HIGHER FEMALE THAN MALE MORTALITY
IN SOME COUNTRIES OF SOUTH ASIA :
A DIGEST

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A.—THE PHENOMENON

1. Exceedingly high sex ratios among the total population have been observed in the censuses of Ceylon, India and Pakistan, over a number of decades. In addition, the censuses of these countries give a peculiar pattern of sex ratios by age, in which the sex ratios by broad age groups increase from childhood to adulthood to old ages. This paper aims at putting together the evidence, which seems to be conclusive, that a main cause of this situation is a particular and local pattern of sex differential in mortality, where female chances of survival are lower than those of the males, throughout most of the age span. This phenomenon, which exists at least among the 20 percent of world population who live in these countries, is important and deserves more attention, among public health workers, sociologists, as well as demographers who need to make special allowance for this situation in forecasting mortality trends and in preparing demographic projections.

2. An excess of males over females has been observed in all population censuses of Ceylon. This excess is shown in table 1 by ethnic group in 1946 and 1963. The pattern of increasing sex ratios with age exists among both the indigenous and the immigrant groups. Naturally the immigrants [1] have higher sex ratios in ages 15 and

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(1) The immigrants are the Indian Tamils, Indian Moors, and others. The percentages of these three groups among the total population in 1963 were 10.60, 0.26 and 0.19, consecutively.

above, but the pattern is distinct among the indigenous population which constituted 87 percent of the total population in 1946 and 89 percent in 1963. In fact, this same pattern of increasing trend existed among each indigenous ethnic group in the country, except for the small group of the «Burghers and Eurasians» which amounted to 0.63 percent of the total population in 1946 and 0.43 percent in 1963 [2].

3. An excess in enumerated males is also well known to students of Indian demography [3]. It will be noticed in table 1 that in 1951 the sex ratios were increasing from one age group to the next, and in 1961 the age groups 0-14 and 15-44 had virtually equal sex ratios while the ratio was much higher in ages 45 and above. The excess of males is distinct among most ethnic groups, including, Hindus, Muslims, and particularly the Sikhs, with the 1961 sex ratios of the three groups being, consecutively, 1062, 1070 and 1177. The only two exceptions are the Christians and the Zoroastrians (Parsis) whose sex ratios in 1961 were 1011 and 963 respectively. These two latter groups constituted only about 2.5 percent of the total population [4]. The excess of males is particularly high in the northern belt of states where sex ratios ranging between 1100 and 1157 have been observed in 1961. The only two states in which the 1961 sex ratios were below unity were Kerala (979) and Orissa (999) [5]. Pakistan has also maintained a very high sex ratio in the population enumerated in 1951 and 1961 and the increasing pattern of these ratios with age has prevailed in both West and East Pakistan. As table 1 shows, the same pattern existed in the estimates for 1960 derived from adjusted 1961 figures and published in a report by the Planning Commission [6].

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(2) This group consists of descendants of Europeans who inter-married with Ceylonese. The 1963 sex ratios in the three consecutive ages groups were 1021, 984 and 983.

(3) For a detailed study of several aspects of this phenomenon see Visaria, P. M. «The Sex Ratio of the Population of India and Pakistan and Regional Variations during 1901-61» in Ashish Bose, *Patterns of Population Change in India 1951—61*, (Allied Publishers) 1967, pp. 344-345.

(4) *Census of India*, 1961, Vol. I part II—C (i) Social and Cultural Tables and *Census of India*, Paper No. 1 of 1963, 1961 Census : Religion.

(5) *Census of India*, Paper No. 1 of 1962 ; 1961 Census : Final Population Totals, 1962.

(6) Planning Commission, Perspective Planning Section, *Population Projections for Pakistan*, 1964.

