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Research Article

The Pakistan Healthcare Sector at Stake: Brain Drain of Pakistan Doctors

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ABSTRACT:

Background: The exodus of Pakistan's medical personnel is a major problem for the country. The nation's already overburdened healthcare system suffers from this brain drain, which results in a lack of qualified professionals and subpar patient care. This exodus is caused by a number of factors, including political instability, a lack of prospects for professional progression, and inadequate compensation. The exodus of highly skilled healthcare workers from Pakistan, sometimes known as "medical brain drain," is a growing concern that jeopardizes the country's healthcare system. As economic disparities, gender biases, and professional hurdles drive doctors, nurses, and other medical professionals outside, Pakistan has a serious shortage of medical workers. The purpose of this study is to investigate the fundamental causes and implications of medical brain drain, to identify the biases that worsen the problem, and to provide concrete solutions to reduce its impact on Pakistan's healthcare system. This research emphasizes the importance of specific policies aimed at improving healthcare working conditions, reducing gender disparity, and raising investment in medical training and infrastructure. **Objectives:** The study's objectives are to determine and examine the main factors that lead Pakistani physicians to look for work overseas and to evaluate the resulting effects on the country's healthcare system. **Materials and Methods:** A variety of methods, including surveys, experiments, and observational studies, may be used in quantitative research. The study used a quantitative research design and a cross-sectional survey approach. **Results:** A sizable portion of physicians cite low pay, unfavorable working circumstances, and a dearth of prospects for professional growth as reasons for their choice to immigrate. Furthermore, the situation is made worse by political unpredictability and security worries, which drive many people to look for safer and more stable surroundings. **Conclusion**: Pakistan's healthcare sector is seriously threatened by the continuous exodus of medical personnel. To solve this problem, extensive reforms are needed, such as bettering pay packages, improving working conditions, providing them the opportunities for their specialization trainings, grand maintaining political stability to keep talent in the nation. Therefore, in order to reduce brain, drain out of the nation, governments in developing nations like Pakistan should concentrate on policies that guarantee job opportunities are available, offer suitable research facilities, provide safe working conditions, and establish merit systems. In conclusion, it is critical to highlight that Pakistan has substantial obstacles in developing and successfully implementing migration-related policies since there is a dearth of a substantial database with international migration statistics. Therefore, among other things, keeping such a database up to date is essential for the proper execution of policies.

Keywords: Pakistan, Developing Nation, Migration, Healthcare Sector, and Brain Drain

1 | INTRODUCTION

Medicine is regarded as a prestigious profession in our culture. Doctors in Pakistan endure rigorous five-year undergraduate training that determines their future success. After completing undergraduate studies, doctors must complete postgraduate training, which requires a weekly workload of 80 hours. Doctors often have high expectations,

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particularly regarding pay and quality of life.[1] The shortage of skilled healthcare workers in Pakistan is exacerbated by the influx of smart experts seeking better job possibilities elsewhere. In 2022, the Bureau of Emigration and Overseas Employment reported that almost 765,000 Pakistanis, including 2,500 physicians, left the nation, underlining the seriousness of the crisis. Healthcare personnel shortages are caused by a deteriorating system, a lack of residency positions, low compensation during rising inflation, cultural biases, and undervaluation of professions such as nursing. Moreover, cultural expectations for women to emphasize household tasks lead to a lopsided number of females.[2] Healthcare personnel shortages are caused by a deteriorating system, a lack of residency positions, low compensation during rising inflation, cultural biases, and undervaluation of professions such as nursing. Female doctors leave the medical sector at a disproportionate rate due to cultural expectations that women prioritize household chores. This increases the task for existing healthcare providers, adding to the system's stress. Pakistan's healthcare sector is in peril as a growing number of medical experts relocate abroad in quest of better job possibilities, better working conditions, and greater compensation. This issue, sometimes known as "medical brain drain," has far-reaching implications for the country's health system.[3] Medical brain drain is the emigration of healthcare professionals from their home country to work in other countries. This situation is not exclusive to Pakistan; many developing countries have comparable challenges in keeping skilled healthcare staff. The reasons for medical brain drain are diverse, necessitating a comprehensive strategy to reverse the trend. One of the main reasons why healthcare professionals leave Pakistan is a lack of opportunity for career advancement and professional development. The healthcare system's insufficient resources make it difficult for experts to give the best possible treatment to their patients. Healthcare practitioners in Pakistan frequently confront lower pay and fewer perks than their counterparts in other nations. This discrepancy in salary encourages experts to seek higher-paying employment elsewhere.[4] Pakistan's political instability and security problems create an unpredictable climate in which healthcare practitioners can practice. Many professionals feel safer and more secure working in countries with more stable political environments. The scarcity of training programs and educational opportunities in Pakistan can stifle the professional development of healthcare professionals. Professionals may be unable to develop their professions unless they pursue additional education or specialized training abroad.[5] The shortage of experienced healthcare workers jeopardizes the delivery of key services and exacerbates Pakistan's already overburdened healthcare system, where the doctor-to-patient ratio is 1:1300, significantly lower than the World Health Organization's recommended ratio of 1:1000. In recent years, Pakistan has experienced a disturbing phenomenon known as medical brain drain, in which healthcare professionals, mainly doctors and nurses, have left the country in search of better prospects elsewhere.[2] This development has generated worries about the impact on Pakistan's healthcare system or the quality of care provided to its population. In this paper, we have looked at the factors driving the healthcare diaspora and consider viable solutions to this critical issue. This research investigates the reasons that contribute to medical brain drain in Pakistan, including societal, economic, and gender prejudices, and provides methods to solve these issues.[6] Brain drains negatively impacts economic growth and innovation by removing qualified workers and their experience. To address this issue, a complete approach is needed, including enhancing healthcare infrastructure and working conditions, increasing residency posts and pay, and offering better job prospects to retain talented doctors. Research on brain drain can help policymakers create appropriate policies based on the country's needs. These initiatives can strengthen Pakistan's healthcare system and ensure better medical services for its citizens.

