



# Pharmacoeconomic Evaluation of Homeopathy: Assessing Efficacy, Economics, and Policy Perspectives



Aditya Dilipkumar Patil<sup>1</sup>, Sargam Ramesh Singh<sup>2</sup>

1. Tech Hom Research Solution, Maharashtra, India.
2. Samarth Homeopathic Clinic and Research Center, Maharashtra, India. \* **Corresponding Author:** thrs.patil@gmail.com

Use your device to scan and read the article online



**Citation** Dilipkumar Patil. A, Ramesh Singh. S, Pharmacoeconomic Evaluation of Homeopathy: Assessing Efficacy, Economics, and Policy Perspectives. 2024; Journal of Pharmacoconomics and Pharmaceutical Management , 10(1):35-46. DOI: 10.18502/jppm.v10i1.15399

**Running Title** Pharmacoeconomic Evaluation of Homeopathy

**Article Type** Research Paper

## Article info:

Received: 25.01.2024

Revised: 01.03.2024

Accepted: 18.03.2024

## License Statement

This work is licensed under a Creative Commons Attribution NonCommercial 4.0 International license (<https://creativecommons.org/licenses/by-nc/4.0/>).

Non-commercial uses of the work are permitted, provided the original work is properly cited  
Copyright © 2024 The Authors.

Publisher  
Tehran University of Medical Sciences

## ABSTRACT

**Background:** In contemporary healthcare, evidence-based practices are fundamental for ensuring optimal patient outcomes and resource allocation. Essential steps for conducting pharmacoeconomic studies in homeopathy involve study design, intervention identification, comparator selection, outcome measures definition, data collection, cost analysis, effectiveness analysis, cost-effectiveness analysis, cost-benefit analysis, sensitivity analysis, reporting, and peer review. While conventional medicine undergoes rigorous pharmacoeconomic evaluations, the field of homeopathy often lacks such scrutiny. However, the importance of pharmacoeconomic studies in homeopathy is increasingly recognized, given its growing integration into modern healthcare systems.

**Methods:** A systematic search of electronic databases (PubMed, Scopus, Web of Science) was performed to identify relevant literature using keywords such as "homeopathy," "pharmacoeconomics," and "efficacy." Articles meeting inclusion criteria were assessed for quality using established frameworks like the Consolidated Health Economic Evaluation Reporting Standards (CHEERS). Data synthesis was conducted thematically, focusing on study objectives, methodologies, findings, and conclusions.

**Results:** Ten pharmacoeconomic studies within homeopathy were identified, demonstrating varying degrees of compliance with reporting guidelines. While most studies reported costs comprehensively, some lacked methodological transparency, particularly in analytic methods. Heterogeneity was observed in study designs and outcome measures, reflecting the complexity of economic evaluation in homeopathy. Quality of evidence varied, with some studies exhibiting robust methodologies while others had limitations.

**Conclusion:** Based on the review, recommendations include promoting homeopathic clinics, providing policy support, adopting collaborative healthcare models, and leveraging India's homeopathic resources. Pharmacoeconomic studies in homeopathy are crucial for evaluating its economic implications compared to conventional medicine. While certain studies demonstrated methodological rigor, opportunities exist for enhancing consistency, transparency, and quality in economic evaluations. Addressing these challenges is essential for informing decision-making regarding the economic aspects of homeopathic interventions.

**Keywords:** CHEERS, Health policy, Homeopathy, Pharmacoeconomy



## Introduction

In the realm of healthcare, the importance of evidence-based practices cannot be overstated. As medical advancements continue to evolve, the scrutiny placed on various treatment modalities grows, urging practitioners to justify their efficacy and cost-effectiveness. (1) While conventional medicine has long been subjected to rigorous pharmacoeconomic evaluations, the field of homeopathy has often been perceived as lacking in this aspect. However, the need for pharmacoeconomic studies in homeopathy is becoming increasingly apparent, as it plays a crucial role in assessing the value of homeopathic interventions within modern healthcare systems. (2)

### Understanding Pharmacoeconomics:

Pharmacoeconomics is a branch of health economics that evaluates the cost-effectiveness of pharmaceutical interventions. It assesses the economic impact of treatments by considering factors such as costs, outcomes, and resource allocation. Through pharmacoeconomic studies, policymakers, healthcare providers, and patients gain insights into the value proposition of different treatment options, aiding decision-making processes and resource allocation within healthcare systems. (3)

The Need for Pharmacoeconomic Studies in Homeopathy:

**1.Resource Allocation:** With healthcare budgets under constant strain, optimizing resource allocation is paramount. Pharmacoeconomic studies provide valuable insights into the cost-effectiveness of homeopathic treatments compared to conventional therapies. This information enables policymakers to allocate resources efficiently, ensuring that patients have access to cost-effective healthcare options. (4)

**2.Patient-Centric Care:** Homeopathy often appeals to individuals seeking alternatives to conventional medicine, driven by factors such as perceived safety, minimal side effects, and a holistic approach to health. Pharmacoeconomic evaluations help patients make informed decisions by weighing the costs and benefits of homeopathic treatments relative to other options. This review delves into the efficacy of homeopathy, its economic implications, and pertinent policy perspectives. To achieve comprehensive coverage, a systematic search of electronic databases including PubMed, Scopus, and Web of Science was conducted, employing relevant keywords such as "homeopathy," "pharmacoeconomics," and

options. This promotes patient-centered care, empowering individuals to choose the most suitable treatment based on their preferences and values. (5)

