

present if respondents gave "old age" as the cause for impairment on any one of seven separate questions on individual activities of daily living. It seems plausible that someone responding to difficulties with multiple activities of daily living would be more likely to include old age as a cause for at least one of them than would someone who was having difficulties with only one. Yet in the study, number of activities named was not included in an otherwise extensive list of control variables in the multivariate analysis.

With no control for the number of activities of daily living involved, attribution to aging could simply be a surrogate for number of activity dependencies present, surely a known risk factor for mortality. □

William J. Strawbridge, PhD

Requests for reprints should be sent to William J. Strawbridge, PhD, Human Population Laboratory, California Public Health Foundation, 2151 Berkeley Way, Annex 2, Berkeley, CA 94704.

Reference

1. Rakowski W, Hickey T. Mortality and the attribution of health problems to aging among older adults. *Am J Public Health.* 1992;82:1139-1141.

Rakowski and Hickey Respond

Dr Strawbridge has identified a plausible alternative explanation for the results of our investigation,¹ and we have therefore reexamined the data in light of his comments. It is possible that persons who report difficulty with a greater number of activities of daily living might also be more

likely to attribute one or more of such problems to old age. We did not include activities of daily living in the original list of control variables because it was evident that the maximum number of activities that could be attributed to old age was limited by the number of activities of daily living that a respondent identified. However, our analyses did include a large number of health-related covariates, and there were only 72 persons who made at least one attribution to aging. Therefore, the large majority of persons who reported several activities of daily living limitations did not provide an aging attribution.

Further review of the data has shown that the respondent's number of activities of daily living was not related to attributing at least one activity problem to old age ($\chi^2 = 7.35$; $df = 6$; $P = .29$). The absolute percentages of attribution to old age for each number of activities of daily living were as follows: 1 activity, 5.5%; 2 activities, 7.0%; 3 activities, 3.7%; 4 activities, 6.3%; 5 activities, 3.5%; 6 activities, 0.0%; 7 activities, 6.3%. The multivariate logistic regression analysis was then repeated, with the number of activities of daily living added to the list of predictors, along with the several other covariates cited in our earlier report. The adjusted odds ratio for attributing one or more activities of daily living to old age as the main cause was 1.76 (95% confidence interval = 1.05, 2.96). These results are extremely consistent with the original report and appear to reflect the absence of a bivariate association between number of activities of daily living and attribution to old age. In effect, number of activities can be added to the

list of variables that showed no association with attribution to aging (cited in Table 3 of the original paper).

Dr Strawbridge's observation is important because it draws attention to what might have been an irresolvable confound in the data, had the number of activities of daily living been associated with attribution to aging. Specifically, persons must have health problems before any attribution of health problems to aging is possible, a fact that sets the stage for an interdependence that can be difficult to disentangle. The Longitudinal Study of Aging assessed aging attribution in regard to the specific set of activities of daily living. A more generic scale (i.e., one not tied to specific health problems) was not available. At the same time, there can be no guarantee that a generic scale of aging attribution would have as strong a potential for association with a health outcome as one tied to specific problems. Although our reanalysis supports the original article, Dr Strawbridge's comments are important to consider in any further study of aging attribution and health outcomes. □

*William Rakowski, PhD
Tom Hickey, DrPH*

Requests for reprints should be sent to William Rakowski, PhD, Department of Community Health, Box G-A405, Brown University, Providence, RI 02912.

Reference

1. Rakowski W, Hickey T. Mortality and the attribution of health problems to aging among older adults. *Am J Public Health.* 1992;82:1139-1141.