

Impact and Determinants of Sex Preference in Nepal

CONTEXT: Gender discrimination and son preference are key demographic features of South Asia and are well documented for India. However, gender bias and sex preference in Nepal have received little attention.

METHODS: 1996 Nepal Demographic and Health Survey data on ever-married women aged 15–49 who did not desire any more children were used to investigate levels of gender bias and sex preference. The level of contraceptive use and the total fertility rate in the absence of sex preference were estimated, and logistic regression was performed to analyze the association between socioeconomic and demographic variables and stopping childbearing after the birth of a son.

RESULTS: Commonly used indicators of gender bias, such as sex ratio at birth and sex-specific immunization rates, do not suggest a high level of gender discrimination in Nepal. However, sex preference decreases contraceptive use by 24% and increases the total fertility rate by more than 6%. Women's contraceptive use, exposure to the media, parity, last birth interval, educational level and religion are linked to stopping childbearing after the birth of a boy, as is the ethnic makeup of the local area.

CONCLUSIONS: The level of sex preference in Nepal is substantial. Sex preference is an important barrier to the increase of contraceptive use and decline of fertility in the country; its impact will be greater as desired family size declines.

International Family Planning Perspectives, 2003, 29(2):69–75

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Since the Cairo International Conference on Population and Development in 1994, and the Beijing Conference on Women and the Girl Child in 1995, gender equality has been a priority area of demographic research. In the South Asian context, researchers have estimated that there are millions of women “missing” from the population, leading to an unusually high ratio of males to females.¹ Failure to report the birth of girls, sex-selective abortion, neglect of daughters and female infanticide may all play a role.

In some countries with a strong sex preference, couples stop having children only when they are satisfied with the sex composition of their family²—typically, after the birth of a son. Consequently, the sex ratio of last-born children (sex ratio at last birth) can be much higher than the biological constant of 106 sons per 100 daughters ever born (sex ratio at birth). For example, in Punjab, a region in Northwest India known to have high levels of gender bias,³ the sex ratio at last birth is 184.⁴

Sex preference in Nepal has received little attention, possibly because the overall sex ratio at birth (105) is similar to the expected value.⁵ In addition, Nepal is in the early stages of fertility decline; hence, sex-selective abortion is rare.⁶ However, the sex ratio at last birth in Nepal for women who claim to have completed their families or to have been sterilized is estimated at 146, suggesting that stopping behavior among these women is driven by son preference.⁷

Son preference is generally viewed as a socially determined bias: In a patriarchal society, couples prefer to raise

a child who has the culturally accepted characteristics, status and economic potential associated with the male gender. This preference often influences behavior and may result in gender biases that negatively affect girls' and women's welfare, health and survival. Thus, preference may lead to discrimination.

The ultimate indicator of the effect of gender discrimination on children is the sex-specific child mortality rate, after correction for sex-determined disease susceptibility (girls are generally more resistant to disease than are boys) and for other gender-related differences (e.g., accidental deaths are more common among boys than among girls). A mortality rate among girls that is higher than that among boys indicates excess female child mortality and hence female disadvantage. In this respect, South Asia is again prominent, for although overall childhood mortality continues to decline in this region, the relative plight of girls has worsened: For example, between the 1970s and the 1980s, excess mortality among females aged 1–5 years increased from 11% to 28% in India and from 8% to 22% in Nepal.⁸ Son preference may be a direct contributing factor, through shortened birth intervals after the birth of girls⁹ and the neglect of younger daughters in large families of girls in which parents are still hoping for a boy.¹⁰ Son preference may also promote more extreme forms of discrimination, such as feticide or infanticide of females.¹¹

Studies conducted in India suggest that sex preference influences not only discrimination and excess mortality, but

also demographic transition.¹² Through the postponement of stopping behavior until the birth of a son, sex preference may exert its strongest effect on fertility during the intermediate stage of demographic transition, thereby slowing fertility decline. However, in Korea and China, where aggregate fertility levels are low, gender bias has persisted through the demographic transition—no longer as sex-determined stopping behavior, but as sex-selective abortion. This finding has unsettling implications for population structure, marriage, the labor market and women's status in these two countries.¹³

