

Male bias in health care utilization for under-fives in a rural community in western India

B. Ganatra¹ & S. Hirve¹

A cross-sectional survey, in 1991, of 3100 families in 45 contiguous villages in the Pune district of Maharashtra state showed that 456 under-5-year-olds had suffered an acute respiratory infection and/or diarrhoea during the previous 7 days. Significantly more boys (88.9%) than girls (76.5%) were treated by a registered private medical practitioner (odds ratio (OR) = 2.51). Referrals for further treatment were followed by parents significantly more often in the case of their sons (69.2%) than daughters (25%) (OR = 6.75). An average of Rs 35 (US\$ 1.16) was spent on the treatment of a son, compared with Rs 23 (US\$ 0.76) for a daughter. In general, parents were willing to travel a greater distance (>2 km) to seek medical treatment for their sons. These differences persisted even after adjusting for severity of illness, parent's income, occupation and education, and the birth order of the child.

Intervention programmes directed at under-fives would need to correct the bias against girls if equitable access to health care is to be achieved.

Male-female differentials in mortality patterns among under-5-year-olds in developing countries have been well documented, the majority of countries showing how any biological advantage of females is overridden by societal norms so that female mortality far exceeds male mortality after the perinatal and early neonatal periods (1-9). This difference in mortality is the clearest sign of overt and covert discriminatory behavioural practices which favour the treatment of sons over daughters. Several studies have suggested that family allocations of resources including food, money and maternal attention tend to deprive female children of health care (2-4, 7, 10-13).

This study investigates the extent of sex bias in the utilization of health care facilities for children with common illnesses in a rural area of Maharashtra state.

Materials and methods

A cross-sectional survey of 45 contiguous villages (population, 120 000) in the Pune district of Maharashtra state was carried out from August to November 1991. A total of 3100 families with children under 5 years of age were interviewed by medico-social workers. All under-five children with a history (non-fatal of acute respiratory infection (ARI) and/or diarrhoea during the previous 7 days) were included in the study. The duration and severity of the most

recent illness (ARI or diarrhoea) were recorded. Severity was graded, based on a simple classification of symptoms that were most likely to be remembered by the families. Severity of diarrhoea took into account the frequency of loose motions, associated vomiting, and the presence of dehydration (indicated by a depressed fontanelle, sunken eyes, and decreased urine output). Severity of ARI was graded on the basis of fever and a history of breathing difficulty (rapid breathing and stridor). Details on health care utilization variables (e.g., whether medical treatment was sought, from whom, and on what day of the illness; the type of treatment taken and whether referral was advised and accepted; the distance travelled to seek medical advice; and the amount of money spent on the illness and transport) were collected by a questionnaire. Data were also collected on factors that could potentially influence health care utilization like birth order, socioeconomic status, and parents' education. The sex of the child was recorded but the medicosocial workers who collected the data were not told the aims of the study in order to minimize interviewer bias.

All variables were analysed, by sex, and differences in proportions were tested using Student's *t*-test. Logistic regression analysis helped indicate whether sex remained a significant factor influencing treatment variables after controlling for type and severity of illness and other confounding factors.

Results

Among the 3100 families (with under-fives) interviewed, a total of 456 children had had an episode of ARI or diarrhoea within 7 days, giving a prevalence

¹ Research Scientists, K.E.M. Hospital Research Centre, Sardar Mudliar Road, Rasta Peth, Pune 411 011, India. Requests for reprints should be sent to this address.

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of 9.4% for ARI and 5.3% for diarrhoea. There was no significant difference in the prevalences between boys and girls. Two fatal episodes involving girls who died as a consequence of ARI were excluded from the analysis.

Treatment was sought by the families in 77.8% of episodes of illness, with no apparent sex bias. Medical advice, in the case of both sons and daughters, was on average sought on the second day of illness, while treatment was actually started on average on the fifth day after onset of the illness.

Further analysis of children for whom treatment was sought showed a significantly higher proportion of girls (18.8%, compared to 6.7% for boys) who were taken for treatment to a paramedical worker (auxiliary nurse-midwife or multipurpose health worker). On the other hand, a significantly higher proportion of boys (88.9%, compared to 76.5% for girls) were treated by a registered private practitioner (Table 1). This difference persisted even after adjusting for severity of the illness.

