

ORIGINAL RESEARCH

Factors influencing parental role satisfaction among Korea fathers of young children in the COVID-19 endemic era

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Abstract

Background: The purpose of this study is to identify the factors that influence the parental role satisfaction of Korea fathers with young children (ages 1–3) in the COVID-19 endemic period. **Methods:** Data were collected from 172 Korea fathers of young children from March to May 2024, self-reported questionnaire using convenience sampling. Descriptive statistics, *t*-test, ANOVA (Analysis of Variance), correlation analysis and multiple regression were used to analyze the collected data. The Durbin-Watson value was 2.23, which is close to the ideal value of 2, indicating no significant autocorrelation in the error terms. Residual analysis also confirmed that the model met the assumptions of linearity, normality of error terms and homoscedasticity. **Results:** The regression model was found to be significant ($F = 22.18, p = 0.004$), with an explanatory power of 61.2%. The factors that most significantly influenced the parental role satisfaction of fathers with young children were found to be parenting behavior ($\beta = 0.36, p = 0.009$) and parenting stress ($\beta = -0.22, p = 0.003$). **Conclusions:** Parenting behaviors were positively related to paternal role satisfaction, while greater parenting stress was associated with lower paternal role satisfaction. To improve the parental role satisfaction of fathers with young children, it is important to encourage positive parenting behaviors and create support systems and programs to reduce parenting stress. Further research should focus on the impact of paternal involvement in the Korean context to build a comprehensive understanding of how fathers can receive support in their roles. By addressing these areas, policymakers and community programs can better support fathers, ultimately benefiting families and children in Korea.

Keywords

Early childhood; Korea fathers; Parental role satisfaction; Parenting behavior; Father-child relationships; Parenting stress

1. Introduction

1.1 Significance of the study

The COVID-19 pandemic has had a profound impact on societies worldwide, including quarantine measures, social distancing, school closures, travel bans, border closures and the collapse of healthcare systems [1, 2]. In response to the severity of COVID-19, South Korea classified it as a “social disaster” under the “Framework Act on the Management of Disasters and Safety”. A social disaster refers to incidents that affect the health and safety of the public due to the occurrence of epidemics and infectious diseases [3]. Social disasters disrupt the daily lives and quality of life of children and can severely impact developmental tasks across various stages, including infancy, preschool, school age and adolescence [4–6]. Due to their developmental vulnerability and often limited ability to protect their own health and safety, children may find it challenging to actively respond to social disasters [7]. Conse-

quently, the COVID-19 pandemic has underscored the critical role of caregivers in providing essential support, guidance and protection to help children navigate these difficult times. In South Korea, various policies, including “quarantine” and “social distancing” were established and implemented to prevent COVID-19 infections. The spread of COVID-19 led caregivers to work from home and delay sending children to childcare and educational institutions [8, 9]. The postponement of school attendance, in particular, increased the caregiving burden on parents, significantly escalating the multi-role burden among dual-income parents [10–12]. This situation prompted a social shift towards more active paternal involvement in childcare, challenging the cultural norm in South Korea where the caregiving burden predominantly fell on mothers [13]. COVID-19 has served as a crucial catalyst in transforming the role of fathers from mere economic providers to more active and engaged caregivers. This shift has significantly impacted the social perception of fatherhood and contributed

