

Factors affecting the first-born child's attitude toward the second child in Shanghai

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Abstract. – OBJECTIVE: This study aimed to investigate factors associated with the attitude of the first-born child (FBC) towards the birth of the second child in China, in order to provide guidance for the preparation of a multi-child family.

SUBJECTS AND METHODS: A questionnaire, including requesting information for gender, age, health, parents' education and household income, was randomly distributed participating FBCs. The anxiety level, psychological, emotional and behavioral manifestations of the FBCs were evaluated. F-test and t-test were performed to identify significant factors associated with the FBC's attitude towards the second child. Out of the 65 surveys distributed, 61 were recovered and analyzed.

RESULTS: Our analysis indicated that female FBCs (total score vs. male, 45.38 ± 4.02 vs. 42.95 ± 4.29 , $p=0.031$) with parents of higher education ($p=0.020$ in psychological and $p=0.025$ in behavioral manifestations) were in general more receptive to the second child. The FBC's health, school years and household income were not significant factors associated with their attitude towards the second child ($p>0.05$). Our analysis also found that the FBC's attitude towards the arrival of the second child was largely positive, and older children with parents of higher education were more likely to be receptive to the second child.

CONCLUSIONS: The findings of this study could provide guidance for parents to better prepare the psychological, emotional and behavioral states of the FBCs and family, enabling the FBCs with a positive attitude towards the second child. This finding is instrumental to promote a harmonious family atmosphere and growth environment for both the first- and second-born children.

Key Words:

Second-born child, Demography, Family-planning, Sibling relationship.

Introduction

For nearly three decades, the one-child policy has been enforced in China, leading to a rapid deceleration of the population growth in the country. The deteriorating effects of the one-child policy have begun to manifest, such as the growing proportion of elderly population, the lack of young labor force and economic drive, etc¹⁻³. Thus, the "two-child policy", which lifts the second child's restriction, has come into effect since 2015, with the purpose of encouraging families to have more children⁴.

However, one of the challenges faced by the childbearing age adults is the distant memory of multi-child families. In addition, knowledge concerning the psychological, emotional, economic and behavioral preparations for the second child is insufficient, especially in the newly developed socioeconomic environment of China⁵. Moreover, the first-born child (FBC) would need to experience a transition from care receiver to caregiver. This role change not only inevitably alters the entire family structure, but also brings psychological shock to the FBC to some extent⁶. Facing the arrival of the second child, the FBC encounters challenges in personality, psychology and social values, such as self-centeredness, family responsibility, etc⁷⁻⁹. Moreover, many families are still struggling with psychological problems with their FBC. Together, these issues have caused many family conflicts, and it is necessary to investigate the factors associated with the FBC's attitude towards the second child to provide better nursing practices for the preparation of the second child¹⁰.

Herein, this study adopted a survey-based approach to investigate the factors associated with

the attitude of the FBCs towards the second child. Questionnaires were distributed to school-age FBCs to collect data on their gender, health conditions, parental education, household income, etc. The results of the survey could provide guidance for parents to prepare the psychological, emotional and behavioral states of the FBCs and the family to enable the FBCs with a positive attitude towards the second child. This finding is instrumental to promote a harmonious family atmosphere and growth environment for both the first- and second-born children.

Subjects and Methods

Subjects

This study was approved by the Ethic Committee of Shanghai Jiao Tong University Affiliated Sixth People's Hospital. Eligible subjects were school-age FBCs (who were in primary school, middle/high school, college, or graduate school), who had or would (whose mother was pregnant at the moment of study) have a younger sibling in the family. Consents were obtained from the parents. Inclusion criteria included: (1) both parents were birth parents, and not divorced; (2) participants and their parents were informed about the purpose and method of this research; (3) participants were healthy, capable of autonomous communication and willing to communicate with the medical staff; (4) participants had basic reading comprehension skills.

Survey Design

The survey questionnaire was divided into three sections: (1) general information of the survey: a self-reported questionnaire which mainly included gender, age, household income, health status, parental education, etc.; (2) self-reported attitude questionnaire (**Supplementary Information**), which investigated the cognitive, emotion, and behavioral levels of the child; (3) anxiety analysis based on self-assessment scale (SAS, **Supplementary Information**) which consisted of 20 items with the score ranging from 0 to 80 (a high score indicated more anxiety - a score of >50 indicated an anxiety symptom).

