REFORMING PAKISTAN'S HEALTHCARE SYSTEM: A COMPARATIVE ANALYSIS WITH DEVELOPED AND DEVELOPING COUNTRIES ON SYSTEM ENHANCEMENT NEEDS AND FINANCING

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ASIA e UNIVERSITY

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ABSTRACT

This study examines the issues and inequities in Pakistan's healthcare system using perspectives of structure, problems, and inadequacy in contrast to developed as well as developing countries. Lack of physical infrastructures, human power, and a weak health system compounded with weak governance structures in Pakistan pushed the country into this position across the healthcare index. Analyzing Pakistan in relation to other countries emphasize on excess and outdated medical technology, minimum and decreasing health care investment, lack of preventive care and health education which turns into a lens to compare with developed countries. In order to complement these gaps, an analysis technique known as Thematic Analysis was used and includes variables like patient satisfaction, Healthcare accessibility, Technological adoption and Healthcare funding. By using thematic analysis, noticeable connections were revealed with the meaning that hospital capacity, financial points, and investments in healthcare technologies and human resources are critical for enhancing the quality and readiness to respond to the healthcare crises. Moreover, interview experiences of professional healthcare, patient participants, and financial experts provide the understanding that the system relies on the external funding source, lacks proper integration with technology, and has no accountability. The findings drawn from it are associated with the four essential directions of the reform, including increasing the hospital's capacity, ensuring financial stability, implementing updated technologies, and raising people's awareness. Benchmarking Pakistan's healthcare system against the developed countries and identifying the strategies to achieve working public-private partnership, enhance the healthcare funding, and to adopt and set the effective use of the advanced technology such as the telemedicine in the Pakistan. It provides comprehensive policies on the healthcare improvement in Pakistan, in addition to arguing for the importance of investing in a strong healthcare system as a means to bolster the economy and increase the population's standards of health.

Keywords: Healthcare system, system enhancement needs, healthcare financing, healthcare infrastructure, health workforce challenges

APPROVAL

This is to certify that this thesis conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, for the fulfilment of the requirements for the degree of Doctor of Philosophy.

The student has been supervised by: **Professor Dr Rosalan bin Ali**

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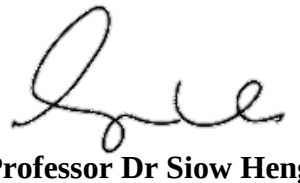
This thesis was submitted to Asia e University and is accepted as fulfilment of the requirements for the degree of Doctor of Philosophy.



Professor Dr Siow Heng Loke
Asia e University
Chairperson, Examination Committee
(19 February 2025)

DECLARATION

I hereby declare that the thesis submitted in fulfilment of the requirements for the Degree of Doctor of Philosophy is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

Name: Asadullah Khan

Signature of Student: **Date**: 19 February 2025

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LIST OF ABBREVIATION

AI	Artificial Intelligence
BHU	Basic Health Unit
CMS	Centers for Medicare and Medicaid Services
COVID-19	Coronavirus Disease 2019
CPH	Comparative Public Health
EHR	Electronic Health Record
EMR	Electronic Medical Records
GDP	Gross Domestic Product
GDPPC	Gross Domestic Product per Capita
HCP	Healthcare Professional
HCW	Healthcare Worker
HHS	Health and Human Services
HIS	Health Information Systems
HRH	Human Resources for Health
ICT	Information and Communication Technology
IPMA	Importance–Performance Map Analysis
LMIC	Low- and Middle-Income Countries
MCH	Maternal and Child Health
MH	Mobile Health
MMR	Maternal Mortality Rate
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PHC	Primary Health Care

PHEIC	Public Health Emergency of International Concern
PPE	Personal Protective Equipment
PPP	Public–Private Partnership
QALY	Quality-Adjusted Life Year
RHC	Rural Health Center
SDGs	Sustainable Development Goals
SES	Socioeconomic Status
SHIT	Sustainable Health Information Technology
TB	Tuberculosis
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.0 Background of Study

Pakistan, a developing country with a population exceeding 200 million, operates a complex and highly stratified healthcare system that warrants comprehensive research and systematic analysis (Hayat et al., 2020). The healthcare sector in Pakistan functions through a dynamic interplay between public and private entities, with both sectors contributing significantly to healthcare delivery. These entities are governed at multiple administrative levels federal and provincial often resulting in overlaps, policy fragmentation, and inconsistent service delivery. Notably, approximately 70% of the population seeks care in private hospitals and medical institutions, a trend supported by evidence that private facilities offer comparatively higher levels of efficiency and patient satisfaction (Hashami, 2020; Raza, 2021).

