Reviewer's report

Title: A registry-based follow-up study, comparing the incidence of cardiovascular disease in native Danes and immigrants born in Turkey, Pakistan and the former Yugoslavia: Do social inequalities play a role?

Version: 1 Date: 27 April 2011

Reviewer: Anton Kunst

Reviewer's report:

Major compulsory revisions

1. No results are presented on the analyses of interaction between SES and country of birth. Given the importance that the paper gives to interaction (especially in the Introduction), results should be presented in at least on table or graph. Such a table may show whether the authors’ conclusion of “no interaction” reflect a truly small interaction effect, or a potentially large effect but insufficient statistical power to demonstrated this effect with statistical significance.

2. More information should be given in the role of SES factors in the results as presented in table 2. This small table can easily be extended to show the relationship of CVD with the SES indicators for which control is made. This might show, perhaps, that the confounding effect of SES is mostly related to employment, with no large effect of either income or house ownership. It would be a missed opportunity not to enrich table 2 with this supplementary information.

3. It seems as though in the analysis of duration of residence, no control is made for 5-year age group or another measure of age. Instead, the authors seem to have make analysis of relationship within broad age groups (30-44 or 45-59) without further control for age, despite the strong relationship between age and CVD incidence even WITHIN these 15-year age groups. This may have caused important confounding bias. This should be avoided. A strong correlation between age and duration of residence is no excuse but, quite the contrary, it constitutes an extra reason to control for age in sufficient detail.

4. In table 4 could easily be enriched by an analysis in which the native-born population is taken as the reference group. This would show how the two duration-of-residence groups compare to the native born population. This information may be important for the interpretation of the CVD rates of those with short and long duration respectively (as discussed at the end of Discussion). As with table 2, it would be a missed opportunity not to enrich this small table with such additional estimates.

Minor essential revisions

1. In the Abstract, the use of the word “eliminate” should be avoided to describe the effect of socioeconomic factors, if after control for these factors the
migrant-native relative risk estimates are still largely different from 1.0 (albeit not with statistical significance).

2. In the Introduction, reference should be made to previous studies that have demonstrated that the relationship of SES with health outcomes is different in immigrant groups compared to native populations. Examples are available both from England and the Netherlands.

3. In the Methods, justify the exclusion of educational level as a socioeconomic indicator. It is insufficient to refer to “poor validity”. Omitting education may run the risk of important residual confounding by SES.

4. In the analysis, evaluate an alternative measure of household income for those with a partner. Instead of just dividing this household income by 2, it is more common to divide it by a smaller “equivalence factor”, such as the square root of the number of household members (1, 2 or more).

5. In the Results, information may be given on the absolute level of CVD incidence, e.g. by using age-standardized incidence rates. This would enable the complementary “absolute” perspective on inequalities in CVD.

6. In the interpretation of the results, the authors should be aware that the effect of employment status on CVD, and the “contribution” of employment status to the ethnic differences in CVD, may reflect an “artificial” healthy worker effect, rather than a “true” social causation effect.

7. In the Discussion, it is not true to state that risk factors such as smoking and alcohol consumption are “often” represented among non-Western migrants. Usually, they simply are less common in non-Western immigrants.

8. In Conclusion, it seems an overstatement to say that, based on these results, immigrant groups should be prioritized. Compared to for example low SES as a risk factor within the Danish population, the absolute number of people and patients involved are much smaller, while the Relative Risks do not seem to be much higher. Thus, in terms of Population Attributable Fraction, this does not constitute a main public health problem.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests’