What Do We Know About Fatherhood? A Critical Review of Literature

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Introduction

Studies have shown an increase in fathers' involvement (FI) in families since the 1970s. The increase in women's education and their labor force participation are two major factors that have fostered new nurturant fathers who actively engage in their children's lives beyond their traditional breadwinning and disciplinary roles (Lamb 2010). In the mid-1980s, more researchers started to examine how FI influenced children's development and the quality of the father-child relationship. Recently, FI and sensitive fathering have raised more attention in both western and Asian contexts (Yeung 2013; Zhang and Yeung 2012). Many studies have addressed how fathers engaged in children's lives (Harper and Martin 2013; Juhari, Yaacob, and Talib 2013; Sriram and Sandhu 2013) and their roles in children's cognitive development, social adjustment, and academic achievement (Flouri and Buchanan 2004; Lamb 2010; Torres et al. 2014; Yeung, Duncan, and Hill 2000; Yeung et al. 2001).

The study of FI is related to the economic and demographic transitions during the past few decades. Increased men's involvement with children and in housework that took place in the private sphere (the family) has been called the "second half of the gender revolution," whereas the first half referred to the dramatic increase in women's labor force participation in the public sphere (Goldscheider, Bernhardt, and Lappegard 2015). Moreover, the "second demographic transition" (SDT) (Lesthaeghe 2010) illustrated by higher divorce rates and remarriages, more cohabitation, and births to single mothers have also changed the roles of fathers within and outside families (Goldscheider et al. 2015; Day and Lamb 2004). Family policies or social welfare initiatives also exert positive influences on men's participation at home. Paternity leave is an important family-friendly policy that has been formulated in most of the Organization for Economic Co-operation and Development (OECD) member states and some East Asian countries since the 1960s. Although the level of entitlements may vary across countries, plenty of studies have shown that fathers' leave-taking, including paternity leave, childcare leave, and shared parental leave, as well as the duration of such leave, positively impact FI in childcare activities, distribution of housework with their partners, and parental relationship particularly in the first few years following childbirth (Haas and Hwang 2008; Hosking, Whitehouse, and Baxter 2010; Huerta et al. 2014; Knoester, Petts, and Pragg 2019; Nepomnyaschy and Waldfogel 2007; O'Brien 2009; O'Brien and Wall 2017; Petts, Carlson, and Knoester 2019; Petts, Knoester, and Li 2020).

The changes in the conception of a father figure demonstrate the transformation of gender norms and family relationships under social, economic, and cultural transitions. More involved roles of the father not only benefit children's development but also help promote harmonious family environments and fathers' personal development (Brandth and Kvande 2018; Craig 2006; Norman, Elliot, and Fagan 2018). In the long run, it may also contribute to increased fertility rates to expand the workforce. Therefore, FI is a significant topic in the fields of demography, psychology, and sociology, as it can illustrate socio-cultural changes within and outside

the family. This review aims to demonstrate the development of FI in terms of its conceptualization and influences on children's development and other aspects of family relationships. It will also cover how paternity or parental leave policies influence fathers' leave-taking and FI in various sociocultural contexts. Finally, critiques on the research findings and future research directions will be discussed and elaborated.

Theories of Fathers' Role and FI

In this section, I will discuss the theories used in understanding father's role and FI including neo-classical economic theory, human capital theory, gender ideology theory, social role theory, fathers' identity theory, family systems theory, and the Lamb-Pleck conceptualization of FI.

Neo-classical Economic Theory and Human Capital Theory

Becker (1981) stated that the household division of labor is based on the efficient allocation of resources due to productivity differentials among household members. Men usually have more bargaining power and comparative advantages to allocate more time for paid work because they received higher wages than women in the labor market, while women take on more of the domestic responsibilities including childcare and housework. This is also linked to the human capital theory (which includes time allocation and relative resources theories), indicating that the household decides the most efficient combination of time to allocate to paid and unpaid work based on the members' time and resources. In this setup, the one with relatively more resources (i.e., higher income and education) but less available time tend to do less unpaid work at home (Aldous, Mulligan, and Bjarnason 1998; Ishii-Kuntz 2013; Norman, Elliot, and Fagan 2018; Patnaik 2019; Rehel 2014; Tanaka and Waldfogel 2007). The time availability perspective also predicts that men's long work hours restrict their time spent on childcare (Ishii-Kuntz 2013).

