

An overview on pharmacoeconomics

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ABSTRACT

Pharmacoeconomics focuses the analysis of costs on drug therapy. Economic evaluation is necessary for all developing countries. Pharmacoeconomic studies provide more benefits to patients, pharmaceutical industries, and medical professionals in cost effectiveness, regulating health economic and in decision of better choice of drugs. The four different methods used for evaluation of pharmacoeconomics are cost minimization, cost utilization, cost benefit and cost effectiveness. The pharmacoeconomic study plays an important tool in improving the efficiency of the profession of clinical pharmacist. The economic studies are mainly depends upon the costs they are as follows direct cost, indirect costs, invaluable costs, alternative cost, marginal costs and average costs. This review article emphasizes various methods, types of costs and guidelines on evaluation of Pharmacoeconomic studies.

Keywords: Pharmacoeconomics. Economic evaluation. Costeffectiveness guidelines.

1. INTRODUCTION

In current scenario, the cost of medicines and high expenditure on drugs is the main issue for government in developing countries. Mainly 30 to 60 % of income is consumed for medicines in developing countries and low developing countries. [1] Rising expenditure for purchasing the drugs is a serious concern factors for public and private payers in so many countries. [2] In India health care funders such as government bodies, social security funds, insurance companies are affect to meet their rising costs. They plan to reduce the cost of drugs by price negotiations, reducing the cost of most medicines, patient co-payments or drug budgets. [3] Therefore economic studies are considered in order to reduce the cost of the drug and cost spends for treatment. The crucial aim of analyzing economics for providing the effective use of pharmaceuticals. [4] In India the clinical settings was based on two aspects they are as follows, based on pharmaceutical industry, based on hospitalized settings. In industrial set up the cost was raised because of competition of market share and drug cost control. In hospitalized setup the consideration must be given to the impact of therapeutic agent cost on impact of the hospital pharmacy budget, drug costs, nursing costs and laboratory costs for tests[5].

1.1. Pharmacoeconomics

Pharmacoeconomics is the field of study that compares the outcomes (Clinical, economic and humanistic) and costs (resource consumption) of pharmaceutical products, and to select the best alternatives from selected prospective. The main aim of the pharmacoeconomic study is to identifying, measuring and comparing the costs of drugs then establishing a link between both input and output of the products. [5] The international society for pharmacoeconomics and outcomes research (ISPOR) defines the pharmacoeconomic approach that indicates the behavior of individuals, marketing that relevant to pharmaceutical products and frequently depends on costs and consequences of the drugs [6]. The planning for the pharmacoeconomic evaluation should be occurs during the preclinical stages of drug development, mainly the pharmacoeconomic analysis used for phase-IV stages of post marketing research. [7]

1.2. Measurement of health outcome in pharmacoeconomics

The health outcome parameters mainly depend on drug indications, type of research and selected pharmacoeconomic model. The health outcomes can be measured by using certain tools. The health outcomes are mainly measured as quality adjusted life years. Health outcomes can be measured by using monetary units, rating scale

and evidence based correlation with final outcome. [8]

1.3. Objectives of pharmacoeconomic study

- To identify, measure, and compare the different medical costs categories drugs which have been used in Pharmacoeconomic analysis.
- To determine the various outcomes of drugs by this analysis and compare them.
- Compare and contrast different pharmacoeconomic analysis.
- To find out the optimal therapy at low price.
- To determine the validation of various costs and measurement of costs.

1.4. Need of pharmacoeconomics in Indian health care

In India people with 12.4 % are based on below poverty line, their economic conditions are not improved and those peoples are unaffordable for private health care sectors. The costs of the drugs are increased constantly because of the arrival of new medicines and they are marketed and developed under patent law. [9]

1.5. Evaluation of pharmacoeconomic study

Pharmacoeconomics evaluation are used to provide a basis for resource allocation, utilization, new drug formulation, and finally to obtain decision making. A pharmacoeconomic evaluation may be conducted as economic assessment and mainly associated with clinical trials. Several causes for conducting clinical trials they are shown given below,

- New drug formulation (because of increasing their price of durg)
- Change the price of old drug. [10]

1.6. Methods of pharmacoeconomic evaluations

The five methods of pharmacoeconomic evaluations, which used to evaluate the costs and benefits of various alternatives, in that four methods are most frequently used methods they are shown in table 1. [11]

1.7. Types of costs

The different types of costs used in pharmacoeconomics are given below in table 2,

1.8. Various guidelines in Pharmacoeconomic evaluations

The health care professionals follow certain guidelines in evaluation of pharmacoeconomic studies they are shown in figure 2.

Table - 1: Methods of pharmacoeconomic evaluation

Cost Minimization Analysis: (CMA)	<ul style="list-style-type: none"> ➤ The CMA technique is usually based on assumption by comparing the results of different drugs of equal efficacy and equal tolerability. ➤ This technique is done when the outcomes are same for two interventions. ➤ In this technique, the input is considered as cost. ➤ Least cost has been preferred mostly.
Cost Effectiveness Analysis: (CEA)	<ul style="list-style-type: none"> ➤ This CEA technique plays an important role of decision making in identifying a preferred choice to find out the low expenditure drug and possible alternative drugs. ➤ It helps to determined the multiple drug treatment for similar conditions. ➤ In this method, cost of treatment based on the effects of drugs. ➤ Results are expressed as cost/outcome for both therapies.
Cost Utility Analysis: (CUA)	<ul style="list-style-type: none"> ➤ The CUA technique usually estimates the drugs/ interventions with different outcomes can be compared. ➤ CUA can compare cost, quality of drug and quantity of patient years. ➤ The CUA analysis can be based on the measurement of quality adjusted life year (QALY)
Cost Benefit Analysis: (CBA)	<ul style="list-style-type: none"> ➤ The CBA analysis mainly focuses on costs and results (benefits) ➤ It is measured is monetary units. It also used to compared the values of alternatives whose output are in different measurements.

