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Factors Associated With Parental Readiness Amongst Japanese Female Undergraduate Nursing Students: A Cross-Sectional Study

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Background: Trends towards a nuclear family unit, a decline in birth rate, and lack of community relationships make it difficult for adolescents to improve parental readiness in Japanese society. Low parenting skills will be a risk factor for high parenting stress or child abuse. The purpose of the present study is to investigate the factors associated with parental readiness amongst Japanese female undergraduate nursing students.

Methods: The study design is cross-sectional. An anonymous self-reported questionnaire survey was distributed to 225 female undergraduate nursing students from Kyushu, Japan, and the factors associated with parental readiness were examined.

Results: Of the 225 recipients, 208 responded to the questionnaire. Multiple linear regression analysis showed that the parental readiness score was significantly higher in the following groups: students who lived alone or without parents (regression coefficient: $\beta = 1.82$, $p = .027$), students who often interacted with children ($\beta = 1.88$, $p = .018$), students who wanted to give birth ($\beta = 5.72$, $p = .007$), and students who wanted to rear children as their own parents did ($\beta = 2.73$, $p = .009$).

Conclusions: The factors associated with parental readiness were living without parents, experiences interacting with children, desire to give birth, and desire to rear children as their own parents did.

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Key words: adolescents, family relations, nursing students, parenting, parental readiness

Introduction

Compared with the previous generation, today's youths are delaying parenthood more and more¹⁾. This is particularly relevant in Japan, because in the past four to five decades, the social situations of many Japanese have changed dramatically—for example, nuclear family units have increased, the overall birth rate has declined, and community relationships have dwindled. The proportion of nuclear families was about 56% in 2015²⁾. This was pronouncedly higher than that of extended families, which accounted for about 7%. Moreover, the total fertility rate in 2016 in Japan was 1.44, a considerable

drop from 4.54 in 1947³⁾. These broader changes to Japan's social fabric have decreased the chances for adolescents to learn parenting skills through direct observation of their parents caring for their younger siblings or by helping them directly in doing so. It is important for new parents to know how children develop and how to take care of them, as knowledgeable parents support healthy child development⁴⁾. A lack of necessary parenting skills might make parents behave poorly such as using physical violence or using violent language, which in the worst case could lead to child abuse⁵⁾. Such classes speak to the existence of an overarching need to provide parental readiness for the young generation that will

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become the parents of the future.

In Japan, the term of parental readiness arose in the 1980s⁶⁾. The term conveys necessary attributes of parents such as favourable feelings towards infants, volition of caring for children, knowledge and skill regarding nurture⁷⁾. In contemporary society, what type of adolescents can develop parental readiness? Investigation of the factors associated with parental readiness enables consideration of the contents of intervention for improving parental readiness. Previous researchers have explored factors associated with parental readiness such as gender⁸⁾, experiences of interactions with children^{7,9)}, experiences of romantic love¹⁰⁾, memories of early parental nurturance¹¹⁾, attachment style¹²⁾, level of self-esteem⁹⁾, and individuals' economic situation¹³⁾. However, the amount of past research regarding parental readiness is insufficient. Moreover, most research regarding parental readiness that has been done in Japan does not consider the influences of the confounding factors of parental readiness. Thus, we tried to investigate the factors associated with parental readiness using the multivariate analysis.

Women usually have the main role of rearing children at home¹⁴⁾. This demanding gender role of bearing primary child rearing responsibilities facilitates a higher risk of women committing child abuse. According to the Ministry of Health, Labour and Welfare, half the number of child abuse cases were committed by biological mothers, a higher figure than that for biological fathers¹⁵⁾. Thus, it is worth investigating the factors in young women that are associated with parental readiness and take the primary role in child-rearing in their future families, as our first step. The aim of the present study is to investigate the associated factors with parental readiness amongst Japanese female undergraduate nursing students. The findings will be able to help to develop a proper intervention to improve parental readiness for Japanese female nursing students.

Methods

Design and sample

The cross-sectional study was conducted using anonymous, self-reported questionnaires distributed between 11 September and 5 October 2018. We distributed the questionnaires to 225 female undergraduate students whose major was nursing and who were enrolled in the 1st to the 4th grade at a national university located in the Kyushu area, Japan. By posting the questionnaires, students were deemed to have agreed to participate in this study. The survey was approved by the Ethics Committee of Nagasaki University Graduate

School of Biomedical Sciences (29 March 2019; Permission number: 19031405).

