

HEALTH ECONOMICS AND COST-EFFECTIVE DECISION MAKING: ADDRESSING CONTEMPORARY CHALLENGES AND EXPLORING SOLUTIONS IN PAKISTAN

Mohsin Hassan Alvi*¹, Muddassir Sayeed Siddiqui^{2,3}, Faseeh Ullah Khan⁴, Qazi Obaid Ullah Ansari⁵, Shagufta Sultana⁶, Munazza S. Obaid⁷, Tehmina Ashraf⁸, Ayesha Zulfiqar⁹

*¹The University of Karachi, ²Ilma University, Karachi, ³International Lab for Interdisciplinary Research, ⁴Nazeer Hussain University, ⁵First Equity Modarba, ⁶Pakistan Institute of Development Economics, ⁷University of Central Lancashire, ⁸Bahria University, ⁹Dow University of Health Sciences

Corresponding Author: *¹mohsin.h.alvi@pill.org.pk

Received: 29 December, 2023 Revised: 18 January, 2024 Accepted: 24 January, 2024 Published: 9 February, 2024

ABSTRACT

Health economics plays a vital role in underpinning the healthcare costs and their significant impact on healthcare decisions, particularly in resource-scarce settings such as Pakistan. This article emphasizes the multifaceted cost considerations in healthcare, including both direct treatment costs and often-overlooked indirect expenses like travel, parking, special diets, and lost wages due to illness. The article emphasizes the role of economic evaluations in addressing Pakistan's healthcare challenges, examining cost-effective options and providing a roadmap for a healthier future. An evidence synthesis approach was applied to explore possible solutions to health challenges. In addition to this, expert opinions were taken into account to investigate how economic concepts are relevant in decision making for healthcare. The published qualitative data were combined, organized according to research objective and reported in tabular form. Economic concepts and evaluations are found useful in relation to healthcare infrastructure of Pakistan. There are possible economic solutions available to cope with the hurdles of health system. This article advocates the policymakers to prioritize involving health economists in policy formulation and promoting low-cost or cost-effective health interventions, ensuring fair allocation of health budget.

Keywords: Healthcare, Challenges, Health Economics, Way Forward, Pakistan

INTRODUCTION

Pakistan faces several healthcare challenges, including a significant reliance on out-of-pocket payments, leading many to opt for self-medication and neglecting their health. Delays in diagnosis and a lack of funding further exacerbate the situation. Knowing the economy of health is the best way to make health decision based on limited resourcesⁱ. As healthcare is the most crucial aspect of human life, health economics examines all the factors which influence the costs and quality of this industryⁱⁱ. It creates a link between the potential behavior of stakeholders and its impact on quality of care in resource scarce settings. Within a marginalized economy it throws light on how people pay for their health, how their payments are processed and how the system could be restructured to maximize the

gainsⁱⁱ. Since there are several elements associated with cost of health such as direct cost related to treatment and indirect cost (sometimes it's hidden) refers to: travel for seeking health, parking fee, special diet for patient, away from work due to illness, caregiver financial loss due to accompany with patient. It's important to consider all such aspects while making healthcare decisions. In presence of limited resources and alternate uses, a big question arises if person can get better treatment within Rs.50/- then why to spend Rs.100/- on a treatment. Health economics enables to understand the relation between cost and health outcome. Economic evaluations are performed to choose the best alternate among available options using treatment cost and health effect ratio. In a resource

scarce country like Pakistan, health economics play a vital role to make such cost-effective health decisions. The health problems in Pakistan are not wicked problems that do not have any solution. Health financing and utilizing funds correctly are the best solution. The aim of this article is to highlight the contemporary challenges of healthcare and explore the possible solutions through health economics in existing context.

Health Challenges

The main challenge is associated with treatment cost. About 68% of total population pay out of pocketⁱⁱⁱ because health insurance is not affordable and out of reach to majority of poor population. Not only in low-and middle-income countries (LMICs), even the high-income countries like United States fail to provide health insurance to 28 million people and medical expenditures pushed 8 million people into poverty^{iv}. The scenario is much more alarming in poor countries. Selection of Doctor or Hospital is a critical decision because quality requires cost and quality cannot be compromised on health. This is why, majority of patients go on self-medication because medicines are accessible on pharmacy even without prescriptions. In addition to direct treatment costs, due to time constraint, barriers to medical care and no health insurance many people neglect their health conditions and avoid treatments till they can, and carry illness for years^v. This is another reason that long term illnesses are very common^{vi}. People with spiritual belief seek help from faith healers such as pir, Faqeer or other religious personalities. Another significant problem is related with investigations of disease. As universal health coverage remains just a wordily promise without quality care services, inaccurate diagnosis, medication errors make the situation worse^{vii}. Many of the times, doctor could not diagnose illness after getting several investigations and refers to other specialist. WHO reported that healthcare professionals in LMICs were able to make correct diagnosis only one third to three quarters of time, while 15% of hospital expenditures were associated with mistakes in care^{viii}. All such factors put a negative effect on physical and mental health and most important there is also an economic cost of delay in diagnose.

