



Comparative Analysis of Bachelor of Medical Programs in Afghanistan and Pakistan

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Abstract

This research manuscript aims to compare medical bachelor's degree programs in Pakistan and Afghanistan, focusing on curriculum content, teaching methods, and learning objectives. The primary objectives are to identify similarities between the medical curricula of the two countries and to understand the differences that highlight the distinct healthcare challenges faced by each nation's academic institutions. Using document analysis and a comparative qualitative approach, the study examines educational materials from prominent institutions in both countries. It addresses several research questions, including the core components of medical curricula, program similarities, and the methods used to teach medical issues in each context. The findings indicate notable differences in curriculum structure and content: Pakistan's MBBS program typically spans six years and emphasizes the integration of basic and clinical sciences.

In comparison, Afghanistan's MD program lasts seven years and adopts a discipline-based approach. Although both programs cover fundamental medical knowledge, they differ in how cultural elements and practical training opportunities are incorporated. Ultimately, this study aims to provide recommendations for enhancing medical education in both countries, promoting more effective training programs that meet the evolving healthcare needs of their populations. By highlighting the strengths and weaknesses of these educational systems, the research contributes to the ongoing discourse on improving medical training in resource-constrained settings.

Keywords: Curriculum; Healthcare Services; Medical Migration; Healthcare Infrastructure; Specialist Facilities.

Introduction

A systematic educational program created to prepare students for careers in medicine is known as a medical curriculum. It includes an extensive range of classes, activities, and

evaluations designed to build the attitudes, abilities, and information required to become a skilled healthcare practitioner (Shipton et al., 2018). The comparative investigation of bachelor's degree medical programs in Afghanistan and Pakistan points to a comprehensive diagram of the educational systems, educational programs, and techniques utilized in both nations. This investigation offered assistance in recognizing qualities, shortcomings, and regions for advancement inside these medical instruction frameworks. These ponders recommend that restorative instruction in Pakistan faces challenges such as the need to investigate aptitudes and regulation bolster, whereas coordinates educational module progress understudy execution and Afghan medical programs intensely depend on help due to insufficient framework. Research is difficult for Pakistani undergraduate medical and dental students, mostly because of a lack of research expertise, time restraints, mentorship, institutional support, and language barriers (Qamar, 2023).

Undergraduate medical students trained on coordinated curriculums (97.0%) performed way better in the last proficient examinations than those prepared on ordinary curriculums (85.2%) (Abbas et al., 2022). On the other hand, Afghans proceed to cross into Pakistan for basic medical services because of the poor healthcare system, lack of medical specialists, and medical examination problems (Yusufzai, 2008).

The efficacy of medical bachelor's degree programs in Pakistan and Afghanistan can be assessed by looking at learning objectives, instructional strategies, and curriculum material. In order to better meet local healthcare requirements and international educational standards, some areas' curricula are undergoing revision. However, problems like a lack of resources and antiquated instructional techniques still exist. These elements are covered in detail in the sections that follow. Although there is hope in the reforms and integration initiatives in Pakistani and Afghan medical curricula, issues including the necessity for ongoing curriculum improvement and resource limitations still exist. To further improve the efficacy of medical education in these areas, these problems must be resolved. The **objectives of the study** are to critically examine the efficacy of medical bachelor's degree programs in Pakistan and Afghanistan by assessing learning objectives, teaching strategies, and curriculum material, to determine whether aspects of medical bachelor's degree programs in the two nations are similar, to assess how each nation handles its distinct healthcare issues by contrasting the bachelor's degree medical programs in Pakistan and Afghanistan. The study answered tried to answer the questions such as what are the main course components in medical bachelor's degree programs in Pakistan and Afghanistan. What aspects of the curricula of the medical bachelor's degree programs in the two nations are similar, what common tactics are used by both nations to address medical issues in their programs, what are the main content differences between the medical bachelor's degree programs in Pakistan and Afghanistan, how do Afghan and Pakistani institutions allocate resources differently for medical education, and what impact does this have on the way programs are delivered respectively.

Q6: What economic or cultural elements affect the focus and organization of medical bachelor's degree programs in Afghanistan as opposed to Pakistan?

