Descriptive Epidemiology

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**Definition/Relationship**

Descriptive epidemiology seeks to enhance public health by describing the distribution of diseases and understanding the disparity in sickness frequency in a population. The medical field identifies the community at risk and pursues therapeutic interventions to advance health outcomes. Epidemiology has a significant role in medicine and healthcare. Public health is what motivates epidemiologists. Distinguishing intervention perspective is what defines the differences between personal-level medical epidemiology and public health. The medical epidemiology applies intrusions that enhance the health of a treated individual. Community epidemiology focuses on the health impact of the population. Social epidemiology, environmental, and occupational is a classification of descriptive epidemiology. A social epidemiologist investigates large communal structures and elements of health by defining the social environment of people, which can alter the population angle. An environmental scientist concentrates on exposure, for example, emissions from electric cables and air contamination, which are external to individuals and can observe from the community perspective. An occupational researcher focuses on the health of the employees by detecting work-related exposure that can be adapted to decrease mortality and morbidity occurrences in the workforce. In the medical field, the pharmacoepidemiologist inspects drugs, modifies, dispenses, and monitors the effects on the individual (Rogawski, Gray, & Poole, 2016). Gene epidemiology focuses on genetic material that activates diseases that are distinct and have unmodifiable features. Descriptive epidemiology serves a considerable role in public health. Emphasizing in medical intrusions can reduce opportunities in achieving improved results in public health. For instance, concentrating on hereditary factors for an individual-level reaction to obesity cannot address the source of the endemic; therefore, it will not have an impact on the population. Public health provides health equity because its interventions organized to reach a populace, and its policies are applied to the community to promote adequate health. Medical care is accessible to financially stable individuals. Public health innovations have significant benefits because they can raise multiple concerns promptly; for instance, smoking in the designated zones does not only protect the smokers but other people who subjected to second-hand smoke.

**Application**

***(You provided a few generic examples of how epidemiology might be applied in public health. For the application section, I really wanted to see you dive into a specific example of how epidemiology has been applied to a contemporary public health issue.)***

Nurses can survey and monitor disease trends in a group such as schools, healthcare institutions, clinics, homes, and workplaces. For instance, if multiple students in a school became ill because of stomach issues, the doctor can identify what the children had in common within a restricted period. Similarly, if employees in a company displayed an identical concern, the nurse would investigate the cause of the problem by evaluating factors in the work settings. Descriptive epidemiology in the nursing development serves as a model because the caregiver can assess the needs, recognize problems, strategize on ways to evaluate the issues, and develop effective healthcare (DeAnne, Messias, Robert, & Adams, 2010). The purpose of health evaluation is to discover the consequences of disease inceptions, which brings about an understanding of the causes of the onsets. Time-based metrics are used by the health professionals to account for the severity of the disability and in comparing a burden between sicknesses and population in different health states. Valuable metrics such as Disability- Adjusted Life Years (DALY), and Life Years Gained (LYG) are designed purposely for quantifying and comparing a burden instigated by different healthcare concerns. Some standards are applied to determine the onsets of illnesses, including occurrence and prevalence measures of sicknesses. By using incidence criteria, the public health specialist evaluates the cause of the problem, and in the control setting, the researcher investigates the existence cases available. In measuring health and disability, the epidemiologist identifies the magnitude of disease onset. With this information, the expert can organize interventions to manage disabilities (Gouda & Powls, 2014).

**Identify**

One vital objective of descriptive epidemiology is to identify the risk factors and to measure their significance. Epidemiological survey engages three types of analysis: cohort studies, case-control evaluation, and cross-sectional analysis. In cohort investigations, a comparison performed between the individuals not susceptible to the risk factor and the persons vulnerable to the health risk (Ressing, Blettner, & Klung, 2010). The research permits the assessment of mortality levels and incident rates as descriptive measures of frequency, and risk ratio as comparative effect evaluations. In the general population, Standardized Mortality Ratios (SMR) utilized for comparison. In case-control instances, the controls who do not have the sicknesses equated with the people encountering the diseases (Committee on Gulf War & Health, 2008). The data obtained during the study is the odds ratio, which estimated as a comparative effect measure. The cross-sectional analysis examines the disease status and exposure from a defined population at a specific time point. The sample size figures obtained by calculating the difference between unexposed and susceptible groups. The study seeks to discover the relationship between exposure to the risk agents and the growth of a health outcome. The effect evaluated as RR, and prevalence OR, or dominance level. Comparative sizes of the cluster are indicated as type I error, which implies the error of declining the null supposition when positive. Type II inaccuracy noted when the error fails to reject the null hypothesis when the assumption is accurate.

In conclusion, public health epidemiology concentrates on the health impact of a community. Time-based metrics innovated for quantifying and comparing the burden caused by different health issues, for example, DALY and LYG. Epidemiology applies three methods of analysis to measure the extent of the hazard ratio, which are control assessment, cross-sectional examination, and cohort studies.

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