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Epidemiological factors influencing gender preference among mothers attending under-five immunization clinic: A cross-sectional comparative study

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Abstract:

BACKGROUND: Sex ratio is an important social indicator measuring the status and equality of female in society. The falling sex ratio of our country is a demographic disaster that is waiting to happen and is a matter of grave concern. Perception of gender by mothers or families has long-term implications on how children are nurtured during their lives. This study was done to understand mother's preference for the gender of the child and their concerns about the same.

MATERIALS AND METHODS: An observational cross-sectional study was carried out using a semi-structured questionnaire. Two hundred and thirty-four mothers were interviewed. Frequencies and percentages were calculated. Pearson's Chi-square test was used to check the significance of the association.

RESULTS: Study results depict that 26.47% of the mothers who were already having a male child still preferred son. Preference for son was 24.52% and 48.61% among earning mothers and nonearning mothers, respectively. Out of 206 mothers said that they would prefer male child. Reasons cited were as follows: sons carry family name forward (30.6%), having daughters leads to increased expenditure (20.9%), daughters are subjected to different problem in their lifetime mainly violence (11.7%), and sons supported their parents in old age (10.7%).

CONCLUSION: Preference for male child was found to be equally prevalent in both urban and rural areas. Mothers should be educated about the effect of declining sex ratio along with financial capacity building of women and providing social security to senior citizens which was the main reason for son preference. The impact of gender imbalance on individuals, families, and on society has to be emphasized at every possible point of contact with health-care delivery system.

Keywords:

Gender preference, mothers, rural, urban

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Introduction

The social, cultural, and religious fiber of India is predominantly patriarchal contributing to the secondary status of women and masculinization of the sex ratio.^[1] According to NFHS-4, the sex ratio was 991 females per thousand males and sex ratio at birth was 919.^[2] Sex ratio at

birth depicts the factors that could have come into play before birth.^[3] According to the Census of India data, for every 1000 boys (in the 0–6 years' age group), there are 919 girls in the year 2011, a decline from 927 in 2001.^[4] This demographic imbalance which is caused to the declining sex ratio is a matter of concern to the policymakers, implementers, demographers, and social reformers.^[5] Preference for son is so intense

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that it leads to larger family size, closed pregnancies, premature deaths, and even terminating the child before it is born.^[6] When there is an increase in incidence of birth of unwanted female child these girls are subjected to violence leading to millions of girls missing from population. Tracking gaps in reproductive rights and choices, it has clearly come to the forefront that crime against girls and women leads to insecurities among families regarding giving birth to daughters. While sex-selective abortion has been seen as one of the main manifestations, the intense son preference in India, leading to a declining number of girls and women in society, requires urgent attention as public health concern since reproductive justice and choices are linked to the overall health of the society.^[7] Looking at the number of factors, it influences and its implications, thorough and in-depth studies are needed on gender preference

Materials and Methods

A descriptive cross-sectional study was carried out over a period of 6 months, i.e., from June 2019 to November 2019 in immunization OPD of a tertiary health care center (Center I) and a primary health center (Center II) The centers are affiliated to the community medicine department of a tertiary health-care center. Study participants were mothers attending the immunization clinic in rural and urban areas who were included in the study after taking the informed consent while mothers who were accompanied by her family members were excluded to maintain privacy. All required permission and ethics committee approval were taken from the institution. Assuming the son preference in rural area to be 68% and 50% in urban area, the sample size was calculated using the formula:^[8]

where

$$n = \text{sample size } z_{1-\alpha/2} = 1.96 \quad z_{1-\beta} = 0.84$$

$$p_1 = 68\% \quad p_2 = 50\% \quad q_1 = 100 - p_1 \quad q_2 = 100 - p_2$$

$$\bar{P} = (p_1 + p_2)/2 \quad Q = 100 - \bar{P}$$

Substituting these values in the abovementioned formula, the minimum sample size needed in Center I was 117 and minimum sample size needed in Center II was 117. The minimum total sample size needed was 234. Participants were selected after obtaining a proper informed consent for those who met inclusion criteria. The mothers fulfilling the inclusion criteria were enrolled in the study using a simple random sampling method prospectively by random number tables till the desirable sample size was achieved in each area. The purpose of the study was explained to the study participants. Care was taken to ensure privacy during the interview

by conducting it in a separate room. All study records were kept confidential. The study was approved by the Institutional Ethics Committee (IEC) (Approved on May 15, 2017).

Data collection was done in a separate room to maintain confidentiality. Data were compiled using Microsoft Excel 2017 and were coded accordingly. Numbers, percentages, and mean were used to represent data wherever required. Pearson's Chi-square test was applied to find the association between different study variables. $P < 0.05$ was considered to be statistically significant.

