

## Chapter 15 Cultural factors in epidemiology

### CASE STUDIES

#### Case study: cultural dimensions of depression in Bangalore, India

Raguram and his colleagues<sup>23</sup> in 2001 interviewed 80 patients using the Explanatory Model Interview Catalogue (EMIC) questionnaire, who were attending a psychiatric out-patients clinic at the National Institute of Mental Health and Neuro Sciences (NIMHANS) in Bangalore. All of them had been diagnosed as having depression, according to the criteria of the WHO International Classification of Diseases (ICD-9). The study found that 85 per cent of the patients presented initially with somatic symptoms (such as fatigue, aches and pains, appetite loss or sleep disturbances), rather than complaining of sadness or depression. On further probing, though, 90 per cent admitted that they did have some emotional symptoms, but only one-quarter of the sample identified sadness as their most troubling symptom. They explained their condition as resulting from many aspects of their personal and social lives, including family worries, interpersonal conflicts, financial problems, sexual issues,

'stress', 'nerves' (*nara*) and 'excess heat in the body'. Those who had consulted private medical doctors for this, had been dissatisfied with their treatment ('The doctor did not speak much. Just prescribed some tablets'), and with the doctor's neglect of these personal and social issues. Thus because depression is imbedded in people's experience of daily life and relationships (and is not a separate, universal, diagnostic 'disease'), the authors suggest that 'psychological distress is not merely a state of mind, but an experiential network of social and cultural discourses that operate within any community'. To treat it effectively, one therefore needs to understand people's experiences of suffering, their belief systems and the realities of their daily lives. In poorer countries, in particular, prescribing expensive antidepressants or anxiolytics is not sufficient: 'professional frameworks for research and clinical care must be sensitive not only to professional concepts, but also to cultural contexts and the configuration of local cultural worlds. If not they are handicapped and unlikely to help.'

#### Case study: cervical cancer in Latin America

Cervical cancer is a well-documented example of the role of cultural factors – in this case, sexual norms and practices – in the distribution of a disease. Various studies have shown it to be rare in nuns and common in prostitutes. It is extremely uncommon among Jewish, Mormon and Seventh Day Adventist women. Women with cervical cancer are more likely to have experienced early commencement of coitus, early marriage, multiple sexual partners and multiple marriages. Although the exact cause of cervical cancer is still unknown, it is believed to be multifactorial in origin, and there is a strong suspicion that a viral infection – human papilloma virus (HPV) – might be implicated.<sup>30</sup>

It was originally thought that a woman's sexual behaviour alone could determine her risk of cervical cancer. However in 1982, Skegg and colleagues<sup>31</sup> pointed out that its incidence was very high in Latin America, where women were expected to have only one sexual partner in their lives, and strong cultural sanctions existed against their having premarital or extramarital sexual relationships. They suggested that, if the hypothesis of the infective origin of cervical cancer was correct, then in some communities a woman's risk of getting the disease would depend less on her sexual behaviour than on that of her husband or male partner. One should therefore look at the patterns of

sexual behaviour in a society as a whole, especially the sexual habits of the *men*. On this basis, they postulated three types of society:

- 1 'Type A', where both men and women are strongly discouraged from pre- or extramarital relations (for example, Mormons or Seventh Day Adventists)
- 2 'Type B', where only women are strongly discouraged from extramarital sexual relations but men are expected to have many (especially with prostitutes), as in many Latin American societies and in Europe last century
- 3 'Type C', where both men and women have several sexual partners during their lives (as in modern Western 'permissive society').

The incidence of cervical cancer is lowest in Type A and highest in Type B societies. In Type A groups, such as Jews, Seventh Day Adventists and Mormons, the low incidence could result from endogamous marriage and monogamous patterns of sexual behaviour, as well as from low recourse to prostitutes. Conversely, in Latin America recourse to prostitutes is common. In one study quoted by Skegg and colleagues, 91 per cent of male Colombian students reported premarital intercourse, and 92 per cent of these men had experienced intercourse with prostitutes. The authors suggest that this might account for the high

incidence of cervical cancer in Latin America, as the prostitutes could act as a reservoir of infection. Similarly, the decline in mortality from the disease in the UK and USA (Type C societies)

may be result from changing patterns of sexual behaviour among men, with less recourse to prostitutes in a more 'permissive' society.

