

# PostScript

## LETTERS

### Health benefits of green spaces not confirmed

Takano and colleagues' paper<sup>1</sup> on the association between proximity to "walkable green spaces" and longevity in senior citizens in Tokyo will be of interest to those involved in promoting health in its broadest sense. However, this study has a number of methodological limitations, the authors draw conclusions that are not supported by their results and the study does not merit the largely uncritical responses published elsewhere in the journal.<sup>2-5</sup>

Only 3144 people of 7362 contacted (42.7%) agreed to take part in the survey. This response rate leads to the potential for substantial selection bias that is not discussed by the authors.

The questions used to determine proximity of participants to "walkable green spaces" are not explicitly described and their appropriateness cannot be determined. Asking if participants lived "near" to a place for taking a stroll will lead to highly subjective answers. In particular, those who do take strolls may be more likely to report proximity to such places merely because they are more aware of them. An objective measure of proximity to green spaces and a clear definition of what constitutes "green" would have significantly strengthened the study.

Takano *et al* claim that they make adequate control for socioeconomic factors by including a measure of "monthly living expenses". However, it is not clear how this is calculated and whether it is an appropriate and recognised measure of socioeconomic status in Japan.

The measure of functional status used—whether participants required help to get out of bed—is simplistic. Considering the number of validated measures of functional status available, the use of this measure requires further justification.

In view of these limitations, it is clear that a number of the conclusions drawn in the paper are unfounded. The authors find an association between their measures of proximity to green spaces and longevity in this cohort. This is not evidence of causation and certainly not evidence that "walkable green . . . spaces near the residence significantly and positively influenced five year survival".

As discussed above, socioeconomic factors may not have been adequately controlled for. The association reported may not remain "even after excluding the influence of socioeconomic conditions". In particular, it is possible that more affluent people, who generally live longer,<sup>6</sup> are also likely to live in "greener" neighbourhoods.

Finally, the authors suggest throughout this paper that proximity to green spaces has a positive influence on longevity via an effect on physical activity. However, no data are supplied on the physical activity of participants. Such data would have added substantially to the authors ability to conclude that such a causal chain exists.

While this paper is certainly novel, the authors' conclusions should not be accepted uncritically. Readers and commentators

should not allow their personal convictions that green spaces must be a public good to overshadow their critical appraisal skills. Evidence based policy making is at least as important as evidence based medicine.<sup>7</sup>

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### References

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### Authors' reply

The letter by Adams and White gives us an opportunity to consider whether an individualised analytical framework can contribute to the formulation of a comprehensive evaluation of all the issues surrounding a policy choice. The purpose of our paper<sup>1</sup> was to demonstrate the association between walkable green spaces near the residence and longevity of senior citizens in order to provide information for evidence based policy making. The paper spotlighted an aspect of the web-like association between health determinants and population health.

Some 3144 people agreed to participate among 5924 people contacted, as stated in the paper (53.1% participation). The percentages of women and men whose highest educational experience was primary or secondary school were 52.9 and 46.1, respectively, in the follow up population, while the percentages for the same criteria estimated by the census report of 1990 were 53.4 and 43.2, respectively.<sup>2</sup> It is therefore unlikely that there was a substantial selection bias during the participation of this cohort.

Regarding the factor of walkable green spaces near the place of residence, the paper discussed citizens' perceptions related to green spaces in their neighbourhood. The results of the analysis showed a positive influence of walkable green spaces near the residence on the longevity of older people. It indicated that information on how people view their environment can be of assistance in policy making, rather than simply making claims about the physical characteristics of the environment.

As of the issue of socioeconomic status, it is as well to remember that categories and indeed of class as they are defined in some countries do not necessarily apply in Japan. As more than 80% of the household receipts of elderly families households in Japan depend on pension benefits, monthly living expenses was

considered to be an adequate reflection of socioeconomic gradient, rather than simply evidence of household income. The amount of monthly living expenses used by the elderly subject (single expenses) or by elderly couples including the subject (double expenses) was reported by the subject. Septuplet categories were determined after the adjustment of single or double expenses. The results of the regression analysis including living expenses as an independent variable showed a significant correlation between living in an area with walkable green spaces and longevity after consideration of socioeconomic characteristics.

The reason for the consideration of people who required "help to get out of bed" as a functional level is that this severe dysfunctional condition does not allow people to walk outside their house and has a marked negative influence on longevity. As the consequences of having this severe dysfunction are obvious based on medical considerations, an analysis was performed to exclude this severely dysfunctional population. The results showed an association between walkable green space and longevity regardless of one's functional status at baseline.

It should be borne in mind that "public health is far too complex to be considered merely applied epidemiology".<sup>3</sup>

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### A superficial glance at child health

Torres writes "Bottle feeding in the first six months of age is extremely harmful for babies. There is a high risk of infection because of the use of contaminated water or bottles that results in diarrhoea, malnutrition and increased mortality".<sup>1</sup> I have been trying for years, unsuccessfully, to find evidence in support of this proposed causal mechanism.<sup>2</sup> What is the epidemiological basis for the second sentence? If *JECH* editors think there is a sufficiently reliable database, perhaps they could commission a literature review? The careless dissemination of plausible untruths does nothing to reduce infant mortality, but actively closes down the area to scientific inquiry and new thinking.

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### References

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