to the reconfiguration of the family environment. As the transition to the endemic phase of COVID-19 occurred, studies showed that fathers took more leave/vacation and used flexible work arrangements at higher rates than mothers [7]. This indicates an increase in paternal involvement in childcare and an expansion of parental roles. Paternal involvement provides diverse qualitative stimuli and influences on children's growth and development [14, 15]. According to Pruett's research [6], when fathers engage in high-quality interactions with their children during the ages of 1 to 3, it has been shown to enhance children's emotional stability and the development of social skills. The early childhood period, in particular, is a critical time when children move beyond infancy and require stable attachment relationships with their parents, while also being exposed to and adapting to new environments. It is also the stage before school age, where parental influence remains significant. Therefore, this study focuses on fathers with young children and examines the factors influencing their satisfaction with their parental roles. Previous studies have found that fathers' satisfaction with their parental role is significantly influenced by their involvement in parenting and the quality of their relationship with their children [16]. The more actively fathers participate in parenting, the higher their satisfaction with their role, which in turn positively impacts their children's emotional development. Furthermore, research indicates that fathers who perceive themselves as better parents, especially when they acknowledge and take on more responsibility in parenting, experience greater satisfaction with their role [16]. This reinforces the idea that a father's role is not limited to economic support but is also crucial in providing emotional support and actively participating in child-rearing. In Korea, traditional Confucian values have historically shaped family roles, with fathers often seen as financial providers rather than active caregivers [5]. However, societal changes, such as increasing urbanization, the influence of global perspectives on parenting and shifts in gender roles, are leading to a transformation in how fatherhood is perceived [5]. Modern Korean fathers are increasingly expected to be more involved in child-rearing and emotional support, particularly in light of government policies promoting paternity leave and work-life balance [5]. By investigating Korean fathers, the study can illuminate how these cultural factors influence paternal engagement and child development in ways that differ from Western models. This focus can also help bridge the literature gap and provide insights into how Korean cultural values shape father-child interactions. Additionally, it strengthens the argument for the need to study non-Western fatherhood experiences, ensuring that research in this field is more globally representative. To justify this focus, you could explore these culturally unique aspects of fatherhood in Korea and emphasize how they influence the development of the father-child relationship differently from other cultural contexts. This approach reinforces the importance of studying Korean fathers to gain a more nuanced understanding of paternal roles in a changing society [5]. A review of previous studies on fathers' parental role satisfaction highlights several influencing factors. While some research has focused on fathers' characteristics related to parenting stress [16, 17] and aspects of the parenting environment such as social support and socioeconomic status [18, 19], there is a relative scarcity

of studies examining parental role satisfaction in relation to fathers' characteristics like parenting beliefs [20], children's characteristics like gender [19] and temperament [21] and parenting environment factors such as emotional support from the spouse [22]. Each family may have unique characteristics in their parenting methods and experiences. While children go through the same developmental stages, variations can occur due to the child's individual temperament and personality or the situational context in which the parents have lived or are currently living. Consequently, many fathers raising children in similar conditions but different environments are likely to have distinct experiences. Therefore, this study aimed to identify the factors influencing the parental role satisfaction of fathers with young children in the context of the COVID-19 endemic era, focusing on changes in the parenting process, fathers' parenting behaviors, father-child interactions (Father-child relationships) and parenting stress to provide foundational data for developing intervention strategies to enhance parental role satisfaction.

1.2 Research objectives

The purpose of this study is to identify the factors influencing the parental role satisfaction of Korea fathers with young children in the COVID-19 endemic era.

2. Research methodology

2.1 Research design

This study is a descriptive survey aimed at identifying the factors influencing the parental role satisfaction of Korea fathers with young children in the COVID-19 endemic era.

2.2 Research subjects

The study's participants were fathers of 1- to 3-year-old children attending daycare centers in the Seoul, Gyeonggi and Jeonnam regions of South Korea. They were selected via convenience sampling and consented to participate. Using G*Power 3.1 (Heinrich Heine University Düsseldorf, Düsseldorf, NRW, Germany) for multiple regression analysis, with a significance level of 0.05, a medium effect size of 0.15, a power of 0.80 and 21 predictors, the minimum required sample size was determined to be 160 [21]. To account for a potential 25% dropout rate, the target sample size was increased to 200 fathers. All 200 fathers responded to the survey, but 28 questionnaires were excluded due to incomplete responses, resulting in 172 valid questionnaires for the final analysis, thereby meeting the required sample size.

