chinese immigrant parents with infants aged from birth to 24 months of age to learn more about the project. Each flyer had a website link and a Quick Response code that provided access to the survey information and informed consent page. Furthermore, the flyer contains the investigator's email address, phone number, and the WeChat account that parents can use to contact the investigator.

In addition to local libraries, flyers were also posted in the local WeChat parent groups,

which were all about raising children. WeChat is the most widely used social media by Chinese people all around the world (Kharpal, 2019). The investigator contacted the director of local Chinese American Story e-Garden sites (CASE) to introduce this research and requested assistance on posting the flyer on their WeChat Chinese parent group. CASE is a nonprofit organization and the local chapter of the International Reading Association (ICRA). CASE, primarily targeting Chinese American families with young children living in local areas, works with local public libraries and schools to frequently host Chinese story time and other events regarding Chinese culture (DFW Chinese American Story eGarden, 2018). The WeChat group “Baby Piggy DFW 2019” including 500 Chinese immigrant parents with babies born in 2019 (the year of the pig in Chinese culture) also provided the permission to recruit participants for this study. Parents in these two social media groups often shared local events and discussed questions about raising babies. Snowball sampling was used in addition to posted flyers and social media, with participants invited to share the project information with other mothers and fathers.

Step 2. Screening Eligible Participants

Once parents linked to the initial webpage, participants who wished to continue the survey completed several screening questions: (1) Are you from Mainland China? (2) Is your partner from Mainland China? (3) Were you born in Mainland China? (4) Was your partner born in Mainland China? (5) Are you older than 18 years of age? (6) Do you speak English? (7) Do you have a child aged between 0-24 months? (8) Do you live with your partner and child in the U.S? (9) Do you believe your child is of average health? Parents who answered yes to all these questions were linked to a new page to complete the consent. Parents who answered no to one or more than one screening questions were linked to a page stating appreciation for their interest

and explanation that they do not qualify for the project.

Step 3. Completing the Informed Consent Form

All eligible participants were informed that: (a) the IP tracker was turned off in Qualtrics to make the study anonymous, so measures are completed anonymously, with no identifying information connected to responses; and (b) they may discontinue participation at any time during the study without penalty. Participants were informed that with participation they had the opportunity to be entered into a prize drawing to receive one of two \$50 Amazon gift cards. Participants clicked a tab stating, “Yes, I have read the consent information and agree to take part in the research” or “No, I would not like to participate”. The tab indicating Yes led parents to a Qualtrics web-based survey. All participants were allowed to download a copy of the consent form to keep for their records.

Step 4. Completing Online Surveys

Eligible participants who wished to continue the survey were linked to a demographic questionnaire. Following the completion of the demographic questionnaire, fathers were linked to the Paternal Involvement with Infants scale (PIWIS) for fathers; mothers were linked to the PIWIS questionnaire for mothers, the questionnaire of self-efficacy, and the questionnaires on perceived social support and level of parenting stress.

Step 5. Drawing a Prize

There was a question provided at the end of the survey that directed interested participants to a separate link of Qualtrics survey where they could enter contact information for a prize drawing.

Measures

Demographic Questionnaire

Chinese immigrant mothers and fathers reported their age, gender, educational level, employment status, as well as their children's demographic information, such as age and gender.

Fathers' Self-Report of Paternal Involvement

Fathers' involvement was measured by the PIWIS, which was newly developed by Singley et al. (2018). The PIWIS is a self-report scale that measures involvement in parenting in five dimensions: warmth and attunement, control and process responsibility, emotional involvement, indirect care, and positive engagement. The PIWIS is constructed of 35 items rated on five subscales from not at all (1) to more than once a day (7). For example, "Missing your baby when you are not with her/him". A lower mean score on each subscale means a lower degree of involvement reported by fathers. Higher levels of each dimension of father involvement mean greater fathers' support on that specific domain. Singley et al. (2018) reported the Cronbach's alpha of PIWIS was .77 to .92.

Mothers' Report of Paternal Involvement

Chinese immigrant mothers' rated fathers' involvement using the same measure, PIWIS, that has been adapted to ask her perception of her partner's support (PIWIS). Mothers were asked to rate the subsequent questions in each subscale from *not at all* (1) to *more than once a day* (7). For instance, "Missing his baby when he is not with her/him". A total of mean score on each subscale was calculated. A lower mean score on each subscale reflects that a lower degree of fathers' involvement perceived by mothers.

