J P Roos

Can we eliminate health inequalities? The case of Finland

Abstract

Health inequalities are not easy to explain or diminish. In Finland we have a paradox: the country is one of the most equal in the world but with a very high inequality in the health of men and women, as well as highly educated and less educated people. As inequalities in health are a long process, the explanations should be looked for in the birth conditions of present adults, as well as their permanent lifestyles. Both would seem to explain the health disparities, but there are complications. Possibly also genetics are behind the differences.

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Health and its causes

Health is one of the most important aspects of human well-being. It has sometimes even been equated to well-being, but I think that it is necessary and possible to make a distinction between them. Well-being is more than "just" being healthy, although these two are certainly closely related and influence each other. Health has also an important functional aspect: in order to be able to function properly, the organism must be healthy. So, in more than one sense, health is the normal state of the organism; an unhealthy organism is out of balance and will have to try to regain its full functional capacities. As in the case of high fever: regardless of the cause, you need the get the fever away before being fully functional. And you mostly do not experience well-being while having fever (although it may be pleasant to have a rest in bed).

Health is also essentially a life history concept. An individual's health depends on his heredity, first moments of one's life, conditions in childhood, lifestyles of one's parents and one's own etc. To influence somebody's health may require actions which have visible consequences several decades afterwards. A healthy adult needs in general good living conditions already before birth, during infancy and later childhood. Thus, it is usually impossible to explain differences in health by the present conditions, except under the assumption that similar conditions have continued long enough. Of course, there are also risks that are actualized immediately (highly unhealthy environment, dangerous traffic culture, very bad hospitals etc.) but for building one's health, no immediate recipes work. Only a very long-term and sustained health behavior is effective. An assumption about relevant current causes may be correct especially when we look at class differences or some permanent lifestyle differences which are due to character and personality. But if a society has undergone dramatic changes during the lifetime of the people, these must be taken into account. This is especially true for a country like Finland, where living conditions have changed enormously and where many generations have experienced important hardships and where differences in living conditions have been quite extreme (only 60 years ago Finnish infant mortality was at present third world level, see Hakkarainen 2009). Finland got a general health insurance scheme very late and it has experienced two wars during the past 90 years, its population was largely agrarian 60 years ago and working conditions in industry were harsh until the 1960's. In addition, the liberalization of alcohol policies in the late 60's created a new health hazard when alcohol consumption increased dramatically, and for a second time when the EU regulations led to a dramatic lowering of the price of alcohol (see Herttua 2010). The interesting thing about alcohol is that although the educated middle class drinks alcohol more and more often than the less educated they do not seem to incur same adverse health effects. In all other aspects, the middle classes have clearly more health-oriented life-styles, which are probably the main cause for their better health, combined with their generally better living conditions at birth (the present class differences as to nutrition, conditions at birth, effects of childcare and

school are now rather small, but the differences before the 1960's were very important). It is very difficult to think that there would be genetic causes for the health class differences, but one such causal chain is quite possible and has been suggested by many serious authors, namely IQ-effects (Arden et al 2009). People that are more intelligent can take into account present and future risks and can thus behave more safely. There is empirical evidence that less educated (i.e. less intelligent) people have more risky behaviors and are prone to experience different accidents more often than highly educated people are. This is even true for being struck by lightnings! (Gottfredsson 2007). Accidents don't just happen, they are caused by stupid behavior. Intelligence is highly heritable and therefore better health may also have indirect genetic causes. "Better genes" in the direct sense are also possible, but here it would be improbable that class and education would be directly related to better health genes. But not impossible if natural selection would have operated long enough also in the class structure ("fitter" individuals are selected for upper classes during several generations). On the other hand, genetic differences could explain the health differences of small homogeneous populations which have lived in isolation for a long time (such as the Okinawan population, see Okinawa Centenarian Study)

Health differences are a very much studied subject. There is much data available and also many longitudinal studies (especially in Britain, e.g. the recent Millennium Study) There are even famous "natural experiments" like the Dutch famine in the end of the Second World War (www.dutchfamine.nl/index_files/study.htm) Still, there are many unexplained things and controversies mainly due to the unwillingness of social scientists to discuss genetic effects and non-social causes. Also, isolated populations which are genetically homogeneous are important study objects, as in the case of Okinawa (see Guy Bäckman 2007 for an extensive discussion). The most important objective single measure of health is definitely longevity, but it can be completed with some other objective measures such as mortality in common illnesses, infant mortality, etc. Health expenditure is rather worthless as a health measure, but it tells you how much people are prepared to spend for their health problems (and when you are very well-off, it tells how ill you are, or think you are).

