Health/ill-health transition in less privileged populations: what does the future hold?

ABSTRACT – Changes in health/ill-health in response to alterations in environmental factors are recognised. While the phenomenon has been extensively investigated in Western populations, the extent and sequelae of transitions in less privileged populations are less well appreciated. Examples of changes are given, first for Western populations as a comparison but, more particularly, for rural and urban Africans, for African–Americans, and also for Australian Aboriginals, whose mortality rates for chronic degenerative diseases now exceed those of white Australians. Discussion of the likely future of these populations indicates that a lessening of proneness to Western diseases is unlikely.

In developed and developing populations, changes have been taking place in risk factors, both dietary and non-dietary, with subsequent ramifications in patterns of health/ill-health. Transitions are manifest from past to present, with rise in socio-economic state, with movement from rural to urban areas, and with changes in culture. There have been falls in morbidity/mortality rates from infections, with simultaneous greater survival and associated higher mortality rates from chronic degenerative diseases.

In making comparisons between health/ill-health experiences from past to present, and from the rural primitive to urban sophisticate, it must be remembered that, in the past, health experiences were not all bad, as emphasised by Lord Horder[1].

Transitions in Western populations

In Aristotle's time, children were not named until a week after birth, because 'most perished before that time'[2]. In 1900, infant mortality rate (IMR) was still high, about 100 per 1000 live births; at present it is 6–7 per 1000 live births[3]. As late as the mid-1800s the average age at death among 'mechanics, servants and labourers and their families'[4] was astonishingly low, 16 years. Nowadays the average is 73 years for men and 78 for women[5]. Currently, in most Western populations, coronary heart disease (CHD) accounts for 15–25% of deaths, cancer 15–20%, and stroke about 10%.

Risk factors have changed. Two to three generations ago, the diet was lower in energy content and contained about half the present intake of fat[6]. Consumption of plant foods, especially bread and potatoes, was much higher[6]. Since that time, the rise in vegetable and fruit intake has been slight[7], despite exhortation to double it[8]. While smoking rose to a maximum in the 1970s and 1980s, it has fallen by a half, and has probably now stabilised[9]. Although alcohol consumption has increased, at present it is generally steady[10]. Physical activity is far lower than it used to be[11].

Transitions of Africans

In the past, amongst those who lived traditionally, mortality rates among the young were very high, largely owing to infections and respiratory diseases. Among adults, including the elderly, most deaths from natural causes were also due to infections[12]. Recently, in rural areas, changes are occurring, such as less reliance on plant foods[13]. Death rates among the very young have declined considerably but, among adults, those due to hypertension related diseases and diabetes have greatly increased[14].

With urbanisation, tremendous changes have occurred[14]. Among Africans in South Africa, IMR has fallen from 150–200 per 1000 live births in rural areas to 20–25 in large centres. Life expectancy is about 60 years. Dental caries, obesity in women, hypertension and diabetes have become so prevalent that they now exceed those in the white population. Mortality from stroke has risen but, strangely, CHD has barely increased[15], despite higher serum cholesterol levels and the other risk factors mentioned, and there has been no more than a bare rise in the prevalence of chronic bowel diseases – appendicitis[16] and colon cancer[17].

Among dietary risk factors for CHD, fat now provides about 30% of energy intake, compared with 15% in the past[18], and fibre intake has fallen from 25–30 g or more to 10–15 g daily[14,19]. Other risk factors include smoking, with a prevalence of 53% and 6% among men and women respectively[20]; alcohol intake which has risen[21] and physical activity which has fallen. Tuberculosis[22] and HIV infection[23,24] remain a tremendous problem.

Transition of African–Americans

In the past their IMR was very high. At present the rates for African–Americans and white Americans are respectively 17 and 7 per 1000 live births[25]. While mean life expectancy is 65 and 70 years for African men and women, it is 72 and 80 years for the white population[26]. However, African men and women of 75

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years and older have longer total life expectancy and active life expectancy than whites; furthermore, the differences are larger after stratification for education[27].

Previously rates of cardiovascular diseases and cancer were much lower for African-Americans than for the white population but, in 1992, in 15 leading causes of death, the ratio of age adjusted death rates for whites and Africans was 1 : 1.6. Only in respect of chronic obstructive pulmonary diseases and of suicide were their ratios less than unity, namely 0.8 and 0.6 respectively[26].

The proportion of African-American mothers of infants below the poverty line has been reported as 40% compared with 16% among the US white population[28]. It is likely that the poorer segments have higher intakes of fat and lower intakes of vegetables and fruit. Prevalence of smoking in African men and women has been reported as 34% and 22%; it is 28% and 25% in the white population[29]. Rates of potential life loss before 65 years due to smoking are twice as high for African–American men as for white men[30]. Alcohol consumption is lower than in the white population, but the proportion who are heavy drinkers is higher[31]. Activity at work is greater in Africans but leisure activity is less.

Transition of Australian Aboriginals

The Aboriginals migrated to Australia at least 40–50,000 years ago from south east Asia. As hunter-gatherers, their diet consisted largely of a variety of indigenous plant foods. In the late 1800s they were reported to be 'lean and apparently physically fit'[32]. Their IMR was very high and injuries from accidents and fighting were common. However, a nomadic life restricted the spread of infectious diseases.

Their present number, approaching 300,000, is about 2% of the total Australian population. Two-thirds of them live in urban areas, and rural dwellers live almost wholly in settled communities; 14% are under 15 years old and only 6% are aged 60 years and over. Survival times for men and women have been reported as 58 and 67 years respectively, compared with 73 and 79 years in the general population[33]. Most Aboriginals are poor.

The current frequency of infections among their infants and children is almost 8 times higher than among other Australian children[34]. Respiratory illness, injury and poisoning are common causes for admission to hospital. Among adults, cardiovascular diseases, diabetes and mental disorders are the major illnesses. A high proportion of admissions is for assaults, traffic accidents, burns and scalds.

Mortality rates for Aboriginals in Western Australia during 1983–1989 were much higher than those for whites in all age groups except 75+ years[35]. 'Lifestyle' diseases such as diabetes, circulatory diseases and hypertension are now the major causes of death. Similar findings were reported from a corresponding mortality inquiry in the Northern Territory for 1979–1991[36].

In the Northern Territory, 33.5% of total energy intake was derived from fat, 9.8% from protein, 30.0% from sugars (unusually high) and 27% from complex carbohydrates[37]. Fibre intake was low, 10–15 g daily. The ratio of polyunsaturated to saturated fatty acids (0.47) was low.

The prevalence of tobacco smoking is high in both men and women, 70.5% and 42.5% respectively[38], as is alcohol consumption; 53% of men and 19% of women were reported to have drunk nine or more standard drinks per drinking occasion, compared with 4% and 0.5% in non-Aboriginals[39]. Aboriginals used to be physically very active; this is no longer the case.

What factors will affect future transitions?

In seeking to predict likely future changes in health/ill-health/mortality patterns, many factors have to be taken into reckoning.

Changes in incidence and mortality for certain diseases

In western populations there has been a puzzling change in the occurrence of CHD; currently known risk factors explain only about half of the variance in its occurrence[40]. In South Africa the recent 56% fall in CHD mortality rate in the white population has occurred in the absence of any avoiding action[41]. Weatherall, writing of declines in mortality from cardiovascular diseases, and of gains in life expectancy, considered that 'this phenomenon is completely unexpected and unexplained . . .'[5]. In Japan, according to recent changes in risk factors, mortality rates from colon and prostate cancers should be rising – but they are falling[42]. In Western populations, spectacular reductions have occurred in dental caries; contrary to popular appreciation, sugar intake explains less than 10% of the variance[43].