4. The above illustrated pattern is virtually unique. There are very few recent censuses of countries with negligible international migration where the sex ratio of the enumerated population is as high as the 1082 of Ceylon in 1963, the 1063 of India in 1961 or the 1111 of Pakistan in 1961 [7] . The increasing or non-decreasing pattern of sex ratios with age is also unique [8] . It will be noticed from table 1 that neither this level nor the pattern existed in the 1961 census of neighbouring Indonesia. Nor did they exist in the relatively long history of censuses of the UAR and Turkey in the Middle East. It is also to be noted that all the censuses of the UAR and Turkey given in table 1 show the «normal» decreasing pattern of sex ratios by age. Even in some censuses where the sex ratio of the enumerated population was high as in Syria in 1960 and in several censuses of Turkey, the decreasing pattern existed.

B.—COULD SEX RATIO AT BIRTH OR MIGRATION BE INFLUENCING FACTORS ?

5. Of the four factors which can possibly account for this phenomenon, namely an abnormally high sex ratio at birth, larger relative emigration of females or immigration of males, higher female mortality compared to that of the males, and relatively larger under enumeration of females, the first two can perhaps be disposed of despite the inadequacy of data. While lower sex ratios at birth than 105-106 have been observed in certain population groups, much higher ratios have not been frequently encountered, except among small groups where sampling error can account for the excess. In Ceylon where registration is known to be relatively much more complete than in other countries in the region, this ratio fluctuated annually between 103.2 and 104.0 during 1955-67. Several Ceylonese demographers have used values of the sex ratio at birth below the international

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(7) In all countries of Asia, Africa and Latin America that had a population over one million in 1965, the censuses taken since 1960 show that only two countries had equally high sex ratios ; these are Libya (1083) and Iran (1070).

(8) Among all countries of Asia, Africa and Latin America with a population over one million in 1965, the most recent census or survey had this increasing pattern of sex ratios only in the three countries under discussion here and Southern Rhodesia (African Population). The «normal» decreasing pattern was observed in 16 out of 74 censuses. It is interesting to note that in 49 countries (66 percent) the sex ratio curve had a trough in ages 15-44. This latter observation deserves attention since it may be indicative of relatively high under enumeration of males in the working ages in many countries.

average. Raja Indra for instance adopted the ratio of 104.0 observed during 1940-1944 since during these years the need to obtain rationed commodities stimulated registration of births[9] . Again there is no evidence of a higher than normal sex ratio at birth in India or Pakistan. Since registration information in India is not reliable, the Demographic Training and Research Centre, Bombay collected data on the sex ratio at birth among the births which took place during 1949-58 in hospitals and health centres. Among the total of 1,441,000 such reported births in all India, the sex ratio was 106.0 [10].

6. Sizable female emigration from Ceylon can be excluded since the indigenous Ceylonese migrated little out of the Island [11]. Moreover, the fact that the same pattern exists among the indigenous population excludes immigration as a possible influencing factor. The observed excess of males in India cannot be attributed, to any significant extent, to emigration from India. Not only has emigration from India been insignificant when compared to the total population, but also this migration has been highly masculine. Post-partition population transfers between India and Pakistan cannot be a significant factor in the observed excess of males. Visaria estimates the impact, of the refugee movement on the sex ratio of the 1951 enumerated population of both countries to be less than half of one percent. Moreover, these movements were apparently «family» migrations. From a discussion of sex ratios based on «persons born in the state», the author concludes that the high magnitude of the sex ratio in the northern belt in India is not, in the main, the result of selective migration. Nor does migration seem to be a significant factor in the high sex ratio observed in Pakistan since high ratios have existed for many decades prior to independence ; thus in Sind and Baluchistan the sex ratio has always been above 1200 [12].

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(9) Raja Indra, R., *Sinhalese Population Growth 1911-1946*, Department of Gensus and Statistics, Ceylon, 1955, pp. 7-8. See also Sarkar, N. K., *The Demography of Ceylon*, 1957, pp. 25 and 32.

(10) Demographic Training and Research Centre, Bombay, *Newsletter*, Issue No. 2, August 1960, p. 17.

(11) See for instance, Raja Indra, *op. cit.* Appendix C. pp. 46-47 and Sarkar, *op. cit.*, pp. 187-189.

(12) Visaria, *op. cit.*, pp. 344-349. Kingesley Davis has estimated in his *Population of India and Pakistan*, Princeton University Press, 1951, p. 98, that the proportion of those living abroad and descending from an origin in the subcontinent was about one percent of the total population of India and Pakistan.