Nepal has been classified as having considerable levels of son preference since the World Fertility Surveys first documented the phenomenon in the 1980s.¹⁴ Although daughters are desired, sons are very highly prized because they continue the family name, can perform funeral rituals and are expected to provide support in old age. Nepal's patrilineal social structure discourages women from practicing contraception until they have a son.¹⁵ In these circumstances, son preference may exert an influence not only on contraceptive use and fertility levels, but also on the progress of fertility decline. However, to our knowledge, no national study has systematically investigated patterns and implications of son preference in Nepal. In this study, we examine the extent, impact and determinants of sex preference in Nepal, by measuring levels of various forms of gender bias, analyzing effects of sex preference on contraceptive use and fertility, and identifying factors associated with son preference.

DATA AND METHODS

Data for this study came from the 1996 Nepal Demographic and Health Survey (NDHS). Of the 8,429 ever-married women aged 15–49 included in the NDHS, we selected the 4,661 women who desired no more children or who had been sterilized at the time of the survey. Because these women had decided to stop childbearing, we could examine their completed families in terms of size, sex composition, birth order and the sex of the last child born.*

We studied the following indicators of gender bias: the sex ratio at birth and at last birth, ratios of male-child to female-child mortality rates, sex ratios among children who had received certain immunizations and the distribution of women according to the sex of the last child born. Furthermore, after weighting the data, we estimated the effects of son preference on contraceptive prevalence and fertility.

To measure the effect of sex preference on contraceptive prevalence, we applied the Arnold method¹⁶ to data from all women interviewed in the NDHS, regardless of whether they had finished childbearing. We calculated the rate of current use of a modern method among women according to the number of sons at each parity, and used the highest values at each parity, regardless of sex composition, as estimates of the expected contraceptive prevalence in the absence of sex preference. The percentage difference in contraceptive prevalence caused by sex preference is defined as the ratio of the absolute difference between observed and expected prevalence to the expected value, multiplied by 100. In this way, we calculated effects of sex preference by the women's parity and their number of sons and daughters.

To determine the effect of sex preference on fertility, we used a recently developed method,¹⁷ which assumes that the population does not practice sex-selective abortion and that childbearing stops when the desired number of children of a certain sex is reached. We first calculated the parity progression ratio (the proportion of women of a specific parity who have another child) for each parity. We then assumed that if childbearing continued regardless of the last child's sex, the ratio of daughters who were not the last-born child to those who were would be the same as the ratio of sons who were not the last-born child to those who were. Therefore, we used the latter term as the estimated parity progression ratio in the absence of sex preference at last birth.†

The total fertility rates (TFRs) in the presence and absence of sex preference were obtained by summing successive products of parity progression ratios.‡ The percentage difference in the parity progression ratio and TFR caused by sex preference is defined as the ratio of the absolute difference between observed and expected value to the expected value, multiplied by 100. This approach is analogous to the Arnold method, which we did not use because Nepal's fertility transition is at an earlier stage than that of India.§¹⁸

Finally, logistic regression analysis was used to identify women's socioeconomic and demographic characteristics that were associated with having a son as the last child. To account for clustering in the primary sampling units of the NDHS, we first used MLwiN version 1.10 to fit alternative regression models. Most of the socioeconomic and demographic factors that we selected as explanatory variables had been shown to be significantly associated with sex preference in studies conducted in countries with a high de-

*The results are unchanged if women decided to continue childbearing after the survey, because we assumed that they had still indirectly expressed their satisfaction about the number and sex of their children by virtue of their stopping behavior.

†The number of births of the next parity can be expressed as the sum of male and female births that are not last births of the current parity. This identity can be elaborated as $B_{j+1} = {}_{NL}F_j + {}_{NL}M_j = (B_j \times {}_L F_j / B_j \times {}_{NL} F_j / {}_L F_j) + (B_j \times {}_L M_j / B_j \times {}_{NL} M_j / {}_L M_j)$, where B_{j+1} = births of parity $j+1$; B_j = births of parity j ; ${}_{NL}M_j, {}_L F_j$ = number of last-born males and females of parity j ; and ${}_{NL}M_j, {}_{NL}F_j$ = number of not last-born males and females of parity j . Thus, the hypothetical parity progression ratio (PPR) at parity $j = B_{j+1} / B_j = ({}_L F_j / B_j \times {}_{NL} F_j / {}_L F_j) + ({}_L M_j / B_j \times {}_{NL} M_j / {}_L M_j)$. In the absence of sex preference at last birth, ${}_{NL}F_j / {}_L F_j$

$= {}_{NL}M_j / {}_L M_j$. Hence, the PPR in the absence of gender preference at parity $j = ({}_L F_j / B_j \times {}_{NL} M_j / {}_L M_j) + ({}_L M_j / B_j \times {}_{NL} M_j / {}_L M_j) = {}_{NL}M_j / {}_L M_j$.