According to known risk factors, the occurrence of CHD in urban Africans should be far higher than it is[15]. Conversely, the excessively high mortality rate from this disease among Indians in South Africa and in the UK cannot be adequately explained[41,44,45]. Among African elderly women, hip fracture rate, in so far as it may be related to their habitually low calcium intake, should be high, yet its incidence is only one-tenth of that in the white population[46].

Clearly, caution must be exercised over future predictions of morbidity/mortality situations for the chronic diseases of lifestyle.

Increasing restrictions on health expenditure

Cuts in expenditure are being made, or are being contemplated, in most countries. The US spends 14% of its gross national product (GNP) on health care,

but efforts are afoot to restrict it[47]. In New Zealand, 'reforms are relentlessly unravelling a system that was once the envy of the world'[48]. Worse still, in India, 'the grim scenario is Hell for All rather than Health for All'[49]. In Africa, all countries have insufficient money and there are restrictions on health practices. Thus, in Zimbabwe, since 1990, economic reforms have threatened health services that, until recently, have been a source of national pride[50]. In Kenya, cuts in spending have evoked a rise in sexually transmitted diseases and a fall in rates of clinic use, with increases in the spread of HIV and AIDS[51]. In South Africa, one of the effects of intensifying primary care has been a major decrease in tertiary health services[52].

Increasing dichotomies in socioeconomic state

In the past, many believed that the higher the GNP the better the vital statistics, but this belief has major limitations. In the US more than 37 million people do not have ready access to health care, yet between 1960 and 1993 the proportion of GNP spent on health increased from 4.4% to about 14%; the overall benefit seems to have been minimal[5].

Within a community or nation, increasing evidence indicates the existence of associations between income inequality and various mortality indicators. One forthright conclusion is that increasing inequality in income 'is bad for the economy, bad for crime rates, bad for people's working lives, bad for the infrastructure and bad for health – in both the short term and long term'[53]. Unfortunately, evidence indicates that in all countries, developed and developing, the trend is for the rich to get richer while the poor get poorer.

Failure to adopt a prudent lifestyle

Numerous recommendations have been made to lessen health risks by altering lifestyle practices, but responses have been slight. Regarding the dietary avoidance of cancer, it has been averred that 'health is not a priority for most people in the course of their daily lives and only surfaces when health problems emerge'. Studies have found little evidence that changes in health related behaviour were a response to formal health messages[54]. It seems that Western populations have taken meaningful action to reduce smoking, but not developing populations.

Many of these transitions, particularly those relating to the major part played by changes in nutrition, were ably described and discussed by McKeown[55]. However, some of the beneficial changes that he envisaged if lifestyles were amended have not been attained.

Conclusion

Many of these considerations are depressing. What could less privileged populations legitimately wish for? Surely, the first wish would be that there should be sufficient food for all. Next, certainly in rural areas, there should be greater availability of water, with improvements in sanitation and hygiene. The 24-hour availability of a doctor or a nurse at clinics has been associated with a huge fall in IMR, as was well demonstrated in the Gambia[56]. Such changes, with additional measures such as increasing inoculations of children, would have tremendous potentialities for improvements in health, and their realisation is not wholly visionary[49]. The foregoing, however, would have little relevance to populations such as African-Americans and Aboriginals, among whom better health facilities already exist.

Mortality from chronic degenerative diseases among Africans in South Africa is likely to get worse. The general desire of Africans is to emulate the lifestyle enjoyed by the white population, so adoption of a 'prudent' lifestyle is highly unlikely[57]. This implies, in the ultimate, that prolongation of disease-free years, or the years of 'wellness', is a forlorn hope.

Notwithstanding, there must be recognition of the fact that in the case of some relatively poor populations in countries such as Cuba[58], Chile[59], Brazil[60], and India's Kerala province[61], enormous improvements have been made in public health. Hence, in further transitions, changes to the good (or to the bad) will depend very much on the will of the authorities, and perhaps even more on the determination of the communities themselves.

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