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Gender and health in Sri Lanka

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Abstract

Sri Lanka has today easily the longest life-expectancy of any nation in South Asia. The country's achievements have been particularly impressive in the health of women and girls who have substantially lower mortality levels than males; this is unexceptional in the developed world where it is the norm but striking in South Asia where it is not. It has been suggested that low female mortality may reflect a high involvement of Sri Lankan women in decision-making over health care and feeding practices which has benefited their health and that of their children, especially their daughters. Yet census data indicate that until recent decades overall mortality levels were little lower than in other South Asian countries and female age-specific mortality rates were higher than male rates. The paper explores the issues involved concluding that the autonomy of women has contributed to the decline of overall mortality, once modern health services developed. However, women's autonomy has not in itself overcome the sex differential in care, given the economic dependence of women and their families on males: husbands while the women are raising children and ultimately sons for old-age support.

In the general concern with excess female mortality in a region generally suffering high levels of mortality Sri Lanka offers an instructive comparison. Whereas northern India, Pakistan and to a lesser extent Bangladesh are characterized by higher female than male mortality, at least at younger ages, and unbalanced and indeed worsening sex ratios, in Sri Lanka female mortality is exceeded by male mortality. This is no cause for surprise, since in a region where female status is often low and female autonomy restricted many observers have remarked on the relative autonomy of Sri Lankan women and their comparatively high social status. Yet this explanation is too simple. Until about 1960, female mortality exceeded male mortality in almost all age groups; indeed for some age groups this was the case until very recently (Langford and Storey 1993). Partly as a consequence of this excess female mortality, overall mortality levels appear to have compared unfavourably to those of southern India though mortality was lower than in northern India. In this paper we examine some of the reasons why female mortality levels exceeded male levels in the past and why these differentials have disappeared in recent years.

Female and male mortality in Sri Lanka: trends over time.

As shown in Table 1 national statistics indicate that Sri Lankan women today enjoy much the best health status of women in any country in South Asia. Female life expectancy at 74 years is little short of that in many industrialized countries and exceeds second-placed India by some dozen years and last-placed Bhutan by 25 years. In contrast to the other countries of the region where the overall life expectancies at birth of the two sexes are similar, female life expectancy exceeds male life expectancy by several years. In this too Sri Lanka apparently has more in common with countries outside South Asia than other countries within the region.

Sri Lankan women seem to be realizing their biological advantage over men. The female advantage in Sri Lanka, however, is still only half of what is typical of a Western country. The difference may reflect poor life-style habits among men in Western countries, for example smoking, drinking and insufficient exercise, as much as it reflects continuing adverse factors in regard to the health of Sri Lankan females.

A key factor in the superior health of Sri Lankan women is their very low levels of maternal mortality compared to other South Asian women (see Table 1). The health status of Sri Lankan women, however, has not always been exceptional; see Table 2 on trends in sex differentials in Sri Lankan mortality. Indeed, as Langford and Storey (1993) have shown, in the early years of this century there was little to distinguish Sri Lankan mortality from that of British India. While overall mortality was somewhat below that of North India and less disadvantageous to females it was worse on both counts than in South India. Even more surprisingly, in this period sex ratios were worse in Sri Lanka than in India even taking into account excess male migration to Sri Lanka from India.

Table 1
Female and male life expectancies and maternal mortality in South Asia and selected developed countries

Country	Life expectancy (1992)		Difference *(female - male)*	MMR (per 100,000 births)
	Female	Male		
Bhutan	49	48	+ 1	1,305[a]
Nepal	53	54	- 1	833
Bangladesh	56	55	+ 1	600
Pakistan	59	59	0	270
India	62	61	+ 1	-
Sri Lanka	74	70	+ 4	80
United Kingdom	79	73	+ 6	-
United States	80	73	+ 7	-

Notes: [a] Incomplete data

Source: World Bank 1994: Tables 28 and 29.

From the earliest figures available, 1893-1901 male life expectancy consistently exceeded female life expectancy until the 1960s (UN-ESCAP 1976: Annexe 3). This was, as Langford and Storey (1993) have noted, in contrast to the situation prevailing in Southern India where census figures from early this century indicate that female life expectancy exceeded male life expectancy. Yet South India is the part of South Asia which most observers say resembles most closely Sri Lanka in demographic and sociological terms (Yalman 1971). Of interest here is Dyson and Moore's (1983) distinction between the societies of South India which have high female autonomy and low female mortality and fertility, and the societies of north India where women are more tightly circumscribed and have correspondingly high female mortality and fertility. The Dyson and Moore model of South Indian society is seemingly strongly influenced by Yalman's (1971) outstanding ethnography of Sri Lanka's Sinhalese Kandyan society. Yet the evidence indicates that Sri Lanka did not always have the demographic characteristics ascribed to their Southern model.

