Predicting father involvement: A hierarchical regression analysis of fathers' age and fathering self-efficacy

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Abstract. Father involvement helps children aged 0-5 years regulate their emotions and reduce the risk of later behavioral problems. Nevertheless, a survey by Badan Pusat Statistik (BPS) in 2021 indicated the low level of father involvement in child rearing. Therefore, the present study investigated the influence of fathering self-efficacy on fathers' involvement in childrearing while controlling age as a covariate. Participants were 154 fathers' aged 20 - 45 years, with children aged 0 - 5 years old. Data were collected using adapted versions of the Father Self-Efficacy Scale and the Inventory of Father Involvement. A two-step hierarchical regression analysis was performed. In step-1, age was significantly predicted for lower father's involvement (B = -.026, SE = .009, 95%CI [5.436, 6.665]), accounting for 4.4% variance explained. In step-2, the effect of fathers' age became non-significant (95%CI [-.016, .011]), while fathering self-efficacy emerged as a positive predictor of fathers' involvement (B = .49, SE = .003, 95%CI [.043,.055]), with 58.3% variance explained. These findings suggest that although older age may be associated with reduced father involvement, high levels of fathering self-efficacy can promote sustained engagement in childrearing activities.

1 Introduction

Father involvement is commonly conceptualized through the quality and quantity of time fathers allocate to interactions with their children, both directly and indirectly. Direct involvement encompasses affective, cognitive, and moral domains of interaction; whereas indirect involvement, on the other hand, is reflected in fathers' provision of resources and their support for mothers in caregiving roles [1].

In early childhood care, particularly for children aged 0–5 years, the father's role is considered essential because it positively influences child development. Father involvement significantly affects children's cognitive and language development at 24 and 36 months, or the pre-kindergarten period. Furthermore, father involvement helps toddlers regulate their emotions, which might reduce the risk of the later behavioral problems [2]. Nevertheless, in practice, childcare responsibilities are often dominated by mothers. A survey conducted by

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the Badan Pusat Statistik (BPS) in 2021 on parenting for children aged 0–5 years revealed that only 37.17% of fathers and mothers jointly engaged in childcare for this age group. The remaining 62.83% indicated that mothers played a more dominant role in caring for children within this age range [3]. This reflects the low level of father involvement in childcare, particularly for children aged 0 - 5 years.

Furthermore, demographic factors such as fathers' age may also influence paternal involvement in childrearing. Although limited research has explicitly examined the direct effect of fathers' age on paternal engagement, [4] reported that middle-aged fathers were actively involved in childrearing, although specific age-related patterns were not examined in detail. Similarly, [5] suggested that paternal involvement may vary across age groups. Fathers of children aged 0–5 years are generally within a productive working age, which is often associated with longer working hours and may reduce opportunities for engagement. These findings highlight the importance of considering demographic variables such as age when studying paternal involvement.

Beyond demographic influences, psychological resources may play a strong role in shaping fathering behavior. Maternal criticism of fathers' parenting performance negatively affects fathers' confidence in their ability to be involved in childcare, leading fathers to relinquish the childcare role exclusively to mothers [6]. Fathers' confidence in their parenting ability, referred to as fathering self-efficacy, has been shown to predict motivation, persistence, and actual involvement in childrearing [4]. Fathers with high fathering self-efficacy are more likely to actively engage in caregiving tasks, whereas those with lower fathering self-efficacy are more hesitant to participate [5].

Building on this evidence, the present study employs hierarchical regression to examine the relative and incremental contributions of demographic and psychological factors to father involvement. Fathers' age was entered in the first step to account for demographic influences, followed by fathering self-efficacy in the second step to determine whether psychological factors explain additional variance in paternal involvement beyond demographic characteristics.