‡TFR is calculated by summing parity progression ratios (PPRs) for each parity, as follows: $TFR = PPR_0 + (PPR_0 \times PPR_1) + (PPR_0 \times PPR_1 \times PPR_2) + (\dots)$, where $PPR_0 = 1$, because all parous women would have had at least one child.

§The Arnold method is effective at low levels of fertility when contraception is commonly practiced: Sex preference is associated with frequent gaps in contraceptive use. However, in countries at an early stage of fertility transition, contraceptive use is not common, and differences in use rates in the presence of sex preference would be very marginal and lead to an underestimation of the level of sex preference.

TABLE 1. Sex ratio of children born to ever-married women aged 15–49 who had stopped childbearing, by selected indicators of gender discrimination, 1996 Nepal Demographic and Health Survey

Indicator	Sex ratio†
Children	
All born	116
Last born	146
Children receiving health care	
Tuberculosis vaccine	102
Diphtheria, pertussis and tetanus vaccine (1 dose)	97
Diphtheria, pertussis and tetanus vaccine (2 doses)	109
Diphtheria, pertussis and tetanus vaccine (3 doses)	105
Polio vaccine (1 dose)	104
Polio vaccine (2 doses)	110
Polio vaccine (3 doses)	107
Measles vaccine	105
Oral rehydration treatment	106
Child deaths	
<1 yr.	96
1–4 yrs.	68
<5 yrs.	87

†Expressed as the number of males per 100 females.

gree of gender discrimination.¹⁹ Individual-level factors included whether the woman currently used a contraceptive, had had at least one son previously, watched television or listened to the radio at least once a week and had electricity or drinking water, as well as age, age at first marriage, parity, last birth interval, educational level, religion, relationship with the head of the household, regions of current and childhood residence, and type of toilet owned. We also assumed that sex preference was related to local contextual factors, which may reflect neighborhood conditions and which have been useful in other studies.²⁰ Accordingly, we included certain ethnicities that were present in the primary sampling units as additional explanatory variables.

Preliminary analysis showed that there was no advantage in fitting models that corrected for sample clustering; consequently, we reanalyzed the data with STATA version 6.0, which accounts for the survey structure. The final model included only variables that were at least marginally significantly associated with stopping childbearing after the birth of a son.

TABLE 2. Percentage distribution of ever-married women aged 15–49 who had stopped childbearing after having had three children, by sex of the last child and birth order of children

Sex of last child and birth order	% (N=1,322)
Last child male	63.6
Male, male, male	16.8
Male, female, male	19.6
Female, male, male	17.7
Female, female, male	9.5
Last child female	36.4
Female, female, female	3.3
Female, male, female	10.9
Male, female, female	8.6
Male, male, female	13.7
Total	100.0

RESULTS

Indicators of Gender Bias

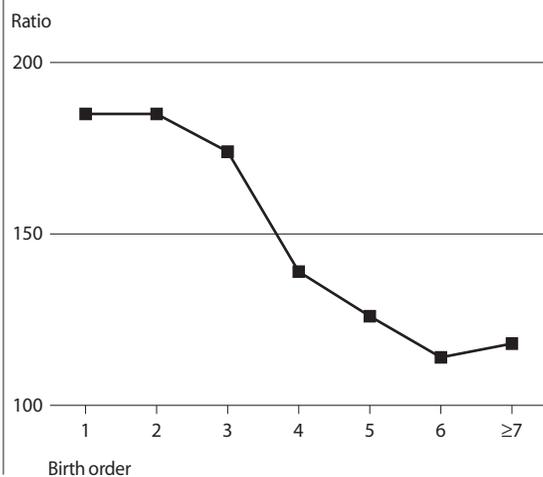
The sex ratio at birth among women who said they had completed their families or had been sterilized was 116 males per 100 females, which is slightly higher than the value of 105 among all women participating in the NDHS. Women in our sample may have underreported births of daughters, especially at higher parities, or said that they desired no more children, having already had at least one son. In contrast, the sex ratio at last birth—a more reliable indicator of how families are exercising a preference for sons in Nepal—was 146, which is the same as the ratio for the country as a whole and suggests a clear tendency toward son-determined stopping behavior (Table 1).

