

## Rehabilitation Communications

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### Review Article

# The Impact of Rehabilitation and Family Medicine Training on Referral Reduction in Tertiary Care Hospitals in Pakistan

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### Abstract

Pakistan's district hospitals are struggling with issues of overcrowding, unintegrated referral routes, and inadequate capacity to handle patient volumes. In this narrative review, we investigated how the incorporation of rehabilitation services and family medicine training in the reduction of referral rates in district hospitals can be achieved. To identify patterns, advantages, and challenges, an exhaustive review of peer-reviewed articles, policy reports, and global case studies published between 2015-2025 was conducted. Results indicate that early rehabilitation intervention helps in patient recovery, improves readmission, and minimizes tertiary care referrals, whereas family medicine training improves primary care by increasing diagnostic accuracy, continuity of care, and patient satisfaction. All these interventions are combined to form a more effective model of healthcare delivery that will be relevant to the Sustainable Development Goals (SDGs) and, in particular, to health system strengthening and universal health coverage. Finally, the review concludes that the burden on secondary and tertiary hospitals can be decreased with the implementation of family medicine residency programs, rehabilitation units, and formal referral protocols. These improvements are possible with policy reforms and investment in workforce training in Pakistan.

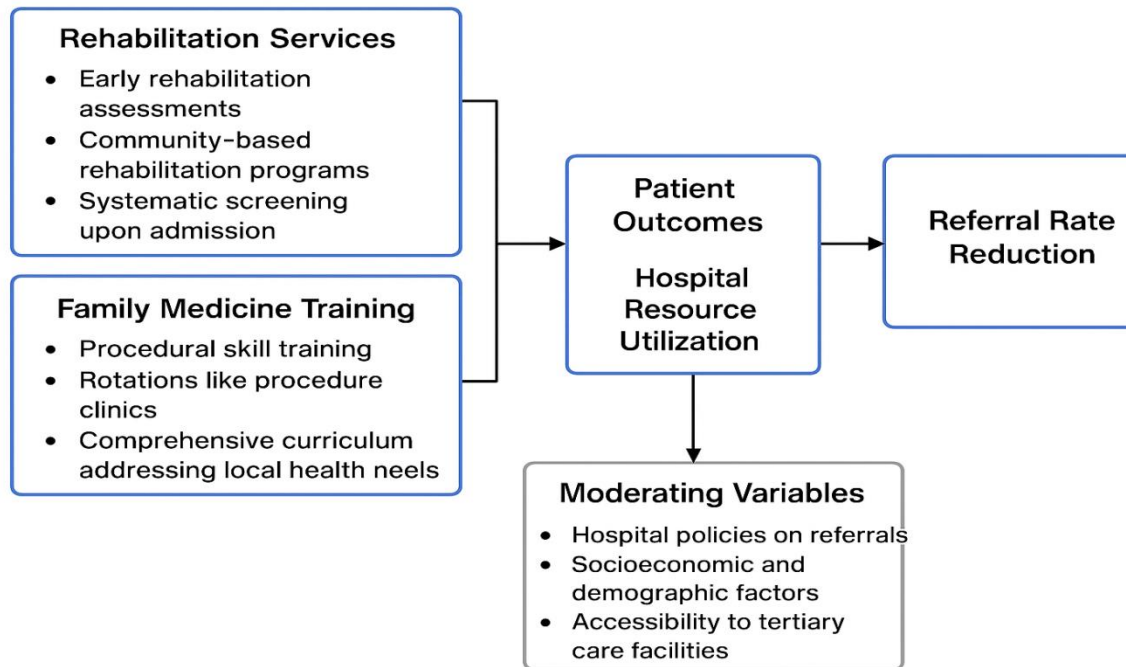
**Keywords:** Rehabilitation, Training in Family Medicine, Reducing referrals, District Hospitals, Pakistan

### 1. Introduction

The underlying systemic inefficiency at district hospitals and referral processes continues to overwhelm tertiary health care facilities in Pakistan. This fact is well known (Saifullah, 2024) and exacerbates health-related issues. This results in tertiary-level consultations spiraling needlessly due to inefficiencies in district hospitals, which are often the first point of contact with many patients. These mishandlings create burdens for tertiary care hospitals in Pakistan (Asad et al., 2025). This further leads to the broken experience of patients and loss of precious health resources (Rashid and Swati, 2025). Rehabilitation through family medicine (FM) training programs can be a long-term solution. These and other schemes provide

physicians with competence to include chronic care, preventive and ambulatory care, and limit the inappropriate number of referrals and continuity of care (Heidarzadeh et al., 2023). In this regard, physicians should be empowered with rehabilitation-focused FM training, which serves to set up more comprehensive care at the district level so that patients are properly managed without further and unjustifiable referrals to the tertiary level (Noreen et al., 2024). A study in Brazil showed a significant decrease in referral of patients to the tertiary care by physicians who had undertaken FM residency training, with more than half of the decrease in specialties such as dermatology and psychiatry. These findings indicate that improved clinical reasoning and procedural skills developed

Figure 1: Conceptual Framework of the Study.



during FM training, have a direct impact on avoidable referrals (Sabzwari, 2015).