On the other hand, those who believe health is something subjective and even socially constructed; i.e. when illnesses are more or less imagined and/or (note that these are conflicting conjectures) can exist only when they get a name (the famous but silly Latour claim that Ramses could not die of TB because TB was not discovered until 19th century, Latour (1996) see also Hacking (Mad travelers) who discusses transient illnesses which appeared and disappeared mysteriously but which were more likely hoaxes or expressions of group hysteria, much like some religious movements: by the way, health can have a lot to do with religious behavior, healing beliefs, homeopathy etc. For Hacking, these transient illnesses are proof of the social construction of illnesses, which is doubtful). Then we cannot actually measure health, at least not in a comparative way. We have lots of imagined illnesses (but real for their sufferers), we have lots of very ill people who believe themselves be quite healthy and we have a continuously changing landscape of illness which cannot be measured in time or between different individuals. There is some truth in this, because illness can be in your head and there are several strange illnesses which are still quite unexplained: chronic fatigue syndrome, electricity sensitivity (which according to my sources is totally imaginary and cannot be discovered in blind tests), unspecified back pain, which cannot be located or which does not seem to have any observable causes, etc.

So there is some room for subjectivity in health. Still, when we discuss class or educational differences in health we get a quite different picture: if health would be subjective or imagined/constructed, it would be quite logical to expect that those with long education and more material for imagination would have many

more illnesses than those who never have heard or read of different illnesses. There may be some class specific illnesses (or at least treatments: psychoanalysis has certainly not been a treatment for the poor and uneducated) which are more common among the middle and upper classes (e.g. depression?) but in most cases of robust, real illnesses for which there is cause and treatment, the upper classes are much healthier and it is the poor an less educated who suffer most from them: cancers, cardiovascular illnesses, obesity (which is an illness, deviation from normal functioning body, but which has nowadays been construed into a human rights and racism issue) etc. It is true that nobody can be denied the choice of obesity, as little as it is any more illegal to commit suicide, but both behaviors are certainly harmful to health and should be understood as such. The freedom to do yourself bodily harm-movement is nowadays quite popular (e.g. Tuomas Nevanlinna or Antti Eskola who like to rant against exercise and healthy living habits and speak about health fascism, of the fat pride movement which tries to create a socially constructed positive image of being fat, doomed to fail).

The one other greatest disparity of health is gender. It in itself disconfirms the claims of a socially construed sexuality and shows that biology rules, whatever the queer theorists might say. But there are also interesting incongruities in the fact that self-reported health sometimes leads to a conclusion that women are less healthy overall than men are, whereas the objective measure, longevity, proves dramatically otherwise.

But before reaching any conclusions, let us take the recent report on health and inequality in Finland (Keskimäki et al 2007) and look at its results.

Inequality of health in Finland

Inequality of health in Finland shows how unequal Finns are when it comes to health and attempts at explanations. The authors are leading researchers in the field and there are many of them. The book is notwithstanding rather even and well written, with the exception of exercise and life styles which would have deserved a more thoroughgoing discussion.

The subject is for us Finns, rather disconcerting. We belong to the more equal countries in the world with low poverty rates and still the health differences are very large (see Wilkinson-Pickett 2009). Our educational level is high and differences are based on intelligence, i.e. educability. Yet it is important to note that inequality was high in the early 60's and before, but with the difference that then the inequality was based on extensive poverty and bad health conditions, whereas modern inequality is based on the explosion of top incomes and most of the people are rather equal

As noted above, the life history effect is central. Most health processes are either heritable and date back many generations or have to do with what happened to us in early childhood. Regular, recurring activities have also important health effects: a short bout of smoking or alcohol drinking in youth is probably less dangerous for health than continuous tobacco and alcohol use. Avoidance of obesity throughout life is better than permanent obesity starting from childhood. Poverty in early childhood is important, but constant poverty is certainly also harmful for health. Mother's health affects that of the child. In Lummaa's studies (see e.g. Lummaa 2007) it is shown that child survival depends very much on mothers' situation. In

other words, studies which only take into account present possible causes are not very good, unless we can assume that these causes have prevailed for a long time (like in when we know the social status or educational attainment of the parents). This is reflected in the fact that incomes do not explain health differences very much, whereas education and occupation are much better. I.e. it is not money which buys better health. As noted also, sex differences in Finland are important. Even women in the lowest educational levels live longer than highly educated men (see Keskimäki et al 2007)!

