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# **Common Health Challenges For Foreigners In Pakistan**

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#### ABSTRACT

Many foreigners living in Pakistan face health challenges. Access to health care for these populations is limited by a variety of sociocultural and economic factors including familiarity with health services, differences in health beliefs, and challenges in health practices. Furthermore, malnutrition and poor health in some migration zones, especially among different refugees, complicate the health challenges faced by them. The health system that relies heavily on out-of-pocket payments and lacks adequate resource allocation creates challenges for individuals to access quality health care. Difficulties in understanding local health practices and differences in health care affect their well-being and to some extent, health care requires development and cultural understanding. Overall, foreigners in Pakistan face difficulty in accessing adequate health care, health beliefs, disparities, and disease complications due to various reasons. This review discusses the most common health related issues the foreigners face in Pakistan and common reasons behind it.

# **GRAPHICAL ABSTRACT**

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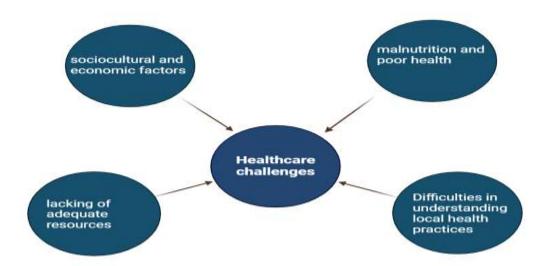
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### INTRODUCTION

Tourism and immigration encompass social, cultural, and economic facets, encompassing travel outside one's home for personal or professional purposes (1). This multifaceted industry generates employment opportunities due to its labor-intensive nature and contributes significantly to revenue generation through taxation, particularly within the hotel sector. Furthermore, tourism is pivotal in amassing foreign exchange, fostering cross-cultural understanding and collaboration, opening avenues for business ventures, and contributing to a nation's economic growth (2). Pakistan currently holds 124 out of 136 countries in the 2017 TTCI Report, signifying a notably low standing. This ranking reflects subpar performance in the tourism sector, notably in areas such as business environment (119th), safety and security (133rd), health and hygiene (101st), human resource and labor market (134th), prioritization of travel and tourism (122nd), and ICT readiness (126th). These factors collectively contribute to the country's overall challenges in tourism development (1). The quality of healthcare services in a country significantly impacts the well-being of its population, influencing its ability to establish new enterprises and maintain resources effectively. Improving existing health services is crucial, and having mobile hospitals/dispensaries stationed in tourist hotspots could reassure tourists regarding their health concerns, thereby contributing to a more positive tourism experience (3).

A healthcare system is an organized network of resources and professionals dedicated to delivering health services that cater to a nation's needs and preferences (4). Across the globe, in 195 countries, the primary objective is to enhance overall health and reduce the burden of diseases within the context of global healthcare. Presently, four widely recognized models combine both public and private healthcare facilities, offering diverse frameworks for the functioning of healthcare systems worldwide (4). The healthcare structure in Pakistan includes primary, secondary, and tertiary tiers, collaboratively managed by the public and private sectors. However, the country faces challenges in delivering quality healthcare due to the overwhelming healthcare burden (5). Over the past decade, the government's healthcare expenditure has remained significantly low at 0.5-0.8% of the GDP, well below the WHO-recommended allocation of 6% of GDP for healthcare (5). According to the recent census by the Pakistan Bureau of Statistics, Pakistan is declared the sixth-highest populated country with approximately 208 million residents (6).

Insufficient funding in the healthcare sector stands as a significant cause for inadequate infrastructure, exacerbated by political instability and unequal resource distribution (5). Pakistan urgently requires the establishment and enhancement of more tertiary care and educational facilities. Presently, healthcare spending only amounts to 0.4% of Pakistan's GDP, falling significantly short of the WHO's recommended 6% allocation for healthcare in low-income countries (5). Additionally, this allocation of funds is unevenly distributed, primarily favoring Pakistan's urban and developed regions. Consequently, there exist substantial disparities in accessing healthcare services, notably affecting rural areas and low-income communities, which lack fundamental healthcare amenities (4).