Data Collection

The questionnaires were distributed and collected on the spot by investigators who were uniformly trained to ensure that each questionnaire was answered independently, and any omissions

were noted in time. A total of 65 copies were randomly distributed and 61 were recovered with a recovery rate of 93.85%.

Statistical Analysis

The data were processed by SPSS 20.0 (IBM Corp., Armonk, NY, USA) statistical software. General information of the FBCs was described by frequency distribution and composition ratio. The data on the scores of the FBC's attitude towards the second-born child were considered normal distribution. The difference was considered statistically significant with $p < 0.05$.

Results

Subject Characteristics

The demographic information of the subjects is summarized in Table I. A total of 65 questionnaires were distributed to FBCs of school age and 61 were recovered (recovery rate 93.85%). Most of the subjects were female (39 out of 61 subjects). A large amount of the children was above the age of primary school (i.e., middle/high school, and college) and only four of the subjects were in primary school. The subjects were mostly healthy and belonging to middle-class/wealthy families. The highest educational degrees of their parents were mostly middle/high school or college. The FBCs in the study felt generally happy (48 of 61 subjects), and they described their relationship with their parents as "close friends" (22/61), "role model" (21/61), "parents" (7/61) and "loving brother/sister" (11/61).

Anxiety Level of the FBCs

The average score of the anxiety scale for the 61 older children was 46.26 ± 3.44 , which was <50 points, indicating no anxiety in general. Table II is a summary of the anxiety scores of FBCs with scores <50 (group 1) and >50 (group 2). Only 5 subjects were in group 2 and the two groups showed significant difference between their scores ($p=0.040$, Table II).

Factorial Analysis of the FBC's Attitude Towards the Second Child

The survey examined three aspects of the FBCs, including psychological, emotional and behavioral status to evaluate their attitude towards the second child. The score of the 61 subjects was 44.51 ± 4.25 , with the psychological score at 9.16 ± 1.45 , emotional score at 16.70 ± 2.19 , and be-

Table I. Characteristics of the first-born child (N = 61).

Characteristics		Number (n)	Percentage (%)
Gender	Male	22	36.1
	Female	39	63.9
Age (School year)	1-6 grade	4	6.6
	7-9 grade	19	31.1
	High school	32	36.1
	College	16	26.2
Physical condition	Excellent	25	41.0
	Average	32	52.5
	Poor	4	6.6
Household income	Low	10	16.4
	Middle class	36	59.0
	Wealthy class	15	24.6
Parental education	Primary school	5	8.2
	Middle or high school	26	42.6
	College	27	44.3
	Graduate school	3	4.9
Feeling of happiness	Yes	48	78.7
	No	13	21.3
Roles played	Intimate friend	22	36.1
	Role model	21	34.4
	Parents	7	11.5
	Caring brother/sister	11	18

Table II. Anxiety level of the first-born child (*t*-test) (N = 61).

	N	Mean	SD	SEM	<i>t</i>	<i>p</i> -value
Total anxiety score	56	45.68	2.91	0.389	-5.377	0.040
No anxiety	5	52.80	1.48	0.663		

behavioral score at 18.64 ± 2.72 . We first investigated how the FBC's school year affected their attitude towards the second child (Table III). Our findings indicated that there was no statistically significant difference in their attitude among those in primary school, middle/high school and college ($p > 0.05$), although FBCs of higher school years generally demonstrated higher psychological and emotional scores. In terms of behavioral score, we were surprised to find that FBCs in high school demonstrated the highest score among all age groups. There was no statistically significant difference in the FBC's attitude towards the second child in terms of either household income

(Table IV) or health status (Table V) ($p > 0.05$). There was no clear trend linking higher wealth with improved attitude of FBCs towards the second child, either (Table VI).

However, statistically significant differences were found in the FBC's gender (Table VII) and parental education levels (Table VIII). Female FBCs (total score vs. male, 45.38 ± 4.02 vs. 42.95 ± 4.29 , $p = 0.031$) with parents having a higher education level ($p = 0.020$ in psychological and $p = 0.025$ in behavioral manifestations) were in general more receptive to the second child. Post-hoc analysis (Table VIII) suggested that FBCs with parents having a primary school education

Table III. First-born child's attitude towards the second child (child's school year covariate).