Table 2
Age specific mortality ratio of male to female rates, 1900 - 1972 - Sri Lanka.

Age group	1900-02	1910-12	1920-22	1952-54	1962-64	1970-72
0	1.07	1.06	1.06	1.24	1.20	1.21
1-4	0.82	0.82	0.85	0.83	0.85	0.85
5-9	0.84	0.86	0.89	0.84	0.90	0.93
10-14	0.94	0.86	0.86	0.94	1.06	1.08
15-19	1.35	1.02	0.91	0.74	0.99	1.08
20-24	0.71	0.79	0.71	0.59	0.72	1.18
25-29	0.66	0.70	0.71	0.56	0.75	1.06
30-34				0.59	0.74	1.05
35-39	0.95	0.89	0.92	0.72	0.86	1.23
40-44				0.92	1.04	1.52
45-54	1.20	1.17	1.23	1.09	1.15	1.55
55-64				1.17	1.19	1.46
65-74	0.78	0.80	0.84	1.01	1.05	1.19
75+				0.92	0.93	1.06

Sources: Langford and Storey 1993: Table 3; Nadarajah 1983: Table 2.

Hence, as pointed out by Langford and Storey (1993), we have an apparent conundrum. A country which observers might expect to be characterized by low female mortality, as indeed it is today (see Table 3), was characterized by higher female mortality. Langford and Storey (1993) suggest that Sri Lanka's situation reflected high maternal mortality associated with anaemia arising from particularly high levels of malaria and hookworm; they state that because of climatic conditions these afflictions were a much greater health concern in Sri Lanka than in South India. This may well be an important part of the explanation for the greatest changes in mortality that have taken place in those age groups affected by maternal mortality, but it is not a complete explanation. According to Nadarajah (1983: 320-321) even after the effect of maternal mortality is taken into account female deaths in the reproductive age groups exceeded male deaths. Furthermore, as Langford and Storey (1993) themselves note, female mortality was higher among children where maternal mortality is not a factor, which, as they comment, would seem to indicate a degree of sex-discriminatory behaviour.

It is possible that Langford and Storey have overstated the importance of the hookworm and malaria campaigns in reducing sex mortality differentials. Table 2 indicates that the major decline in the differentials occurred in the two periods 1952-54 to 1962-64 and 1962-64 to 1970-74, after the malaria decline which occurred in the internal period before 1952. The hookworm decline was even earlier. It is worth noting that Langford (1996) in a recent article argued that the malaria campaign was of minor importance in Sri Lanka's mortality decline.

Table 3
Recent changes in childhood mortality ($_1q_4$) differentials in Sri Lanka.

		Period	
Sex of child	1972-77	1977-81	1982-87
Female	22.4	10.6	9.2
Male	16.4	10.5	9.8

Source: Department of Census and Statistics 1988.

We shall examine the possible factors in higher female mortality in the light of data from the 1985-87 Sri Lankan Demographic Change Project[1] (SLDCP) and the 1987 Sri Lankan Demographic and Health Survey (SLDHS) as well as from more general sources. There are three principal aspects of the SLDCP that are of interest here, first what it reported on prenatal and post natal care and delivery, second what it reported on health treatment behaviour and thirdly what it reported on nutrition, all factors directly relevant to differentials in mortality. There are limitations, however, in seeking to understand an historical artefact using contemporary data.

Prenatal and postnatal care

The most striking finding of the SLDCP on prenatal care, as of all surveys examining the subject, is the remarkable acceptance by Sri Lankan women of the need for proper obstetric care and the strength of the Sri Lankan health system in providing it. In the SLDCP survey areas 97 per cent of urban women and a remarkable 98 per cent of rural women (excluding the estate sector) went to hospital for childbirth (Pieris 1994: Table 5.3). The exception to these results were the tea estates inhabited predominantly by a population of Indian Tamil origin among whom childbirths in hospital remained a minority. The SLDCP findings may have been extreme, the survey sites being largely located in the more developed southwest of Sri Lanka, but other surveys indicate similar if somewhat lower figures. For example, Meegama and Gaminiratne (1986: 20) found over 80 per cent of births attended by doctors or trained midwives.

