Green College Lectures

Social factors and disease: the medical perspective

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As an epidemiologist, my preoccupation with social factors may be considered under three main headings. Firstly, the social determinants of health and of the development of disease. These include factors in the structure and dynamics of human society that influence the exposure of individuals to those agencies that either sustain or threaten health. Secondly, the social determinants of the course and outcome of disease in individuals and society. These include social influences that determine behaviour and especially the decision making of those who experience illness and of those responsible for the provision of caring services. Thirdly, the social determinants of how health and disease are defined. Health and sickness are relative terms and individuals are healthy to the extent that they can function in their context. There are thus two distinct but complementary strategies for the pursuit of health: one seeks to promote the physical capabilities that enable individuals to function in the widest diversity of social contexts; the other seeks to promote social contexts in which individuals can function independently of limitations in their physical capability.

I intend to concentrate on a single main issue: the unequal distribution of health among the social classes. Human beings exhibit considerable diversity. That the health experience of human beings should vary is therefore taken to be neither surprising nor completely remediable. What is more surprising is that the health experience of human beings varies systematically among social groups. Among the most interesting examples of such variation is the unequal mortality experience of different social classes.

Social class

Within most human societies there seem always to have existed groups enjoying different privileges and status. These have derived from the division of labour and reflect the different ways in which individuals acquire the means of livelihood. The enormous proliferation of paid employment has resulted in the development of societies in which the variation in income results in a wide range of outlook and lifestyle. At the same time there has developed an opportunity for both upward and downward social migration. A system of social classification has been developed in Britain which is based on a categorisation of occupations, which seems to reflect both the educational requirements associated with employments and the general privileges that accrue to those in them. It divides the population into five social classes and has been used for the presentation of health and vital statistics in Britain for over 50 years. It has been seriously criticised for many inadequacies over much of its history but its use continues.[1]

In most decennial reviews of occupational mortality and in many other studies the association of mortality with social class has remained remarkably unchanged over nearly half a century. The topic raises a series of questions which it is illuminating to seek to answer.

(1) Is there really a persistent association between poor health and social underprivilege?

(2) If so, what are its causes and to what extent might they be remediable?

(3) How important is it to pursue equality in the distribution of health?

(4) To what extent is such a pursuit an appropriate or legitimate responsibility of either a national health service or of the professional personnel who work within it?

Health and social underprivilege?

There are a number of difficulties in the analysis of social class variations in health. Arrangements are made in the years surrounding census years to relate statistics on deaths to statistics on the population and to publish tables relating mortality at various ages and from various causes to selected occupations and the five social classes. One serious problem is that the assignment of occupations to the social classes is amended periodically and occupations may be moved from one class to another. These changes may be influenced by the wish to preserve the smooth gradient of mortality across the social classes, which many people believe was a prime criterion of the original categorisation. The relative size of the classes has changed over the period since the procedure was introduced. The lowest social classes have become much smaller, and if the ordering reflects the distribution of mortality then the contents of the lowest categories must increasingly reflect the tail of that distribution.

Undoubtedly, the earliest version of the classification (in 1911) was later amended to secure a continuous mortality gradient.[1] The classification has been periodically revised. If the wish to maintain mortality gradients dictated any part of the revisions then this was not applied very thoroughly. The occupations within each class have continued to display substantial variation in age standardised mortality rates. A redistribution of occupations designed to maximise the social class gradient in mortality would "demote" pharmacists from social class I and publicans from class II, and would "promote" postal delivery men, window cleaners, and building labourers from their positions in classes IV and V—among many other relocations.

Another difficulty is social migration. If migration to occupations in the lower social classes were a consequence of impaired health then the social class distribution of mortality might reflect the consequences rather than the causes of the morbidity leading to death, and this migration probably accounts for some of the social class gradient. That it is less important in some of the major causes of

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death is suggested by the short duration of prefatal morbidity for many of these diseases and also by the tendency for the mortality of wives classified by their husband's occupation to exhibit similar social class gradients to those of men.

