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Relationship between newborn care knowledge, attitudes toward child-rearing, parental role confidence, and the expected number of children among university students in a region of South Korea

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Abstract: In 2023, the total fertility rate in South Korea was 0.72, the lowest among all Organization for Economic Cooperation and Development countries. The country's low birth rate is influenced by sociocultural factors, including negative perceptions of children and child-rearing, particularly among unmarried men and women. Shaped by these factors, the expected number of children among university students serves as a predictor for future fertility rates. This descriptive survey explored factors influencing the expected number of children among university students in a specific region of South Korea. It examined the relationship between students' knowledge of newborn care, attitudes toward child-rearing, parental role confidence, and their expected number of children. Data were collected in August 2024 from 100 students enrolled in the Healthy Parenting Recipes course at K University in Daegu. A total of 78 valid responses were analyzed using descriptive statistics and ordinal logistic regression with SPSS/PC Version 29.0. The results showed that participants who prioritized maternal career (exp(B) = .381, CI: .151–.610, p = .001) and those with greater parental role confidence (exp(B) = .132, CI: .010–.254, p = .034) are more likely to desire a higher number of children. These results suggest that fostering an environment where women can balance work and childcare may increase fertility rates. Additionally, enhancing parental role confidence through parenting education may increase the expected number of children among unmarried men and women. Overall, the findings offer valuable insights for policies to address South Korea's low birth rate.

Keywords: *Attitude, Low fertility, Offspring, Parenting, University.*

1. Introduction

1.1. Necessity of the Study

As ultralow fertility continues to intensify in South Korea, the total fertility rate for 2023 was recorded at 0.72 [1] which is less than half the OECD average of 1.51 in 2022 [2]. Socioeconomic and cultural factors, changing values regarding marriage and children, increasing age at first marriage, and a higher incidence of subfertility/infertility due to delayed pregnancies all contribute to this strikingly low fertility rate [3]. Low fertility, which impacts population structure and socioeconomic balance, is a critical issue that requires urgent national attention.

The expected number of children refers to the number of children one plans to have in the future, serving as an indicator of one's intention to have children [4]. Among men and women of reproductive age, the expected number of children increased from 1.56 in 2021 [5] to 1.8 in 2024 [6] reflecting a recent positive shift in attitudes toward marriage and childbirth [6]. It also highlights the association between unmarried individuals' expected number of children and their attitudes toward childbirth and parenting. Therefore, identifying factors that influence the expected number of children among

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unmarried men and women (such as attitudes toward childbirth and parenting) is essential for developing effective strategies to address low fertility.

Transitioning into adulthood and building their identities, university students begin planning for their future families while preparing for careers and marriage. Therefore, their expected number of children can reflect their intentions to become parents [7]. This highlights the importance of identifying factors that influence university students' expected number of children and fostering a supportive social environment that facilitates their transition to parenthood.

Newborn care knowledge encompasses various parenting behaviors and skills aimed at safeguarding the physical health and well-being of infants [8]. The various roles parents assume in caring for and interacting with newborns, which are essential to children's growth and development, are acquired through experience and education, rather than instinct [9]. Greater knowledge of newborn care boosts parenting confidence and reduces parenting stress, thereby supporting more effective child-rearing practices [9]. Therefore, newborn care knowledge is expected to ease prospective parents' anxieties about childbirth and parenting, foster a positive outlook on parenthood, and potentially increase their expected number of children.

Attitudes toward child-rearing refer to the parental attitudes and behaviors reflecting the emotional bonds commonly developed during the parenting process [10]. Components of these attitudes include maternal career priority, awareness of the importance of caregiving, dedication to the infant, and prioritization of the infant's needs. Maternal career priority particularly impacts the fertility rate among today's unmarried men and women with career-focused life perspectives [6]. For example, countries with a high proportion of women in the workforce, such as the United States, France, and Germany, show similar fertility and population replacement rates, largely due to social environments that support women in balancing work and family life [11]. Therefore, it is crucial to examine how attitudes toward child-rearing, including maternal career priority, affect the expected number of children.

The other components of the abovementioned attitudes toward child-rearing—awareness of the importance of caregiving, dedication to the infant, and prioritization of the infant's needs— encourage parents to respond sensitively to infants' cues, establish secure attachments, reduce parenting stress, and foster positive parenting attitudes [12]. Building on previous findings that reduced parenting stress correlates with a higher intention to have children [13] it can be inferred that university students who develop positive, interaction-based attitudes toward children may have a higher expected number of children.