This study employs a comparative qualitative approach to analyze medical bachelor's degree programs in Pakistan and Afghanistan. The objective is to understand the differences between these educational systems and their potential impacts on medical education. The primary method for data collection is document analysis, which allows for

a systematic review of existing educational materials. This process involves the following steps:

Collect program descriptions and academic syllabi from Kabul Medical University in Afghanistan and the Pakistan Medical & Dental Council (PMDC) in Islamabad, Pakistan. And review official curriculum standards reports from educational authorities to understand the regulatory frameworks governing these programs. Furthermore, Syllabi and Program Descriptions: Compile syllabi from selected universities to gain insights into course content, structure, and offerings. Institutional Reports: Analyze reports from Afghanistan's Ministry of Higher Education (MoHE) and relevant educational bodies in Pakistan to assess curriculum effectiveness and compliance with national standards. The analysis of collected data involves two main approaches. First, Thematic Analysis, which is the Coding of qualitative data from reports and curricula to identify recurring patterns related to curriculum effectiveness. This includes examining trends in subject coverage, teaching methods, and learning objectives. Second, was Comparative Analysis, which is usable to compare matrices to evaluate curriculum components from both countries. This analysis highlights strengths, such as innovative teaching approaches, comprehensive subject coverage, and potential weaknesses in the systems. This structured methodology comprehensively explains how medical education is shaped in Pakistan and Afghanistan. By identifying similarities and differences in curricula, the study aims to guide improvements in both educational systems, fostering more effective medical education that meets the needs of students in both countries. The paper also outlines the six-year MBBS (Bachelor of Medicine, Bachelor of Surgery) program in Pakistan, detailing the curriculum's focus on clinical skills, professional behavior, and research competencies expected of graduates. It presents a well-organized curriculum that blends subject-based and system-based learning approaches. Additionally, the text covers required internships, learning resources, and assessment methods. Annexures provide further details on Islamic Studies, Pakistan Studies, and English language proficiency standards. Recent assessments of medical education in Pakistan and Afghanistan have shown both advancements and difficulties. An integrated bioethics program in Pakistan has demonstrated efficacy in helping medical students acquire knowledge, develop their skills, and behave ethically (Allana et al., 2024). More possibilities for real-world application and improved integration during clinical years are necessary, nevertheless. The quality of medical education in Afghanistan is still a concern despite efforts to modernize curricula and teaching strategies, including suggestions for quick facility expansion (Stanikzai, 2023). Pakistani students believe that task-based learning is more successful than self-directed learning and traditional lectures (Mahsood et al., 2022). Students see opportunities for improvement, such as improving the learning environment, even if they generally have positive opinions of their educational experiences (Onyura et al., 2016). All things considered, these studies highlight the significance of ongoing curriculum assessment and modification to satisfy changing educational demands in both nations. Anatomy, physiology, biochemistry, pathology, pharmacology, and community medicine are among the subjects covered in Pakistan's medical curriculum, which aims to produce doctors who are kind and focused on the community (Baig et al., 2006). Both Pakistan and Afghanistan need to develop plans to enhance their healthcare systems because they struggle to meet national health metrics (Qarani & Kanji, 2015). Afghanistan lacks teacher education programs like B.Ed. and M.Ed., but Pakistan offers such programs, suggesting that their teaching standards need to

be raised (Safi, 2019). Despite their importance for undergraduate medical students, medical ethics, time management, and communication skills are not taught in Pakistani MBBS programs (Cueto et al., 2006). These studies draw attention to the parallels and discrepancies between Afghanistan's and Pakistan's medical and educational curricula, highlighting the necessity of curriculum creation and cooperation to improve the standard of healthcare and education in both nations. The protracted hostilities, unstable economies, and poor infrastructure in Afghanistan and Pakistan pose serious problems for their healthcare systems (Acerra et al., 2009; Qarani & Kanji, 2015). Both nations need to strategically enhance a number of areas of their health systems since they suffer from unmet health indicators (Qarani & Kanji, 2015). Afghanistan, in particular, is striving to expand its medical education facilities in spite of persistent economic and political challenges (Stanikzai, 2023). In order to alleviate healthcare inequities and enhance access to care, community health worker (CHW) programs have been established in both nations; however, these initiatives encounter obstacles such as insufficient funding and training (Folz & Ali, 2018). The Basic Package of Health Service (BPHS) was implemented in Afghanistan with the goal of giving cost-effective medical treatments, such as trauma care, priority (Acerra et al., 2009). However, problems like inadequate healthcare facilities, a shortage of qualified healthcare professionals, and security concerns still plague both nations (Qarani & Kanji, 2015).

