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Social rank: a risk factor whose time has come?

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56 million people died in 2015, many prematurely and most (71%) from non-communicable diseases (NCDs).¹ Yet NCDs were absent from the UN Millennium Development Goals (MDGs), which expired in 2015.² Recognising this absence, WHO has set member states a goal to reduce premature mortality from the major NCDs by 25% by 2025 (the 25×25 goal).³ To achieve this goal, WHO urges action on seven established NCD risk factors.³ In *The Lancet* Silvia Stringhini and colleagues⁴ argue that these risk factors are not enough. Instead, they would have us address an additional (eighth) risk factor: low socioeconomic status (social rank). Having low social rank means being powerless to determine your own destiny, deprived of material resources, and limited in the opportunities open to you, which—the authors imply—shapes both your lifestyle and your life chances.

Stringhini and colleagues⁴ base their argument not on political ideology but on rigorous science: an original multicohort study of 1.7 million adults followed up for mortality (all cause and by cause) for an average of 13 years. All risk factors (low occupational class, physical inactivity, high alcohol intake, current smoking, obesity, diabetes, and hypertension) were measured with the same relative precision, enabling fair comparison as predictors of mortality. Risk models were both minimally and mutually adjusted, controlling confounding and enabling attenuation (the extent of mediation of one risk factor by another) to be assessed. Finally, estimates of risk factor prevalence and effect were combined to estimate impacts (population attributable risks)—the fraction of all deaths that could potentially be prevented

if exposure of the population to the risk factor of interest was reduced to the minimum risk level.

Even with use of a crude categorisation of social rank based on occupation (professional, intermediate, and unskilled), the study was able to quantify the social gradient in mortality: an approximately 20% increase in risk per unit decrease in rank (minimally adjusted hazard ratios for all-cause mortality for intermediate vs high occupational class were 1.21 in men and 1.17 in women and for low vs high occupational class were 1.42 in men and 1.34 in women). These estimates represent an effect size similar to that of the 25×25 risk factors except for obesity (which was smaller at 1.04 in men and 1.17 in women) and current tobacco smoking (which was larger at 2.17 in men and 2.02 in women). When adjusted for the other risk factors, the effect of low social rank was moderately attenuated (reducing the hazard ratio for all-cause mortality from 1.46 to 1.26)—suggesting that social rank affects health both by shaping lifestyles and via other pathways. Although not mentioned by the authors, these other pathways would include stress, major life events, material deprivation, and working conditions.⁵ Although some societies are more egalitarian than others, on average low social rank accounted for 18.9% (men) and 15.3% (women) of all adult deaths in this study population. This population attributable fraction is greater than that of the other 25×25 risk factors except for current tobacco smoking (29.0% for men and 21.0% for women) and physical inactivity (26.2% for men and 23.4% for women). An important caveat is health selection, whereby poor health leads to downward social mobility rather than the

Panel: Evidence-based strategies to minimise the impact of social hierarchy on health**Invest in children**

- Early childhood development enrichment programmes
- Intensive parent support (home visiting) programmes
- Enrolment of all children in early childhood education

Get the welfare mix right

- Regulate markets as necessary
- Implement income transfer policies that redistribute resources (ie, progressive tax and benefit regimes)
- Optimise balance between targeted and universal social protection policies through benefit design that minimises both undercoverage and leakage
- Eliminate child poverty through monetary and non-monetary support for families with dependent children

Provide a safety net

- Provide income support or tax credits
- Provide social housing
- Subsidise childcare
- Provide free access to health care (especially preventive services)

Implement active labour market policies

- Provide job enrichment programmes
- Democratise the workplace (involve employees in decision making)
- Provide career development and on-the-job training
- Provide fair financial compensation and intrinsic rewards
- Promote job security
- Discourage casualisation of the workforce

Strengthen local communities

- Foster regional economic development
- Promote community development and empowerment
- Encourage civic participation
- Create mixed communities with health-enhancing facilities

Provide wrap-around services for the multiply disadvantaged

- Coordinate services across government and NGOs
- Provide intensive case management when necessary
- Foster engagement of the targeted families and individuals

Promote healthy lifestyles

- Strengthen tobacco control and addiction services
- Improve the diet of poor families (eg, through subsidising fruit and vegetables, community gardens, purchasing co-ops, school meals)
- Provide green space and subsidised sport and recreation facilities

Ensure universal access to high quality primary health care

- Subsidise practices serving high need populations
- Provide additional nursing and social worker support for practices in disadvantaged areas
- Assist patients with clinic transport and childcare
- Provide services free at point of use
- Provide conditional cash transfers (to increase demand for clinical preventive services)

Strategies are collated from multiple sources.²⁹

reverse.⁶ This reverse causation could not be adjusted for in a single equation regression model and could have led to overestimation of the impact of social rank on mortality. However, only a single dimension of social rank—occupational class—was captured, and that only crudely, which will have generated the opposite bias.

Whatever the exact effect and impact of low social rank on the health of individuals and populations might be, the authors' **key message is clear: social rank deserves consideration alongside the established 25×25 risk factors.** In fact, intervening on social rank will itself partially address the challenge of unhealthy lifestyles. Moreover, upstream interventions (eg, earned income tax credits, universal early childhood education) are likely to be pro-equity, whereas more downstream interventions (eg, smoking cessation assistance, dietary advice) typically favour the privileged (who generally find it easier to access material and social support for behaviour change).⁷

Yet are not all modern societies hierarchical? Undoubtedly so, but good evidence suggests that the

social gradient can vary in steepness, and its impact on health can be ameliorated, at least in part.⁸ Is political advocacy not, however, beyond the scope of practice of doctors? After all, doctors lack the requisite formal training to advise on opportunities for health advancement from social policies (panel).

However, the strength of evidence for the effect of social rank on mortality, as exemplified by the study by Stringhini and colleagues, is now impossible to ignore.

Moreover, the UN Sustainable Development Goals,¹⁰ which have replaced the MDGs and will run from 2016 to 2030, provide a timely opportunity to go beyond the WHO 25×25 goal and place social determinants squarely at the centre of sustainable development. What is needed is strong advocacy from the health professions, led by doctors, for this wider view of risk factors. Does this mean that it is no longer enough for us, as doctors, to know about clinical medicine and human biology? Must we in the health professions also become adept at macroeconomics and sociology? Let us hope so.

REALLY!