Article IV

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Paper IV. Biometrical Journal 48(5), Eide, Geir Egil & Heuch, Ivar, Average attributable fractions: a coherent theory for apportioning excess risk to individual risk factors and subpopulations, pp. 820-837. Copyright 2006 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. http://dx.doi.org/10.1002/bimj.200410156 Abstract only. Full-text not available due to publisher restrictions.

Average Attributable Fractions:

A Coherent Theory for Apportioning Excess Risk

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Summary

The attributable fraction in a population and the attributable fraction in exposed are different epidemiologic measures for quantifying the contribution of a risk factor to the risk of disease. While the attributable fraction in a population depends on both the relative risk of disease and the risk of being exposed in the population, the attributable fraction in exposed depends only on the relative risk. Similar relationships apply to the combined attributable fraction in a population and in exposed, respectively, for quantifying the total contribution of a group of risk factors. Eide and Gefeller (1995) showed how the sequential and average attributable fractions could be applied to quantify the contributions of the individual risk factors to a combined attributable fraction in a population. The present paper shows how this methodology can be extended to the combined attributable fraction in exposed. The resulting average attributable fractions in exposed are compared to other proposed methods. The relationship between the average attributable fractions in a population and in exposed is outlined, thus establishing a coherent theory for apportioning attributable fractions in individuals, groups of individuals and populations, to single risk factors or groups of risk factors like modifiable versus nonmodifiable factors.

Key words: Attributable risk; Adjusted attributable fraction; Sequential attributable fraction; Attributable fraction in exposed; Probability of causation; Assigned share.