2 Method

2.1 Participants

This study was conducted with fathers residing with their spouse and children aged 0 - 5 years. Purposive sampling was utilized, a non-probability sampling method in which participants were deliberately selected based on predefined inclusion criteria determined by the researcher. Data were collected through an online survey administered via Google Forms. A total of 154 fathers participated in the study. The average age of respondents was 33.6 years (SD = 5.46). In addition, most participants were employed in the private sector (48.7%), and their highest educational attainment was predominantly senior high school or equivalent (39%), followed by undergraduate degrees also 39 percents (see Table 1).

Table 1. Demographics of participants (N=154)

Variable	Frequency	Percent (%)
Age groups (M±SD= 33.6±5.46)		
21 - 30	52	33.8
31 - 40	87	56.5
41 - 50	15	9.7
Education level		
Middle school	4	2.6
High school	60	39

Diploma	22	14.3
Undergraduate	60	39
Postgraduate	8	5.2
Occupation		
Private employee	75	48.7
Entrepreneur	20	13
Civil servant	46	29.9
Other	13	8.4
Income (IDR)		
< 1 million	4	2.6
1 - 3 M	19	12.3
3 - 6 M	57	37
6 - 9 M	24	15.6
9 - 12 M	17	11
12 - 25 M	26	16.9
> 25 M	4	2.6
Other	3	1.9
Residency		
With parents/parents in law	57	37
Separately with parents/parent in law	97	67

Household income levels varied. The most common income bracket was 3 - 6 million IDR per month (37%); whereas only a small proportion reported earning less than 1 million IDR (2.6%). With respect to residency, most participants lived separately from parents or parents-in-law (67.0%), whereas the remainder reported living with their parents or parents-in-law (37.0%).

2.2 Research Instrument

2.2.1 Father Involvement

The measurement of father involvement in this study utilized the Indonesian-adapted version of the Inventory of Father Involvement by Hawkins [7]. This instrument encompasses the following dimensions, including discipline and teaching responsibility, school encouragement, mother support, providing time and talking together, praise and affection, developing talent and future, reading and homework support, attentiveness. The Inventory of Father Involvement consists of 26 items rated on a 7-point Likert scale ranging from 0 (very poor) to 6 (excellent). Participants were also given the option to select NA (not applicable) if an item did not correspond to their circumstances. Father involvement in childrearing was assessed based on the mean total score reported by participants. The reliability of the Inventory of Father Involvement in this study was acceptable, with Cronbach's alpha coefficient of .947.

2.2.2 Demographic Factor

Fathers' age was obtained through self-report items. In this study, fathers' age was included in the regression model as a predictor of father involvement.

2.2.3 Fathering Self-efficacy

Data on father self-efficacy in this study were collected using the Fathering Self-efficacy Scale developed by Sevigny [8]. This instrument comprises several dimensions, including teaching, parenting in context, financial responsibility, safety and protection, discipline and control, nurturing, accessibility, instrumental care and routines, and play. Fathering self-efficacy was assessed based on the total score obtained by participants across 22 items of the scale. In the current study, the reliability of the scale in this study was acceptable, with Cronbach's alpha coefficient of .935..

2.3 Data Analysis Techniques

SPSS for Windows version 27 was used for statistical analysis. We performed multiple linear regression with hierarchical model analysis to examine the incremental effect of demographic and psychological variables gradually. Prior to conducting multiple linear regression analysis, assumption tests (e.g. linearity, autocorrelation, multicollinearity, etc.) were carried out.

3 Result

3.1 Descriptive statistics and correlation analysis

Pearson's correlation test revealed a negative correlation between fathers' age and father involvement ($r = –.21$, 95% CI [–.35, –.07]), indicating that father involvement decreases with increasing fathers' age. In contrast, fathering self-efficacy was positively correlated with father involvement ($r = .77$, 95% CI [.71, .82]), suggesting that higher levels of paternal self-efficacy are associated with greater involvement in childrearing (see table 2).