Pakistan faces a substantial share of regional communicable diseases due to factors like overpopulation, unsafe drinking water, poor sanitation, socioeconomic challenges, limited health awareness, and insufficient vaccination coverage (7). This situation increases the country's vulnerability to epidemics linked to such diseases. Risk of dengue in Asia and Pacific Islands is on the rise with incidences being reported. These travellers can secure themselves by averting mosquito bites. Second, Pakistan is in the midst of an ongoing outbreak of XDR typhoid fever. XDR infections fail to respond well to most available antibiotics. The Pakistan's healthcare system has many challenges when it comes to high-quality care delivery to its citizens. However using correct planning, sufficient funding and true efforts of government these challenges can be thwarted (4, 8).

#### **METHODOLOGY**

The methodology used in the study on health problems experienced by foreigners in Pakistan consists of several stages. In the beginning, a comprehensive search of the literature was carried out utilizing databases such as PubMed, Google Scholar, and various journals by entering specific keywords that related to the topic. Subsequently, articles that fulfilled the set inclusion and exclusion criteria were selected, covering healthcare problems, culture, and disease complications among foreigners in Pakistan. Data from the relevant articles were then extracted and were organized. As a result, extracted data was put through meticulous analysis to figure out prevalent health issues and inherent patterns. The data synthesis and interpretation were done using factors like healthcare access, cultural beliefs, and digital healthcare technologies. This resulted in a comprehensive overview of the issues. At last, a literature review in detail was done, including evidence from the selected articles, and it was thoroughly reviewed and revised to make sure that accuracy and continuity were achieved.

#### AIM OF THE WORK

This review describes health-related issues such as inadequate health intervention, cultural and economic factors that influence health, unevenness in the delivery of care services, and the common health concerns for foreigners in Pakistan. In this review, various aspects are discussed, including health system structure, challenges to funding and resource allocation etc. Also provides the contribution of digital and telehealth technologies in solving healthcare issues of foreigners. The role of culture and environment in health status is discussed based on the eco-systems approach that requires sustainable measures. Furthermore, the health management recommendations are suggested to concentrate on reinforcing the health infrastructure, supporting community projects, and promoting publicization of the key priorities. Generally, the aim of the work to thoroughly investigate the surrounding situation of the health landscape for foreigners in Pakistan and shed light on strategies to address these challenges.

# **HEALTH LANDSCAPE FOR FOREIGNERS**

The foreigners in Pakistan face various health hurdles. These include limited healthcare availability conditioned by social, cultural and economic factors. In addition, the lack of information on accessible healthcare facilities and different health beliefs as well as poor hygiene practices, cultural differences and occurrences of malnutrition add to these problems. Many health challenges confront healthcare workers and other foreigners in Pakistan; their difficulties are somehow linked to the country's struggles towards latching onto MDGs aimed at promoting healthy living. The problems faced by the people have consequences not only for them but also to other foreigners living in this country (9, 10).

However, some challenges in the Pakistani health scenario of foreigners are newborn and maternal mortality rates, uneven resource utilization state by states and over reliance on out-of pocket payment as main mode of financing. Factors associated with healthcare services and medicine consumption among Pakistani migrants in high income countries are determined by specific personal variables as well as host country attributes. Therapeutic system of Pakistan can be said to run on a meagre budget with only 0.8% of GDP going under healthcare expenditure However, in the course of time, patient-centeredness has become a driving force to shift toward better health with equity and responsiveness. Hepatitis B and C in Pakistan pose a threat to health care workers, including foreigners; proper prevention measures need must be implemented. Surgical access is hindered by various barriers such as patient-related, environmental, health system and provider factors that affect the foreigners seeking medical care (11-16).

In spite of the government's Health for All programs, migrants are faced with challenges in availing healthcare services. However, the progress in developing a more healthful healthcare environment is minimal and one of the largest issues addressed within it are preventive medical treatments that receive insufficient attention. The health of refugee women, especially with the high rate of malnutrition and severe medical complications is an area that requires attention. Coupled with these sociocultural and religious factors, the situation gains even more complexity from such diverse patterns of health-seeking behavior in Pakistan. (12, 17-19).