Maternal Parenting Stress

The Parent Stress Scale (PSS), developed by Berry and Jones (1995), was used to

measure Chinese immigrant mothers' parenting stress for the purpose of the study. The PSS is a 5-point Likert-type questionnaire, which includes 18 questions. This scale measures the level of parenting stress according to a parent's self-perception of raising children. All 18 items are rated from *strongly disagree* (1) to *strongly agree* (5). Questions 1, 2, 5, 8, 17 and 18 are reversed coded. A low score represents a low level of parenting stress reported by mothers. Berry and Jones (1995) reported the Cronbach's alpha was .83, which is a high internal consistency.

Social Support

Chinese immigrant mothers' perceived social support was measured by the Multidimensional Scale of Perceived Social Support (MSPSS). MSPSS is a 12-item Likert-type questionnaire, which is designed by Zimet, Dahlem, Zimet, and Farley (1988) to assess perceived support from friends, family, and a special person. Each item is measured on a 7-point scale from *very strongly disagree* (1) to *very strongly agree* (7). High scores reflect satisfied degrees of perceived support. The reported Cronbach's alpha of the MSPSS was .93 (Canty-Mitchell & Zimet, 2000).

Mothers' Self-Efficacy

Chinese immigrant mothers' self-efficacy was assessed by using items from the Parenting Sense of Competence Scale (Johnston & Mash, 1989). The Efficacy subscale includes 7 questions, which evaluates the degree of parents' problem-solving abilities and competence in parenting. Each question is measured on a 6-point scale from *strongly agree* (1) to *strongly disagree* (6). A higher score means a higher level of self-efficacy in parenting.

Results

Independent *t*-Test Analyses

SPSS version 26 was used to analyze the data for the purpose of the current study. To

answer the first research question regarding the level of agreement of Chinese immigrant mothers' and fathers' reports of fathers' involvement, a total of five independent-samples *t*-tests were computed to compare the mean-level differences between same dimensions of the PIWIS reported by different gender groups. To counteract the possibilities of type I error, a Bonferroni correction was conducted to obtain an adjusted probability value ($p = .01$).

Table 2

Means and Standard Deviation of Mothers and Fathers' Reports (N =197)

	Mother (n =152)			Father (n =45)			<i>t</i>
	α	Mean	SD	α	Mean	SD	
Fathers' WA	.95	6.37	1.01	.87	6.47	.68	.60
Fathers' CO	.92	4.68	1.65	.83	4.76	1.25	.32
Fathers' EI	.65	5.29	1.27	.66	4.47	1.52	-3.29**
Fathers' IC	.56	3.34	1.56	.61	3.30	1.60	-1.48
Fathers' PE	.85	4.71	1.42	.74	4.88	1.18	.75

Note. WA = warmth and attunement. CO = control. EI = emotional involvement. IC = indirect care. PE = positive engagement. *df* = 195 for all five *t*-tests. ** $p < .01$

As can be seen in Table 2, Chinese immigrant mothers reported significant greater level of fathers' emotional involvement ($M = 5.29$, $SD = 1.27$) than the same type of involvement reported by Chinese immigrant fathers ($M = 4.47$, $SD = 1.52$), $t(63.31) = -3.29$, $p = .002$. *t*-Tests also revealed that there were no significant differences between Chinese immigrant mothers' and fathers' reports of fathers' behavioral warmth and attunement in childcare, fathers' control behavior in parenting, fathers' indirect care, and fathers' positive engagement with children. The results showed a significant mean difference in the scores for fathers' emotional involvement reported by Chinese immigrant mothers and the same type of involvement reported by Chinese immigrant fathers, but it does not support the hypothesis that Chinese immigrant mothers reported statistically significantly lower levels of fathers' involvement across all five dimensions

of the PIWIS in comparison to Chinese immigrant fathers' reports of their involvement behavior.

Hierarchical Multiple Linear Regression Analysis

Another purpose of the current study was to examine how well Chinese immigrant mothers' reports of paternal involvement across the five dimensions of the PIWIS, Chinese immigrant fathers' reports of paternal involvement across the same five dimensions of the PIWIS, and Chinese immigrant mothers' perceived social support predict mothers' parenting stress. A hierarchical multiple linear regression analysis was used to answer this research question, because this analysis explained the linear relationship between explanatory variables and one response variable. It also helped to understand the overall fit of the equation model and the unique contribution of each independent variable to the total variance explained (Aiken, West, & Reno, 1991).