C.—THE EFFECT OF FEMALE UNDER ENUMERATION

7. It seems evident, therefore, that the pattern of sex ratios observed in these three countries can be accounted for only in terms of relative female under enumeration or mortality, or both. Several census reports of Ceylon discard the possibility of excessive under enumeration of females and mention higher female mortality as the main cause of the relative deficiency in enumerated females [13]. The 1921 census report adds that «Further, on the assumption of under-statement of females, one would expect the proportion of males among the Mohammedans to have been very high say, higher than the Sinhalese, among whom the women are allowed more freedom. But this is not the case.» [14] The same type of argument was stressed in the 1911 census of India [15].

8. Successive censuses of India have repeated the same regional pattern of sex ratios. The 1951 Census Report estimates, on the basis of post-enumeration check that, even though there was more under enumeration of females than males, adjustment for relative under enumeration would lower the sex ratio for India by only two points per thousand [16], and hence would not account in any significant degree for the excess of males in the enumerated population. Surveys have also given larger numbers of males in the population. For instance, the fourteenth round of the National Sample Survey which dealt with «Fertility and Mortality Rates in Rural India» gave larger number of males in the rural areas of all states except Orissa, Madras and Kerala. The sex ratio of all rural India was 1038 [17]. Though no information is available on the extent of sex difference in degree of under enumeration as measured by the 1961 post-enumeration check, there is some evidence that the sex difference was similar to

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(13) As early as 1849 Pridham observed to correlation between the sex ratio and the general living conditions see : Pridham, C., *An Historical and Statistical Account of Ceylon and its Dependencies, Vol. 1. 1849*, p. 451.

(14) *Censuses of Ceylon* : 1921, Vol. 1, Part II, p. 3, 1946, Vol. 1, Part I, p. 144 and 1953, Vol. 1, General Report, 1957.

(15) See : *Census of India* 1951, Vol. 1, India, Part I-A Report, p. 57.

(16) *Census of India* 1951, Vol. 1, India, Part I-A Report, p. 58.

(17) *The National Sample Survey*, EGth *Round 1958-1959*, No. 76, *Fertility and Mortality Rates in Rural India*, The Cabinet Secretariat, Government of India, 1963, pp. 114-115.

that of the 1951 check [18] . In Pakistan, the Planning Commission's report on Population Projections states that the 1961 census contains substantial under enumeration of females and children and gives the following estimates of under enumeration : 2.75 million (5.5 percent) among males and 4.70 million (11.0 percent) among females [19] . Recently published population projections for Pakistan prepared at the Pakistan Institute of Development Economics again concede the existence of relatively higher under enumeration of females and make an adjustment equal to 1.84 million (3.7 percent) among males and 3.45 million (7.6 percent) among females [20]. But again the adjusted age-sex distribution has a sex ratio of 1066, and has ratios equal to 1031, 1079 and 1144 in the three consecutive age groups, which is the same pattern shown in table 1.

9. There is thus evidence in the three countries to indicate that, although available censuses suffer from higher under enumeration of females, this particular factor apparently cannot account solely or even perhaps substantially for the observed level and age pattern of the sex ratio.

10. One should add that even though several censuses in countries of Asia and North Africa seem to indicate higher under enumeration of females, existing statistical evidence cannot lend full support to the view that this result is to be expected on cultural grounds. If we take countries around the Indian Peninsula we find that censuses taken in 1960-1961 gave sex ratios among the total population equal to 973 in neighbouring Moslem Indonesia, 970 in neighbouring Hindu Nepal and 1004 in neighbouring Buddhist Thailand. As table 1 shows, the sex ratio of the enumerated population in the United Arab Republic has ranged between 991 and 1012 [21].

(18) *Census of India*, Paper No. 1 of 1962, Final Population Totals-1961 Census, 1962, p. vi and Visaria, *op. cit.*, p. 350. Needless to say, if the extent of under enumeration is anywhere near the 11 persons per 1000 enumerated in 1951 and 7 per 1000 enumerated in 1961 as given in the census reports, then such figures cannot account for the observed excess of males in the enumerated population, no matter what the sex difference in under enumeration was like. See : *Census of India*, Vol. 1, Part II-A (i), General Population Tables, 1964.