2 | LITERATURE REVIEW

Medical brain drain is the emigration of healthcare professionals from their native nations to explore better chances elsewhere. According to Hussain et al.[6] Pakistan has emerged as a prominent exporter of medical talent, with an increasing number of doctors and nurses departing for nations such as the United States, the United Kingdom, and the Middle East. Low earnings, bad working conditions, political instability, and limited prospects for career progression have all been recognized as major factors for migration. Furthermore, Shah[7] stated that economic issues and inflation compound the situation, as medical professionals struggle to make ends meet in Pakistan, which has one of the world's highest inflation rates. Gender bias is another major factor contributing to medical brain drain in Pakistan. Female healthcare workers, particularly doctors, confront societal and professional barriers that frequently impede their career advancement. Cultural pressures on women to prioritize family and domestic responsibilities contribute to a disproportionate number of female doctors abandoning the profession.[9] This gender bias causes a higher turnover rate among female healthcare workers, contributing to a further shortage of trained medical people. Contend that these cultural expectations are firmly embedded in the Pakistani setting and must be addressed through structural reforms in order to retain female medical practitioners. The impact of medical brain drain on Pakistan's healthcare sector is significant. As the country loses a large proportion of its professional labor, healthcare services become less accessible, particularly in rural and neglected areas. That a scarcity of doctors and nurses has a direct impact on the quality of care offered to patients, resulting in increased wait times, overburdened healthcare facilities, and a general reduction in public health outcomes.[10] The loss of human capital in the healthcare sector jeopardizes not just urgent health services, but also

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the country's ability to handle long-term health issues such as chronic illness management, maternity health, and infectious disease outbreaks. The problem of brain drain, or the emigration of competent individuals from one country to another, is frequently exacerbated by occupational stress, bad working conditions, and limited career advancement prospects. Highly trained individuals are especially vulnerable to relocation when they believe their professional development is stifled or their working environment is harmful to their well-being.[11]

According to research, people in developing countries or regions with high levels of occupational stress and bad working are more likely to seek better possibilities elsewhere.[12] Occupational stress is directly related with intention to leave the current place.[13] The appeal of better working conditions, greater wages, and better career growth opportunities in wealthy countries frequently encourages migration. As a result, brain drain can cause a large loss of human capital, with long-term ramifications for the source country's development.[14] Departments who don't care for the employee mental stability at work would lead to Stress at work by this employee would think about other suitable options.[15] Furthermore, brain drain might result in a vicious loop. As competent professionals emigrate, the local labor market experiences a shortage of experienced workers, which can lead to further deterioration in working conditions and possibilities, causing more people to seek opportunities overseas. The link between occupational stress, working conditions, career advancement prospects, and brain drain is multidimensional. Occupational stress and poor working circumstances are frequently identified as important factors influencing employees' intentions to leave their native countries for better opportunities[16] Furthermore, the availability of career development chances abroad is a powerful motivator for qualified professionals pursuing professional advancement.[17] The available literature emphasizes the significance of developing work environments that promote employee well-being, professional development, and work-life balance in order to reduce the danger of brain drain. Organizations that prioritize these criteria are more likely to retain competent workers and contribute to national economic development by limiting talent outflows.[18] Analyzing brain drain's potential effects and repercussions highlights its crucial significance and estimated the financial toll that Pakistan has incurred from the loss of talent due to brain drain.[19] This study examined the many aspects of Pakistan's loss of talent. They calculated the economic impact of this talent loss by accounting for both explicit and hidden expenses. The reduction in a country's productive capacity brought on by this brain drain was also examined.[18] Their findings demonstrate that when productivity loss is taken into account, the cost to the nation of origin increases considerably.