2.3 Research instruments

2.3.1 Parenting behavior

To measure parenting behavior, this study utilized the tool developed by Park [23] for assessing the parenting behavior of primary caregivers of young children. The instrument comprises 26 items (for example "I listen attentively to my child's words"), with responses given on a 5-point Likert scale ranging from "strongly disagree" (1-point) to "strongly agree" (5 points). Higher scores indicate a greater tendency towards

the measured parenting behaviors. The reliability of the tool at the time of development was Cronbach's $\alpha = 0.91$, and in this study, the reliability was Cronbach's $\alpha = 0.86$.

2.3.2 Father-child relationships

In this study, Barnard's [24] Nursing Child Assessment Teaching, a 30-item tool developed by Im [25], was used to measure the relationship between fathers and children, which measures interactions between fathers and children from birth to three years old. The instrument includes 21 items (for example "My baby responds more to human voices than to other sounds"), focused on the child's perspective and 9 items focused on the father's perspective, all rated on a 5-point Likert scale. Higher scores indicate better father-child relationships. The tool had a reliability of Cronbach's $\alpha = 0.91$ at the time of development, and in this study, the reliability was Cronbach's $\alpha = 0.92$.

2.3.3 Parenting stress

Parenting stress was measured using Crnic and Greenberg's [26] Parenting Daily Hassles scale. This tool consists of 18 items (for example "I have to constantly clean up the toys and food that are scattered around") rated on a 5-point Likert scale, ranging from 1 point for "not at all bothersome" to 5 points for "very bothersome". Higher scores indicate greater parenting stress. The reliability of the tool at the time of development was Cronbach's $\alpha = 0.90$, and in this study, the reliability was Cronbach's $\alpha = 0.91$.

2.3.4 Parental role satisfaction

Parental role satisfaction was measured using a modified version of the Parent Satisfaction Scale (PSS) originally developed by Halverson and Duke [27]. This version was validated and adapted by Seo and Lee [28] for fathers of young and preschool-aged children in Korea. The tool consists of 18 items (for example "Having children is worth all the sacrifices") that assess the joy and burden of the parental role, as well as its perceived importance. Responses are given on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating greater parental role satisfaction. The reliability of the tool at the time of development was Cronbach's $\alpha = 0.90$, and in this study, the reliability was Cronbach's $\alpha = 0.82$.

2.3.5 General characteristics of the children and fathers

Questions regarding the general characteristics of the children included inquiries about the child's gender, age, health status and temperament. As for the general characteristics of the fathers, questions were asked about the father's age group, highest level of education, employment status (whether employed, on parental leave or in another status), family structure (nuclear family, extended family or other), average monthly income, duration of marriage and the number of children.

2.4 Data collection and ethical considerations

The researcher directly visited daycare centers located in Seoul, Gyeonggi and Jeonnam regions of South Korea and

conducted the study with the cooperation of the daycare center directors. Data were collected through surveys from 01 March to 30 May 2024. Participants were recruited using the "notification mobile app" utilized by the daycare centers. Those who expressed interest in participating were met in person at the daycare center's education room. The researcher provided detailed explanations about the study using an information sheet, covering the background, purpose, subjects, methods, duration, participation and withdrawal, benefits and risks and confidentiality. Participants who provided written consent were then selected for the study and asked to complete the survey.

2.5 Data analysis methods

The data collected in this study were analyzed using SPSS/WIN (Version 24.0, IBM Corp., Armonk, NY, USA) software as follows: The general characteristics of the study participants were calculated using frequency, percentage, mean and standard deviation. The parenting behavior, father-child relationship, parenting stress and parental role satisfaction of the study participants were analyzed using mean and standard deviation. Differences in parenting behavior, father-child relationship, parenting stress and parental role satisfaction according to the general characteristics of the participants were analyzed using *t*-test or ANOVA, with *post-hoc* tests conducted using the Scheffé test. The correlations between parenting behavior, father-child relationship, parenting stress and parental role satisfaction were analyzed using Pearson's correlation coefficient. The factors influencing parental role satisfaction were analyzed using hierarchical multiple regression analysis.

3. Results

3.1 General characteristics of the subjects

The study included 96 male children (55.8%) and 76 female children (44.2%). Regarding age, 57 children (33.1%) were between 6 months and less than 9 months old. According to the fathers' perceptions, 84 children (48.8%) were considered to be in "very good health" and 97 children (56.4%) were perceived to have an "average" temperament. The age distribution of the fathers in the study indicated that 68 participants (39.5%) were between 31 and 35 years old. In terms of education, 68 fathers (39.5%) had completed a university degree. Regarding employment status, 101 fathers (58.7%) were employed and 71 fathers (41.3%) were on parental leave. The majority of the families were nuclear families, with 162 families (94.2%) fitting this description. The average monthly income for the majority of the fathers was between 3 million and 4 million KRW (Korean Won), with 58 fathers (33.7%) falling into this income bracket. For marital duration, 77 fathers (44.8%) had been married for between 5 and 10 years, and 107 fathers (62.2%) had two children (Table 1).

TABLE 1. Differences based on the characteristics of the study subjects (n = 172).

Characteristics	Categories	n	%	Parenting Behavior			Father-Child Relationship			Parenting Stress			Parental Role Satisfaction		
				Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>
Child's Gender															
	Boy	96	55.8	3.13	0.33	0.62 (0.535)	3.07	0.27	0.12 (0.907)	3.62	0.67	-1.71(0.089)	3.53	0.35	0.87 (0.384)
	Girl	76	44.2	3.10	0.36		3.07	0.26		3.80	0.76		3.49	0.29	
Child's Age															
	Less than 6 months	39	22.7	3.14	0.30	1.52 (0.422)	3.08	0.22	0.20 (0.883)	3.79	0.74	0.84 (0.431)	3.49	0.33	1.92 (0.582)
	6 months to less than 9 months	57	33.1	3.13	0.29		3.11	0.24		3.55	0.70		3.55	0.32	
	9 months to less than 12 months	23	13.4	3.10	0.42		3.02	0.31		3.73	0.62		3.51	0.31	
	12 months and older	53	30.8	3.09	0.39		3.05	0.30		3.78	0.75		3.49	0.32	
Child's Health Status															
	Very healthy	84	48.8	3.13	0.37	2.01 (0.138)	3.12	0.29	2.70 (0.070)	3.69	0.69	0.12 (0.883)	3.50	0.32	0.18 (0.838)
	Healthy	76	44.2	3.07	0.32		3.02	0.24		3.72	0.75		3.53	0.32	
	Average	12	7.0	3.28	0.26		3.06	0.17		3.61	0.78		3.54	0.38	
Child's Temperament															
	Easy	47	27.3	3.07	0.36	0.61 (0.543)	3.09	0.29	0.20 (0.817)	3.62	0.71	2.35 (0.099)	3.54	0.31	0.40 (0.673)
	Average	97	56.4	3.12	0.34		3.07	0.25		3.66	0.71		3.52	0.35	
	Difficult	28	16.3	3.16	0.33		3.05	0.25		3.96	0.72		3.47	0.25	
Caregiver's Age															
	26–30 years	17	9.8	2.99	0.41	1.41 (0.243)	3.09	0.30	0.22 (0.883)	3.87	0.84	0.96 (0.412)	3.50	0.31	1.770 (0.155)
	31–35 years	68	39.5	3.14	0.35		3.05	0.28		3.71	0.69		3.47	0.31	
	36–40 years	59	34.3	3.09	0.34		3.09	0.25		3.59	0.69		3.59	0.34	
	41 years and older	28	16.3	3.19	0.28		3.08	0.23		3.79	0.78		3.47	0.31	
Caregiver's Education Level															
	High school graduate or less	33	19.2	3.14	0.33	0.68 (0.569)	3.11	0.24	0.52 (0.671)	3.82	0.73	1.17 (0.325)	3.49	0.38	1.18 (0.326)
	Junior college graduate	60	34.9	3.09	0.37		3.06	0.25		3.65	0.72		3.55	0.34	
	University graduate	68	39.5	3.14	0.33		3.07	0.30		3.64	0.68		3.51	0.30	
	Graduate school or higher	11	6.4	3.01	0.28		3.01	0.17		3.98	0.86		3.44	0.14	

TABLE 1. Continued.