For a preliminary assessment of possible gender discrimination after the birth of a child, we calculated sex ratios among children aged 12–24 months who had been immunized against tuberculosis; diphtheria, pertussis and tetanus; polio; and measles. We also included the use of oral rehydration solution to treat diarrhea in the two weeks before the survey. The sex ratios ranged from 97 to 110 males per 100 females, thereby showing no evidence of gender bias for any of the vaccinations or the rehydration treatment (Table 1).

However, ratios of sex-specific mortality rates among children consistently favored males, particularly among children aged 1–4 (sex ratio, 68; Table 1). Because boys in most countries have a higher mortality rate than do girls (especially during infancy) because of biological frailty, the mortality ratios in this study are particularly striking. Although oral rehydration treatment and immunization are not implicated, our findings suggest that parents discriminate against female children in provision of nutrition and use of health care services.

We investigated whether women's stopping behavior was sex-determined by analyzing the sex and birth order of children born to the 1,322 women who had stopped childbearing or had been sterilized after having three children. The proportion of women who had stopped childbearing whose last child was a boy was much higher than that of such women whose last child was a girl (64% vs. 36%; Table 2). The contrast between women with three sons and those with three daughters (17% and 3%, respectively) is particularly striking. These results suggest that stopping behavior in Nepal is strongly driven by son preference. However, sizable proportions of women have families with one son and one daughter, showing that some couples prefer an equal number of sons and daughters.

Furthermore, sex ratios at last birth are higher than 100 for women of all parities, with the highest at 185 for first and second births (Figure 1, page 72). Hence, women who stop having children at lower parities are more likely than others to have had a son as their last child. In contrast, women who have had several children are more likely than others to have had at least one son and are therefore less likely to stop having children when they have had their desired number of sons.

FIGURE 1. Sex ratio of last children born to ever-married women aged 15–49 who had stopped childbearing, by birth order

Sex Preference and Contraceptive Use

Among the 5,902 women who had had up to four children, overall contraceptive prevalence was 25%, compared with 33% if there had been no sex preference—a reduction of eight percentage points, or 24% (Table 3). Contraceptive use varied widely according to sex composition: For example, for families with three children, 44% of women who had had three boys used a method, but only 6% of those who had had three daughters did so. Women who had given birth to two boys and one girl had a contraceptive prevalence rate of 49%—the highest among all women and the level we would have expected if son preference had been absent at parity three. In addition, we assumed that method use among women with no children, one boy and no girls, two boys and no girls, and three boys and a girl was unaffected by son preference. Rates of contraceptive use were lowest among women whose children were all girls, and were appreciably lower than rates that would have occurred in the absence of sex preference: The greatest reduction (88%) occurred among women with three daughters and no sons.

Sex Preference and Fertility

The method that we used to assess the effect of sex preference on parity progression and fertility assumed that women who preferred to have a son would continue having children until a son was born. Among the 5,666 parous women, the actual proportion of women at a given parity who had another child was higher than the proportion that would be expected in the absence of son preference at last birth for parities one to eight (Table 4), indicating that the desire for a son caused women to continue childbearing. The actual TFR was 4.43—more than 6% higher than the rate in the absence of sex preference for the last child born (4.16—not shown).

For comparison, we performed a similar analysis on parous Indian women who had completed their families (not shown), using data from the 1992–1993 National Fam-

ily Health Survey of India. We focused on women from three southern states with a weak son preference (Karnataka, Kerala and Tamil Nadu) and from three northern states with a strong son preference (Haryana, Punjab and Rajasthan). In the states with a strong son preference, the actual TFR was 13% higher than the rate expected in the absence of son preference; in the states with a weak preference, the actual rate was only 2% higher. By comparison, son preference in Nepal had a moderate impact on fertility. Furthermore, the increase in the parity progression ratio because of sex preference was highest at the third parity for all three regions and the magnitude of increase reflected the impact of sex preference: Indian states with a strong son preference had the largest increase (13%), followed by Nepal (8%) and the Indian states with a weak preference (3%).