(19) *op. cit.*, p. 1.

(20) Brun, A. L. *et al.*, *Population Projections for Pakistan 1960-2000*, Pakistan Institute of Development Economics, Karachi, 1968, pp. 7-12.

(21) In addition to the readings in table 1, the sex ratios were 1008 in 1907 and 1003 in 1917.

D.—SEX DIFFERENTIALS IN MORTALITY

11. The main question is then whether a higher female than male mortality exists (or existed) in Ceylon, India and Pakistan and whether this sex difference can account, in addition to under enumeration, for the observed high sex ratios [22]. The existence of this sex differential has been indicated by several demographers [23]. This situation has also been frequent in the Western Europe before World war I. [24].

12. Available values of life expectancies at birth in the three countries indicate the existence of the sex differential, as may well be seen in table. Because of the varying degrees of accuracy of original data country-wise and time-wise, the levels and trends of the results in this table should be interpreted cautiously. The main weight of the figures lies perhaps in their consistency and in the fact that the excess female mortality has been accepted by the authors and the users. For instance, the 1951 census report of India makes the following comment in thisconnexion : «there is a traditional fondness for male issues in most parts of the country and a corresponding dislike for female children. All the affection and care is bestowed on male children but female children are not much cared for» [25].

13. It should be pointed out that in one instance a life table for India which was derived by the stable age distribution method applied to the 1951 census sex-age distribution gave a higher female ?

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(22) This does not mean that Ceylon, India and Pakistan are the only three countries in the world where female mortality is higher than that of the males. In fact in neighbouring Iran, if one accepts the hypothesis that the second census taken in 1966 had better coverage than the first census of 1956, the 1966 sex ratio of 1070 may well be indicative of higher female than male mortality in that country. The higher reliability of the 1966 census is stated by Bharier, J., in : *A Note on the Population of Iran, 1900-1966. Population Studies*, Vol. XXII, No. 2, July 1968, p. 277. The author bases this view on the opinions of several sources.

(23) See particularly Sarkar, *op. cit.*, Visaria, *op. cit.*, and Rukanuddin, A. R., A study o fthe Sex Ratio in Pakistan, in «*Studies in Demography of Pakistan*, Pakistan Institute of Development Economics, Xarachi, 1967 pp. 139-225.

(24) For a detailed presentation and discussion see Stolnitz, George J., A Century of International Mortality Trends : II, Population Studies, Vol. X No. 1, July 1956, pp. 17-42.

(25) *Census of India*, paper No. 2, 1954, Life Tables-1951 Census, p. 26.

namely 34.7 years as against 33.5 for males. The authors make the following important comment : «Thus there is a choice between explaining the recorded masculinity of the Indian population by assuming that the subordinate position of women caused their omission from the census, or by assuming that it caused their death in childhood. We have chosen the former explanation ; the official census publication data and life tables in effect accept the latter. Quite probably the truth lies somewhere in between ; females are doubtless undercounted somewhat more than males, and their risks of death exceed the male in childhood somewhat more than our life table shows» [26]. This latter conclusion by the authors, which is substantiated by subsequent statistical evidence, seems to summarize the situation, at least in India and Pakistan. It is to be noted also that a recent study which allowed for the influence of mortality decline on the age distribution of India, has given as «quasi-stable» estimates of life expectation at birth during 1951-61, 37.80 years for males and 36.98 years for females. [27]

14. Female mortality has been, and still is particularly high relative to that of the males in the maternity ages 15 to 45. This can well be seen from table 3, where the 1953 female death rate in Ceylon was over 80 persent higher than that of the males in the most reproductive ages 20-29. In 1963, the excess in the same ages was still over 25 percent ; and in the age group 30-34 the excess was still almost one third of the male rate. In India, the female death rate in the reproductive ages 15-44 was 38 percent higher than that of the males in the fourteenth round of the National Sample Survey (rural India, 1958-59), [28] and as much as 174 percent higher in the Khanna Survey (Punjab, 1956-60) [29]. Again in Pakistan the Population

(26) Coale, A. J. and Hoover, E. M., *Population Growth and Economic Development in Low-Income Countries*, Oxford University Press, 1959, p. 351.

