

## Pharmacoeconomics: Boon or Bane in India

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### ABSTRACT

Due to high treatment costs, pharmacoeconomic analysis plays a vital role in the search for intensified efficiency in resource sharing out for drug therapies in high income countries. The extent to which pharmacoeconomic analysis is employed in the same role in low income countries is less well established. This systematic review discovers and briefly accounts pharmacoeconomic studies which have been carried and further evaluates their influence in the selection of essential medicines.

**Keywords:** Pharmacoeconomics.

### INTRODUCTION

Pharmacoeconomics is "A branch of health economics which particularly focuses upon the costs and benefits of drug therapy".

(i) Whether the new drug is equally or more effective in the said disease as likened to the standard treatment?

(ii) Does the new drug have any economic advantage against the existing drugs.<sup>1?</sup>

Health-Care System & Health-Care Financing System<sup>2,3</sup>

India is the world's largest democracy. The challenge before India is to attain health care accessible for the majority of its people. Allopathic health care has emerged as one of the greatest service sectors in India. India expends only 5% yearly gross domestic product (GDP) on health care. Of this, most of the expenditure (about 80%) is individual out-of-pocket (OOP).

### Pharmacoeconomics aims to lessen

1. Health expenditures, although optimizing healthcare results.
2. Pharmaceutical expenditures, exploding much faster than total healthcare outgos.
3. A lot of drug alternatives and empowered consumers also fuel the need for economic evaluations of pharmaceutical products.
4. The increasing cost of healthcare products.
5. This increasing concern has propelled demand for the use life expectancy,
6. Healthcare resources are not easily approachable and affordable to many patients.<sup>6</sup>

### PHARMACOECONOMIC EVALUATION

#### Issues in Pharmacoeconomic evaluation

All economic evaluation has basic structure which involves stated clearly and in detail measurement of inputs (costs) and measure outcomes

The common issues in Pharmacoeconomics evaluation are,

#### General Perspectives

Economic evaluation is a tool for helping decision-making given assumptions about how society wills to maximize the benefits from bounded health care spending. It involves identification of the benefits and costs of such spending.

In pharmacoeconomic evaluation cost can be fractioned into,

Financial cost (compulsory cost) and Economic cost (resource for which no mandatory payment is made). Cost can be measured in following ways,

Cost / unit (cost/tab, cost/vial), Cost / treatment, Cost / person, Cost / person / year, Cost / case prevented, Cost / life saved, Cost / DALY (disability-adjusted life year)

Outcome (Benefits)

The second important component of a pharmacoeconomic study is outcome. What is the effect of alternative drug therapies on disease progression, survival, quality of life?

#### METHODS OF PHARMACOECONOMIC EVALUATION<sup>8</sup>

Cost-effectiveness analysis (CEA), Cost minimization analysis (CMA)

Cost-benefit analysis (CBA), Cost-utility analysis (CUA). In detail these are discussed in table 1.

### LIMITATIONS OF PHARMACOECONOMIC EVALUATION<sup>8</sup>

- a) Choice of the drugs is given according to the marketed pressure. Pharmacists give drugs as per their wish (alternative drugs for prescribed medicine)
- b) Drugs are prescribed under promotional pressurizing activities of marketing executives of pharmaceutical firms.
- c) For chronic diseases, bio-availability consideration can have an upper-hand over Pharmacoeconomics.

### STEPS TO OVERCOME LIMITATIONS

- 1) The state associations and hospitals should procure medicine directly from firm/ industry.
- 2) Sensitizing students of health sciences on Pharmacoeconomics
- 3) Creating awareness of concepts and rules of Pharmacoeconomics in existing physicians should also be done.

### PROCEDURE AND DISCUSSION

The present work was carried out at Nuzvid division and Vijayawada by group of three students of final year B.Pharmacy. We planned to collect the most common formulation's details [Paracetamol, Caffeine (500mg+30mg), Paracetamol /Acetaminophen (500mg), Paracetamol (650mg), Metformin (500mg)]. Details are provided in Table2, Table3, Table4, Table5

Few pharmacies refused to give the necessary information (even Brand name, cost) some other encouraged, gave us the data required and the Data of different formulations collected from different pharmacies is tabulated (some good impact manufacturer's details too added even they are not available in the research done market, we collected cost details of such manufacturers from Metropolitan cities from our other resource people). From the research it was observed that the same combinations of drugs are having different cost, cost variation is because of the brand value and brand image in market. We are not at all criticizing the cost variation, it is always their marketing strategies and their efforts in market. Though cost variation is upto manufacturer and market promoter views obviously cost variation is putting burden on the middle class and poor people. In our research work we found that some established and renown branded manufacturer

and market promoters are providing their formulations relatively lesser cost but at the time in case of other formulations we found vice versa situation.