Table 2. Correlation for fathers' age, fathering self-efficacy, and father involvement (N=154)

Variable	1	2	3
1. Father involvement	—		
2. Fathers' age	-.21	—	
3. Fathering self-efficacy	.77	-.252	—
M	5.176	33.36	99.06
SD	.683	5.46	10.54

$p<0.01$

3.2 Assumption testing

In this study, the Durbin–Watson statistic was 2.127, which falls within the acceptable range of 2 to 3, indicating no autocorrelation among the predictors. The variance inflation factor (VIF) values were also below 10, suggesting that multicollinearity was not present among the independent variables. Normality testing was not conducted, as the data analysis utilized the bootstrap method, which allows the assumption of normality to be relaxed [9].

3.3 Hierarchical linear regression used to determine the predictor of the father involvement

The hierarchical regression analysis was conducted in two steps to examine the changes of roles of the independent variables in predicting father involvement. In the first step, a simple linear regression was performed with the fathers' age as predictor, suggesting that fathers' age negatively predicted lower father involvement in childrearing ($B = -0.26$; $SE = 0.009$; 95%CI [5.436, 6.665]), accounting for 4.4% variance explained ($R^2 = .044$). In the second step, fathering self-efficacy was added as the predictor in multiple linear regression model. At this stage, fathers' age was no longer significantly predicted father involvement (B = -

.002; SE = .007; 95%CI [-.016, .011]), whereas fathering self-efficacy emerged as a strong and positively significant predicted father involvement (B = .049; SE = .003; 95%CI [.043, .055]). The final model explained 58.3% of the variance in father involvement (R^2 = .583; see Table 3).

Table 3. Hierarchical linear regression analysis of age and fathering self-efficacy in prediction of father involvement

Variable	Step 1			Step 2			
	B	*SE*	*95%CI (LL, UL)**	*B*	*SE*	*95%CI (LL, UL)**	*VIF*
Constant	6.052	.312	5.436, 6.665				
Fathers' age	-.026	.009	-.044, -.008				
Constant				.358			
Fathers' age				-.002	.007	-0.016, 0.011	1.068
Fathering self-efficacy				.049	.003	0.043, 0.055	1.068
F	7.007			107.78			
R^2	.044			.583			
R^2 change	.044			.54			

**LL—Lower level, UL—Upper level*

4 Discussion

This study found that increasing father age was associated with lower involvement in childcare. This finding differs from Castillo et al. [10], who found that father age was a major predictor of involvement in childcare. According to the research, older fathers were more involved than younger fathers due to their greater emotional maturity, stronger feeling of duty, and better knowledge of their roles and responsibilities as fathers. Furthermore, [4] supported the argument by mentioning that older fathers typically have more adequate resources and stronger role identification, allowing them to give positive parenting experiences and develop meaningful relationships with their children. However, this study involved fathers from diverse socio-demographic backgrounds in which older fathers might face increased work demands, career responsibilities, and time constraints, reducing their opportunities for direct engagement with their children. [10] also noted that employment-related demands can limit fathers' availability to participate in their children's education and daily activities. Similarly, Zahira and Alfiasari [11] found that fathers with higher education levels showed lower involvement when their work roles required them to live apart from their children, highlighting how structural and contextual pressures can override the positive effects of age on father's involvement. Thus, in this study, age may be describing the demand for father's role, especially the role of financial fulfillment, rather than describing maturity or stability.

A more nuanced explanation of these findings can be drawn from research on the broader psychological, socioeconomic, and cultural factors that influence paternal engagement. Older fathers may face psychological barriers such as distress, loneliness, and the persistence of traditional masculinity norms that discourage them from engaging in day-to-day childcare [12]. At the same time, career progression often comes with longer hours, heavier workloads, and inflexible job demands, all of which limit the capacity of older fathers to be consistently present with their children [13]. Cultural and generational attitudes further complicate this picture: while younger fathers are increasingly open to nurturing and emotionally expressive models of fatherhood, older generations tend to adhere more strongly to traditional provider roles [14]. These overlapping psychological, socioeconomic, and cultural influences may therefore explain why age in this study functions less as a resource and more as a constraint on father involvement.