(27) P. M. Visaria, «*Mortality and Fertility in India 1951-61*» (mimeographed), table 10, p. 28.

(28) *The National Sample Survey, Fourteenth Round : July 1959-June 1959, No. 76 ; Fertility and Mortality rates in India.* Government of India, Calcutta, 1963. Table 5.2 p. 17 The Sample covered 2500 villages, 234,000 households and 1.2 million persons.

(29) The survey was undertaken in 16 villages of the Ludhiana district in the Punjab. The survey gave sex ratios of total population very similar to those shown by the 1951 and 1961 censuses for the study villages. The resulting mortality rates given in table 3, which are quoted from Visaria, *op. cit.*, p. 362, resulted from permanent observation by resident trained data collectors.

Growth Estimate experiment, which was conducted during 1962-65 on a national probability sample has shown that in ages 15-44 the female rate was 75 percent higher than that of the males [30].

15. There is thus ample evidence in table 3 to show that high maternal mortality is a major reason for the observed excess in female mortality. In addition, the table clearly indicates the existence of higher female mortality among young children above the first year 1-4 was 24 percent both in 1955 and 1963 while in ages 5-9 this excess of life. Thus, in Ceylon, the excess in the female death rate in ages was 19 percent in 1955 and 11 percent in 1963 [31]. In Pakistan the excess in the 1-4 age group was 32 percent, while the male and female rates in ages 5-14 were equal. In India, the specific female death rate in ages 0-14, given by the Khanna study was 50 percent higher than that of the males. The National sample survey indicates very little excess female mortality in ages 0-14 as a whole, but since the same survey gives a much lower infant mortality rate among females than among males (138 as against 153) [32], the results clearly imply a higher female mortality rate in ages 1-14.

16. It is very puzzling to note, however, that available data do not indicate excessive female infant mortality relative to that of the males. Clearly the ratios of 82-84 percent of the female to the male infant death rate in Ceylon in 1955 and 1963 and in the PGE results for Pakistan, and perhaps even the 90 percent ratio of the female to the male infant mortality rates given by the Indian NSS, are so low that they raise suspicion. However, it is perhaps very doubtful that the degree of registering or reporting infant female deaths would be so seriously different fro mthe corresponding degree among female deaths in the rest of the age span. Actually, other factors affecting the accuracy of the data being of equal influence, one has to assume that in Ceylon in 1963 and in the PGE in Pakistan there were respectively a 50 percent and a 58 percent under registration or under reporting of females if one is to obtain a female to male ratio of death rates in infancy equal to that observed in ages 1-4. This assumption

(30) The data were taken from Selzer, W., *Benchmark Demographic Data for Pakistan : A Review of Summary Estimates Derived from the PGE Experiment.* Pakistan, Institute of Development Economics, Research Report No. 22, Karachi, 1968. Table 7, p. 39.

(31) In addition to the rates in table 3, the rates for 1955 were taken from the *UN Demographic Yearbook 1966*, table 19, p. 442.

(32) Natural Sample Survey *op. cit.*, table 5.3, p. 17.

seems highly unlikely at least in Ceylon which does not show evidence of serious relative neglect of registering female deaths in ages oneand above and where the registered sex ratio at birth does not indicate more reluctance to report female births. In any case, if the figures on infant mortality pressented here are not so erroneous as to reverse the truth, the result clearly poses a challenge to the view that female infants are given less attention, at present, than males on cultural grounds.

