



## Retrospective Study

# Survey and clinical considerations of gender identity in lower primary school children

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## Abstract

### BACKGROUND

Gender consciousness directly affects the development of gender identity, which is a continuous and lifelong process. Meanwhile, hospitalization is a part of many children's lives and has an impact on their gender development.

### AIM

To investigate the current situation of gender identity in lower primary school children by conducting a survey of 202 hospitalized children in the lower grades and to provide a theoretical basis and foundation for the cultivation of gender identity and medical treatment of children based on the results. This study aims to inspire clinical medical staff to scientifically and reasonably arrange hospital wards for lower primary school children and pay attention to gender protection during the medical treatment process and to help children shape a unified and clear gender identity, which will enable them to better integrate into society and promote their personality development.

### METHODS

The gender consciousness scale for elementary and middle school students was

used for the survey.

## RESULTS

Gender identity was already present in lower primary school children. The children's gender roles and gender equality consciousness were strong, exceeding the critical value, but their gender characteristics, gender identity, and gender ideal consciousness were weak. Children aged 6 had the weakest gender identity, and girls had significantly stronger gender identity than boys.

## CONCLUSION

Gender identity is already present in lower primary school children, providing a basis and inspiration for the cultivation of gender identity and medical treatment of lower primary school children. Clinical medical staff should be aware of and understand these results and should scientifically and reasonably arrange hospital wards for lower primary school children.

**Key Words:** School-age children; Gender consciousness; Gender identity; Hospitalization; Gender weakening

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**Core Tip:** Investigate the gender consciousness of hospitalized elementary school children and their current development status from a social gender perspective. Enable children to better integrate into society and promote the development of their personality and sound gender consciousness.

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## INTRODUCTION

Gender consciousness is one of the important aspects of self-awareness, which refers to the perception and understanding as a member of a certain gender of the group's situation in the social system and structural domain and the identification, evaluation, and inclination to act based on this information[1,2]. Gender consciousness directly affects the development of gender identity, which is a continuous and lifelong process. Researchers believe that biological factors guide and restrict the development of males and females, and social factors also play an important role in the process of individuals' formation of gender roles[3]. Physiological and social factors interact to determine individuals' gender consciousness and role identity[4]. Currently, research on gender consciousness in China mainly focuses on adult women, with less attention given to children and even less to hospitalized children[5]. Hospitalization is a part of many children's lives and has an impact on their gender development. In clinical practice, the random allocation of hospital rooms for children and the lack of privacy curtains during examinations overlook the important influence of individual gender factors on children, although these factors have an undeniable impact on children's identity formation. This study aims to investigate the gender consciousness of hospitalized elementary school children and their current development status from a social gender perspective. Based on this, this study proposes scientific and reasonable recommendations and strategies for hospitalization and provides timely interventions and guidance to help children shape a unified and clear gender orientation. This will enable children to better integrate into society and promote the development of their personality and sound gender consciousness.

### Problem statement

Despite enormous changes in social development, the stereotypical understanding of gender that has been ingrained in people's minds still affects and dominates individuals' related cognition and behavior. For example, in home decoration, boys' rooms are often blue or green, while girls' rooms are pink or orange[6]. However, when children are hospitalized, health care workers weaken their gender identity by placing boys and girls in the same ward. This gender-neutral arrangement can weaken a child's consciousness of his or her own gender, create confusion in the child's psychological and gender identity, and lead to a nondifferentiated understanding of the same sex and the opposite sex. Especially in the early years of schooling, children have not yet mastered complex classification skills, and gender-neutral arrangements that weaken gender identity increase their gender-biased thinking, hindering their exploration of all potential and comprehensive development and affecting their physical and mental health. Erikson's theory of personality development considers the influence of biology on individual development and incorporates the impact of culture and society. Erikson suggests that individuals' growth process is influenced by physiological, psychological, and social events, and interaction with the surrounding environment plays a dominant role in personality development[2]. Currently, hospitals do not give sufficient attention to gender consciousness, such as bed arrangements and privacy protection. Although these

phenomena are often overlooked, they create direct or potential obstacles to individuals' personal development, such as patients' personality development and gender identity. Especially for younger children who have not yet mastered complex classification skills, such arrangements weaken their gender identity and increase gender-biased thinking, which has a significant impact on their psychological and behavioral development and hinders their development of a healthy gender identity.