Gender Ideology Theory, Social Role Theory, and Fathers' Identity Theory

Parenting is rooted in "social norms about appropriate roles of men and women," (Cabrera, Volling, and Barr 2018, 153) arguing that fathers should provide for more of the economic resources while mothers should offer more of the daily care and emotional support to their children (Aldous, Mulligan and Bjarnason 1998; Cooksey and Fondell 1996; Ishii-Kuntz 2013; Milkie et al. 2002). A gender perspective "provides a framework for the problems of mismatches between cultural meanings and behaviors in families" (Milkie et al. 2002, 23). It posits that fathers who are more acceptable of an egalitarian gender ideology tend to be more actively engaged with childcare activities and other household tasks than those with more traditional gender attitudes (Aldous, Mulligan, and Bjarnason 1998; Ishii-Kuntz 2013). Moreover, parents may also have different views on involvement with children. For example, while mothers see interactions with children as involvement, fathers may consider interactions with mothers as another kind of involvement due to less available time as a result of longer work hours.

Nevertheless, fathers' roles and identities are constructed and developed through their lived experiences and interactions with other family members and fathering activities. These "contribute to the meanings, significance, and perceptions that men attribute to fatherhood and its accompanying roles" (Knoester, Petts, and Pragg 2019, 258-9; Castillo, Welch, and Sarver 2011; Marsiglio et al. 2000; Petts and Knoester 2018; Pragg and Knoester 2017). Identities of fathers can be more salient when men perceive fatherhood as more important than other roles. Killewald (2013) pointed out that married residential fathers had a more salient and highly committed fatherhood identity as providers and in their involvement with children than those with other types of marital and residential status with their children. The enhanced fathers' identity can also promote work efficiency and stimulate their investment in human and social capital, bringing not only "fatherhood premium" (referring to wage increases for men after becoming a father) for themselves but also contributing to their children's development (Killewald 2013).

Family Systems Theory

Fathers' role can also be understood under the concept of family systems which consider the family as a unit of "organized, interdependent individuals" (Galovan et al. 2014, 1848). Several subsystems consist the overall family system. These include interactions between fathers and children, and among fathers with other family members (i.e., mothers) (Cabrera et al. 2018; Galovan et al. 2014; Holmes and Huston 2010; Schober 2012; Yeung and Li 2022). Therefore, family members are linked together and fathers' behaviors are directly or indirectly related to children's development through educational investments, father-child interactions, spousal relationships, and family environment (Cabrera, Volling, and Barr 2018; Cabrera 2020). Moreover, parental relationships could be enhanced when both parents spend time with their children and experience successful parenting interactions (Broderick 1993). When empirically examining the influence of FI on children's developmental outcomes, researchers need to account for the mothers' parenting (Cabrera, Vollin, and Barr 2018), gender ideology, or other sociodemographic characteristics. Stepfathers also play the role of "relative strangers" and may view their new family role as providing more support to their partners instead of actively participating in childcare activities with their stepchildren (Beer 1988; Cooksey and Fondell 1996).

Lamb-Pleck Conceptualization

The Lamb-Pleck conceptualization is the most frequently used framework of constructing FI, which encompasses three components: (1) paternal engagement (i.e., direct interaction with the child, in the form of caretaking, play, or leisure often measured in father-child time); (2) accessibility or availability to the child (i.e., indirect attention to and supervision of children in close proximity); and (3) responsibility, defined as making sure that the child is taken care of and arranging for resources and welfare and making decisions for the child (Lamb 2010, 59; Lamb et al. 1985; Pleck 2010; Pleck, Lamb, and Levine 1986). In practice, responsibility