There remains a difficult question of whether personal characteristics affecting health experience might also determine occupational choice. Himsworth has gone further and argued that this may be an explanation of social class differentials in mortality rates among the newborn since the characteristics influencing a woman's capacity to promote the survival of her child may also influence her choice of husband's occupation.[2]

The consistency of the association of social class with most causes of mortality and also with many other indices of health suggests that the association is "real" enough to require explanation. Its persistence is more problematic.

Possible causes of association between social class and health

How far do observed mortality rates reflect specific hazards associated with employment? Hazards arising from work may be distinguished as those arising directly from the occupational process or its materials, those arising from other environmental influences to which an occupation particularly exposes those who work in it, and those arising from the lack of intrinsic or extrinsic rewards associated with the work. Our knowledge of the hazards of the first kind remains sketchy; for example, serious estimates of the proportion of all cancer mortality attributable to occupational causes may vary from 5% to over 30%.[3] Standardisation of occupational mortality for social class suggests that about 20% of the social class variation arises directly from occupational hazards.[4] Examples of hazards arising from environmental causes to which work may specifically expose the worker include the raised risk of breast cancer in nuns and the raised risk of skin cancers in outdoor workers.

But the most serious concomitant of work is the reward or lack of it. Little scientific attention has been directed to the effects on health of the low intrinsic rewards associated with much of the work in manufacturing industry. The wage rewards have been even more neglected as causes of occupationally associated ill health, although they must be major determinants of lifestyles.

There no longer seems much doubt that unemployment is associated with a range of health impairments. Is the adverse health experience concentrated among the unemployed or is it general in economically depressed societies? Is it simply that those in poor health are the first to lose their jobs? Evidence is accumulating that poor health and raised mortality—especially from heart disease and suicide—are more considerable in the unemployed. Studies based on the OPCS longitudinal study from the 1971 and 1981 population censuses show that mortality is raised among men who are seeking work. This may be explained neither by their previous sickness absence nor by their social class.[6]

Nutrition is among the factors affecting health. The diet of those with low incomes differs appreciably from that of the better off, mainly because the calorie needs are met by cheaper means which unbalance the intake of other important nutrients. A measurable result of nutritional variation is stature, which still sharply reflects social circumstances in childhood and adolescence.

Housing may be another important social deprivation relevant to health. The replacement of many of the houses of the last century has not been an unqualified change for the better. Although hard evidence of the harmful effects of high rise housing is difficult to acquire, one striking example is the large social class variation in the mortality from accidents—now the most important cause of death in childhood and clearly related to inadequate play space and to unsuitable domestic heating arrangements.

Our understanding of the aetiologies of cancer, cardiovascular disease, and chronic locomotor disorders makes it difficult to assess the precise role of social factors as causal agencies in spite of the overwhelming evidence of their importance. In most of the major diseases it is evident that social factors account for more of the variation than any other factor after age.

Himworth's and also Crombie's view that some inherited attributes are both inimical to health and determinant of occupational or marital choice requires consideration.[2,6] But do such characteristics exist? There is evidence that maternal height is associated with the survival of the offspring but little reason to suppose that this is causal and overwhelming evidence that human stature reflects nutritional and other environmental experience far more than genotype. A substantial body of evidence relates to the importance of education, outlook, and aspiration in determining both health and the use of health services, but there is little ground for believing that such attributes are determined genetically. Furthermore, the notion that our social hierarchy substantially reorders the population of each generation on the basis of genetically determined characteristics not only defies the evidence but sets at nought the importance of the whole apparatus by which the privileged maintain their privileges for their offspring.

