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Dreams of Tigers and Flowers: Child Gender Predictions and Preference in an Urban Mainland Chinese Sample during Pregnancy

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Abstract

In an urban, mainland Chinese sample, we investigated expectant mothers' stated gender preference for a boy or girl child, their conjectures on the fetal gender, the culture-specific beliefs for making their predictions, and their relations to sociodemographic variables. A total of 174 women were interviewed at 12–19 weeks gestation. Among 84 women who made a prediction on gender, 56 (67%) thought they were carrying a boy, and 28 (33%) expected a girl. The most frequent reasons cited for their speculation were personal feelings (36%), food/taste preference (13%), feedback from others (13%), somatic responses (13%) and dreams (7%). Out of 63 women who stated a wish for a boy or girl child, 45 (71%) wished for a girl and 18 (29%) wished for a boy. Women with undergraduate or graduate degrees were more likely to indicate a preference for boys. Older expectant mothers were more likely to report that they thought they were carrying boys. In conclusion, the majority of the women did not state a distinct choice for gender of the child. When they expressed a gender preference, more mothers expressed a desire to have a girl. However, boy child conjectures were more frequent than girl child conjectures. Greater boy child preference and prediction among the most highly educated and older expectant mothers might be reflective of implicit social status in having sons in urban China.

Keywords

Culture; Families; Pregnancy; Sex; Gender; Parenting; Folklores; Folk Beliefs; One-Child Policy

Introduction

Studies on antenatal sex ascertainment by ultrasound reveal that the majority of pregnant women in the United States, up to 75 to 81% by estimates, wish to know the fetal gender (Harrington, Armstrong, Freeman, Aquilina, & Campbell, 1996; Shipp et al., 2004; Walker & Conner, 1993). Among parents who choose not to learn the fetal gender, holding a prediction about the baby's sex is frequent, with varying degrees of conviction. Interestingly, more highly

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educated expectant mothers (greater than 12 years of education) were found to predict correctly fetal sex greater than chance (71%), compared to less educated women (43% correct)(Perry, DiPietro, & Costigan, 1999). Moreover, women whose forecasts were based on psychological criteria (feelings or dreams), as opposed to folkloric beliefs (eg. feeling if the tummy bounces like a basketball, lack of morning sickness, etc. for the prediction of a boy child), were more accurate in their predictions. First-time mothers most frequently based their predictions on feelings or intuition (61%). The next most frequent attribution among nulli- and multiparas was the way the woman was carrying the baby (30%). Dreams and the level of fetal activity were cited by 14 percent and 10 percent of women, respectively.

The attitudes, perceptions and perinatal concepts of women during pregnancy are also sensitive to sociocultural differences (Harris, Linn, Good, & Hunter, 1981), time and context (Teichman, Rabinovitz, & Rabinovitz, 1992). Most of the studies in the 1950's to 1970's demonstrated that women preferred boys (Hammer & McFerran, 1988; Markle & Nam, 1971; Westoff & Rindfuss, 1974), especially if they referred to a possibility of having only one child. However, studies from the same era and later, documented that middle class and educated women expressed less preference for sons (Hammer & McFerran, 1988; Uddenberg, Almgren, & Nilsson, 1971;Marleau & Saucier, 2002). The contexts of the family and society are also important. Among first-time expectant mothers in an Israeli sample (Teichman et al., 1992), preferences regarding fetal gender did not indicate a predominant pattern (28% preferred boys, 33% preferred girls and 38% had no preference). By the third pregnancy, however, most mothers naturally expressed a predominant preference for a child of a gender they did not have.

Son preference is entrenched in Chinese societies and is supported by pragmatic and ideological practices (Chan et al., 2002). Several studies indicate that boy child preference predominates in rural areas (Lavely, Li, & Li, 2001; J. Li, 2004, 2005; J. Li & Lavely, 2003; Zeng, 1994). In this study, we investigated expectant mothers' stated gender preference for a boy or girl child, their conjectures on the fetal gender, the culture-specific beliefs for making their predictions, and their relations to sociodemographic variables, in an urban, mainland Chinese sample. While studies on gender preference conducted in other settings have to take into account the family size and order of the children, with the ultimate size of the family being an unknown covariate, we had preset conditions in this study, due to the birth restriction rules in the context of the one-child policy in China. Even though our study did not directly examine the impact of the one-child policy, implications for the policy on gender preference and conjecture percolating to the level of individual families' percepts are important background for this study.

The 'one-child policy' has been in place since 1979 (Greenhalgh & Bongaarts, 1987; Hardee, 1984; Larsen, 1990; Wan, Fan, Lin, & Jing, 1994). The term is actually a misnomer, as the one-child rule applies to a minority of the population (Hesketh, Lu, & Xing, 2005). The situations between rural and urban areas differ greatly. In rural areas, where approximately 70 percent of the people live, a second child is generally allowed after five years due to acknowledgment of the traditional preference for boys. In some areas, having a second child is permitted irrespective of the sex of the first child. Third and fourth children are still not rare and are officially permitted for ethnic minorities and in underpopulated areas. In the cities, the one-child per family rule is strictly applied, with a few exceptions, which include the existence of a handicapping condition in the first child, minority group ethnicity, and special occupations (Hesketh et al., 2005)..

Ultrasound or chromosomal analysis for the sole purpose of identifying fetal gender is illegal under Chinese law (She, 1996), but an exemption is made if the family has a history of a sex-linked disorder. Even though it is illegal to obtain an ultrasound for sex determination, however, the high sex ratios of boys at birth are attributed mainly to the rapid and widespread diffusion

of the use of ultrasound for sex selection in the 1990's (Chen, Xie, & Liu, 2007). The sex ratio at birth remained high in both rural and urban areas in 2001, based on data collected in the Chinese National Family Planning Commission (Ding & Hesketh, 2006), but the trend may be changing in the urban areas. In that survey, 45% of respondents said the ideal family consisted of one boy and one girl. Slightly more women, in fact, expressed a preference for one girl (5.9 percent) than for one boy (5.6 percent) (Hesketh et al., 2005). A survey which included 28 women and 8 men in 4 regions of China found that 53% of interviewees expressed a preference for a balance of 1 boy and 1 girl. (Su & Macer, 2005). They expressed very favorable opinions of the effect of family planning on their health, household work, education, job opportunities, ability to earn more income and time for leisure. This sentiment is related in context to the Chinese concept of "yousheng" (translated as "quality birth"), which encapsulates investment in maintaining a premium quality of life for the child (implicitly, without regard to gender), beginning from a robust birth.

Irrespective of the actual sociocultural environment, asking for the mother's preference for the gender of the child is itself a 'loaded' question. The mother's response as to whether she would like to have a boy or girl child may be an unadulterated conveyance of her desire, or it may have incorporated her family's wishes, if not the general perspectives of the community or society. The embedding of the mother's child gender preference in the larger context of the family's desire may not occur at a conscious level. Survey data on gender preference are inevitably hampered by the ambiguity or deliberateness of mothers' responses. The sex birth ratio can cast some light on gender preference as a whole for the community or society (Biggar, Wohlfahrt, Westergaard, & Melbye, 1999; Hesketh & Xing, 2006), but it cannot tap into the families' perspectives and emotions. We chose in this study to use the mother's conjecture of fetal gender, and the contrast between conjecture and preference, to gain some insights on the perspectives of expectant mothers. The survey of mothers' conjecture of the baby's gender provides a forum for mothers to offer a speculation instead of a "wish" which may have an implicit connotation of gender bias. The gender conjecture also informs on the cultural practices used to predict the sex of the baby.