can be measured by solo parenting (i.e., solo engaged time and solo accessible time) which refers to "fathers' time spent [on] caring for children when the mother is not present" (Wray 2020, 540). "Solo parenting is qualitatively different from time mediated by the presence of the mother," which can help develop fathers' caring competence and facilitate co-parenting with the mother (Wray 2020, 3). It can also promote father-child and spousal relationships, and in turn increase family well-being (Brandth and Kvande 2018; Craig 2006; Norman, Elliot, and Fagan 2018; Wilson and Prior 2010). Although the Lamb-Pleck model has been widely used, there is no consensus on how to determine the relative importance of each dimension it presents, and how to mediate the level of difficulty in capturing the quality of FI (either using a time diary or self-reported data) (Cabrera 2020, 135).

Recently, Pleck (2010) proposed a revised conceptualization of FI with three primary and two auxiliary components, including:

(1) positive engagement activities, interaction with the child of the more intensive kind likely to promote development; (2) warmth and responsiveness; and (3) control, particularly monitoring and decision making.... (4) indirect care, activities done for the child that do not entail interaction with the child, in the forms of material indirect care (purchasing and arranging goods and services for the child) as well as social indirect care (fostering community connections with peers and institutions), but excluding breadwinning; and (5) process responsibility, referring to a father's monitoring that his child's needs for the first four components of involvement are being met, as distinct from the extent to which the father meets those needs himself. (Pleck 2010, 67)

The last two auxiliary domains were under the term "responsibility" in the previous version (Lamb et al. 1985), and "the effect of process responsibility is mediated by other involvement components" (Pleck 2010, 87). Although this revised version explicitly pointed out that the referred FI should be positive rather than negative, it excludes the father's breadwinning

role in this framework. Pleck (2010, 71) suggested that "the three primary components ... are moderately related to each other and [may] comprise a single factor, though 'control' is somewhat less strongly associated with the other two components" and whether the composite score of FI should be used for analysis could be based on the results of the confirmatory factor analysis. Currently, almost no empirical evidence on the linkages of indirect care and process responsibility with children's outcomes exists, and most of the studies focus on the three primary components of FI (Pleck 2010). Future studies should therefore pay more attention to these auxiliary components and address this gap.

Other empirical studies have provided alternative classifications of FI based on the abovementioned conceptualizations (For more details, see: Cabrera, Shannon, and Tamis-LeMonda 2007; Cooksey and Fondell 1996; Flouri and Buchanan 2004; Gold, Edin, and Nelson 2020; Kroll et al. 2016; McWayne et al. 2013; Rempel et al. 2017; Sriram and Sandhu 2013; Torres et al. 2014; Xu and Yeung 2013; Zhang, Wang, and Lu 2019; Liu et al. 2019).

Theories of FI on Children's Outcomes

In this section, I now discuss more specifically three theories linking FI to children's outcomes. They are the attachment theory, Bronfenbrenner's concept of "proximal process," and the social capital theory.

Attachment Theory

Attachment theory posits that a secure infant-father attachment is characterized by both the quantity and quality of FI. This attachment remains "relatively stable across early childhood" and predicts an "increased paternal sensitivity over time (Cabrera 2020, 136). It can also lead children to develop a positive "internal working model" of self in relation to others, which is "a key foundation for effective relationships with adults and peers" (Pleck 2007, 197). Therefore, this "secure attachment" can promote good children's outcomes, such as socio-emotional and cognitive development,

independent of the effects of infant-mother attachment (Pleck 2007, 198, 2010). In addition to the aspects of "presence" and "warmth," attachment theory also emphasizes the caregiver's "sensitivity" and "responsiveness" (Pleck 2007, 199). Nonetheless, the theory is primarily applicable in infancy and early childhood, and scholars from developmental science criticize that it is too narrow in scope.

Bronfenbrenner's Concept of "Proximal Process"

Bronfenbrenner (1979, 21–22) proposed that the ecology of human development is "a product of the interaction between the human organism and the changing properties of the immediate settings where the developing person lives, consisting of the microsystem, mesosystem, exosystem, macrosystem, and chronosystem." The microsystem is the key developmental arena promoting the "proximal process" which is described as "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting" (22). The father is considered an important additional and unique microsystem partner for the children, with whom they could promote cognitive and socio-emotional development by experiencing good "proximal process" and father-child interactions (Pleck 2007). This unique role echoes the "essential father" theory, stating that the role of the father is different from the mother's nurturing role, which particularly lies in his function of introducing the outside world and its reality to his children (Lamb 1975, 256).