### Case study: cultural practices and hepatitis B

Brabin and Brabin<sup>32</sup> in 1985 reviewed the role of cultural factors in the transmission of the hepatitis B virus. The level of infection by the virus varies widely between countries, ethnic groups, tribes and even neighbouring villages. Part of the reason for this is a number of cultural factors, including sexual behaviour patterns, family and marriage patterns, and cultural changes affecting women and their childbearing age. For example, the risk of infection with the virus varies with the level of promiscuity, and the spouses of promiscuous partners are therefore at greater risk from infection, which is particularly important in the case of pregnant women. They point out that marriage patterns that permit extramarital relations, polygamy, frequent divorces or the exchange of partners may all contribute to spread of the virus, as may widespread recourse to prostitution, especially in tropical countries. Family patterns involving frequent adoption of children and their movement between households, and the movement of women in marriage between villages, may also

provide channels for the spread of infection. In contrast, marital patterns that forbid marriage between different communities or segments of a community may confine the infection to certain geographical or ethnic pockets; for example, Chinese immigrants in the UK and USA and Fijian Indians all have low levels of HBsAG, characteristic of their homelands. Finally, social changes such as war, migrations and social upheaval may break down barriers that contained the virus in a local environment and spread it further afield. Since the prevalence of hepatitis B antigen (which correlates with the rate of vertical transmission of the virus) declines with age, most vertical transmission occurs when women bear children at a younger age. Cultural changes that produce a later age of marriage and childbearing will therefore reduce this transmission, and the spread of infection. The authors conclude that, especially in the case of hepatitis, 'interpretation of epidemiologic data in non-Western societies demands a cultural perspective if modes of transmission are to be correctly defined and intervention planned'.

### Case study: coronary heart disease among Japanese in Japan, Hawaii and California

In a number of studies in the 1970s, Marmot and colleagues<sup>9,10</sup> examined the epidemiology of coronary heart disease, hypertension and stroke among 11 900 men of Japanese ancestry living in California, Hawaii and Japan itself. The aim was to identify the influence of non-genetic factors on these three groups, by comparing disease rates of the two migrant groups and those of Japanese who had not emigrated. They found that there is a gradient in the occurrence of coronary heart disease (CHD) between the three groups, with the lowest rate in Japan, intermediate rate in Hawaii and the highest rate in California. The influence of other risk factors commonly associated with high CHD rates, such as hypertension, diet, smoking, weight, blood sugar and serum cholesterol levels, was examined. It was found that the gradient in the incidence of CHD could not be explained only by the presence of these risk factors (for example, those who smoked similar amounts in the three groups still

showed a gradient in the incidence of CHD). However, the incidence of CHD was found to be related to the degree of adherence to the traditional Japanese culture they were all brought up in. The closer their adherence to these traditional values, the lower was their incidence of CHD. Within California, those Japanese-Americans who had become most westernized in outlook had higher rates than those immigrants who followed their more traditional lifestyle. Marmot and Syme<sup>10</sup> point out that 'these results support the hypothesis that the culture in which an individual is raised affects his likelihood of manifesting coronary heart disease in adult life', and that this relationship of culture of upbringing to CHD 'appears to be independent of the established coronary risk factors'. In the case of the Japanese, the cultural emphasis is on group cohesion, group achievement and social stability. In this cultural group, as in other traditional societies, it is suggested that 'a stable society whose members enjoy the support of their fellows in closely knit groups may protect against the forms of social stress that may lead to CHD'.

### Case study: cultural practices and parasitic diseases

Alland<sup>33</sup> examined the relationships between certain cultural practices and the incidence, distribution and spread of parasitic diseases. Although published in 1969, most of his findings still apply today and are also relevant to infectious diseases. He notes how the arrangement of living space, the type and arrangement of houses and the numbers of people per room or house may all influence the spread or containment of disease. The social isolation of certain subgroups, such as within a rigid caste system, may affect the spread of epidemics into certain communities. Population movements, such as a nomadic lifestyle, also help to spread parasitic and other infections, sometimes through the wider distribution of their human wastes. Certain cultural practices that separate man from the extra-human environment of some parasitic organisms also help reduce infections. For example, the practice of digging deep latrines (as opposed to discharging waste products into rivers or

streams) offers protection against those parasitic infections that are spread by urine or faeces. Contamination of water supplies is also prevented by its location far from domestic animals or human habitations, and by the separation of drinking sources from water used for bathing or laundering. Other cultural practices, such as frequent spitting, may increase the spread of viral and other infections through the community. Patterns of visiting the sick, or attending large public rites or festivals, may also be related to the spread of epidemics. Certain agricultural techniques, such as the cultivation of rice paddies, may increase the danger of schistosomiasis and other parasitic infestations. Certain forms of dress, such as tailored clothing, apparently provide a better environment for lice or fleas to live in than do loose togas, while the sharing of clothing within a family may also spread these infections. These and other cultural practices may influence the distribution of a wide range of parasitic, bacterial, viral and fungal infections.