Determinants of Son Preference

Table 5 shows the factors that were at least marginally significantly associated with stopping childbearing following the birth of a son (regardless of parity or number of sons). Women who practiced contraception (mainly female sterilization) were more likely than those who did not to have finished childbearing with a boy (odds ratio, 1.4). Hence, women whose last child had been a girl but did not use a method had a special kind of unmet need, because they had stated that they had no desire for more children, but their desire for a son kept them from being sterilized. Women who had previously had at least one son were less likely than those who had had no sons to have completed their family with the birth of a boy (0.7), confirming the existence of sex-determined stopping behavior. Women who watched television also had reduced odds of stopping childbearing following the birth of a son (0.7), as did those

TABLE 3. Calculation of the effect of son preference on use of modern methods of contraception among ever-married women aged 15–49 who had had up to four children, by parity and number of sons

Parity and no. of sons	No. of women	No son preference	Son preference	Effect (%)
All	5,902	33.0	25.1	-23.9
Parity 0	971	3.1	3.1	0.0
Parity 1				
0	525	13.9	10.8	-22.3
1	614	13.9	13.9	0.0
Parity 2				
0	276	43.9	16.5	-62.4
1	685	43.9	26.9	-38.7
2	392	43.9	43.9	0.0
Parity 3				
0	118	49.2	5.8	-88.2
1	167	49.2	28.5	-42.1
2	202	49.2	49.2	0.0
3	186	49.2	43.9	-10.8
Parity 4				
0	50	46.3	14.3	-69.1
1	272	46.3	22.2	-52.1
2	430	46.3	43.2	-6.7
3	293	46.3	46.3	0.0
4	72	46.3	42.5	-8.2

TABLE 4. Calculation of the effect of son preference on parity progression ratio among parous ever-married women aged 15–49 who had stopped childbearing, by parity

Parity	No. of women	No son preference	Son preference	Effect (%)
1	276	0.952	0.961	0.9
2	1,004	0.806	0.826	2.5
3	1,322	0.711	0.769	8.2
4	1,120	0.672	0.697	3.7
5	765	0.643	0.661	2.8
6	490	0.602	0.615	2.2
7	304	0.570	0.582	2.1
8	200	0.516	0.532	3.1
9	119	0.445	0.400	-10.1
10	66	0.488	0.470	-3.7

who had completed primary school (0.6); odds were marginally reduced for women with an incomplete primary education (0.8).

The low age at first marriage in Nepal reflects a culture in which marriages are arranged between families, sometimes even at birth. A large proportion of women get married before age 15, and these women are likely to stop childbearing as soon as they have a son.²¹ Our findings show that older ages at marriage and parities higher than four

are at least marginally associated ($p < .10$) with a reduced likelihood of stopping with a male child. The latter result is consistent with similar studies in India showing that high-parity women are not interested in stopping childbearing when they bear a son,²² because they probably already have at least one son.

Birth intervals are negatively correlated with son preference:²³ If a couple is eager to have a son, they are likely to hurry the conception, leading to a shorter birth interval. Our analysis revealed that if the previous birth interval was longer than 18 months, the odds of having had a son at last birth were reduced (odds ratio, 0.6–0.8). Hence, a woman had a higher likelihood of ending her family with a son if the birth interval was less than 19 months.

Religion was also a significant individual-level factor: Muslim women had lower odds of having a boy at last birth than did Hindu women (odds ratio, 0.6), probably because they had higher fertility and were less likely to practice stopping behavior than women from other religious groups.

