of a number of other adult health outcomes including total mortality (5), cardiovascular disease (6), some cancers (6), high blood pressure (7), and other psychiatric disorders (8). That these relations are apparent in adults who completed a brief psychometric intelligence test up to 65 years earlier (5) is particularly compelling. The association between most of these health outcomes and childhood cognitive ability tends to remain significant after adjustment for early life socioeconomic position, while further examination of the potential confounding/mediating effect of adult social circumstances is needed (9).

We agree with Karp et al. (1) that the most informative studies of dementia risk will contain measures of intelligence, as well as details of education and parental and own socioeconomic position. The causal directions among these intercorrelated variables are moot and require more research. However, there is more information concerning the relation between psychometric intelligence and dementia than they indicate.

REFERENCES


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TWO AUTHORS REPLY

We thank Dr. G. David Batty et al. (1) for showing interest in our paper. The primary focus of our article (2) was to evaluate if the association between low education and increased risk of Alzheimer’s disease and dementia could be explained by occupation-based socioeconomic status. We could not find that adult socioeconomic status or socioeconomic mobility mediated the association between low education and Alzheimer’s disease. In the Discussion section of our article, we brought up the possible relevance of early life factors, such as early socioeconomic factors, mental stimulation, or cognitive abilities. We reported as a limitation of our study not having access to any measures of early life intelligence, a weakness that we share with many other studies concerning diseases and conditions in the elderly.

We agree with the authors that both the Nun Study (3) and the Scottish study on mental abilities in young age and dementia (4) are of importance for our study discussion, as they provide some evidence supporting the hypothesis that premorbid intelligence may influence risk of dementia and Alzheimer’s disease in old age. Mental ability at 11 years of age should be of great significance for cognitive reserve (5). At the same time, socioeconomic factors in early life (6) may constitute some of the environmental factors influencing mental ability.

On the other hand, we do not agree with Batty et al. (1) concerning their interpretation of the associations between lower psychometric intelligence in early life and a number of different health outcomes, including cardiovascular disorders and cancer. These new findings seem to us to question the likelihood of, instead of supporting, a causal relation between premorbid intelligence and dementia. The biologic plausibility of a possible association with dementia is supported by the cognitive reserve hypothesis, but we wonder which is the biologic plausibility for the other associations. Instead, these findings seem to suggest that common factors, such as, for example, socioeconomic factors and life habits, during the whole life may act as major confounders.

In conclusion, we can only agree with the authors (1) concerning the difficulties of establishing causal directions among these interrelated variables and the risk of Alzheimer’s disease, and we hope that future studies will contain all the measures necessary to clarify these issues.

REFERENCES


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