In addition to age, this study revealed fathering self-efficacy as a significant predictor of father involvement in their children's care. Fathering self-efficacy refers to a father's perception of his parenting abilities [4]. Several researches have found that fathering self-efficacy is associated with increased involvement in various parenting duties and responsibilities. For example, Zahira and Alfiasari [11] discovered that as fathering self-efficacy grows, so does father involvement in parenting, especially in stressful situations. This finding suggests that fathering self-efficacy not only increases father involvement but also protects against the decline in involvement that can occur with age, which is often accompanied by a variety of life challenges such as work stress and changing family dynamics [11]. Another study, [10], discovered that fathering self-efficacy is an important element in father involvement in their children's schooling. When a father is confident in his parenting abilities (fathering self-efficacy), he is more likely to participate actively, regardless of age. Similarly, [6] demonstrated that fathering self-efficacy directly predicted father involvement in Chinese families, even after accounting for socio-demographic variables like age and education, indicating that psychological resources may outweigh demographic factors in shaping parenting behavior.

Looking more closely at this relationship, father self-efficacy, or a father’s belief in his ability to effectively parent, has been consistently shown to strengthen paternal engagement across different contexts. Fathers with strong self-efficacy are intrinsically motivated to participate in childcare because they feel confident in their ability to carry out parenting tasks successfully [4,6]. This intrinsic confidence encourages them to seek out opportunities for interaction with their children, such as reading stories, assisting with learning, or engaging in play, even when faced with external pressures. Moreover, the relationship between self-efficacy and involvement often operates as a reinforcing cycle: greater confidence encourages more active involvement, and the positive experiences gained from this involvement in turn enhance fathers’ belief in their parenting competence. Over time, this dynamic creates a self-sustaining loop that nurtures both confidence and active engagement [15].

In this sense, high fathering self-efficacy enables fathers to reinterpret age-related obstacles—whether psychological, socioeconomic, or cultural—not as fixed limitations but as challenges that can be managed and overcome. Then we can conclude that high fathering self-efficacy enables older fathers to reinterpret age-related challenges not as fixed limitations but as manageable obstacles. This mindset promotes adaptive coping strategies and persistence, which sustain involvement behaviors. Conversely, low fathering self-efficacy may lead fathers to disengage from parenting roles, amplifying the negative effect of age.–The study's findings also show that, while increasing age can limit fathers' opportunities for direct parental involvement, high self-efficacy allows for optimal involvement. This is because increasing age does not always have a negative impact on fathering self-efficacy, as older fathers often have more experience and emotional maturity, which helps them feel confident in their parenting roles [15]. This suggests that fathering self-efficacy is critical in maintaining fathers' involvement over various life stages, implying that psychological resources and confidence in parenting abilities might exceed chronological age in determining the quality of father-child interactions.

5 Conclusion

The findings of this study indicate that fathers' age has a negative effect on fathers' involvement in childrearing, which implies that as fathers grow older, their level of involvement tends to decrease. However, subsequent results reveal that fathering self-efficacy can eliminate the significant influence of fathers' age on paternal involvement. This suggests that fathering self- efficacy is a crucial factor in determining father involvement in childrearing. Although increasing fathers' age may reduce opportunities for fathers to participate in parenting, the presence of strong fathering self-efficacy enables fathers to maintain optimal involvement in their children's upbringing.

6 Implication

This study suggests that initiatives to promote fathers' engagement in childcare should prioritize fathering self -efficacy over paternal age. Programs like parenting workshops, peer support, and father-child activities can help fathers feel more confident in their parenting roles. Policymakers are encouraged to provide supportive conditions, such as family-friendly employment rules and community services, in order to maintain paternal involvement throughout life stages. Future research could use longitudinal designs to investigate how fathering self-efficacy changes over time and interacts with other demographic and psychological characteristics.

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