Another problem which adds to the burden of illness is the limited allocation of healthcare budgets. With a very minimal GDP allocation, only some miracles can improve health status of people^{viii}. All these barriers are embedded to Pakistan's healthcare system and hampering the access for disadvantaged groups^{ix}. poor socio-economic status, job instability, rising inflation, and long-term physical illnesses are affecting mental health adversely^x. Despite the high prevalence of depression (3.13%) and anxiety disorders (1.70%) out of total Disability Adjusted Life Years (DALYs) there is no separate proportion of mental health budget in total health budget although of Pakistan^{xi}. Funds are given to psychiatric units and very less portion is being used in policies reform. Neglecting the mental health is a prime cause of increase in economic burden of mental illness (617 billion PKR)^{xii}.

A Way Forward

Despite severe ongoing economic crises, numerous improvements in the health sector have been observed. Still, there is a long way to go toward development of robust healthcare system for general population. One of the most effective ways to improve health is to ensure cleanliness or remove litter on the street. Effective waste management and recycling system play an important role.

As offering the best treatment at an affordable price is national health agenda, government should better utilize healthcare experts in making policy and implementation plan. Low cost- and cost-effective health interventions^{xiii} should be implemented along with development of digital models for healthcare such as Aga Khan Development Network Digital Health Programme, Sehat Sahulat Card (SSC) and Benazir Income Support Programme (BISP). There must be a separate provision of mental healthcare in the health budget. Spend more on child and maternal health that will give maximum return in future. Spending millions of rupees on these factors will save billions of rupees in future.

As the health economics is spreading gradually in educational institution but yet to be recognized as a separate discipline^{xiv} that can never grow until new research introduce by researchers. There is a strong need to create a pool of researchers/academicians for health economics promotion and bring knowledge

and inventions together for culturally specific context.

Dirty localities reflect the lifestyle of people. The change in behavior towards taking an ownership for neighborhood can improve the standard of living. Religious/Influential personalities' roles are very important in realization of such thoughts.

The spillover effect of patient's health on family member is very high due to abnormal migration of patient from resource scarce districts to resource rich districts such as Karachi, Lahore, Rawalpindi, Peshawar, and Quetta. The entire family migrates with patient and live within or outside the hospital premises. This affects family life and localities near the hospital. About 68% people go to private hospitals ⁱⁱⁱ due to not getting space in public hospitals as they are overburdened. Government should allocate health budget keeping an eye of burden of diseases and population density of districts. Moreover, strengthening the primary care will reduce the burden at secondary and tertiary care facilities and this will help to reduce migration.

Health Financing

There must be numerous health financing decisions that need to be taken by government but increasing the burden of diseases is an indication that health financing is not among the priorities of the government ^{vi}. Imposing the below proposed solutions will bring a change in the health system.

Import of cars and motor bikes (especially 70cc engines) must be completely banned and provide better transport service that will give a graceful travel to people. Driving a big car with single person should never encourage. Promote mass transit in order to save energy that can be used in industries and the health sector. Beside these, thousands of acre land are wasted and not in use, especially in South Punjab, Thar areas and Balochistan. By utilizing those lands, overseas housing schemes should be introduced that will bring more dollars into the country. Some areas of KPK have good worth of living and can be used efficiently for this purpose.

Foreign assistance can help in developing the strategy of setting priorities for improving health such as health policy and system development, addressing social determinants of health, communicable and non-communicable disease and

mental health, improving the health for women and child, disaster risk management, and partnership resource mobilization and coordination^{xv}.

Discussions

Economics is an important perspective in providing solution to healthcare challenges, such as, for improving the healthcare system, it is essential to invest in infrastructure, increase the number of healthcare facilities, and train and retain more healthcare workers. Additionally, Pakistan can benefit from a social health insurance system that provides financial protection to citizens, ensuring that the cost of healthcare services does not push people further into poverty. By combining these efforts with public health education and disease prevention initiatives, Pakistan can work towards a healthier population and a more robust economy in the long run. The possible economics solutions are mentioned alongside healthcare challenges (See Below Table).

