Letters

A way of measuring poverty that could further a change for the better

Crucial for the evaluation of the Millennium Development Goals is a method of measuring health. In a recent editorial in the *Bulletin*, Fosu convincingly argued that poverty reflects the health status of a country's citizens and is the underlying cause of "neglected diseases".[1] It is also clear that impaired health exacerbates poverty, whether directly or indirectly, via diminished national growth.[2] Poverty and health are linked bidirectionally.[1] This complex association can be illustrated by a cause-effect loop: malaria being a historical and HIV/AIDS a contemporary example.

Various methods have been used to measure poverty and human development on population level; criticisms against them are as many.[1] Credible health economic data can only be produced based on valid epidemiological data (see the 2007 series on health statistics in the *Lancet* available at: http://www.thelancet.com/collections/series/health_statistics). Many countries are far from fulfilling the need for valid information.

We still have to rely on complex statistical models and assumptions to fill the existing gaps in basic country-specific data. "Per capita income" fails to correlate sufficiently and precisely with measures of human development, such as life expectancy or child mortality.[1] Another indicator, the "headcount ratio", is the proportion of a population earning less than the standard required for basic needs (US$ 1 per day). Variations over time and place, and exchange rates, however, make it difficult to grasp the scope and functions of this index.

Indices are needed to single out countries requiring attention from an international aid perspective. They are, however, often not helpful for national health policy-makers, because in developing countries poverty may vary considerably from region to region, between urban and rural areas and also within urban settlements. Differences are surprising even within resource-poor neighbourhoods: whereas some households clearly belong to the poorest of the poor, others possess a range of sophisticated utensils (H Feldmeier and I Krantz, unpublished data). Existing summary statistics are inappropriate in describing subtle but important differences in available resources.

We suggest that poverty and human development can be captured by a simple method, whether at country, region, urban/rural or neighbourhood level, by determining the combined prevalence or incidence of four (or a maximum of five) epidermal parasitic diseases (EPSDs): scabies, hookworm-related cutaneous larva migrans (hrCLM), tungiasis, pediculosis capitis and possibly pediculosis corporis. These diseases occur ubiquitously (or, in the case of tungiasis, on two continents) and are encountered in rural as well as urban settings.[3] In low-income countries, epidermal parasitic skin diseases are widespread, but with a patchy distribution, with lower-income strata being disproportionately affected (H Feldmeier and J Heukelbach, unpublished data). In Brazil, tungiasis and hrCLM are much more prevalent in deprived and resource-poor populations, while the diseases occur only sporadically in more affluent strata.

Four factors useful as poverty indicators characterize each of the EPSD. First, prevalence, intensity of infestation and morbidity correlate on the population level. A reduction in prevalence will mean a future decrease in morbidity and an increase in quality of life and health. Second, disease occurrence overlaps and polyparasitism is frequent. Hence, knowledge of one EPSD could generate occurrence estimates of other endemic EPSDs in an area. Third, prevalence, intensity and morbidity are disproportionately high in particular population segments: girls and women (scabies, head lice), children (scabies, head lice, hrCLM, tungiasis), the elderly (scabies, tungiasis), or displaced persons and homeless people (scabies, tungiasis, pediculosis corporis). Lastly, the various EPSDs are easily diagnosed by affected individuals, caretakers or health staff.[3] An index could be elaborated that reflects the degree of morbidity caused by the four (or five) major EPSDs in defined populations, based on self-reporting of sentinel individuals from strategically chosen groups.

The health of populations is ultimately a political concern. We need political commitments to implement findings in order to improve population health. While waiting for high-quality epidemiological data and ensuing information on health economics, our suggestion is to use sentinel group descriptions of EPSDs in a participatory approach, i.e. information that is easy to understand for each and everyone, politicians and laymen, and with considerable potential for action and change for the better. ■

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References

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