A higher proportion of boys were advised referral (7.3%), compared with girls (4.6%); this difference was not statistically significant. But the parents took referral action significantly more in the case of sons (69.2%) than daughters (25%).

Families spent more money on the treatment of sons (average, Rs 35 (US\$ 1.16)) than daughters (average, Rs 23 (US\$ 0.76)). This difference remained statistically significant even after controlling for the type and severity of the illness. In 11% of the female children and in 3.3% of male children, only the free health care facilities and services were utilized and no money was spent on medicine, transport or consultations. This difference was significant.

Boys were also favoured when one had to travel a greater distance to seek medical treatment. Thus, for a significantly higher proportion of girls medical advice was sought only within a 2-km radius (i.e., in the village itself); the proportion was higher for boys when the distance to travel was more than 2 km.

Logistic regression analysis (Table 2) showed that after controlling for severity and type of illness and other factors like parents' education, occupation and income, the chance of seeking medical advice from a private practitioner was 2.5 times greater for boys than for girls. Sons were also favoured, compared with daughters, by parents who were twice as likely to travel outside the village for medical care and about 3.7 times as likely to spend more for treatment. If referral for further treatment was advised it was 6.8 times more likely to be availed of in the case of a son, compared to a daughter.

There was no statistically significant sex bias in factors like resorting to home remedies, the type of treatment (oral medications, injections, etc.), and

Table 1: Proportions of males and females for selected health care utilization factors

| Health care factors | Proportions ^a (%) | | | P value |
|---------------------------|------------------------------|-------|------------|-------------------|
| | Boys | Girls | Difference | |
| Treated by private doctor | 88.9 | 76.5 | 12.4 | <0.05 |
| Treated by paramedic | 6.7 | 18.8 | -12.1 | <0.05 |
| Referral advised | 7.3 | 4.6 | 2.7 | N.S. ^b |
| Referral availed | 69.2 | 25.0 | 44.2 | <0.05 |
| Distance travelled: | | | | |
| <2 km | 30.0 | 45.1 | -15.1 | <0.05 |
| 2-5 km | 38.3 | 32.4 | 5.9 | N.S. |
| >5 km | 31.6 | 22.5 | 9.1 | N.S. |
| Expense: | | | | |
| Nil | 3.3 | 11.0 | - 7.7 | <0.05 |
| Rs 1 to Rs 10 | 14.4 | 33.7 | -19.3 | <0.05 |
| Rs 11 to Rs 50 | 62.8 | 49.4 | 13.4 | <0.05 |
| Rs 51 to Rs 100 | 13.9 | 5.2 | 8.7 | <0.05 |
| >Rs100 | 5.5 | 0.6 | 4.9 | N.S. |

^a Percentages are those children for whom treatment was sought.

^b N.S. = not significant.

whether this was taken fully or partly. Wherever significant differences were noted, they persisted after adjusting for parents' education, income and occupation, the birth order of the child, and the number of living brothers and sisters.

Discussion

Since data collection involved a 7-day recall a certain degree of recall bias was inevitable. The interviewers were not told the purpose of the study, so this source of error was minimized. Only the more common childhood illnesses (ARI and diarrhoea) were considered in this study, and it is not possible to say how gender bias would manifest in the case of more severe childhood illnesses.

The under-five mortality rate for the study area is 70 per 1000 live births, diarrhoea with dehydration accounting for 20% of all deaths and ARI for 12%. The proportion of under-five mortality is higher for females (54%, compared with 46% in males), which is statistically significant (unpublished data from

Table 2: Adjusted odds ratios for risk factors in health care utilization, showing extent of male bias

| Risk factor | Male:female odds ratio |
|--------------------------------------|-----------------------------|
| Treated by private doctor | 2.5 (1.3, 4.7) ^a |
| Distance travelled (>2 km cf. ≤2 km) | 2.0 (1.2, 3.2) |
| Expense (>Rs 50 cf. ≤Rs 50) | 3.7 (1.6, 8.6) |
| Referral availed | 6.8 (0.9, 49.2) |

^a Figures in parentheses are the 95% confidence limits.

WHO's 'Study on low birth weight and infant morbidity and mortality' and the ongoing WHO 'Rural cohort study on child survival'). However, it was outside the scope of this study to determine the degree to which sex bias in health care utilization is linked to these differences in mortality.

The preference for a male child is near universal and is seen to varying degrees even in the developed world (14, 15), but is most manifest in societies which are male-oriented (1, 3, 5, 6, 16-18). Differentials in utilization of health care is one way in which this preference manifests. Several studies in Punjab (3, 7, 12, 19-21) have shown differences in health care utilization for girls, medical attention being sought much less frequently and only at a much later stage of illness. The patterns of discrimination found in these earlier studies were more overt than in our study, and this may be due to secular changes with time. It is also in keeping with the observation that the preference for sons becomes less marked from northern to southern India as the economy changes from dry land to wet land cultivation and the productive values of daughters increases (1).^a

Although our study area has a well developed primary health care infrastructure with regular contacts between the health care providers and the people, the higher value placed by the community on private physicians must account for the significantly higher proportion of boys being treated privately. Rahaman (11) found decreases in attendance by females at a diarrhoea treatment clinic as distance from the centre increased. In our study, parents took their sons over greater distances to get treatment or for referral, compared with taking their daughters. Birth order and the number of living brothers or sisters were not found to influence the money spent on treatment or the distance travelled for treatment, unlike reports from other studies (3).

Our findings suggest that the preference for sons and other local customs may directly influence the health status of females, including the utilization of health services and child survival technologies on behalf of girl children. Where fees are charged or referrals to a higher level of care are involved, families are likely to deny these more often in the case of daughters. Therefore, intervention programmes directed at under-fives would need to correct the bias against girls if equitable access to health care is to be achieved.

^a Leslie J et al. *Weathering economic crisis — the crucial role of women in health*. Paper presented at the Second Takemi Symposium in International Health, Harvard School of Public Health, 1986.

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Résumé

Biais en faveur du sexe masculin dans l'utilisation des soins de santé chez les moins de cinq ans dans une communauté rurale de l'ouest de l'Inde

Une enquête transversale réalisée en 1991 sur 3100 familles dans 45 villages contigus du district de Poona dans l'Etat de Maharashtra a montré que 456 enfants de moins de cinq ans avaient souffert d'une infection respiratoire aiguë (IRA) et/ou de diarrhée au cours des sept jours précédents. Seuls les épisodes non mortels ont été examinés. La gravité des cas a été notée au moyen d'une échelle simple basée sur les faits retenus par la famille. La prévalence des IRA et de la diarrhée était analogue entre les deux sexes.

Dans 77,8% des cas, l'enfant a été vu par un professionnel de santé, en moyenne deux jours après le début des symptômes. Aucun biais lié au sexe n'était alors apparent. Une proportion significativement plus grande de garçons (88,9%) que de filles (76,5%) ont été traités par des praticiens privés, ce qui semble compatible avec l'estime dans laquelle la communauté tient les praticiens privés, dont elle pense qu'ils fournissent de meilleurs soins.

En moyenne, 35 Rs (US\$ 1,16) ont été dépensés pour le traitement d'un fils, contre 23 Rs (US\$ 0,76) pour une fille. Une plus forte proportion de filles ont été traitées dans le village, tandis que les garçons étaient plus souvent emmenés dans un centre de soins plus éloigné (OR = 2,0). Les familles acceptaient plus souvent que l'enfant soit adressé à un service spécialisé s'il s'agissait d'un garçon (OR = 6,8).

Partout où des différences significatives ont été notées, elles ont persisté après correction de la gravité de la maladie, du niveau d'études des parents, de leur revenu et de leur profession, et du rang de naissance de l'enfant.

Bien que la zone étudiée ait une infrastructure de soins de santé primaires bien développée, avec des contacts réguliers entre la communauté et les agents de soins de santé, il semble que la préférence pour les garçons se manifeste dans l'utilisation des services de santé et des soins de

survie. Lorsque les soins sont payants ou qu'il est question d'envoyer l'enfant à un service spécialisé, les familles en refuseront le coût plus souvent s'il s'agit de filles. Par conséquent, tout programme d'intervention axé sur les moins de cinq ans devra tenir compte de ce biais en faveur des garçons, afin d'assurer un accès équitable aux services de soins.

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