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Editorial

Excess Female Mortality in India: The Case of Himachal Pradesh

Statistics are people with their tears wiped dry.

Dr Julius Richmond
Former Surgeon General
of the United States

Under circumstances in which all individuals in a society have equal access to nutrition and health care, women will tend to have longer life expectancies and their proportion of the population will exceed that of men. When men outnumber women, as they do in India and China as well as in other countries in South Asia and sub-Saharan Africa, the most parsimonious explanation is that human behavior, in the form of severe gender inequities, is the fundamental cause of excess female mortality and of a significant imbalance in the population's female-to-male sex ratio.

The numbers are staggering. Sen's estimate for the number of "missing women" worldwide is 100 million.¹ Coale's estimate is somewhat lower: 60 million.² In either case, excess female mortality must be considered among the leading problems in health and social well-being in the world. Yet, given the magnitude of the problem, the topic has received relatively little attention beyond occasional articles that appear, for the most part, in professional journals devoted to demography rather than to health per se. This limited concern is extraordinary. And unacceptable.

While it is not fair to single out India—the sex ratio in China is just as low, and Pakistan has been reported as having the lowest of all (only about 900 women for every 1000 men)¹—this editorial will be confined to India for 2 reasons. First, India has conducted decennial censuses for more than a century, and those data provide a wealth of information not available for any other country in which males outnumber women. Second, evidence from Himachal Pradesh, a state in northern India, sug-

gests that dramatic and positive changes in rates of excess female mortality are possible.

In considering sex ratios in India, one must examine 2 questions³: (1) What are the causes of excess female mortality? and (2) Why did the sex ratio steadily decline between 1901 and 1991?

As of the last Indian census, in 1991, there were only 929 females for every 1000 males in India. This means that between 22 million and 37 million Indian women were "missing."^{1,2} There is now abundant evidence that excess female mortality is brought about through the systematic neglect of the health and nutrition needs of girls and women, high rates of maternal mortality, and, to a lesser extent, female infanticide and abortion of female fetuses.⁴⁻⁸ Although female deaths in India exceed those of males well beyond childhood and into the 20s—and the late 30s in some states^{9,10}—Sen singles out excess female mortality among children from birth to 4 years of age as the most important source of the sex ratio discrepancy¹ (see also Das Gupta¹¹). In most of the world, death rates among females are typically lower than among males in this age group. In the United Kingdom, for example, the death rate for female children younger than 4 years is 73.7% that of males. The same is true in poorer nations (89.1% in Peru and 78.7% in Zimbabwe) and in other nations of Asia (82.6% in Japan and 83.7% in South Korea).¹² The data from India are much different. Within this age group, the death rate among females is 107.4% of the death rate among males. In the state of Rajasthan it is 119.0%.⁹

Even more distressing, the sex ratio in India has *worsened* over the course of the 20th century. In 1901, the ratio was 972 females for every 1000 males; by 1991 it had fallen to 929.⁹ While the reasons for India's anomalous sex ratio are fairly well established, the reason for its decline is open to question, especially in

view of general improvements in health indicators in India during the past 50 years. Mayer suggests that the decline is due to sex biases in the demographic transition; that is, as overall health and nutrition improves, it does so at a greater rate for men than for women.³ As a consequence, the female-to-male ratio falls as mortality rates for both men and women decrease differentially.

Mayer's analysis considers only national data because migration and changes in state boundaries, he argues, make regional data less reliable. No doubt this is true, but we must also consider whether the pursuit of the highest possible level of reliability is warranted. Looking exclusively at national data obscures regional variations that may suggest how social, cultural, economic, and political environments influence the relative magnitude of excess female mortality. Between 1901 and 1991, the national female-to-male ratio fell from 972 to 927 per 1000. In Rajasthan, where the female-to-male ratio has consistently been below the national average, the ratio increased marginally from 905 to 910 females per 1000 males. In Kerala, the only Indian state in which the female-to-male ratio has always been above parity and is the highest in India, the ratio increased from 1004 to 1036. Kerala's success in this and other areas of human development has been noted widely, but because Kerala has always been different culturally and socially from the rest of India,^{13,14} it is difficult to isolate those factors that have been responsible for its positive female-to-male ratio.