Sri Lanka's comprehensive obstetric and antenatal services reflect an extensive period of development. Preventive health measures began in Sri Lanka in the 1920s with the introduction of antenatal clinics, immunization against communicable diseases and improved sanitation. An important step in providing preventive health care was the establishment of a health unit in 1926 which trained field midwives and public health inspectors (Perera 1985: 99-100). The services were further developed in the 1930s following the introduction of self-rule. An important step here was the decision, based on the recommendation of the

[1] The SLDCP was a joint program between the Demographic Training and Research Unit (DTRU), University of Colombo and the Department of Demography, Australian National University. It was a multi-purpose survey and in-depth study which collected information on marriage, fertility, health and mortality, and migration. This paper draws on the health and mortality related information gathered. Data collection in the SLDCP included a structured survey-type questionnaire and a census of over 12,000 persons from 2200 households to provide a basic demographic overview of the communities. The survey also used a community-level micro-approach combining an anthropological participant observation study and in-depth interviews. All the major ethnic and religious groups of Sri Lanka were included in the survey and the survey areas were chosen from all three of the major recognized sectors of the population: urban, rural and estate (cf. Pieris 1995).

Donoughmore Commission in 1933, to extend the franchise to women on the basis that it was women who truly cared for the welfare of their families. The full extension of the expanded health system with a major impact on mortality occurred in the period immediately after the Second World War and continued after independence in 1948 through the 1950s.

A critical factor in the improvement in maternal as well as infant mortality was the employment of trained midwives from early this century. Even today trained midwives—now called Public Health Nurses—visit every household with newly married couples, pregnant women, young children and anyone else who requests their service. They provide advice and services on family planning, pregnancy care, childbirth, and infant and child care, including immunization, breastfeeding, supplementary feeding and health care (SLDCP midwives' interviews, 1985-87). Their activities in this regard must reduce sex-related differentials in health care, as the midwives monitor the progress of all children's growth. If children are not brought to the clinic regularly for their immunization and checkup, the midwives tell the mothers that they are neglecting their children. However, while the midwife system operates effectively in most areas, the SLDCP indicated that in the estates and the urban poor areas the midwife service failed to reach some women.

An additional factor reducing the effectiveness of the midwife service in the estates and urban poor areas is that in this area it is the men rather than the women who are often responsible for treating their children, whereas in the more educated predominantly Sinhalese population of the SLDCP's rural and urban middle-class field sites, health decisions are primarily the concern of the wife to whom the midwife's message is addressed. The women are absent because of their full-time employment as tea-pickers, a situation which may also mean that many are missed by the midwife on her household visitation rounds.

It is evident that this very high use of antenatal and obstetric care, in combination with measures to control hookworm and malaria which reduced anaemia, have undoubtedly been a factor in lowering Sri Lanka's surprisingly high female mortality. As noted earlier, high maternal mortality does not fully explain why female mortality was above male mortality. It may be observed that some of the causes of maternal mortality such as anaemia may also have contributed to non-maternal mortality. Anaemia continues to be a significant problem amongst girls in younger age groups, for example the 15-19 age group, who in late-marrying Sri Lanka rarely give birth.

Apart from reducing maternal mortality the high use of antenatal and obstetric services is also an indication of the highly developed state of Sri Lanka's health services, and of the popular acceptance of health services. These factors help explain the remarkable decline in Sri Lankan mortality but they do less to explain the changes in gender differentials in mortality.

Health treatment

The SLDCP and the SLDHS found virtually no discrimination between the sexes in health care. The SLDCP data do not suggest that respondents are more inclined to report illnesses of males than females. Indeed, marginally fewer males than females were reported sick: 49 per cent of men and 51 per cent of women. Slightly more males than females under age five were reported as having been sick in the recent past but this is in keeping with the sex ratio at birth: 52.8 per cent males as against 47.2 per cent females. Neither figure implies a differential in attention given to the treatment of males compared to females.

