Inequity, acculturation and the 'Mediterranean paradox'

From OLIVER RAZUM[1] and HAJO ZEEB[2]

Sirs—Khlat and Darmon[1] extend the 'Hispanic Paradox', the low all-cause mortality that Hispanics experience in the US in spite of a low socioeconomic status, to Mediterranean migrant populations in Europe. They analyse the role that a 'salmon bias' (the re-migration of ill migrants to their country of origin) and a 'healthy migrant effect' (a selection of healthy individuals at the time of immigration) might play. One of the key questions they raise is why a mortality advantage of migrants would persist over decades. In view of low socioeconomic status and poor working conditions, as well as presumably deteriorating health behaviours with acculturation, any mortality advantage that migrants experience would be expected to disappear quickly with time spent in the host country.

We believe this is not always the case. Acculturation may lead to improving health behaviours and thereby declining mortality, even in the presence of socioeconomic and health inequalities that migrants face. Moving from one's own country to another can bring substantial benefits to individuals and their families in terms of better access to effective medical care. Moreover, inequalities in access to care which migrants face may lessen with increasing length of time the respective migrant *group* has been established in the host country. We illustrate this by examining maternal mortality (International Classification of Diseases, Ninth Revision [ICD-9]: 630–676), a particularly sensitive indicator of inequity,[2] and one that is unlikely to be affected by salmon bias or healthy migrant effect. Obstetric complications will not usually lead to a maternal death if prompt, adequate treatment is available. We assessed trends in maternal mortality among German women and among women of Turkish nationality residing in former West Germany, based on routine death registration data for 1980–1997. Two million people of Turkish nationality reside in Germany, constituting the largest migrant group. Many came as work migrants in the 1960s and 1970s or followed later as family members. They often hold low-paid jobs in cleaning and construction, are exposed to numerous health risks, and may face cultural and language barriers when accessing health care. For comparison with the population of origin, we present estimates of maternal mortality in Turkey.[2–4]

In the study period, 713 364 live births and 106 maternal deaths among Turkish women in West Germany were reported. The Figure shows that their crude maternal mortality ratio (maternal deaths per 100 000 live births) over time converged upon that of German women. The maternal mortality ratio of Turkish women in Germany, standardized to the age distribution of German mothers, declined from 33.9 (95% CI: 25.0, 42.8) in the period 1980–1985 to 6.3 (95%CI: 2.6, 9.9) in 1992–1997. Mortality from abortion and ectopic pregnancy (ICD-9: 630–639), conditions that require immediate access to emergency care, showed a particularly steep decline. The horizontal bars in the Figure 1 represent the—considerably higher—estimates of maternal mortality ratio for Turkey as a whole.

Firstly, our findings illustrate an aspect of health inequality between countries. After migration to affluent nations, regular (documented) migrants from lower-income countries may experience substantial health advantages, relative to their populations of origin, as far as avoidable causes of mortality are concerned.[5] More importantly, our findings suggest that access to, and utilization of, health services is not only determined by an individual migrant's length of stay. It appears to improve with the length of time a migrant *population* has been established in the host country, an—albeit crude—proxy of acculturation. The observed decline in maternal mortality thus is an active achievement, not only by the health services, but also by the migrant women and their families.[6] Given the complexity of the association between migration and mortality experience, future epidemiological research on this topic should be model-driven (for example, based on a better model of the healthy migrant effect), rather than engaging in attempts to explain puzzling empirical evidence *post hoc*.

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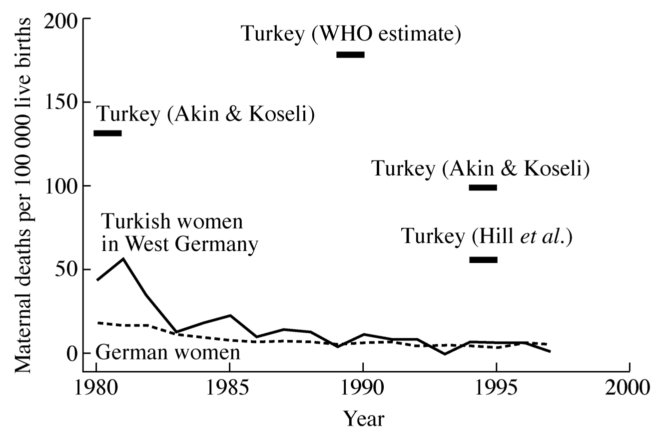

Figure 1 Maternal mortality ratio among German (------------) and Turkish (——) women in West Germany; and estimated for Turkey as a whole[2–4] (▬▬)

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Author's response

From MYRIAM KHLAT

We have pinpointed the unexpected mortality advantage that both Moroccans in France and Turks in Germany enjoy in comparison with their host population, and wondered about the underlying factors. In relation to that, Razum and Zeeb question the expectation that 'any mortality advantage that migrants experience would be expected to disappear quickly with time spent in the host country', and provide a convincing demonstration of a downward trend in maternal mortality associated with acculturation in Turkish women in West Germany. It is indeed worth noting that, while the 'Mediterranean paradox' relates to all-cause mortality, there are specific causes of death which are associated with higher mortality levels in Mediterranean migrants, and that maternal mortality is one of them. In France too, the maternal mortality ratio of Moroccan migrants was, in the 1980s 50% higher than that of the French female population.[1] The pattern of decline found by Razum and Zeeb does fit very well into the traditional rationale of migrant studies, i.e. that 'rates in migrants are expected to converge on those of their host country'. Better access to obstetric care may play a decisive role in explaining the findings, but also increased use of contraception, resulting in a progressive reduction of the proportion of births occurring to youngest and oldest women and of high-parity births, which are attached to a higher risk of maternal mortality. Additional information may be needed, though, to support the hypothesis that the access and utilization of health services depend on 'the length of time a migrant population has been established in the host country', rather than on 'the individual migrant's length of stay'. Was immigration of Turks to Germany still ongoing during the period of observation, in which case that interpretation would make sense, or are we dealing with an ageing population of migrants? Are second-generation migrants included in the analysis? Last but not least, while the case of maternal mortality is very instructive, it has to be placed in the wider context of all-cause mortality: in the long run, as the health behaviours of migrants slowly converge on those of the affluent societies in which they have settled, then the rising rates of many cancers and of cardiovascular diseases are likely to offset—by far—any decline attached to less common causes of death. Unless other factors—indirect selection, different gene–environment interaction—come into play.

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