In terms of gender prediction, the historical practices in a patrilineal society, such as China, are geared toward finding out in advance if a male heir is going to arrive. Not surprisingly, calendars, horoscopes and almanacs (usually the Tong Shu, also called the Farmer's Almanac), facilitate making the prediction. When our participants refer to fortune telling, they generally use the term "suan ming," literally translated as "life calculation." This calculation may be based on the almanac, zodiac signs, astrological charts, or other tools, and could, but not necessarily involve consultation with a paid fortune teller.

In this study, we examined culture-specific avenues for predicting fetal gender, in a mainland Chinese provincial capital city where the one-child per family rule is enforced. More pointedly, we clarified if Chinese culture-specific ways of gender prediction were more frequently employed than the folk beliefs cited by pregnant women in western samples, as reported in the literature. We investigated if maternal gender preference for boys was stronger than for girls in this urban Chinese sample. Beyond asking for mother's gender preference, we examined the conjecture of fetal gender qualitatively and quantitatively (Yoshikawa, Weisner, Kalil, & Way, 2008). We investigated the associations between conjecture and preference, and between these two outcome measures and sociodemographic variables. Our hypotheses were: 1) Most mothers would not indicate a wish for a boy or girl child, but when they did, more mothers would express a wish for a boy child; 2) More mothers would conjecture that they were carrying a baby boy rather a baby girl; and 3) Mothers would broadly use culture-specific ways of fetal sex prediction, such as fortune telling or checking of the Chinese almanac.

Methods

Participants and Setting

The data were collected between October 2007 and March 2008. One hundred and seventy-four pregnant women were recruited from the main Maternal Child Health facilities in Kunming (Kunming City Maternal Child Health Hospital and Yunnan Maternal Child Health Hospital), the capital city of Yunnan Province, China. Kunming, with a metropolitan population of 4.2 million, is the only major city in a province of 43.8 million people (Yunnan Province Department of Commerce Data, 2003). The prenatal clinics in the hospitals are among the largest sources of obstetric care in the city. Potential participants responded to flyers and word of mouth (recommendations) by other participants, and all were screened for eligibility based on gestational age and residency, by brief interviews conducted by phone or in face-to-face meetings. Eligibility criteria included being between 12 and 20 weeks of gestation and being a resident of the city, which represented 42% of the clinical population. Eighty-nine percent of eligible candidates were willing to participate. Inclusion criteria were: 1) Gestational age between 12 and 20 weeks; 2) Singleton pregnancy; 3) Residence in the city; 4) No history of diabetes mellitus, hypo- or hyperthyroidism, or hypertension (to be representative of healthy women, as the overwhelming concern of women with at-risk pregnancies is expected to be the well-being, and not the gender, of the fetus); .5) Non-smoking; 6) Han (majority) ethnicity. Ninety-four percent of potential participants met all the inclusion criteria. All mothers were expecting their first child, and all were wanted pregnancies. We did not encounter participants with a family history of a sex-linked disorder.

One-hour appointments were made with participants, and the interviews were conducted in closed rooms to maintain privacy and confidentiality. Trained interviewers bilingual in Chinese and English conducted the interviews using Mandarin or the local dialect. The responses were written in Chinese, and were translated and back-translated for accuracy.

This collaborative research was approved by the Human Subjects Protection Committees of UCLA and Kunming Medical College. Signed informed consent was obtained from all participants.

Procedure

Pregnant women who agreed to participate were interviewed and requested to complete questionnaires. Data on sociodemographic variables were obtained from the participants. Prior to the questions related to fetal gender, the interviewer built rapport with the participants by conversing with them and gathering the sociodemographic data.