Parental role confidence refers to parents' belief in their ability to effectively nurture and discipline their children, as well as handle parenting challenges independently [14]. This confidence significantly impacts the performance of parental roles [14] and can also influence attitudes toward childbirth. Previous research indicates that higher levels of parental role confidence among adolescents is associated with more positive attitudes toward childbearing [15]. Therefore, it is crucial to examine the relationship between parental role confidence and the expected number of children among college students, who are prospective parents.

A significant body of domestic and international literature exists on perspectives related to childbirth. This includes a systematic literature review of factors influencing childbearing intentions [16] studies examining the relationship between family values and intentions to have children in South Korea [17, 18] research on the association between parenting knowledge and the expected number of children [19] investigations into the impact of women's increased economic participation on fertility rates [20] studies on the relationship between parental role confidence and attitudes toward childbirth among adolescents [15] and research on factors affecting the expected number of children [4]. However, research remains scant on the relationships between newborn care knowledge, attitudes toward child-rearing (including maternal career priority), parental role confidence, and the expected number of children.

To fill this research gap, this study examines the relationships between newborn care knowledge, attitudes toward child-rearing, parental role confidence, and the expected number of children among

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university students. The findings of this study are expected to serve as foundational data for developing policies to address the current low fertility rate.

1.2. Purpose of the Study

This study identifies factors influencing the expected number of children among university students in a region of South Korea. To achieve this, the present study had two specific objectives: (1) to assess the levels of the expected number of children, newborn care knowledge, attitudes toward child-rearing, and parental role confidence; and (2) to identify factors influencing the expected number of children.

2. Methods

2.1. Study Design

This study was conducted as a descriptive quantitative survey to assess the levels of the expected number of children, newborn care knowledge, attitudes toward child-rearing, and parental role confidence and identify factors influencing the expected number of children among university students in a selected region of South Korea.

2.2. Data Collection

The study targeted 100 university students enrolled in the liberal arts course *Healthy Parenting Recipes* at K University in Daegu, South Korea, during the second semester of 2024. Between August 21 and September 4, 2024, participants completed a self-report survey via a Google Forms link. Data were collected from the 78 students who consented to participate, and all responses were fully completed and included in data analysis.

3.3. Instruments

3.3.1. Expected Number of Children

The expected number of children was assessed using a single-item scale that asked respondents, "How many children would you like to have?" The response options were "I do not want children," "One child," and "Two or more children."

3.3.2. Newborn Care Knowledge

Newborn care knowledge was assessed using a scale originally developed by Kang and Shim [8] and later modified by Lee and Park [21]. This self-report questionnaire includes 16 items covering various aspects of newborn care, such as feeding, organizing the infant's environment, identifying jaundice, recognizing and addressing abnormal symptoms, and umbilical cord care. The scale is binary, with each item scored as 0 for an incorrect response or 1 for a correct response. The total score ranges from 0 to 16, and higher scores indicate greater newborn care knowledge. The reliability of this tool was reported as Cronbach's $\alpha = .81$ in Lee and Park [21] study and KR-20 = .24 in this study.

3.3.3. Attitudes Toward Child-Rearing

Attitudes toward child-rearing were assessed using an instrument developed by An and Bang [22] and later modified by Won and You [23]. This 17-item scale comprises four domains: maternal career priority, awareness of the importance of caregiving, dedication to the infant, and prioritization of the infant's needs. Based on the results of a factor analysis, four items (Items 1, 2, 7, and 12) with low communalities (below 0.4) were removed. This resulted in a 13-item scale: 3 items for maternal career priority (Items 14, 15, and 16), 5 items for awareness of the importance of caregiving (Items 9, 10, 11, 13, and 17), two items for dedication to the infant (Items 3 and 6), and 3 items for prioritization of the infant's needs (Items 4, 5, and 8). All items are rated on a 5-point Likert scale ranging from 1 ("Strongly

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disagree") to 5 ("Strongly agree"). The total score ranges from 13 to 65, and higher scores indicate more positive attitudes toward child-rearing. The reliability of this scale was reported as Cronbach's α = .85 in Won and You [23] study and .62 in this study. The Cronbach's α was .74 for awareness of the importance of caregiving, .96 for dedication to the infant, .74 for maternal career priority, and .50 for prioritization of the infant's needs.

3.3.4. Parental Role Confidence

Parental role confidence was assessed using the Parenting Sense of Competence Scale, originally developed by Kim [24] translated and adapted by Gibaud-Wallston [25] and further revised by Won and You [23]. All items are rated on a 5-point Likert scale ranging from 1 ("Strongly disagree") to 5 ("Strongly agree"). The total score ranges from 17 to 85, and higher scores indicate greater parental role confidence. The Cronbach's α of this tool was .73 in this study.