The other differences in health are mainly explained by education and occupation. Incomes are less relevant (which probably is explained by the fact that incomes are not so permanent and are less related to long term). Of course, one can also ask what lies behind education and occupation. It is more obvious that occupation should be relevant, if we think that physically demanding, more risky occupations are more harmful to health than easy, less risky occupations, such as that of a professor. But why education? Why should longer years at school affect your health? One explanation is that being at school is less risky for your health than working; another is that it is an easy occupation. But there is also the possible connection to IQ, mentioned above. If you are intelligent, you can go to school AND you can behave more intelligently relative to your future health. In my view, this is the main reason why education is so important. A person who is able an prepared to defer gratification by studying diligently for several years before getting to work for a remuneration is somebody who is also prepared (and able) to live in a way which supposedly keeps him healthy in the future. For it is not only a question of willingness but also ability to avoid risks. In a recent study concerning breastfeeding, it was noted that smokers are less eager to breastfeed. It is highly probable that the reason for not wanting to breastfeed AND for smoking is the same: low education and lack of interest in health behavior. Smoking in itself has no causal effect on the propensity to breastfeed.

As I write this, a report about the connection with extensive TV-watching and mortality is published (14.1.2010). According to it, much TV watching increases mortality by some 15%. Of course this is not a direct causal chain, but rather two phenomena with a common cause, namely propensity to act in a way which is harmful for health (although the leading researcher seems to believe otherwise)

There is one hitch here: why should women live so much longer, if there is no difference between the intelligence of men and women? The answer lies in the fact that intelligence is not sufficient, you must also actively wish to avoid risks. And the latter is one quality in which women and men differ (see e.g . Byrnes et al 1999). Women are adapted to consider the safety of their children and be much more averse to risks than men, for which risk-taking is part of the sexual selection process. It should also be noted that women are more motivated in having education which might imply that they are also more motivated in positive health behaviors. In any case, sex is a very strong and independent cause, although sociologists often refuse to admit this. Even in the case of Okinawa, the longevity effect is mainly feminine; the men do not live exceptionally long (see Guy Bäckman 2007).

The causal model for differences in health

To explain differences in health, we can present a following classification of different causal categories:

- Is the environment healthy or not? Some of the regional differences are not always related to

regions, i.e. when the poor live in different areas than rich.

- Heritability is also important, as noted above. There are possible ethnic health differences, especially if the population is genetically homogeneous. We know that Finns have a special set of illnesses which are not common elsewhere. But there are even genetic differences between eastern and Western Finns, and some differences between Swedish-speaking and Finnish-speaking Finns. The most important genetic difference is sex, although we don't know the exact mechanism.
- The growth environment of the foetus and infant seems to have very important effect
- The behavior of the individual: risk-taking, healthy or unhealthy lifestyle, smoking and drinking, obesity
- Especially education has important indirect health effects
- Work environment and work career: hard work kills!
- Unemployment, divorce, loneliness & other such life events have important health effects
- Differences in health services and treatment

From this follows that it is possible to diminish the health differences, especially if we start from the beginning. Differences in birth conditions and children's living conditions are here most important. If the possibilities of the family relative to health services are very different, this will have important consequences. The working environment can be improved. Life style differences can be diminished and risk behaviors can be attenuated. The problem is often that those who are spontaneously more apt to avoid health risks will react better to all kinds of health protection policies. Thus general information, positive health policies will tend to increase the differences. Only strong discrimination and even some disciplining can affect the people with most risk behaviors.

Even though the study is very concrete and avoids the typical sociological pitfalls (naive constructionism, refusal of causal analysis), it is still in that sense normal sociology that it avoids completely a discussion of biological causes of health differences and especially genetics and heredity. When we want to understand health differences, this is unfortunate. Especially demographic and health research would stand to get most of evolution theory.

Regardless of this fact, the study shows in an interesting way how the health inequalities have changed: workers suicides and violent behaviors, lung cancer deaths and brain blood circulation diseases have acted towards diminution of differences in the first decade of 2000 while upper employees have become healthier in heart diseases and cancers. Alcohol has increased mortality risk equally to everybody. In the case of women, the educated employees have become more healthier in all areas.

The difference between educated women and uneducated men is dramatic: 35-year old educated women have over 50 years lifetime left whereas men with basic education have less than 40 years (and the difference is even bigger when we account for healthy lifetime). Sex and education are here equally strong: both account for about 5 years of the difference.

Interestingly, the same difference is not observed in the subjective health: although men feel less healthy than women do and the difference has increased, women report more illnesses and react stronger to negative effects. Also, it is interesting that in the depression years both men and women felt healthier (women even more than men). Even the unemployed were feeling more healthy. This is left unexplained in the report. We can only speculate. Maybe less essential illnesses are being underreported when the general situation is more serious. In any case, the difference between educated and uneducated women is remarkable: during the time of the study, it has increased from seven to eleven per cent: so the less educated women feel themselves nowadays much less healthy.