17. The evidence thus seems to be conclusive that female mortality is higher not only in the maternity ages but also among young children. There seems to be little difference between the rates of mortality of the two sexes in ages 45 and above. The question then arises as to what extent this pattern of mortality could account for the observed sex ratio in the total population. This exercise has actually been carried out for India and Pakistan. Visaria has found that the excess female mortality observed in the Khanna study villages can explain the deficit of females in the Punjab where such deficit is the highest among all states. Even the lower limit of the 95 percent confidence interval around the sex ratio expected from the Khanna mortality pattern can explain about or over half of the imbalance of the sexes in the Punjab in various censuses. The author also finds tmat excess female mortality with an average level equal to that observed in the Ramnararam Health Centrearea during 1950-52, which gave equal to 53.42 among males and 52.60 among females, would be sufficient to account for the sex ratio of the total population of India [33]. Likewise, for Pakistan, Rukanuddin has shown that by taing a growth rate equal to 3 percent and life expectancies at birth equal to 46.85 among males and 45.00 among females, this level of mortality can account for most of the observed relative deficiency in the enumerated females in 1961 : the balance of the deficiency, which would then be ascribed to higher relative female under enumeration, would be of the order of 2 percent above an assumed level of under enumeration of males. More of the female deficiency would naturally be accounted for by mortality if the female level is below that mentioned above [34].

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(33) *Op. cit.*, pp. 356-369.

(34) *Op. cit.*, pp. 216 and 218.

E.—TRENDS IN THE GAP BETWEEN FEMALE AND MALE MORTALITY

18. Ceylon is the only one among the three countries for which the age-sex specific mortality data presented in table 3 can show recent trends. The data in table 3 show that a main contributor to the gain in the relative level of female mortality in Ceylon has been the considerable improvement in maternal mortality which reduced by 22 percent the ratio of the female mortality rate to that of the males in ages 15-44 during the decade 1953-63. In ages 1-9 where the gap has also been serious, the ratio in ages 5-9 fell by 8 percent during the same period, but there is no evidence of relative improvement in ages 1-4 since data for 1955 indicate that in this age group the ratio of the death rates of the two sexes was the same in 1963 as it was in 1955. Accordingly, as table 2 shows, there has been a considerable narrowing of the longevity gap between the two sexes, from 2.1 years at the onset of the more rapid mortality decline in 1946 to 0.5 in 1963. Life expectancies for India presented in table 2 show no evidence of a narrowing of this gap, but it must be remembered that even in 1951-60 the mortality level was still considerably higher than it was in Ceylon in 1946 and that the 1951-60 values of $\overset{o}{e}_0$ are the only readings yet available since the onset of the recent mortality decline.

19. If we try to visualize future trends in the sex differential by studying the assumptions made in recent population projections we find that no narrowing of the gap is assumed in the projections up to 1980 prepared by the Registrar General, India. For lack of information, these projections maintain constant the deficiency of 1.3 years in $\overset{o}{e}_0$ shown by the 1951-61 life tables [35]. On the other hand, projections for Pakistan prepared recently at the Institute of Development Economics make the following assumptions concerning future trends in life expectancy of males and females in East and West Pakistan [36] Thus, the projections assume not only a bridging of the gap but a continuation of female gain over the males. In view of the lower mortality level in the East, a faster average annual gain than that in the West is assumed for both sexes, but it is not clear why the females in the East, who had the lower than their counterparts in the West,

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(35) Registrat General, India, «Revised Population Projections», Mimeographed, preliminary draft, 1967. These projections were prepared in 1964.

(36) Bean, A. L. et al., op. cit., pp. 13-17.

	1960—65		1980—85		Average Annual Gain	
	East	West	East	West	East	West
Males	49.2	51.1	60.8	61.3	.58	.50
Females	46.9	48.7	63.8	63.8	.84	.75
Females-Males	—2.3	—2.4	+3.0	+2.5	.26	.24

should end up in 1980-85 with a larger gain over the males than in the West. On the average, the figures imply an annual gain in e_o^o, equal to a quarter of a year, of females over males.