**3.Integrative Healthcare:** In an era of integrative medicine, where conventional and complementary therapies coexist, pharmacoeconomic studies play a pivotal role in assessing the value of integrating homeopathy into mainstream healthcare. By examining the cost-effectiveness of combined treatment approaches, healthcare systems can capitalize on the strengths of both conventional and homeopathic modalities, optimizing patient outcomes while managing costs effectively. (6)

**4.Quality Assurance:** Rigorous pharmacoeconomic evaluations enhance transparency and accountability within the homeopathic community. By subjecting homeopathic interventions to the same level of scrutiny as conventional treatments, stakeholders can ensure that resources are allocated to therapies backed by robust evidence of cost-effectiveness. This fosters quality assurance and elevates the credibility of homeopathy as a viable healthcare option. (7)

The integration of pharmacoeconomic studies into the realm of homeopathy is essential for evaluating its value within modern healthcare systems. By assessing the cost-effectiveness of homeopathic interventions, stakeholders can make informed decisions regarding resource allocation, promote patient-centered care, and enhance the credibility of homeopathy as a viable healthcare option. Moving forward, concerted efforts are needed to overcome existing challenges and ensure that pharmacoeconomic evaluations contribute to the evidence-based practice of homeopathy, ultimately benefiting patients and healthcare systems alike. (8)

### Materials and Methods

This narrative review investigates the necessity for pharmacoeconomic studies within the domain of homeopathy, elucidating crucial factors and methodologies for executing such assessments. Drawing from existing literature,

"efficacy." Articles, reviews, and meta-analyses published in English were considered for inclusion. Inclusion criteria encompassed studies discussing pharmacoeconomic aspects of homeopathic interventions, their comparative effectiveness with conventional treatments, and policy implications. Quality appraisal of selected studies was performed using established

frameworks such as the Consolidated Health Economic Evaluation Reporting Standards (CHEERS) checklist. (9-10) Data extraction involved meticulous examination of study objectives, methodologies, findings, and conclusions. Synthesis of findings was carried out thematically, delineating key insights into the necessity, challenges, and methodologies for conducting pharmacoeconomic evaluations in homeopathy.

## Results

### Overview of Studies

In conducting this narrative review, we identified a total of 10 pharmacoeconomic studies within the field of homeopathy, all of which were evaluated using the CHEERS reporting guidelines. These studies encompassed a diverse range of interventions, patient populations, and economic evaluations pertinent to homeopathic treatments mentioned in figure 1.

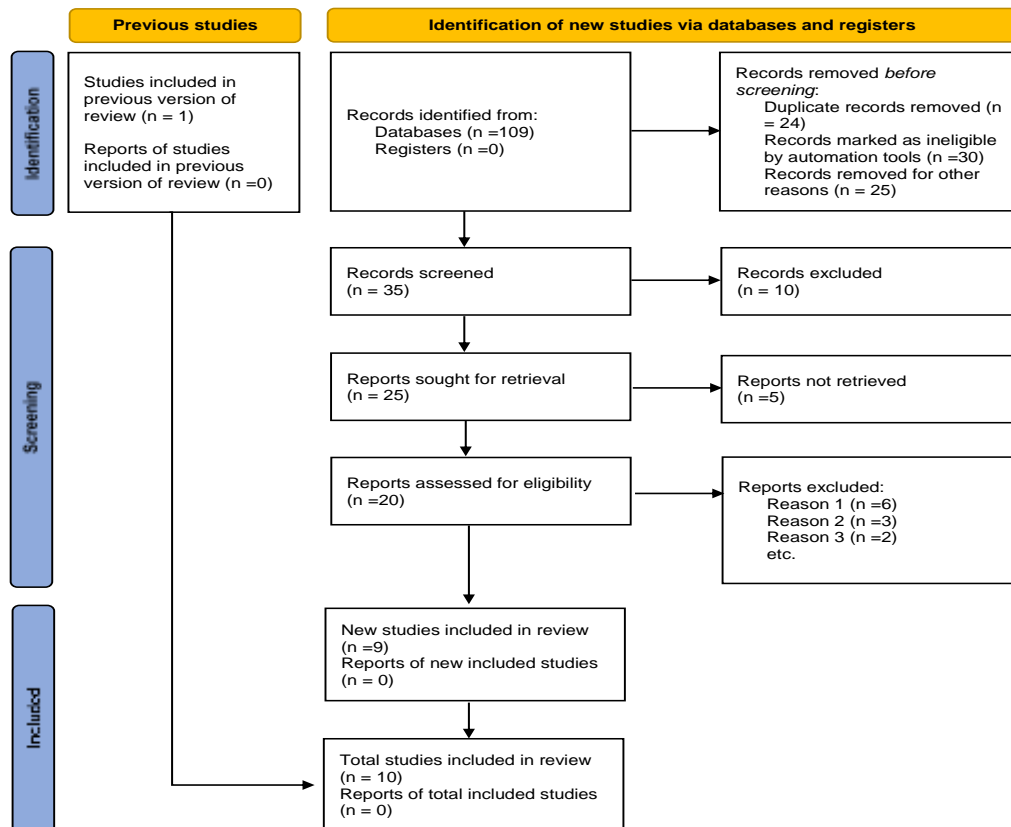


Figure 1. (PRISMA 2020). (11)

### Compliance with CHEERS Reporting Guidelines

Analysis revealed varying degrees of compliance with the CHEERS reporting guidelines across the included studies

mentioned in table 1. The adherence to each component of the CHEERS framework was assessed, providing insights into the comprehensiveness and transparency of reporting within the field.