Himachal Pradesh may offer a more useful example. The female-to-male ratio there rose from 884 per 1000 males in 1901 to 912 in 1951 to 976 (second only to Kerala) in 1991.¹⁵ In light of the sharp decrease in the sex ratio for India as a whole during the same period, this is an extraordinary achievement. Moreover, because its percentage of female deaths to male deaths among children from birth to 4 years of age is 88.2%—the lowest in India—it is likely that the Indian census of 2001 will show that the sex ratio in Himachal Pradesh has continued to rise toward parity or even to surpass it. This is in stark contrast to Mayer's prediction that the census of 2001 will find a sex ratio for all of India of 912 females per 1000 males.³

During the past 50 years, when the gap between the numbers of women and men was decreasing rapidly, health and social indicators in Himachal Pradesh years have climbed from below the national average to levels that approach or exceed those of Kerala. Increased productivity in agriculture between 1951 and 1983 gave Himachal Pradesh one of the fastest-growing economies in India. As of 1987–1988, its poverty rate was less than one half the national average,⁹ and the great dis-

parities in wealth that characterize most of India were less severe in Himachal Pradesh.¹⁶ Himachal Pradesh has also excelled in its commitment to public education: per capita government expenditure on education and the teacher-to-population ratio during this period have been about twice the national average.⁹ The results have been impressive. In 1951, the literacy rate in Himachal Pradesh was only 7.7%, the lowest in India and less than one half the national average.¹⁶ By 1971, however, the state's literacy rate had surpassed the national average, and by 1991 it had far exceeded it.¹⁷ In addition, indicators of health and social well-being in Himachal Pradesh have improved dramatically: rates of infant mortality, total fertility, the percentage of married women aged 15 to 19, and rates of prenatal care and child vaccinations are all better than the national averages.⁹

Why is the sex ratio in Himachal Pradesh approaching parity? Mayer's suggestion that increases in female literacy may have a role is supported by the evidence. Improvements in health care must have made a contribution. Sen's assertion about the importance of the role of female participation in the labor force⁷ is also borne out: 19.4% of the labor force in Himachal Pradesh is composed of females, compared with the national average of 16%.⁹ Finally, economic development and relatively low levels of poverty have surely had an influence.

Is it possible that Himachal Pradesh is simply different from the rest of India and holds no useful lessons? It is a relatively small state with a dispersed population. Its economic successes may not be replicable elsewhere. The cultures of the hill peoples, in which women are valued and enjoy a high degree of autonomy, may be what sets it apart.¹⁸ Migration patterns and shifts in state boundaries may be giving the illusion of change. Nevertheless, and despite protests that might be raised that Himachal Pradesh holds no lessons, the enormity of the problem of excess female mortality in India is such that we must pay attention to what has occurred there. That means conducting research that goes beyond what has been done previously. First, the research must be comparative. For example, we must determine the reasons why the proportion of female deaths to male deaths among children from birth to 4 years of age is 119% in Rajasthan, while it is 88.2% in Himachal Pradesh. One avenue for research would be a sex-based epidemiologic study of age-specific causes of mortality. That is, can we identify specific conditions that account for a significant proportion of the difference between sex mortality rates in these 2 states of India? An answer to that question would begin to suggest where interventions to reduce excess female mortality would be most effectively targeted. But cross-sectional epidemio-

logic research may not be of much use in explaining why excess female mortality has remained a problem in much of India, while it is rapidly disappearing in Himachal Pradesh. Without a close investigation of the complex social, economic, political, and cultural processes that have led to positive changes in the sex ratio in Himachal Pradesh, we will not have an answer.

We cannot sit by in the face of Mayer's predictions. Working from an expected ratio of 1040 females per 1000 males (about what is found in Kerala), he calculates that some 70 million Indian women will be "missing" from the 2001 census, 2 to 3 times the number of only a decade before. International concern must be turned to finding out how Himachal Pradesh has apparently solved what Sen has deemed "one of the more momentous, and neglected, problems facing the world today."^{7(p66)} □

Alex Cohen, PhD

The author is with the Department of Social Medicine, Harvard Medical School, Boston, Mass.

Requests for reprints should be sent to Alex Cohen, PhD, Department of Social Medicine, Harvard Medical School, 641 Huntington Ave, Boston, MA 02115 (e-mail: alex_cohen@hms.harvard.edu).

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