

Socio-Economic Health Inequalities: Ever-Lasting Facts or Amenable to Change?

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Date of Submission: Mar 01, 2013

Date of Acceptance: Apr 09, 2013

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How to cite this article: Kamangar F. Socio-economic health inequalities: Ever-lasting facts or amenable to change? *Int J Prev Med* 2013;4:621-3.

In this issue of the journal, Moradi *et al.*,^[1] have demonstrated that in Kurdistan Province of Iran individuals in lower socio-economic groups are more likely to have several risk factors for non-communicable diseases, including insufficient consumption of fruit and vegetables, insufficient consumption of fish, high consumption of unhealthy fat and oils, and hypertension.

Moradi *et al.*'s study was limited to a certain period of time (2005-2009) and to a certain location (Kurdistan Province of Iran). As such, the specific findings of the study, e.g. lower consumption of fruit and vegetables by the lower socio-economic groups, may be limited to this area and this time period. Nevertheless, the more general finding of this study – that the less advantaged people of the society are more exposed to causes of most diseases – are ubiquitous and have been documented ever since they were first studied. In 1830, Villermé's studies in France showed that mortality was directly linked to poverty, a finding that was corroborated in a more recent re-analysis of the original data^[2]. Likewise, in 1842, Edwin Chadwick showed that poor living conditions increased risk of disease and reduced life expectancy in England,^[3] a finding that was partly responsible for the Public Health Act of 1848. The rich-poor health gradient still holds true in most parts of the world. For example, in

the City of Glasgow, Scotland, where the National Health System provides universal services, the life expectancy in the most deprived neighborhoods is 12 years lower than that in the most affluent neighborhoods^[4]. The differences are even more striking in the United States. In Baltimore City, for example, there is a 20-year gap across neighborhoods^[5]. And one doesn't have to be poor to suffer from adverse health consequences; other minor differences in social class can be consequential too. For example, a recent study of British civil servants, who are not poor, showed that those in the lowest socio-economic positions had a 60% higher risk of death compared to those in the highest socio-economic groups.^[6]

The reasons of such differences are not simple; they depend on time and location. One would guess that over 100 years ago, the major reasons for higher rates of mortality in the poor were their higher risk of being exposed to famine and infectious diseases, the two main causes of death of the time. This was, in turn, due to a higher chance of not having enough food, overcrowding, and poor sanitation among the poor, and a lower chance of receiving vaccines. Other causes could have included a higher risk of death due to accepting risky construction jobs or working in unsanitary and noxious conditions. However, the decline of famine and infectious diseases,

has been brought to us by a host of factors—including the widespread availability and low cost of food, clean water, vaccines, and antibiotics—did not lead to the disappearance of differences in life expectancy across socio-economic groups. Such differences still exist, albeit for different reasons, and in some places they are increasing. For example, recent studies by the U.S. Social Security Administration have shown that the rich-poor life expectancy gaps in the United States are now expanding.^[7] In the United States and the United Kingdom, lower socio-economic groups are more likely to smoke,^[6,8] to be obese,^[6,8] to have less access to healthy food,^[9] to eat less healthy diets,^[6] to exercise less,^[6,8] and to be the subject of violence.^[10] Certainly living in poverty-stricken neighborhoods makes it more likely to be a victim of violence. And living in a household that is not well-lit makes it more likely that one would fall and have disabling or even fatal fractures. The poor's imminent and day-to-day needs of life make it more difficult to focus on healthy behaviors that bear fruit a few decades later. The poor, who are on average less educated, are also less likely to be aware of many causes of illness. In nearly all European countries, the less educated have lower life expectancies than the more educated.^[11] Therefore, as much as we would like that such inequalities completely disappear, in all likelihood, the rich-poor health gradient is likely to remain, at least to some extent. Perhaps one should add this inequality to other certain facts of life, such as death and taxes!

