Rethinking the terms non-communicable disease and chronic disease

We welcome Ackland et al’s timely discussion on the terms “non-communicable” and “chronic” disease. Their argument is that conditions currently labelled “non-communicable” are in fact “communicable” because the risk behaviours that underlie them are highly transmissible. Thus they argue for a change in label, from “non-communicable diseases” to “chronic diseases”.

Their argument, however, confuses one classification system, which is based on cause (namely, communicable diseases compared with non-communicable diseases compared with injuries), with a second classification system, which is based on effect (namely, acute conditions compared with chronic conditions). Their argument also overlooks the growing consensus that chronic conditions include certain communicable diseases, such as HIV/AIDS.1 2 In fact, certain non-communicable conditions are acute in nature, while certain communicable conditions require chronic, ongoing care. For example, HIV/AIDS clearly has an infectious aetiology but requires long-term management by the healthcare system. As such, it has a great deal in common with type 2 diabetes. Conversely, acute appendicitis is a “non-communicable disease” that requires an urgent health care intervention. As such, it has a great deal in common with injury.

We welcome Ackland’s timely discussion of the terms non-communicable disease and chronic disease.3

We are glad that Unwin4 argue strongly that the term “chronic” will be more readily understood and of greater utility if it refers to conditions requiring long term management by health systems.

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Reference
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Epidemiology of SARS: the missing pathogen?

This is indeed a strange disease. The epidemiology suggests it to be of relatively low infectivity, but high severity. This in itself is odd, especially if the causative agent is a virus and the principal mode of spread by coughing/droplet. Also odd is the undoubted existence of “superspreaders”, who can infect very many of their contacts—I can’t think of any parallels to this in respiratory virology.

Perhaps the SARS virus obeys the usual rules of droplet transmitted respiratory infections, and is of high infectivity. However, because of shared antigens, a proportion of the population has an acquired resistance to the new virus, having already been exposed to another, relatively innocuous, virus that provides immune protection. It is possible that the proportion of humanity immune or partially immune to SARS could be as high as, say, 95% if the second virus were a very common one, for example, one of the coronaviruses that causes coryza. This would explain the seemingly low, unexpectedly so, infectivity of the SARS agent.
Is the inverse care law no longer operating?

The inverse care law, proposed by Julian Tudor Hart in 1971, states that "the availability of good medical care tends to vary inversely with the need for it in the population served." A number of authors have now claimed to have found instances of the inverse care law operating in practice.

The law may have been overtaken by accidental factors and the possibility of a probabilistic mechanism may have been missed. However, there is a major difference between the inverse care of services and the inverse care of disease that needs to be addressed.

The question is: how can we create an intervention to prevent the occurrence of disease and reduce the burden of illness? This is a much more complex issue than simply increasing access to services.

References


Do socioeconomic conditions reflect a high exposure to air pollution or more sensitive health conditions?

We read with great interest the recent paper by Martins et al. concerning the impact of socioeconomic conditions on air pollution adverse health effects in elderly people in Sao Paulo, Brazil. These results are very interesting and may promote understandings of which social category of people are most sensitive to air pollution.

The authors suggest that socioeconomic deprivation represents an effect modifier of the association between air pollution and respiratory deaths in elderly people for an increase of 10 μg/m³. They conclude that poverty represents an important risk factor that should be taken into account when determining the health consequences of environmental contamination. We agree with these conclusions. Nevertheless, the question is to know if poor people died because they are more exposed to air pollution, or because of income, occupation, social or psychological and economic considerations.

We know that people with lower socioeconomic status are more sensitive to a large number of risk factors associated with different life habits, or to addictive behaviours, such as smoking habits. When air pollution is considered, socioeconomic characteristics as an effect modifier can take two aspects. Firstly, people with low socioeconomic status may be more sensitive in terms of health effect because they have associated diseases and people with certain diseases had a greater risk of dying during an episode of increased air pollution than the rest of the general population. Furthermore, people living in underprivileged sectors would have both more limited access to health care and greater exposure to air pollution. Exposure to air pollution is the second aspect of the prevention of the effect modifier. Jerrett et al. argue, low socioeconomic conditions may be associated with manufacturing and so with a higher workplace exposure, but also with a lower level of education. In addition, persons with lower socioeconomic characteristics may be exposed to a complex mix of pollution from indoor sources, as well as outdoor pollution because of traffic, industry, and waste burning in developing countries. It is important to explore the link between individual exposure and socioeconomic characteristics because these two factors are strongly correlated.