One important aspect of Bronfenbrenner's ecological model is its emphasis on the two-directional or reciprocal relations between the developing person and the environment, which links how children's behaviors influence parenting (Belsky 1984, as cited in Pleck 2010); specifies how the mesosystem and exosystem influence children's outcomes from parents' marital relations, jobs, and social support networks under the "process model of parenting;" and emphasizes "sensitive parenting that is attuned to the needs of the child" (Pleck 2007, 199). Recently, Bronfenbrenner's framework on "the dynamics of paternal influences on children" was

applied to the life course model which underscores the contextual factors "that may determine the way fathers are involved with their children, ... such as fathers' ethnicity, residential status, and socioeconomic status (SES), ... [and] may hinder or facilitate the father-child relationship even for nonresident fathers" (Cabrera et al. 2007; McWayne et al. 2013, 901).

Social Capital Theory

Coleman's (1988, 1990) social capital theory refers to parent-child relationships and interactions, in which parents can monitor their children's behaviors thus promoting children's well-being. Later, Pleck (2010, 84) classified family social capital into "parental socialization social capital" referring to the parenting behavior on children's developmental outcomes and "parental community social capital" (serving as advocates for children in schools and other settings, as well as sharing parents' social networks with children, or sharing "knowledge of how to negotiate entry into the adult world"). This social capital theory considers the parents' role in children's peer relations as they integrate into the community. It also suggests that parental financial and socialization capital (related to parents' income and education) may influence early child development, while parental community social capital (related to parents' employment status and occupation) may be more consequential for a child's later development (Pleck 2007, 2010). It echoes the father's identity resource theory which points out that fathers can influence children's development by providing human, economic, and social capital as a way of transferring experience to children (Amato and Ochiltree 1986). According to the "fathers' parental capital model" developed by Pleck (2010, 84-85), the above-mentioned paternal social capital can foster a good child's outcome because these components entail aspects of "proximal processes" (i.e., peer relations or nonpeer community connections) and "authoritative parental style." Additionally, this model demonstrates that "material indirect care" is a key mediator between family financial capital and child's outcomes, which puts the previously excluded fathers' breadwinning role back into the framework (Pleck 2010).

Nevertheless, on average, fathers provide more financial capital but participate less in children's socialization than mothers. Traditional social capital theory does not differentiate parents' separate roles in building up family social capital for children. Moreover, whether fathers could contribute more to parental community social capital is still not clear as women's labor market participation rate has increased and the distinction in job-related networks has become less obvious (Pleck 2007). Finally, researchers need to develop specific theories or linkages on how the three forms of family social capital influence a child's outcomes through different pathways.

Main Findings of FI on Children's Outcomes

Studies in the recent decades show that children in intact families have spent longer time with their fathers as compared with other types of families. In the US, fathers' total involvement time was about 2.5 hours on a weekday and 6.5 hours on a weekend, and among all the activities, household and social activities had the most notable increase. Children under 12 years of age spent longer time with their fathers in play and companionship, but less time in the achievement-related, household, or social activities (i.e., religious activities, visiting, or other organizational events) (W. J. Yeung et al. 2001). Similarly, from 1992 to 2006, Australian fathers' time spent on primary (i.e., physical care) and secondary (i.e., supervising children while doing other primacy activities) childcare activities increased significantly, whereas time spent in the company of children decreased a little (Craig, Powell, and Smyth 2014). In China, fathers tended to focus more on rule teaching and emotional communication for their kindergarten children (Wang et al. 2021), while for teenage daughters, they provided emotional support, communication on studies, future plans, and university selection (Xu and Yeung 2013). Taiwanese fathers have adopted more egalitarian parenting attitudes and have become more involved in children's education, outdoor activities, as well as being positive role models besides their traditional role as the financial provider (Ho et al. 2011). In addition, well-educated Indian and Muslim fathers were highly involved

in providing moral guidance, praying, correcting negative behavior, monitoring children's habits, choosing schools for children, and planning for children's future under the influence of the Hindu and Malay culture or Islam (Sriram and Sandhu 2013; Juhari, Yaacob, and Talib 2013).