#### COMMON HEALTH CONCERNS FOR FOREIGNERS

The problems that the hospitality sector in Pakistan faces are less facilities available, poor support and security. However, most of the hotels and restaurants in this country do not have proper certification standards to guarantee high-quality services. It is essential to implement special regulations so that the industry can provide innovative services while still conforming to certain standards dictated by changing travel and tourism dynamics. The country Pakistan is in the transitory period of healthcare scenario which faces very serious problems such as HIV/AIDS, dengue fever, bird flu and SARS due to rising resistant cases of pulmonary tuberculosis. These diseases are so common, therefore it means that resources need to be coordinated. To solve the above challenges, resource allocation must be equitable with a concentration on preventive measures. Though these attempts, communicable diseases continue to be a major public health issue in Pakistan responsible for morbidity and mortality. These diseases originate from socioeconomic, environmental and behavioral risk factors (20, 21).

Regionally, Pakistan has a considerable burden of different communicable diseases such as HIV/AIDS and Hepatitis B& C & Tuberculosis [and the emerging challenge] is MDR-TB which poses huge threat to region. Congested urban centers, the compromised access to safe drinking water and inadequate sanitation – socioeconomically disadvantaged conditions all contribute towards heightened epidemic risks for this country. Health awareness promotion is limited whilst many people also lack vaccination coverageation. Additionally, many illnesses

such as vaccine-preventable diseases, foodborne infections, zoonotic diseases and healthcare associated infections thus represents serious threat to human health on national interest level (22, 23)

The emergence of NCDs has however become a significant challenge since the communities' lifestyle have changed. The complex situations arising out of these circumstances pose a serious threat to the community that requires urgent action on improving citizens' physical welfare. The treatment of NCDs in healthcare planning requires establishing diagnostic, preventive and therapeutic centers. This is due to the fact that these centers play a crucial role in responding appropriately to non-communicable diseases' complexities. Early diagnosis, preventive measures and efficacious treatment are the focus of efforts to reduce mortality from these diseases which in turn will improve quality of life for individual community members (24, 25)

Challenges	Hospitality Sector	Healthcare System
Facilities	Limited facilities available	Congested urban centers, compromised access to safe drinking water, inadequate sanitation (20, 21).
Certification Standards	Lack of proper certification standards	Limited health awareness promotion and vaccination coverage (20, 21).
Security	Poor support and security	Heightened epidemic risks due to socioeconomic conditions (20, 21).
Communicable Diseases	Limited resources for prevention	High burden of communicable diseases including HIV/AIDS, Hepatitis B & C, Tuberculosis, and emerging challenge of MDR-TB (22, 23)
Non-Communicable Diseases	Limited resources for prevention	Lifestyle changes leading to increased prevalence of NCDs, requiring establishment of diagnostic, preventive, and therapeutic centers (24, 25)

#### DIGITAL AND TELEHEALTH

Both significant opportunities and risks are offered to foreigners staying in Pakistan by digital health and telehealth technologies, completely changing healthcare scenario. These innovations increase the availability and ease of access to healthcare, enabling foreigners to engage with health care specialists remotely even without physical presence and receive specialized consultation services (26). But difficulties can arise if there are language differences, internet connectivity problems, or data safety concerns. The use of telehealth enables the advancement

of public health programs, leading to general population well-being and profit for both nationals and migrants (27). It allows foreigners to remote manage their medical needs via electronic medical prescription and medication management. Foreigners can gain knowledge necessary to their health through telehealth by way of furthering the concepts of health education and awareness (28). However, cultural differences and health literacy issues need to be addressed. Furthermore, the insurance providers' acceptance of telehealth and regulatory issues might have an overall effect on foreigner effectiveness in Pakistan. This calls for efforts in order to tackle these problems and ensure that digital health enhances efficiency of healthcare provision (29).