	Primary school (n = 4)	Middle school (n = 19)	High school (n = 22)	College (n = 16)	F	<i>p</i> -value
Psychological score	10.00 ± 1.16	9.21 ± 1.18	8.91 ± 1.37	9.25 ± 1.89	0.683**	0.566
Emotional score	17.50 ± 3.11	16.95 ± 1.96	16.23 ± 2.45	16.88 ± 1.93	0.620**	0.605
Behavioral score	18.50 ± 1.29	18.53 ± 3.08	19.23 ± 2.35	18.00 ± 3.03	0.640**	0.593
Total score	46.00 ± 4.16	44.68 ± 4.55	44.36 ± 4.32	44.13 ± 4.15	0.218**	0.884

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Table IV. First-born child's attitude towards the second child (household income covariate).

	Poor (n = 10)	Middle class (n = 36)	Wealthy (n = 15)	F	p-value
Psychological score	9.60 ± 1.17	8.89 ± 1.53	9.53 ± 1.36	1.617**	0.207
Emotional score	17.80 ± 2.66	16.39 ± 2.16	16.73 ± 1.83	1.657**	0.200
Behavioral score	18.80 ± 2.39	18.89 ± 2.93	17.93 ± 2.43	0.667**	0.517
Total score	46.20 ± 4.02	44.17 ± 4.36	44.20 ± 4.14	0.945**	0.395

Table V. First-born child's attitude towards the second child (child's health covariate).

	Well (n = 25)	Average (n = 32)	Poor (n = 4)	F	p-value
Psychological score	9.36 ± 1.68	9.06 ± 1.32	8.75 ± 0.96	0.461**	0.633
Emotional score	16.84 ± 2.27	16.44 ± 2.23	18.00 ± 0.82	0.982**	0.381
Behavioral score	18.40 ± 2.65	18.75 ± 2.78	19.25 ± 3.30	0.218**	0.805
Total score	44.60 ± 4.32	44.25 ± 4.43	46.00 ± 4.45	0.304**	0.739

Note: **p < 0.01.

Table VI. First-born child's attitude towards the second child (gender covariate).

	Male (n = 22)	Female (n = 39)	F	p-value
Psychological score	8.86 ± 1.58	9.33 ± 1.36	1.485**	0.228
Emotional score	16.18 ± 2.13	17.00 ± 2.20	1.989**	0.164
Behavioral score	17.91 ± 3.38	19.05 ± 2.21	2.543**	0.116
Total score	42.95 ± 4.29	45.38 ± 4.02	4.890**	0.031

Table VII. First-born child's attitude towards the second child (parents' education covariate).

	Primary school (n = 4)	Middle/high school (n = 19)	College (n = 22)	Graduate school (n = 16)	F	p-value
Psychological score	7.60 ± 1.52	9.35 ± 1.52	9.11 ± 1.09	10.67 ± 2.08	3.561**	0.020
Emotional score	17.60 ± 1.82	16.73 ± 2.13	16.74 ± 2.30	14.67 ± 2.08	1.153**	0.336
Behavioral score	19.40 ± 1.82	17.88 ± 2.89	19.56 ± 2.44	15.67 ± 0.58	3.369**	0.025
Total score	44.60 ± 3.21	43.96 ± 4.36	45.41 ± 4.23	41.00 ± 4.36	1.242**	0.303

Table VIII. Post-hoc analysis of the parental education.

Factor	(I) Parental education	(J) Parental education	SD (I-J)	SEM	p-value
Psychological readiness	Primary school	Middle/high school	-1.746*	0.667	0.011
		College	-1.511*	0.665	0.027
		Graduate school	-3.067*	0.998	0.003
	Middle/high school	Primary school	1.746*	0.667	0.011
		College	0.235	0.375	0.534
		Graduate school	-1.321	0.833	0.119
	College	Primary school	1.511*	0.665	0.027
		Middle/high school	-0.235	0.375	0.534
		Middle/high school	-1.556	0.832	0.067
	Graduate school	Primary school	3.067*	0.998	0.003
		Middle/high school	1.321	0.833	0.119
		College	1.556	0.832	0.067

Note: *p < 0.05.

level had significantly lower scores than those with higher education level (*vs.* middle/high school, $p=0.011$; *vs.* college, $p=0.027$; *vs.* graduate school, $p=0.003$).