Results

The number of mothers interviewed in this study was 234, as shown in Table 1. In rural area, 66.66% (78) of the mothers were in the age group of 20–26 years, while in urban area, 48.71% (57) were in the age group of 26–32 years. The mean age was 25.10 years and 28.58 in rural and urban areas, respectively. Both areas were Hindu dominated having 64.10% (75) Hindus in rural area and 76.06% (89) in urban area. Majority of the women in both areas, i.e., 83 (35.5%) and 113 (48.3%), belonged to socioeconomic Class III and IV. Majority of the women, i.e., 58.11% (68) and 46.14% (54), were educated up to high school in rural and urban areas, respectively.

As shown in Table 2, of 234 respondents, 43.16% (101) had preference for male child. The factor of son preference was correlated with various socioeconomic characteristics. Among those who preferred male child, 24.52% (13) of the women were earning while 48.61% (88) of the women were nonearning women ($P = 0.00$). Forty-eight (20.51%) mothers showed preference for daughter, out of which 39.62% of the mothers had a source of income. Fifty percent (62) of the mothers who preferred son belonged to socioeconomic Status IV and V ($P = 0.03$). Preference for son was more in joint families 58 (46.03%) as compared to nuclear families 43 (39.8%). Son preference in rural area was 54 (46.15%) and in urban area was 47 (40.1%).

As shown in Table 3, 37.5% (6) of the mothers who were illiterate mostly preferred son while 56.3% (9) showed no preference. Out of 234 mothers, 206 (88.0%) mothers said that sons are preferred over daughters in our community. One hundred and eleven (94.87%) out of 117 mothers from urban area and 95 (81.19%) out of 117 mothers from rural area felt that sons are preferred over daughters. Out of the total 206 (88.0%) mothers who preferred sons over daughters, majority of them, i.e., 63 (30.6%), said that sons carried family name forward, 43 (20.9%) said that daughters increased expenditure, 36 (17.5%) said that daughters were married off to another family, 24 (11.7%) said that daughters went through many

Table 1: Sociodemographic profile of mothers

| Sociodemographic variable | Rural ($n_1=117$), n (%) | Urban ($n_2=117$), n (%) | Total ($n=234$), n (%) |
|--|------------------------------|------------------------------|----------------------------|
| Age group (years) | | | |
| 20-26 | 78 (66.66) | 39 (33.32) | 117 (50) |
| 26-32 | 39 (33.32) | 57 (48.71) | 96 (41) |
| >32 | 0 | 21 (17.94) | 21 (9) |
| Religion | | | |
| Hindu | 75 (64.10) | 89 (76.06) | 164 (70.1) |
| Muslim | 12 (10.25) | 19 (16.23) | 31 (13.2) |
| Others (Sikh, Buddhist) | 30 (25.64) | 9 (7.69) | 39 (16.6) |
| Socioeconomic status (Modified BG Prasad's scale 2018) | | | |
| I | 2 (1.7) | 3 (2.56) | 5 (2.1) |
| II | 8 (6.83) | 14 (12) | 22 (9.4) |
| III | 40 (34.18) | 43 (36.75) | 83 (35.5) |
| IV | 60 (51.28) | 53 (45.29) | 113 (48.3) |
| V | 7 (6) | 4 (3.41) | 11 (4.7) |
| Education | | | |
| Illiterate | 16 (13.67) | 0 | 16 (6.8) |
| Primary school | 24 (20.49) | 27 (23.06) | 51 (21.8) |
| High school | 68 (58.11) | 54 (46.14) | 85 (36.3) |
| Graduate | 9 (7.69) | 36 (30.76) | 45 (19.2) |