FI exerts positive influences on children's outcomes in four main categories. Firstly, the father-child relationship as a result of FI helps form children's personalities at a young age. Studies indicate that a good fatherson relationship prove to be a crucial mediator of the father's role as a sex role model in predicting boys to be more masculine (Mussen and Rutherford, 1963, as cited in Lamb 2010). Secondly, FI promotes young children's language and cognitive development. A father's supportive parenting behaviors, such as physical affection, nurturance, and companionship are positively associated with desirable children's behaviors and cognitive outcomes, including self-esteem, self-control, life satisfaction, and social and cognitive competence (Cabrera, Shannon, and Tamis-LeMonda 2007; Harris and Marmer 1996). The father's sensitivity, positive regard, and cognitive stimulation are also significantly associated with higher scores on mental development of 24- and 36-month-old children, and higher scores on receptive vocabulary for 36-month children with both concurrent and predictive effects in the US (Tamis-LeMonda et al. 2004). In Vietnam, the increased father-infant interactions predicts a significantly higher level of language development among nine-month-old infants (Rempel et al. 2017). Thirdly, FI also enhances children's social, behavioral, and psychological outcomes. For example, positive FI has a significantly negative association with externalizing (i.e., destructive, aggressive, and hyperactive behavior, etc.) and internalizing behavior problems (i.e., anxiety, anger, fear, sadness, emotional impulses, etc.) of preschool children (Jin Zhang, Liu, and Hu 2019). A study in the UK points out that fathers' beliefs in positive parenting involvement and their creative play with children at the age of nine months to five years are significantly related to lower risks of children's behavior problems (Kroll et al. 2016). In the same way, in China, greater fathers' involvement is related to better psychological adaptability and mental

health of primary school children (Zhang, Wang, and Lu 2019). Finally, FI also strengthens children's early learning skills and academic achievements. A meta-analysis demonstrates that high quality FI was positively related to children's academic success and self-regulation (McWayne et al. 2013). In Hong Kong, fathers' engagement in number application activities with children significantly predicts number competence (Liu et al. 2019).

FI also has a long-term impact on adolescence or adulthood. Adolescents who have more involved fathers when they were young showed to have higher reading and math scores with fewer grade retention (Cooksey and Fondell 1996; Miller et al. 2020). Fathers' attitudes and behaviors, church attendance, precautionary behavior, and orientation toward challenges rather than affiliation can strongly predict adult children's years of schooling, sons' hourly wage, as well as reducing the risk of nonmarital births of adult daughters (Yeung, Duncan, and Hill 2000). Similar to the results in the US, FI, for children at the age of seven, significantly predicts better educational attainment, especially for girls at the age of 20 in the UK; they are independent from the effects of mothers' involvement (Flouri and Buchanan 2004).

FI and Family Structure

FI results in different desirable outcomes based on a child's gender and family SES "by reducing the frequency of behavior problems in boys and psychological problems in young women, and enhancing cognitive development, while decreasing delinquency [of children] ... in low SES families" (Sarkadi et al. 2008, 153). Torres et al. (2014) found that in Portugal, higher FI in playing indoor activities was negatively associated with social competence for girls, and more leisure activities with fathers outdoors significantly reduced boys' anger-aggression. However, Flouri and Buchanan (2004) demonstrated that the child's gender and family structure had no moderating effects between FI and children's educational attainment at the age of 20. In terms of adolescents' behavioral outcomes, the child's gender may have a moderating role on FI, but results were inconclusive (Gold, Edin, and Nelson 2020).

