

Book Reviews



Disease Mortality and Population in Transition By Alex Mercer. Leicester University Press, 1990 ix-262pp. Hardback UK£45.00.

Readers of *Health Transition Review* will welcome Mercer's book which examines afresh the dramatic fall in mortality in Europe. It offers a new interpretation of the mortality patterns of industrializing countries over the past three centuries and an analysis of the repercussions for the structure and size of the global population in future.

Mercer challenges McKeown's view that advances in the economic standard of living, and particularly improved nutritional resistance to infectious diseases, have been largely responsible for the English decline in mortality. He argues that preventive and public health measures provided the basis for sustained mortality decline, and that changes in transmission rates of infectious diseases as a result of socio-demographic change were more important than individual economic circumstances or nutrition. He places particular emphasis on immunization against smallpox and on improvements in insanitary living conditions, and implies that declines in cholera, typhus and smallpox had additional repercussions for mortality from secondary diseases including respiratory tuberculosis in the 19th century. He suggests that less overcrowded housing had as much effect in reducing death rates as any improvements in nutrition. He emphasizes the many interrelationships between non-communicable diseases and communicable diseases, and proposes that these contribute to contemporary disease and mortality patterns. Finally, he draws attention to the possibility that immune and cellular reactions from some micro-organisms have adverse consequences on the non-communicable manifestations of disease.

In separate chapters, the book deals with disease patterns, standard of living and population change after the Plague; smallpox epidemics and mortality in the 18th century, and the impact of immunization measures; changes in infant mortality, gastro-intestinal disease, typhus, typhoid and cholera; respiratory and airborne infectious diseases; the transition to non-communicable disease mortality patterns; and the global transition in disease and mortality which is taking place. As with McKeown's *The Modern Rise of Population*, the book's data sources are predominantly British, but there are fragments of data from Denmark, Sweden, Finland, Norway, USA, Italy, and Germany. The analytic period extends from 1540 to 1981 but most of the focus is on the period 1750-1950. There are 172 pages of tersely written text, 35 pages of footnotes, a strong bibliography, and a useful set of supplementary tables and figures which form an appendix. The book is well indexed and belongs, alongside McKeown, as a key resource for students and researchers in the health and demographic sciences.

Mercer argues that the major epidemic diseases of the 17th and 18th centuries no longer occur at all in Europe, and that the recession of plague, smallpox, cholera and typhus epidemics was a revolutionary change in the human condition. He distinguishes between the disease-specific health measures and the various other changes affecting disease patterns. The early recession of plague is thought to be the result of preventive interventions, including isolation measures and quarantine for ships; smallpox and cholera receded when disease-specific preventive measures were effectively applied through early, widespread and grass-roots vaccination on the one hand, and attention to water

and sewerage on the other. The limitation of family size also seems likely to have contributed significantly to a reduction in severity of infection. Mercer suggests that improvements often occurred when there was no discernible improvement in the economic standard of living for the majority of people, nor in average nutrition; but that much of the fall in mortality could be attributed to human intervention in or directly affecting the disease transmission process. He agrees with McKeown that hospitals could not have played a major part in the English mortality decline since this began before they became effective, and that there were few effective treatment measures or curative medicines until chemotherapy was developed in the 1940s. However, many preventive and public health measures had been introduced even before germ theory brought more scientific understanding of transmission processes.

Mercer proposes that there is more universality and continuity in the global process of mortality transition than has been previously accepted, and spends some time examining the relationship between communicable disease and the so-called non-communicable diseases. Although non-communicable diseases have been thought of as diseases of the modern industrial way of life and increasing affluence, death rates from circulatory disease and cancer are now as high in some countries with a much lower economic standard of living as in Western populations. There are other significant biological and statistical indications that changes in circulatory disease death rates might be causally linked with the changing incidence of common airborne infectious diseases, and that adverse effects of micro-organisms or immune reactions are involved in diseases as varied as cancer, diabetes, nephritis and cirrhosis of the liver. The downturn in respiratory disease mortality from the end of the 19th century is thought more likely to have been a product of socio-demographic changes affecting the airborne infectious disease environment than a direct result of improvement in people's economic standard of living or nutrition.

