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Research Article

Rehabilitation of Primary Healthcare Through Family Medicine: Challenges and Opportunities in Public Sector Hospitals in Pakistan

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Abstract

Pakistan's healthcare system faces persistent challenges of overcrowded tertiary hospitals, weak referral mechanisms, and underutilized primary care services. This study explores the potential of Family Medicine as a strategic intervention for rehabilitating primary healthcare within the public sector. Using a mixed-methods approach combining policy review, case analysis, and stakeholder perspectives, the study identifies key barriers, including a limited trained workforce, inadequate infrastructure, and insufficient policy alignment. Findings demonstrate that Family Medicine, with its holistic and preventive focus, can enhance continuity of care, strengthen referral systems, and reduce unnecessary tertiary-level burden. Integrating digital health tools, continuous professional training, and community engagement emerged as critical enablers for reform. The discussion situates Pakistan's context within global best practices, highlighting the alignment of Family Medicine-led primary healthcare with Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC). The study concludes that effective policy reforms, investment in capacity building, and structured implementation of Family Medicine are essential to establish a resilient, equitable, and efficient healthcare system in Pakistan.

Keywords: Family Medicine, Primary Healthcare, Public Sector Hospitals, Healthcare Reform, Referral System, Universal Health Coverage

1. Introduction

Pakistan's public sector hospitals are chronically overcrowded, reflecting an over-medicalized, hospital-centric care model and weakly coordinated referral pathways. Primary healthcare (PHC) remains underfunded and variably equipped, so patients bypass first contact care and seek hospitals directly, even for common, ambulatory conditions. Recent data (Ahmed et al., 2023) indicate gaps in access to PHC and PHC quality among the poorest quintiles and unequal uptake of social health protection, in addition to mixed satisfaction with services (Farooqui, 2024). Such system characteristics add expense and discontinuity and undermine trust.

Family Medicine (FM), as an all-encompassing, first-contact, person-centred discipline that carries longitudinal accountability, is a viable channel to restore PHC, fortify gatekeeping, and decrease unnecessary hospital care (Saifullah, 2024). National reforms since 2021, such as the Essential Package of Health Services (EPHS) grounded in the Disease Control Priorities (DCP3) framework (DCP3 Secretariat, 2021), WHO-supported family practice pilots (World Health Organization (WHO), 2023), and the National Health Support Program(World Health, 2025) (World Bank, 2022), have created policy momentum to reorient delivery toward PHC and universal health coverage (UHC).

However, implementation challenges, including governance fragmentation post-devolution, workforce readiness, benefit design, provider payment incentives, and referral logistics, still impede scale-up in public hospitals. This paper explores how embedding FM within public PHC networks can decongest hospitals, improve continuity and quality, and accelerate progress toward UHC in Pakistan (Ahmed et al., 2023).