Characteristics	Categories	n	%	Parenting Behavior			Father-Child Relationship			Parenting Stress			Parental Role Satisfaction		
				Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>	Mean	SD	<i>t/F(p)</i>
Employment Status															
	Employed	101	58.7	3.07	0.36	-2.20 (0.029)	3.03	0.29	-2.28 (0.024)	3.74	0.68	1.01 (0.316)	3.51	0.30	-0.22 (0.827)
	On parental leave	71	41.3	3.18	0.31		3.13	0.21		3.63	0.77		3.52	0.35	
Family Type															
	Nuclear family	162	94.2	3.11	0.34	-0.01 (0.993)	3.06	0.26	-1.43 (0.154)	3.70	0.73	0.32 (0.751)	3.51	0.32	-0.69 (0.493)
	Extended family	10	6.8	3.12	0.42		3.19	0.23		3.63	0.53		3.58	0.33	
Average Income															
	Less than 2 million KRW	8	4.7	3.01	0.28	1.58 (0.181)	2.99	0.33	0.86 (0.492)	3.90	0.73	0.78 (0.542)	3.69	0.36	1.72 (0.148)
	2 million to less than 3 million KRW*	40	23.3	3.06	0.35		3.06	0.27		3.78	0.79		3.50	0.26	
	3 million to less than 4 million KRW*	58	33.7	3.08	0.34		3.04	0.26		3.73	0.72		3.57	0.36	
	4 million to less than 5 million KRW*	37	21.5	3.22	0.35		3.13	0.25		3.54	0.65		3.43	0.34	
	5 million KRW and more	29	16.9	3.15	0.34		3.09	0.26		3.66	0.72		3.50	0.28	
Duration of Marriage															
	Less than 5 years ^a	29	16.9	3.07	0.37	0.18 (0.907)	3.07	0.28	0.53 (0.664)	3.48	0.72	6.46 (<0.001) d > a, b	3.46	0.30	1.06 (0.370)
	5 years to less than 10 years ^b	77	44.8	3.12	0.36		3.08	0.27		3.87	0.69		3.50	0.30	
	10 years to less than 15 years ^c	49	28.5	3.12	0.34		3.04	0.24		3.43	0.65		3.58	0.37	
	15 years or more ^d	17	9.9	3.14	0.22		3.14	0.27		4.05	0.71		3.51	0.30	
Number of Children															
	1	47	27.3	3.13	0.36	0.92 (0.400)	3.06	0.27	0.51 (0.601)	3.71	0.72	0.24 (0.785)	3.45	0.33	1.54 (0.218)
	2	107	62.2	3.12	0.35		3.08	0.27		3.71	0.73		3.54	0.32	
	3 or more	18	10.5	3.01	0.30		3.02	0.22		3.59	0.67		3.55	0.29	

SD: Standard Deviation; KRW: Korean Won.

*: KRW refers to Korean Won, the official currency of South Korea.

a, b, c, d: Different letters indicate statistically significant differences between groups as determined by post-hoc analysis. For example, group d shows significant differences compared to groups a and b at a significance level of $p < 0.05$.

3.2 Differences in parenting behavior, father-child relationship, parenting stress, and parental role satisfaction based on general characteristics of the subjects

An analysis of parenting behavior based on the general characteristics of the subjects revealed a significant difference related to the employment status of the caregivers ($t = -2.20$, $p = 0.029$). The father-child relationship also showed a significant difference based on the employment status of the caregivers ($t = -2.28$, $p = 0.024$). Parenting stress varied significantly with the duration of marriage of the caregivers ($F = 6.46$, $p < 0.001$). However, there were no significant differences in parental role satisfaction based on the general characteristics of the subjects (Table 1).