Table 1. (9-10)

Study qualities of reviewed studies *				
Study characteristic	FS	PS	NS	NA
Title and abstract				
1. Title	10	0	0	0
2. Abstract	10	0	0	0
Introduction				



3. Background and objectives	10	0	0	0
Methods				
4. Target population and subgroup	8	2	0	0
5. Setting and location	7	2	1	0
6. Study perspective	10	0	0	0
7. Comparators	8	2	0	0
8. Time horizon	10	0	0	0
9. Discount rate	1	3	6	0
10. Choice of health outcomes	10	0	0	0
11a. Measurement of effectiveness	8	0	0	2
11b. Measurement of effectiveness	2	0	0	8
12. Measurement and valuation of preference- based outcomes	9	0	0	1
13a. Estimating resources and costs	4	0	0	6
13b. Estimating resources and costs	0	0	0	10
14. Currency, price date, and conversion	4	2	4	0
15. Choice of model	10	0	0	0
16. Assumptions	10	0	0	0
17. Analytical methods	8	2	0	0
Results				
18. Study parameters	8	2	0	0
19. Incremental costs and outcomes	4	2	4	0
20a. Characterizing uncertainty	2	5	0	3
20b. Characterizing uncertainty	2	2	4	2
21. Characterizing heterogeneity	2	4	1	3
Discussion				
22. Study findings, limitations, generalizability, and current knowledge	10	0	0	0
Other				
23. Source of funding	6	4	0	0
24. Conflicts of interest	3	7	0	0
FS, fully satisfied; NA, not applicable; NS, not satisfied; PS, partially satisfied.				
* N = 10 for each item evaluated.				
† The "NA" rating was acceptable for item numbers 11a, 11b, 12, 13a, 13b, 20a, 20b, and 21.				

### Comprehensive Reporting of Costs

A notable finding was the consistent reporting of costs associated with homeopathic interventions across the majority of studies. Detailed breakdowns of direct medical costs, indirect costs, and resource utilization were frequently provided, facilitating a comprehensive understanding of the economic implications associated with homeopathic treatments.

### Methodological Transparency

While many studies demonstrated robust reporting of economic outcomes, a subset exhibited shortcomings in methodological transparency. Specifically, deficiencies were observed in the description of analytic methods, such as the handling of uncertainty and sensitivity analyses, which are crucial for

assessing the reliability and generalizability of economic evaluations.

### Heterogeneity in Study Designs

Heterogeneity was evident in the study designs employed across the reviewed literature, reflecting the diverse methodologies utilized to assess the economic impact of homeopathy. Studies ranged from cost-effectiveness analyses and cost-utility analyses to cost-minimization studies, highlighting the multifaceted approaches adopted to evaluate the economic efficiency of homeopathic interventions.

### Outcome Measures

Outcome measures varied widely among the included studies, encompassing diverse economic endpoints such as cost per quality-adjusted life year (QALY), cost per symptom-free

day, and cost per successfully treated patient. This diversity underscores the complexity of economic evaluation in homeopathy and the importance of tailoring outcome measures to the specific context of each study.

### Quality of Evidence

Assessment of the overall quality of evidence revealed a mixture of high-quality studies with robust methodologies and lower-quality studies with methodological limitations. While certain studies demonstrated rigorous adherence to CHEERS reporting guidelines and methodological standards, others exhibited shortcomings that may compromise the validity and reliability of their findings.

### Emerging Trends and Research Gaps

An emerging trend identified in this review was the increasing emphasis on patient-reported outcomes and quality of life measures in economic evaluations of homeopathy. Additionally, notable research gaps were identified, including the need for standardized reporting practices, enhanced methodological rigor, and greater transparency in economic evaluations within the field.

The reviewed studies were assessed across various study characteristics using a scale ranging from fully satisfied (FS), partially satisfied (PS), not satisfied (NS), to not applicable (NA). Each item was evaluated with a sample size (N) of 10. The qualitative data from the reviewed studies suggests varying levels of satisfaction across different study characteristics. Overall, the titles and abstracts of the studies were consistently rated as fully satisfied (FS) by all reviewers, indicating a strong presentation of study objectives and findings. Similarly, the background and objectives section received high ratings across the board, indicating clarity and relevance. In terms of methods, aspects such as study perspective, time horizon, and choice of health outcomes were universally well-received, demonstrating thoroughness and appropriateness.