Material and Method

Samples Collection

Official program descriptions and academic curricula gathered from the Pakistan Medical & Dental Council (PMDC) and Kabul Medical University (Afghanistan) serve as the main sources of data. Official curriculum standards reports and institutional reports from the Ministry of Higher Education in Afghanistan and pertinent educational authorities in Pakistan are additional sources of information. Secondary data from published studies and educational research that are pertinent to medical education in both nations are also included in the study. Triangulation in this study is achieved by using multiple data sources, including syllabi and curriculum outlines, alongside independent Coding by multiple researchers to enhance consistency. This approach strengthens the validity and reliability of the findings by cross-checking documents and incorporating diverse perspectives in the analysis.

Method

The approach is qualitative and uses document analysis to examine current course materials in a methodical manner. Syllabi, curriculum outlines, and reports on program structures and regulatory frameworks are gathered, compared, and contrasted as part of the strategy.

There are two primary qualitative approaches employed:

Thematic analysis is a technique used to code qualitative data and find recurrent themes in topics including learning objectives, teaching strategies, and curriculum efficacy. Comparative analysis is the process of comparing curricular component matrices from both nations in order to evaluate their respective advantages, disadvantages, and teaching methods.

Data Analysis

In order to identify themes pertaining to the effectiveness of medical education and curriculum content, data analysis entails carefully coding curriculum papers and educational reports. Thematic analysis reveals important trends and patterns in curriculum objectives, practical training inclusion, and subject coverage. Aspects including program duration, curriculum design, academic integration, and cultural background between Afghanistan and Pakistan are contrasted in the comparative analysis. Together, these analytical procedures provide insights into the parallels, discrepancies, and effects of the various medical education programs.

Findings

To answer our questions, it is analyzed as follows:

Answer to the First Question: The official documents, Kabul Medical University Curriculum & Syllabus for Faculty of Medicine and Curriculum of Pakistan Medical & Dental Council, outline the medical bachelor's degree programs (MBBS in Pakistan and MD in Afghanistan). Below are the key components of each program:

Pakistan:

Overarching Goals: The MBBS curriculum aims to produce physicians capable of addressing societal healthcare needs, applying evidence-based medicine, and prioritizing health promotion and disease prevention.

Curriculum Structure: The program lasts 6 years, with the final year dedicated to apprenticeship training. It offers two curriculum designs: a preferred system-based approach and a subject-based approach, both emphasizing the integration of basic and clinical sciences.

Competencies: Graduates are expected to demonstrate competencies as medical practitioners, professionals, researchers, and leaders.

Core Subjects: The curriculum covers traditional medical subjects such as anatomy, physiology, biochemistry, pathology, community medicine, surgery, and various medical specialties. It also includes medical ethics, professionalism, communication skills, and research methods.

Integration of Subjects: Horizontal and vertical integration of basic and clinical sciences is emphasized to provide a holistic understanding of medical concepts.

Practical Learning: The curriculum balances theoretical and practical learning, with a stronger focus on hands-on training in clinical sciences.

Assessment: Annual university examinations are conducted, and the curriculum promotes continuous quality improvement through self-monitoring by module coordinators and institutional self-assessment.

Afghanistan:

Program Length and Structure: The MD program at Kabul Medical University (KMU) spans 7 years, including a 1.5-year internship. The curriculum is discipline-based and divided into three phases: basic biomedical sciences, behavioral and social sciences, and clinical science and skills. It also includes "university inclusive" courses such as Islamic studies, English language, and information-communication technology (ICT).

Curriculum Goals: The KMU curriculum aims to prepare students to address evolving healthcare needs, emphasizing lifelong learning, patient advocacy, and ethical medical

care. It also seeks to produce physicians who understand both domestic and global health issues.

Curriculum Phases:

Years 1 and 2: Focus on basic biomedical sciences, including anatomy, physiology, biochemistry, genetics, molecular cell biology, and introductory courses in public health and medical ethics.

The focus of years three through six is on clinical sciences and skills, during which students complete core clerkships in various medical disciplines.

Internship: The program includes an internship to enhance clinical skills and provide hands-on experience.

Core Subjects: The curriculum covers a wide range of medical subjects, including anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, community medicine, surgery, and other medical specialties. It also incorporates medical ethics, English language proficiency, Islamic studies, and behavioral and social sciences such as epidemiology, public health, and health policy.

Assessment: A variety of evaluation methods are used, including written exams, clinical assessments, practical tests, and research projects.

Similarities: Both curricula share the following features:

Strong Foundation in Basic Sciences: Both programs dedicate the initial years to foundational biomedical sciences, ensuring students have a solid understanding of human biology and function before progressing to clinical applications.

Exposure to Core Clinical Disciplines: Students in both programs gain extensive exposure to primary medical specialties through core clerkships or rotations.

Focus on Practical Training: Both programs emphasize hands-on training, recognizing the importance of practical experience in developing clinical skills.