The stratification of educational opportunity and the privileges associated with different occupations seem to offer a more plausible explanatory basis. The less privileged occupations are not only more hazardous to health in themselves but the rewards and the associated life circumstances determine poorer nutrition, poorer housing, reduced job security, smaller disposable income, and a reduced skill and confidence in manipulating the bureaucracy of the health care system. There is also evidence that the health care personnel and institutions that serve the poorer sections of society reflect the generally poorer quality of the social environment associated with underprivileged communities.

In short, whereas it would be foolish to dismiss the possibility that social stratification partly reflects intractable variations in personal characteristics that also influence health, there is overwhelming evidence of the primary importance of environmental concomitants of social underprivilege.

How important is it to pursue equality in health distribution?

The public attitude to inequality is far from simple, although considerable lip service is usually paid to equality before the law and the right of all adult citizens to participate in elections. There is clearly some consensus that we are born equal in respect of certain rights, but most societies have found it expedient to differentiate between those goods to which all citizens have an equal right and those whose unequal distribution is either accceptable or even desirable.

Three considerations determine whether a commodity may remain unequally distributed in a society which lays claim to being just: (*a*) inequality has to be tolerated when it is unavoidable; (*b*) inequality may be tolerated when it is considered to reflect legitimate variation in the values that individuals attach to trivial goods; (*c*) inequality is often positively fostered in the belief that an unequal distribution of rewards is an important motivator of a maximum individual contribution, from which ultimately everyone benefits.

In considering the socially unequal distribution of health we may dismiss the second consideration as largely irrelevant since the duration and quality of one's life are hardly trivial to anyone. We are confronted with the issues of how far inequality in health is inevitable and how far is it desirable as part of the motor force of a competitive economy.

The inevitability of inequalities in health does not follow from our present inability to attribute them to precisely understood causes. Even if genetically determined social characteristics lie at the root of both social stratification and health variation, obviously also such characteristics are not sufficient causes of either. Although prevention is generally facilitated by aetiological understanding, it is not wholly dependent on it and even diseases that are wholly genetically determined may still be treated.

Most human communities still find it expedient to reward their citizens unequally. Nevertheless, there is a general consensus that not all rewards should be unequally distributed and life and health would seem candidates for exemption. We do, however, tolerate inequalities which there are good grounds for believing we could

reduce. Part of the difficulty is that positive discrimination in favour of the disadvantaged is difficult to achieve.

Pursuit of equality by health services and professionals?

Fundamental to the reduction of systematic inequalities in health experience is the rectification of inequalities in their determining circumstances or their compensation. The notion that inequalities in health call for directed ameliorative action is the central premise on which medical practice is based. The problem that arises stems from the nature of the ameliorative action that is required. Action may have to be social and economic rather than traditionally clinical and undertaken at the initiative of the community as a whole. When the National Health Service of the UK was established its creators envisaged that it would pursue not only the health of the nation but also its equitable distribution. In the event, the responsibility it has accepted has been much more limited. Those who believe that this was both inevitable and sufficient generally assign responsibility for social change to persons and organisations outside the NHS and often assert the need for that service to stand aloof from issues that are inescapably political.

So far as the distribution of health care is concerned, its distribution within a community might be guided by one or more of four principles.[7]

The market, so that each individual would purchase health care according to his or her readiness and ability to pay for it.

Removal of the monetary constraint—This is broadly the system we have in the UK. It does not seem to guarantee equal access among those of equal needs but it does lead to demand outstripping supply.

Maximising the surplus of benefit to cost—This planned attempt is beginning to be developed, however crudely, in the attempt to constrain health care resources and to plan their deployment according to cost-benefit or cost effectiveness criteria.

Deploying care to reduce health variance—Clearly preventive procedures are not deployed in such a way, and the residual social and geographical variations in health suggest that if such a principle is guiding the deployment of care it is having little effect.

It has to be acknowledged that health services are of marginal relevance to the nation's health and especially to the inequalities in its distribution. Several major approaches suggest themselves as likely to be rewarding.