## MATERIALS AND METHODS

### Objects

This study was approved by the Hospital Ethics Committee. The inclusion criteria were as follows: (1) Age:  $6 \leq Y < 10$ ; and (2) hospitalization for at least 2 d. The exclusion criteria were as follows: (1) Single room admission; (2) patients with mental disorders who could not communicate; (3) patients with unstable vital signs; and (4) patients with significant organ dysfunction. From August to September 2022, a convenience sampling method was used to select eligible children from a pediatric hospital in Zhejiang Province as the study subjects.

### Methods

**Survey tools:** General information survey tool: Based on a literature review, the researcher designed a general information survey form for the children, including gender, age, grade, whether they were only children, family structure, personality, and current home address.

Gender consciousness scale: Referring to the gender consciousness scale for elementary and middle school students in the research conducted by Huang Fengjuan in Taiwan, this scale includes five dimensions: Gender identity, gender ideals, gender traits, gender roles, and gender equality. A total of 36 items are rated on a 5-point Likert scale, with 1 to 5 representing strongly agree, agree, neutral, disagree, and strongly disagree, respectively. The gender identity dimension includes Items 1, 6, 11, 16, 21, 23, and 28; the gender ideals dimension includes items 2, 7, 12, 17, 24, 29, and 33; the gender traits dimension includes items 3, 8, 13, 18, 25, 30, and 34; the gender roles dimension includes items 4, 9, 14, 19, 22, 26, 31, and 35; and the gender equality dimension includes items 5, 10, 15, 20, 27, 32, and 36. The scores of the 36 items are summed and divided by 36 to obtain the overall average score of the participant's gender consciousness, which represents the overall level of gender consciousness. The score of each dimension is calculated by adding the scores of each item in that dimension and dividing.

### Data collection methods

Based on the principle of voluntariness, we obtained the consent and cooperation of medical parents and strictly selected research subjects according to the inclusion and exclusion criteria. The researchers explained the purpose, significance, and questionnaire content of the survey to the research subjects in a unified manner. After obtaining consent, the research subjects completed an online electronic questionnaire. After completing the information, the questionnaires were checked one by one on the spot and collected. A total of 202 questionnaires were distributed in this survey and 202 valid questionnaires were collected, with an effective recovery rate of 100%.

### Statistical methods

The original data were input into Excel and imported into SPSS 20.0 software for data analysis. The analysis methods included descriptive statistics, independent sample *t* tests, analysis of variance, and multiple comparisons. A significance level of  $P < 0.05$  was accepted to denote significance.

## RESULTS

### General analysis of the children

This study investigated the gender consciousness status of 202 hospitalized children in the early grades of primary school and conducted statistical analysis on the scores of various dimensions of gender consciousness. The specific information of the basic sociodemographic characteristics of the 202 hospitalized children is detailed in [Table 1](#). There were 95 girls and 107 boys. In terms of age, there were 15 children aged 6 years (6.0 years to 6 years and 11 mo), accounting for 7.4% of the total sample; 65 children aged 7 years (7.0 years to 7 years and 11 mo), accounting for 32.2% of the total sample; 100 children aged 8 years (8.0 years to 8 years and 11 mo), accounting for 49.5% of the total sample; and 22 children aged 9 years (9.0 years to 9 years and 11 mo), accounting for 10.9% of the total sample. From the perspective of grade distribution, the number of students in the first to third grades was roughly the same, with the second grade having the most students, accounting for 86.1% of the total number. With regard to whether the participants were only children, non-only children accounted for 56.9%. With regard to the children's family structure, children who were mainly cared for by parents accounted for the majority (57.9%), which is related to the current family structure still being dominated by nuclear families. With regard to the children's personality type, extraverted personality types accounted for the majority (57.4%). With regard to the children's current residential address, 194 children (96%) lived in urban areas, which is related to the location of the study, a first-tier coastal city in the eastern region.

**Table 1 Basic demographic and social characteristics of school-aged children in lower grades (mean  $\pm$  SD), *n* (%)**