Integration of Professionalism and Medical Ethics: Both curricula explicitly address professionalism and medical ethics, underscoring the importance of ethical principles and conduct in medical practice.

Differences:

Structure: The Pakistani curriculum offers two formats—system-based and subject-based—while the Afghan curriculum follows a discipline-based, phased structure.

Duration: The Pakistani MBBS program spans six years, whereas the Afghan MD program lasts seven years.

Religious Studies: Islamic studies are a mandatory component of the Afghan curriculum, reflecting the country's cultural and religious context. In contrast, the Pakistani curriculum does not explicitly include religious studies.

Overall, both programs provide a comprehensive medical education that balances theoretical knowledge with practical application, aligning with the healthcare needs of their respective countries.

Answer to the Second Question: The MD program in Afghanistan and the MBBS curriculum in Pakistan share several similarities:

Strong Foundation in Basic Biomedical Sciences: Both programs dedicate their initial years to foundational biomedical sciences. In Afghanistan, this is termed "basic biomedical science," while in Pakistan, it is referred to as "pre-medical education." These foundational courses cover topics such as anatomy (gross and microscopic), physiology (cell,

cardiovascular, respiratory, and renal systems), biochemistry (molecular biology, metabolism), and genetics.

Exposure to Core Clinical Disciplines: After the foundational phase, students in both countries engage in clinical sciences through core clerkships or rotations in specialties like internal medicine, surgery, pediatrics, obstetrics and gynecology, ophthalmology, and otorhinolaryngology.

Emphasis on Practical Training: Both programs prioritize hands-on training. The Pakistani curriculum sets specific theory-to-practice ratios for basic sciences (50:50), clinical sciences (30:70), and internships (15-20:80). The Afghan curriculum integrates clinical training throughout its 5.5-year program. Practical components include laboratory sessions, clinical clerkships, and internships.

Integration of Medical Ethics and Professionalism: Both curricula emphasize medical ethics, professionalism, and communication skills, reflecting the importance of ethical practice and patient interaction.

Focus on Community Medicine and Public Health: Both programs include modules on community medicine, epidemiology, and public health, highlighting the role of physicians in addressing population health.

Language and Communication Skills: Communication skills training is mandatory in Pakistan, while the Afghan curriculum includes English language courses to facilitate global medical communication.

In summary, despite differences in program length and structure, both curricula share core elements that align with the knowledge, skills, and values required for modern medical practice.

Answer to the Third Question: Medical programs in Afghanistan and Pakistan address healthcare challenges specific to their contexts:

Pakistan:

Healthcare Needs: The curriculum emphasizes training doctors to address disease prevention, health promotion, and curative care using a biopsychosocial approach.

Evidence-Based Medicine: Graduates are trained to evaluate and apply medical research in practice critically.

Health Disparities: The curriculum addresses socioeconomic determinants of health and promotes cultural sensitivity in patient care.

Afghanistan:

Adapting to Healthcare Changes: The curriculum prepares graduates to adapt to advancements in medical technology and knowledge, incorporating modern teaching methods like simulations.

Public Health Priorities: Modules on epidemiology, public health, and health policy reflect the need to address local and global health challenges.

Ethical and Cultural Sensitivity: The curriculum emphasizes ethical behavior and cultural competence in patient care.

Common Approaches:

Both programs emphasize foundational biomedical sciences, practical training, professionalism, public health, and communication skills.

In conclusion, both nations demonstrate a shared commitment to addressing healthcare challenges through their medical curricula, tailored to their unique contexts.

Answer to the Fourth Question: Key differences between the MD program in Afghanistan and the MBBS program in Pakistan include:

Curriculum Structure and Duration:

Afghanistan: The MD program spans 7 years, with a discipline-based, phased structure. The first two years focus on basic biomedical sciences, followed by clinical training.

Pakistan: The MBBS program lasts 6 years, offering flexibility between system-based and subject-based approaches.

Inclusion of Specific Subjects:

Afghanistan: Includes courses like medical physics, biophysics, and clinical & forensic toxicology.

Pakistan: Features forensic medicine, behavioral sciences, and mandatory courses in Islamic studies and Pakistan studies.

Emphasis on Content:

Afghanistan: Prioritizes early clinical exposure and community engagement.

Pakistan: Focuses on evidence-based medicine, health promotion, and disease prevention.

Depth of Coverage:

Afghanistan: Devotes more time to foundational sciences in the early years.

Pakistan: Emphasizes clinical rotations and hands-on training.

