

## RESEARCH ARTICLE

### An assessment of the geographical approach to health inequality

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New interest is being shown in the geographical approach to health inequality at both the research and the service provider level. The scientific and methodological basis of this approach does not take into consideration the social structure and the history of the locations/communities under investigation. The analysis of geographical differences must be verified and consideration given to possible variations in internal health inequalities between entities compared. Our approach to health inequalities is based on the theory that social health inequalities are essentially the final product of living conditions and lifestyle taking account of individual and collective history.

**Keywords:** health inequalities; sociology of health; geography

#### Introduction

Over the last decade, numerous health studies have been conducted in the United States and Europe (particularly the United Kingdom) using a geographical approach based on location and environment. The authors have tested various hypotheses regarding the effects of local circumstances on the health of the population. This type of strategy includes the so-called ecological studies that compare mortality and morbidity in inhabitants of specific regions and contextual studies that use multilevel analysis<sup>1</sup> to relate the socio-economic context to health data and studies comparing small numbers of well-defined places. Addressing questions about the influence of the community, the environment and the general health-related context requires consideration of a series of concepts and hypotheses that have been put forward in attempts to explain how individual and community factors can affect well-being. Later on, we shall see that although this approach enables us to combine multiple research techniques, it is important to be vigilant for reductionism. Local factors must be considered when investigating causes of death, taking into account individual histories and the collective history of the area concerned.

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### **New interest in the geographical approach**

Investigation of geographic variations in health has a long history, and European researchers have for many years had the opportunity to assess differences in mortality between rich and poor neighbourhoods. However, the so-called health geographers rarely discuss this historical dimension of health and inequality, preferring to analyse current data using current techniques, with all the methodological and theoretical assumptions that go with them.

Factors underlying the recent surge in interest in the geographical approach include a new understanding of the determinants of health and inequality, and the recognition that social factors influence health via several different mechanisms that fall under the umbrella of location (Curtis 2004a). However, that enthusiasm (particularly marked among epidemiologists), was quickly countered by strong criticism from the proponents of approaches focusing on individual characteristics (Regidor 2006); the principal question that arises is: can community context have an impact independent of individual attributes?

The emergence of new methodological techniques such as multilevel analysis has stimulated empirical research and considerations of theory, all of which increase the legitimacy of the geographical approach. In addition, there is a growing recognition among social scientists (particularly in the United States) in the field referred to as 'segregation and urban poverty', as well as among bodies responsible for healthcare planning and provision, that studies of this type can be useful in the implementation of social and educational programmes that include a health dimension (Messer *et al.* 2006).

Similar changes are occurring in continental Europe, though rather later than in the United States and United Kingdom. In fact, despite the availability of reliable differential mortality data, interest in social health inequality remains very low in certain countries (Germany, Italy and France, for example). The need to respond to the WHO's official recommendations (Europe-WHO 1985) has prompted European institutions (such as the European Commission) (Dahlgren and Whitehead 2007) to adopt reduction of inequality as a goal, but initiatives to achieve it are relatively rare other than preventive measures, which often end up increasing health inequalities (Baumann and Äiäch 2009).

### **Why take a geographical approach to social health inequalities?**

The question being addressed here is not so much why the geographical approach to social health inequality<sup>2</sup> is interesting, but rather what, on a theoretical level, it offers beyond political or pragmatic considerations. Does it provide unique information and, if so, why? A true debate must be opened on the various points raised by these questions. It is unfortunate that a discussion has not yet begun, because inequality is increasing while recognition and understanding of it seem to be diminishing.

In fact, most serious studies in this field, whatever the approach adopted, are essentially concerned with the same issue – the genesis and nature of social health inequality. Researchers who assume that an environment or social context is relevant other than in its effect on the people who live there must try to assess how – after taking account of individual factors such as income, social category and level of education. Results vary according to the relative weight given to individual and environmental factors and according to the sophistication of the

methods implemented. Because of the emphasis on environment, studies using a geographical approach often underestimate individual characteristics (Anderson and Armstead 1995).

Sarah Curtis, a well-known British health geographer, recently showed that the area of residence (particularly at a very early age) affects health (chronic diseases reported at the time of the sampling) along with individual characteristics (Curtis 2004b). When the list of variables considered under each of the two headings (individual and geographical) is examined, context variables are numerous and often synthetic, retrieving fixed indicators that reflect the wealth or poverty of the area concerned. The 'Carstairs' index (Carstairs and Morris 1991) used in that study (Curtis 2004b) contains measures of housing over-population, unemployment, membership of a low social class and a lack of car in the home. All these variables may simply be called individual and be collected in individual questionnaires at the time of surveys intended to measure and help elucidate social health inequalities.