Table 1
Healthcare Challenges and Economic Solutions in Pakistan

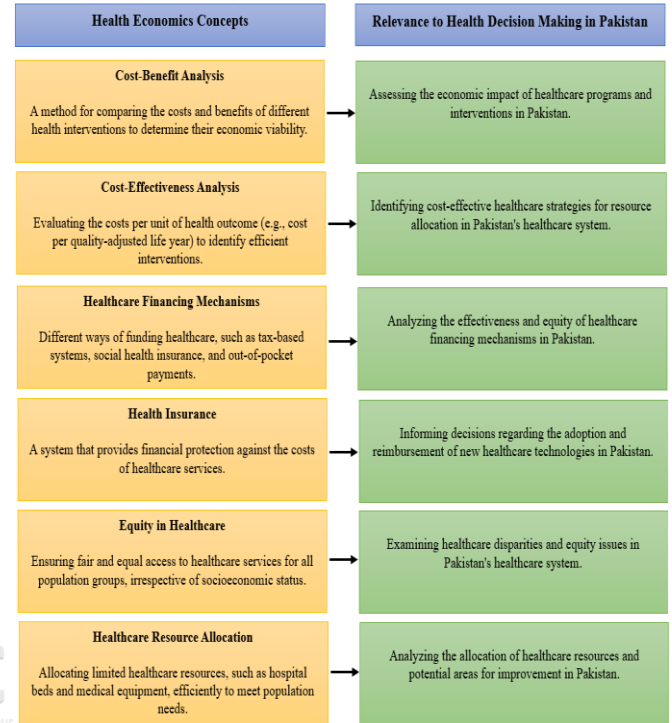
S #	Healthcare Challenges	Economic Solutions
1	Rising Healthcare Costs	- Cost-sharing Mechanisms - Reduced out-of-pocket expenses - Containment of healthcare spending
2	Quality of Care	- Pay-for-Performance Programs - Improved healthcare outcomes - Enhanced accountability of providers
3	Healthcare Innovation and Research	- Investment in Research and Development - Stimulated medical research and technological advancements - Increased availability of innovative treatments
4	Healthcare Workforce Shortage	- Training and Education Programs - Improved healthcare delivery - Increased healthcare workforce supply
5	Limited Access to Healthcare	- Investment in rural healthcare infrastructure - Incentives for medical education and training - Universal healthcare coverage through insurance
6	Disease Outbreaks and Epidemics	- Strengthening healthcare surveillance, data collection and analysis

		<ul style="list-style-type: none"> - Investment in vaccine manufacturing and distribution - Establishing a national emergency response framework
7	High Maternal and Child Mortality	<ul style="list-style-type: none"> - Investment in maternal and child health programs - Education and awareness campaigns on family planning - Nutritional and Poverty alleviation programs and social safety nets
8	Non-communicable Diseases (NCDs)	<ul style="list-style-type: none"> - Promoting healthy lifestyles through public campaigns - Expanding NCD treatment facilities and services - Subsidies for essential NCD medications
9	Inadequate Healthcare Financing	<ul style="list-style-type: none"> - Increasing healthcare budget allocation - Encouraging private health insurance - Implementing health insurance for vulnerable groups
10	Malnutrition and Food Insecurity	<ul style="list-style-type: none"> - Implement targeted food assistance programs for impoverished communities. - Promote agricultural and livestock development for sustainable food sources. - Develop a national immunization program with a focus on remote areas.

In Pakistan, health policy is heavily influenced by health economics. It is critical to allocate resources effectively and efficiently in a country with limited health resources and a diverse population. Health economics enables the prioritization of healthcare spending, design of health policies that address the most urgent health issues, and the evaluation of the cost-effectiveness of healthcare initiatives. Pakistan may make informed decisions to increase healthcare access, quality, and affordability, which will eventually result in improved health outcomes of general population, by understanding the economic consequences of various health measures. Health economics concepts play a pivotal role in shaping healthcare strategies. Economic evaluations help determine the most financially viable healthcare programs amidst limited resources and the most effective strategies for resource allocation within healthcare system^{xvi}. Evaluating different healthcare financing mechanisms, including insurance, aids in improving accessibility, and allocation of resource effectively are essential for an organized healthcare system. The use of these health economics concepts

for health decision have been discussed in the Pakistan context (See Below Figure).

