

## Elements Affecting the Formation of Maternal Sense : Recollections of Maternity Acquired during Puberty in Parturient Women

KITAGAWA Mariko<sup>1)</sup>, UCHIYAMA Kazumi<sup>2)</sup>, KIDO Kumiko<sup>3)</sup>, NAKAJIMA Ritsuko<sup>4)</sup>,  
WAKIMOTO Hiroko<sup>4)</sup>, KUME Ryuko<sup>5)</sup> and ASAO Takeshi<sup>6)</sup>

### Abstract

This study was conducted to investigate how the formation of a maternal sense during puberty affects the further development of this in pregnant women, to clarify the primary factors for this, and to help predict and support the process of the formation of the maternal sense.

1. Six puberty factors were detected in the factor analysis. The 1st factor was the family relation factor (satisfaction level in relationships with parents). The 2nd factor was the gender role factor (desire to become family-oriented). The 3rd factor was the maternal behavior factor (nursing children), and the 4th factor was the community cultural factor (interest in community-related information). The 5th factor was the lifestyle factor (regular lifestyle), and the 6th factor the self-expression factor (recognizing self and acting based on self).

2. Relationship between Age at Time of Marriage and Family Relationship Factor

The age group under 19 years showed the fewest factor score. The factor score showed increase with subject age, and group of 35 to 39 years acquired the highest factor score of 0.346.

3. In the relation between the above six factors in puberty and the factors contributing to the structure of the maternal sense, the second factor (gender role factor), the third factor (maternal behavior factor), the fourth factor (community culture factor), the fifth factor (lifestyle factor), and the sixth factor (self-expression factor) have a positive relation, while the first factor (family relations factor) is negatively associated.

**Key words:** puberty, formation of maternal sense, childbirth, recollection of maternity

### Introduction

It is said that the maternal sense is formed during the period in which a girl grows up, and is accelerated through pregnancy, childbirth, and nursing. While puberty is a crucial period for forming and developing a maternal sense, it is also a period when one's ego is formed and various psychological conflicts occur.<sup>1, 2)</sup>

This study was conducted to investigate how the formation of a maternal sense during puberty affects the further development of this in pregnant women, to clarify the primary factors for this, and to help predict and support the process of the formation of the maternal sense.

The subjects of the study were 203 mothers on the fifth day after childbirth in Osaka City during the pe-

1) Nagoya City University School of nursing (Midwifery/Human Behavioral Sciences)

2) Siebold University of Nagasaki Faculty of Nursing and Nutrition (Maternity Nursing)

3) Yamaguchi Prefectural University School of Nursing (Maternity Nursing and Midwifery)

4) Nagoya City University School of nursing (Midwifery)

5) The Yamagata Prefectural Foundation for the Promotion of Renal and other Organ Transplants

6) Graduate School of Human Culture Nara Women's University (Developmental Psychology)

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riod of May through August, 1998. A questionnaire with 25 items regarding puberty was constructed based on existing documents and preceding studies, and subjects were asked to answer the self-evaluation questionnaire using five grade scale. The data were first analyzed by simply adding the scores, and then a factor analysis was conducted to extract the factors for each investigative item.

### Background

On the effects of difficulties during puberty on pregnancy, delivery, and puerperium, Nakano<sup>3)</sup> suggested that among women showing secondary amenorrhea which was clearly brought on by menstrual impairments during puberty, particularly weight loss and stress, such difficulties during puberty could have a considerable effect on later establishment and course of pregnancy and puerperium. Puberty is the period when a girl makes the transition from child to adult and reproductive functions mature; there is great development both physically and mentally. Puberty is very significant in terms of later life, and the quality of health during this time is said to have a great effect on the later physical and mental development of women, and their health maintenance. <sup>4,5)</sup> Yamazaki<sup>6)</sup> claims that a mental attitude of "loathing and rejection of maturity" can result from eating disorders during puberty. Fujimi<sup>7)</sup> noted the increase in nuclear and independent families as one of the effects on the family of the industrialization and urbanization accompanying the economic growth that started around 1960, the importance of the husband-wife relationship (the parent-child relationship was relatively less important) and the decrease in the number of children. In Japan, however, while nuclearization of the family appeared to have changed family structure to a single family unit from the traditional family structure, called "Ie (home)," the traditional family model was still felt in strong ties to family in various aspects of life, including the parent-child relationship and the existence of the bride/daughter-in-law (who bore the duties and responsibilities of family inheritance), above the husband-wife relationship. In the age when maternal awareness and behavior was taken to be instinctual, pregnancy and delivery were generally seen as an ea-