Pre-parental readiness scale

The Pre-parental Readiness Scale (PRS)⁹⁾ has been used to assess the degree of readiness to be a parent. We contacted the author who provided this scale via email, and gave permission to use it in our research. The scale consists of ten questions, each scored on a five-point Likert scale ranging from one ('does not describe me at all') to five ('describes me really well'). The scores of the ten items are summed for a total parental readiness score between 10 and 50. Higher scores indicate a higher parental readiness. The ten questions cover topics, for example, 'I am willing to raise a young child', 'I am looking forward to raising a child in the future', or 'I am interested in the process in which children develop'. The questionnaire has been standardised, and its reliability and validity have been confirmed. The PRS has an estimated internal consistency (Cronbach's alpha) of 0.85⁹⁾.

Experiences of interacting with children and experiences of romantic love

The questionnaire asks 1) whether respondent has younger siblings or not, 2) whether the respondent has experience interacting or spending time with small children after entering university (including a practicum in child or maternal care), and 3) whether the respondent has experienced romantic love. Unlike the other questions, question 2) had three answer options: a) often, b) a few times, and c) none.

Attitude towards parents and family

The instrument called 'Positive Attitude towards the Family'¹⁶⁾ evaluates the attitude the respondent has regarding her family. It consists of seven questions, such as, 'When I was in trouble, my family helped me', or 'My family understood my joys and sadness and accepted my feelings'. Each question is scored on a three-point Likert scale ranging from 0 ('I would have to say, "No"') to 2 ('I would have to say, "Yes"'). The scores of the seven items are summed for a total Positive Attitude towards the Family score between 0 and 14. A higher score indicates that the respondent's attitude towards the family is more positive. This scale has an estimated internal consistency (Cronbach's alpha) of 0.82¹⁶⁾.

Other questions were 'Do you want to be a mother like your own mother in the future?' and 'Do you want to rear children like your own parents did in the future?' along with

some about the desire to marry and give birth.

Statistical analysis

For the preliminary univariate analysis, the Mann-Whitney U test and Kruskal-Wallis tests were employed to assess the strength of associations between parental readiness and other variables. Because the maximum value of Positive Attitude towards the Family score equalled a median of 14, we divided respondents' data into two groups, a high-score group that contained only scores of 14, and a low-score group with scores of 13 or less, when we performed the Mann-Whitney U test.

The multiple linear regression analysis was conducted, with parental readiness as a dependent variable. Only those variables showing a significant association in univariate analysis ($p < .20$, Mann-Whitney U test and Kruskal-Wallis test) were included in the model. We used a stepwise regression (backward selection method), and we set a significant level for deciding when to enter ($p = .05$) and remove ($p = .10$) predictors in the stepwise model. All statistical analysis was performed using SPSS software, version 21.0 for Windows (IBM, Japan).

Results

Of 225 recipients, 208 respondents returned the survey (92%), and 3 returns were excluded from the analysis because of incomplete responses. A total of 205 participants were evaluated. The median of the PRS was 40 (the 25th percentile was 36 and 75th percentile was 44). Cronbach's alpha was 0.88 in the present study. The median of the Positive Attitude towards the Family score was 14 (the 25th percentile was 11 and 75th percentile was 14).

Table 1 indicates the association between independent variables and the PRS. Bivariate analysis showed that students who obtained high scores were more likely to have some experience in interacting with children ($p = .026$), to have positive attitude towards their families ($p = .001$), and to have an experience of romantic love ($p = .028$). Moreover, students who reported the following attributes obtain significantly higher scores in parental readiness: desire to get married in the future ($p < .001$), desire to give birth in the future ($p < .001$), desire to be a mother like one's own mother in the future ($p = .001$), desire to rear children in the future as one's own parents did ($p < .001$).

To determine the factors associated with parental readiness, the multiple linear regression analysis was performed (Table 2). The scores are significantly higher in the following

groups: students who live alone or live without parents (regression coefficient: $\beta = 1.82$), students who often interact with children ($\beta = 1.88$), students who want to give birth ($\beta = 5.72$), and students who want to rear children as their own parents did ($\beta = 2.73$), $F(5, 197) = 13.617$, $p < .001$. Although it is not statistically significant, students who want to marry tend to have higher scores ($\beta = 3.45$, $p = .078$).