Alone it is not only the responsibility of manufacturer and market promoter but also responsibility of middlemen i.e dealers and retailers.

Acceptable practice is majority branded pharmacies are providing discounts on purchase.

### CONCLUSION

1. The study concludes that in India the pharmacoeconomic evaluation is essential to obtain optimal therapy at lowest price, alternative treatment plans, which help the poor and middle class Indians to obtain well health care services.
2. Costs of the medicines are growing constantly. In a country with scarce resources and an ever growing population with diverse health care needs, health economics (pharmacoeconomic evaluation) plays a vital role in determining the delivery of equitable and cost-effective health services.
3. Majority research works on Cost-effectiveness analysis (CEA) at the same time if works also focus on Cost minimization analysis (CMA) then it will enlighten on the present scenario and alternatives and we can minimize cook-book medicine procedures simultaneously Evidence based Medicine comes into practice.
4. If public of Indian society strictly makes purchase and show their willingness towards pharmacies which are providing discounts on purchase will show a strong impact on local retailers and for sure they too will face the resulting market with healthy spirit which ultimately reduces the expenses on medicine by middle class and poor people.

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**Table 1: Methods of Pharmacoeconomic Evaluation**

S.NO	METHOD	DEFINITION
1	Cost-effectiveness analysis (CEA)	Compare two or more treatment options for a specific condition and is dependent on the value in nonmonetary terms that is placed on the outcome in comparison to the cost.
2	Cost minimization analysis (CMA)	When two or more interventions are evaluated and demonstrated or assumed to be equivalent in terms of a given outcome or consequence, costs associated with interventions may be evaluated and equated.
3	Cost-benefit analysis (CBA)	compares the costs and outcomes of alternative therapies and the outcome is then expressed in monetary terms. <sup>6</sup>
4	Cost-utility analysis (CUA)	Executed in the same manner as cost-effectiveness analysis except that the endpoint differs. The endpoint of cost-utility analysis is described as 'quality-adjusted life years saved'.

**Table 2: Paracetamol, Caffeine (500mg+30mg)**

Manufacturer	Brand Name	Cost/ Unit(Rs)
Cyper Pharma	Sudrex	0.55
Serve Pharmaceuticals	Febrimol C	0.60
Helios Pharmaceuticals	Pantac	0.62
Acron Pharmaceuticals	Zoom	0.70
Prayas Pharmaceuticals	Parazep	0.80
Kentreck Labs Pvt Ltd.	Paktab	1.00
Bini Laboratories Pvt Ltd	Binilon	1.50
Care Pharma (India) Ltd.	Thermogesic Plus	2.20

**Table 3: Paracetamol /Acetaminophen (500mg)**

Manufacturer	Brand Name	Cost/ Unit(Rs)
Agron Remedies	37-C	0.84
Am. Biocare	Ab-Par	1.20
Meriodin	Achmol	0.90
Therapeutic	Aeknil	0.70
Alicon Pharma	Alcocin TAB	0.80

**Table 4: Paracetamol (650mg)**

Manufacturer	Brand Name	Cost/ Unit(Rs)
Alpha lab	Almol forte	1.20
Group	Aminol-hs	0.65
Indoco	Febrex	0.90
Svizera h. Care	Febrinil	1.1
Citadel	Fepanil	1.1
Synokem	Kemcin	1.1
Raptakos	Lotemp	1
Themis pharma	Metapulus	1
Intima (ipca)	Pacimol	1.2
Winsome	Parabig	8
Wockhardt	Pyrexon-650	1.35
Frankford	Restol-650	1.8
Sandoz	Temfix	1.1

**Table 5: Metformin (500mg)**

Manufacturer	Brand Name	Cost/ Unit(Rs)
Genetica (aristo)	Bigomet	0.75
Sanofi aventis	Cetapin xr	2.5
J.b. Chemical	Daomet-sr	1.5
Torrent	Dibeta sr	1.9
Bal pharma	Diamet	0.95
Novartis	Dibimet	1
Biochem	Duomet er	2
Ipca	Emnorm	1.5
Cipla	Exermet	1.8
Alkem	Formin	0.95
Nicholas piramal	Gluformin	1.4
Cipla	Glumet	0.7
Franco-indian	Glyciphage	1.1
Usv	Glycomet	1.3
Glenmark	Xmet	1.3

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