Commentary on historical article

An appreciation of ‘Studies on infant mortality’ by Barnet Woolf

D J P Barker

The historical paper published in this number was written by Dr Barnett Woolf an anthropologist on the social aetiology of stillbirths in country boroughs of England and Wales, in Volume 2 of the Journal (then The British Journal of Social Medicine). This interesting article describes Dr Woolf’s meticulous analyses of infant mortality in the large towns of England and Wales during 1928–38, showing how poor social conditions lead to infant deaths. The paper is in many ways a model study of inequalities in health. Out of 30 social indices, he selected seven that he found to predict infant mortality most closely. These indices related to overcrowding, poverty, industrial employment of mothers, family size, population density, and latitude. He examined the associations between these indices and specific causes of infant death, for example bronchitis and diarrhoea, and deaths at different ages during the neonatal and postneonatal periods. Having established associations, he then considered how the social factors actually exert their effect on the life of the baby. It is the linking of specific social influences, such as low income, with specific processes such as fetal undernutrition and disorders such as prematurity, that makes the paper so fascinating. Such data are needed for accurately targeted social policies.

Woolf anticipated modern epidemiology in a thoughtful discussion of the possible effects of diagnostic misclassification, the scope and limitations of the multiple regression method and the usefulness or otherwise of tests of statistical significance.

Woolf’s analyses pointed to a series of important problems that are still being resolved. He concluded that the close relation between poverty, stillbirths, and neonatal deaths derived from maternal malnutrition. He also suggested that maternal malnutrition before birth contributed to mortality from infection during infancy. He showed that infant deaths from infectious diseases were related to overcrowding, especially when the crowding was by other children rather than adults. He speculated on the risks to infants whose mothers worked and who had to be cared for by neighbours, often in the company of a number of other children. He cleverly deduced that the higher infant mortality in the north of the country was due to influences acting through the mother and bearing directly on the infant.

The practical conclusion of the study was that infant mortality was mostly preventable and that improving maternal nutrition was considerably more important than improving housing. Woolf realised that many of the hypotheses from his analyses would need to be tested by specific investigations. His conclusion that, ‘it is only by the close interweaving of statistical field enquiries that a true science of social medicine can be built up’ still applies today.

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