However, some discrepancies were noted in certain methodological aspects. While the measurement of effectiveness (11a) generally met expectations, there were instances where

reviewers were only partially satisfied (PS) with the measurement methods (11b). Similarly, estimating resources and costs (13a, 13b) showed a trend towards dissatisfaction (NS), particularly in the detailed estimation of costs. Concerns regarding assumptions and analytical methods were also raised by some reviewers, although these were generally addressed to varying degrees.

Results sections displayed mixed satisfaction levels. While study parameters and analytical methods were generally well-received, there were instances of dissatisfaction (NS) with the characterization of uncertainty (20a, 20b) and heterogeneity (21). Incremental costs and outcomes (19) also showed discrepancies, with some studies meeting expectations while others fell short.

In discussions, study findings, limitations, and generalizability were consistently rated as fully satisfied (FS), indicating comprehensive coverage and critical reflection. However, there were notable disparities in the reporting of funding sources and conflicts of interest, with some studies lacking transparency in these areas.

### Discussion

#### Unlocking the Potential of Homeopathy: Efficacy, Economics, and Policy Perspectives –

Unlocking the potential of homeopathy encompasses a multifaceted exploration into its efficacy, economic implications, and policy considerations. Proponents tout its holistic approach and minimal side effects, while critics often question its scientific basis and efficacy beyond a placebo effect. However, delving deeper into this subject reveals a nuanced landscape that intertwines medical, economic, and policy dimensions. (11) At the heart of the discussion lies the efficacy of homeopathy. While some studies suggest positive outcomes for certain conditions, others point to methodological flaws and the lack of robust evidence. Proponents argue that homeopathy's individualized approach and focus on the body's self-healing mechanisms provide benefits that conventional medicine may overlook. Additionally, they highlight the low risk of adverse effects associated with homeopathic





remedies, making them appealing to individuals seeking alternatives to mainstream treatments. However, skepticism persists within the scientific community, with critics emphasizing the need for rigorous clinical trials to validate homeopathy's efficacy beyond anecdotal evidence. (12)

Beyond its clinical efficacy, homeopathy also raises economic considerations. Advocates argue that its emphasis on prevention and holistic health could lead to cost savings by reducing the burden of chronic diseases and avoiding expensive interventions. Moreover, homeopathic remedies are often less expensive than pharmaceutical drugs, potentially offering affordable treatment options, particularly in resource-constrained settings. However, critics caution against diverting resources towards treatments that lack scientific support, arguing that investments should prioritize evidence-based interventions with proven outcomes to optimize healthcare spending and maximize public health impact. (13-14)

The policy landscape surrounding homeopathy is complex and varies widely across different jurisdictions. Some countries have integrated homeopathy into their healthcare systems, providing reimbursement for consultations and remedies through public or private insurance schemes. These policies reflect a recognition of consumer demand for complementary and alternative therapies and an acknowledgment of the potential benefits they may offer. However, other countries have taken a more skeptical stance, implementing regulations to restrict the marketing and practice of homeopathy or excluding it from reimbursement schemes due to concerns about safety, efficacy, and cost-effectiveness. (15-16)

Navigating the intersection of efficacy, economics, and policy in homeopathy requires a balanced approach that considers diverse perspectives and empirical evidence. Research efforts should focus on conducting high-quality studies to elucidate homeopathy's mechanisms of action, identify patient subgroups most likely to benefit, and determine its comparative effectiveness against conventional treatments. (17-19) Economic analyses should evaluate the cost-effectiveness of incorporating homeopathy into healthcare systems, accounting for potential savings, as well as the opportunity costs associated with allocating resources to unproven interventions. Policy decisions should be

informed by scientific evidence, guided by principles of patient safety and autonomy, and responsive to public preferences and values. Unlocking the potential of homeopathy necessitates a comprehensive examination of its efficacy, economic implications, and policy considerations. While contentious debates persist, approaching this topic with an open mind and a commitment to scientific inquiry offers the best chance of harnessing the benefits of homeopathy while safeguarding public health and healthcare resources. (20-21) Ultimately, the quest to optimize healthcare delivery requires a willingness to explore diverse therapeutic approaches and adapt policies to reflect evolving evidence and societal needs.

### **Cost-Effective Management of Recurrent Infantile Rhinopharyngitis: Homeopathic vs. Antibiotic Strategies – (12)**

The pharmacoeconomic study aimed to compare the efficacy, quality of life impact, and costs associated with two treatment approaches ('homeopathic strategy' versus 'antibiotic strategy') utilized by allopathic and homeopathic general practitioners in managing recurrent acute rhinopharyngitis in children aged 18 months to 4 years. Statistical analysis of data from 499 patients involved in a previous 6-month prospective study revealed that the 'homeopathic strategy' outperformed the 'antibiotic strategy' in terms of medical effectiveness, with fewer episodes of rhinopharyngitis (2.71 vs. 3.97,  $P < 0.001$ ) and complications (1.25 vs. 1.95,  $P < 0.001$ ). Additionally, patients under the 'homeopathic strategy' reported better quality of life scores on the Par-Ent-QoL scale (21.38 vs. 30.43,  $P < 0.001$ ). Furthermore, the 'homeopathic strategy' demonstrated lower direct medical costs covered by Social Security (88 Euros vs. 99 Euros,  $P < 0.05$ ) and reduced sick-leave instances among parents (9.5% vs. 31.6%,  $P < 0.001$ ). These findings suggest that homeopathy could represent a cost-effective alternative to antibiotics in managing recurrent infantile rhinopharyngitis, highlighting potential benefits in terms of efficacy, quality of life, and economic considerations.

