PRESS RELEA E

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Two social scientists charge in a paper published today that the "statistical association" method is fallacious as a means of establishing cigarettes as a cause of lung cancer mortality. This method leads to absurd consequences; for example, that divorce is as much a "cause" of higher mortality as heavy cigarette smoking, or that tobacco use "prevents" suicide, accidents, or diabetes.

Furthermore, among various factors associated with lung cancer mortality, urban residence shows a consistently positive association, even when the smoking habit factor is held constant.

The paper appears in the current issue of "Industrial Medicine and Surgery." The authors are Jacob Cohen, Ph.D., of New York University, and Robert K. Heimann, Ph.D., of The American Tobacco Company. Last year these two social scientists reported on a 14-year study of 11,000 company employees who smoke more, live longer, and have fewer deaths from cancer or heart disease than the general public.

Cohen and Heimann attack the theory that a heavier smoking population will incur lung cancer at a higher rate than a lighter smoking population.

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This, they point out, is not so. They cite:

1. Four large, well-defined populations showing heavy smoking with lower mortality (South African males, New Zealanders, Australians, American Tobacco employees).

2. Such factors as divorce, drinking, poverty, psychological differences and urban residence which associate with lung cancer mortality.

3. The very studies offered in support of the cigarette causation theory, showing regular cigarette users with mortality rates roughly similar to the general population from which they are drawn.

As to point (1) above, Cohen and Heimann publish new data to show New Zealanders include three times as many more-than-a-pack-a-day smokers per 100 as Britons and South Africans twice as many. Their lung cancer mortality is 50% lower than in Britain.

American Tobacco employees include nearly three times as many more-than-a-pack-a-day smokers per 100 as the U. S. population. Their lung cancer mortality is 29% lower than average.

However each of these populations shows lower urbanization. "Neither South Africa nor New Zealand nor Australia," the authors note, "is as highly urbanized as Great Britain, and the American Tobacco employees live and work in medium-sized and small cities."

The authors note "Wherever investigation is made, the lung cancer mortality is higher in urban areas than in rural."

While the level of cigarette use is not predictive of lung cancer mortality, the "urban factor" is consistently so, even when smoking habits are held constant.

As to point (2):
Lung cancer mortality associations have been reported for divorce, drinking, poverty, psychological differences and urban residence as well as for smoking. These suggest the fallacy of using any one association to establish "cause." They also suggest that the "urban factor" might be a catchall term for tendencies related to the urban way of life.

Descriptions of urban-related tendencies in scientific literature include: "nervous tension," "the syndrome of social stress," "heightened metabolic activity," "the restless personality," and "accelerated rate of living."

"It has been demonstrated," Cohen and Heimann say, "that lung cancer mortality is higher in U. S. cities than for the general population, and still higher in the largest cities. For males in the 15 largest cities, which account for half the urban population, lung cancer mortality is on the order of 35% above the general average. For all urban males, it is 20% above average."

As to point (3), the difficulty in making causal inferences from statistical associations is illustrated by the very studies on which the cigarette causation theory is largely based.

a. The regular cigarette smokers who comprise about three-fifths of the Doll-Hill, Hammond-Horn and Dorn samples show death rates and lung cancer death rates about the same as the general population's.

b. Taking non-smokers as the norm or criterion against which other mortality rates are compared has been questioned on the basis that such persons or some of them may be "biologically disposed to self-protective habits" and therefore live longer. Non-smokers constitute less than a fifth of the Doll-Hill sample, the Hammond-Horn sample, and the Dorn sample. Mortality rates shown by these persons may not constitute a criterion of what is "normal." Their mortality rates are so far below the general population average as to suggest that this minority class or part of it may be abnormal rather than normal.

c. With respect to death by violence and suicide: Hammond's sample shows cigarette smokers with a 6% lower death rate from this cause than non-smokers; smokers of 1-10 cigarettes daily a rate 14% lower; pipe smokers a rate 17% lower; and cigar smokers a rate 27% lower. Dorn found suicide-accident deaths 8% less probable among tobacco users than among abstainers.

d. Cohen and Heimann emphasize that these and other reverse gradients are not "cited as arguments that tobacco use prevents suicide, accidents, diabetes, or rheumatic heart disease, but to indicate the absurd consequences of accepting single-variable gradients (such as smoking) based on non-smoker mortality as the 'normal expectancy.'"

A reprint of the paper, "Heavy Smokers with Low Mortality and the Urban Factor in Cancer Mortality," is attached.


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