#### **CULTURAL AND ENVIRONMENTAL FACTORS**

With the continuous degrading of ecosystems in Pakistan, delicate environmental balances have been disrupted resulting to fatal consequences; biodiversity loss and destabilization if vital ecological systems. Deforestation caused by diverse human activities has not only removed natural habitation but also changed weather patterns and soil fertility thus contributing to imbalances in the ecology. Industrialization which enhances societies' growth has also quickened environmental destruction. All these have been greatly aggravated by the wide deployment of advanced technologies that increased energy demand and waste production, polluting more intensively increasing resource consumption. This, in combination with increasing emissions from motor vehicle exhausts suppressing has drastically increased air pollution particularly to towns (30, 31).

Human lifestyles cause such a profound impact that it cannot be overemphasized. The reliance on energy-consuming appliances such as refrigerators and air conditioners, coupled with the fact that people rely heavily on personal care products has lead to a significant increase in carbon footprints. The atmosphere has been depleted by the discharge of greenhouse gases including CFCs, SO2 and NO2 thus allowing harmful radiation to enter Earth' Thus, these undertakings have exacerbated environmental calamities such as pollution and intensified global warming. Once the temperatures began to rise, it started with melting of polar ice caps and glaciers that has already led to measurable increase in sea levels threatening coastal communities around the world(32, 33).

These environmental problems accumulate to pose immediate hazards on terrestrial and aquatic life. Ecosystems cannot cope and this leads to ecological disturbances that threaten the very basis of life on Earth. Addressing these issues is of paramount importance. A prompt and cooperative response is important in order to minimize such adverse effects on the environment. Implementation of sustainable practices, shifting towards cleaner sources of energy, creating environmental consciousness and embracing policies aimed at conservation are essential in saving our planet for the current generation and also those to come (34).

Challenges	Impact	Solutions
Deforestation	Loss of natural habitat,	Reforestation efforts,
	changed weather patterns,	sustainable forestry
	soil fertility loss	practices, afforestation
		initiatives (30, 31).
Industrialization	Increased environmental	Adoption of cleaner
	destruction	production technologies,
		stringent environmental
		regulations (30, 31).

Advanced Technologies	Increased energy demand, waste production, intensified pollution	Promotion of renewable energy sources, energy efficiency measures, waste management strategies (32, 33)
Human Lifestyles	Increased carbon footprints, discharge of greenhouse gases	Environmental education and awareness, promotion of sustainable lifestyles, use of eco-friendly products (32, 33)
Global Warming	Melting polar ice caps, rising sea levels	Mitigation of greenhouse gas emissions, international cooperation on climate change agreements (34)

#### OVERCOMING HEALTH CHALLENGES

Public health, as a multidimensional field, necessitates comprehensive attention from public health agencies, policymakers, and academic institutions. Unfortunately, there's a notable absence of proactive initiatives to cultivate a national discourse on the pivotal role of public health (35). This void highlights the urgent need to fortify the capabilities of public health entities across numerous essential domains, aiming to uplift the standard of living for the common citizen. One of the foundational pillars in this endeavor is the enhancement of medical care accessibility and quality (36). A robust healthcare system that ensures equitable access to healthcare services and maintains high standards of treatment and care is indispensable for fostering a healthier population. Initiatives focused on improving medical care delivery, especially to underserved communities, play a pivotal role in mitigating health disparities and ensuring equal healthcare opportunities for all (37). In addition, fostering biomedical research is crucial in motivating innovation in healthcare. Through support of research institutions in conducting and achieving breakthroughs in medicine, they contribute to the development of many new therapeutic methods, new diagnostics, and prevention efforts against different diseases and conditions. A focus on the integration of various health services provided by governments not only increases the effectiveness of the health services themselves, but it also builds a sturdy base for an evidence-based approach to public health. To improve health results, it is necessary to take a strategic approach to public health planning. Effective public health management requires the preparation and application of comprehensive strategic plans that are intended to make health an integrated part of all policies. As roadmaps, these plans lay out specific objectives and activities for addressing health problems in society. They also help allocate resources efficiently. Public health interventions must be directed at implementing health policies for the greatest impact of all (38-40).