Discussion

We found that the median of PRS was 40 and the median of the Positive Attitude towards the Family was 14 in this study. In order to compare these figures with the previous studies, we calculated the mean of the PRS and the Positive Attitude towards the Family as former papers used mean rather than median. The mean of each scale in the current study was 39.3 ($SD = 6.2$) for PRS and 12.0 ($SD = 2.9$) for Positive Attitude towards the Family. These scores are similar to the PRS and Positive Attitude towards the Family scores of previous reports, at 38.5 ($SD = 5.8$)⁹ and 10.9 ($SD = 3.3$)¹⁶, respectively.

The study investigated that factors associated with parental readiness amongst Japanese female undergraduate nursing students were 'living alone or living without parents', 'experiences in interacting with children', 'desire to give birth', and 'desire to rear children as their own parents did'. For the factor 'experience in interacting with children', 37.6 % of students reported considerable experience interacting with children, and their scores for parental readiness are significantly higher than those who have a few or no experiences. This outcome supported the results of previous research^{7, 9}. In the nursing university where this study was conducted, there are many chances to volunteer with children, such as caring for or playing with disabled children and looking after primary school students after school. Lecturers at the university actively introduce and recommend volunteer opportunities in the university locale. Moreover, this university provides a practicum regarding child care when the students enter the second grade. Students visit nurseries for three days and spend time with children who are under five years old. The third-grade students do practicum in the department of paediatrics and obstetrics, where they care for sick children and new-born babies for total about two weeks. Sasaki et al. found that continuous interaction with children leads to adolescents' improved parental readiness⁷. They explain that the reason continuous interaction with children positively influenced parental readiness is that the interactions encourage positive feeling towards children amongst adolescents who experience contentment at participating in the children's

development, understanding their needs and personalities, and building relationships with the children⁷). The respondents in this study were more likely able to build relationships

with children through their practicum or volunteer activities, and these experiences might enhance their level of parental readiness.

Table 1. Association between participants' characteristics and Pre-parental Readiness score (N=205)

Factor			Pre-parental Readiness score			p-value
	n	(%)	Q1 ^a	Median	Q3 ^b	
University Grade of Students						0.346 ^c
1 st	33	(16.1)	33	40	44	
2 nd	52	(25.4)	38	41	43.25	
3 rd	70	(34.1)	37	41	44	
4 th	50	(24.4)	35	39	43	
Living style						0.059 ^c
Alone	126	(61.5)	37.25	41	44	
With parents	70	(34.1)	33	38	44	
With others ^d	9	(4.4)	39	40	43	
Have younger sibling(s)						0.344
Yes	109	(46)	36	41	44	
No	96	(54)	36	40	44	
Experience in interacting with children						0.026
Often	77	(37.6)	37	41	45	
A few times or none	128	(62.4)	35	40	43	
Positive attitude towards the family						0.001
Low (0-13)	62	(30.2)	34	39	43	
High (14)	143	(69.8)	37.75	41.5	44	
Experience of romantic love						0.028
Yes	186	(90.7)	36.25	41	44	
No	19	(9.3)	36	38	40.5	
Desire to get married						<0.001
Yes	189	(92.2)	37	41	44	
No	16	(7.8)	26.75	33.5	37.25	
Desire to give birth						<0.001
Yes	189	(92.2)	37	41	44	
No	16	(7.8)	26	32.5	36.25	
Desire to be a mother like own mother						0.001
Yes	160	(78)	37	41	44	
No	44	(21.5)	32.75	37.5	43	
Unknown	1	(0.5)				
Desire to rear children as own parents did						<0.001
Yes	165	(80.5)	37	41	44	
No	39	(19)	30	35	42	
Unknown	1	(0.5)				

Note: Mann-Whitney *U* test was performed.

^aThe first quartile

^bThe third quartile

^cKruskal-Wallis test

^dIncluded grandmothers and female siblings

Table 2. Multiple linear regression analysis of factors associated with parental readiness (N=203)

Factor	Regression coefficient	Standard error	p-value
Living style 0. Living with parents 1. Living alone or without parents	1.82	0.819	0.027
Experience in interacting with children 0. A few times or none 1. Often	1.88	0.787	0.018
Desire to give birth 0. No 1. Yes	5.72	2.09	0.007
Desire to get married 0. No 1. Yes	3.45	1.95	0.078
Desire to rear children as own parents did 0. No 1. Yes	2.73	1.04	0.009
R^2	0.257		

However, the trend of declining birth rates in Japan makes it difficult for young people to interact with children. This situation, in which there are few siblings or small children in a family or community, deprives them of the chance to develop parental readiness from a young age. In view of this situation, the Ministry of Education, Culture, Sports, Science and Technology changed the educational guidelines for domestic science courses at junior high and high schools in the late 1990s¹⁷⁾. In more recent child care studies, the issues of infants' physical and mental development, the lives and activities of preschool children, the roles that parents, families and communities play, and other topics were studied by students¹⁷⁾. Subsequently, schools began to provide opportunities for students to interact with children at nurseries or kindergartens. Unfortunately, most programs consist of a curriculum that lasts only a few hours¹⁸⁾. Moreover, there are several problems, such as limitations in the number of nurseries or kindergartens that can accept students and difficulties in securing human resources to organise programs for interacting with children¹⁹⁾. It is important to accumulate knowledge and skills for organising such programs at junior high and high schools and to develop programs which can help students continuously interact with children at as many schools as possible.