3.3 Levels of parenting behavior, father-child relationship, parenting stress, and parental role satisfaction of the subjects

The levels observed among fathers of young children were as follows: parenting behavior scored an average of 3.67 ± 0.34 points, father-child relationship scored 3.64 ± 0.27 points, parenting stress scored 3.70 ± 0.72 points and parental role satisfaction scored 3.37 ± 0.32 points (Table 1).

3.4 Correlation between parenting behavior, father-child relationship, parenting stress, and parental role satisfaction as perceived by study subjects

The correlation analysis among the variables, as perceived by fathers of young children, revealed significant relationships (Table 2).

3.5 Factors influencing parental role satisfaction among fathers of young children

To determine the impact of parenting behavior, father-child relationship and parenting stress on the parental role satisfaction of fathers with young children, a multiple regression analysis was conducted. Multicollinearity among the independent variables was checked using tolerance limits and the Variance Inflation Factor (VIF). The results showed tolerance limits ranging from 0.42 to 0.89, all above the threshold of 0.1, and VIF values ranging from 1.00 to 1.45, all below the threshold of 10, indicating no issues with multicollinearity. Additionally, the Durbin-Watson value was 2.23, which is close to the ideal value of 2, indicating no significant autocorrelation in the error terms. Residual analysis also confirmed that the model met the assumptions of linearity, normality of error terms and homoscedasticity. The regression model was found to be significant ($F = 22.18$, $p = 0.004$), with an explanatory power of 61.2%. The factors that most significantly influenced the parental role satisfaction of fathers with young children were found to be parenting behavior ($\beta = 0.36$, $p = 0.009$) and parenting stress ($\beta = -0.22$, $p = 0.003$). Parenting behaviors were positively related to paternal role satisfaction, while greater parenting stress was associated with lower paternal role

satisfaction (Table 3).

4. Discussion

COVID-19 has significantly impacted national economies and societies, particularly highlighting the crucial role of caregivers in providing essential support, guidance and protection for children. Early childhood, in particular, is a critical period when children transition from the absolute need for stable attachment with their parents in infancy to being exposed to and adapting to new environments. During this stage, the influence of parental care remains profound. Therefore, this study focused on the parental role satisfaction of fathers with young children, examining the factors influencing their satisfaction in the context of the COVID-19 endemic era, particularly looking induced in the caregiving process, along with parenting behavior, father-child relationship and parenting stress, affected their parental role satisfaction. The role of fathers in child development is highly important, as fathers have a unique influence on their children's emotional, social and cognitive development [5]. Father involvement is associated with increased self-esteem, social skills and academic achievement in children, and plays a crucial role in helping children build confidence and take on new challenges [6]. Traditionally, the focus has been on mothers' roles in child-rearing, but recent research has increasingly shown that fathers' parenting styles and interactions have a distinct and significant impact on children's development, different from that of mothers [8]. For example, play and interaction with fathers tend to foster more adventurous and exploratory behaviors in children, helping them develop problem-solving skills and independence [6]. Fathers also play a key role in teaching children social norms, resolving conflicts and developing emotional regulation skills. The roles of mothers and fathers are complementary [10]. While mothers typically provide more stable attachment and nurturing, fathers encourage children to engage more actively with the world. As such, both parenting styles contribute to the holistic development of the child, and it is essential for these roles to work in harmony. Research on the role of fathers provides scientific evidence of the positive influence fathers have on their children in various family structures and parenting environments [5]. This research supports the promotion of father involvement in parenting, emphasizing its importance for child development. Examining the differences in parenting behavior and father-child relationship levels based on the general characteristics of the study subjects, it was found that fathers on parental leave exhibited higher levels of parenting behavior and father-child relationships. This supports previous research findings [11, 29], which reported that during the leave period, fathers actively participate in caregiving and childcare duties, creating a nurturing and supportive environment for their children, and that the positive experiences and skills gained during the leave contribute to forming positive relationships with their children [30–32]. Particularly during the COVID-19 period, restrictions on daily life such as social distancing and quarantine likely increased the amount of time fathers spent at home, providing more opportunities for active parenting behavior [33]. Consequently, fathers on leave were probably more engaged in active parenting and had higher

TABLE 2. Correlation analysis.

