



500-Word Essay **Epidemiological Studies**

Epidemiology is the scientific study and analysis of the distribution of diseases within a specific demographic of people or animals. It involves a particular evaluation of when, how and where the condition occurred (Trichopoulos et al.2015). Through the study, the epidemiologist determines the risk factors associated with the disease and their following protective factors to safeguard people and animals against such diseases or conditions. Different types of epidemiology studies impact diverse knowledge of prognosis, diagnosis, and treatment of diseases and conditions among different medical practitioners and scientists. For instance, cohort studies involve an examination of the risk factors over a specific duration. It encompasses the observation of a specified population with unique characteristics such as the same age group, comorbidity, or different level of severity of their condition. By accumulating adequate, relevant information on the population such as historical backgrounds, physical health, and imaging, it equips researchers with the right tools for predicting, diagnosing the disease through laboratory tests and device appropriate treatments (Croft et al. 2015).

Additionally, other epidemiological studies such as the cross-section and case-control studies fundamentally attribute to the primary objective of evaluating and improving the health standards within the society. Through a well-extrapolated descriptive and analytical analysis conducted at various levels, the epidemiologist understands the patterns and clinical importance of the symptoms and conditions prevailing during the prognosis and diagnosis. The established information optimizes the efficient of the diagnosis process that would facilitate the acquisition of the relevant treatment of the disease. For example, it postulates a framework for the design of an acceptable and feasible intervention like the medical imaging of the suspected coronary artery and myocardial ischemia without endangering the patients'

(Vandenbroucke et al. 2007).

Therefore, epidemiological studies facilitate improved analysis of clinical trials that enable individual scientist or medical students to deduce viable treatments of diverse conditions with risk stratifications. It allows inventions of appropriate interventions to eradicate the socio-economic epidemics caused by different diseases, which has resulted in the formulation of numerous health reforms.

Creation of awareness for every individuals and stakeholder within the medical sector is vital to ensure the safety of all patients and utilization of an acceptable and feasible intervention to deduce appropriate treatment of prevailing conditions that affect all spheres of life such as socio-cultural, economic and political sectors. Having participated in an investigation and epidemiological study, it is vital for medical research institutions to establish measures and regulations that protect both the researchers and the participants of investigations to facilitate health and the conducive relationship between the two parties without discrimination and prejudice. However, with the advancement in technology, the complexity of medical issues have also risen and advocated for the rejuvenation of new ideas is vital to enable the researcher to invent safety methods of conducting clinical trials that would result in proper diagnosis and treatment of conditions without exposing patients into unnecessary medical risks and threats (Moscoe, et al, 2015).

Further, understanding the basic framework of the outbreak of different diseases enable the researcher to rapidly develop principal diagnosis to treat the disease and prevent its future occurrence. For example, through brain imaging, a scientist can evaluate and comprehend the molecular circuitry level within a patient and develop an appropriate treatment. Nevertheless, only providing an accurate depiction of a disease and its risk factor is inadequate as all the stakeholders should be equipped with proper tools accompanies by constant communication, teamwork, and attention to the outcome to propel viable judgment (Boulware et al. 2016).

Finally, advocating for accountability within the medical institutions and the entire sector would eradicate instances of carelessness during the investigation, prognosis, diagnosis, and intervention. Also, it is appropriate to foster association between the federal agencies and the pharmaceutical industry to encourage constant epidemiological studies on the outbreak of diseases and endorse meta-analysis tools to help develop a treatment for disorders (Beydoun et al. 2014).

Reference

Beydoun, M. A., Beydoun, H. A., Gamaldo, A. A., Teel, A., Zonderman, A. B., & Wang, Y. (2014). Epidemiologic studies of modifiable factors associated with cognition and dementia: systematic review and meta-analysis. *BMC public health*, *14*(1), 643.

Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2016). Race and trust in the health care system. *Public health reports*.

Croft, P., Altman, D. G., Deeks, J. J., Dunn, K. M., Hay, A. D., Hemingway, H., Timmis, A. (2015). The science of clinical practice: disease diagnosis or patient prognosis? Evidence about “what is likely to happen” should shape clinical practice. *BMC Medicine*, *13*, 20. <http://doi.org/10.1186/s12916-014-0265-4>

Moscoe, E., Bor, J., & Bärnighausen, T. (2015). Regression discontinuity designs are underutilized in medicine, epidemiology, and public health: a review of current and best practice. *Journal of clinical epidemiology*, *68*(2), 132-143.

Trichopoulos, D., Olsen, J., Saracci, R., & Greene, N. (2015). *Teaching epidemiology: a guide for teachers in epidemiology, public health, and clinical medicine*. Oxford University Press.

Vandenbroucke, J. P., Von Elm, E., Altman, D. G., Gøtzsche, P. C., Mulrow, C. D., Pocock, S. J., ... & Strobe Initiative. (2007). Strengthening the Reporting of Observational Studies in Epidemiology (STROBE): explanation and elaboration. *PLoS medicine*, *4*(10), e297.