The differences concerning healthy life years are also dramatic. In the lowest educational group the slow rise has turned down in this millennium and the difference in good or very good health is over 13 years between the highest educated and the low educated (while differences in expected life span are only 4-6 years). Education gives a longer healthy life even more than long age as such. It is much more important than income. The attempts to explain this in the book are not very convincing.

The main explanatory model here is lifestyle: Smoking, alcohol, eating, physical activity. All these affect in the same direction, i.e. more educated smoke less, eat better, and are more physically active. The only exception is alcohol consumption were more educated have increased their alcohol consumption, but still a same level of alcohol consumption seems to be less harmful (i.e. more moderate and less intoxication-oriented). It is interesting that all groups have improved their food consumption, so that the differences have remained. As to obesity, only highly educated women have been able to avoid increases in body weight, but obesity is still a problem to the lower educated. Still, for all groups, the average weight index is in the overweight category (over 25). In smoking, uneducated women have increased their smoking dramatically (from under 20% to over 30) whereas educated men have decreased their smoking dramatically whereas educated women have not increased their already low smoking behavior.

In health services, there is a dramatic class difference in that better educated use more workplace health care services whereas less educated use the public health services. An interesting detail in use is that for instance, bypass heart operations are equally common in all education classes, but survival rates are much better in the higher education group.

Can we eliminate the differences?

In fact, we can be pretty agnostic concerning the effect of health services for health. If the supply of services is strictly equal, this will always lead to much better outcomes in the better educated category. Only strict positive discrimination starting from childhood could result in equalization of health, but this would certainly also result in the destruction of the public health system as the higher educated would seek private solutions. Thus, the only efficient measures are on the other hand those which have the highest impact on the life styles of the less educated: strict restrictions on alcohol and smoking, control of obesity, incentives for increasing physical activity. I.e. stronger immediate motivating factors to induce behaviors which the higher educated are willing to adopt without any special incentives. This would probably not much decrease the differences, but it would make the less educated clearly healthier, which would be a good outcome. And highly important, because we will otherwise soon have a large number of obese, sick

old people in our hands. The best we can expect is for health to follow the same trend as the famous Flynn-effect: everybody becomes healthier but the distribution is not affected. In the case of health this may even result in equalization as there may be an upper limit for increase in the life span.

Another is that we should start really early: improve the quality of life of expecting mothers, follow very actively the development of the infants and try to see that their living conditions have most positive consequences for health: i.e., good nutrition, early learning of healthy behaviors, less risk-taking. This is a very complex problem but the most important thing is to realize that most what we do if the health services here and now will have an impact only 30-40 years later, when the health problems begin to accumulate. The key is motivation.

So the picture is clear: Finns are highly and rather inexplicably unequal in health. In my opinion, the explanation is historical. Those who are now above forty and who amount for roughly one half of the population, were born when the conditions were extremely unequal. But this would require that younger Finns should show more health equality, which is not the case: the disparity seems to be growing, although everybody becomes healthier, see Keskimäki et al 55-57. So it is possible that my theory is not correct. But if the health related lifestyles persist as they seem to do, even younger generations are prone the get the same illnesses and even some new, especially concerning obesity and alcohol-related problems. In both of these, it is the younger generation which has lost control. Still, one can ask, why such a disparity! There are certainly some class related propensities of getting better service or being willing and able to seek treatment, but they are not large. Rich Finns do not go to get treatment in the US but stay home and trust the public health services, especially with serious illnesses (for less serious stuff and aesthetic surgery they trust private doctors).Also, for the gender disparity, there is no easy explanation. Finnish men and women are among the most equal in the world and women do most of the same things as men, except crimes and alcohol drinking, especially drunkenness. So there is no special reason why just in Finland the disparity between men and women should be so large, although the disparity in itself is surely genetic in origin and not due to any worldwide social regularities. In countries where women are maltreated and unwanted, they do have higher mortality and shorter lifespan than men do, but in countries like Finland, the difference is mainly genetic with some unknown social component. It is probably mainly due to the same reasons as the disparity between sexes in Russia, i.e. that men drink much more and eat badly. Also in Finland, the reason should be mainly sought in the unhealthy behaviors of the men, whereas women behave simply in a naturally health inductive way. The disparity is due to the stupidity of men, not to the intelligence of women. Women are the health norm, from which stupid men diverge.

As to the Okinawans, as noted above, I believe that their longevity is mainly heritable, not only in the sense that they have better genes, but also in the sense that they have for a long time engaged in healthy activities. I.e also due to cultural heritability. But this is for my esteemed colleague Guy Bäckman to resolve!

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