	Parenting Behavior	Father-Child Relationship	Parenting Stress	Parental Role Satisfaction
Parenting Behavior	1.00			
Father-Child Relationship	0.56***	1.00		
Parenting Stress	-0.16*	-0.03*	1.00	
Parental Role Satisfaction	0.21**	0.11*	-0.24*	1.00

*: Correlation is significant at the $p < 0.05$ level (two-tailed).

**: Correlation is significant at the $p < 0.01$ level (two-tailed).

***: Correlation is significant at the $p < 0.001$ level (two-tailed).

TABLE 3. Factors influencing parental role satisfaction.

	B	SE	β	t	p	VIF
Constant	42.08	8.26		5.42	<0.001	
Parenting Behavior	6.14	2.12	0.36	6.84	0.009	1.450
Father-Child Relationship	-0.14	0.12	-0.08	-0.86	0.377	1.448
Parenting Stress	-1.61	0.04	-0.22	-3.21	0.003	1.003

$R^2 = 0.612$, $\text{adj}R^2 = 0.438$, $F(p) = 22.18$ (0.004)
 $d(\text{du}) = 2.23$, $z(p) = 0.1004$ (0.266), $\chi^2(p) = 2.265$ (0.519)

VIF: Variance Inflation Factor; B: Unstandardized Regression Coefficient; SE: Standard Error; $\text{adj}R^2$: Adjusted Coefficient of Determination, indicating the proportion of variance explained by the model, adjusted for the number of predictors.

levels of relationship with their children. This underscores the importance of paternal involvement in supporting children's emotional well-being and developmental growth stages. Therefore, it is crucial to promote workplace policies such as parental leave and flexible working arrangements and to implement various policies that support fathers' involvement in childcare.

Parenting stress levels, based on the general characteristics of the study subjects, were found to be higher in fathers who had been married for "15 years or more" compared to those who had been married for "less than 5 years" or "between 5 years and less than 10 years". This finding contrasts with previous studies suggesting that longer marriage duration enables couples to develop effective coping strategies over time, reducing stress when facing parenting challenges [34]. Research has shown that as marriage length increases, couples acquire various strategies to manage parenting issues effectively, thus positively impacting parenting stress. Crum & Moreland [35] found that couples in long-term marriages understand each other's needs and conflicts, facilitating stress management in the parenting process. Similarly, Hser *et al.* [36] reported that long-married couples exhibit higher stress tolerance and better emotional regulation during child-rearing. Moreover, considering a marriage duration of 15 years or more and the average age of young children, the increasing age of caregivers likely contributes to a greater sense of burden in parenting due to physical, psychological, cognitive and social changes. Studies also support that older age in caregivers can amplify the burden of parenting. Specifically, Simeng *et al.* [37] report that parental aging correlates with decreased physical energy and increased psychological fatigue, intensifying the perceived burden of parenting. Furthermore, Dong *et al.* [38] found that middle-aged parents experience higher social stress from parenting than younger parents, analyzing this as a stress factor accompanying role changes due to aging.

As marriage duration with young children increases, changes in fathers' social roles may affect their psychological state, leading to higher parenting stress. Dabrowska & Pisula [39] reported that fathers face increased psychological strain and experience this as parenting stress due to shifting roles at work and home. Additionally, Smith [40] noted that long-married fathers with young children experience changes in social roles that negatively impact their identity and parenting-related psychological stress. The higher paternal parenting behaviors were associated with stronger father-child relationships, greater satisfaction in their parental role and reduced parenting stress. There are very few studies examining the correlations between fathers' parenting behavior, father-child relationship, parenting stress and parental role satisfaction, making direct comparisons difficult. However, considering previous findings [3, 4, 30] that, although involving different subjects, showed that fathers' involvement in caregiving and play positively impacted mothers' parental role satisfaction and reduced parenting stress, it can be inferred that fathers' parenting behavior has a positive influence. The higher the level of father-child relationship perceived by fathers of young children, the lower the parenting stress and the higher the parental role satisfaction. Conversely, higher levels of parenting stress are associated with lower parental role satisfaction. This supports previous research findings [8, 31, 32], which suggest that when parents experience stress while raising their children, it negatively impacts their psychological satisfaction, attitude towards their children and relationships with them. Therefore, it is essential to develop policies that promote active parenting behavior among fathers, enhance father-child relationships, improve parental role satisfaction and reduce parenting stress. This includes creating educational programs specifically for fathers.