3.4. Data Analysis

The collected data were analyzed using IBM SPSS Statistics version 29.0 in the following manner. First, descriptive statistics were used to analyze the general characteristics of the participants, expected number of children, newborn care knowledge, attitudes toward child-rearing, and parental role confidence. Second, ordinal logistic regression was performed to identify factors influencing the expected number of children.

3.5. Ethical Considerations

Participants were informed about the study's purpose and procedures, as well as the implications of their participation. They were assured of confidentiality, protection of personal information, and their right to withdraw from the study at any time without any negative consequences. Data were collected only from those who consented by marking "I agree" in Question 1 of the Google Forms survey. Participants were informed that the data would be used exclusively for research purposes, securely stored for one year following study completion, and then disposed of following relevant regulations.

4. Results

4.1. General Characteristics of the Participants

The average age of participants was 23 years. Among the 78 respondents, 29 (37.2%) were males, and 49 (62.8%) were females. Regarding the academic year, 37 participants (47.4%) were in their first or second year, while 41 (52.6%) were in their third or fourth year. Most respondents (n = 60, 76.9%) reported no religious affiliation (Table 1).

Table 1.
General characteristics of the participants (N = 78).

Categories		**M ± SD**	**n (%)**
Age		23.00 ± 2.17	
Gender	Male		29 (37.2)
	Female		49 (62.8)
Academic year	1–2		37 (47.4)
	3–4		41 (52.6)
Religion	Yes		18 (23.1)
	No		60 (76.9)

4.2. Expected Number of Children

Participants who desired desired two or more children were the highest in number (n = 41, 52.6%), followed by those who wanted one child (n = 22, 28.2%), and those who did not want children (n = 15, 19.2%) (Table 2).

Table 2.
Expected number of children (N = 78).

Categories (n)	n (%)
0	15 (19.2)
1	22 (28.2)
≥ 2	41 (52.6)

4.3. Scores for Newborn Care Knowledge, Attitudes Toward Child-Rearing, and Parental Role Confidence

The average score was 11.64 ± 1.86 for newborn care knowledge, 45.87 ± 4.48 for attitudes toward child-rearing, 20.46 ± 2.82 for awareness of the importance of caregiving, 7.47 ± 2.11 for dedication to the infant, 9.04 ± 2.37 for maternal career priority, 10.21 ± 1.78 for prioritization of the infant's needs, and 27.68 ± 4.78 for parental role confidence (Table 3).

Table 3.
Scores for newborn care knowledge, attitudes toward child-rearing, and parental role confidence (N = 78).

Variable	M ± SD	Min.	Max.	Range
Newborn care knowledge	11.64 ± 1.86	7	15	0–16
Attitudes toward child-rearing	45.87 ± 4.48	37	61	13–65
Awareness of the importance of caregiving	20.46 ± 2.82	13	25	5–25
Dedication to the infant	7.47 ± 2.11	2	10	2-10
Maternal career priority	9.04 ± 2.37	3	15	3–15
Prioritization of the infant's needs	10.21 ± 1.78	8	15	3–15
Parental role confidence	27.68 ± 4.78	19	41	7–28

4.4. Factors Influencing the Expected Number of Children

Maternal career priority (a domain of attitudes toward child-rearing) and parental role confidence were identified as significant factors influencing the expected number of children. Both maternal career priority (exp(B) = .381, 95% CI: .151–.610, p = .001) and parental role confidence (exp(B) = .132, 95% CI: .010–.254, p = .034) were positively correlated with the expected number of children (Table 4).

Table 4.
Factors influencing the expected number of children (N = 78).

Variable			B	SE	Wald	df	PAR p	95% CI	
								Lower	Higher
Threshold	Expected number of children	1	3.677	4.386	0.703	1	0.402	-4.920	12.273
		≥ 2	5.430	4.410	1.516	1	0.218	-3.215	14.074
Position	Gender	Male	0.562	0.650	0.748	1	0.387	-0.712	1.836
		Female	0a			0			
	Academic year	1–2	-0.559	0.677	0.682	1	0.409	-1.886	0.768
		3–4	0a			0			
	Religion	Yes	0.134	0.613	0.047	1	0.828	-1.069	1.336
		No	0a			0			
	Age		-0.111	0.166	0.447	1	0.504	-0.436	0.214
	Newborn care knowledge		0.205	0.135	2.303	1	0.129	-0.060	0.469
	Awareness of the importance of caregiving		-0.097	0.095	1.045	1	0.307	-0.283	0.089
	Dedication to the infant		0.018	0.120	0.023	1	0.878	-0.217	0.254
	Maternal career priority		.381	0.117	10.583	1	0.001	0.151	0.610
	Prioritization of the infant's needs		0.055	0.145	0.145	1	0.704	-0.229	0.340

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	Parental role confidence	0.132	0.062	4.483	1	0.034	0.010	0.254
MFI $\chi^2 = 26.191$ ($p = .003$)								

5. Discussion

This study identified maternal career priority, one of the four domains of attitudes toward child-rearing, and parental role confidence as significant factors influencing the expected number of children among university students in a selected region of South Korea.