### **Evaluating Homeopathic Medicines in Germany: A Comprehensive Analysis – (13)**

On January 11, 2024, Germany's Federal Health Minister Prof. Dr. Karl Lauterbach announced a

significant shift in the financing of services lacking proven medical benefits by the Statutory Health Insurance (SHI), sparking a thorough investigation into homeopathic remedies within the German healthcare system. Despite their long-standing popularity, questions have been raised about the efficacy and justification of funding for homeopathy. Market analysis reveals substantial sales of €607 million in 2022, predominantly driven by self-medication, even though homeopathy was delisted from the SHI benefits catalog in 2003. Regulatory concerns include the evidentiary standards for efficacy and inconsistent compliance with advertising regulations, posing risks to consumer safety and transparency. Clinical scrutiny highlights a lack of high-quality evidence supporting homeopathic remedies, with concerns about adverse drug reactions and their comparative costliness. These findings underscore the need for regulatory reforms and a reevaluation of reimbursement policies, aligning with Prof. Dr. Karl Lauterbach's stance. The complexity of the homeopathic industry in Germany necessitates evidence-based policymaking and regulatory vigilance to ensure patient safety and rational healthcare practices.

#### **Evaluating the Cost-Effectiveness of Homeopathic Treatments: A Decade of Progress and Challenges Ahead – (14)**

The systematic review builds upon previous work by Viksveen et al., offering insights into the economic evaluations of homeopathic treatments over the past decade. Incorporating six new studies and employing a hierarchical decision matrix alongside a standardized health economic tool, this review aims to provide an updated perspective on homeopathy's cost-effectiveness. Despite heterogeneity across the 21 reviewed studies in therapeutic indications and methodologies, a trend emerges favoring homeopathic treatment in terms of improved health outcomes and reduced costs. While varying methodological qualities were observed, recent publications demonstrate higher standards, emphasizing comprehensive economic analyses. The findings align with assessments of complementary and integrative medicine, highlighting the need for high-quality economic research across therapeutic fields. Acknowledging limitations, future directions emphasize well-defined conditions, randomized

controlled trials, and comprehensive cost-outcome assessments. Expert opinion underscores the importance of rigorous study design and standardized assessments to inform policy decisions and build confidence in homeopathic treatments' value, anticipating continued improvements in study quality.

#### **Homeopathy in Primary Healthcare: Efficacy, Affordability, and Patient Satisfaction - Insights from Two Studies and Policy Recommendations – (15)**

Findings from Study 1 reveal significant patient turnout in both homeopathic and allopathic clinics, with homeopathic clinics catering to a substantial population, indicating demand for homeopathic treatments. A diverse range of ailments is managed through homeopathy, with notably lower costs per visit compared to allopathic clinics, suggesting potential cost-effectiveness. Study 2 highlights high satisfaction levels among patients in homeopathic clinics and mutual referral patterns between allopathic and homeopathic systems, emphasizing collaborative healthcare delivery. These findings support homeopathy's efficacy, affordability, and patient satisfaction, suggesting its potential to reduce healthcare expenditures, particularly in developing countries. The endorsement of integrating homeopathy into primary healthcare frameworks exemplifies a promising strategy for maximizing cost savings and enhancing patient satisfaction globally.

#### **Assessing the Effectiveness and Cost-Effectiveness of Individualized Classical Homeopathy (ICCH) Programs: Insights from a Study on Multiple Diagnoses – (16)**

The study evaluates the efficacy and cost-effectiveness of additional enrollment in an Individualized Classical Homeopathy (ICCH) program across various diagnoses. Results indicate that ICCH participants with migraine or headache, asthma, and depression experienced additional benefits compared to control groups, although the effect for depression was deemed minimally clinically relevant after six months. From the insurer's perspective, ICCH participants with these diagnoses exhibited higher costs over a 12-month period, yet when considering Quality-Adjusted Life Years (QALYs), ICCH treatment appeared cost-effective for certain conditions. Strengths include



the reflection of routine care scenarios and robust economic analysis using health claims data. However, limitations such as the observational design, small sample size, and protocol violations warrant caution in interpretation. Further research is needed to confirm these findings and assess the role of ICCH within broader healthcare contexts, particularly given the availability of evidence-based treatments for the evaluated diagnoses.

### **Evaluating Methodology and Implications of Homeopathic General Practitioner (Ho-GP) Management – (17)**

This observational comparative effectiveness study examines the management of atopic eczema in children over a three-year period, comparing conventional treatment with homeopathic approaches. While no significant long-term outcome differences were found between the two modalities, the study design reflects real-world clinical practice, enhancing external validity. However, baseline differences and the absence of randomization pose limitations to internal validity. Both treatment groups exhibited improvements in disease severity, with decreasing medication usage over time. Nevertheless, homeopathic treatment incurred significantly higher long-term costs, primarily driven by doctors' fees and medical aids. Methodological considerations in cost estimation were acknowledged, with sensitivity analyses supporting consistent cost disparities. These findings highlight the importance of considering cost-effectiveness alongside clinical outcomes when evaluating therapeutic interventions and emphasize the need for rigorous research to inform treatment decisions effectively.