For students of the health transition, Mercer's book is an important milestone. It certainly carries us beyond McKeown, though others will no doubt carry the debate on the role of nutrition much further than has been possible in a book of this scope and scale. Nevertheless, Mercer's interpretation of the events is a plausible one which offers new hope to the public health professional, that efforts to constrain communicable disease transmission by whatever means available to us will continue to contribute to mortality control. The book should be on the shelves of both demographic and public health scientists and is required reading for students of health transition.

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Women's Health: from Womb to Tomb By Penny Kane, Macmillan, London 1991. xx + 209 pp. Hardback only, A\$49.95

This is an interesting book that draws together a great deal of research material and causes the reader to reflect not only about women's health but also about men's health and the societies that condition this health. We only know whether women's health is surprising by comparing it with men's health and hence, for much of the book, both sexes get a look in. The most important source for this section of the work is Alan Lopez's contribution to the volume that he and Lado Ruzicka edited from a WHO Conference at the Australian National University in the early 1980s.

At least among population of European origin, there are fascinating patterns in excess male mortality. In Eastern Europe there is a single maximum between 20 and 30 years of age where male mortality may be three times that of females. In English-speaking countries of overseas European settlement there is a second hump between 60 and 70 years of age, more modest in height, but where male mortality is still double that of females. Finally, there is a North Sea pattern found in the various segments of Britain and the low countries where the old age hump competes in magnitude with the younger one. This was the pattern in Australia until after the Second World War, when the younger hump began its upward climb. Given the demonstration that two-thirds of the excess male mortality in the 15-44 age range can be explained by motor vehicle accidents, four-fifths by all accidents, with suicides making up most of the balance, then it is clear that we are examining a life-style phenomenon, dominated by the use of motor cars and motor bikes. The same is not true with regard to the older age excess, where half the difference is explained by cardiovascular disease, but two-fifths of the balance appears to arise from greater smoking and drinking.

Imhof's work with German parish records seems to show greater female than male survival over the last four centuries, although a substantial excess of old women is largely a product of the last one-and-a-half centuries. It is possible that female child mortality was higher in the sixteenth century. Not only is middle-age and old-age mortality greater among males than females, but the difference soars with widowhood or divorce. Indeed, while women survive as well on their own as in partnership, single, widowed or divorced men, at least until old age, die much more readily.

Kane argues that women's physiology is, because of their reproductive system, more complex and hence probably renders them more likely to sickness. Certainly, they see doctors more frequently. Some of the reasons for this arise from diseases of the genito-urinary system, but mental disorders are also a significant cause. The latter are partly a function of survival to older age, but may also have a lifestyle component.

Kane's book supplies a great deal of data and informed comment. Much of it is grist to the mill for this journal in that it demonstrates the importance of social and behavioural patterns, although the impact of this demonstration is probably heightened by the emphasis on the comparison of the sexes and would not have been quite as clear if the sole focus had been on the cause of female death.

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Child Mortality and Survival in South Asia: a Nepalese perspective. By Bhakta Bahadur Gubhaju, Daya Publishing House, Delhi, 1991. xvi+214pp. Hardback Rs. 190

Based very closely on a doctoral thesis submitted in 1983, this volume's timeliness could at first glance seem to be diminished by the fact that the main data source is a survey conducted in Nepal in 1976 and also because analytical reasons dictated that the main findings of the study about infant and child mortality should refer only to births which occurred in the period 1962 to 1971. However, it should be kept in mind that the toll of mortality remains extremely high in Nepal, so that the results presented in this book remain very relevant for public policy in that country. In fact, given that recent estimates of infant mortality rates in Nepal (128 per thousand live births for 1985-1990 according to the 1988 *United Nations Demographic Yearbook*) suggest a rather slower rate of decline since the early 1970s than was apparently occurring during the 1960s (Gubhaju estimates rates of 189 pre-1962, 176 for 1962-1966 and 158 for 1967-1971), a reader today is likely to wish that there had been as much emphasis in the volume on explaining the mortality decline as on the circumstances of child survival.