Similarly, reported differentials in treatment were minor and none were significant. Table 4 may suggest a slightly greater likelihood for boys than girls under five to have received modern treatment for the same illness, but the numbers are small and the overall differences are not statistically significant. There is some evidence that females were more likely than males to receive Ayurvedic treatment, possibly because most women live at home and work

close by so that they are able to follow easily the various dietary regimes and other behavioural changes required when taking Ayurvedic treatment, unlike men who often work far from home. Self-treatment, except for chest pain and skin disease, is more often used by men. Adult males also use a lot of analgesics before seeking treatment as they are employed away from home and find it hard to go to free medical care (Table 5).

Table 4
Numbers[a] and proportions of commonly reported illnesses of children aged five and under, by type of first treatment and sex of the child, in all survey areas.

Illness group	Sex	Hospital (free)	Private (paid)	Ayurveda	Self-treatment	Other[b]	Total
Fever	Male	26.9 (21)	34.6 (27)	2.6 (2)	34.6 (27)	1.3 (1)	100.0 (78)
	Female	23.3 (14)	28.3 (17)	0.0	45.0 (27)	3.4 (2)	100.0 (60)
Cold/cough/ catarrh	Male	19.0 (12)	23.8 (15)	1.6 (1)	52.4 (33)	3.2 (2)	100.0 (63)
	Female	17.3 (9)	9.6 (5)	1.9 (1)	69.2 (36)	1.9 (1)	100.0 (52)
Diarrhoea	Male	21.4 (6)	35.7 (10)	0.0	42.9 (12)	0.0	100.0 (28)
	Female	30.4 (7)	30.4 (7)	4.3 (1)	34.8 (8)	0.0	100.0 (23)
Worms	Male	33.3 (6)	50.0 (9)	0.0	16.7 (3)	0.0	100.0 (18)
	Female	16.7 (3)	61.1 (11)	5.6 (1)	16.7 (3)	0.0	100.0 (18)
Other respiratory	Male	40.0 (6)	40.0 (6)	0.0	13.3 (2)	6.7 (1)	100.0 (15)
	Female	40.0 (10)	28.0 (7)	4.0 (1)	24.0 (6)	4.0 (1)	100.0 (25)
All illnesses	Male	26.3 (60)	32.9 (75)	1.8 (4)	37.3 (85)	1.8 (4)	100.0 (228)
	Female	25.0 (51)	32.9 (53)	3.4 (7)	41.2 (84)	4.4 (9)	100.0 (204)

Note: a The number of children is given in parentheses.

b Owing to small numbers modern/traditional combination, and magico-religious treatment are not included here.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

Table 5
Percentage distribution in treatment of illnesses of last sick person in household by sex in all survey areas, all ages.

Illness group	Sex	Hospital (free)	Private (paid)	Ayurveda	Self-treatment	Magico-religious	Both modern & traditional	N
Fever	M	19.2	29.8	0.8	49.0	1.2	0.0	245
	F	22.3	29.1	0.7	46.4	0.4	0.7	278
Cold/cough/	M[a]	12.4	13.4	2.3	70.0	0.0	0.5	217
catarrh	F[b]	16.5	11.6	3.0	67.0	0.7	0.7	267
Diarrhoea	M	26.8	28.2	2.8	42.3	0.0	0.0	71
	F	23.8	38.1	4.8	33.3	0.0	0.0	84
Wounds &	M	41.4	17.2	10.3	31.0	0.0	0.0	29
accidental	F	50.0	27.8	5.6	16.7	0.0	0.0	18
injury								
Rheumatism	M[b]	18.9	27.0	16.2	35.1	0.0	0.0	37
& body	F	29.3	12.0	29.3	26.7	2.7	0.0	75
pains								
Worms	M	35.3	38.2	0.0	26.5	0.0	0.0	34
	F	21.6	48.6	2.7	24.3	2.7	0.0	37
Chest pain	M	21.4	71.4	7.1	0.0	0.0	0.0	14
	F[c]	43.5	30.4	0.0	17.4	0.0	0.0	23
Other	M	30.4	43.5	2.2	19.6	2.2	2.2	46
respiratory								
	F	27.8	48.1	2.5	19.0	2.5	0.0	79
Skin disease	M	33.3	50.0	3.3	10.0	3.3	0.0	30
	F	40.0	16.0	20.0	24.0	0.0	0.0	25
Malnutrition	M	36.4	27.3	0.0	27.3	9.1	0.0	11
	F	14.3	66.7	9.5	4.8	4.8	0.0	21

Note: Only those illnesses reported by 10 or more people included in Table.