Discussion

In planning for and nursing the second child, the education and care of the FBC must not be ignored, since it would directly affect the attitude of the FBC towards the second child. While supporting the second child, the FBC may develop increasingly negative attitude towards the second child, which is detrimental for the well-being of both children. Awareness of the challenges in preparing the psychology, emotion and behaviors of the FBC for the second child is of great necessity.

Here we chose our study subjects among FBCs of school age, because they do not have yet the ability to live independently and still need to rely on their parents. After the second child is born, most of the family's attention is focused on the second child and the FBCs often feel the loss of attention¹¹. The emotions of the FBCs in this period are the most vulnerable. In addition, school children are easy to convene, which is conducive to the high recovery rate of the survey.

The average anxiety score of the 61 FBCs was 46.26 ± 3.44 , indicating no overall anxiety (score of <50). Only 5 of the FBCs showed mild anxiety. However, given that the average anxiety score of Chinese population is 29.78 ± 10.07 ¹², the anxiety score among the investigated FBCs was high, which was a concerning sign. This may be caused by the fact that the parents shift their attention to the second child. This may bring a tremendous sense of loss, panic, unfairness, and insecurity to the FBC. Common consequences may include declined academic performance, decreased interest, emotional instability, and even behavioral degradation, which increase the educational burden of parents¹³.

Our data showed that most of the FBCs expressed a positive attitude towards the arrival of the second child (Table I). FBCs of early age generally demonstrate better attitude towards the second child because the lack of playmates in their early age may have caused loneliness and isolation, and the desire for company remains high. In addition, FBCs from elementary school have not yet formed mature self-thinking, and thus their ideas are more malleable, and they

are more willing to agree with their parents¹⁴. However, as they grow older, they may gradually enter a period of rebellion and self-centeredness, decreasing their desire to accept the second child^{15,16}.

Our study showed that female FBCs had significantly higher scores than male FBCs ($p < 0.05$), indicating that female FBCs were more receptive to the arrival of the second child. This finding is consistent with traditional gender roles. For instance, parenting is highly valued as a feminine trait^{17,18}. Females are also more compassionate and inclusive than males and are better caregivers. Females also tend to have more positive attitude towards weak and needy people, thus are more likely to show the willingness to accept the second child¹⁹.

We also found that, in families with higher parent educational levels, the FBCs were more likely to accept the arrival of the second child. It is suggested that the more educated parents are, the more emotional support they could bring to their children. In contrast, parents with inadequate education tend to give their children more punishment, rejection, denial and less independence. Moreover, parents with higher education are more aware of the shocks to the FBC while bringing in the second child; therefore, they could tackle problems with FBCs early^{20,21}.

Analysis of the survey data showed that health conditions and household income were not significant factors associated with the attitude of the FBCs towards the second child. Together, these data have pinpointed education as the essential issue parents should focus on in preparing for and nursing the second child. Some educational strategies may be adopted to improve the attitude of the FBCs towards the second child: (1) parents should balance their attention between the FBC and the second child, and timely detect any abnormality of the FBC; (2) facing with bad behaviors of the FBC, they should not blame him/her, but instead focus on better communication, providing more care and emotional support; (3) they should allow the FBC to participate in the process of nursing the second child and educate the second child to follow the FBC as a role model, which could increase the confidence of the FBC and guide him/her to pay more attention to words and deeds; (4) parents can guide the FBC to treasure the growth of a new life, recall the process of gestating themselves, and emphasize the joy of company.

Conclusions

Through this survey, we found that the FBC's age, health, and family income were not significant factors associated with their attitude towards the second child. FBCs who were female and with higher parent educational levels showed better attitude towards the second child. Therefore, in the clinic, the nursing staff, faced with distressed parents preparing for the second child, can guide them to pay more attention to the education of the FBC and cultivate a harmonious family support system.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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Authors' Contribution

Data collection and analysis: Cuiqin Huang, Wei Han and Sanlian Hu; Study designed and manuscript writing: Sanlian Hu. All authors approved the final submission.

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