The previous *t*-tests revealed that there was a statistically significant difference in mean fathers' emotional involvement score between Chinese immigrant mothers and fathers, thus the rest of four dimensions of fathers' involvement were not included in the regression model based on the possibility of collinearity. However, because mothers and fathers were treated as individuals, but were not matched mother-father pairs, the current data were not suitable for examining the relationship between fathers' reports of father involvement and Chinese immigrant mothers' parenting stress. Therefore, the following statistical analyses relied on mothers' reports.

A two-stage hierarchical regression analysis was adopted with fathers' involvement across five dimensions from Chinese immigrant mothers' reports and their perceived social support predicting Chinese immigrant mothers' parenting stress. A correlation analysis (Table 3) was conducted to evaluate the relationships among all variables before running the regression

analysis. Six model assumptions including linear relationship, independence of observations, equal error variances, multicollinearity, significant outliers, and normality of residuals were checked to avoid Type I or Type II error inflation and ensure a meaningful analysis. Eventually, fathers' involvement across five dimensions from mothers' reports and mothers' perceived social support were included in the regression models.

Table 3

Correlations between Predictors and Mothers' Parenting Stress

Variables	1	2	3	4	5	6	7	8
1. Fathers' WA	-							
2. Fathers' CO	.62**	-						
3. Fathers' EI	.09	-.06	-					
4. Fathers' IC	.30**	.40**	-.07	-				
5. Fathers' PE	.62**	.67**	.09	.45**	-			
6. Mothers' SO	.40**	.42**	.09	.18*	.32**	-		
7. Mothers' SE	.20*	.22**	.10	.05	.11	.35**	-	
8. Mothers PS	-.11	-.16	-.25**	-.07	-.11	-.48**	-.58**	-

Note. WA = warmth and attunement. CO = control. EI = emotional involvement. IC = indirect care. PE = positive engagement. SO = social support. SE = self-efficacy. PS = parenting stress. * $P < .05$. ** $p < .01$.

Chinese immigrant mothers' reports of fathers' five types of involvement were entered at stage one of the regression model to test the predictive effect of mother's reports of fathers' involvement across five dimensions on mothers' stress score. In the step 2, mothers' perceived social support were entered to test the predictive effect of social support on mothers' stress score over and above mothers' reports of fathers' involvement across five dimensions. The hierarchical multiple regression revealed that at stage one, only fathers' emotional involvement significantly contributed to the regression model ($F(5, 146) = 3.12, p = .01$) and accounted for 10% of the variation in Chinese immigrant mothers' parenting stress score. Introducing mother's perceived social support explained an additional 20% of variation in mothers' parenting stress score and

this change in R^2 was significant ($\Delta R^2 = .20$), $F(1, 145)$ change = 40.13, $p < .001$. Upon adding mothers' perceived social support to the regression model, fathers' emotional involvement was adjusted with remaining significance ($\beta = -.23$, $p = .002$). The results are also shown in Table 4.

Table 4

Summary of Hierarchical Multiple Regression Analysis of the Impact of Mothers' Reports of Fathers' Involvement and Mothers' Social Support on Mothers' Parenting Stress (n = 152)

Variable	Block 1			Block 2		
	<i>B</i>	SE <i>B</i>	β	<i>B</i>	SE <i>B</i>	β
Fathers' WA	.21	1.04	.22	1.29	.94	.13
Fathers' CO	-1.30	.69	-.22	-.42	.63	-.07
Fathers' EI	-2.12	.62	-.28**	-1.76	.56	-.23**
Fathers' IC	-.22	.56	-.04	-.17	.50	-.03
Fathers' PE	.50	.82	.07	.37	.73	.05
Mothers' SO				-4.46	.70	-.50***
R^2	.10			.29		
ΔR^2				.20***		

Note. WA = warmth and attunement; CO = control; EI = emotional involvement; IC = indirect care; PE = positive engagement; SO = social support. ** $p < .01$. *** $p < .001$.

It suggested that Chinese immigrant mothers' perception of higher levels of fathers' emotional involvement was associated with lower levels of mothers' parenting stress, as their stress score was decreased accordingly. However, Chinese immigrant mothers' reports of fathers' emotional involvement was a less significant predictor compared to mothers' perceived social support ($\beta = -.50$, $p < .001$) on predicting mothers' parenting stress. In other words, Chinese immigrant mothers' perceived social support was the most significant predictor of mothers' stress score in the current study, which was consistent with our hypothesis. Fathers' behavioral warmth and attunement in childcare, control behavior in parenting, indirect care, as well as fathers' positive engagement with children did not have a direct effect on Chinese

immigrant mothers' experience of parenting stress.