Row totals add up to 100.

a Three persons were not given any treatment.

b One person was not given any treatment.

c Two females received no treatment.

Source: Primary analysis of Sri Lankan Demographic Change Project Data, 1985 and 1987.

The SLDHS data (Arnold 1991: Table 5) seem to suggest that there was somewhat lower reporting of the incidence of diarrhoea for girls than for boys and a higher proportion of boys (76%) than girls (68%) with diarrhoea being taken to a medical facility for treatment. However, almost identical proportions of boys and girls with diarrhoea in the two weeks before the survey were given ORS. None of the reported differentials was statistically significant.

Immunization

Proper immunization is critical for good health. However, neither the SLDCP nor the SLDHS reported significant differentials by sex. The major differential found was by area, a factor

closely related to ethnicity and socio-economic status. It is perhaps significant that, except for measles, immunization coverage was almost 100 per cent. Even for measles vaccine there was no significant difference by sex in coverage. Indeed the effective coverage of both sexes may have played a key role in reducing sex differentials in child mortality in that it has greatly reduced infectious disease which affects both sexes roughly equally, with the consequence that a higher proportion of remaining deaths are due to accidents to which, worldwide experience indicates, boys are more subject than are girls.

Nutrition

The SLDCP data were analysed to see whether there had been any sex differentials in infant feeding patterns by sex of the child, regarding length of breastfeeding and supplementary feeding, among the infants and young children. Overall, boys were breastfed one month longer than girls: 18.6 months for boys and 17.6 for girls. This was true of all survey areas except among the Moors in the urban poor areas for whom there was no difference (Pieris 1994). The difference, however, is not statistically significant. The SLDHS data also showed no significant difference in the length of breastfeeding for boys and girls (Arnold 1991: Table 7).

For children being breastfed there is very little evidence of sex differentials in care and treatment except to the extent that males are biologically somewhat more prone to death than females. For this reason, among Sri Lankan infants under one year, girls have long exhibited lower mortality than boys (Langford and Storey 1993: 226). However, differences in nutrition after weaning, normally in the child's second year, can have a major influence on mortality differentials. It is of interest, therefore, that at this age the mortality of girls continued until recently to exceed that of boys.

Arnold's (1991: Table 8) analysis of SLDHS nutritional data for children aged 3-35 months did not show a statistically significant difference between the boys and the girls in the proportions stunted, underweight and wasted. However, when the data were restricted to children aged 24-35 months, a significantly greater proportion of girls were malnourished. The proportion of stunted girls was nearly ten per cent more than that of boys and the proportion of underweight girls about 12 per cent more than the boys. There was, however, no significant difference between the proportions of wasted children. The data suggests that there may be some continuing degree of discrimination against girls in Sri Lanka. Indeed, there is continuing belief that young boys burn more energy by their daily activities than girls and thus need more food. This is partly because boys are encouraged to be more active whereas girls from an early age are instructed to play less energetic games. People do not see this as discriminatory behaviour against girls but as teaching them to be more feminine and gentle, an essential requirement for being a woman. Nevertheless, while these differences are of concern, they are not huge. Significantly, the Sri Lankan Demographic and Health Survey data indicate that average female child mortality for the 1982-87 period has now fallen below that of the males, suggesting that while differentials remain in nutrition they are no longer having a major effect on health. This may suggest that, with Sri Lanka's very developed health system, nutrition is only a minor factor in mortality. Nutrition may still be contributing to important differentials in other aspects of health such as morbidity but, as noted above, the SLDCP found only minor differences in reported illness by sex.

We have noted that improved maternal care has played an important role in reducing gender differentials but maternal mortality did not explain the full sex differential. This suggests that there may have been some degree of sex discrimination. The SLDCP and the SLDHS found limited evidence of discrimination in child care and slightly more in nutrition. It seems unlikely that either was enough to affect mortality significantly, given that nearly all children and adults get adequate attention in time and that nutrition appears to have only a

marginal effect on mortality, as distinct from overall health, in Sri Lanka now. What effect these factors continue to have, however, has been further reduced by the efforts of the midwives and other health personnel to encourage parents to bring children and themselves to health services, by school nutrition programs and programs for the poor, and almost universal attendance of both sexes at schools where teachers will insist that sick students convalesce; in the past they may have continued to work when they should have been resting (cf. Caldwell and Caldwell 1990).