### Case study: AIDS and sexual practices in urban Brazil

Parker<sup>34</sup> in 1987 studied sexual attitudes and practices in urban areas of Brazil, in relation to the growing incidence of acquired immune deficiency syndrome (AIDS) in that country. Based on his fieldwork, he criticized the assumption that 'sexual practices are constant cross-culturally – that sexual behaviour is largely unaffected by its specific social and cultural context'. He pointed out that models of AIDS transmission (and therefore of prevention) developed in the USA and Western Europe may be inappropriate to the Brazilian cultural context. The assumption that there are just three types of sexual behaviour – heterosexuality, homosexuality and bisexuality – with clear boundaries between these groups does not reflect Brazil's complex cultural reality. For example, not all homosexuals are regarded as being really 'homosexual'. Brazilian culture differentiates between the active, penetrating partner (the *homem* or 'man'), and the passive 'woman' (known as the *viado* or *bicha*). Social stigma attaches mainly to the latter, while the *homem* can have sexual relations with either women or men, 'without sacrificing his masculine identity'. The same distinction applies also to the more active male prostitutes (the *miche*), as opposed to the more passive transvestites or *travesti*. In popular

thought, therefore, 'the category of *homossexuais* or "homosexuals" has generally been reserved for "passive" partners, while the classification of "active" partners in same-sex interactions has remained rather unclear and ambiguous'. This ambiguity can in turn undermine preventive strategies and health education that are directed only against the more obvious *viados*.

Another significant feature in Brazil is the widespread practice of anal intercourse, both between men and men, and between men and women. It is also common between male clients and female prostitutes. In adolescence, too, anal intercourse is common, mainly in order to avoid both unwanted pregnancy and rupture of the hymen – still an important sign of a young woman's sexual purity. The apparently frequent incidence of anal intercourse among different groups in Brazil thus 'makes the epidemiological picture of AIDS there quite distinct from the picture in Europe and the United States'; these patterns 'significantly change the definition of "high-risk" groups in Brazil and may well further the spread of AIDS to the population at large'. Thus, Parker concluded that epidemiological research on AIDS should recognize the disease as 'simultaneously a socio-cultural and biological phenomenon', and that preventive strategies should always take this into account.

### Case study: comparison of surgical rates in the USA, Canada and England and Wales

Vayda and colleagues<sup>35</sup> compared overall surgical rates in Canada, England and Wales, and the USA in the period 1966–76. In particular, they examined the relationship between:

- 1 Operative rates per 100 000 population in each of the three countries.
- 2 Selected resources (surgical manpower and hospital beds).
- 3 National priorities, as measured by percentage of gross national product (GNP) spent on health care.
- 4 Disease prevalence, as measured by mortalities for selected diseases for which surgery is one form of treatment.

The rates of 10 common operations were computed in the three countries and compared. These operations were: lens extraction; tonsil surgery; prostatectomy; excision of knee cartilage; inguinal herniorrhaphy; cholecystectomy; colectomy; gastrectomy; hysterectomy; and Caesarean section. During the 10 years studied, overall surgical rates in England and Wales were found to have remained constant, while Canadian rates were also relatively constant, but rates in the USA increased by about 25 per cent. Canadian rates, though, continued to be 60 per cent higher than the British rates, and the USA rates, which were 80 per cent greater than those in England and Wales in 1966, were 125 per cent greater than those in England and Wales in 1976. Caesarean sections increased in all three countries from 53 per cent to 126 per cent. In 1976 about 12 per cent of all Canadian and American births were delivered in this way, but the rate in England and Wales was only 7 per cent. Hysterectomy rates were twice as high in Canada and the USA compared with the British sample. In comparing the availability of hospital beds, the British sample had

the lowest number (and the lowest number of operations) of the three in 1976, and while Canada had 30 per cent more hospital beds than the USA, overall operative rates in the USA were 40 per cent higher than in Canada. In the decade under study, England and Wales spent about 5 per cent of their GNP on health care, Canada spent about 7 per cent and the USA about 9 per cent. The study could find no clear correlation between operative rates in the three countries and the availability of either hospital beds or medical manpower; neither were they related to differing mortality rates (as a measure of prevalence) of the selected diseases between the countries. Instead, the differences were caused by 'differing treatment styles and philosophies of patient management', the different value systems of these countries, the priority they assign to health care (as reflected in the percentage of GNP allocated to health care), and changes in technology (especially the increase in cardiac, vascular and thoracic surgery in the USA and Canada). The authors note that 'differing operative rates are more a reflection of consumer and provider preferences; consequently, outcomes must be measured in terms of quality of life and postoperative morbidity rather than by mortality'. This is because most operations done are elective or discretionary, and not done for any potentially fatal condition; this explains why the differences in operative rates were not related to differing mortalities from the selected conditions. The study demonstrated, therefore, that 'at least three industrialized Western countries have tolerated substantial differences in their frequencies of surgery without consistent unfavourable outcomes'. To some extent, therefore, the cultural values of the surgeon, the patient and the society in which they live play a part in determining the frequency with which surgery is used as a treatment for certain conditions.