Due to their labor and productivity, immigrants frequently boost the GDP of their new nations, which causes significant financial losses in their home countries. Due to their labor and productivity, immigrants frequently boost the GDP of their new nations, which causes significant financial losses in their home countries. According to their assessment, which deducts remittances received from the contribution of migrants to the global GDP, Pakistan had a productivity loss of US$ 303.4 billion in 2023 alone. Low pay and a lack of professional infrastructure are the main reasons given by a sizable percentage of doctors (83%) for leaving the nation. The lack of possibilities for additional education and specialization in Pakistan forces over 84% of medical professionals to emigrate. Two major causes for physicians to emigrate are ongoing political unrest and terrorist threats. Issues like insufficient medical resources and infrastructure lead to discontent among healthcare workers, who then look for better working conditions elsewhere. One of the main causes of the medical brain drain has been Pakistan's unstable economy over the last five years, which has resulted in market closures and higher prices. All of these elements work together to cause Pakistan's healthcare sector to suffer from the continuous exodus of medical experts.[19] The brain drain of young physicians from underdeveloped nations like Pakistan can be explained by a number of economic and social hypotheses. The following are a few of the most pertinent theoretical stances:

2.1 | Becker's (1964) Human Capital Theory

According to this notion, people may boost their productivity and earning potential by investing in their education and abilities. Highly qualified individuals, like physicians, look for chances in nations where their human capital is better rewarded when the local healthcare sector does not offer sufficient financial returns or career advancement. Doctors in Pakistan are pushed to migrate due to low pay, a dearth of contemporary medical facilities, and few postgraduate possibilities.

2.2 | Hypotheses

H1: Reward and recognition are associated with Brain Drain of Doctors
H2: Career development opportunities is associated with Brain Drain of Doctors
H3: Working conditions & Environment is associated with Brain Drain of Doctors

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3 | METHODOLOGY

The research has followed positivism research philosophy. Deductive approach has been used and survey strategy was adopted in this study. Quantitative research method is utilized in this cross-sectional study to gather information from respondents. This study used a survey design, which is a method of choosing and analyzing samples to provide information on current phenomena. A sample of 150 healthcare professionals, including doctors, nurses, and medical students, were questioned to learn why they left or were thinking about leaving the nation. This cross-sectional study was conducted on 150 junior doctors from Islamabad and Rawalpindi Medical Colleges and Hospitals during November and December 2024. The self-administered questionnaire was developed following a comprehensive literature review and circulated. Data was analyzed with SMART PLS 4.0, and p-values <0.05 were considered statistically significant.

4 | HYPOTHESES TESTING

The data was collected through survey method, which includes the collection of data through personal visits to the Banks. The study has applied Smart partial least square (PLS) 4, Smart PLS software was used for results reliability and validity of the data. Researcher has used measurement model assessment technique using to check composite reliability, Cronbach alpha, average variance extracted, discriminant validity etc. Hypothesis testing was also performed using SMART PLS software by structural equation modelling technique. The goal of demographic analysis is to look at the respondents' fundamental information, such as their education level, gender, age, and job experience. Demographic analysis was provided in section A of the questionnaire for the respondents in this study.

Table 1 Demographics

Characteristics	Frequency	%
Gender		
Male	94	58.7
Female	56	41.3
Age		
20-30	84	40.9
31-40	33	29.6
41-50	11	24.7
51-60	22	4.8

Table 2 Construct Reliability and Validity

Variables	Cronbach's Alpha	Rho A	Composite Reliability	Average Variance Extracted (AVE)
WC&E	0.936	0.939	0.947	0.691
CDO	0.921	0.936	0.940	0.727
R&R	0.972	0.973	0.975	0.780
BD	0.948	0.953	0.957	0.736

Composite reliability for all variables is greater than 0.7 and AVE value for all variables is higher than 0.5 (21). Table 2 shows high Cronbach's alpha coefficients for WC&E (0.936), CDO (0.921), R & R (0.972), and MBD (0.948) indicating their dependability. Composite reliability is a statistical measure that assesses the interconnectedness of indicators in a construct. Higher values indicate greater dependability. The constructs of WC&E (0.939), CDO (0.936), R & R (0.973), and MBD (0.953) exhibit strong reliability, with rho_a values exceeding 0.9. The components' Average Variance Extracted (AVE) values are: WC&E (0.691), CDO (0.727), R & R (0.780), and MBD (0.736). A coefficient of AVE greater than 0.5 indicates acceptable internal reliability and consistency for the researched construct. The study's constructs met the composite reliability and average variance extracted (AVE) criteria, indicating their dependability and homogeneity.