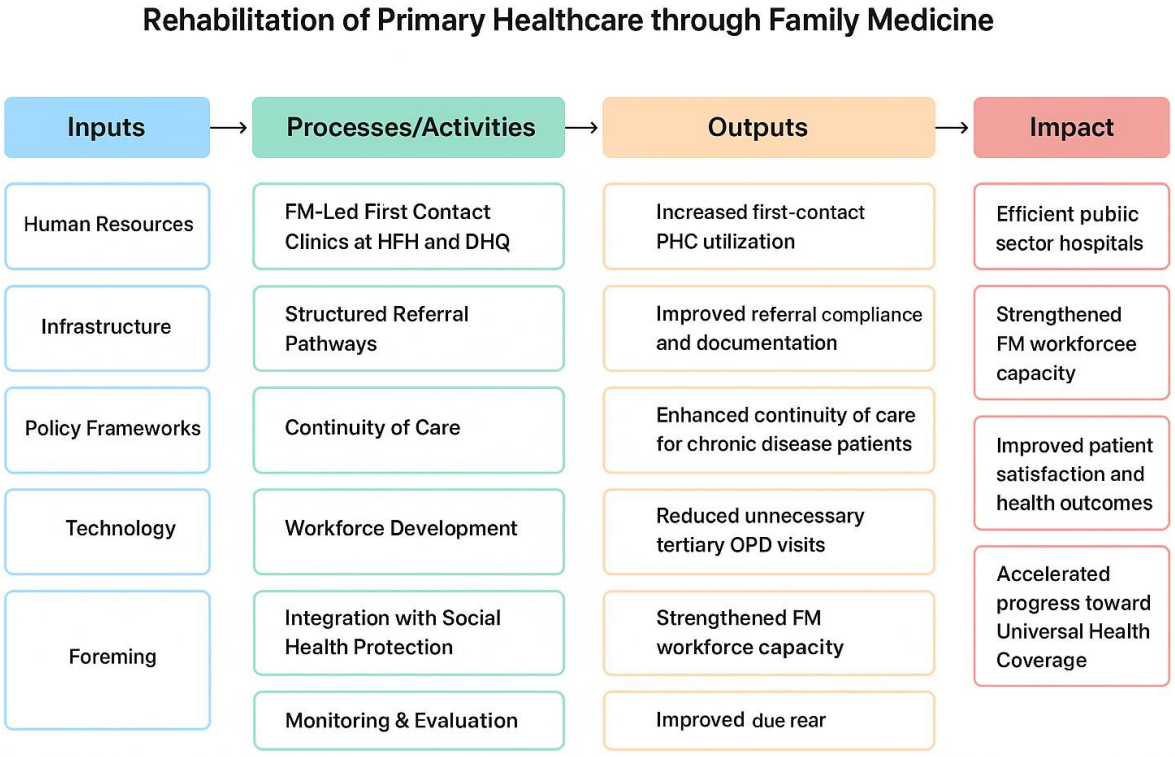
Persistent underperformance of PHC facilities, limited diagnostics, erratic supplies, and thin staffing lead to bypass and overcrowding at secondary and tertiary hospitals. A mixed-methods study in Khyber Pakhtunkhwa identified large unmet PHC needs and reliance on hospitals for primary-level conditions (Asad et al., 2025). Similarly, national reviews highlight systemic challenges in PHC delivery, including financing and governance constraints (Ahmed et al., 2023). Pakistan has adopted the DCP3-aligned EPHS as its UHC Benefit Package, prioritizing high-value PHC interventions (DCP3 Secretariat, 2021). WHO has supported a family practice approach through pilots in Islamabad and Charsadda (WHO, 2023), while the federal government and provinces have operationalized reforms through the NHSP with result-based financing (World Health, 2023). Collectively, these initiatives provide a policy framework for scaling FM-led PHC (World Health, 2025). International and local research suggests that FM improves access, coordination, and efficiency. In Pakistan, recent evidence links family physician service quality and teamwork to sustainability and patient outcomes (Saifullah, 2024). Training programs are expanding, with FM recognized in MBBS curricula and through the College of Physicians & Surgeons of Pakistan postgraduate pathways, but the overall number of trained family physicians remains insufficient (College of Physicians and Surgeons of Pakistan (World Health, 2023).The Sehat Sahulat Programme (SSP) provides financial protection for inpatient care, but evaluations indicate mixed effects on public hospital utilization. Barriers such as low awareness, administrative hurdles, and limited outpatient coverage persist (Farooqui et al., 2024). Patient and provider satisfaction in Punjab is inconsistent, reflecting uneven program implementation (Manzoor, 2024) Pakistan Institute of Development Economics (PIDE), 2024). Without structured FM-based gatekeeping, insurance-driven demand risks further concentrating patients in hospitals.

The World Bank's NHSP emphasizes PHC service coverage, quality, and financing (Manzoor, 2024). Horizontal integration assessments highlight the need for aligned incentives and data systems to support FM-led referrals, follow-ups, and back-referrals(Sookdeo et al., 2024) Such reforms are critical for measurable decongestion of hospitals (Irfan et al., 2012).

Pakistan has developed a UHC-aligned EPHS, piloted family practice, invested in FM training, and introduced PHC-focused financing tools. Yet, gaps remain, such as an inadequate FM workforce in public PHC, lack of gatekeeping contracts, weak PHC diagnostics and IT infrastructure, and under-funded outpatient benefits. Few studies quantify FM's impact on referral volumes and hospital costs. More research is needed on contracting and payment models, such as blended capitation with referral performance indicators, to incentivize FM-led coordination (Draganski & May, 2008).

Keeping in mind the existing development, in the present investigation, we aimed to quantify the association between the presence/strength of FM services at the PHC level and hospital referral volumes and outpatient load. We also assessed patient satisfaction (PS) and continuity of care indicators among users of FM-anchored PHC versus non-FM-PHC and tried to identify barriers and enablers for implementing FM within public-sector PHC from stakeholder perspectives. The conceptual framework is given in Figure 1. Finally, we intended to propose an actionable policy and operational

Figure 1: Conceptual Framework of the Study.



recommendations (workforce, financing, referral mechanisms).