While all these factors help explain why the effect of sex differentiation on mortality may have been reduced, they do not explain the existence of such discrimination in the first place, especially given the reputed position of Sri Lankan women. There are two points to be made here. The first point is that such discrimination was relative. The female mortality disadvantage was always less than that of North India and once specific factors were accounted for, such as those causing anaemia, it may have been little more than in South India. Nevertheless it existed. The second point is that a distinction needs to be made between the relative autonomy of Sri Lankan women and the value given both to the breadwinner and to sons who were expected to look after the older couple as they aged.

The mother as the family carer

The relative autonomy of Sri Lankan and particularly Sinhalese women has been noted by numerous writers from the seventeenth century on (Knox 1981; Ribeiro 1925; Percival 1803; Leach 1971; Yalman 1971). This autonomy has almost certainly been a major factor in Sri Lanka's health achievements this century (J.C. Caldwell 1986; Pieris 1995; Caldwell 1996a). Women have been able to seek care for themselves and their families on their own initiative, indeed women are expected to bear prime responsibility for their children's health; some might deny that having responsibilities imposed on them really represents female autonomy. In the SLDCP women were asked 'when a child is sick who decides whether to take that child to a doctor?'. Nearly half or 48 per cent in the Southwest sample said the mother alone and 45 per cent said the mother with her husband's agreement. Only seven per cent said it was the husband's decision alone (Pieris 1994: 147). We would interpret this as meaning that it was essentially the mother's choice in 93 per cent of cases, and in those cases where the husband's agreement was sought this was essentially indicative of the concern of both husband and wife for the child's welfare and the need to keep the husband concerned.

A contrast was provided by the tea estate area, inhabited primarily by descendants of nineteenth-century Indian Tamil immigrants, among whom women's autonomy was much less. In this area men were responsible for most outside dealings including taking children to hospital, despite the fact that the main income earners were women who worked on the tea estates. In answer to the same questions only nine per cent said that the mother alone made the decision, 72 per cent said it was the mother's decision with father's agreement, and 19 per cent that it was the husband's decision alone (Pieris 1994: 147). The greater role of estate males in making the decision to seek treatment may reflect, in part, the special position in the estates, where, unlike elsewhere in Sri Lanka, it was the husband who was most likely to be home, while his wife worked as a tea picker. However, response to other questions indicated that estate males had a dominance in other decision-making areas, where being at home was not an important factor, that Sinhalese men in the Southwest sample did not have. An example of this was the decision to practise family planning.

The responsibility and capability of Sri Lankan women in health care had been enhanced, according to the SLDCP respondents, by mass education. Schools have been available for both boys and girls since the early nineteenth century but it was with the introduction of universal free education in vernacular languages in the twentieth century that there was a

dramatic increase in female literacy. In 1881 30 per cent of males and only three per cent of females were literate; by 1931 62 per cent of males and 30 per cent of females were literate (Sumathipala 1968). By 1981, 50 years later, female literacy had risen to 82 per cent and male literacy to 91 per cent. This is comparable to Kerala State but far above other parts of South Asia. Indeed Sri Lanka's 1921 literacy rate for females (21%) is identical to Pakistani women's literacy rate in 1990 (see Caldwell 1992).

This rise in female education was seen by most SLDCP respondents as the single most important reason why infant and child health has improved in Sri Lanka. Explaining the effect of education, Podi Menika said:

> Now most mothers look after their children well because they are educated and know health matters well. In our time women couldn't look after their children well because they had many of them. Now women have only two or three children and things have changed this way: education has improved, health programs are available and many medicines have been developed.

Pinchi Nona said that the education of women has changed the way women do things now. They can question mothers' old ways of doing things and adapt new ways.

> Nowadays mothers are educated and they have a good knowledge about health and looking after the children. They learn about good hygiene and they get advice from health clinics and books. In the past women didn't know much and knew only what their parents said.

Another respondent, Agnes, attributed health changes to increased female autonomy.

> Nowadays mothers look after the health of their children well because they can understand about health matters. They feel that they can control their own lives as that of their children. It has been helped by the new health facilities.

Education has made people knowledgeable about health matters, and encouraged them to take greater interest in the care of their children. It has given them more faith in modern medicine, taught them to take instructions from doctors and to follow them correctly and when children are sick to seek prompt treatment.