However important though individual socio-economic variables (social class, home-ownership, marital status and employment) may be, they cannot fully account for all the differences observed in mortality and morbidity. Other indexes of deprivation have been proposed; for example, one group assessed the relationships between social and material deprivation and the use of tobacco, excessive alcohol and psychotropic drugs by both sexes and in various age groups (Baumann *et al.* 2007). Increasing levels of deprivation were found to be associated with a greater likelihood of tobacco use, alcohol abuse and frequent psychotropic drug intake.

Of course, the availability of data influences how studies are conducted. In addition to various private and public sources, information is often gathered by simply handing out questionnaires to the population of interest. It should also be borne in mind that yesterday is as important as today; social reality in a given geographical area is the product over time of a community history comprising all the individual histories of the population.

Further consideration of variables affecting so-called individual characteristics would doubtless show an even stronger relationship with health status. This is precisely the question: why not do it when we can? Why not acknowledge that we rely on variables in environment or context because there is no alternative? However, that is not usually a consideration. The geographical approach is frequently adopted because it is presented as heuristic, whereas its foundation is in fact a social analysis that often summarises, sometimes to the point of caricature.

Furthermore, characteristics presented as relevant individual variables are not necessarily so. Addressing questions of social inequality is a matter of measuring and analysing differences in values (income, heritage, knowledge, health, social success, etc.) among hierarchical social groups (social classes, socio-professional categories). Inequality concerns not individuals as such, but the overall social structure. The difficulty, of course, is to differentiate hierarchical groups in such a way as to optimise the hypotheses that can be tested concerning the structure of the social body. Social inequalities in health are the result of a wider lack of social fairness – striking examples of the manner in which handicaps and difficulties (and privileges and advantages) are largely determined at birth (Blane 1999). Ironically, perhaps, the difference is most apparent at the other end of life. Death – formalised as mortality (or life expectancy) is our best measure of inequality and social injustice.

The most important thing is not to attempt to measure and understand social health inequality, whether approached geographically or not, through any one

indicator (income or level of education, for example). Possible differences between locations or geographical areas must be thought of as having their sources in differences between social classes or socio-professional categories located in the same places. It is clear that considerable regional differences in mortality have long existed in certain European countries; but when age, sex and socio-professional factors are taken into account, is there in fact a geographical inequality between regions as such? If so, what is its nature? That question was addressed in our research in ‘Nord-Pas de Calais’ in northern France (Aiach *et al.* 2004).

### **Danger of a culturalist regional approach**

The study showed that what might appear to be a geographical health inequality was in fact due to greater inequality within socio-professional categories than in other French regions (Aiach *et al.* 2004). The question asked initially (why are people in the ‘Nord-Pas de Calais’ at increased risk of cancer?) then became: why is there greater social health inequality in this region than elsewhere (in particular with regard to cancer)? What underlies the high death rate among employees and workers?

Interviews with local health providers and researchers always produced the same response: the presence in the region of classic risk factors – poor nutrition, tobacco and (particularly) alcohol intake, some pollution, but very little mention of occupational risk. Remarks included: ‘people here don’t pay attention to anything, they don’t behave as they should, they love drinking, eating and parties, they are stubborn about sickness and do not seek healthcare properly or quickly enough’.

Difficult living conditions and unemployment were sometimes evoked, but they were still used to support the view that a lack of ambition, mobility or will to overcome extreme situations leads to psychological states that generate cancers. This manner of explaining the particularly poor situation of the region doubtless had the force of evidence, as the literature showed the population to be at risk due to a diet very high in fats and sugar, a high rate of smoking and considerable alcohol consumption.

However, in-depth analysis of mortality data showed that the differences between this region and the rest of France could be explained by socio-professional factors. During 1987–1993, a relatively high death rate was observed among men aged 25–54 (compared with the average for the identical socio-professional category in other French regions), that is, 31% for employees/workers, 12% for intermediate categories and less than 5% for upper management and liberal professions (Aiach *et al.* 2004).

If the level of social inequality with regard to death was equal to the average French level, this region was located with the average for French regions in the matter of mortality. A different approach was required, one that took account of social inequality in its historical context and of the lives of the people concerned – particularly those of labourers in mines, metallurgy and textiles.