A quasi-experimental study reported a 47% reduction in pediatric referrals and a 30% reduction in gynecological referrals following targeted CME awareness sessions (Nazir et al., 2024). This underscores the potential for even short-term educational interventions to shift referral behavior, though sustained impact likely requires ongoing professional development.

A narrative synthesis of referral interventions identified four core strategies: GP education, system redesign, specialist collaboration, and patient engagement. While GP education was consistently effective in reducing inappropriate referrals, the training alone is insufficient without systemic reforms in infrastructure, processes, and patient education (Mohammadibakhsh et al., 2023). This aligns with global health system strengthening frameworks that emphasize multi-level interventions.

Pakistan has made early strides in strengthening FM through initiatives such as the FamMed Essentials blended-learning program, designed to enhance GP competencies in line with universal health coverage (UHC) goals (Khan et al., 2024). While this program focuses primarily on capacity-building rather than direct referral outcomes, it reflects a broader national recognition of the importance of structured FM training to improve healthcare delivery at the community and district levels (Khan et al., 2024). A systematic review of Family Physician Program (FPP) implementation highlighted seven critical pillars: governance, financing, workforce, service delivery, health information systems, accessibility, and cultural adaptability. These structural factors strongly influence the effectiveness of referral pathways and underline the need for FM training to be embedded within an enabling environment (Farooqui, 2024). This suggests that FM-based referral reduction strategies in Pakistan will succeed if supported by broader policy and system-level reforms

(Irfan et al., 2012). This paper examines how structured FM training and rehabilitation elements affect referral in Pakistan district hospitals. Specifically, it evaluates training intensity and physician competence, in relation to referral behavior, and takes into account moderating and contextual factors such as CME and healthcare dynamics in the area.

## **2. Methodology**

### **2.1. Study Design**

This study was conducted as a narrative review, synthesizing current evidence on the impact of rehabilitation interventions and FM training on referral reduction within district hospitals. The narrative review approach was selected due to its flexibility in integrating findings from diverse sources empirical research, policy reports, and conceptual frameworks, to provide a comprehensive overview of the topic (Sookdeo et al., 2024).

### **2.2. Procedure**

The review was guided by the following research questions. How does the integration of rehabilitation services at district hospitals influence referral rates at the district hospitals? What role does FM training play in strengthening district hospitals and reducing unnecessary referrals?, What challenges and opportunities exist for implementing these interventions in low- and middle-income countries, particularly Pakistan?

The following techniques are used for the collection of the data for the current study. Databases searched included PubMed, Scopus, Web of Science, and Google Scholar. Grey literature, such as WHO reports, Ministry of Health documents, and health policy briefs, was also reviewed. Keywords and Boolean operators included: “rehabilitation services” AND “referral reduction”, “family medicine training” AND “primary healthcare”, “district hospitals” AND “Pakistan”, “referral pathways”, “continuity of care”.

Only peer-reviewed articles, policy documents, and reports published between 2015–2025; studies addressing primary healthcare, FM, rehabilitation, and referral management in hospital settings were included in this study. Studies unrelated to healthcare delivery, non-English publications, or research without relevance to low- and middle-income countries were excluded. Extracted variables included rehabilitation interventions, FM training (Independent Variables, referral reduction (Dependent Variable), and healthcare infrastructure, physician workload, patient awareness, policy environment (Mediating/Contextual Factors).

### **2.3. Analysis and Synthesis**

The findings were narratively synthesized rather than statistically pooled, and the studies were grouped according to thematic categories such as the role of rehabilitation in referral management, the contribution of FM training to PHC strengthening, and the barriers and opportunities for integration in LMIC contexts. The synthesis highlights both global evidence and local implications for Pakistan.