Survey on gender wish and conjecture

For this survey, the women were asked if they were wishing to have a boy or girl child. They were then asked about their husband's wish, i.e. whether they thought their husband was wishing to have a baby boy or girl. They were asked what they thought about the husband's wish irrespective of whether they themselves had expressed a wish for a boy or girl, i.e. if they had reported that they just wished for a healthy child, or it did not matter to them if the baby were to be a boy or girl, the interviewer proceeded with asking the participant about her thoughts on her husband's wish. For the gender conjecture, the participants were asked if they thought they were pregnant with a boy or girl child. The responses to these questions were recorded by the interviewer on a nominal scale with the choices of boy, girl, or don't know/no preference. For those who had a gender speculation, they were asked what made them believe that they were having a boy/girl. This response was recorded verbatim. Participants were then asked how strongly they believed they were pregnant with a boy or girl with the following choices on a Likert scale: Not convinced, slightly convinced, moderately convinced, or very convinced.

Similarly, strength of maternal wish and maternal conviction of husband's wish for the baby's gender were recorded on 4-point Likert scales. The Cronbach's alpha coefficient was examined for the following six items: 1) Maternal wish for the baby's gender; 2) Strength of maternal wish; 3) Maternal conjecture of baby gender; 2) Strength of maternal conjecture; 4) Maternal thought of husband's wish for the baby's gender; 6) Strength of maternal conviction of husband's wish. The Cronbach's alpha coefficient was 0.71, suggesting satisfactory internal consistency.

Qualitative analysis of the explanations for women's gender predictions

Participants' verbatim explanations for their stated fetal gender conjecture were analyzed using constant comparative method (Strauss and Corbin, 1998). To develop the preliminary coding scheme, two coders coded a subset of transcripts line-by-line. The bilingual investigators, two interviewers, and two coders met as a group to identify recurrent themes related to maternal gender predictions. Similar concepts were grouped into conceptual categories before arriving at consensus on the final coding framework. Arranged by order of frequency, from highest to lowest, with examples for each category given in the parentheses, the themes were as follows: 1) Feeling or intuition or prediction (eg. "From my feelings, but it's hard to describe in total why"); 2) Food or taste preferences (eg. "I have not liked sour tasting food in the past, but now I do"); 3) What others said (eg. "People in my surroundings say it's a boy"); 4) Somatic reason, referring to body condition or reactions (eg. "My body condition is good - it feels like a boy"); 5) Fortune Telling/Almanac Prediction (eg. "My father used the almanac and predicted a girl child"); 6) Dream ("Dreaming of snakes is a sign for having a boy child; dreaming of flowers is a sign of having a girl child"); 7) Body Image-Related (eg. "My bottom protrudes out, but my belly remains small, and it does not protrude"; "Because I turned ugly after I became pregnant, it is going to be a boy"); 8) Family history ("My brothers and sisters all have boys. My probability of having a boy should be lower. I think it should be a girl"); 9) Emesis (eg. "Seems like a girl from the vomiting"); 10) Traditional Chinese medicine consultation; and 11) Referral to reading from a book. The last two themes were cited by only 2 women. Following the identification of the themes, the two coders assigned numerical codes based on the themes to the participants' responses in the dataset. Inter-rater reliability in coding the themes according to the participants' verbatim explanations for their stated fetal gender conjecture, was 96%. For example, if the participant said, "I believe I am going to have a boy, because there are so many boys in my husband's family," the code for family history theme was assigned. If the coders had discrepancies or difficulties in identifying the predominant theme, these were clarified in a meeting with the whole team of investigators, coders and interviewers.

Data Analysis

Descriptive statistics were computed using mean and standard deviations for continuous data and frequencies for nominal data. Cross-tabulations with chi-square tests were used on boy-girl dichotomized maternal gender wish, mother-reported paternal gender wish and gender conjecture. T-tests were used for comparison of means between two groups (eg. gender wish and gender conjecture) based on continuous variables when appropriate. Mann-Whitney U test was used in bivariate analyses involving the family income levels, as they were not normally distributed. We constructed separate multiple logistic regression models to examine gender preference and gender predictions in relation to maternal age, gestational age, log-transformed family income (income), and maternal educational attainment of bachelor's degree or above (education). The selection of these variables was based on the bivariate associations which had p-values of less than 0.05, previous research findings and a priori theoretical assumption. In our multivariate analysis we considered the following interaction terms: maternal age x income, maternal age x education and education x income. Backward elimination was used to construct each multivariate model, where variables were considered for elimination if their F-test p-value