The analysis revealed that 52.6% of participants desired two or more children, a figure close to the national average of 1.9 children among unmarried men and women [6]. These findings align with those of a 2024 survey by the Low Fertility and Aging Society Committee. The survey reported that 68.3% of men and 54.6% of women aged 25–29 anticipate having two or more children [6]. Additionally, a follow-up study [26] indicated that 65.4% of unmarried men and women hold positive views on marriage, with increasingly favorable perceptions of having children. Specifically, the increase in the expected number of children appears closely associated with improved attitudes toward marriage and childbearing.

The theory of planned behavior, proposed by Presidential Committe on Ageing Society and Population Policy [27] posits that human behavior follows established plans, with individuals being aware of the conditions and actions necessary to achieve specific goals. This theory can also be applied to childbearing behavior. When applied to the intention to have children, it suggests that childbearing decisions are influenced by one's capacity and resources for parenting, awareness of the importance of caregiving, attitudes toward childbearing, and subjective norms—factors that collectively reinforce the intention to have children.

In this context, university students' attitudes toward child-rearing, as prospective parents, reflect their intentions regarding future childbearing. Among the four domains of attitudes toward child-rearing, maternal career priority showed a significant impact on the expected number of children. This finding aligns with that of previous studies reporting a positive correlation between female employment and fertility rates [20, 28, 29]. Ryu [29] further noted that female unemployment can reduce household income, leading women to delay or avoid childbirth. Additionally, Jang [20] who analyzed the determinants of fertility rates across 30 OECD countries between 2005 and 2016, found that fertility rates increase as female employment improves. However, the positive relationship between economic activity and birth rates depends on work–family balance supported by national policies, such as financial assistance, maternity and paternity leave, childcare leave, and childcare facilities [28].

Given the characteristics of the target population—university students—it is unlikely that their participation in the workforce would directly boost birth rates. Today's Korean university students often define success as having a stable job, a good home, and economic security. To achieve these goals, they prioritize their careers from a young age, often sacrificing personal desires in pursuit of success [30]. Considering young adults' strong emphasis on career success, policies should aim to expand job opportunities for women that promote a work–family balance, thereby increasing the expected number of children.

Additionally, the study found a positive correlation between parental role confidence and the expected number of children. This finding aligns with that of previous research showing that greater parental role confidence in adolescents is associated with more positive attitudes toward childbearing [15]. University students with high parental role confidence tend to have positive attitudes toward marriage and childbearing and are likely to assume successful parental roles in the future. However, a 2024 survey on attitudes toward marriage and childbearing revealed that 47.8% of men and women aged 25–29 have no plans for children due to vague concerns about the challenges of pregnancy, childbirth, and parenting [6]. This finding highlights the need for parenting programs that equip university students, as prospective parents, with knowledge and skills related to childbirth and parenting. Enhancing parental role confidence through such education could increase both the desire for childbearing and the expected number of children.

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The study explored the relationship between university students' newborn care knowledge, attitudes toward child-rearing, parental role confidence, and their expected number of children. The finding that higher levels of maternal career priority is associated with a higher number of expected children reflects the career-focused life goals of today's young adults. The positive correlation between parental role confidence and the expected number of children underscores the need for efforts at both the government and community levels to bolster confidence in fulfilling parental roles. This study provides a strong rationale for developing policies, such as pre-parental education programs, that address the low fertility rate by supporting young adults who prioritize work–family balance in this era of low fertility.

6. Conclusion

This study investigated the relationships between Korean university students' newborn care knowledge, attitudes toward child-rearing, parental role confidence, and the expected number of children to provide foundational data for fostering a social environment that promotes higher fertility rates. The findings revealed that maternal career priority and parental role confidence are positively correlated with the expected number of children. To further validate these findings and explore additional influential factors, replication studies should examine a broader range of factors affecting the expected number of children. Additionally, to enhance generalizability, future research should include samples of university students from diverse regions of South Korea.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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