Overall, the Afghan curriculum is more traditional and discipline-based, while the Pakistani curriculum offers greater flexibility and a stronger focus on integration and public health.

Answer to the Fifth Question: While detailed resource allocation data is limited, some insights can be drawn:

Pakistan:

Institutions are responsible for providing infrastructure, library resources, skills labs, and financial aid.

Stipends for internships are mandatory, reflecting a commitment to practical training.

Faculty development and supervision are emphasized.

Afghanistan:

Limited information is available, but the curriculum's focus on practical training and early clinical exposure suggests significant resource investment in teaching hospitals and clinical facilities.

Challenges:

Both countries likely face resource constraints, impacting program delivery and healthcare outcomes. Further research is needed to explore these issues in depth.

Answer to the Sixth Question: Cultural and economic factors influence the focus and structure of medical programs in both countries:

Afghanistan:

The emphasis on practical training and early clinical exposure reflects the need to address urgent healthcare challenges in a resource-limited setting.

Public health priorities and community engagement are central to the curriculum.

Pakistan:

The flexible curriculum design and focus on evidence-based medicine reflect a more developed medical education system.

The inclusion of Islamic studies and Pakistan studies highlights cultural and religious influences.

Economic Factors:

Afghanistan's resource constraints likely shape its pragmatic curriculum.

Pakistan's stronger economy allows for greater investment in research and specialized training.

Cultural Factors:

Both curricula reflect cultural values of community service and ethical practice.

Further research is needed to understand these influences fully.

Table 1: A summarized comparative table of key aspects from the results across Afghanistan (KMU MD program) and Pakistan (PMDC MBBS program)

Aspect	Afghanistan (KMU MD Program)	Pakistan (PMDC MBBS Program)
Program Length	7 years (including 1.5-year internship)	6 years (final year apprenticeship)
Curriculum Structure	Discipline-based, phased (basic biomedical, behavioral/social, clinical)	Two designs: system-based or subject-based, integrated basic and clinical sciences
Core Subjects	Anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, community medicine, surgery, medical ethics, English, Islamic studies, behavioral and social sciences	Anatomy, physiology, biochemistry, pathology, community medicine, surgery, medical ethics, professionalism, communication skills, research methods
Integration of Subjects	Traditional discipline-based, phased with early clinical exposure	Horizontal and vertical integration, emphasis on holistic understanding
Practical Learning	Continuous clinical training, including internships, with an emphasis on early exposure	Strong focus on clinical science, hands-on training, and defined theory-to-practice ratios.
Assessment Methods	Written exams, clinical assessments, practical tests, and research projects	Annual university exams, continuous self-assessment, and module monitoring
Curriculum Goals	Prepare physicians for evolving healthcare challenges with a focus on ethics, lifelong learning, and global health.	Produce doctors skilled in evidence-based medicine, health promotion, and disease prevention.
Religious/Cultural Content	Mandatory Islamic studies, cultural competence emphasis	Islamic studies and Pakistan studies included; cultural sensitivity emphasized
Focus on Public Health	Strong emphasis on community medicine, epidemiology, and health policy	Emphasis on health disparities, population health, and community medicine
Resource Allocation	Limited information; focus on clinical facilities and early training	Institutions provide labs, stipends, faculty development, and infrastructure
Unique Features	Includes medical physics, biophysics, and forensic toxicology	Forensic medicine, behavioral sciences, flexible curriculum design

This table highlights the similarities and differences in program length, structure, subjects, practical training, assessment, and cultural features between the two medical education programs.

Recommendations for Further Research

Afghanistan: Strengthen research integration, improve access to technology, and enhance faculty development.

Pakistan: Promote uniformity in program delivery, enhance community engagement, and address social determinants of health.

Shared Recommendations: Encourage inter-institutional collaborations, conduct regular curriculum reviews, and provide career counseling for students.

Limitations of the study

The data was collected from the official curricula of two countries, Pakistan and Afghanistan. Furthermore, there was secondary data for analysis. The data was analyzed through a qualitative type of thematic analysis, which also has a flow of generalization of results.

Conclusion

The medical education systems in Afghanistan and Pakistan exhibit both distinct and shared characteristics, with Afghanistan's 7-year MD program emphasizing early clinical exposure, public health, and Islamic studies, while Pakistan's 6-year MBBS program focuses on flexibility, evidence-based medicine, and health promotion. Key differences lie in program duration, the timing of clinical exposure, and research integration, yet both systems share a strong community orientation, practical skills development, and mandatory Islamic studies, reflecting the unique cultural, economic, and historical contexts of each country.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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