### **Economic Evaluation of Homeopathy: A Critical Review of Evidence for Healthcare Decision-Making – (18)**

The economic evaluation of complementary and alternative medicine (CAM) therapies like homeopathy holds significant importance in informing healthcare decision-making amidst resource constraints. Our review aimed to scrutinize and evaluate existing economic assessments of homeopathy to contribute to the evidence base guiding policy makers, clinicians, and healthcare payers, as well as patients.

Fifteen pertinent articles reporting on fourteen economic evaluations of homeopathy. These evaluations collectively involved 3,500 patients who received homeopathic treatment, with a median of 97 patients (interquartile range: 48-268), and encompassed control group participants, with a median of 57 (IQR: 40-362). Among the fourteen studies, eight indicated improvements in patients' health alongside cost savings, while four studies reported comparable improvements in homeopathy patients to those in control groups, with similar costs. However, two studies observed similar health outcomes to conventional treatments but at higher costs.

Despite these findings, the studies exhibited considerable heterogeneity and methodological weaknesses. Consequently, drawing definitive conclusions based on existing economic evaluations of homeopathy remains challenging. The evidence regarding the costs and potential benefits of homeopathy appears promising, the heterogeneity and methodological limitations of existing studies warrant caution. Future research endeavors should address these limitations to provide more robust evidence for guiding healthcare decision-making.

### **Unraveling the Socio-Economic Tapestry of Haemophilia: Insights from Nashik to Nagpur – (19)**

Haemophilia, a rare genetic bleeding disorder, imposes substantial challenges on individuals, families, and society. This study explores the social and economic impacts of managing haemophilia, revealing significant financial burdens exacerbated by clinical complexities. In regions like Nashik, Mumbai, Amravati, Surat, and Nagpur, where treatment is sought extensively, economic strain is pronounced. The demographic profile skews male, with onset often in youth, highlighting the lifelong nature of the condition. Marital status and education levels underscore socio-economic context, with many patients unmarried and possessing varying education levels. Employment struggles are evident, with a significant portion unemployed or in unstable jobs. Financial constraints worsen caregiving burdens, exacerbated by limited access to medical insurance. Co-morbidities compound clinical complexities, emphasizing the need for comprehensive healthcare solutions. Alternative therapies like homeopathy emerge as cost-effective adjuncts, potentially reducing financial strain. Their reported



satisfaction underscores the importance of exploring complementary approaches. Integrating such therapies, especially in developing nations, offers promise in mitigating economic strain and improving health outcomes. However, challenges remain in implementing these approaches in developed nations. This study emphasizes understanding the social and economic dimensions of haemophilia management, offering insights into holistic, financially sustainable care approaches.

### **Analyzing Long-Term Health Care Costs: A Comparative Study of Homeopathy vs. Conventional Care in Integrated Contracts – (20)**

This comprehensive study examines healthcare costs associated with homeopathy usage within an integrated care contract compared to conventional care over a 33-month period. Results reveal that patients utilizing homeopathy experienced higher healthcare costs persistently throughout the observation period, supported by a robust sample size of over 43,000 insured individuals. Despite this strength, limitations exist, such as the restriction to data from a single insurer, potentially biasing results towards a more affluent demographic. Additionally, while efforts were made to enhance comparability between groups, residual confounding remains a concern. The study's focus solely on costs prevents assessment of treatment outcomes, and the observational design introduces the possibility of selection bias. Nonetheless, the findings underscore the importance of long-term analyses in evaluating health interventions and suggest the need for further research to understand the drivers of cost disparities and to inform evidence-based healthcare policy and practice.

### **Comparing Conventional vs. Homeopathic Treatment Approaches for Atopic Eczema in Children: Insights from a Three-Year Observational Study – (21)**

This observational comparative effectiveness study examines the management of atopic eczema in children over a three-year period, comparing conventional treatment with homeopathic approaches. While no significant long-term outcome differences were found between the two modalities, the study design reflects real-world clinical practice, enhancing

external validity. However, baseline differences and the absence of randomization pose limitations to internal validity. Both treatment groups exhibited improvements in disease severity, with decreasing medication usage over time. Nevertheless, homeopathic treatment incurred significantly higher long-term costs, primarily driven by doctors' fees and medical aids. Methodological considerations in cost estimation were acknowledged, with sensitivity analyses supporting consistent cost disparities. These findings highlight the importance of considering cost-effectiveness alongside clinical outcomes when evaluating therapeutic interventions and emphasize the need for rigorous research to inform treatment decisions effectively.

Overall, while the reviewed studies demonstrated strengths in areas such as study design, objectives, and presentation of findings, there were areas where improvements could be made, particularly in resource estimation, uncertainty characterization, and transparency in funding and conflicts of interest disclosures. Addressing these concerns could enhance the credibility and applicability of future research in the field.