According to a study by Cooksey and Fondell (1996), stepfathers spend significantly less time engaging in certain types of activities with children compared to households with two biological parents, regardless of whether they live with their own biological children. In contrast, single fathers spend significantly more time with their children on leisure activities, talking, and reading or helping with homework compared to fathers in households with two biological parents. In terms of academic performances, both preteens and teenagers from households with single fathers and stepfathers had significantly lower grades than those living with two biological parents. Nevertheless, preteens and teenagers with involved fathers had significantly better grades than those whose fathers were not (Cooksey and Fondell 1996). FI of nonresidential biological fathers also helped reduce internalizing and externalizing behaviors among adolescent boys and girls (Gold, Edin, and Nelson 2020).

According to the family systems theory, a child's mother plays the mediating role between FI and the children's outcomes. The emotional and instrumental support from fathers enhanced women's happiness, quality of marital relationship, mother-child relationship, which in turn, can "facilitate positive adjustment for children" (Lamb 2010, 9; Yeung 2016). For instance, it was pointed out that Filipino fathers built good relationships with their children and got involved in their development by supporting their spouses financially and emotionally (Harper and Martin 2013). FI also had a full mediating effect between positive maternal gatekeeping and children's social-emotional development (Wang et al. 2021). Finally, the financial support and parenting of non-resident fathers indirectly contributed to children's better behavioral and cognitive development by reducing mothers' parenting stress (Choi, Palmer, and Pyun 2014, 8).

Critique on the Findings of FI on Children's Outcomes

In both western and Asian societies, although fathers have spent more time with their children in the past three decades, mothers remain the primary caregivers and spend more time in direct childcare activities and doing housework (Xu and Yeung 2013; Yeung et al. 2001). In general, fathers are more likely to be involved in children's play, social, and exploratory activities (Chen 2013; Craig 2006). In terms of measuring FI, some studies used observations or videotaped father-child interactions thus moving "beyond methodologies that rely on mothers as proxy respondents for fathers" (Cabrera et al. 2007, 209; Tamis-LeMonda et al. 2004). Other studies have shown that the closeness of father-child relationship is much more important than the personal characteristics of fathers (Lamb 2010). Therefore, future studies need to pay attention to both quantity (i.e., time spent with children) and quality (i.e., father-child relationship) of FI, which are crucial for the children's better development (Hofferth 2003).

Nevertheless, the current literature has several limitations. Firstly, most of the empirical studies focused more on the measurement of FI with less effort spent on the theoretical framework. Although articles clearly demonstrated the components of FI in their studies, they lack the theoretical linkages to explain how and why FI influences children's outcomes. Attachment theory and fathers' role theory are the most frequently used. Social capital and "proximal process" theories (see Bronfenbrenner 1979) can be used more effectively for future studies to explore how fathers' socialization and community social capital influence children's later development, as well as putting FI under different ecological contexts. Additionally, current theories of FI are mainly suitable for heterosexual two-parent families, which may not provide good explanations for children's outcomes in homosexual families. Further research is needed to test these theories to a broader range of families or develop new theories in relation to changing marriage contexts.

Secondly, fathers' childcare time may decline when children grow older, peaking around preschool (Huerta et al. 2014, 313). It is also possible that with the increasing age of children, FI may concentrate more on social and educational activities rather than on personal care. Only a few studies examined the relationship between FI and children's outcomes based on longitudinal data, whereas other studies used cross-sectional data or small sample sizes in particular cities. Therefore, causal inferences cannot be fully established due to unobserved factors. Bidirectional association or reverse causality indicating that children's outcomes influence types and degree of FI may also exist (McWayne et al. 2013; Miller et al. 2020).

Thirdly, according to the family systems theory, FI is not an exogenous paternal behavior but a relational process between the father and the child embedded in other family relationships. Pathways of FI should be addressed further in future studies, including couple relationship quality, dyadic conflict, and co-parenting. Although many studies found that FI had an independent positive influence on children's cognitive, behavioral, psychological, and academic development when mothers' involvement was held constant (Flouri and Buchanan 2004; Kroll et al. 2016; Miller et al. 2020; Tamis-LeMonda and Cabrera 2002), whether and how FI plays a unique role on children's outcomes compared with the influences from their spouses is still not clear. One study based on the Taiwan Education Panel Survey using structural equation modeling showed that mothers' involvement had a significantly positive association with adolescent academic achievement, whereas FI had no significant effect (Hsu et al. 2011). The inconsistent results of the current literature may be due to the differences in measuring FI, dimensions of children's outcomes, developmental stages of children, and cultural contexts. Future research must investigate further the independent effect of FI on children's outcomes by controlling for the effect from the mothers' side.