gerly-awaited blessing by those around the women, and family members and others provided support in raising the child. The more maternal awareness is regarded as instinctual, the more training and experience naturally spread to nearly all women in society. The basis of maternal awareness is development in the growth period up to the time of maturity; that is, it is formed as the child grows in trust and sympathy in an appropriate mother-child relationship during infancy.<sup>8)</sup> In modern society, harmful influences such as housing problems, family structure, home life, and education reduce the number of opportunities to foster maternal awareness.<sup>6)</sup>

#### Subjects for the Survey:

Two hundred three puerperae on the fifth day after birth in a hospital in Osaka City, during the 4 months between May and August, 1998.

#### Ethical considerations

When distributing the questionnaire, we informed prospective subjects that their privacy would be ensured, and that they would not suffer any negative consequences if they did not consent to participate. Whether or not to write their names on the questionnaire was decided by the subjects themselves.

#### Survey Methods:

1) A questionnaire consisting of 25 question items on puberty was used in addition to existing literature and prior studies. A questionnaire method called on ego-gram was used for the structural analysis of ego statuses.

Answers to the questions were made by the mothers themselves based on self-evaluation, using a linear analog scale.

2) The perinatal period abnormal screening index was used for evaluating the health levels of expectant mothers.

#### Methods of Analyzing Data:

A factor analysis was conducted to detect the factors that each item of the survey considers. Varimax rotation was executed to investigate the formative concept factors, and the factors relating to the formation of maternal sense, which have a proper value of more than 1 and 36.3% of the cumulative contribution rate during puberty, were detected. If the factor-loads of each item were negative in value, the item was interpreted in a reverse manner.

## Results:

## Subject attributes (Table 1)

The subjects of the survey were 203 mothers, and the questionnaire collection rate was 100%. Comparing the attributes of the subjects with the population statistics of Japan, it was found that women who gave birth at the age of 35 or older, married under the age of 19 (early marriage), or married at the age of 35 to 39 (late marriage) accounted for a proportion of the survey subjects than in higher the general population.

## Health levels of expectant mothers (Fig. 1)

In the relationship between the health levels of mothers and their age at time of delivery, it was found the older the age they delivered at, the higher the number of risk points they were given in the health level check, with a significant correlation between the two ( $r=0.9747$ ;  $p<0.01$ ).

Relationship between health levels classified by delivery experience and marriage ages (Fig. 2)

Among primiparae, the older the age they married at, the higher the number of risk points they received in the health level check, with a significant correlation between the two ( $r=0.958$ ;  $p<0.025$ ).

Table 1 Attributes of the subjects

		n=203
		Total (%)
Experience of delivery	Primiparae	108(53.2)
	Multiparae	95(46.8)
Age (years old)	20~24	29(14.3)
	25~29	108(53.2)
	30~34	54(26.6)
	35~39	10( 4.9)
	40 or older	2( 1.0)
Age at time of marriage (years old)	under 19	7( 3.4)
	20~24	96(47.3)
	25~29	82(40.4)
	30~34	13( 6.4)
	35~39	5( 2.5)
Occupation of the subjects	Employed	34(16.7)
	Unemployed	169(83.3)
Family structure	Nuclear family (a couple only)	100(49.3)
	Nuclear family (a couple with children)	86(42.4)
	Multiple family	17( 8.3)
Religion of the subjects	Subjects with religion	25(12.3)
	Subjects with no religion	178(87.7)
High risk pregnancy	high risk	18( 8.9)
	low risk	185(91.1)

Among multiparae, however, no correlation was found between their age at time of marriage and their health levels.

## Scores by item (Table 2)

The average scores and standard deviations were obtained based on the five - grade scale evaluations of the questionnaires on puberty.

The items are arranged in decreasing order of scores. The higher scores indicate more positive response to the maternity-formative factors.

The items with the highest average scores include:

1) "You had a friend/friends who listened to your problems and gave you heartfelt advice" and 2) "You had an important person in your life," with more than 4 scores on average.

Eighteen items showed more than 3 scores on average. The items with the lowest points include: "You were interested in social (public) information." "You had your menstrual periods without discomfort."

