Estimating Alcoholic Prevalence

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Abstract. Alternative methods for estimating the prevalence of alcoholism and alcohol problems are reviewed and evaluated. No standard method has emerged to fill the void left by the Jellinek formula, now generally recognized as invalid. Currently viable methods include techniques based on alcohol mortality data, alcohol consumption data, data from general population surveys, and data on clients in treatment. Different methods contain implicit and differing definitions of alcoholic populations, and the choice between alternative techniques may depend on the purposes of prevalence estimation. The disaggregate nature of societal problems with alcohol suggests that a single number may not capture the totality. However, for the practical applications of estimating need for treatment services and for monitoring the level of alcohol problems and alcoholism across local areas and across time, projections based on per capita consumption offer the most useful and valid figures.

1. Introduction

Alcohol researchers, treatment providers, and program administrators have a common interest in the prevalence of alcoholism and problem drinking across different geographic areas, across different population subgroups, and over time. However, the field of alcoholism epidemiology is in general disarray, with no consensus on the best method or even on the definition of the disease-like entity whose prevalence is to be measured. To some extent, this confusion arises from the lack of any well-developed measuring instrument, but the problem also reflects ideological and political divisions within the professions dealing with alcoholism and alcohol abuse.

Before the early 1950s, the best attempts to make estimates of the number of alcoholics in a given area were based on case-finding methods (also called agency surveys). Case finding refers to the practice of surveying persons or organizations that might come into contact with alcoholics (hospitals, physicians, clergymen, alcoholism clinics, police, employers, etc.) and having each list the alcoholics known to them in the community. After some attempt to correct for multiple listings of names, an estimate would be generated of the size of the known alcoholic population. 1
Case finding never was very satisfactory for epidemiologic purposes because it did not measure the presumably large number of "hidden alcoholics"—those not detected by official agencies, physicians, clergymen, etc. During the 1940s, a formula was developed for this purpose by the pioneer researcher E. M. Jellinek. The Jellinek Formula quickly became the preferred method for estimating the prevalence of alcoholism and was adopted officially by the World Health Organization in 1951. Jellinek's formula, based on the number of yearly deaths reported for cirrhosis of the liver, was justified on the basis of Jellinek's historical studies of cirrhosis trends and their relationships to times of alcohol scarcity.

The Jellinek method was the accepted technique for measuring alcoholism prevalence during the 1950s and 1960s, but, although it is still widely used, in recent years it has fallen into general disfavor. There were several reasons for its decline:

1. During the late 1950s, methodological critiques appeared questioning the methods used in estimating the constants in Jellinek's formula and, more importantly, questioning the assumption that they were indeed constant.
2. The research community came to recognize that there is a broad spectrum of alcohol abuse beyond the chronic addicted alcoholic of the disease model formulated by Jellinek and estimated by his formula. Critics point out that alcohol problems and alcohol dependence can occur in different ways, from a variety of factors—psychological, social, and biological.
3. Recent legislative mandates have required alcoholism funds to be apportioned to local areas (states and counties) on the basis of local need. Thus, official estimates need to be made for small areas. Since the Jellinek formula is statistically unreliable for small populations, a demand was created for methods based on other sources of data.

The past decade has witnessed the appearance of several contenders attempting to fill the void left by the Jellinek formula. Some of these contenders try to patch up the flaws by changing Jellinek's particular method while still maintaining the basic approach of inferring a population of alive but "hidden" alcoholics from the number of certified dead alcoholics. Other contenders base prevalence projections on alcohol sales data and its per capita average: apparent consumption. Still another major approach is the use of data from general population surveys of alcohol consumption and alcohol problems.

Each of these methods has strengths and weaknesses, but none has thus far emerged as a standard technique in the sense that the Jellinek method provided a standard. The current state of the art of alcoholic prevalence estimation is reviewed in the following pages.