exceeded a 0.1 threshold. If more than one variable exceeded the threshold, the variable with the largest p-value was eliminated, and then this procedure was repeated on the smaller model. Model selection stopped when all variables had F-test p-values exceeding the 0.1 threshold. In the event in which a final model consisted of more than one variable, model fit was assessed from the R^2, residual plots and Cook's distance. A two-tailed p value of <0.05 was used to assess significance. All statistical analyses were performed using SPSS for Windows (version 16.0) software.

Results

All participants were married (none was divorced or re-married) (Table 1). The income levels ranged from 4,000 RMB (US $563) to 510,000 RMB (US $71,830) per annum. Maternal age (20–38 years) and paternal age (23–43 years) had a wide range. The majority of mothers (63%) had attained university or vocational college level of education. China has a compulsory education law for at least 9 nine years of education.(statute was passed on July 1, 1986), which is generally in effect in urban areas, but has proved elusive to parts of the rural population. While the majority of the parents did not live with other people in the household, there were 37 (21%) couples who did. Two of these families had children under 16 living in the same house or apartment.

A total of 111 (63.8%) who did not state a preference for a boy or girl child. All of them stated that it did not matter as to what the gender of the child would be, as opposed to stating that they could not, or would not, guess, or simply did not know. One hundred and four mothers gave an explanation for the stated preference or why it did not matter to them. All the explanations were consistently along the lines of "As long as the infant is healthy, I would be happy" or "The sex of the baby does not matter to me." Only one mother, who stated a girl child preference, said that she herself would prefer to have a girl child, but her husband's desire is for a boy child. Out of 63 women who expressed a wish for boy or girl, 45 (71%) wished for a girl and 18 (29%) wished for a boy. More women (n=103) offered an opinion as to what their husband's preference were, compared to the number who stated a preference for a boy or girl child (n=71). Among 93 mothers who expressed what they believed to be their husband's preference, 54 (58%) thought their husbands wanted a boy. Bivariate analyses (Table 2) did not reveal significant differences in family income, mother's age, gestational age, and number of people living in the same household, between mothers who indicated a wish for having a boy and those who expressed a wish for having a girl. Chi-square test revealed no association between mother's wish for a boy or girl child, and having educational attainment above high school (vocational college, undergraduate or graduate school education). However, when maternal education was dichotomized according to maternal educational of at least a bachelor's degree, the chi-square test performed on gender preference (boy/girl wish) and maternal educational attainment (bachelor's degree and above/below bachelor's level) revealed a statistical significant association ($p<0.05$). Specifically, women with at least bachelor's level education were more likely to indicate a preference for a boy child.

In terms of conjecturing whether the fetus was male or female, 90 (52%) of the expectant mothers did not have a conjecture (they did not venture a guess), 56 (32%) thought they were carrying a boy, and 28 (16%) thought they were carrying a girl. When asked about the strength of conviction in their prediction of the fetal sex, 14 (17%) had no conviction in their prediction (i.e. it was purely a guess), 23 (28%) had a slight conviction, 37 (44%) had a moderate conviction and 9 (11%) had a high strength of conviction. Independent t-test did not show a difference in strength of conviction between those who conjectured having boys and those who conjectured having girls.

Bivariate analyses (Table 3) did not reveal significant differences in family income, father's age, number of people living in the same household, and gestational age between mothers who conjectured having boys and those who conjectured having girls. However, by Student's t-test, the mean age of mothers (28.6 ± 2.6 vs 27.2 ± 3.1 years) who conjectured having boys were significantly higher than those who conjectured having girls ($p<0.05$). Cross-tabulations with chi-square tests on dichotomized variables revealed no association between conjecture and attainment of above high school education or having a bachelor's or more advanced degree.