## Factor analysis (Table 3)

Six puberty factors were detected in the factor analysis.

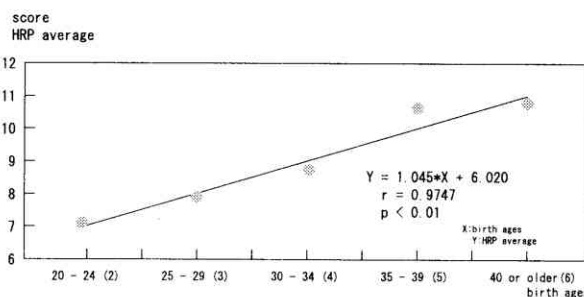


Fig. 1 Relationship between health levels and ages at time of expectant mothers

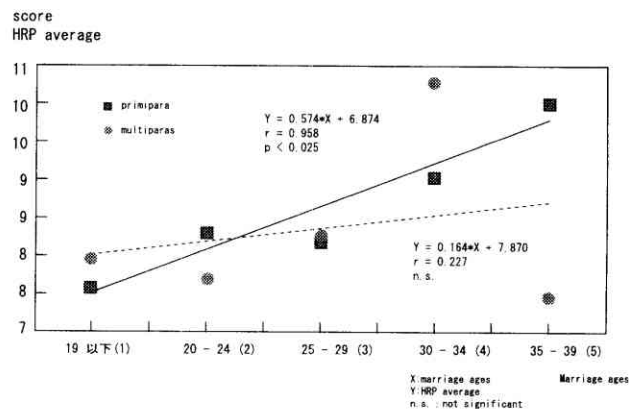


Fig. 2 Relationship between health levels by delivery experience and marriage ages

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The 1st factor was the family relationship factor (satisfaction level in relationships with parents). The 2nd factor was the gender role factor (desire to become family-oriented). The 3rd factor was the ma-

ternal behavioral factor (nursing children), and the 4th factor was the regional cultural factor (interest in community-related information). The 5th factor was the lifestyle factor (regular lifestyle), and the

Table. 2 Points by the item on Puberty

		n=203	
Code	Items	Average Points	Standard Deviations
1	You had a friend/friends who listened to your problems and gave you heartfelt advice.	4.23	0.73
4	You had an important person in your life.	4.09	0.76
16	You found babies cute.	4.02	0.91
21	You always cared about other people's reactions.	3.89	0.73
6	You had confidence in your health.	3.87	0.92
2	You had a satisfying relationship with your parents.	3.80	1.00
20	Your mother told you stories about your birth.	3.76	0.95
13	You were happy to be born female.	3.65	0.87
11	In your family, the roles of your family members were clear.	3.56	0.83
7	You had a regular daily life.	3.56	0.96
12	You wanted to be a homemaker.	3.53	0.90
10	You know about the structure and functions of women's bodies.	3.51	0.66
8	You had a balanced diet.	3.43	1.16
23	You were always conscious of your own actions.	3.39	0.77
15	You cared about how you looked as a woman.	3.34	0.82
3	Your parents always praised you.	3.25	0.88
14	You did not feel women were recognized as adult women until they give birth to a child.	3.25	0.91
24	You were in an environment where customs were regarded as important.	3.21	1.00
19	You always helped your family with housework.	3.21	1.02
18	You had taken care of a small child.	3.14	1.25
5	You wanted to have a different life from your mother's.	3.11	1.00
22	You were always strict with yourself.	2.88	0.70
9	Your menstrual periods were not accompanied by discomfort.	2.88	1.12
25	You were interested in social (public) information.	2.68	0.80
17	Child-rearing did not seem worth while to you.	2.59	1.06

\*The average points were acquired based on the five grades alternative answers to the questions.