Based on the cumulative evidence from these studies, several recommendations can be proposed:

**1.Promotion of Homeopathic Clinics:** Governments and healthcare authorities should consider promoting the establishment of homeopathic clinics at the primary healthcare level to mitigate healthcare costs and improve accessibility to alternative treatment modalities.

**2.Policy Support and Infrastructure Development:** Governments should continue to provide policy support and invest in infrastructure development for the expansion of homeopathic healthcare services, as exemplified by the Indian government's commitment to fostering the growth of recognized systems of medicine.

**3.Adoption of Collaborative Healthcare Models:** Healthcare systems globally can benefit from adopting collaborative models that facilitate mutual referrals between different medical systems, optimizing patient outcomes and satisfaction.



#### 4. Utilization of India's Homeopathic Resources:

India's extensive homeopathic infrastructure, including manpower, institutions, and drug manufacturing industry, presents a valuable resource that can be leveraged to promote homeopathy on a global scale. Other countries can learn from India's experiences in clinical practice, research, and regulatory frameworks to enhance the growth of homeopathy worldwide.

Here are some essential considerations and steps for conducting pharmacoeconomic studies in homeopathy:

**1. Study Design:** Determine the appropriate study design based on the research question and available resources. Common study designs include cost-effectiveness analysis (CEA), cost-utility analysis (CUA), cost-benefit analysis (CBA), and comparative effectiveness research (CER).

**2. Identification of Interventions:** Identify the homeopathic interventions or treatments to be evaluated. This may include specific homeopathic remedies, treatment protocols, or therapeutic approaches.

**3. Comparator Selection:** Choose appropriate comparators for the homeopathic interventions. Comparators can include conventional medicine treatments, placebo, or other alternative therapies.

**4. Outcome Measures:** Define relevant outcome measures to assess the effectiveness and economic impact of homeopathic treatments. These measures may include clinical outcomes, quality-adjusted life years (QALYs), symptom improvement, adverse events, and healthcare resource utilization.

**5. Data Collection:** Collect data on resource use, costs, and clinical outcomes associated with homeopathic treatments and comparators. This may involve conducting clinical trials, observational studies, or retrospective analyses.

**6. Cost Analysis:** Calculate the costs associated with homeopathic treatments, including direct medical costs (e.g., consultation fees, medication costs) and indirect costs (e.g., productivity losses, transportation expenses).

**7. Effectiveness Analysis:** Assess the clinical effectiveness and health outcomes associated

with homeopathic treatments compared to the chosen comparators. This may involve analyzing patient-reported outcomes, disease-specific measures, and health-related quality of life.

**8. Cost-Effectiveness Analysis (CEA):** Evaluate the cost-effectiveness of homeopathic treatments by comparing the costs and health outcomes in terms of a common unit (e.g., cost per symptom improvement, cost per QALY gained).

**9. Cost-Benefit Analysis (CBA):** Determine the economic benefits of homeopathic treatments by comparing the monetary value of health improvements with the costs incurred. This analysis helps decision-makers weigh the financial gains against the costs of homeopathic interventions.

**10. Sensitivity Analysis:** Conduct sensitivity analyses to assess the robustness of study findings to variations in key parameters, such as discount rates, efficacy estimates, and unit costs.

**11. Reporting and Interpretation:** Clearly report study findings, including methodology, results, and conclusions. Interpret the results in the context of existing evidence and policy implications for healthcare decision-making.

**12. Peer Review and Publication:** Submit the study for peer review and publication in reputable scientific journals to ensure rigor and credibility of the research findings.

#### Conclusion

Exploring pharmacoeconomic studies in the homeopathic system involves assessing the cost-effectiveness, cost-benefit, and cost-utility of homeopathic treatments compared to conventional medicine or other interventions. This narrative review provides a comprehensive overview of pharmacoeconomic studies in homeopathy, evaluated through the lens of the CHERRS reporting guidelines. While certain studies demonstrated robust reporting and methodological rigor, opportunities exist for improving the consistency, transparency, and quality of economic evaluations within this domain. Addressing these challenges is essential for advancing the evidence base and facilitating informed decision-making regarding the economic implications of homeopathic interventions.