Table 3 Discriminant validity hetero trait- mono trait ratio (HTMT)

Variables	BD	CD	RR	WRC
BD				
CDO	0.977			
R & R	0.896	0.898		
WC& E	0.950	0.959	0.911	

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Table 3 shows the hetero-mono trait Ratio (HTMT), which is used in structural equation modeling (SEM) to evaluate component distinctness. Discriminant validity is measured by comparing hetero-trait correlations (correlations between different constructs) to mono-trait correlations (correlations within the same construct). Discriminant validity is achieved when HTMT values do not exceed 1.0. This study's HTMT ratios are all below the required threshold of 0.90, indicating successful discriminant validity across all components

Table 4 Path Coefficients

Hypotheses	Relationships	β	Sample Mean	Standard Deviation	T Statistics	P Values
H1	R & R →BD	0.488	0.478	0.096	5.086	0.000
H2	CDO → BD	0.156	0.160	0.070	2.223	0.026
H3	WC& E → BD	0.320	0.327	0.099	3.244	0.001

T-Statistics for each item must be above 1.66, 1.96 or 2.58. R & R is favorably and strongly correlated with Brain Drain.[18] The outcome demonstrated a positive and significant relationship between R & R and Brain Drain, with a path coefficient (β) of 0.488, a T-score of 5.086, and a P value less than 0.05. Thus, the theory is validated. CDO is favorably and strongly correlated with Brain Drain. The outcome demonstrated a positive and significant relationship between CDO and Brain Drain, with a path coefficient (β) of 0.156, a T-score of 2.223, and a P value less than 0.05. Thus, the theory is validated. WC & E is favorably and strongly correlated with Brain Drain. The outcome demonstrated a positive and significant relationship between WC & E and Brain Drain, with a path coefficient (β) of 0.122, a T-score of 3.059, and a P value less than 0.05. Thus, the theory is validated.

5 | RESULTS AND DISCUSSION

The Unstructured interview while face to face meeting with Doctors for Questionnaire explanation & filling the findings show that a number of variables contribute to Pakistan's medical brain drain. The most usually cited reasons are: Low earnings and a lack of financial security for healthcare professionals are strong motivators for relocation. One participant said, "In Pakistan, after spending years in medical school and training, the pay is insufficient to cover even basic expenses, which makes moving abroad an attractive option." Insufficient medical facilities, antiquated equipment, and overburdened hospitals deter professionals from staying in the country. An excessive patient load and insufficient resources result in a stressful and uncomfortable working atmosphere. Female healthcare personnel face extra challenges, such as social pressure to prioritize family responsibilities over their employment. According to Hussain et al.[6] women in the medical profession face greater difficulty in managing family and work, prompting many to seek opportunities abroad where such societal pressures are less pronounced. A lack of options for professional development, such as specialized training or access to research, motivates many healthcare professionals to seek better opportunities abroad. This is especially true for doctors and experts in Pakistan, who face long wait times for residency positions and growth opportunities.

6 | IMPACT ON THE HEALTHCARE SYSTEM

The brain drain exacerbates existing issues in Pakistan's healthcare system. The country already has a significant shortage of healthcare staff, especially in rural areas. With an expected 2,500 physicians departing the country in 2022 alone the healthcare industry is struggling to satisfy the demands of a growing population. The dearth of medical personnel is particularly visible in rural hospitals, where patients endure lengthy wait times, restricted access to specialist care, and subpar treatment. Furthermore, a lack of competent healthcare personnel impedes the country's ability to address urgent public health issues such as maternity and child health, infectious diseases, and noncommunicable diseases including diabetes and hypertension.

7 | CONCLUSION

Medical brain drain is a rising issue for Pakistan's healthcare system, and the implications are far-reaching. The departure of trained healthcare workers, fueled by economic concerns, poor working conditions, and gender biases, exacerbates the medical personnel deficit, particularly in rural communities. Addressing this issue involves a multifaceted approach that includes strengthening hospital infrastructure, providing better financial incentives, promoting gender equality, and encouraging international cooperation. By implementing these solutions, Pakistan would be able to build a more sustainable and equitable healthcare system that can meet the demands of its people. The global community faces a serious conundrum as a result of the problem of highly qualified professionals departing underdeveloped nations. However, given that Pakistan has lost a sizable percentage of its skilled labor relative to its demands, brain drain in Pakistan

particularly in the healthcare sector—should be carefully examined. While remittances can contribute to development, it is important to recognize that nations need qualified people to spur innovation and build robust institutions, which are the cornerstones of sustainable development. Pakistan's highly qualified and bright workforce chooses to migrate for a variety of reasons, such as a dearth of jobs, shoddy institutions, and inadequate research facilities.

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