The factors that most significantly influence fathers' parental role satisfaction were found to be parenting behavior

and parenting stress. This aligns with previous research findings [21, 33, 34], which indicate that the most influential factor on fathers' involvement in parenting is their parental role satisfaction, as higher parental role satisfaction is associated with more affectionate parenting behavior towards children and lower parenting stress. During the COVID-19 pandemic, challenges such as school closures and limited access to childcare facilities due to social distancing policies likely affected fathers' parental role satisfaction, influencing their engagement in parenting behavior and levels of parenting stress. Therefore, to enhance fathers' parental role satisfaction, it is essential to develop educational programs that promote active parenting behavior and improve stress management and coping skills. Moving away from traditional studies focused on mothers, it is highly meaningful to examine parenting behavior, father-child relationship, parenting stress and parental role satisfaction among fathers of young children in the context of the COVID-19 endemic era. Understanding the factors influencing parental role satisfaction in fathers under these circumstances provides valuable insights. However, this study has the following limitations. First, data collection was conducted during the COVID-19 endemic era, making it difficult to compare parenting experiences before, during and after the pandemic. Second, the study did not consider specific characteristics such as the birth order of the children or whether both parents were working, which limits the generalizability of the findings. Third, limitation of the study is the exclusion of the mother's role. Given that parenting is a shared responsibility, maternal behaviors may interact with paternal behaviors. Fourth, future research would be helpful to examine factors that influence Korean fathers' satisfaction with raising their young children over time, particularly fathers' post-pandemic reflections and whether these changes have persisted or reverted to pre-COVID levels.

5. Conclusions

In conclusion, this study emphasizes the critical factors influencing parental role satisfaction among fathers of young children during the COVID-19 endemic era, particularly focusing on parenting behavior, father-child relationships and parenting stress. The findings reveal that parenting behavior and parenting stress account for 61.2% of the variance in parental role satisfaction, highlighting the importance of promoting positive parenting practices and addressing the stressors that fathers encounter. To contextualize these findings within Korea, it is essential to recognize the cultural nuances surrounding fatherhood and parenting roles in Korean society. Traditionally, Korean fathers have often been viewed as primary breadwinners, which can limit their involvement in childcare and family activities. However, with the evolution of social norms and the impact of the pandemic, there is a growing recognition of the importance of paternal involvement in children's lives. Research indicates that active father engagement positively influences child development and family well-being. To enhance fathers' parental role satisfaction in the Korean context, it is necessary to develop programs that not only encourage positive parenting behaviors but also facilitate co-parenting between fathers and mothers. Additionally, providing flexible

work arrangements could enable fathers to spend more time at home, thus strengthening family bonds and improving overall satisfaction in their parenting roles. Further research should focus on the impact of paternal involvement in the Korean context to build a comprehensive understanding of how fathers can receive support in their roles. By addressing these areas, policymakers and community programs can better support fathers, ultimately benefiting families and children in Korea.

AVAILABILITY OF DATA AND MATERIALS

Not applicable.

AUTHOR CONTRIBUTIONS

SJP—Study conception and design acquisition; Discussion and conclusions, suggestions. EJC—Drafting and critical revision of the manuscript. SJP and EJC—Data collection; Analysis and interpretation of the data; English review; Abstract and references and final submission. Both authors contributed to editorial changes in the manuscript. Both authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

For this research, approval for exemption from review was obtained from the Institutional Review Board (IRB) of Cheongam College, where the researchers are affiliated (IRB. CA17-230503-HR-010-01). Informed consent has been obtained from the participants involved.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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