

Table 1 Response rate and distribution of selected health indicators in relation to delivery of postal questionnaire among 9216 middle-aged Danish men

	Pre-printed business reply envelope				Stamped reply envelope	
	1 wave	2 wave	3 wave	All waves	2 wave	P-value*
Number mailed to	3000	1500	3216	7726	1500	
Number returned	1968	996	2065	5029	1025	
Response rate (%)	65.6	66.4	64.2	65.1	68.3	0.02
Living single (%)	18.7	20.1	17.2	18.4	20.6	0.10
Self-reported depression (%)	12.6	12.2	10.5	11.6	11.9	0.79
Poor self-rated health (%)	10.5	10.3	10.2	10.3	12.9	0.02
Smoking (%)	42.8	43.1	42.1	42.6	42.1	0.76
Mean BMI	26.1	26.1	26.1	26.1	26.0	0.50

*All waves (pre-printed business reply) vs second wave (stamped).

population was limited to middle-aged men. We cannot exclude the possibility of a smaller effect of the stamped reply envelope in a younger population with a less traditional view of the personal characteristics of the stamped return vs the pre-printed business reply envelope.

Conflict of interest: None declared.

References

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² Edwards P, Roberts I, Clarke M *et al*. Increasing response to postal questionnaires. *Int J Epidemiol* 2007;**36**:966–67.

³ Osler M, Kriebbaum M, Christensen U, Lund R, Nybo Andersen AM. Loss to follow-up does not seem to bias associations between early life factors and adult depression. *J Clin Epidemiol* (in press).

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Response to 'Cancer incidence rates among South Asians in four geographic regions: India, Singapore, UK and US'

From GIRIDHARA R BABU

I strongly disagree with the statement 'The low rates in India compared with US whites and SA in UK and US may be due partially to under diagnosis but may also be due to lifestyle and environmental factors'.¹ According to reasons elucidated below, the low rates in India are due to gross under-representation of the vast majority of the population, underreporting of cases and many missed cases due to survival bias.

Almost all of the population-based registries from India contain data from mostly cancers reported from conurbations of the respective city. The reports produced by these registries cover a population of 48.5 million which amounts to <5% of the total population of the country.^{2,3} On the other hand in Singapore and UK, the registries provide national population-wide figures, and in the United States the registries

comprise a greater number of cities than in India. Hence the comparison between Indian registries with the other registries is misleading.

India currently does not have successful population-wide mass screening programs for cancer detection even in the cities mentioned in the study. Hence the new cases of cancer detected by registries under-represent the total number of cases, and may over-represent the less severe cases or cases from upper socioeconomic strata who are able to afford health care.

In India, it can be assumed that severe cases either die at home before detection (more so in rural areas) or die at hospital before diagnosis. The cases that are represented in the registries are only those who survived long enough to get detected and hence there is a potential for severe survival bias in the Indian registry data.

Furthermore, the lifestyle and environmental factors in urban areas are probably much worse or certainly

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no better than the other countries in the study. For example, the air pollution rates and smoking rates in Bangalore, Mumbai and Delhi are among the worst in the world. Other lifestyle habits in these cities are also unlikely to be much different from those in cities in other countries. Hence the suggestion that environmental factors play a role in the low incidence of cancer rates in India lacks merit and supporting data.

The authors' report that the age-adjusted incidence rate of cervical cancer was 65.5 in Ambillikai, a rural area. This is probably due to high rates of illiteracy and ignorance among rural population regarding risk factors for cervical carcinoma and lack of simple screening tests in most rural areas. In India, 72% of the population lives in rural areas and the rates of many cancers, including carcinoma cervix, for this vast population remains either absent or limited. The representativeness of data collected by a few urban cancer registries for the entire country is a question that can only be answered if future research focuses on these rural areas.

The authors correctly argue that since it is an ecological study, the interpretations cannot be causal. But, the inferences are not valid at the level of groups either since the registries differ from each country in terms of geographical area covered, lack of homogeneity within the group and the process of reporting to the registry. For example, the UK registry contains

data for all South Asians, the Singapore registry clumps Indians, Pakistanis and Sri Lankans together and the US registry contains only Indians and Pakistanis. I presume that when comparisons are made with Indians in India and these heterogeneous groups, the results cannot be internally valid for only Indians or even for South Asians across any groups. In summary, the authors do not appear to have sufficient information to tackle the question they posed.

References

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Author's Response

From RASHMI SINHA,^{1*} SUSAN DEVESA,¹ TANUJA RASTOGI¹ and ALEYAMMA MATHEW²

We thank Dr Babu for highlighting several of the issues that we also were concerned about as we analysed the data presented in our paper.¹

With respect to the under-representation of the vast majority of the population, it is true that the population-based cancer registries in India cover only a small proportion of the total population and include largely urban areas, although several rural areas also are represented. Rather than simply aggregating the data across the registries, such as is done in the United States, we used the national estimates from Globocan 2002 that were generated by experts at the International Agency for Cancer Research and that attempted to take into account the urban/rural and regional differences in cancer incidence rates in India.^{2–5}

The various population-based registries in India have met quality criteria regarding the completeness and accuracy of case ascertainment and reporting, and substantial efforts have been made to minimize underreporting of cases. The proportion of cases reported solely by death certificate ranged from 1% to 9% in the various Indian registries, somewhat higher than in the UK or United States, but comparable to many other international registries. This suggests that some non-fatal cases also may have been missed. Rates for several cancers, however, such as the oral cavity and pharynx, esophagus, larynx among males and cervix uteri, were higher in India than elsewhere; the true rates for these cancers then must be even higher.

It is true that a cancer that is never diagnosed will not contribute to the incidence statistics; however, we were not in a position to quantify this or to evaluate whether this was a more severe problem in India than elsewhere. To take into account differences in age distributions across the study groups, all rates were directly adjusted using the World population

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