Moradi et al.'s study^[1] is highly valuable and interesting in that it highlights some of the current causes of health inequalities in Iran, and it is one of only very few studies that have examined such associations in that country. The results show a higher frequency of some unhealthy dietary habits in the lower socio-economic groups. They add to the literature that socio-economic health inequalities are ubiquitous, from Kurdistan of Iran, where I was born, to Baltimore City, where I currently live. Equally interesting is documenting what is not different between the lower and the higher socio-economic groups in Kurdistan, e.g. the prevalence of smoking or the prevalence of obesity. As discussed by Moradi et al., in several countries smoking and obesity prevalence were initially higher in the upper social class groups, and it was only through time that these now-known poor health behaviors transitioned to the lower social classes. Now, it is typical in the more developed countries, but not necessarily in the less developed ones, that the more educated people have lower rates of smoking.^[12] Therefore, Moradi et al.'s findings not only demonstrate the current status of such health indicators in

Iran, but they may also showcase the overall status of Iran as an in-transition society.

There is, however, at least one substantial point on which I think I disagree with Moradi *et al.* When the authors have found no differences between the lower and the higher socio-economic groups, for example in the prevalence of obesity or smoking, they have attributed this to the “good performance of the health-care system.” I tend to believe that this is not necessarily the right conclusion. The Iranian health system has been very successful in what it was focused on for years, and that is in reducing the rates of infectious diseases, childhood mortality, and maternal mortality. However, it has not had the capacity, nor it will have the capacity, to handle all health problems. For example, for controlling blood pressure, which is malleable to medical treatment, the efforts of the system have thus far had negligible effects.^[13] The prevalence of many causes of death, such as smoking and obesity, rather than being solely under the influence of the health-care system, are consequences of a multitude of social, economic, and political forces.

The health of a society is tightly knit into the fabric of the society, including its politics, its economics, and the attitude of its people. Thus, if we would like to improve health for all, and to reduce health inequalities, we must not rely solely on the governmental health-care system or on private medical care. Rather we must also change the mindset of individuals of the society. To make progress, to make health better for all, efforts should also be made to educate and empower all the people of the society, and to share with them both the power and the responsibility to make improvements in their health and in their lives^[14]. Rudolph Virchow, one of the most eminent physicians in the history of medicine, advocated for the role of societal and political, in addition to medical, remedies to control the rates of major diseases. Virchow was commissioned in 1848 to investigate a catastrophic epidemic of typhus and famine that plagued Upper Silesia, then part of Prussia and today part of Poland. In his report,^[15] Virchow advocated for the role of empowering and mobilizing all people to prevent and remedy the epidemic. He wrote: “*The law existed, the civil servants were there – and the people died in their thousands from starvation and disease. The law did not help, as it was only paper with writing; the civil servants did no good, for the result of their activity again was only writing on paper. The whole country had gradually become a structure of paper, a huge house of cards, to be toppled in a confused heap when the people touched it. The adverse climatic conditions*

which contributed to the failure of its crops and to the sickness of its bodies, would not have caused such terrible ravages, if it had been free, educated and well-to-do such an epidemic dissemination of typhus had only been possible under the wretched conditions of life that poverty and lack of culture had created in Upper Silesia The logical answer to the question as to how conditions similar to those that have unfolded before our eyes in Upper Silesia can be prevented in the future is, therefore, very easy and simple: education, with its daughters, liberty and prosperity.” The words of Virchow, as old as they are, still resonate as fresh and true.

The mindset of the people plays an equally significant role in reducing inequalities in any society. In societies where people’s mindset is: “When you see the house of your neighbor on fire, carry water to your own,” inequalities are likely to remain. In contrast as trust, mutual respect, and social cohesion increases, disparities become less likely and the overall health of the society improves. Again, I turn to some old words of wisdom. The mindset should be as the Persian Poet Saadi said it so eloquently over 700 years ago:

*“Of One Essence is the Human Race,
Thusly has Creation put the Base;
One Limb impacted is sufficient,
For all Others to feel the Mace.”*

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Source of Support: Nil, Conflict of Interest: None declared.