Figure 1
Health Economics for Health Decision in Pakistan



CONCLUSION

The health economics principles in Pakistan presents multi-dimensional challenges that require immediate attention and strategic planning. Pakistan is struggling with significant out-of-pocket expenses due to insufficient healthcare infrastructure. Key steps toward a progressive healthcare system include strengthening primary care, establishing separate provisions for mental health, promoting health financing strategies, encouraging research in health economics, fairly allocating health resources, and emphasizing preventive healthcare. Pakistan can steer its healthcare policies towards efficient resource utilization by prioritizing contemporary crucial health issues and implementing cost-effective interventions.

Acknowledgement

We express our gratitude to people who gave us thoughts and ideas for the content of this paper. We thank to reviewers for initial review of draft.

Declaration of Interest

No author declares financial, personal, or professional interests

Funding

No external funding was received for the creation of this article.

REFERENCES

- El-Dahiyat, F., Obaid, D., & El Refae, G. (2023). Health Economics. In *Encyclopedia of Evidence in Pharmaceutical Public Health and Health Services Research in Pharmacy* (pp. 1-12). Cham: Springer International Publishing. https://link.springer.com/referenceworkentry/10.1007/978-3-030-50247-8_8-1
- Coursera. (2023). What Is Health Economics and Why Is It Important? <https://www.coursera.org/articles/health-economics>
- Alvi MH & Zehra N (2019). The Health Problems and Role of Health Economics in Pakistan, Magazine Article (Global Mental Health and Cultural Psychiatry, Sep 2019). Retrieved from: https://www.researchgate.net/publication/336030469_The_Health_Problems_and_Role_of_Health_Economics_in_Pakistan
- Ney. J. (2023). Without health insurance, poverty is just a medical bill away. <https://jeremybney.medium.com/without-health-insurance-poverty-is-just-a-medical-bill-away-d62281d61be5>
- Taber, J. M., Leyva, B., & Persoskie, A. (2015). Why do people avoid medical care? A qualitative study using national data. *Journal of general internal medicine*, 30(3), 290–297. <https://doi.org/10.1007/s11606-014-3089-1>
- Malik MA, Wasay M. Economics of health and health care in Pakistan. *J Pak Med Assoc*. 2013 Jul 1;63(7):814-5.
- WHO. (2018). Low quality healthcare is increasing the burden of illness and health costs globally. <https://www.who.int/news/item/05-07-2018-low-quality-healthcare-is-increasing-the-burden-of-illness-and-health-costs-globally>
- Shaikh, B. T., & Ali, N. (2023). Universal health coverage in Pakistan: is the health system geared up to take on the challenge?. *Globalization and Health*, 19(1), 4. <https://globalizationandhealth.biomedcentral.com/articles/10.1186/s12992-023-00904-1#citeas>
- Panezai, S., Ahmad, M. M., & Saqib, S. E. (2017). Factors affecting access to primary health care services in Pakistan: a gender-based analysis. *Development in practice*, 27(6), 813-827.
- Asad, N. & Godil. L (2023). Empowering Mental Health: Opportunities and Challenges in Pakistan. <https://hospitals.aku.edu/pakistan/AboutUs/News/Pages/mental-health-challenges-in-pakistan.aspx>
- Alvi MH, Ashraf T, Naz F, Sardar A, Ullah A, Patel A, Kiran T, Gumber A, Husain N. Burden of mental disorders by gender in Pakistan: analysis of Global Burden of Disease Study data for 1990–2019. *BJPsych Bulletin*. 2023 Sep 29:1-8.
- Alvi MH, Ashraf T, Kiran T, Iqbal N, Gumber A, Patel A, Husain N. Economic burden of mental illness in Pakistan: an estimation for the year 2020 from existing evidence. *BJPsych International*. 2023:1-3.
- Alvi MH, Shiri T, Iqbal N, Husain MO, Chaudhry I, Shakoor S, Ansari S, Kiran

T, Chaudhry N, Husain N. Cost-effectiveness of a culturally adapted manual-assisted brief psychological intervention for self-harm in Pakistan: a secondary analysis of the Culturally Adapted Manual-Assisted Brief Psychological Randomized Controlled Trial. Value in health regional issues. 2022 Jan 1;27:65-71.

Alvi MH & Ashraf T (2022). HEALTH ECONOMICS – A SITUATION ANALYSIS, Magazine Article (Dow University of Health Sciences, Vol 9, Oct-Dec, 2021). Retrieved from: https://www.researchgate.net/publication/360912814_HEALTH_ECONOMICS_-_A_SITUATION_ANALYSIS

World Health Organization. WHO country cooperation strategy at a glance: Pakistan. World Health Organization; 2018.

Torbica A, Tarricone R, Drummond M. Does the approach to economic evaluation in health care depend on culture, values, and institutional context?. The European Journal of Health Economics. 2018 Jul;19:769-7