Table. 3 Six Factors Relating to Puberty

		<Items with the factor loads of more than 0.40>					
		First Factor	Second Factor	Third Factor	Fourth Factor	Fifth Factor	Sixth Factor
First factor Family relationship factor	2	-0.9337	0.1213	0.0096	0.1820	0.0463	0.0539
	3	-0.5008	0.0153	0.1155	0.1901	0.1460	-0.1237
	5	0.4515	-0.0671	0.0253	0.1134	-0.1421	-0.1146
Second factor Gender role factor	12	0.0397	0.7540	0.1703	0.1687	0.1861	-0.0187
	13	-0.0829	0.6507	0.2529	-0.0053	0.0791	-0.0878
	14	-0.0933	0.6433	-0.0368	0.1793	0.1069	-0.1733
Third factor Maternity behavioral factor	16	-0.2110	0.1623	0.4284	0.2343	-0.1048	0.0016
	17	0.1269	-0.0024	-0.4145	0.1953	-0.0501	0.1166
	18	-0.0320	0.0950	0.5865	0.1190	-0.1072	-0.0740
Fourth factor Regional culture factor	19	0.0184	0.1236	0.6305	0.1329	0.1091	0.0885
	24	-0.0524	0.1842	0.0436	0.5383	-0.0147	-0.0781
	25	-0.2755	0.0733	0.1028	0.7239	0.0915	0.0677
Fifth factor Lifestyle factor	7	-0.2285	0.0321	0.0464	0.0690	0.7091	0.0282
	8	-0.1188	0.1612	0.1083	-0.0288	0.5846	-0.0993
Sixth factor Self-expressive factor	15	0.0458	0.2921	-0.0845	0.0130	-0.1045	-0.5006
	23	-0.0744	-0.0594	0.1250	0.1881	0.2072	-0.6570
Sum of Squared Factor-Loads		2.06	1.70	1.50	1.44	1.30	1.05
Factor Contribution Rate (%)		8.26	6.81	6.03	5.78	5.21	4.20
Cumulative Contribution Rate (%)		8.26	15.07	21.11	26.90	32.12	36.32

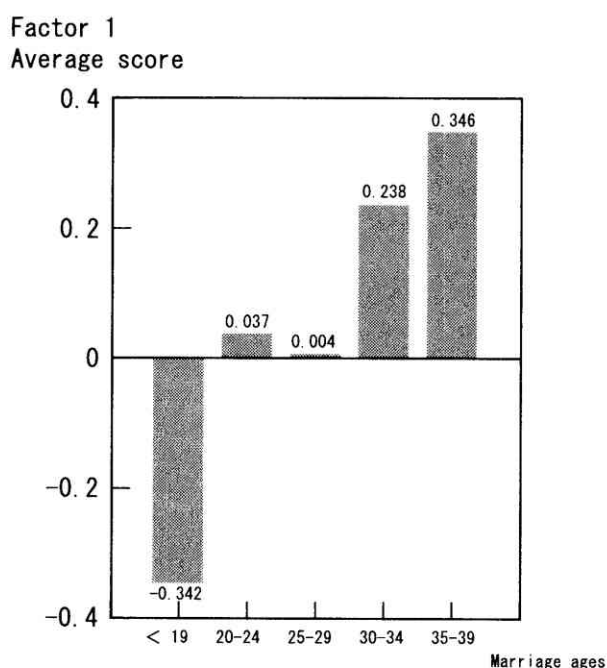


Fig. 3 Relationship between marriage ages and family relationship factor

6th factor the self-expressive factor (recognizing self and acting based on self).

Relationship between marriage ages and family relationship factor (Fig. 3)

The subjects' marriage ages were classified into 5 groups and compared with the average scores for the first puberty factor (family relation factor). The age group under 19 years showed the fewest factor scores. The factor scores showed increased with subject age, and the age group of 35 to 39 years acquired the highest factor points of 0.346.

### Discussion

A factor analysis was conducted from the survey results to clarify the factors contributing to maternal formation. Here we discuss the meaning of each factor in puberty including the present results, and the relation of each factor with subject characteristics as well as the relation of each puberty factor with maternal formation.

#### 1. Relation between the meaning of factors during puberty and subject characteristics

The first factor of puberty, since it is closely related to the family, is called the family relationship factor.

It is related to a satisfying relationship with one's parents. However, the expression of a negative factor load for relationship with mother and family, seen in responses such as "I was praised by my parents," can be interpreted as a negative relationship. This indicates a lack of trust or affection toward their mothers, such as when they say "I want to live in a way different than my mother," and a rejection of their parents (Table 3). From these results, we see that puberty is a time when people go through the process of searching for a self-identity while at the same time the family system itself is growing. When these young people are placed in a situation where they risk identity "diffusion," there are negative changes in their feelings, thinking, and viewpoint toward themselves, and their ideal self is denied. The factor contribution rate was 8.26%.