Finally, a child's gender, family structure, and neighborhood characteristics are important factors influencing FI. Killewald (2013) presented that different fathering contexts, such as marital status and coresidence influence fathers' identities and changing behaviors in both paid work and childcare activities. Studies should do further research in testing the moderating effect of a child's gender, as well as considering how family living arrangements (i.e., grandparenting) and community SES or social capital will influence FI, and how non-resident fathers, non-biological fathers, and single fathers interact with their children. Furthermore, whether FI is a potential mediator and can attenuate the negative effects of family structure and family SES on children's outcomes remains inconclusive.

The Role of Family-Friendly Policies on FI

With the transition to a more involved father figure, family-friendly policies have been developed. One such policy, the paternity leave, was first initiated in Europe in the 1960s, with the aim to increase gender equality at home and in the workplace, to strengthen father-child bonds, and to achieve work-life balance among fathers (Rostgaard 2002). By taking time off work, fathers can have a positive influence on their engagement with their children through changing gender norms and parenting attitudes. It may also influence the transformation of social and cultural norms of a general population spurring behavioral changes among mothers and fathers (Wray 2020). In this section, I will briefly illustrate how leave-taking influences FI and introduce existing policy contexts in Asian societies.

Current literature regarding parental or paternity leave policy and FI has been largely based on western contexts. A large number of studies have shown that taking of leaves of considerable length has a significantly positive influence on FI in both housework and daily childcare activities (i.e., changing diapers, preparing the food, feeding the baby, etc.) within the first three to five years after the child's birth (Almqvist and Duvander 2014; Haas and Hwang 2008; Bünning 2015; Huerta et al. 2014; Hosking, Whitehouse, and Baxter 2010; Kotsadam and Finseraas 2011; Knoester,

Petts and Pragg 2019; Nepomnyaschy and Waldfogel 2007; Seward et al. 2006; Tanaka and Waldfogel 2007; Schober 2014). In the US, paternity leave-taking also predicted a significantly higher level of FI in children's developmental activities (i.e., reading and playing) over their first few years (Petts and Knoester 2018). The 2006 "daddy quota" policy in Quebec significantly increased fathers' solo parenting time by about 2.2 hours per week (Wray 2020, 547). Leave-taking and the increased engagement with children enhanced father-child closeness and promoted children's school performance when they reach adolescence (Petts, Knoester, and Waldfogel 2020; Cools, Fiva, and Kirkebøen 2015).

Paternity leave or parental leave policies available for fathers are still limited in Asian societies, especially among most of the South and Southeast Asian societies that follow strict gender norms of childcare. In Japan and Singapore, they provide more generous well-paid paternity leave for as long as 180 days and 54 days respectively, while in Hong Kong, Korea, and Taiwan, leaves last for not more than five days (Chau, Foster, and Yu 2017). Although Japan offers much longer paternity leave than other countries, a qualitative study pointed out that employers desire for employees to take the needs of the company as their first priority instead of family responsibilities, and men were not encouraged to take parental leave, as women are seen to be the natural caregivers (Brinton and Mun 2016). In Korea, larger firms with more employees provided a higher proportion (about 30 percent to 50 percent) with access to maternity leave, paternity leave, parental leave, and work-time reductions for eligible workers than small or medium-sized enterprises, which implement "dual privilege" to those with high SES (Lee and Zaidi 2020, 600).