Despite this overwhelming reliance on the private sector, Pakistan's public healthcare system is burdened by long-standing structural deficiencies. These include underfunded services, fragmented governance, lack of accountability, and poor resource allocation. Weak infrastructure and a shortage of trained, fairly compensated healthcare professionals further impede effective service delivery (Meghani et al., 2014). The constitutional devolution of healthcare responsibilities to provincial governments with the exception of Federally Administered Tribal Areas (FATA) adds another layer of complexity. This decentralization affects both access to and satisfaction with healthcare across different regions.

According to the Economic Survey of Pakistan (2020–21), the country has a total of 14,331 healthcare facilities supported by a workforce of 454,496 medical professionals, including doctors, nurses, and paramedical staff (Hafeez et al., 2023).

Of these, 245,987 have been certified by the Pakistan Medical & Dental Council, validating their professional credentials. However, a significant portion of these qualified professionals emigrate in search of better working conditions, lighter workloads, and higher compensation a persistent brain drain that exacerbates domestic healthcare challenges. This is further compounded by the attrition of female healthcare workers, who often leave the workforce due to familial and societal obligations.

Consequently, there exists a striking imbalance in workforce distribution, one doctor serves approximately 1,300 patients, one nurse serves every 20 patients, and there are three nurses per doctor, underscoring critical human resource gaps in the sector (Khan, 2019). Moreover, the perception of public healthcare as universally accessible is not matched by reality. Financial inequities are stark, with 78% of patients financing their medical treatment through out-of-pocket expenditures, reflecting the inadequacy of public healthcare financing mechanisms (Mumtaz, 2018). Fearing low service quality and limited accessibility in public institutions, many citizens opt for private care despite the higher cost burden. In light of these challenges, this study situates Pakistan's healthcare system within a comparative framework, analyzing its performance relative to developed nations including the United Kingdom, the United States, and various European countries. The comparison emphasizes key dimensions such as healthcare financing, infrastructure, workforce capacity, technological integration, service accessibility, and governance quality. These criteria are selected to uncover the root causes of Pakistan's systemic inefficiencies and to identify international best practices that may inform contextually relevant policy reforms.

In light of the preceding discussion, this study undertakes a critical examination of Pakistan's healthcare system with a focused lens on governance,

financing, and technological integration three pillars that define the operational efficacy of any health infrastructure. By drawing a comparative framework with select developing countries that have made notable progress in reforming their health sectors, such as India, Sri Lanka, Bangladesh, and Thailand, this research aims to highlight actionable pathways for systemic improvement. The study not only explores the deficiencies in Pakistan's current system but also identifies scalable strategies rooted in comparative best practices. These encompass governance models that enhance accountability, innovative financing mechanisms that reduce out-of-pocket burdens, and technological frameworks that bridge service delivery gaps, particularly in underserved areas. Through this comparative analysis, the research intends to offer grounded, evidence-based insights that inform sustainable policy reform, institutional restructuring, and strategic investment in health technologies are all essential for transforming Pakistan's healthcare system into a resilient and equitable model.

1.1 Overview of Healthcare System in Pakistan

In many developing countries, including Pakistan, the healthcare system is organized around a dual structure comprising both public and private sectors. This duality creates a dynamic yet fragmented ecosystem where governance and service delivery responsibilities are distributed across multiple layers of government, primarily between federal and provincial authorities. Within this framework, private healthcare providers play a significant role. In Pakistan, private hospitals and clinics serve approximately 70 percent of the population, primarily due to their relatively better patient satisfaction, operational efficiency, and infrastructural quality compared to public sector counterparts (Hashami, 2020; Raza, 2021).