20. If we consider the effect of a possibl improvment in registration in Ceylon to have negligible effect on the study of differences in between the two sexes, the results in table 2 indicate an almost constantpace of emale gain in life expectancy over males equal to 0.1 of a year every calendar year since 1946. In view of the complexity of factors involved and differences in level as well as in sex differential, it is difficult to say whether such a pace of improvement as observed in Ceylon can be used in predicting future trends in India and Pakistan where the present mortality level is similar to that of Ceylon in the late 1940's. Though this pace may be acceptable a priori in India where the gap is small, the question that cannot be answered here is whether a faster pace, similar to that adopted in the Pakistan projections referred to above, would be more plausible. This question is important mainly in social development ; demographic projections for the next twenty years will not be significantly influenced b ythe difference between the alternatives.

F.—CONCLUDING REMARK

21. The above observations indicate the need for a regional or local approach to the analysis of some demographic problems. «Borrowing» experience from developed countries or from countries that have data, though useful for many purposes, may not be logical or even plausible. For instance, in the countries studied here, it is clear from the above results that neither the present situation nor the trends in the near future are reflected in the model life tables, derived from average international experience, which automatically provide a relationship between the levels of mortality among males and females once the level in the whole population is given. Even within the same region, generalizations tributed to «culture» may be over-simplifications.

TABLE 1

Sex Ratios (males per 1000 females) by Age
Ceylon, India, Pakistan, and other selected countries

Country group and year	Total Enumerated Population	Sex Ratios by age group			
	(in thousands)	All Ages	0—14	15—44	45+
CEYLON					
1946 Census					
Total population	6,657	1130	1041	1165	1259
Indigenous	5,784	1100	1045	1113	1199
Sinhalese	4,621	1100	1048	1105	1219
Immigrant	873	1363	1010	1514	1831
1963 Census [1]					
Total population	10,590	1082	1035	1063	1275
Indigenous	9,420	1075	1037	1058	1234
Sinhalese	7,518	1071	1038	1049	1231
Immigrant	1,170	1138	1021	1096	1663
INDIA					
1951 Census	356,768	1056	1045	1059	1074
1961 Census	438,775	1063	1057	1055	1100
PAKISTAN					
1951 Census [2]	73,880	1127	1042	1131	1253
1960 Adjustment					
Total population	101,450	1059	1011	1049	1268
West Pakistan	46,200	1074	1022	1060	1284
East Pakistan	55,250	1047	1002	1039	1253
1961 Census	90,283	1111	1085	1083	1272
INDONESIA					
1961 Census	96,319	973	1019	920	1009
UNITED ARAB REPUBLIC					
1927 Census	14,178	991	1043	961	960
1937 Census	15,921	1002	1031	990	965
1947 Census	18,967	981	1018	971	931
1960 Census	25,771	1012	1067	982	950
TURKEY					
1945 Census	18,790	1011	1120	1031	749
1955 Census	24,065	1034	1094	1050	874
1965 Census	31,391	1032	1078	1031	929
SYRIA					
1960 Census	4,565	1056	1114	1011	999

(1) 10 per cent sample
(2) The sex ratios in this line correspond to the age groups 0-9, 10-39 and

(table 1 cont'd.)

Sources : Ceylon : Department of Statistics, *Census of Ceylon,* 1946, Vol. II, pp. 146-147 ; and *Census of Ceylon,* 1963 (10 per cent sample tabulations), Vol. I, pp. 23-24, 1967.

India : The 1951 figures were prepared from unsmoothed data supplied to the U. N. Statistical Office. The 1961 age-sex distribution was taken from the U. N. *Demographic Yearbook, 1964,* table 5, pp. 140-141.

Pakistan : The 1951 and 1961 figures are calculated from census data available in the U. N. *Demographic Yearbooks, 1960,* table 5 p. 214 and 1965, table 6 p. 190. The source of the 1960 figures is cited in footnote 6.

