



American Journal of Epidemiology & Public Health

Short Communication

Pharmacoepidemiology Importance and Applications -

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Submitted: 13 April 2023; Approved: 18 April 2023; Published: 19 April 2023

Cite this article: Mousnad MA. Pharmacoepidemiology Importance and Applications. American J Epidemiol Public Health. 2023 Apr 19;7(1): 006-007. doi: 10.37871/ajeph.id63

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KEY POINTS

- Pharmacoepidemiology aims to study the use and effects of pharmaceutical products in large populations.
- Pharmacoepidemiology is a growing field essential for the government, pharmaceutical companies, clinicians, patients and policymakers.
- Healthcare professionals and students need to understand better using medicines and applying pharmacoepidemiologic approaches.
- Drug Utilization (DU) is considered a powerful tool to promote the rational use of medicines.

INTRODUCTION

In the last decades, modern medicine has been blessed with pharmaceutical tools that are much more powerful than they had before. Although major global public health problems such as malaria, pneumonia and tuberculosis are controlled much better, they also result in the ability to do much more significant harm.

The history of drug regulation matched the record of major adverse drug reaction disasters. Pharmacoepidemiology is the application of epidemiological theories and methods in the pharmaceutical sector to identify the beneficial and harmful of drugs on populations [1].

Pharmaco-epidemiology has become increasingly important for regulatory agencies and public and private health institutions to provide safer and more cost-effective care [2].

TERMINOLOGY, DEFINITION AND RELATED DISCIPLINES

Pharmacoepidemiology contains two components, namely “pharmaco” and “epidemiology”.

The word “epidemiology” is semantically composed of the Greek roots “epi” (= among or upon), “demios” (= the people, as in “democracy” and “demography”) and “logos” (= science) [3,4].

Epidemiology aims to study the distribution and determinants of diseases and health-related events to control health problems [5]. Clinical pharmacology is the study of the effect of drugs on humans [6]. “Pharmacoepidemiology is the study of the utilization and impact of drugs in large numbers of people” [6].

APPLICATIONS OF PHARMACOEPIDEMIOL-OGY

The most common application of Pharmacoepidemiology is using information from such studies to make drug therapy decisions. These applications include Pharmacovigilance; drug utilisation; Pharmacoepidemiology Risk Management; Pharmacoepidemiologic studies devices; and Hospital Pharmacoepidemiology [7].

Drug Utilisation (DU) is considered one of the most commonly used applications of Pharmacoepidemiology. The World Health Organization (WHO) defined DU as: “The marketing, distribution, prescription, and use of drugs in society, with special emphasis on the resulting medical, social, and economic consequences” [7].

DU describes the extent, nature and determinants of drug use and aims to facilitate the more rational use of medicines in a given society by providing helpful information about drug utilisation, drug

prescribing, and drug use systematically and logically using techniques and methodologies developed and recognised internationally.

Methods used in drug utilization studies include qualitative studies; studies on prescription habits; studies on patient compliance; studies on drug effects; studies on patients’ knowledge about drugs; descriptive studies, determinants of drug utilisation and impact of drug use; and consumption studies.

PHARMACOEPIDEMIOLOGY RESOURCES

Professional organisations

- International Society of Pharmacoepidemiology (ISPE) Web <http://www.pharmacoepi.org>
- American College of Epidemiology.
- Society of Epidemiologic Research.

Professional journals

- Pharmacoepidemiology and Drug Safety, edited by the International Society for Pharmacoepidemiology.
- American Journal of Epidemiology.
- Drug Safety.

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