The method of the author is an exemplar of a frequently-found model for analysis of demographic survey results. He draws heavily on the body of international literature on child survival (until 1983!) to formulate questions and candidates for answers, chooses appropriate subsets of his data set on which to examine these questions, presents bivariate and multivariate analyses, and sometimes uses snippets of the anthropological and sociological literature about Nepal to explain the findings within their cultural context. The method is both likely to provide confirmation of theories propounded in the literature, which it does, and to falter, sometimes stumble, at the occurrence of unusual results. Out-of-context references to the anthropological literature are not necessarily helpful in this regard, although they are usually interesting.

The role of maternal education as an important contributor to child survival is confirmed, although mothers' education was found not to be important in the first year of life in Nepal, even in bivariate analysis. A very much lower level of mortality between the ages of 1 and 5 for children of mothers with some education, than for mothers with none, was attributed to the fact that in a country where breastfeeding is universal, the impact of decisions about child feeding and hygiene is strongest at childhood ages after weaning, and mothers' ability to break with traditional practices is strengthened if they have some education. There is little deeper discussion; a competing hypothesis is that education primarily confers the ability to acquire relevant knowledge, and that the transfer of relevant correct knowledge to mothers is what is actually important in determining child survival (as found by Streatfield et al., (1990) in the case of immunization in Indonesia). The important resource allocation considerations for governments, in trying to decide whether it is more beneficial to bring more formal education to women or to pursue direct health promotion campaigns, are not minor issues.

There is a great deal of careful attention to the confounding factors influencing analysis of biological and demographic determinants of child survival, and the resulting analysis provides striking confirmation of the importance of long birth intervals in achieving higher levels of child survival, and the relative unimportance of birth order, sex of the child, and maternal age in this context. This analysis necessarily excludes first births. The nature of the influence of maternal age is not handled extremely well in the analysis, because elsewhere in discussing results about all births the author points to singularly large significance of maternal age, when the length of birth intervals is not taken into account, and (p.125) to the policy imperative of increasing age at marriage and postponing first births until age 20. This confusion about the role of maternal age is evident in the concluding chapter (pp.177-8). To settle the matter it would have been necessary to do a separate analysis of first births only, although it can be surmised that the number of cases would have been too small to get substantial numbers of first births at higher ages or even to contrast successfully the very young mothers with older teenagers.

The role of long birth intervals is discussed much more successfully, with control for the influence of death of the preceding child and the timing of that death, but the discussion is mainly about competition for scarce family resources and attention, and about maternal depletion. There is no mention, for example, of the possible role of cross-infection among closely-spaced children.

A reader of this volume learns a good deal about the circumstances and correlates of child survival in Nepal, and about Nepal itself and its people. There is also an index to assist casual re-use. For these purposes it can be recommended strongly. To contribute to insights about the causes of demographic change or provide useful policy perspectives, it could be argued, there would need to be a stronger macroscopic perspective than this book provides. If something is to be done about unacceptably high mortality levels in Nepal, then this extremely worthwhile baseline study will need to be followed up by analysis, at a local level, of the way in which people gain access to the health services available, the structure and nature of the health services, the ability of communities to improve health-threatening environmental conditions, and empowerment to obtain relevant knowledge and resources and use them effectively.

Reference

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Les Populations OcĖaniennes aux XIX^e et XX^e SiĖcles (The Populations of Oceania in the 19th and 20th Centuries) By Jean-Louis Rallu. *Travaux et Documents*, no.128, INED/PUF, Paris 1990. 348pp., 150F.

With this book Rallu, researcher with the Institut National d'Etudes DĖmographiques, makes an important contribution to the knowledge of the demographic history of the South Pacific archipelagoes. He confirms, through the use of demographic history techniques, the reality and the magnitude of the depopulation of a number of islands during the course of the nineteenth century and the beginning of the twentieth. Thus, he provides answers to the reassessing by some historians of the population decrease among the people of Oceania following contact with Europeans.