In East Asian countries, governments need to pressure employers to build up a family-friendly work environment and culture by reducing the long work hours and paying more attention to the family needs of parents (Jones 2019). More empirical studies are needed to examine the effects of paternity and parental leave policies on FI, family cohesion, and children's development using nationally representative longitudinal data. Supposedly,

countries with longer and well-remunerated paternity and parental leave policies would encourage more active FI, strengthen father-child and marital relationships, as well as promote better children's developmental outcomes. As the types and length of leave for fathers in Asian societies are much less adequate than those in European countries especially the Nordic countries, results based on these contexts may not be comparable with societies where fathers can take over two months' paternity leave and other shared parental leave.

Conclusion

The existing literature has comprehensively examined how FI influences children's development and how family leave policies promote FI in a variety of western industrialized countries. For the benefit of future research, I summarize the commonalities and research gaps of these two branches of literature in the following points.

First, the factors for leave-taking and FI which include child's gender and age, fathers' age, educational level, income, employment status, work hours, gender ideology, childhood experiences (i.e., whether or not they have an involved father), work environment, as well as mothers' income, work hours, gender ideology (i.e., maternal gatekeeping) has been emphasized. Moreover, the characteristics of the workplace (i.e., working industry, the sex ratio of the workplace, workplace norms, etc.) present structural barriers to fathers' leave-taking and engaging with children. Therefore, policy availability may not be the only factor affecting fathers' leave-taking. Studies should investigate how fathers' working environment including their work time and schedules influence FI, and how fathers' "responsibility" plays a role in children's development if they cannot get involved with children in the dimension of "engagement" and "accessibility."

Second, although studies have shown a significantly positive relationship between fathers' leave-taking and FI, how narrowly or broadly FI is conceptualized is still unclear. Most of the studies measured FI with direct childcare activities using fathers' or mothers' reports of estimated frequencies. Time diary data is needed for a more comprehensive examination of FI in various aspects and to avoid overestimations. Additionally, current literature focuses on fathers' leave-taking and associated involvement during the period around childbirth until under three years old. To test whether fathers' leave-taking has a mid-term positive influence on their engagement with children during the preschool years is necessary.

Third, for the effect of parental leave policies on children's outcomes, the literature has pointed out the direct impact of maternal leave-taking on increasing the rates and duration of breastfeeding, as well as reducing infant morbidity and mortality (i.e., neonatal, infant, and under-five mortality) (Khan 2020; O'Brien 2009). Meanwhile, studies on fathers' leave-taking often presented increased time spent with children (i.e., childcare activities, social, and achievement activities, etc.) and improved father-child relationship. Future research should pay more attention to the mediating role of FI in interacting with mothers' involvement (i.e., booster effect) and co-parenting on children's development.

Fourth, the family social capital theory proposed by Coleman (1988, 1990) provides broad and vague descriptions of the parent-child relationship in terms of how parents share their responsibilities in daily childcare activities and interactions. It did not point out the differences between the roles of mothers and fathers, especially in the early childhood phase when mothers tend to be the primary caregivers. In this regard, identifying fathers' engagement with children and extended family members during the early childhood period and their unique contributions to young children's outcomes is necessary and important.

Fifth, studies have pointed out the issue of selection bias of fathers' leave-taking and FI. Although some used longitudinal datasets and more advanced statistical methods (i.e., propensity score matching, regression discontinuity, difference-in-differences, etc.) to attenuate the selection bias, the causality is still not fully addressed. Results based on fixed-effects models can also be biased because of "endogeneity as a result of time-varying heterogeneity or reverse causality" (Bünning, 2015, 742). Future

studies need to pay more attention to the unobserved heterogeneity that could exist between fathers who took leave and those who did not, such as fathers' prenatal commitments, personalities, and gender ideologies.

Lastly, studies on leave-taking and FI should be conducted in a more contextualized manner, and currently, little is known about Asian contexts. The existing studies of FI in Asian societies often used convenient sampling with a small sample size, hence large representative longitudinal data sets are needed for examining the causal relationship between FI and children's outcomes. Longitudinal data can also help trace the patterns of FI over time with the growth of children. More attention should also be paid to intraregional differences of FI, such as rural-urban dichotomies.

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Declaration of Funding and/or Conflict of Interest

This paper does not have any conflict of interest with any party or people.

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