Nepal extends from mountainous regions in the north, through hills, to *terai* (plains) in the south. Sex preference increases toward the south of the country.²⁴ To investigate the effect of ethnicity as a reflection of geographic and hence

TABLE 5. Odds ratios from logistic regression analyses examining the association between various characteristics and stopping childbearing after the birth of a son

Characteristic	Odds ratio	Characteristic	Odds ratio
INDIVIDUAL			
Contraceptive use†			
No (ref)	1.00	Religion	
Yes	1.36**	Hindu (ref)	1.00
		Buddhist	1.03
		Muslim	0.62*
		Other	1.06
		ETHNICITY OF SAMPLING UNIT‡	
Previous son		Rai and Lim	
No (ref)	1.00	0.0 (ref)	1.00
Yes	0.73**	0.1–10.0	0.89
		10.1–20.0	0.95
Watches TV at least once a week		>20.0	0.74*
No (ref)	1.00	Hill groups other than Rai and Lim	
Yes	0.73**	0.0 (ref)	1.00
		0.1–10.0	0.75**
Education		10.1–20.0	1.05
None (ref)	1.00	>20.0	1.16
Incomplete primary	0.80	Yadav	
Complete primary	0.62*	0.0 (ref)	1.00
Incomplete secondary	1.22	0.1–10.0	0.99
≥complete secondary	0.92	10.1–20.0	1.77**
Age at first marriage		>20.0	1.33*
<10 (ref)	1.00	Tharu	
11–15	0.71	0.0 (ref)	1.00
16–20	0.69	0.1–10.0	1.02
>21	0.68	10.1–20.0	1.46*
Parity		>20.0	0.93
1 (ref)	1.00	Occupational caste	
2	1.20	0.0 (ref)	1.00
3	1.05	0.1–10.0	1.10
4	0.80	10.1–20.0	1.06
5	0.71	>20.0	1.24*
6	0.65*	Constant	1.433**
≥7	0.68*	χ^2	147.9**
Last birth interval		<i>df</i>	30
<19 mos. (ref)	1.00		
19–60 mos.	0.83*		
>60 mos.	0.62**		

* $p < .05$. ** $p < .01$. †Current use of any modern method. ‡By percentage of each ethnicity present. Note: ref=reference category.

cultural background, we categorized primary sampling units by the proportion of certain ethnicities present.²⁵ Four ethnicities had a significant influence on sex preference: Rai and Lim (from the eastern mountain and hill areas), Tharu (from the *terai*), Yadav (from the *terai* close to the Tibetan border), and occupational caste (from the *terai*).^{*} A woman's odds of having ended childbearing with a boy were reduced if she lived in a community in which more than 20% of the people were Rai and Lim (odds ratio, 0.7) or up to 10% were from hill groups other than Rai and Lim (0.8). In contrast, her odds were elevated if the makeup of her community was more than 10% Yadav (1.3–1.8), about 10–20% Tharu (1.5) or more than 20% occupational caste (1.2). These findings relate to the cultures of these groups. For example, people from occupational caste groups feel that having a son is fundamental to being accepted by the community.²⁶

DISCUSSION AND CONCLUSION

The existence of son preference in a region where fertility has begun to fall has implications for future population policy in Nepal, as well as for the broader study of the role of son preference in socioeconomic development. This study shows that son preference in Nepal has a moderate impact on both contraceptive use and fertility.

The elimination of sex preference in Nepal would add eight percentage points to contraceptive use and would reduce the TFR by slightly more than 6%. Such an increase in contraceptive use would be a considerable advance for the country's family planning program. If a further drop in fertility is achieved without a commensurate decrease in son preference, however, the use of sex-selective abortion is likely to increase.

The impact of son preference, however moderate, must be viewed in the context of fertility transition in Asia: The higher the overall level of fertility, the weaker the effect of sex preference on the TFR. For example, if a population strictly applies a stopping rule after the birth of a boy, son preference would have a higher impact on parity progression at parity one than at parity two.²⁷ A further decline in fertility in Nepal would result in a higher impact of son preference and would further delay the fertility transition.

The impact of sex preference in Nepal should not be underestimated. In Asian societies where the need to have sons to support the family financially is prominent, women are not encouraged to take on economic activity outside the home. An associated Asian custom is the practice of dowry payments, which will always impoverish the parents of girls and enrich the parents of boys.²⁸ Possible geographic and ethnic clustering of son preference in Nepal is likely to correlate with women's autonomy. The improvement of women's status and education and the importance of raising the value of girls in society should therefore be policy imperatives.