Nearly two-thirds of the work is devoted to a study of demographic changes in the Marquesas, an island group to the north-east of French Polynesia, from 1885 to 1945, thus covering the depopulation phase which extends to 1925, then stabilization and eventually demographic recovery. Rallu undertook to reconstruct Marquesan family histories by combining civil registry data with data from other sources, particularly baptism records and the 1892 census lists. He notes a regular decrease in population, at a fast rate and over long periods, between 1886 and 1926. The negative growth rate is around -2 per cent per year, and even reaches -3 per cent between 1911 and 1920.

Epidemics are not a factor in this decrease: the only epidemic during the period of study accounted for less than 1 per cent of the deaths recorded between 1886 and 1925. The negative growth is due mostly to the high mortality caused by imported diseases, notably infectious diseases. The most abnormally high mortality rates are found in the adult age groups. The existence of excess mortality

among women, only partly linked to deaths in childbirth, leads the author to the conclusion that the high male mortality rate is not due to wars or violent deaths, and that the high mortality rate among both sexes is due to disease.

The second cause of population decrease in the Marquesas Islands is the low birth rate. Rallu shows that general fertility was low. Fertility rates, very low in the earliest generations studied (the number of offspring for the 1866–1875 generations being about two children per woman) gradually increase from generation to generation. The rise in fertility is observed first among the younger age groups, then spreads to the older groups. The author estimates fertility among the later generations, those born 1911–1915 and which he studies until age 35, to be of the order of 6.4 births per woman.

The low fertility is due to the high incidence of primary sterility: 30 to 40 per cent of women of the earliest generations are sterile. Secondary sterility also plays a significant role. Venereal diseases appear to be the major cause of sterility, with the precarious conditions in which deliveries took place as another factor of secondary sterility. After this very rich study of the demographic history of the Marquesas, the author devotes the second part of his work to other islands of the Pacific: the rest of French Polynesia, New Caledonia and Vanuatu.

Having revised the estimate of the size of the population of Tahiti at the time of Cook's visit in 1774 to 66,147 people and having mentioned earlier estimates and the first census, Rallu proceeds with a reconstruction of the demographic evolution of Tahiti and the major islands of French Polynesia by projecting back on the basis of certain census data. It is regrettable that the choice of these data was made without an in-depth study of the conditions in which they were taken, and thus of their reliability. For instance, the 1848 Tahiti census is described as underestimated, whereas the information that can be found about it in the archives – showing a three-day process, a subdividing of the territory into investigation areas, qualified personnel (French officers and Tahitian officials), name lists by households – would lead one to think that this census was reliable, unlike the '1863' census, whose very date is erroneous since its first results were published in 1862.

The author goes on to study the influenza epidemic which struck the Society Islands in 1918, and its demographic impact. The death toll was enormous, and primarily affected the adult age groups. The gross mortality rate reached 191 per 1000, as against 45 per 1000 in high-mortality periods outside of the epidemic.

The brief chapter on New Caledonia is somewhat disappointing. It mostly rehashes the few existing publications, without adding anything new. The decrease in Melanesian population between 1911 and 1921 is thus again attributed, in major part, to the influenza epidemic of 1918. And yet, this particular epidemic did not affect New Caledonia, and the short-lived influenza epidemic which did strike took place in 1921, two weeks after the census, and only caused about 30 deaths.

The portion covering Vanuatu completes earlier works by the author. In the absence of any Civil Registry, Rallu collected genealogies from the oral tradition of the north of the island of Malekula, and was thus able to piece together the demographic change since the beginning of the century. The very rapid decrease in population is due to a very high mortality rate, where frequent wars, new diseases and epidemics vie with the low birth rate. Yet one notes substantial differences in mortality rates between the small island of Vao and the north coast of Malekula. The lower mortality rate on Vao could be due to its relative isolation and its more favourable climate.

These last remarks remind us that within a framework of regular and rapid population decrease, which seems to be shared by many islands of the South Pacific, there can be large variations from island to island. In particular, the absolute magnitude of the depopulation depends on the greater or lesser duration of the phenomenon, this duration itself being linked to the initial date and the intensity of the contacts with the rest of the world.

It is to be hoped that other case studies, as valuable as those conducted by Rallu, will continue to improve our knowledge of the demographic history of the South Pacific, and to confirm the existence of a 'pre-transitional' stage to the theory of demographic transition.

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