To promote public health equity, addressing health disparities is extremely important. Efforts directed at eradicating inequalities in health care access, treatment, and outcomes among various population groups are essential. Thus, by achieving a just allocation of resources and services targeted towards marginalized groups such as ethnic minorities and women, based on diverse socioeconomic, cultural and geographic factors, public health can move more towards a more inclusive and equal service to people. Simultaneously, the revolutionary future of healthcare delivery and management hinges upon advances in such related fields as information technology and biotechnology. Data management will be most effectively handled by technology; it will also aid in remote medicine via telemedicine and permit health trends to be monitored with high accuracy so intervention can be timely. It has become equally important

to use biotechnological innovations for breakthrough treatments, personalized medicine, and strategies to prevent disease. Similarly, leveraging biotechnological innovations can pave the way for cutting-edge treatments, personalized medicine, and breakthroughs in disease prevention strategies (41, 42).

Regulation of health services, ensuring the safety of consumer products through strict food and drug regulations, and environmental control are key components of public health management It is important to strict policies and regulations are developed to ensure the quality and safety of health care services and products. International cooperation is inevitable in combating infectious diseases and addressing global health problems. Agreements and cooperation with other countries to coordinate efforts in disease prevention to exchange health information are essential to effectively address transnational health risks. Independent community health assessments are a valuable tool for assessing the effectiveness and quality of community health services. Ensuring that these assessments are carried out in a fair and transparent manner helps to identify gaps and areas for improvement, thereby contributing to the improvement of community health services (43, 44).

# MENTAL HEALTH AND WELL BEING

Pakistan faces a huge health challenge with an estimated fourfold burden of disease. Added to this multi-faceted health tragedy is the confluence of communicable diseases based on the increasing risk posed by non-communicable diseases, which impedes both national growth and development and mental health of increasing issues that plague the nation's entire health care delivery system. These concerns include a worrying rise in accidents, which calls for the immediate establishment of specialized trauma centers and strong prevention programs aimed at reducing morbidity and rising deaths associated with accidents (45, 46).

Among the multifaceted health challenges is the growing prevalence of mental illness, which has emerged as pressing concerns in Pakistan. The growing prevalence of mental health problems such as depression, anxiety, and other mental illnesses places a heavy strain on an already burdened health care system Lack of mental health resources, stigma and inadequate awareness add to the challenges faced by individuals who are struggling with mental health issues (47).

Furthermore, the increasing incidence of accidents, whether on roads, at work, or elsewhere, represents a major health concern. The increasing number of accidents results in serious injury, disability and death, which has a significant impact on public health. Establishment of a specialized medical facility equipped with the necessary facilities and skilled health professionals is essential to effectively manage and minimize the adverse health consequences of accidents. In addition, it is necessary to implement strong preventive measures, such as road safety policies, workplace safety policies and public awareness campaigns, to prevent the increasing number of accidents and health burden (48).

In addition, hazardous working conditions for waste workers in landfills further increase health risks. These workers face a myriad of health hazards in their daily activities such as exposure to humanitarian waste, infection, toxins, chemicals, sharp chemicals and medical waste These factors a it is alarming that such prolonged exposure adversely affects their physical and psychological well-being, underscoring the need for early intervention (49). Overall, addressing these multifaceted health challenges demands urgent action, improved healthcare resources, robust preventive strategies, and enhanced support systems to safeguard public health and well-being in Pakistan (50).

#### RECOMMENDATIONS FOR HEALTH MANAGEMENT

The infrastructure and staffing in Medical and Dental Colleges, Training Institutions, Nursing Schools, and Public Health Schools in Pakistan do not align adequately with international standards. To bolster the health sector, it's crucial to dispatch medical graduates for a one-year service in rural areas(51). While the concept of community-oriented medical education is prevalent across Pakistan, there's a need for an enhanced orientation program to instill in graduates a stronger sense of commitment and capability to serve their communities (52).