*Percentages in brackets are column percentages

Table 2: Relation of sociodemographic profile of mother with gender preference

| Sociodemographic variable | Preference of mother | | | Total ($n=234$), n (%) | Statistical analysis (P) |
|---------------------------|----------------------------|--------------------------------|-------------------------------------|----------------------------|------------------------------|
| | Son ($n_1=101$), n (%) | Daughter ($n_2=48$), n (%) | No preference ($n_3=85$), n (%) | | |
| Religion | | | | | |
| Hindu | 75 (45.7) | 35 (21.3) | 54 (32.9) | 164 | $P=0.03$ |
| Muslim | 9 (29.0) | 3 (9.7) | 19 (61.3) | 31 | |
| Others | 17 (43.5) | 10 (25.64) | 12 (30.76) | 39 | |
| Earning status | | | | | |
| Earning | 13 (24.52) | 21 (39.62) | 19 (35.84) | 53 | $P=0.00$ |
| Nonearning | 88 (48.61) | 27 (14.91) | 66 (36.46) | 181 | |
| Socioeconomic status | | | | | |
| I-II | 11 (40.7) | 10 (37.03) | 6 (22.22) | 27 | $P=0.02$ |
| III | 28 (33.33) | 20 (24.1) | 35 (42.2) | 83 | |
| IV-V | 62 (50) | 18 (14.51) | 44 (35.48) | 124 | |
| Type of family | | | | | |
| Nuclear | 43 (39.8) | 23 (21.3) | 42 (38.9) | 108 | $P=0.62$ |
| Joint | 58 (46.03) | 25 (19.84) | 43 (34.12) | 126 | |
| Area residence | | | | | |
| Urban | 47 (40.1) | 28 (24) | 42 (35.8) | 117 | $P=0.40$ |
| Rural | 54 (46.15) | 20 (17.09) | 43 (36.75) | 117 | |
| Total | 101 (43.16) | 48 (20.51) | 85 (36.32) | | |

Table 3: Association between mothers' educational status and gender preference

| Mothers' education | Preference of mother | | | Total | Statistical analysis |
|--------------------|----------------------|-------------------|------------------------|-------|----------------------|
| | Son, n (%) | Daughter, n (%) | No preference, n (%) | | |
| Illiterate | 6 (37.5) | 1 (6.3) | 9 (56.3) | 16 | $P=0.06$ |
| Primary school | 20 (39.21) | 11 (21.5) | 20 (39.21) | 51 | |
| High school | 57 (46.72) | 31 (25.40) | 34 (27.86) | 122 | |
| Graduate | 18 (40.0) | 5 (11.1) | 22 (48.9) | 45 | |

*Percentages in bracket are row percentages

problems in their lifetime, 22 (10.7%) said that sons supported their parents in old age, and 18 (8.7%) said that sons performed last rites.

Figure 1 shows that those mothers who were already having a daughter showed preference for son while mothers who were already having a son showed more

preference for daughter. Even higher son preference 50 (35.46%) was seen in women for their first child.

As shown in Figure 2, in mothers who were married at the age of <20 years, 32 (43.83%) showed more preference for son followed by 29 (39.72%) who did not show any preference ($P = 0.00$).

Only 20 (17.09%) from rural area and 32 (27.35%) from urban area knew that father is responsible for the sex of the child. Here, we also found that 166 (70.9%) of the mothers felt that females do not enjoy equal rights as males in our society. Seventy percent of the mothers said that females do not enjoy equal rights as males in society in terms of going out for studying or doing some job. More women from rural area as compared to urban area believed that equal rights are given to females.

Discussion

This study was done to assess the gender preference among mothers attending immunization OPD at urban and rural health centers. Totally 234 mothers were interviewed, in which 117 mothers were taken from rural area and 117 from urban area. The present study explored that preference for male child was more as compared to female child and it was almost equally prevalent in both urban and rural areas, whereas in a study done by Pawaiya *et al.*, male child preference was observed more in the rural area 57% compared to an urban area 43%.^[9]

In our study, we found that gender preference was significantly associated with religion, earning status of mother, socioeconomic status, gender of previous child, and age of mother at marriage. As we can see in Table no 2. in our study preference for son was more (43.16%) while while in a study done by Kansal *et al* in Meerut found that majority of pregnant women did not show any preference.^[10]

Almost two-third of the Hindu families preferred son although it was lesser as compared to the results obtained by Gautam *et al.* who found that preference

for male child was 81% Hindu families although it was not statistically significant.^[11] A similar study done by Kanyadi and Kulkarni found that Muslims as compared to Hindus were more likely to prefer son which was contradicting the results of our study.^[12] Forty percent of the earning mothers preferred daughters while almost half of the nonearning mothers who were financially dependent on their husband preferred son; similar results were obtained by Gautam *et al.* who showed that son preference was more among housewives (78%) than employed (25%) and was statistically significant.^[11] Thus, financial capacity building of women and making them aware about government-run programs for women empowerment through mass media would be helpful in these cases. Nearly 50% of the mothers from socioeconomic Class IV and Class V preferred son same as shown by Karmali *et al.*^[13] In our study, mother living in a joint family showed slightly more son preference than in nuclear family similar to the results obtained by Gadi *et al.*^[14]