Social demographic characteristics	Total	Male	Female	F/ $\chi^2$	P value
Age				0.993	0.803
6 $\leq$ Y < 7	15 (7.4)	9 (4.5)	6 (3.0)		
7 $\leq$ Y < 8	65 (32.2)	32 (15.8)	33 (16.3)		
8 $\leq$ Y < 9	100 (49.5)	53 (26.2)	47 (23.3)		
9 $\leq$ Y < 10	22 (10.9)	13 (6.4)	9 (4.5)		
Grade				0.830	0.660
First grade	25 (12.4)	15 (7.4)	10 (5.0)		
Second grade	174 (86.1)	90 (44.5)	84 (41.6)		
Third grade	3 (1.5)	2 (1.0)	1 (0.5)		
Only child				0.352	0.553
Yes	87 (43.1)	44 (21.8)	43 (21.3)		
No	115 (56.9)	63 (31.2)	52 (25.7)		
Family structure				0.079	0.962
Nuclear family	182 (90.1)	97 (48.0)	85 (42.0)		
Large family	4 (2.0)	2 (1.0)	2 (1.0)		
Single parent family	16 (7.9)	8 (2.5)	8 (2.5)		
Character				2.917	0.233
Introversion	55 (27.2)	25 (12.4)	30 (14.9)		
Extroversion	116 (57.4)	62 (30.7)	54 (26.7)		
Other	31 (15.3)	20 (9.9)	11 (5.4)		
Current home address				3.820	0.148
City	194 (96.0)	105 (52.0)	89 (44.1)		
Countryside	5 (2.5)	2 (1.0)	3 (1.5)		
Town	3 (1.5)	0 (0.0)	3 (1.5)		

### Gender consciousness scores of primary school children in the early grades

As shown in [Table 2](#), the overall average score of gender consciousness of primary school children in the early grades was 2.80, slightly lower than the critical value of 3, indicating that the gender consciousness of primary school children in the early grades was at a medium to low level. The scores for gender roles and gender equality were 3.03 and 3.32, respectively, which were higher than the medium critical value, indicating that the gender role and gender equality consciousness of primary school children in the early grades were relatively strong. The average scores for gender identity, gender ideals, and gender traits were slightly lower than the critical value, indicating that the level of gender consciousness of primary school children in the early grades in these three dimensions was at a medium to low level.

### Gender consciousness of primary school children in the early grades of different genders and ages

[Table 3](#) of this study shows the independent-sample *t* tests on the gender consciousness scores of primary school children in the early grades from a gender perspective. The results show that there were significant differences between male and female children in the five dimensions of gender identity, gender ideals, gender traits, gender roles, and gender equality ( $t = -4.250$ ,  $t = -3.207$ ,  $t = -3.487$ ,  $t = -2.695$ ,  $t = -3.120$ ,  $P < 0.05$ ), indicating that female children had significantly stronger gender consciousness in the five dimensions. This result is consistent with the widely held belief that girls mature earlier than boys[7].

Based on Erikson's theory of personality development, most researchers have focused on adolescents, and there is a lack of systematic research on the expression and education of gender consciousness in children of different ages[8]. The primary school stage is a crucial period for shaping and developing children's gender consciousness and laying the foundation of their personality development[9]. During this period, the shaping and development of children's gender consciousness greatly affect their personality traits as adolescents as well as their self-consciousness of gender-related issues[10]. According to [Table 4](#), there was no significant difference in the overall score of gender consciousness among children in the four age groups ( $P = 0.066$ ,  $P > 0.05$ ). However, there were slight differences in the scores on various dimensions. After multiple post hoc comparisons, it was found that the scores of children with leukemia aged 6 ( $6 \leq Y <$

**Table 2 Gender consciousness scores of school-aged children in lower grades**

Table of latitudes and total quantities	Number	Minimum value	Maximum value	Mean	SD
Gender identity	202	1.00	4.86	2.71	0.77
Gender ideals	202	1.00	4.00	2.45	0.59
Gender traits	202	1.00	4.43	2.50	0.66
Gender roles	202	1.38	4.63	3.03	0.67
Gender equality	202	1.86	4.71	3.32	0.56
Gender consciousness	202	1.64	4.15	2.80	0.55

**Table 3 Gender consciousness scores of school-aged and lower grade children of different genders**

Gender	Number of cases	Gender consciousness	Gender identity	Gender ideals	Gender traits	Gender roles	Gender equality
Male	107	2.66 ± 0.61	2.51 ± 0.70	2.32 ± 0.53	2.34 ± 0.62	2.91 ± 0.66	3.20 ± 0.53
Female	95	2.96 ± 0.66	2.95 ± 0.78	2.59 ± 0.62	2.66 ± 0.67	3.16 ± 0.66	3.44 ± 0.56
<i>t</i>		3.357	4.225	3.336	3.525	2.687	3.128
<i>P</i> value		0.000	0.000	0.002	0.001	0.008	0.002
95%CI		0.124-0.476	0.234-0.645	0.110-0.429	0.141-0.499	0.067-0.433	0.089-0.391