For foreign entities invested in improving healthcare, a recommendation would be to focus on enhancing these educational institutions and providing support for the implementation of community-focused programs. Emphasizing the importance of public health in policies and among healthcare professionals is essential for aligning the country's progress with international health standards. This includes investing in resources to equip institutions and nurture a healthcare workforce more attuned to community needs, ultimately fostering a more robust and responsive healthcare system(53). Advocating for the prioritization of public health among policymakers and healthcare professionals is vital. Foreign entities can assist in driving this agenda by fostering partnerships, conducting capacity-building programs, and advocating for policies that emphasize the importance of public health. By jointly investing efforts and resources in these areas, local and foreign organizations can contribute significantly to the development of Pakistan's healthcare sector to meet global standards and meet the healthcare needs of its diverse population various solutions (4, 54).

Recommendations	Description
Dispatch medical graduates for rural service	Sending medical graduates to rural areas for
	one-year service to address healthcare
	disparities and enhance community-focused
	care (51)
Enhance community-oriented medical	Strengthen orientation programs to instill in
education	graduates a stronger sense of commitment
	and capability to serve their communities
	(52).
Focus on improving educational institutions	Foreign entities should invest in enhancing
	infrastructure and staffing in medical and
	dental colleges, training institutions,
	nursing schools, and public health schools
	to align with international standards (53)
Support community-focused programs	Provide support for the implementation of
	community-focused healthcare programs to
	address local healthcare needs effectively
	(4, 54)

#### **CONCLUSION**

Foreigners living in Pakistan face many health challenges. Access to health care by these populations is limited by a variety of sociocultural economic factors with known health services available, differences in health beliefs, and local challenges understanding health practices. These individuals' health experiences are sometimes affected by hygiene practices and cultural differences. Furthermore, patterns of malnutrition and poor health in some expatriate communities, complicate the health challenges faced by this population. Additionally, migrant health workers living in Pakistan face their own health challenges. A health system that relies

heavily on out-of-pocket payments and lacks adequate resource allocation creates challenges for these individuals to access quality health care. High maternal and neonatal mortality rates, uneven distribution of resources and lack of access to surgical services further aggravate health barriers for foreigners in Pakistan Infectious diseases such as hepatitis The prevalence of B and C poses health risks not only to local residents but also to foreigners living in the country and contribute to these challenges, which affect the well-being of foreigners in Pakistan Foreigners in Pakistan face barriers in healthcare due to lack of health care, cultural differences, and inadequate resources. Difficulties in understanding local health practices and disparities in health care delivery affect their well-being, and require development and cultural understanding of health care delivery. Overall, health care patterns of foreigners in Pakistan include difficulty in accessing adequate health care, health beliefs, disparities, and challenges in disease prevention and its implementation.

#### **REFERENCES**

- 1. Arshad MI, Iqbal MA, Shahbaz MJAPJoTR. Pakistan tourism industry and challenges: a review. 2018;23(2):121-32.
- 2. Adnan Hye QM, Ali Khan REJAPJoTR. Tourism-led growth hypothesis: A case study of Pakistan. 2013;18(4):303-13.
- 3. Florea C, Ciovica CEJCoA-F, Economy E. Adventure Tourism-A Fundamental Pillar in the Development of Sustainable Tourism. 2012;1(2012):547.
- 4. Muhammad Q, Eiman H, Fazal F, Ibrahim M, Gondal MFJC. Healthcare in Pakistan: Navigating Challenges and Building a Brighter Future. 2023;15(6).
- 5. Khan SJHCCR. Situation analysis of health care system of Pakistan: post 18 amendments. 2019;7(3):244.
- 6. Malik MS, Afzal M, Farid A, Khan FU, Mirza B, Waheed MTJFiPH. Disease status of Afghan refugees and migrants in Pakistan. 2019;7:185.
- 7. MMI. [Available from: <a href="https://mmi.edu.pk/blog/health-issues-in-pakistan/">https://mmi.edu.pk/blog/health-issues-in-pakistan/</a>.
- 8. CDC.
- 9. Rehman AU, Zakar R, Zakar MZ, Hani U, Fischer FJF. Protocol for a cross-sectional study on factors affecting health-related quality of life among Afghan refugees in Pakistan. 2021;10(971):971.
- 10. Islam AJJTJotPMA. Health-related millennium development goals: policy challenges for Pakistan. 2004;54(4):175-81.
- 11. Afzal U, Yusuf A, editors. The state of health in Pakistan: An overview the State of Health in Pakistan: An Overview" with Anam Yusuf, paper presented at the Ninth Annual Conference on Management of the Pakistan Economy, Lahore School of Economics Paper published in the Lahore Journal of Economics: Special Edition; 2013.
- 12. Saleem A, Steadman KJ, Fejzic JJJoI, Health M. Utilisation of healthcare services and medicines by Pakistani migrants residing in high income countries: a systematic review and thematic synthesis. 2019;21:1157-80.
- 13. Khowaja KJJTJoNA. Healthcare systems and care delivery in Pakistan. 2009;39(6):263-5.
- 14. Syed Fawad M, Saima H, Rukhsana R, Aisha F. Healthcare in Pakistan-A systems perspective. 2016.
- 15. Hamid S, Ismail FW, Jafri WJJotCoP, JCPSP S--p. Hepatitis and the healthcare worker-a pakistani perspective. 2007;17(4):240-5.
- 16. Irfan FB, Irfan BB, Spiegel DAJJosr. Barriers to accessing surgical care in Pakistan: healthcare barrier model and quantitative systematic review. 2012;176(1):84-94.
- 17. Ikram W, Zaman K, Ahmad M, Niazi MJREBS. The study of healthcare assessment in Pakistan (1991-2007). 2011;4(1):225-37.
- 18. Fatima M, Nosheen F, Afzaal M, Islam F, Noreen R, Imran A, et al. Nutritional and health status of Afghan refugee women living in Punjab: A cross-sectional study. 2023.
- 19. Anwar M, Green J, Norris PJPh. Health-seeking behaviour in Pakistan: A narrative review of the existing literature. 2012;126(6):507-17.