It was seen that 70% of the mothers who already had a female child preferred son and 25% of the mothers who were already having a male child still wanted to have son while only 7% of the mothers were there who already had a girl child and still gave preference for girl. It was also seen that 35% of the mothers preferred their first child to be son. Vadera *et al.* and Yugali *et al.* also showed the same results.^[15,16] Mothers who were married at younger age mostly preferred son while mothers who were married at older age mostly preferred daughters. In our study, we found that preference for particular gender was not significantly associated with area of residence of mother and it was almost equal in both urban and rural areas similar to the findings obtained in a study done by Yasmin *et al.* who found that son preference in rural was 60% urban area was 52% an^[17] Son preference was equally there in both nuclear and joint families depicting that family members may not influence mother's preference for a particular gender. In our study, we found that education of mother has no influence on her preference and even educated mothers preferred son. Similarly, Karmali *et al.* also showed that educational status of mother had no significant association with son preference while Gautam *et al.* observed that preference

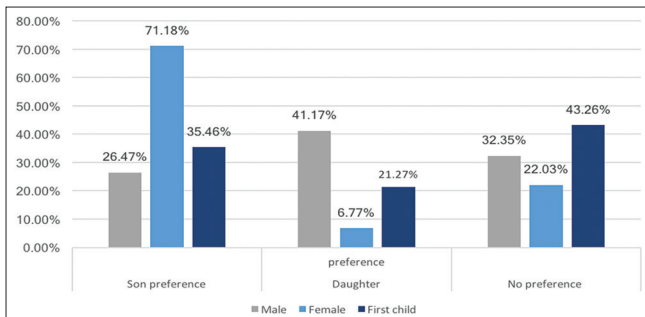


Figure 1: Association of preference of mother with the gender of previous child

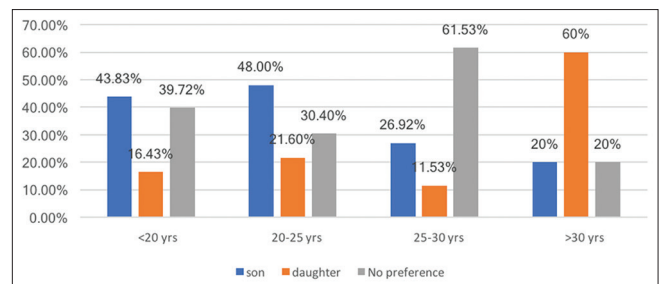


Figure 2: Association of age of mother and gender preference

for son was more in illiterate women, i.e., 90% and less in graduates (34%), and this association between education and preference for son was found to be statistically significant.^[11,13] It was also observed that more number of rural mothers felt that men and women are given equal rights in the society as compared to urban mothers which may be due to the safety issues or increasing violence against women in our society mainly in urban areas. Similarly a study was done by Srivastav *et al* in rural population of Uttarpradesh where 94% women felt that they do not enjoy equal rights as males.^[18] Similarly, a study done by Thulaseedharan in Kerala found that only 31.5% of the women were of opinion that they have right to decide to work outside of home.^[19]

More number of women from urban area felt that sons are given preference over daughters. The main reasons for preferring son over daughters were that they carry family name forward while daughters increase expenditure and they are married off to another family. Ashturkar *et al.* noted in a rural area of Pune, Maharashtra, that the most common reason of son preference was support at old age (58%) followed by demand of male child by family members (33%), while in a study done by Chellaiyan *et al.*, the main reasons for preferring son was pressure from family and social responsibility carried out by male.^[20,21]

This is a type of descriptive study which provided an in-depth analysis about the son preference. A comparative analysis was done between the rural and urban areas which helped us to know the scenario better.

The present study was conducted in a small population in hospital, so the findings cannot be generalized in community. Here, the study was done in immunization OPD where mothers came with their babies and their preference for that child was asked, so there might be a possibility that she may not have revealed her actual preference, and moreover, being a sensitive issue, probing her more was not ethically correct.

Conclusion

The study provided an insight into the gender preference in urban and rural settings. Gender perceptions and differential treatment based on gender call for multipronged strategy to address the situation. The study reiterates the need of counseling services to families focusing on gender-sensitive behavior at every possible point of contact with health-care delivery systems. Awareness and promotion of all the government-run incentive programs, IEC material showing female role models, campaigns regarding gender equality, ill-effects of adverse sex ratio, and gender imbalance must be clear and loud through mass media. Interventions

such as financial capacity building of women through various approaches, elimination of dowry system, health insurance, and social security schemes during old age are of vital importance. Further research can be planned to assess uptake, implementation, and impact of such interventions

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Conflicts of interest

There are no conflicts of interest.

Code of ethics

The study was approved by the IEC (Approval No. 1046/17). Code of ethics was followed at all stages of the study.

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