Therefore, we are proposing a multi-disciplinary approach with particular emphasis on historical issues. For example, we could investigate an extraordinarily high incidence of oesophageal cancer of the higher aero-digestive system by looking at the professional histories of patients who suffer from it, as Thébaud did in the Paris area (in: Aiach 2004).

### Conclusion/discussion

The geographical or ecological approach to health inequality seems to fail for lack of theoretical improvement of notions used in the surveys. A distinction can be drawn between content and context, the effect of the context on health being what remains of geographical variation after consideration of the description of the population. This raises three problems (Macintyre and Ellaway 2002):

- (1) Individual social characteristics are in part incorporated in geographical factors used in models (particularly multilevel models);
- (2) Modifiable health variables (smoking, alcohol intake, physical activity, respiratory function) are used in investigations without due regard to the fact that they are often the product of social context and
- (3) Most importantly, the lack of attention being paid to developing theories to explain the mechanisms that connect area of residence with health-related behaviour and health status. Social composition and the context are often presented as distinct notions and not as a single problem, whereas the underlying explicative models of inequalities remain implicit.

Location (in various sizes and forms) can be seen as a black box containing some sort of 'social miasma' that has a harmful effect on health (Sloggett and Joshi 1994). Other authors refer to the epidemiological conception of 'place' as an entity that influences health without the need to directly analyse the roles played by cultural and social factors (particularly those related to living conditions) (Anderson and Armstead 1995).

Of course, the variety and nature of factors with a potential effect on 'geographical' differences in health depend on the characteristics of the localities under scrutiny, particularly their size. A comparison between neighbourhoods of a city is not like a comparison between neighbourhoods of different cities, and even less like comparisons between cities, departments or regions. Factors relating to the histories of places, and especially of their inhabitants, vary according to the place concerned. Living conditions and lifestyles also differ greatly from place to place, even when communities have much in common in terms of social health inequality (differences between categories or social classes are proportionate but their importance varies according to the size and the nature of the places compared).

Some authors (Sloggett and Joshi 1994, Macintyre and Ellaway 2002) have proposed adding a third notion to composition and context – a collective dimension reflecting the cultural and historical traits of communities. This 'explanation' would emphasise shared norms, traditions, values and interests, thus adding an anthropological dimension to the socio-economic, psychological and epidemiological considerations addressed in geographical approaches. While approving of that approach, we do not see the need to maintain a separation between context and the collective dimension, which does nothing but enlarges the context by including historical and socio-anthropological aspects.

The approach we offer rests on the theory that social health inequality is essentially the final product of other social inequalities (DiPrete and Eirich 2006). We see this as a continuum that runs throughout life, from birth to advanced age, and results in increased risk of serious illness and premature death among people who have faced the greatest difficulties in life with the least resources. The most

serious handicaps they have to bear relate to the impact of the environment, particularly poor working conditions, on their physical health (Thébaud 2006).

That is why we opt for an approach that focuses on living conditions and lifestyle issues that relate to social health inequality. The individual joins the collective and the notion of context fades in favour of research into living conditions (past and present) of social groups in the areas studied.

Research into health inequalities, particularly when it involves the social epidemiological approach, should take account of the nature of pathologies underlying inequality. Aetiological factors vary enormously in effect and time-course, as is very well reported by proponents of the life-long so-called materialistic approach ('the life course') (Bartley 2007) to the production of social health inequalities (Lynch *et al.* 2000). Unfortunately, this is not the dominant strategy used in ecological or geographical studies of social health inequality. It is easy to see why the psychosocial approach seems to have put air in the sails of international institutions such as the World Bank, and of politico-administrative entities in some countries in Europe. In no way does it highlight the true structural determinants of social inequality and thus of the health inequalities it produces. It is, however, the challenge which one requests the prevention and the promotion of health to rise (Baumann and Aïach 2009).

## Notes

1. Multilevel models, initially developed in social sciences and more particularly in education were intended to take into account the contextual dimensions of an individual analysis, for example membership of a class or particular school in an analysis of educational levels. They take hierarchical structure into account and address the geographical dimension in a model focused at the individual level, which makes it possible to locate regional effects (Dinaucout 2009).
2. We consider that social inequalities in health are primarily the final result the state of health (mortality, morbidity) of the social structures in a given population at a given time, and relate to hierarchical considerations. Inequalities of health are the product of underlying living conditions and lifestyle factors (Aïach and Fassin 2004).

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