Mediation Analysis

To test the mediating effect of mothers' self-efficacy on the association between mothers' reports of fathers' involvement across five dimensions and mothers' parenting stress, a Baron and Kenny (1986) mediation analysis was used. This analysis examines how the effect of an independent variable on an outcome was transmitted through an intervening variable.

Figure 1. Unstandardized regression coefficients for the effect of fathers' emotional involvement on mothers' parenting stress across different levels of mothers' self-efficacy. ** $p < .01$. *** $p < .001$.

If an independent variable cannot predict a dependent variable, or the total effect of a mediation model is not significant, a mediating effect will not exist. As a result, fathers' warmth and attunement, control behavior, indirect care, and positive engagement were excluded from the mediating analysis because none of them predicted mothers' parenting stress. The following three-step mediation analysis only estimated how mothers' self-efficacy mediates the relationship between fathers' emotional involvement and mothers' parenting stress (See Figure 1).

The first regression included mothers' reports of fathers' emotional involvement predicting mothers' parenting stress, which reflected a total effect of the mediation model (path *c* in Figure 1A). The second regression had fathers' emotional involvement predicting mothers' self-efficacy (path *a* in Figure 1B). The third regression included both fathers' emotional involvement and mothers' self-efficacy predicting mothers' parenting stress. As shown in Figure 1, the unstandardized regression coefficient between fathers' emotional involvement and parenting stress (path *c* in Figure 1A) was statistically significant ($B = -1.93, p = .002$), as was the unstandardized regression coefficient between mothers' self-efficacy and mothers' parenting stress ($B = -.92, p < .001$), shown as path *b* in Figure 1B. The direct effect, shown as path *c'* in Figure 1B, remained significant with an increased coefficient ($B = -1.5, p = .003$) after adjusting for mothers' self-efficacy (the mediator). However, path *a* between fathers' emotional involvement and mothers' self-efficacy (see Figure 1B) was not statistically significant ($B = .50, p = .20$). According to the criteria of a mediation model, the path from the independent variable to the mediator must be significant. In other words, if fathers' emotional involvement was related to mothers' parenting stress through mothers' self-efficacy, fathers' emotional involvement should predict mothers' self-efficacy and in turn mothers' self-efficacy should predict mothers' parenting stress. Given that the mediating analysis in the current study did not meet this criterion, it was concluded that mothers' self-efficacy did not have a mediating effect on the relationship between Chinese immigrant mothers' reports of fathers' emotional involvement and mothers' parenting stress.

Discussion

One of the purposes of this study was to compare the level of agreement on fathers' involvement across five dimensions reported by Chinese immigrant mothers and fathers. The

previous studies found fathers reported higher levels of fathers' involvement than mothers (Coley & Morris, 2002; Charles et al, 2018; Mikelson, 2008). However, the general finding from the current study is that the mean fathers' emotional involvement score was significantly higher in Chinese immigrant mothers' group than in Chinese immigrant fathers' group. Despite the difference, many similarities were found that Chinese immigrant mothers and fathers reported similar level of fathers' involvement on fathers' warmth and attunement, control behavior, indirect care, and positive engagement. The results of this study did not support the hypothesis that Chinese immigrant fathers will report higher levels of involvement across all five dimensions in parenting than mothers, but these findings reinforced the previous study that mothers and fathers reported levels of fathers' involvement differently for different domains (Charles et al., 2018).

During the past 30 years, Chinese fathers' traditional role in parenting has transferred to a more "maternal" role (Chuang & Su, 2009). For example, fathers share caregiving responsibilities with mothers and are more likely involved in childcare such as feeding and bathing babies. Chinese immigrant mothers and fathers may be reporting similar levels of fathers' involvement in several dimensions because both may take a positive role in raising their children. Chuang and Su (2009) also pointed out that Chinese fathers' main role as financial provider has remained steady in modern society, although they tend to engage more in childcare in different domains. Compared to other domains of fathers' involvement, Asian fathers as major providers to families, were less likely involved in emotional activities in childcare (Yeung, 2013). Therefore, Chinese immigrant mothers may not have strong role expectation on Chinese immigrant fathers' emotional involvement in parenting. Once Chinese immigrant fathers participated in emotional care of children, no matter to what extent, Chinese immigrant mothers

may perceive a higher level of fathers' emotional involvement than they really are.