- 20. KAMRAN M, ILYAS S, editors. Challenges and opportunities for Hospitality and Tourism Sector of Pakistan. PAPER PROCEEDINGS OF INTERNATIONAL CONFERENCE ON TOURISM AND HOSPITALITY MANAGEMENT 2013 (ONLINE); 2013.
- 21. Zafar SN, McQueen KKJWjos. Surgery, public health, and Pakistan. 2011;35:2625-34.
- 22. Bilal W, Qamar K, Abbas S, Siddiqui A, Essar MY. Infectious diseases surveillance in Pakistan: Challenges, efforts, and recommendations. Annals of medicine and surgery (2012). 2022;78:103838.
- 23. Butt M, Mohammed R, Butt E, Butt S, Xiang JJRm, policy h. Why have immunization efforts in Pakistan failed to achieve global standards of vaccination uptake and infectious disease control? 2020:111-24.
- 24. Jafar TH, Haaland BA, Rahman A, Razzak JA, Bilger M, Naghavi M, et al. Non-communicable diseases and injuries in Pakistan: strategic priorities. Lancet (London, England). 2013;381(9885):2281-90.
- 25. Khan SD, Jafar TH, Siddiqi K, Ahmad T, Khan AA, Samad ZJJoGH. Data on non-communicable diseases: A missed opportunity in Pakistan. 2023;13.
- 26. Bilal W, Qamar K, Siddiqui A, Kumar P, Essar MY. Digital health and telemedicine in Pakistan: Improving maternal healthcare. Annals of medicine and surgery (2012). 2022;81:104425.
- 27. Paul M, Maglaras L, Ferrag MA, AlMomani IJIE. Digitization of healthcare sector: A study on privacy and security concerns. 2023.
- 28. Gupta A, Dogar ME, Zhai ES, Singla P, Shahid T, Yildirim HN, et al. Innovative telemedicine approaches in different countries: Opportunity for adoption, leveraging, and scaling-up. 2020;5(1).
- 29. Ahmed A, Ahmed MJJTJotPMA. The Telemedicine Landscape in Pakistan-Why are we falling behind? 2018;68(12):1820-2.
- 30. Yousaf US, Ali F, Aziz B, Sarwar S. What causes environmental degradation in Pakistan? Embossing the role of fossil fuel energy consumption in the view of ecological footprint. Environmental science and pollution research international. 2022;29(22):33106-16.
- 31. Rehman A, Radulescu M, Ma H, Dagar V, Hussain I, Khan MKJE. The impact of globalization, energy use, and trade on ecological footprint in Pakistan: does environmental sustainability exist? 2021;14(17):5234.
- 32. Abas N, Kalair A, Khan N, Kalair AJR, Reviews SE. Review of GHG emissions in Pakistan compared to SAARC countries. 2017;80:990-1016.
- 33. Rasul G, Chaudhry Q, Mahmood A, Hyder K, Dahe QJPJoM. Glaciers and glacial lakes under changing climate in Pakistan. 2011;8(15).
- 34. Park Y-WJUNEP. The environment and climate change: outlook of Pakistan. 2013;107.
- 35. Oman DJM. Mindfulness for Global Public Health: Critical Analysis and Agenda. 2023:1-40.
- 36. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. 2018;6(11):e1196-e252.
- 37. Goodman RA, Bunnell R, Posner SFJPm. What is "community health"? Examining the meaning of an evolving field in public health. 2014;67:S58-S61.
- 38. Seyhan AA, Carini CJJotm. Are innovation and new technologies in precision medicine paving a new era in patients centric care? 2019;17:1-28.
- 39. Aveling E-L, Martin G, Herbert G, Armstrong NJSS, Medicine. Optimising the community-based approach to healthcare improvement: Comparative case studies of the clinical community model in practice. 2017;173:96-103.
- 40. Organization WH. Regional action framework on improving hospital planning and management in the Western Pacific. 2020.
- 41. Jackson CS, Gracia JNJPHR. Addressing health and health-care disparities: the role of a diverse workforce and the social determinants of health. 2014;129(1\_suppl2):57-61.
- 42. Junaid SB, Imam AA, Balogun AO, De Silva LC, Surakat YA, Kumar G, et al., editors. Recent advancements in emerging technologies for healthcare management systems: A survey. Healthcare; 2022: MDPI.
- 43. ur Rehman MRA, Wang J, Ali Y, Sorn MK, Khan RDAJOALJ. Food and Drug Safety Management in Pakistan. 2023;10(5):1-9.
- 44. Carroll LD, Wetherill MS, Teasdale TA, Salvatore ALJJoPHM, Practice. Community health improvement plans: an analysis of approaches used by local health departments. 2022;28(1):E291-E8.
- 45. Naseem S, Khattak UK, Ghazanfar H, Irfan AJPAMJ. Prevalence of non-communicable diseases and their risk factors at a semi-urban community, Pakistan. 2016;23(1).