The most frequent reasons cited for maternal speculation about the gender of the fetus were intuition or personal feelings (36%), food/taste preference (13%), feedback from other people (13%), somatic responses (13%), dreams (7%), and fortune telling (6%) (Table 4).

Multivariate logistic regression analyses did not identify additional significant variables among those described in the Data Analysis section. Maternal education remained moderately significantly associated in the full model with gender preference (p-value = 0.048), and maternal age was moderately significant in the full model with gender prediction (p-value = 0.068). Furthermore, maternal education was the only variable retained by the backward elimination procedure for factors associated with gender preference. Similarly, maternal age was the only variable retained in the gender prediction model.

Conclusions

The sample in our study consisted of expectant mothers 12–19 weeks gestational age, who have residency in a provincial capital city, where the one-child per family rule is applied. The majority (64%) of expectant mothers in this sample did not state a distinct choice for child gender. When they expressed a gender preference, 71% mothers expressed a desire to have a girl, even if they believed that their husband wanted a boy. The first hypothesis was thus partially supported. While mothers might not have been forthcoming in expressing a boy child preference, mothers might also have been guarding themselves against disappointment. Further clarification was not obtained by asking mothers to elaborate on their reasons for their stated gender preference, or the lack of a preference. The explanations were logical but non-revealing (the vast majority explained that they would be satisfied as long as the infant were to be healthy).

Little data is available on the fetal sex preference of expectant mothers in urban or more prosperous areas of China, but data from the 2001 national survey (Ding & Hesketh, 2006) indicated that 37% of predominantly young, urban women claimed to have no preference for one sex over the other, and in another study (Hardee, Xie, & Gu, 2004), 75%of respondents in prosperous Jiangsu province were satisfied with their one child regardless of sex. This agrees with the results for our sample of well-educated participants, 104 (60%) of whom stated either that all it mattered to them was having a healthy child, or that the sex of the child did not matter to them. The expression of desiring a healthy birth is consistent with the concept of "yousheng" or having a quality birth (Su & Macer, 2005). The participants who offered reasons for their gender preference alluded to this notion in stating that having a healthy birth was of overarching importance in comparison to the sex of the child.

It is conceivably less encumbering to speak of boy or girl child conjecture. Our results indicated that in contrast to a minority of women (29%) expressing a boy child preference, among the 84 mothers who offered a conjecture of the baby's gender, 67% speculated having a boy. The second hypothesis is thus supported. The contrast debatably lends support to the notion that perhaps for some mothers, the gender preference for a girl child could itself be a buffer against disappointment. That is, the conjecture may be more representative of the hope as the actual desire is suppressed, in the event that the hope is not realized. The fact that more women who cited personal feelings or intuition, were more likely to predict having a girl, may also suggest

that mental attribution for girl child prediction could serve as a protective mechanism against disappointment.

The frequency of boy child conjecture is also increased due to the incorporation by the mother of the signs for a boy child from others' observations. In a society that still places a premium on having a boy child, the odds of pleasing, rather than displeasing, an expectant mother, is simply higher by pronouncing that it looks like she is having a boy child. In other words, there is less downside risk to making a boy child prediction to meet the approval of the mother, compared to making an assumption that the mother would be pleased to have a girl child. It is noted from the verbal explanations for gender conjectures, that colleagues and others outside the family, predictably rendered a boy child opinion to the mother, and so did a preponderance of fortune tellers and authoritative elders.

The mean age of mothers who conjectured having a boy child was higher than those with boy child predictions. The national survey data revealed a trend that the desire for more children, as a proxy for having more chances to have a boy child, increased with the mother's age group (Hesketh et al., 2005). It may also be possible that mothers who are older may have the notion that sons could provide more financial security in their senior years (Li, 1997; Robey, 1985), which would be a traditional outlook in the culture.