Since a discrepancy was found between Chinese immigrant fathers' and mothers' reports, this study also attempted to investigate how both fathers' and mothers' reports of fathers' involvement and mothers' perceived social support contribute to Chinese immigrant mothers' parenting stress. However, due to missing matched parent pairs in the data, the analysis in this study was only able to answer how Chinese immigrant mothers' perceived fathers' involvement across five dimensions and social support predict their parenting stress. Consistent with previous studies (Cardoso et al., 2010; Ornelas, et al., 2009), Chinese immigrant mothers' perceived social support from their families, friends, and significant others was the strongest predictor of their parenting stress. Chinese immigrants respect their culture norms, which is reflected in raising children by following the advice from elderly, such as children's grandparents. Many of them and their children were taken care by children's grandparents after giving birth and relied on grandparents' support when they and their husbands returned to work (Lee & Brann, 2015). Sometimes children's fathers, as not the primary caregivers, were confused what to do because most of things were done by children's mothers and grandparents with more experience (Shorey & Ang, 2019). Moreover, fathers tended to be involved less when mothers were more engaged in parenting (Planalp & Braungart-Rieker, 2016). In addition, young Chinese mothers tended to share information and seek for advice regarding childcare through social-media, such as parenting-related WeChat groups (Hua, 2017). Mothers shared and learned experiences of raising children from new and old friends from these chatting groups. Accordingly, receiving support from families and friends may have a greater stress-buffering effect than receiving spouses' support for Chinese immigrant mothers.

In addition to mothers' perceived social support, fathers' emotional involvement in

childcare was also a significant factor related to Chinese immigrant mothers' experience of parenting stress. Although Chinese immigrant mothers may not have high expectation on fathers' emotional engagement in childcare, they may still desire appreciation of their parenting contributions from fathers. And interestingly, Chinese immigrant mothers' reports of fathers' warmth and attunement behavior, control behavior, indirect care, as well as positive engagement did not significantly predict their parenting stress. The possible reason may be because these mothers viewed fathers' parenting behaviors in these four dimensions that are not fathers' daily obligation.

The current study also tested the mediating effect of mothers' self-efficacy to see how it accounted for the relation between Chinese immigrant mothers' reports of fathers' involvement across five dimensions and their parenting stress. In addition, higher parent self-efficacy has been demonstrated to be related to greater parent involvement and lower levels of parenting stress (Murkli, 2011). As the level of new mothers' self-efficacy increased, they may be more willing to encourage fathers to involve in parenting (Schoppe-Sullivan, et al., 2015). Parents with strong efficacy tended to have confidence to successfully raise and educate children and meet family demands, which in turn lower their risks of experiencing stress (Murkli, 2011; Sanders & Woolley, 2005). Therefore, although moderating effect of mothers' self-efficacy is not the major interest of this study, how mothers' self-efficacy affected the strength of the relation between five types of fathers' involvement and Chinese immigrant mothers' parenting stress was assessed as well to comprehensively understand mothers' parenting stress. A Baron and Kenny moderation analysis was conducted to assess how the relationship of fathers' involvement across each dimension to mothers' parenting stress changed at different levels of mothers' self-efficacy. Since there are five dimensions of fathers' involvement, five separate hierarchical regressions for

each of the dimensions were thus adopted where the first block had the predictors (i.e., fathers' warmth and attunement score and mothers' self-efficacy score) and the second block had the interaction effect. All the predictors in the interaction were centered and then were multiplied together to form an interaction effect (i.e., centered fathers' WA score X centered mothers' self-efficacy score). The overall model for each of the regressions was not significant ($p > .05$).

The results showed that neither mediating effects, nor moderating effects were found in this case, which did not support the third hypothesis in this study. Future studies may want to test other possible factors that have mediation or moderation effects on the association between fathers' involvement and mothers' stress. For example, mothers' parenting stress was influenced by parental involvement through parental competence (Beryhill, 2015). Another study suggested that mother-father relationship influenced the direction between father involvement and mothers' parenting stress (Nomaguchi, Brown, & Leyman, 2012).

Limitation

This study has a number of limitations. First, recruitment of fathers was more difficult than the recruitment of mothers. Although the total number of the sample size ($N = 197$) achieved the power of .80, only 45 fathers were recruited for the current study. The unequal sample size thus generated a medium effect size for the independent samples *t*-tests.