- 46. Wainberg ML, Scorza P, Shultz JM, Helpman L, Mootz JJ, Johnson KA, et al. Challenges and opportunities in global mental health: a research-to-practice perspective. 2017;19:1-10.
- 47. Shah SM, Sun T, Xu W, Jiang W, Yuan YJGP. The mental health of China and Pakistan, mental health laws and COVID-19 mental health policies: a comparative review. 2022;35(5).
- 48. Sherin AJKMUJ. Road safety: A major public health issue. 2021;13(1):1-3.
- 49. Kumar R, Khan EA, Ahmed J, Khan Z, Magan M, Nousheen N, et al. Healthcare waste management (HCWM) in Pakistan: current situation and training options. 2010;22(4):101-6.
- 50. Rana W, Mukhtar S, Mukhtar SJAjop. Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. 2020;51:102080.
- 51. Wajid G, Sethi A, Khan RA, Aamir HSJPJoMS. World federation for medical education: appropriateness of basic medical education standards in Pakistan. 2019;35(5):1185.
- 52. Claramita M, Setiawati EP, Kristina TN, Emilia O, van der Vleuten CJBme. Community-based educational design for undergraduate medical education: a grounded theory study. 2019;19(1):1-10.
- 53. Khattak AF, Rahman AU, Khattak M, Qazi M, Gilani H, Khan A, et al. Toward Sustainable Healthcare Systems: A Low and Middle-Income Country's Case for Investing in Healthcare Reforms. 2023;15(5).
- 54. Shahid SJORF. Public Policy Lessons from Pakistan's Experience with COVID-19. 2020;25.