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Commentary

Study of Epidemiology and Public Related Health Issues

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Description

Epidemiology is a scientific discipline founded on sound scientific inquiry methods. Epidemiology is data-driven, relying on a methodical and unbiased approach to data collection, analysis, and interpretation. Basic epidemiologic methods rely on careful observation and the use of valid comparison groups to determine whether what was observed differs from what might be expected, such as the number of cases of disease in a specific area during a specific time period or the frequency of an exposure among persons with disease. Epidemiology, on the other hand, draws on methods from other scientific fields, such as biostatistics and informatics, as well as biologic, economic,social,and behavioral sciences.

Indeed, epidemiology is frequently referred to as the "basic science of public health," and for good reason. To begin, epidemiology is a quantitative discipline that requires a solid understanding of probability, statistics, and sound research methods. Second, epidemiology is a method of causal reasoning that involves developing and testing hypotheses based on scientific fields such as biology, behavioral sciences, physics, and ergonomics in order to explain health-related behaviors, states, and events. However, epidemiology is more than just a research activity; it serves as the foundation for directing practical and appropriate public health action based on this science and causal reasoning.

The study of the frequency and pattern of health events in a population is known as epidemiology.

The term "frequency" refers not only to the number of health events in a population, such as the number of cases of meningitis or diabetes, but also to the relationship of that number to the population size.The occurrence of health-related events over time, place, and person is referred to as a pattern. Time patterns can be annual, seasonal, weekly, daily, hourly, weekday versus weekend, or any other time breakdown that influences disease or injury occurrence. Geographic variation, urban/rural distinctions, and the location of work sites or schools are all examples of place patterns. Personal characteristics include demographic factors that may be related to the risk of illness, injury, or disability, such as age, gender, marital status, and socioeconomic status.

Epidemiology is also used to look for determinants, or the factors that influence the occurrence of disease and other health-related events. Epidemiologists believe that illness does not occur at random in a population, but rather occurs when an individual has the right combination of risk factors or determinants. Epidemiologists use analytic epidemiology or epidemiologic studies to determine the "Why" and "How" of such events in order to find these determinants. They examine whether groups with varying disease rates differ in terms of demographics, genetic or immunologic make-up, behaviors, environmental exposures, or other so-called potential risk factors.

Epidemiology was originally focused solely on communicable disease epidemics, but it was later expanded to include endemic communicable diseases and non-communicable infectious diseases. Additional epidemiologic methods had been developed and applied to chronic diseases, injuries, birth defects, maternal-child health, occupational health, and environmental health by the mid-twentieth century. Then, epidemiologists began to examine behaviors related to health and well-being, such as the amount of exercise and the use of seat belts. With the recent explosion in molecular methods, epidemiologists can now make significant advances in investigating genetic markers of disease risk. Indeed, the term "health-related states or events" can refer to anything that has an impact on a population's well-being. Nonetheless, many epidemiologists continue to use the

term “disease” as shorthand for a wide range of conditions.

Although epidemiologists and direct health-care providers (clinicians) are both concerned with disease occurrence and control, their perspectives on “the patient” differ significantly. A clinician is concerned with an individual’s health, whereas an epidemiologist is concerned with the collective health of people in a community or population. In other words, the individual is the clinician’s “patient,” while the community is the epidemiologist’s. As a result, when confronted with an ill person, the clinician and the epidemiologist have distinct roles to play. For example, when a patient presents with diarrheal disease, both parties are eager to determine the correct diagnosis. The clinician, on the other hand, is usually concerned with treating and caring for the individual, whereas the epidemiologist is concerned with determining the exposure or source of the illness. Infectious disease epidemiology, for example, is the closest thing to “shoe leather” epidemiology, which means going out into the community, talking to patients, contacts, practitioners, and observing the environment. Direct comprehension and “closeness” to data, Small-scale studies, immediate outcomes, Etiology is simple to grasp.

Acknowledgment

None

Conflict of Interest

None