The greater autonomy of women in health decision making had clearly been a major factor in improving health and was an important factor in why health indices were very much better in southwestern Sri Lanka than on the estates. However, to the extent that education and women's autonomy affect the well-being of not just the mother but also her children, boys and girls, they have contributed to the general decline of mortality in Sri Lanka and not specifically to reducing sex differentials in mortality.

The value of sons and daughters

Even when health decisions were the responsibility of the woman, she had some incentive to protect the health of the main income earner, her husband, and of her sons whose responsibility it would be to support the parents later in life. It may be hypothesized that this difference will be less than when the husband is responsible for the family's health but an incentive for continued differentiation remains.

It is clear that in the past the value of girls for parents was less than that of boys. In an agricultural society without social welfare the well-being of parents depends on being looked after by a child who will, if the family has land, inherit at least part of the family farm. In most of South Asia this means a son. In Sri Lanka it is theoretically possible for daughters to inherit property, but in the case of agricultural land they usually do not exercise their rights. Amongst the Sinhalese, parents will usually stay with a son, though, in the absence of an earning son, they may stay with the daughter. This is reflected in the household with whom a young married couple resides after marriage. Amongst the Sinhalese the preferred form of marriage was what is referred to as *diga* marriage (Leach 1971; Yalman 1971), in which the couple lived with the husband's family and worked their land. This was in contrast to *binna* marriage in which the couple lived with the wife's family and inherited land from them. This usually operated in circumstances where there were no sons in the family, and the daughter and her husband inherited the land. For the husband, however, there was little prestige in the marriage.

With regard to the changing value of daughters the important point is that in the past amongst the Sinhalese, parents were primarily the responsibility of sons, but in case of need daughters could look after them. This may have led to somewhat greater value being placed on sons than on daughters, but not such a high value as in cultures where daughters would not in any situation be able to look after parents. This may lead to some discrimination, conscious or unconscious, in the care and feeding of daughters. Nevertheless, some caution should be exercised in accepting this hypothesis. Amongst Sri Lanka's matrilineal Muslims where daughters and their husbands inherited, the respondents agreed, indeed stressed, that their daughters had less autonomy of action, and it may be suggested less status than their sons. Almost certainly there was more discrimination in care between boys and girls among the Muslim community. The restrictions on women certainly reduced overall care to themselves and their children.

Respondents indicated that the situation was changing with regard to the care of aged parents. Rising education levels have made it more acceptable for women to work; at the other end of the spectrum uneducated women in families without productive assets have always worked. At the same time urbanization and the reduced importance of agricultural land has meant that sons feel less responsibility for looking after their parents in their old age in return for the family's assets. Consequently in many families it is the daughters who look after their parents. Indeed parents expressed the view that daughters were likely to be more caring than sons and their wives. An alternative arrangement is for daughters and sons to share the caring for parents, who may stay alternately with each of their children or even live separately from children.

The ability of daughters to care for their parents is also a function of the high position of women and their importance in the family decision making. Sinhalese families are essentially simple consisting of the couple and their children (cf. Yalman 1971). Even when living with the parents they remain a separate budgetary unit, and there is an expectation that they will become a separate residential unit with the exception of the child who will inherit the parental house. This means it is essentially a decision of the couple whether the parents of either will reside with them. In contrast to the preference for patrilocal reference noted above, the SLDCP found that almost as many young couples resided with the wife's parents immediately following marriage (29%) as with the husband's (35%). The remaining 35 per cent established new homes. Among the Sri Lankan Muslims, who had historically been matrilineal, residence with the wife's family was the norm (Caldwell 1996b). Residence patterns following marriage, however, are not related to the ultimate pattern of care for aged parents.

The value of daughters has also been affected by a rise in female age at marriage from a median age of around 18 years early this century to approximately 24 years today (cf.

Caldwell 1992). The consequent additional maturity of brides has almost certainly raised their influence in family decision making *vis-à-vis* their husbands. It has also meant a substantial period following education when women are often earners. In Sri Lanka young women in this position may not be expected to contribute to their parental household even when living there. Indeed there is a commonly expressed feeling that the responsibility for the household is a duty of the parents, and that the young woman should be saving for her future. Nevertheless, even when she is not contributing directly to the household budget, in numerous ways her expenditure does add to the household's material well-being, and in addition reduces the parental responsibility for her future marriage costs.