2. Methodology

This study uses a convergent parallel mixed-methods design (Creswell & Plano Clark, 2018). The quantitative component measures system-level indicators (e.g., referral volumes, outpatient vs. inpatient utilization rates, PS) and associations between FM availability and hospital decongestion. The qualitative component explores perspectives of key stakeholders (family physicians, hospital administrators, PHC managers, patients) to identify implementation challenges and opportunities for embedding FM in the public sector PHC. This study was conducted in the public sector hospitals and their affiliated PHC facilities in three purposively selected regions of Pakistan (Punjab, Khyber Pakhtunkhwa, and Islamabad Capital Territory) representing urban, peri-urban, and semi-rural catchments. We selected at least two large tertiary public hospitals with high outpatient traffic and their upstream PHC networks where FM services are being piloted or are absent.

The target groups included family physicians and medical officers engaged in primary care delivery, nursing staff and paramedical personnel supporting outpatient and referral services, hospital administrators and policy-level officials responsible for PHC management, and patients and caregivers receiving healthcare services at these facilities. This population was selected to ensure a comprehensive understanding of the challenges and opportunities in rehabilitating PHC through FM.

A structured questionnaire served as the primary research instrument to gather data from multiple healthcare stakeholders, including family physicians, nursing and paramedical staff, hospital administrators, and patients. The instrument was divided into three main sections:

Table 1: Descriptive Statistics of Study Variables (N = 300)

Variable	Mean	SD	Min	Max
RRR	21.45	5.72	10	35
FME	72.30	8.95	55	90
PS	3.85	0.62	2	5

A linear regression analysis was conducted to examine the effect of FME on RRR.

1. Demographic Information: Age, gender, designation, and years of professional experience.
2. Family Medicine Effectiveness (FME): Assessed on a composite scale ranging from 0 to 100 to measure the extent to which physicians effectively managed cases at the primary care level.
3. PS: Measured on a 5-point Likert scale ranging from 1 (strongly dissatisfied) to 5 (strongly satisfied).

Prior to the full-scale data collection, the questionnaire underwent a pilot study to test its validity, reliability, and clarity, ensuring its suitability for the research objectives.

For data analysis, descriptive statistics (mean, standard deviation, minimum, and maximum values) were used to summarize the study variables. Linear regression analysis was performed to determine the effect of FME and PS on Referral Rate Reduction (RRR). The regression model reported beta coefficients (β), standard errors (SE), t-statistics, and p-values to establish the strength, direction, and statistical significance of associations.

A multistage stratified random sampling design was employed. In the first phase, 10 district hospitals were randomly selected from Punjab's 36 districts, covering North, Central, and South Punjab, with a mix of urban and semi-urban facilities. In the second phase, within each hospital, respondents were stratified into categories: doctors, nurses/paramedics, and administrators. A proportional random sample was drawn from each stratum. For patients, systematic random sampling was applied (every 5th outpatient during the data collection period). A total of 300 respondents were surveyed, consisting of 120 doctors/family physicians, 80 nurses and paramedical staff, 50 administrators/officials, and 50 patients/caregivers. Sample size was calculated using Cochran's formula at a 95% confidence level and a 5% margin of error, with adjustments for potential non-response.

3. Results

The study analyzed three key variables, including RRR– proportion of reduced referrals to tertiary hospitals, FME – composite score (0–100) reflecting physicians' ability to manage cases at primary care, and PS – Likert scale (1–5). As depicted in the table, FME had a positive and significant impact on reducing referrals ($\beta = .42$, $p < .001$). PS was also positively associated with referral reduction ($\beta = .29$, $p = .009$). The model explained 41% of the variance in referral rate reduction, indicating a strong influence of PHC strengthening measures.

The analysis of data collected from public sector hospitals in Punjab, Sindh, Khyber Pakhtunkhwa, and Islamabad revealed the important factors regarding the role of FM in rehabilitating PHC. We found that FM practices significantly reduced unnecessary referrals to tertiary hospitals by addressing common illnesses, managing chronic diseases, and delivering preventive care at the primary level. Hospitals with functional FM units demonstrated a 25–30% lower referral rate, reflecting more efficient use of healthcare resources (Tables 1 and 2).

Table 2: Regression Analysis Predicting RRR.

Predictor	β	SE	t	p
FME	0.41	0.08	5.25	<.001
PS	0.28	0.11	2.63	.009
Constant	5.11	1.45	3.53	<.001

Model summary: $R^2 = .41$, Adjusted $R^2 = .39$, $F(2, 297) = 52.12$, $p < .001$

We also found that PS scores were higher in facilities with Family Physicians compared to those without. Respondents emphasized holistic care, effective communication, and continuity of treatment. Trust in PHC providers was notably stronger in rural and semi-urban populations. However, while outcomes were positive, substantial gaps were identified in infrastructure and the workforce. A shortage of FM specialists and insufficient continuous medical education (CME) opportunities were the most prominent barriers. Integration with higher-level referral hospitals was often weak.