Secondly, this study found that Chinese immigrant parents rated different level of fathers' emotional involvement, so fathers' self-reports of involvement and mothers' reports of fathers' involvement may influence mothers' parenting stress differently. However, due to constraints owing to study design, there was missing matched pairs parent data. Thus, the second research question was not tested by fathers' reports of fathers' involvement. The fourth research question has the same problem related to matched pairs data, thereby not qualifying for a mediating

analysis to see how mothers' self-efficacy mediates the association between fathers' reports of fathers' involvement and mothers' parenting stress.

Third, this study did not account for children' variables that may influence the relationship between fathers' involvement and Chinese immigrant mothers' parenting stress. For example, children' gender may influence the level of Chinese immigrant fathers' involvement, which in turn affected mothers' parenting stress. Finally, the participants in current study are Chinese immigrant parents in the United States, generalization to other people with different cultural origins may be limited.

Conclusion

Despite there are several limitations, this study suggests that comparing mothers' and fathers' agreement in reports of fathers' involvement across multiple dimensions is crucial. Since a discrepancy was found on a particular dimension of fathers' involvement reported by Chinese mothers and fathers, future research focusing on Chinese immigrant group may primarily focus on the effect of fathers' emotional involvement on mothers' stress. Although missing matched father-mother pairs data, the findings of this study are still considered valid, given that mothers' stress is the focus in this study, and relying on mothers' reports of fathers' involvement is thus appropriate.

Raising a child for new parents is challenging, so this study suggests that Chinese immigrant mothers should not only encourage fathers to be physically involved but also emotionally engaged in childrearing, particularly for immigrant mothers who are lack of social support from grandparents and friends and more likely to have parenting stress. By considering the negative effects of increased stress, this study also suggests researchers and practitioners should not only introducing risk factors regarding poor parental involvement but also providing

protective strategies to reduce parents' stress when informing services or interventions to Chinese immigrant families in the United States.

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APPENDIX
EXTENDED LITERATURE REVIEW

Nearly all parents experience stress, even though some of them have higher levels of education and good income (Deater-Deckard, Chen, & El Mallah, 2013). Deater-Deckard (2004) defined parenting stress as parents' negative psychological reaction during parenthood. Parenting stress, as a specific type of stress, has negative influences on parenting and family functions in both families of healthy children and children with special needs (Walker, 2000). A high level of parenting stress was linked to multiple undesirable parenting and family outcomes, such as harsh parenting, decreased marital satisfaction, and externalizing problems of the child (Dubois-Comtois, Moss, Cyr, & Pascuzzo, 2013; Epifanio, Genna, De Luca, Roccella, & La Grutta, 2015; Jackson & Choi, 2018). Mothers, often viewed as primary caregivers, have reported higher levels of parenting stress than fathers (Musick, Meier, & Flood, 2016). Mothers' experiences of stress when their children were infants have been related to children's later insecure attachment and behavioral problems (Ok, 2007; Tharner et al., 2012). Mothers' parenting stress, prenatally or postnatally, has long-term negative effects on children's growth (Aizer, Stroud, & Buka, 2016).

Factors Related to Mothers' Parenting stress

Due to the negative consequences of mothers' parenting stress on family functioning and children's development, it is crucial to explore factors influencing mothers' experience of parenting stress. Understanding factors associated with mothers' parenting stress can contribute to identifying solutions that support mothers when parenting children in the first years of life. This will support healthy family functioning and promote their children's development.

Studies have demonstrated that mothers' parenting stress is linked to postnatal depression, mothers' personality, mothers' insecure attachment, antenatal attachment, poor dyadic adjustment, a low level of fathers' involvement, and limited social support (Cardoso, Padilla, & Sampson, 2010; Leigh & Milgrom, 2008; Mazzeschi, Pazzagli, Radi, Raspa, &

Buratta, 2015; Mulsow, Caldera, Pursley, Reifman, & Huston, 2002; Nomaguchi, Brown, & Leyman, 2017). Postnatal depression has been identified as a strong predictor of mothers' parenting stress (Leigh & Milgrom, 2008). Mulsow et al. (2002) considered that mothers' personality and social support are key factors that influenced mothers' parenting stress. Consistent with Mulsow and colleagues (2002), Cardoso et al. (2010) found that limited social support is associated with mothers' parenting stress. Additionally, Mazzeschi et al. (2015) suggested that mothers' insecure attachment, antenatal attachment, and poor dyadic adjustment are also risk factors influencing new mothers' parenting stress. Compared to the foregoing discussion, research examining the association between fathers' involvement in parenting and child care and mothers' experience of parenting stress is limited (Nomaguchi et al., 2017).