The second factor is called the gender role factor, and is related to being glad that one was born female. With the feeling that women are recognized as adult women when they marry, become pregnant, and raise children and that they will fulfill the social and traditional roles expected of women through these behaviors, they want to adhere to their parents' wishes and values (Table 3). These factors correspond to a positive maternal role. The factor contribution rate was 6.81%.

The third factor is the maternal behavioral factor for developing a nurturing mutual relationship. It is marked by a positive image of children, expressed in such responses as "I helped with the housework and looked after small children," and "Babies are cute." These items are involved in the formation of motherliness as items showing signs of maternal awareness. They are positive factors for loving, rearing, and assisting the growth of children. The factor contribution rate was 6.03%.

The fourth factor is called the regional cultural factor, and indicates growing up in environment where value was placed on cultural structural elements in lifestyle. This was expressed in such responses as "had an interest in public information" and "was in an environment where customs were regarded as important." The factor contribution rate was 5.78%.

The fifth factor is the lifestyle factor. This includes the development of behaviors consistent with a healthy body, such as proper eating habits during

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puberty, including a balanced diet and regular daily habits, and management of one's own health (Table 3). The factor contribution rate was 5.21%.

The sixth factor is the self-expressive factor, "which positively express femaleness," acceptance of one's gender role, and self-awareness in such responses as "cared about how I looked as a woman," and "was always conscious of my own actions." The factor contribution rate was 4.20%, while the cumulative contribution rate up to the sixth factor was 36.29%.

## 2. Relation between puberty factors and maternal formation

In the relation between the above 6 factors in puberty and the factors contributing to the structure of the maternal sense, the second factor (gender role factor), the third factor (maternal behavioral factor), the fourth factor (regional culture factor), the fifth factor (lifestyle factor), and the sixth factor (self-expressive factor) have a positive relation, while the first factor (family relation factor) is negatively associated.

The first factor in puberty is the family relation factor. The feelings of closeness of the parents or mother with the child, the mothers love, and respect of the parents are needed for the daughter to identify with the mother. If they are not present, the daughter may want to avoid the mother's methods of socialization. The relationship between parents and daughter during puberty may be considered a factor contributing negatively to maternal formation in the psychological preparation state.

Viewing the family relationship factor during puberty from the aspect of identity, after the state of non-dependence or independence in young adulthood (Blos, 1971)<sup>9)</sup>, that is, the state when assistance, guidance or even approval from someone else inside the family is not necessary, in pregnancy the dominant action of a state of mutual dependence (one's individuality is well displayed, and deep mutual involvement with others is emphasized) is asserted.<sup>2)</sup> Specifically, from results showing a positive response in maternal formation factors with more high-scoring items among the items for each factor in Table 2, a family relationship factor showing a negative assessment of parent-child and family relations in puberty is reflected in the "gender role factor"

during pregnancy as "enjoy being pregnant," "feel happy to become a mother," and "happy to be born female," and confirming such commonly held interdependence factors as "have satisfying relationships with parents and husband," and "my mother taught me many things during pregnancy." However, as shown in Fig.3, a low factor score for the younger group may indicate that it is difficult to form a relationship of mutual dependence. Moreover, in self-concept formation factors such as "receive cooperation from my husband and family" and "will become a good mother," and self-enlightenment factors such as "myself will find and move in a positive direction" and "believe in my own potential," the family relationship during puberty is changed to a positive image in the maternal formation during pregnancy. Gender role factors can positively contribute to maternal formation by showing positive acceptance of one's own gender role and a high psychological preparedness of acceptance of one's own sex.<sup>10)</sup> Maternal behavioral factors, those showing the feelings that women in particular have toward children, such as thinking that a baby is "cute, adorable" in one's child caring experience indicate acceptance of the role of becoming a mother, and contribute positively to maternal formation.<sup>11)</sup> Regional and cultural factors are those showing the development of the maternal sense under the strong influences of familial, social, and cultural factors, and contribute positively to the development and formation of the maternal sense. Among lifestyle factors, a healthy maternal upbringing during puberty with lifestyle guidance and nutrition management is the first step toward fostering a healthy maternal sense. With knowledge on family and individual health, the development of healthy living habits in the stage of preparing the body for motherhood contributes positively to maternal formation.<sup>11, 12)</sup> Self-expressive factors indicate sexual and psychological maturity during puberty. One comes to watch oneself as a woman, and understand one's sexual development and changes of the body and mind. One is aware of one's figure and abilities, and one's individuality as a woman begins to function. The structural maturity of the ego is a factor acting positively on maternal formation.