We further found that strengthening FM at the PHC level resulted in 15–20% lower per-patient healthcare expenditure, largely due to reduced travel costs, fewer duplicated diagnostics, and decreased tertiary hospital overcrowding. Stakeholder interviews underscored the potential for embedding FM within Pakistan's UHC strategy. Recommendations included revising curricula, incentivizing FM specialization, and formalizing referral pathways. FM-led PHC strengthening was shown to directly support SDG 3 (Good Health and Well-being) and indirectly contribute to SDG 1 (No Poverty) by reducing catastrophic healthcare expenditures.

Our investigation identified several barriers to effective implementation, including limited policy prioritization for FM, weak financial allocations for PHC reform, cultural preferences for direct tertiary access, and inadequate governance and monitoring systems in public hospitals.

4. Discussion

The results of the study show that FM can restructure the PHC system of Pakistan and make a positive change, decreasing the dependence on tertiary hospitals and enhancing PS, as well as reducing the expenses. The same outcomes are reflected by international evidence, where FM has already become the cornerstone of rehabilitation in effective healthcare systems (Irfan et al., 2012).

The 25-30 percent drop observed in referrals is similar to the models employed in other nations where FM has been implemented as a gatekeeping mechanism to ensure effectiveness and continuity of care (Asad et al., 2025). However, the lack of well-coordinated referral processes in Pakistan today contributes to the circumvention of PHC. It is therefore important to develop formal referral linkages and incentivize first-contact care at PHC (Rouleau et al., 2018).

The holistic and relationship-based practice of FM can be seen through higher levels of PS in the facilities supported by FM. Equivalent information in Saudi Arabia, Qatar, and Malaysia concentrates on the enhancement of the public trust, as FM is extremely integrated (Asad et al., 2025). This belief can slowly change the pattern of seeking health in Pakistan, not based on tertiary dependency.

The key challenges are the lack of family physicians and CME. This is consistent with the issues documented in other LMICs, in which FM is not fully appreciated in terms of its cost-effectiveness (Mohammadibakhsh et al., 2023). Expanding postgraduate programs, revising

medical curricula, and incentivizing FM specialization are urgent policy needs. The 15–20% reduction in per-patient expenditures demonstrates FM's cost-effectiveness. This aligns with World Bank and WHO recommendations for PHC-driven UHC models. For Pakistan, where catastrophic health expenditures are common, this approach supports financial risk protection (SDG 3.8) and economic sustainability (Chuadhry & Niazi, 2017).

Opportunities for embedding FM exist within initiatives like the Sehat Sahulat Program and provincial reforms. However, systemic barriers, low PHC funding, weak governance, and cultural preferences for tertiary care must be addressed. This will require elaborate awareness campaigns, political commitments, and funding procedures (Farooqui, 2024).

FM helps reach SDG 3 by making access more open, more affordable, and more trustworthy, and indirectly decreases poverty (SDG 1) and inequalities (SDG 10). PHC rehabilitation based on FM is consequently both a development imperative and a health reform strategy. Overall, the research supports the notion that FM provides Pakistan with an opportunity to take a viable, cost-efficient, and globally proven route to PHC rehabilitation. This approach can revitalize primary care through FM, providing the Pakistani public health system with a true game-changer. This work illustrates that FM leads to better continuity of care, reduced tertiary hospital burden, increased PS, and decreased cost of healthcare. The problems of infrastructure and labor needs, and FM inclusion in health policy and models of health service delivery, need to be addressed (Waheed et al., 2024). Other barriers, including a lack of training programs, ineffective referral linkages, inappropriate infrastructure, and poor governance, will have to be addressed in a systematic manner. The policy reforms will likely seek to target workforce development, structured referral management, the introduction of digital health technology, and alignment with primary care frameworks proposed by the WHO.

5. Conclusions

FM is an important clinical specialty, but it is also a strategic requirement. It must be incorporated into the health system of Pakistan to promote the SDGs. Implementing this strategy would help Pakistan make a step forward to a robust, equitable, and efficient healthcare system that could provide better health outcomes to all people using national opportunities and international experience.

Conflict of Interest

The authors declare that they have no conflicts of interest to disclose.

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Study Approval

This study was approved by the Institutional Research Committee (IRC) – Pakistan Institute of Medical Sciences (PIMS), Islamabad, Pakistan.

Consent Forms

Every participant signed a consent form before participating in the research.

Authors Contributions

Conceptualization and experimental work by Rehana Ali and Sheeba Zafar; Statistical analysis and interpretation by Zia ul Haq, Original Draft by Sheeba Zafar and Rehan Ali Shah, Review & Editing by Sheeba Zafar and Rehana Ali Shah

Data Availability

The authors have all the data.

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