Fathers' Involvement

The family systems theory emphasizes the importance of fathers' influence both on children's development and mothers' well-being (Franck & Buehler, 2007). The first model of father involvement, which was originally proposed by Lamb, Pleck, Charnov, and Levine (1985), includes three dimensions: fathers' direct engagement with children in children's activities, availability to children, and responsibility to children in child care and adequate resources. This influential model has been widely used to conceptualize father involvement in most current fathering research (Pleck, 2010). Fathers' involvement has been reported as an important multidimensional factor when examining mothers' parenting stress in infancy. For example, unmarried adolescent mothers have reported that insufficient fathers' direct engagement, availability, and responsibility during infancy are related to higher levels of parenting stress for mothers (Kalil, Ziol-Guest, & Coley, 2005). However, a more recent research study only focused on fathers' direct engagement and identified no relationship between fathers'

direct engagement with their three-year-old and mothers' parenting stress among low-income White and African American married mothers who were living with their husbands or cohabiting with their partners (Harmon & Perry, 2011). Accordingly, due to the inconsistent findings and the absence of relevant studies, it is reasonable to further explore whether levels of early fathers' involvement impact mothers' parenting stress.

From a family systems perspective, it would be important to determine differences in the impact of fathers' involvement on mothers' experiences of stress across families with different racial backgrounds. Most of the existing studies focused on examining factors that related to American-born mothers' parenting stress (Xu, Wang, Ahn, & Harrington, 2018). Overall, however, the research examining factors determining parenting stress of foreign-born mothers has been limited (Xu et al., 2018). Differences have been reported in how foreign-born mothers may experience parenting. For example, foreign-born mothers are likely to have limited social resources, receive less partner support, and experience higher levels of parenting stress than mothers who were born and living in the United States (Harmon & Perry, 2011). Foreign-born mothers from different nationalities have found to experience different degrees of parenting stress (Eo & Kim, 2017). Compared to the non-U.S. born mothers from Korea and Vietnam, Filipino mothers had a higher level of parenting stress (Eo & Kim, 2017). Mothers from Asian countries have been found to report more parenting stress than Hispanic mothers (Xu et al., 2018). Chinese Americans emerged as the largest group within the Asian Americans cohort in the United States (López, Ruiz, & Patten, 2017). However, studies on the parenting stress of Chinese immigrant mothers are scarce. In other words, how well findings in studies of U.S.-born mothers and non-U.S. born mothers from Korea, Vietnam, and Filipino can be generalized to Chinese immigrant mothers is unclear. The present study will provide information on foreign-

born Chinese mothers' parenting stress in infancy as related to fathers' support.

Another limitation of most research examining fathers' involvement in early childcare is that most research relies on mothers' reports of fathers' involvement, with no reports from fathers directly (Hernandez & Coley, 2007). When research does include perceptions of fathers' involvement based on mothers' and fathers' reports, discrepancies in perceived levels of fathers' support have been found. (Coley & Morris, 2002; Charles et al, 2018; Mikelson, 2008). For example, in low-income minority families, fathers reported higher level of father involvement than did mothers (Coley & Morris, 2002). Likewise, fathers in fragile families, i.e., families at high risk of living in poverty or greater risk of being unmarried, reported greater degrees of providing fathers' support in child care than reported by mothers (Mikelson, 2008). Moreover, Charles and colleagues (2018) examined fathers' accessibility, engagement, and responsibility in child care, and their findings were consistent with prior research in that fathers from low-income minority families reported a higher level of involvement in parenting than was reported by mothers. They also mentioned that mothers and fathers reported levels of fathers' involvement differently for different domains. This introduced the potential importance of accessing not only level of support solely, but the type of support provided by fathers' involvement.