In China, parental educational achievement and the ability to ensure the educational success of the children are both highly regarded. Although achievement of above high school-level education was not associated with either gender preference or gender prediction, women with a bachelor's degree or above (i.e. master's and more advanced degrees), indicated a higher boy child preference. It is possible that the symbolic status of having a son matters more to high-achieving women with the highest education in this urban group.

Several folklores on gender prediction, such as taste changes and body responses were similar to those reported in a U.S. sample (Perry et al., 1999). The third hypothesis is not borne out, as traditional checking of the Chinese Almanac, fortune telling, and culture-specific indicators from dreams (tigers, snakes or flowers as related by mothers in this sample), were less commonly cited. Consultation with traditional Chinese medicine practitioners is cited by only one mother. In obstetrics care, women in the cities generally turn to maternity and child health hospitals and their affiliates (R. Y. Yan, 1989; Y. Yan, 1987). Misapplication of the folklores was rife, but nonetheless, misinterpretation of the folklore was not associated with the conviction strength of the prediction. Inconsistencies occurred in the direction of sex prediction based on taste changes or cravings, eg. some believed that predilection for sour tasting foods indicated a boy child, while others predicted the other way. Curiously, the extant number of boys in the family tree was cited to predict yet another boy, while another mother in the same situation presumed that she would be the odd one out in the family, and thus would have a girl.

Much of our knowledge on son preference in China is derived from work conducted in rural areas (D. Li, 1997; J. Li, 2005). Qualitative data and more detailed inquiry about gender preference can elicit participants' perspectives and uncover the motivations behind their stated preference, which may not be distilled from general surveys and inferences made from the sex ratio at birth. This study extends the findings in the literature on son preference in China, by asking questions about gender predictions and conjecture, and unmasking nuanced perspectives of son preference in urban China among well-educated women. While the urban population is generally more educated and there is no need to depend on male children for financial security and self-sustenance (Anson & Sun, 2004;Hao, 1998), son preference remains an indicator of women's status in Chinese society, and son preference can be detected at subtle levels. A better understanding of son preference in urban China can be reflective of the status of women in the urban setting as well.

The study had several limitations. The sample size of 174 was relatively small, which might have provided inadequate statistical power to detect moderate or small differences. However, this sample size allowed us to collect qualitative data on gender conjecture and preference. Due to the very small number of participants at the lowest educational and occupational level, other possible associations between gender preference or gender conjecture and socioeconomic factors might not have been detected. The parents in this sample were well-educated so that the findings cannot be generalized to less educated samples, especially in the rural areas where educational opportunities are comparatively lacking, and gender-based health inequalities are more frequently found (Anson & Haanappel, 1999). However, as a huge and populous country, it is not difficult to find urban centers with well educated groups in contemporary Chinese society. This study was based on maternal reports and lacked verification by the input of other family members and objective measures. Gender preference and conjecture can also change over the course of pregnancy, but the findings presented here did not include longitudinal observations. In the future, we shall be collecting data from a rural sample in the province for comparison. The study also had the potential for biases in social acceptability due to self-report and potential participation biases, which could have affected the representativeness of the sample and thus the generalizability of the results.

In summary, the majority of the expectant mothers in this urban, well-educated sample did not state a distinct choice for child gender. When they expressed a gender preference, more mothers expressed a desire to have a girl, even if they believed that their husband wanted a boy. However, boy child conjectures were more common than girl child conjectures. While mothers might be underreporting the desire for a boy child, it is also possible that the mothers might be guarding themselves against disappointment. . Among women with undergraduate or graduate degrees, however, wishes for boys were more frequently expressed. Older women were also more likely to predict that they were carrying boys. It is possible that implicit social status in having a boy child may underlie the nuances of son preference in urban China among well-educated women Maternal source of gender prediction centered around intuition, food or taste preferences and somatic responses. Culture-specific ways of fetal sex prediction, such as fortune telling or checking of the Chinese almanac, were less commonly employed.