## Conclusions

From the results of a factorial analysis on the factors in maternal formation, 6 factors during puberty were extracted: the family relations factor, gender role factor, maternal behavior factor, community cultural factor, lifestyle factor, and self-expression factor.

### 1) Characteristics of factors in puberty

The lifestyle factor expressing regular living and eating habits during puberty, indicates a positive response corresponding to the physiological changes during pregnancy. In the family relation factor during puberty, the factors of a close relationship between the subjects and their parents or mothers, and difficulty in respecting their mothers and rejecting their parents' ways of living were strong. However, anti-dependence or independence of their mothers during puberty was affected by the self-expressive factor, and such women tended to succeed in tasks for their development during puberty by skillfully expressing their individuality and maturing on their own, while establishing harmony with others.

Looking at the gender role factor during puberty, it was found that the subjects followed the roles and values that have been socially and traditionally expected of women, and they accepted the gender role which is most likely to meet their parents' expectations. The beginnings of special feelings toward children were found in the maternal behavioral factor, while in the regional culture factor, the natural instinctive feelings for motherhood held by the women was strongly affected by the family, social and cultural factors, and gradually developed to form the maternal sense.

### 2) Family environment during puberty and maternal formation in pregnancy

The traditional family structure in Japan, called "Ie" (home) seems to have made a transition to independent nuclear families.

However, more than the relationship between husband and wife, the traditional family rules and standards such as the relationship between parents and children, and the presence of the daughter-in-law (with the obligations and responsibilities of family inheritance) permeate all aspects of life, that is, the

relationship between parents and children, lifestyles, and the social and cultural environment had a great effect on the formation of the maternal sense during puberty in the subjects.

There are many issues to be faced, such as marriage, pregnancy, and childbirth in the period before a young woman's identity is established, and the period of parent-child difficulties. Thus, while a young woman may be biologically ready to become a mother, major problems may remain in the formative process of becoming psychologically and socially ready for motherhood. In recovering from role failure one tries to build new relationships toward acquiring a new role with support from parents and trusted friends.

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## 母性形成のエLEMENTに関する研究

—産婦の思春期における母性性の想起—

北 川 眞理子<sup>1)</sup>・内 山 和 美<sup>2)</sup>・木 戸 久美子<sup>3)</sup>・中 嶋 律 子<sup>4)</sup>  
脇 本 寛 子<sup>4)</sup>・久 米 龍 子<sup>5)</sup>・麻 生 武<sup>6)</sup>

- 1) 名古屋市立大学看護学部（助産学/人間行動科学）
- 2) 県立長崎シーボルト大学看護栄養学部（母性看護学）
- 3) 山口県立看護大学看護学部（母性看護学・助産学）
- 4) 名古屋市立大学看護学部（助産学）
- 5) 財団法人山形県腎等臓器移植推進機構
- 6) 奈良女子大学大学院人間文化研究科（発達心理学）

### 要 約

本研究は思春期の母性形成がその後の、発達段階にある妊婦の母性形成過程にどのように関与するか、その要因を明らかにし、母性形成過程の予測や援助の資料とする目的で調査を行った。

1. 思春期の母性形成に関与する因子として6因子が抽出された。第1因子；家族関係因子（両親との満足した関係）、第2因子；性役割因子（家庭的な女性への願望）、第3因子；母性行動因子（子どもの世話）、第4因子；地域・文化因子（地域情報への関心）、第5因子；生活習慣因子（規則的な日常生活）、第6因子；自己表現因子（意識し行動する）である。
2. 結婚年齢と家族関係因子との関係では、19歳以下において因子得点が最も低く、結婚年齢が高くなるほど因子得点は高くなり35～39歳の因子得点は0.346と最も高い。
3. 母性形成の構造に関与する因子と6因子との関連では思春期の第2（性役割因子）、第3（母性行動因子）、第4（地域・文化因子）、第5（生活習慣因子）、第6（自己表現因子）は母性形成に肯定的に関与し、第1因子（家族関係因子）は否定的因子として関与する。

キーワード：思春期、母性形成、出産、母性性の想起