Pleck (2010) proposed a more nuanced conceptualization of father involvement to help understand that how and to what extent fathers are involved with their children in different domains. This built on the traditional model of Lamb et al. (1985) and proposed five dimensions of involvement: positive engagement activities (direct interact with children in childcare), behavioral warmth and responsiveness (i.e., hugging children), control (setting rules to children), indirect care (i.e., arrange doctor appointment and select schools for children), and process responsibility (i.e., monitoring what needs to be done). On the basis of Pleck's model (2010),

Singely and his colleagues (2018) completed research identify another dimension of fathers' involvement, i.e., emotional involvement. Further, based on factor analyses, these researchers conceptualized fathers' control and process responsibility as one dimension through a series of factor analyses. Therefore, to understand today's role of father involvement comprehensively, the current study extends previous research by examining whether there are discrepancies between Chinese immigrant mothers' and fathers' perceptions of fathers' involvement across these five domains of early child care: 1. fathers' positive engagement, 2. indirect care, 3. emotional involvement, 4. fathers' warmth and attunement, and 5. control and process responsibility (Singely et al., 2018). Investigating the relation between these dimensions of fathers' involvement in parenting help to determine what types of involvement are most supportive of mothers' parenting activities. Less frequent fathers' indirect care, such as selecting children' school and taking children to see a doctor, might not always reflect a lower level of father involvement (Singely et al., 2018). The reason might be that single fathers are logically involved in childcare more than married fathers (Hofferth & Lee, 2015). This study also investigates how and to what extent the five domains of father involvement reported by mothers and fathers influence Chinese immigrant mothers' parenting stress differently.

Social Support

Another aspect of support received by mothers is that of social support from resources other than the child's father. Social support was identified as multiple types of support from social network, including friends, other people, and families (Zimet et al., 1988). Parents receiving support from their social networks felt more effective and were positively involved in positive parenting activities (Marshall, 2001; Taylor, Conger, Robins, & Widaman, 2015). Mothers with a high level of perceived social support managed better stress and had more

confidence on parenting (Thompson, Flood, & Goodvin, 2006). Consistent with this point, social support has been reported to be negatively correlated with parenting stress. For instance, Cardoso et al. (2010) found that less social support was associated with higher parenting stress among non-Hispanic White and non-Hispanic Black mothers. Interestingly, Mexican immigrant mothers reported that social support was more helpful than fathers' support in reducing their parenting stress (Cardoso et al., 2010). It was proposed that this difference in support based on source of support is related to how Mexican American families divide labor on the basis of gender, and mothers in these families are viewed as the primary caregivers on child rearing (Dumka, Gonzales, Bonds, & Millsap, 2009). Similarly, foreign-born Mexican mothers stated that they were more likely to rely on support from their mothers, female friends, and to reduce their parenting stress, although they received their support family income (Ornelas, Perreira, Beeber, & Maxwell, 2009). These findings are helpful to better understand the association between different sources of support and mothers' parenting stress in immigrant families, but it is unclear whether Chinese immigrant mothers report more benefit from support from relatives and friends than support from fathers.

Mothers' Self-Efficacy

A set of beliefs about parent role which were developed during childrearing is called parental self-efficacy (Benedetto & Ingrassia, 2017). Bandura (1977) defined self-efficacy as people's confidence to accomplish tasks successfully. Parents with strong self-efficacy normally have more motivation and goal-oriented behavior than parents with poor self-efficacy (Trahan, 2015). Furthermore, parents who are high in self-efficacy showed positive behavior in parental engagement, whereas parents with poor self-efficacy may have difficulties to handle stress (Benedetto & Ingrassia, 2017). Many mothers reported physical and socio-emotional challenges,

as well as stress during early motherhood. Research has demonstrated that mothers' stress was related to their weak self-efficacy (Law et al., 2019). On the other hand, mothers with strong self-efficacy engaged in parenting positively, responded to children in adaptive ways, and showed low levels of stress during postpartum period (Coleman & Karraker, 2003; Law et al., 2019).

In addition to the direct associations between mothers' self-efficacy and their parenting stress, mothers' self-efficacy might play a mediating role between fathers' participation in childcare and mothers' parenting stress. According to the study of Xu et al. (2018), 639 non-U. S. born mothers reported that the changes in the level of fathers' involvement were not related to the changes in mothers' parenting stress. As a result, they suggested that future research should pay attention to potential mediating effects between fathers' involvement and mothers' parenting stress. Specifically, fathers' involvement might indirectly influence mothers' parenting stress through a third variable, such as mothers' self-efficacy. Bandura (1986) explained that high self-efficacy plays a positive role in the reduction of negative emotions, such as stress and depression. Moreover, Cohen, Holloway, Domínguez-Pareto, & Kuppermann, (2015) pointed out that mothers' parenting self-efficacy was positively influenced by the emotional support from families. Emotional support is one of the dimensions of fathers' involvement (Gutman & Huth-Bocks, 2015). Therefore, it is reasonable to assume that receiving effective fathers' involvement can strengthen mothers' self-efficacy in parenting, which in turn reduce mothers' parenting stress.

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