The variable called 'Desire to rear children as their own parents did' was associated with parental readiness in this study. Most students who want to rear children as their own parents did apparently have a good relationship with their parents. Scharf and Mayseless found that the attachment style which had been established by the relationship with parents in childhood influences the parenting of adolescents in Israel¹²⁾. The rearing environment may have an effect on the development of parental readiness.

An inappropriate rearing environment consists of a wide range of conditions from a high risk level, such as physical or sexual abuse, to a lower risk level in which children find it difficult to build secure attachment with mothers or other caretakers. In current Japanese society, a more diverse family style makes the situations of adolescents more complicated. Thus, it seems important to support the creation and maintenance of appropriate rearing environments to enhance parental readiness. Although interactions with children enhance the level of parental readiness, it is unclear if such experiences are effective in improving readiness for young people who were raised in an inappropriate environment. It may be difficult for these adolescents to improve their readiness, in spite of having good experiences in interacting with children. With the consideration that the rearing environment influences parental readiness, we should consider targeted programs for such adolescents to improve parental readiness, rather than just providing a single program for all adolescents.

Living independently is associated with parental readiness in our study. Goldscheider, Hofferth, and Curtin insisted that early nest-leaving improves parenting amongst young adults²⁰⁾. Living separately from one's parents generates not only physical but also mental independence. The stage of being a university student is a time to break free from one's parents and to develop relationships with others. Another study found that female undergraduate students who have experienced romantic love reported a statistically higher number of life events that they expected in their future¹⁰⁾. The researchers concluded that, at least partly because of their experiences with romantic relationships, these students could project a concrete image of their future lives, such as marriage and raising children, by using these past experiences to explore the future possibilities¹⁰⁾. Therefore, living separately from

parents provides the environment where they can establish a relationship with other people, and greater experience in forming healthy relationships with another person will raise parental readiness.

In terms of life event, our study showed the different results between desire to get married and give birth. In the regression result, only desire to give birth but not desire to get married statistically associated with parental readiness. The result suggested that, of the people who want to get married, not all of them wish to give birth or raise children. Ohnishi, Machiyama, Nishihara, Sato, and Matsuyama also found that amongst female undergraduate students, being in a romantic relationship was positively associated with desire to marry but not with desire to have children in the future²¹. Additionally, a study found that childless lesbian and gay individuals were less likely than their heterosexual peers to report parenting desires and intentions in Italy²². This change in social cues may lead women to think that birth and parenting are not requisites upon marriage. Thus, those who want to have a baby after marriage have statistically higher parental readiness, but it is unclear how high preparedness is in those who want to get married but have no desire to have a baby. In order to improve an adolescents' parental readiness, a parent education module may be effective for them²³.

There are several limitations in the present study. First, this is a cross-sectional study, so it cannot establish causation. Second, the PRS that we used has only one subscale, which mainly measures the degree of positive feeling towards children. However, parenting expectations must be considered along with other dimensions, such as isolation from society¹³ or positiveness towards rearing children⁶. Lastly, the subjects of this study are only female, therefore, if we target male students, it may show different factors associated with parenthood preparedness.

In future research, we will focus on the differences in parental readiness between men and women, not only women. It may be necessary to consider how interventions and recommendations vary by gender, based on the results.

In conclusion, the present study investigated factors associated with parental readiness amongst Japanese female undergraduate nursing students who were 'living alone or away from their parents', 'experience[ed] in interacting with children', 'desir[ing] to give birth', and likewise exhibited some degree of 'desire to rear children as their own parents did'. Our results may help to consider the content of parenting programs for Japanese female nursing students.

Conflicts of Interest and Source of Funding:

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No authors declare any conflicts of interest.

Ethical approval

The survey was approved by Ethics Committee of Nagasaki University Graduate School of Biomedical Sciences (29 March 2019; Permission number: 19031405).

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