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TABLE 1

Distribution of Demographic Variables in the Study Sample

	Mean	SD	Range
Mother			
Age (years)	28.0	3.1	20–38
Husband's Age (years)	30.5	3.4	23–43
Gestational Age (years)	14.8	1.6	11–18.5
Income Per Annum (Chinese RenMingBi/US Dollars)	RMB 68,819/US 9,693	RMB 61,370/US 8644	RMB 4000/US 563 - RMB 510,000/US 71,830
Number of people living together in the household	2.5	1.1	2–7
Education:			
Elementary School *	0 (0)		
Junior High School	11 (6.3)		
High School	54 (31.0)		
Vocational College	58 (33.3)		
University and Above	51 (29.3)		
Husband's Education:			
Elementary School *	0 (0)		
Middle School	9 (5.2)		
High School	42 (24.1)		
Vocational College	69 (39.7)		
University and Above	54 (31.0)		
Occupation:			
Non-skilled labor	4 (2.3)		
Company Employee	61 (35.1)		
Professional or Trade-Related	33 (18.9)		
Self-Employed	11 (6.3)		
Homemaker	33 (19.0)		
Others*	32 (18.4)		
Husband's Occupation:			
Non-skilled labor*	14 (8.0)		
Company Employee	57 (32.8)		
Professional or Trade-Related	55 (31.6)		
Self-Employed	10 (5.8)		
Unemployed	3 (1.7)		
Others	35 (20.1)		

* Numbers (%)

S.D., Standard Deviation

TABLE 2

Bivariate Analyses Based on Maternal Gender Preference

Gender Preference	Girl (n=45)	Boy (n=18)	P value
Gestational age in weeks; mean (SD)	14.7 (1.4)	15.0 (1.6)	0.45[a]
Maternal age in years; mean (SD)	27.5 (3.1)	27.8 (3.1)	0.68[a]
Husband's age in years; mean (SD)	30.5 (2.8)	30.7 (2.1)	0.73[a]
Number of people in household; mean (SD)	2.8 (1.3)	2.6 (1.2)	0.48[a]
Income in RMB; median (range)	55,000 (7500–200,000)	50,000 (10000–300,000)	0.75[b]
Maternal education: Above high school (yes/no)	29/16	10/8	0.51[c]
Maternal education: Bachelor's degree (yes/no)	9/36	9/9	0.02 [c]

[a] Student's t-test;

[b] Mann-Whitney U-test;

[c] Chi-square test; SD = Standard deviation.

TABLE 3

Bivariate Analyses Based on Maternal Gender Prediction

Gender Prediction	Girl (n=28)	Boy (n=56)	P value
Gestational age in weeks; mean (SD)	14.3 (1.4)	15.0 (1.7)	0.05[a]
Maternal age in years; mean (SD)	27.2 (3.1)	28.6 (2.6)	0.03[a]
Husband's age in years; mean (SD)	29.9 (2.5)	30.8 (3.2)	0.21[a]
Number of people in household; mean (SD)	2.7 (1.4)	2.3 (0.8)	0.16[a]
Income in RMB; median (range)	50,000 (4000–350,000)	55,000 (10000–300,000)	0.88[b]
Maternal education: Above high school (yes/no)	15/13	36/20	0.34[c]
Maternal education: Bachelor's degree (yes/no)	9/19	18/38	1.00 [c]

[a] Student's t-test;

[b] Mann-Whitney U-test;

[c] Chi-square test; SD = Standard deviation.

TABLE 4

Maternal Explanations for her Prediction of Fetal Gender

Reason for Gender Conjecture	Frequency	Percent
Feeling or intuition or prediction	30	35.7
Food preferences	11	13.1
What others said	11	13.1
Somatic reason, referring to body condition or reactions	11	13.1
Dream	6	7.1
Fortune Telling/Almanac Prediction	5	5.9
Body Image-Related	3	3.6
Family History	4	4.8
Emesis	1	1.2
Traditional Chinese medicine consultation	1	1.2
Referred to a book	1	1.2
Total	84	100.0