Full employment—The damage to health from unemployment can no longer be gainsaid. The primary function of the economy is to produce goods and services, distributing the necessary work among those available for doing it. We are clearly mismanaging our human resources.

Adequate housing—In Britain we have not only some of the worst slums in the industrialised world but also a general quality of housing that is very poor in the basic amenities. There is also a serious shortage of housing.

Nutrition—Our national diet has been the subject of sustained criticism for decades. It is particularly poor among those who are generally underprivileged. A sound diet is appreciably more expensive than an unsound one.

Abuse of addictive substances—Tobacco, alcohol, prescribed psychotropics, and illegally acquired drugs—in that order of descending numerical importance—account for a substantial part of both total morbidity and mortality and their unequal distribution. Paradoxically, their use is greatest among those least able to afford them.

Redistribution of disposable income—The change that is most required if health is to be less unequally distributed. Small increases for the least well off would substantially improve their health, while comparable reductions for the rich would be unlikely to have any noticeable effect. This was the central recommendation of the Black Report, which remains unique in its attempt to diagnose and prescribe for this particularly British malaise.

Doctors can only advise, and those who receive their advice are always free to ignore it. This has never deterred doctors from giving clinical advice. The duty to maintain a sustained advocacy in the interests of the national health is surely a collective one for our profession. There is no way we can opt out of political duty. To be silent is to be just as politically active as to be eloquent—and far less satisfying.

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How should a patient be weaned off long term benzodiazepine treatment? Is the weaning off time likely to be related to the period of habituation?

The clinical management of benzodiazepine dependence is complex and there are few guidelines.[1] There is no consensus regarding the best regimen for the withdrawal process. Four weeks is probably the minimum and 16 weeks the usual maximum. Some authorities, however, recommend even slower withdrawal. Most long term users will have only minor problems withdrawing, and of those who experience symptoms only a few will have protracted and severe withdrawal symptoms. It is impossible to predict who will have problems and duration of usage does not determine duration of withdrawal. By and large, the rate of reduction of dosage should not be fixed at the outset and should be "titrated" against the patient's withdrawal symptoms. Generally, withdrawal symptoms emerge in a few days after the dosage is lowered but they may be delayed for some time. Therefore it is best to reduce the dosage in weekly steps until the first withdrawal symptoms emerge, at which stage the rate of reduction should be slowed. At each juncture the doctor should wait until the withdrawal symptoms have abated sufficiently for the patient to be willing to contemplate the next accentuation of symptoms. After final withdrawal patients should be seen frequently and reassured about the wide range of often bizarre symptoms that may be encountered. Alternative medication includes β blockers for some of the symptoms and antidepressants should depressive symptoms supervene. There is no medication, however, that will entirely suppress the withdrawal symptoms. Psychological adjuncts to treatment are essential and include support, explanation of symptoms, and reassurance.—M H LADER, professor of clinical psychopharmacology, London.

1 Higgitt AC, Lader MH, Fonagy P. Clinical management of benzodiazepine dependence. *Br Med J* 1985;291:688-90.

How useful is Lactobacillus acidophilus powder in relieving the symptoms of widespread infection with candida?

There is no evidence that *Lactobacillus acidophilus* powder is as effective as the conventional antifungal treatment for candida infections. The likely mode of action is an indirect one such as interference with the adherence of candida cells to epithelial surfaces. This substance has also been used in the "candida" syndrome in which various symptoms ranging from diarrhoea to dyspepsia, headache, depression, and lassitude are believed to be caused by the presence of candida in the gastrointestinal tract. Patients with these symptoms have been reported to benefit from treatment with oral antifungal treatment as well as other substances, including *Lactobacillus acidophilus*. To my knowledge, however, it has not really been possible to show that candida is implicated in the pathogenesis of this condition on objective scientific criteria. So it is probably safest to criticise the assumption that this particular organism is implicated in the syndrome.—R J HAY, consultant dermatologist, London.