The results of this analysis show clear implications for

the family planning program in Nepal. Geographic and economic barriers to contraceptive service use in Nepal are well known, but the additional barrier of sex preference should also be understood by service providers. Furthermore, in the light of a possible increase in the availability of ultrasound technology, sex preference may have an impact on sex-selective abortion, a practice that has risen with declining fertility in other cultures with a strong sex preference.²⁹

In conclusion, son preference in Nepal is not highly visible because there are few indications of a rising sex ratio at birth or of high mortality rates among female children. However, son preference remains substantial in Nepal, and its effects are likely to become much more pronounced as desired family size declines.

REFERENCES

1. Agnihotri SB, Missing females: a disaggregated analysis, *Economic and Political Weekly*, 1995, 30(33):2074–2084; Coale AJ, Excess female mortality and the balance of the sexes in the population: an estimate of the number of "missing females," *Population and Development Review*, 1991, 17(3):517–523 & 565–567; Das Gupta M, Selective discrimination against female children in rural Punjab, India, *Population and Development Review*, 1987, 13(1):77–100; and Griffiths P, Matthews Z and Hinde A, Understanding the sex ratio in India: a simulation approach, *Demography*, 2000, 37(4):477–488.
2. Dalla Zuanna G and Leone T, A gender preference measure: the sex ratio at last birth, *Genus*, 2001, LVII(1):33–57.
3. Das Gupta M, 1987, op. cit. (see reference 1).
4. Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2).
5. Pradhan A et al., *Demographic and Health Surveys: Nepal Country Report*, Calverton, MD, USA: Macro International, 1997.
6. Karki YB, Sex ratio in Nepal, *Economic Journal of Nepal*, 1992, 15(1):30–37.
7. Pradhan A et al., 1997, op. cit. (see reference 5).
8. United Nations (UN), The extent and causes of female disadvantage in mortality: an overview, in: UN Secretariat, ed., *Too Young to Die: Genes or Gender?* New York: UN Department of Economic and Social Affairs Population Division, 1998, pp. 1–15.
9. Choe MK et al., Son preference, family building process and child mortality, in: UN Secretariat, *ibid.*, pp. 208–222.
10. Clark S, Son preference and sex composition of children: evidence from India, *Demography*, 2000, 37(1):95–108.
11. Choe MK et al., 1998, op. cit. (see reference 9).
12. Arnold F, Choe MK and Roy TK, Son preference, the family-building process and child mortality in India, *Population Studies*, 1998, 52(3): 301–315; and Mutharayappa R et al., Son preference and its effect on fertility in India, National Family Health Survey Subject Reports, Mumbai, India: International Institute for Population Sciences, 1997, No. 3.
13. Park CB and Cho NH, Consequences of son preference in a low-fertility society: imbalance of the sex ratio at birth in Korea, *Population and Development Review*, 1995, 21(1):59–84; Tuljapurkar S, Li N and Feldman MW, High sex ratios in China's future, *Science*, 1995, 267(5199):874–876; Warren MA, *Gendercide: The Implications of Sex Selection*, Totowa, NJ, USA: Rowman and Allanheld, 1995; and Zeng Y et al., Causes and implications of the recent increase in the reported sex ratio at birth in China, *Population and Development Review*, 1993, 19(2):283–302.
14. Cleland J, Verall J and Vaessen M, *Preferences for the Sex of Children and Their Influence on Reproductive Behaviour*, *World Fertility Survey Comparative Studies*, Voorburg, Netherlands: International Statistical Institute, 1983, No. 27.
15. Karki YB, 1992, op. cit. (see reference 6).
16. Arnold F, Measuring the effect of sex preference on fertility: the case of Korea, *Demography*, 1985, 22(2):280–288.

*The occupational caste consists of lower-caste ethnicities of the *terai*, such as Sinchokre, Langmote, Lama, Banth, Garthi, Ghimire, Paret and Gandel.

17. Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2).
18. Arnold F, 1985, op. cit. (see reference 16).
19. Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2).
20. Arnold F, 1985, op. cit. (see reference 16), Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2); and Das Gupta M, 1987, op. cit. (see reference 1).
21. Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2).
22. Pradhan A et al., 1997, op. cit. (see reference 5).
23. Dalla Zuanna G and Leone T, 2001, op. cit. (see reference 2).
24. Arnold F, 1985, op. cit. (see reference 16).
25. Bista DB, *People of Nepal*, Kathmandu: Ratna Pustak Bhandar Publishers, 1996; and Fricke T and Teachman JD, Writing the names: marriage style, living arrangements, and first birth interval in a Nepali society, *Demography*, 1993, 30(2):175–188.
26. Karki YB, 1992, op. cit. (see reference 6).
27. Arnold F, 1985, op. cit. (see reference 16).
28. Das Gupta M, 1987, op. cit. (see reference 1).
29. Park CB and Cho NH, 1995, op. cit. (see reference 13).

RESUMEN

Contexto: La discriminación por razones de género y la preferencia por los hijos varones son características clave del Sur de Asia, las cuales están muy bien documentadas en la India. No obstante, en Nepal se ha prestado poca atención a las cuestiones de discriminación por razones de género y la preferencia de sexo.

Métodos: Se utilizaron los datos de la Encuesta Demográfica y de Salud de Nepal de 1996, correspondientes a las mujeres de 15–49 años alguna vez casadas que no deseaban tener más hijos, para investigar los niveles de discriminación por razones de género y preferencia de sexo. Se calculó el nivel de uso de anticonceptivos y la tasa global de fecundidad (TGF) en casos que no hubiere preferencia de sexo, y se realizaron análisis de regresión logística para examinar la relación entre las variables socioeconómicas y demográficas y la decisión de no tener más hijos después del nacimiento de un hijo varón.

Resultados: Los indicadores de discriminación por razones de sexo comúnmente utilizados, tales como la relación de masculinidad y las tasas de inmunización específicas por sexo, sugieren que en Nepal no haya un elevado nivel de discriminación por razones de sexo. Sin embargo, la preferencia de sexo disminuye el uso de anticonceptivos en un 24%, y aumenta la TGF en más de 6%. El uso de anticonceptivos, la exposición a los medios de información, la paridad, el último intervalo intergenésico, el nivel educativo, la religión y la composición étnica

fuieron todas variables vinculadas a la suspensión de los nacimientos después de haber nacido un hijo varón.

Conclusiones: El nivel de preferencia de sexo en Nepal es considerable. Representa una importante barrera para incrementar el uso de anticonceptivos y reducir la fecundidad en ese país; su impacto puede crecer a medida que disminuya el tamaño deseado de la familia.

RÉSUMÉ

Contexte: La discrimination entre les sexes et la préférence pour les fils sont des caractéristiques démographiques clés de l'Asie du Sud, également bien documentées en Inde. Au Népal, ces questions n'ont cependant guère reçu d'attention.

Méthodes: Les données de l'EDS népalaise de 1996 relatives aux femmes de 15 à 49 ans, mariées ou l'ayant été et qui ne désiraient plus avoir d'enfants ont servi à analyser les niveaux de discrimination et de préférence de sexe. Le taux de pratique contraceptive et l'indice synthétique de fécondité en l'absence de préférence de sexe ont été estimés, tandis que l'association entre les variables socio-économiques et démographiques et l'arrêt de la procréation après la naissance d'un fils était analysée par régression logistique.

Résultats: Les indicateurs usuels de discrimination sexuelle, tels que le rapport des sexes à la naissance et les taux d'immunisation sexospécifiques ne révèlent pas un haut niveau de discrimination entre les sexes au Népal. La préférence de sexe s'y reflète toutefois dans une réduction de 24% de la pratique contraceptive et un accroissement de l'indice synthétique de fécondité de plus de 6%. La pratique contraceptive des femmes, l'exposition aux médias, la parité, le dernier intervalle génésique, le niveau d'éducation et la religion se sont avérés liés à l'arrêt de la procréation après la naissance d'un garçon, de même que la composition ethnique locale.

Conclusions: La préférence de sexe atteint un niveau considérable au Népal. Elle oppose un obstacle important à l'accroissement de la pratique contraceptive et au déclin de la fécondité dans le pays. Son impact se fera d'autant plus ressentir que le nombre d'enfants désiré sera moindre.

Acknowledgment

This research was supported by the Nuffield Foundation. The conclusions and opinions expressed here are solely those of the authors.

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