**Table 4 Gender consciousness scores of school-aged children of different ages**

Age	Number of cases	Gender consciousness	Gender identity	Gender ideals	Gender traits	Gender roles	Gender equality
6 ≤ Y < 7	15	2.52 ± 0.54	2.26 ± 0.75	2.23 ± 0.67	2.27 ± 0.57	2.59 ± 0.67	3.27 ± 0.52
7 ≤ Y < 8	65	2.86 ± 0.56	2.81 ± 0.79 <sup>a</sup>	2.45 ± 0.62	2.51 ± 0.70	3.10 ± 0.70 <sup>a</sup>	3.41 ± 0.58
8 ≤ Y < 9	100	2.84 ± 0.54	2.76 ± 0.75 <sup>a</sup>	2.49 ± 0.58	2.56 ± 0.65	3.07 ± 0.66 <sup>a</sup>	3.32 ± 0.54
9 ≤ Y < 10	22	2.63 ± 0.48	2.52 ± 0.72	2.38 ± 0.47	2.30 ± 0.65	2.90 ± 0.51	3.06 ± 0.55
<i>F</i> value		2.434	2.753	0.990	1.576	2.839	2.155
<i>P</i> value		0.066	0.044	0.399	0.196	0.039	0.095

<sup>a</sup>*P* < 0.05 vs 6 ≤ Y < 7.

7) for gender identity and gender roles were significantly lower than those of children aged 7 and 8 (7 ≤ Y < 8 and 8 ≤ Y < 9). Specifically, in terms of gender identity, the score difference between 6-year-old (6 ≤ Y < 7) and 7-year-old (7 ≤ Y < 8) children was *P* = 0.016, 95%CI: 0.104 to 0.996, while the score difference between 6-year-old (6 ≤ Y < 7) and 8-year-old (8 ≤ Y < 9) children was *P* = 0.012, 95%CI: 0.114 to 0.906. In terms of gender roles, the score difference between 6-year-old (6 ≤ Y < 7) and 7-year-old (7 ≤ Y < 8) children was *P* = 0.012, 95%CI: 0.114 to 0.906, while the score difference between 6-year-old (6 ≤ Y < 7) and 8-year-old (8 ≤ Y < 9) children was *P* = 0.010, 95%CI: *P* = 0.012, 95%CI: 0.114 to 0.906. There was no significant difference in the scores on the five dimensions among children aged 7 to 9, indicating that younger children's understanding of their gender is limited to the physiological level and that overall, their gender consciousness is relatively vague. The overall performance of gender consciousness development shows that the scores of children aged 6 (6 ≤ Y < 7) were significantly lower than the scores of children aged 7 (7 ≤ Y < 8) and 8 (8 ≤ Y < 9).

## DISCUSSION

The formation of gender identity undergoes a long process of development and has a long-lasting and profound impact on the individual[11]. Conflict between an individual's biological and social identities can lead to gender dysphoria, causing severe psychological distress and various feelings of confusion that can affect the individual's social functioning and mental health. Therefore, during this period, individuals need to determine the roles they want to assume and unify their self-perception and how they are perceived by others. The formation of gender identity and personal identification in young children in the early grades of primary school has an important impact on their personality development.



### ***Respect the development of the patient's gender identity and provide reasonable hospitalization and medical care***

The formation of gender consciousness undergoes a long developmental process and has a lasting impact on individuals. If an individual's physiological identity conflicts with his or her social identity, it can lead to gender confusion and "gender anxiety", causing severe psychological discomfort and various forms of confusion that can affect social function and psychological health. Therefore, during this period, individuals need to determine the roles they want to take on and unify their own and others' perceptions of themselves. The formation of gender identity in the personal identification of young patients in the early school years plays an important role in personality development.

Physiological and social factors interact to determine an individual's gender consciousness and gender identity. Although the overall score of gender consciousness did not differ significantly among the four groups of patients of different ages, the results showed that the gender consciousness of young patients in the early school years was at a lower-medium level. This is determined by the psychological and physiological development characteristics of the patients and is also the result of the combined influence of family and education. Young patients in their early school years have only a basic understanding of their gender identity, which mainly remains at the physiological level. Overall, their gender consciousness is relatively vague, especially for 6-year-old patients. Therefore, medical staff should respect the physiological and psychological development characteristics of young patients in their early school years and formulate specific, reasonable procedures and content that are conducive to gender education and sexual psychological health during hospitalization and medical care to implement gender-specific differences in hospitalization and medical care in a targeted manner[12]. On the one hand, we should respect the development of patients' gender identity and provide appropriate guidance to help young patients in their early school years form a healthy and reasonable gender identity. On the other hand, we should combine the requirements of national diagnosis related groups to promote the rational and efficient use of medical social insurance.