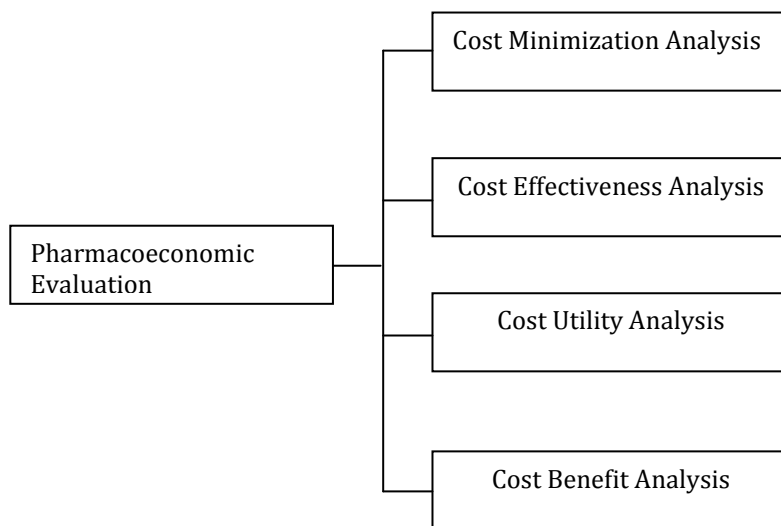


Figure - 1: Methods of pharmacoeconomic evaluations.

Table - 2: Various types of costs	
Direct Costs	➤ Salaries for personnel, bandages, drugs, expenses of premises, building maintenance, electricity.
Indirect Costs	➤ These do not results the transaction of goods and services, loss of earning, loss of productivity, cost of travel to hospital.
Invaluable costs	➤ Pain, worry or other distress, these costs are not calculated in monetary units.
Alternative or opportunistic costs	➤ These types of costs are measured by loss due to unused resources for alternatives (These are difficult to access)
Average costs	➤ Average value of costs
Marginal costs	➤ It is measured by growth (Improvement) of total costs which leads to introduction and execution of additional services

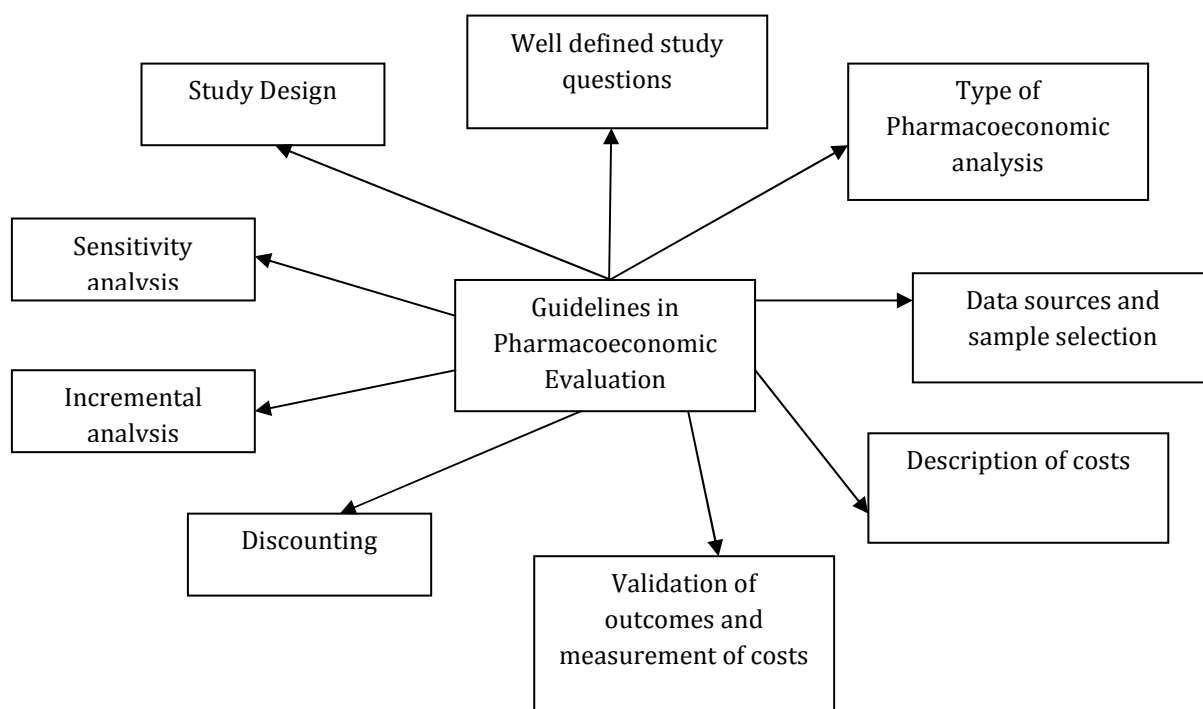


Figure - 2: Pharmacoeconomic guidelines.

2. CONCLUSION

Pharmacoeconomic studies can improve pharmacy professional to make better ideas about pharmaceutical products and services. These help pharmacists to play an important role in decision making, and enhance the understanding of various aspects involved in socio economic issues. Now a days most of the pharma industries improve pharmacoeconomics and give more importance to these studies, these will help for new research in drug formulation. The main conclusion involved in this study is the pharmacoeconomics serves a vital role in selection of drugs and improves the health care system.

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