## Ethical Considerations

## Funding

## Authors' contributions

## Conflict of interest

## Reference

- [1] Tonin FS, Aznar-Lou I, Pontinha VM, Pontarolo R, Fernandez-Llimos F. Principles of pharmacoeconomic analysis: the case of pharmacist-led interventions. *Pharm Pract (Granada)*. 2021 Jan-Mar;19(1):2302. doi: 10.18549/PharmPract.2021.1.2302. Epub 2021 Feb 22. PMID: 33727994; PMCID: PMC7939117.
- [2] Abraham I, Hiligsmann M, Lee KK, Citrome L, Colombo GL, Mike Gregg. What to expect in 2024: important health economics and outcomes research (HEOR) trends. *Expert Review of Pharmacoeconomics & Outcomes Research*. 2023 Dec 22:1-8.
- [3] Jakovljevic M, Verhaeghe N, Souliotis K, Krstic K. Challenges of pharmacoeconomics in global health arena—Contemporary momentum in the early 2020s. *Frontiers in Public Health*. 2023 Apr 13;11: 1189671.
- [4] Patel N, Yanamala S, Rai M. Assessment of Extent and Quality of Pharmacoeconomic Studies in India Using Quality of Health Economic Studies Score: A Targeted Literature Review. *Value in Health Regional Issues*. 2024 May 1;41: 41-7.
- [5] Psenkova MB, Hlavinkova L, Visnansky M, Grega D, Ondrusova M. The Checklist for Standard Methodological Requirements and Reporting of Economic Evaluation of Medicines in Slovakia. *Value in Health Regional Issues*. 2024 Jan 1;39: 14-9.
- [6] Thomas D, Hiligsmann M, John D, Al Ahdab OG, Li H. Pharmacoeconomic analyses and modeling. In: *Clinical pharmacy education, practice and research*. 2019 Jan 1 (pp. 261-275). Elsevier.
- [7] Ahmad A, Patel I, Parimilakrishnan S, Mohanta GP, Chung H, Chang J. The role of pharmacoeconomics in current Indian healthcare system. *J Res Pharm Pract*. 2013 Jan;2(1):3-9. doi: 10.4103/2279-042X.114081. PMID: 24991597; PMCID: PMC4076893.

## ACKNOWLEDGMENTS

Authors declare no any acknowledgement.

- [8] Paulden M. A Framework for the Fair Pricing of Medicines. *Pharmacoeconomics*. 2024 Feb;42(2):145-64.
- [9] Husereau D, Drummond M, Petrou S, Carswell C, Moher D, Greenberg D, Augustovski F, Briggs AH, Mauskopf J, Loder E. Consolidated health economic evaluation reporting standards (CHEERS) statement. *Bmj*. 2013 Mar 25;346.
- [10] Husereau D, Drummond M, Augustovski F, de Bekker-Grob E, Briggs AH, Carswell C, Caulley L, Chaiyakunapruk N, Greenberg D, Loder E, Mauskopf J. Consolidated Health Economic Evaluation Reporting Standards 2022 (CHEERS 2022) statement: updated reporting guidance for health economic evaluations. *MDM Policy & Practice*. 2022 Jan;7(1):23814683211061097.
- [11] Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71. doi: 10.1136/bmj.n71.
- [12] Leemhuis H, Seifert R. Prescriptions of homeopathic remedies at the expense of the German statutory health insurance from 1985 to 2021: scientific, legal and pharmacoeconomic analysis. *Naunyn Schmiedebergs Arch Pharmacol*. 2024 Mar 2. doi: 10.1007/s00210-024-03005-x. Epub ahead of print. PMID: 38430230.
- [13] Ostermann T, Burkart J, De Jaegere S, Raak C, Simoens S. Overview and quality assessment of health economic evaluations for homeopathic therapy: an updated systematic review. *Expert Rev Pharmacoecon Outcomes Res*. 2024 Jan;24(1):117-142. doi: 10.1080/14737167.2023.2266136. Epub 2024 Jan 18. PMID: 37795998.
- [14] Manchanda RK, Kulhashreshtha M. Cost effectiveness and efficacy of homeopathy in primary health care units of the Government of Delhi—a study. *Allgemeine Homöopathische Zeitung*. 2005;250(02):33. Available at: Homeopathy Cost Effectiveness Study.



- [15] Kass B, Icke K, Witt CM, et al. Effectiveness and cost-effectiveness of treatment with additional enrollment to a homeopathic integrated care contract in Germany. *BMC Health Serv Res.* 2020;20:872. doi: 10.1186/s12913-020-05706-4.
- [16] Colas A, Danno K, Tabar C, Ehreth J, Duru G. Economic impact of homeopathic practice in general medicine in France. *Health Econ Rev.* 2015 Dec;5(1):55. doi: 10.1186/s13561-015-0055-5. PMID: 26152791; PMCID: PMC4495089.
- [17] Viksveen P, Dymitr Z, Simoens S. Economic evaluations of homeopathy: a review. *Eur J Health Econ.* 2014 Mar;15(2):157-74. doi: 10.1007/s10198-013-0462-7. PMID: 23397477.
- [18] Rita K, Tapas K, Afroz S, Aafiya S, Hiral B, Omkar K, Gulfisha M, Uday B. Assessment of social and economic impact of healthcare with homeopathy for haemophilia in cognizance with patients' perspective: a cross-sectional survey. *Int J Community Med Public Health.* 2023 Feb 28;10(3):1081-90. Available at: *Int J Community Med Public Health Article.*
- [19] Ostermann JK, Witt CM, Reinhold T. A retrospective cost-analysis of additional homeopathic treatment in Germany: Long-term economic outcomes. *PLoS ONE.* 2017;12(9):e0182897. doi: 10.1371/journal.pone.0182897.
- [20] Roll S, Reinhold T, Pach D, Brinkhaus B, Icke K, Staab D, Jäckel T, Wegscheider K, Willich SN, Witt CM. Comparative effectiveness of homeopathic vs. conventional therapy in usual care of atopic eczema in children: long-term medical and economic outcomes. *PLoS One.* 2013 Jan 31;8(1):e54973.