The remaining countries : U. N. *Demographic Yearbooks, 1948-1967.*

TABLE 2
Life Expectancies at birth, Ceylon, India and Pakistan

| | *Ceylon* | | | | |
	1921	1946	1950	1955	1960—62
Males	32.7	46.8	56.4	58.1	61.9
Females	30.7	44.7	54.8	57.1	61.4
Females-Males	—2.0	—2.1	—1.6	—1.0	—0.5

| | *India* | | | | |
	1901—11	1921—31	1931—41	1941—50	1951—60
Males	22.6	26.9	32.1	32.5	41.9
Females	23.3	26.6	31.4	31.7	40.6
Females-Males	+0.7	—0.3	—0.7	—0.8	—1.3

	Pakistan 1962—64
Males	49.6
Females	46.9
Females-Males	—2.7

Sources : For Ceylon and India except for 1931 - 41 : U. N. *Demographic Yearbook, 1967,* table 2a, p. 704. The 1931 - 41 values for India are quoted from Davis, K., op. cit. p. 62. For Pakistan : Yusef, F., «Abridged Life Tables for Pakistan and its provinces, 1962 - 64,» in IUSSP, Contributed Papers, *Sydeny Conference,* 1967, pp. 533—541. The death rates are those provided by the Population Growth Experiment during 1962 - 64.

TABLE 3

Age — Specific Death Rates, Ceylon, India and Pakistan

Age	Ceylon 1953 M	Ceylon 1953 F	Ceylon 1963 M	Ceylon 1963 F	India 1958—59a M	India 1958—59a F	India 1956—60b M	India 1956—60b F	Pakistan 1962—65 M	Pakistan 1962—65 F	Ceylon 1953	Ceylon 1963	India 1958—59	India 1956—60	Pakistan 1962—65
						Absolute Values (per 1000)							Ratio of female rate to male (per cent)		
0—	33.6	32.6	66.3	54.8					232	194	97	83			84
1—4	3.0	3.6	8.4	10.6					25	33	120	124			132
5—9	1.3	1.4	1.9	2.1	30.2	30.7	19.2	28.8	4	4	108	111	102	150	100
10—14	1.7	2.3	1.2	1.1							135	92			
15—19	2.0	3.6	1.5	1.5							180	100			
20—24	2.4	4.4	2.1	2.6							183	124			
25—29	2.9	4.5	2.5	3.2	4.5	6.2	1.9	5.2	4	7	155	128	138	274	175
30—34	3.9	5.4	2.5	3.3							138	132			
35—39	4.8	5.2	3.5	3.8							108	109			
40—44	7.1	6.8	4.7	4.7							96	100			
45—49	9.2	8.6	6.8	6.0							93	88			
50—54	14.6	12.5	9.0	7.1							86	79			
55—59	21.8	18.3	13.8	11.9							84	86			
60—64	72.4	77.5	19.4	16.3	32.9	24.3	30.7	31.9	33	32	107	84	74	104	97
65—69			35.2	33.5								95			
70—7			56.0	50.5								90			
75+			141.0	154.0								109			
All ages	10.7	11.4	8.8	8.5	19.3	18.8	14.6	19.1	19	20	107	97	97	131	105

a For rural areas only.
b For 16 villages in the Ludhiana District, Punjab.

Sources for Ceylon : U.N. *Demographic Yearbook*, 1966, table 19, p. 442.
for India and Pakistan : See paragraph 14 in the text.

Mortalité féminine supérieure à la mortalité masculine dans quelques pays d'Asie du Sud : une synthèse.

Resumé

Cet article présente une évidence statistique, qui semble être concluante, qu'il existe pour Ceylan, l'Inde et le Pakistan une forme particulière de mortalité où, contrairement à l'expérience générale, la mortalité féminine est supérieure à la masculine. Les rapports de masculinité de la population recencée dans ces trois pays sont parmi les plus forts du monde, et la structure par âge des rapports de masculinité est telle qu'ils augmentent de l'enfance à l'âge adulte, et de nouveau de l'âge adulte aux âges élevés. Des rapports de masculinité anormalement élevés et une migration sélective ne sont pas suffisants pour rendre compte de cette structure particulière, mais il y a des signes d'un plus fort degré de sous-énumération pour les femmes que pour les hommes. La cause principale de cette structure, toutefois, est une mortalié féminine supérieure, à l'âge de la maternité aussi bien que pendant l'entance. Ceci montre la nécessité d'une approche régionale ou locale vers certains problèmes démographiques. Dans ce cas, par exemple, les tables de mortalité modèle fondées sur une moyenne de l'expérience internationale ne sont pas représentatives.