However, the public healthcare system, which is essential for equitable service provision, faces multiple structural and functional impediments. These include

administrative inefficiencies, weak accountability mechanisms, misallocation of resources, and a shortage of adequately trained and fairly compensated medical personnel. Furthermore, underdeveloped infrastructure in many areas severely restricts access to quality care (Meghani et al., 2014). These challenges are emblematic of broader systemic issues observed across many developing nations where health systems struggle under the weight of population growth, fiscal constraints, and governance limitations.

Constitutionally, in Pakistan and similar developing contexts, the primary responsibility for healthcare service delivery lies with provincial governments, although the federal level retains oversight of certain territories and strategic functions. In Pakistan's case, the healthcare system comprises 14,331 medical facilities staffed by a workforce of over 450,000 professionals, including doctors, dentists, nurses, midwives, and community health workers. While this numerical representation may appear robust, disparities in distribution, skills, and service standards highlight the critical need for coordinated reforms across all subsystems to ensure equitable and efficient healthcare delivery.

Table 1.1: Health Institutional Survey

Table 1.1: Health Institutions and Personnel		
1	Hospitals	1,282
2	Dispensaries	5,743
3	Rural Health Centers	670
4	TB Clinics	412
5	Sub Health Centers	5,472
6	MCH Centers	752
	Total no. of health institutions	**14,331**

1	Doctors	245,987
2	Dentists	27,360
3	Nurses	116,659
4	Midwives	43,129
5	Lady Health Visitors	21,361
	Total personnel working in healthcare sector	454,496

Source: Pakistan Economic Survey 2020-21 https://www.finance.gov.pk/survey https://www.finance.gov.pk/survey/chapters_21/PES_2020_21.pdf

Nevertheless, the substantial quantities, often highlighted as a source of advantage, obfuscate underlying concerns. The presence of qualified medical professionals has considerable importance; nonetheless, a notable proportion of these individuals pursue job prospects overseas, enticed by more advantageous service structures, reduced workloads, and perhaps enhanced remuneration. Due to personal and societal pressures, many female healthcare workers quit due tothe "brain drain" problem. Thus, the present ratio of physicians to patients is 1:1300, whereas theratio of nurses to patients is 1:20, demonstrating a considerable gap with three nurses for every doctor. A noteworthy aspect that sometimes eludes public comprehension is the fact that, contrary to the widespread belief that healthcare services are universally available inside public institutions,the actual situation differs.

According to Mumtaz (2018), a significant majority of people, namely 78%, bear the financial burden of their healthcare expenditures. The insufficiency of public healthcare choices compels a substantial segment of the populace to seek private alternatives, which often provide comparativelygreater accessibility to treatments. The inability of public hospitals to satisfy the healthcare needs of a fast rising population

leads many individuals to seek treatment from private physicians, thus straining the public healthcare system. This complicated terrain creates a healthcare system that annually faces preventable diseases including dengue fever, hepatitis, and malaria.

According to Butt et al. (2020), Pakistan's vaccination coverage is 60%. The country's infant mortality rate of 70 per 1000 births is also concerning. Despite global advances, polio persists in the nation, highlighting its healthcare system's flaws. The aforementioned obstacles arise from the convergence of a continuously growing population, a shortage of competent healthcare professionals, concerns over accessibility, and fundamental structural inadequacies (Khan, 2019). Compared with its neighbors (see Table 1.2), healthcareindicators of Pakistan are not satisfactory.

Table 1.2: Health Indicators of Pakistan and its Neighbors

Country	Life expectancyin years	Infant mortality rate per 1000 births	Maternal mortality rate per1000	Under-five mortality rate per 1000	Population growth rate
Pakistan	67.3	55.7	140	67.2	1.9
India	69.7	28.3	145	34.3	1
China	76.9	6.8	29	7.9	0.4
Afghanistan	64.8	46.5	638	60.3	2.3

Source: Ministry of Finance, Government of Pakistan (2021)

The COVID-19 pandemic has shown the inherent weaknesses and vulnerabilities of Pakistan's healthcare system, highlighting its fragility (Aslam & Akram, 2020). The country faced substantial hazards arising from the possible implications of the pandemic, which were exacerbated by the delicate equilibrium of a faltering healthcare system, the weight of existing diseases, and widespread poverty (Shaikh, 2021). The disaster showed that a system unprepared for the outbreaklacked