It may be hypothesized that these changes have increased the status of women and that this in turn has acted to reduce any discrimination in health care and feeding practices for boys over girls. Unfortunately, it is extremely difficult to gain direct objective evidence that there was discrimination, conscious or unconscious, in the past because Sri Lankans nowadays deny that there ever was any difference in treatment.

One final point on the value of daughters concerns the relative weakness in Sri Lanka of dowry and more specifically of escalating dowry. While dowry exists in Sri Lanka, in contrast to many parts of South Asia its value appears from the evidence of SLDCP respondents to have decreased in real terms. In many parts of South Asia dowry is rising (Lindenbaum 1981; Caldwell, Reddy and Caldwell 1998). No one referred to dowry as a significant issue in marriage or as a major cost to parents. Indeed, nowadays it is often the young woman who pays for it from her own earnings. This relative decline in dowry has taken place at a time when age at marriage has been rising and appears to reflect a decline in family-arranged marriage. The SLDCP indicated that in Southwest Sri Lanka, at least, the majority of all marriages now involve self-selection by bride and groom. The result is that a major factor that has been associated in recent times with diminishing female status in much of South Asia, as highlighted by dowry burnings[2], rising dowry is largely absent in Sri Lanka.

A factor which should not be underestimated in its effect on sex-differentials in health is smaller family size and family planning; Sri Lanka's total fertility rate in 1993 was 2.5 (UNICEF 1995). Smaller family size has directly benefited the health of mothers who are less subject to the impact of multiple childbirths, and who have greater opportunities to rest when unwell. It has also encouraged parents to give close attention to the well-being of their children irrespective of sex. In particular, because there are fewer siblings to look after, there is less pressure on girls to look after them, allowing them rest if needed, and enabling them to attend school.

Conclusion

So what have we found? Sri Lanka is not North India or Pakistan but it is nevertheless part of South Asia. Higher female mortality did exist in the past, and at the beginning of the century approached that of North India. The reasons for this are unclear but higher maternal mortality is undoubtedly an important factor, and the contribution of anaemia as a result of extremely high levels of malaria and hookworm may have been a factor in explaining why Sri Lanka's mortality levels were above those of South India.

Maternal mortality does not fully explain why overall female mortality was above male mortality and in particular why female mortality was higher than male mortality for children. This seems to indicate that there were differentials in care. It should be noted that this pattern

[2] In some South Asian societies a newly married woman is set on fire by her husband or his family, on the complaint that an adequate dowry has not been paid by the woman's family.

applies widely in the world, and was true also in South India for children aged above one year.

The exact nature of the differential in care remains unclear. Modern medical care was virtually absent in Sri Lanka as elsewhere in South Asia at the beginning of the century. Presumably parental care matters in other ways as in nursing children when ill. We have noted that there is some evidence from the SLDHS that minor discrimination existed in nutrition; this may have been larger in the past and the effect of any nutrition deficiency may have been greater.

What distinguished Sri Lanka from northern South Asia, at least, is first that the absolute levels of mortality of girls and of boys have for most of this century been much lower. While girls' mortality may have been marginally higher than that of boys, girls in Sri Lanka lived much longer than boys in Uttar Pradesh for example (Caldwell and Caldwell 1990). This partly reflects the key role of women in looking after the family's health and their relative autonomy, as well as Sri Lanka's general overall social development in health services and education.

The second factor to distinguish Sri Lanka from northern South Asia is that the female mortality disadvantage has been declining all this century. The reasons are undoubtedly complex but include the development of the health system, and public health measures that have reduced maternal mortality as well as socio-economic changes that have changed female status and the value to parents, both the mother and the father, of girls relative to boys.

Given historical differences between Sri Lanka and other parts of South Asia, no firm conclusions can be drawn with regard to the future of gender relations in mortality elsewhere in South Asia. It is clear, however, that a critical factor in overall mortality reduction will be the development of better health services addressing the needs of women and their children. Better educational opportunities especially for women, and other interventions that raise the status of women, will also contribute to reducing mortality among their children. However, absolute sex differentials in mortality, especially among the very young, will not disappear until parents are convinced that their daughters' futures matter as much to them as their sons' futures. Unless fundamental social changes occur this may not happen until the principle of patrilineal inheritance no longer applies or until inherited property is no longer central to the well-being of the younger generation's future. Only then will the parents feel that their future well-being is tied equally to that of their daughters and their sons.

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