More studies are needed to investigate this effect modifier and particularly the significance of this effect. To understand this effect we will need new data on risk factor but also data on individual exposure to have a good interpretation of the results and to have policy implications.
The comments of Filleul and Harrabi on our paper reflect the major concerns about the role of socioeconomic conditions in the association between air pollution and health effects and keep the topic on discussion. Low socioeconomic status evolves different and complementary aspects that can act synergistically to aggravate health conditions. For instance, being more vulnerable to diseases and having less access to health (geographical and economic considerations) are factors that, in general, are concurrent among poor people and can contribute to death. In addition, if they also are more exposed to air pollution, and probably not only air pollution, and exposed to the outdoor but also water pollution, we have the whole picture of what it is to be in the lowest socioeconomic levels of any society. If the discussion focuses only on levels of exposure it reflects the concept of linear dose-response relation between PM$_{10}$ and respiratory diseases that is well known and accepted. $^1$ In our paper we showed that the different effect size of PM$_{10}$ on mortality for each studied region, measured as a percentage increase in mortality for each 10 $\mu$g/m$^3$ of PM$_{10}$, is more correlated with socioeconomic conditions than with the different levels of PM$_{10}$ concentration in each region. However, we agree with Filleul and Harrabi that different study designs can provide information on individual exposure status to clarify the contribution of socioeconomic status on the association between air pollution and health effects. We are developing additional studies focusing on the analysed populations looking for answers to the questions our study brought up. Nevertheless, the results already presented are enough to suppose that “different people” may react differently to the same risk factor.

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Reference


Siblings and adult mortality and stroke risk

In men born between 1906 and 1938 and screened between 1970 and 1973 a strong relation between greater number of siblings and mortality risks was found by Hart and Davey Smith. These risks, however, were also related to adverse behavioural socioeconomic and health measures. $^1$ A great number of children, particularly in lower socioeconomic classes and in the earlier decades of the previous century, implies reproduction at earlier and more advanced maternal age and shorter interpregnancy intervals. These aspects have been neglected in studies on number of siblings in relation to constitutinoal diseases of complex origin. These casualties seem to be connected with non-optimal maturation of ovarian follicles and in fact, the mating oocytes they contain. Conceptions at the extremes of maternal reproductive age or during the critical stages of postpartum restoration of the ovulatory pattern (or durate lactatione) are constrained by protraction of the postovulatory phase of the menstrual cycle that entrains preovulatory overripeness of the oocyte (ProOO). $^2,3$ The driving force behind decreasing rates of newborns with neural tube defects or Down’s syndrome was evident long before the introduction of prenatal diagnosis, selective abortion and folicul supplementation. The true reason for these decreases has never been revealed and the biased scientific preoccupation with recent changes in lifestyle and risk factors for explaining the enigmatic decrease of cardiovascular diseases has also been blamed. A same scenario, therefore, may exist here and ovopathy might be the common causal pathway for developmental anomalies and “innate” constitutional enti- ties of complex origin. The relentless decrease of conceptopathology, running parallel with increasing socioeconomic levels and improving healthcare provision, would be respon- sible for their decrease. $^4$ Intrauterine mortality, stillbirth, and infant mortality began to decrease at the end of the 19th century, while in fact, cardiovascular diseases only after a lifetime delay since the 1960s. Many other unexplained correlates with cardiovascular diseases (and other chronic diseases) are elucidated by this causal path- way, for example, comorbidity, intergenera- tional matrilineal transmission and strong social pattersning, discordance in monozygotic twins, poor fetal growth and low birth weight, seasonality of conception correlated with geographically latitudinal gradient, and finally, male gender biases. $^5$

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Global public goods for health; health economic public perspectives


This volume explores the applicability of the concept of global public goods to health and health related issues as well as the question of the added value—for example, in terms of new analytical insights or a better understanding of various policy approaches and instruments—of looking through the lens of global public goods. As the stage setting chapter 1 by Woodward and Smith notes, “…as globalization pro- gresses…matters which were once confined to national policy are now issues of global impact and concern; yet no one nation necessarily has the ability, or the incentive, to address the[se] problems” (page 3). So cross border cooperation is important for a global public good, let us say, polio eradica- tion, to emerge and to be available for the consumption—or enjoyment—of local communities or countries. The volume’s chapter analyses are written by a multi-disciplinary team of authors and cover three main sets of issues: (1) the global public goods properties of the control or eradication of select communicable conditions (including polio, tuberculosis, antimicrobial drug resistance), and the health consequences of a number of global environmental “bads” (such as the global climate change or the depletion of the ozone layer); (2) the importance of knowledge (including medical knowledge, genomics knowledge, and public health infrastructure and knowl- edge) as a critical input to people’s improved health status and enhanced public health conditions; and (3) how to enable global public goods for health, such as international law and health regulations. However, running through the individual chapter analyses also are common themes. Among them are such issues as the prioritisation of global public goods and the politics of their provi- sion, their “production” and financing.

The discussions on these themes is analy- tically rigorous yet clear and focused, leading to practical and pragmatic—but also innovative—policy conclusions and recom- mendations. Thus, the book should be of interest to researchers and students as well as policymakers and practitioners alike.

Inge Kaul
Do socioeconomic conditions reflect a high exposure to air pollution or more sensitive health conditions?
Laurent Filleul and Imed Harrabi

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