### ***Cultivating health care workers' gender concepts and emphasizing gender guidance for pediatric patients***

Hospitals are important places for gender consciousness education and subtle influence. Appropriate and reasonable gender role behavior and gender consciousness demonstrated by health care workers provide pediatric patients with role models to imitate and an environment that influences them. Medical treatment and hospitalization have an incomparable advantage in gender education activities, and conducting scientific gender education activities during hospitalization is beneficial to the cultivation of children's gender roles and lays a good foundation for adolescent sex education. In this study, we found that the consciousness of gender traits in pediatric patients is relatively weak, which provides a challenge and an opportunity for health care workers. On the one hand, based on traditional gender concepts, we should recognize the differences between males and females and cultivate consciousness of gender differences in pediatric patients. On the other hand, we should overcome traditional and stereotypical gender education methods in families, such as favoring boys over girls, which have negative effects on pediatric patients. Health care workers have an obligation to treat pediatric patients differently based on gender when assigning hospital rooms, emphasizing gender role guidance, helping them establish correct gender consciousness, and distinguishing between same-sex and opposite-sex patients. This can help them understand that certain activities are only for the same sex, while others are only for the opposite sex. This can promote the combination and complementarity of gender consciousness education in medical treatment and family education and help pediatric patients establish correct gender concepts for healthy and harmonious development.

### ***Encourage reasonable opposite-sex interactions through gender-based hospitalization and guidance for pediatric patients***

This study found that pediatric patients of different ages had a strong sense of gender equality. This is related to the current social and family environment, where there is an increasing trend toward gender equality in both career development and family roles[13]. Gender equality consciousness is conducive to mutual respect among opposite-sex patients. Arranging different hospital rooms for patients based on their gender is not an acceptance of traditional harmful gender stereotypes that hold a cognitive bias of "male superiority and female inferiority". Rather, it is a concrete manifestation of respect for each other's physiological differences and the promotion of gender equality consciousness. Therefore, in clinical practice, we should guide pediatric patients to have a correct understanding of the meaning of gender equality, teach them how to interact with the opposite sex, and increase their ability to cooperate and communicate with their peers.

## **CONCLUSION**

In summary, our study found that lower grade school-age children have a low level of gender consciousness. Gender consciousness issues require more attention during children's hospitalization. In clinical practice, we should take measures to help children understand and establish correct gender concepts. At the same time, through the cultivation of gender consciousness among medical personnel and positive and indiscriminate treatment measures, we should ensure the right of children to seek medical treatment and ensure that male and female children receive equal medical resources to achieve gender equality in medical treatment. Overall, promoting gender equality in the health care sector is crucial for the healthy and harmonious development of all children.

## ARTICLE HIGHLIGHTS

### Research background

Hospitalization is a part of many children's lives and has an impact on their gender development. In clinical practice, the random allocation of hospital rooms for children and the lack of privacy curtains during examinations overlook the important influence of individual gender factors on children, although these factors have an undeniable impact on children's identity formation.

### Research motivation

Currently, research on gender consciousness in China mainly focuses on adult women, with less attention given to children and even less to hospitalized children.

### Research objectives

To investigate the current situation of gender identity in lower primary school children by conducting a survey.

### Research methods

Based on a literature review, the researcher designed a general information survey form for the children, including gender, age, grade, whether they were only children, family structure, personality, and current home address. The gender consciousness scale for elementary and middle school students was used for the survey.

### Research results

Lower grade school-age children have a low level of gender consciousness. Children aged 6 had the weakest gender identity, and girls had significantly stronger gender identity than boys.

### Research conclusions

Gender consciousness issues require more attention during children's hospitalization.

### Research perspectives

This study proposes scientific and reasonable recommendations and strategies for hospitalization and provides timely interventions and guidance to help children shape a unified and clear gender orientation.

## FOOTNOTES

**Author contributions:** Zhang YL and Pan XC conceived and designed the study; Zhang HM guided the study; Xu JX and Zhou QY collected the clinical data; Zhang YL and Wang H analyzed the data; all authors drafted and revised the manuscript.

**Institutional review board statement:** This study was reviewed and approved by the Ethics Committee of Hangzhou Children's Hospital.

**Informed consent statement:** All study participants, or their legal guardian, provided informed written consent prior to study enrollment.

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**Data sharing statement:** No additional data are available.

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