## **3. Important Findings of the Review**

### **3.1. Rehabilitation and Referral Reduction**

It was evident from the literature that rehabilitation services reduce unnecessary referrals to the tertiary care facilities. The literature shows that the availability of rehabilitation units (e.g., physiotherapy, occupational therapy, speech therapy) at district hospitals significantly decreases referrals to tertiary care hospitals. Moreover, the patients managed with early rehabilitation interventions report improved functional recovery and reduced need for higher-level interventions. The reviewed literature consistently highlights the contribution of early rehabilitation services in lowering referral rates from district hospitals to tertiary care centers. Studies from low- and middle-income countries (LMICs) show that when rehabilitation departments (e.g.,

physiotherapy, occupational therapy, speech therapy) are integrated at the district level, patients with musculoskeletal, neurological, and chronic conditions can be managed locally, thereby reducing the need for specialized referral (Jantsch et al., 2022). Evidence from the World Health Organization (WHO) also demonstrates that rehabilitation reduces hospital readmissions by improving functional independence and quality of life, further alleviating the burden on referral pathways (World Health, 2023).

### **3.2. District-level Care Reinforced by FM Training**

The literature suggests that trained family physicians manage a broad spectrum of acute and chronic conditions effectively. FM practice improves preventive care, patient counseling, and continuity of care, which collectively reduce inappropriate referrals.

### **3.3. Combined Impact Makes the System of Gatekeeping More Robust**

It is also evident from the data that rehabilitation and FM together form a dual framework that enhances the capacity of first-line centers of care. This synergy reduces tertiary hospital overcrowding, optimizes resource utilization, and improves patient satisfaction.

### **3.4. Obstacles in Implementation.**

It is also evident from the findings that a lack of structured referral guidelines, insufficient staffing of rehabilitation professionals, and limited postgraduate training in FM weaken the system. Cultural perceptions, where patients prefer tertiary hospitals over local care, further limit primary care effectiveness.

### **3.5. FM Training and Primary Care Strengthening**

Evidence indicates that FM training equips general practitioners with the skills necessary for comprehensive, patient-centered care. Physicians trained in FM demonstrate greater proficiency in managing a broad spectrum of conditions, applying preventive strategies, and offering counseling services that minimize

unnecessary referrals (World Health, 2025). District hospitals with family physicians report more effective gatekeeping, ensuring only complex cases are referred to tertiary institutions, while routine conditions are resolved locally (Seyed-Nezhad et al., 2021).

### **3.6. Synergistic Role of Rehabilitation and FM**

A recurring theme in the literature is the synergistic effect of rehabilitation services and FM training. While rehabilitation addresses functional recovery and continuity of care, FM ensures clinical comprehensiveness and longitudinal follow-up. Collectively, this creates a dual strategy that makes district hospitals effective care delivery spots. Studies from South Asia suggest that this combination significantly lowers referral pressure, reduces costs for patients, and improves health system efficiency (Heidarzadeh et al., 2023).

### **3.7. Barriers and Challenges**

Despite positive outcomes, several challenges still remain, including resource constraints, policy gaps, awareness issues, and training limitations.

## **4. Contextual Implications for Pakistan**

In the Pakistani context, where district hospitals face chronic overcrowding and fragile referral mechanisms, the integration of rehabilitation departments and formalized FM training programs at the primary care level emerges as a pragmatic solution (Asad et al., 2025). Pilot studies in Punjab and Sindh provinces have shown that strengthening primary and district-level services reduces patient load at tertiary centers and improves patient satisfaction. However, sustained policy commitment, investment in human resources, and community-level awareness are essential to achieving long-term referral reduction (Alwan et al., 2024).

## 5. Discussion

The results of this review indicate that rehabilitation services, as well as FM training, are essential in reducing referrals at the district hospitals in Pakistan. The combination of the two areas has repeatedly shown lower referral to tertiary care hospitals, better patient outcomes, and improved system efficiency. Physiotherapy, occupational therapy, and speech therapy are rehabilitation interventions that allow patients to regain functional independence at the district level so that consultations at the tertiary level are not so necessary. This is consistent with the recommendation of the World Health Organization (WHO, 2021) that rehabilitation should be distributed at all levels of health care and not in centers of specialization. These services lead to greater patient satisfaction and recovery over time, in addition to workload reduction in tertiary care (Medicine & Dentistry, 2024).

Training in FM also prepares physicians to deal with a broad range of health issues in a community. Family physicians who are well-trained help to decrease unnecessary hospital admissions or referrals through the management of acute and chronic conditions at the local level (Pinto & Giovanella, 2018). Even more notably, their focus on preventive treatment, patient education, and long-term treatment instills trust in patients and decreases the cultural hesitation of patients to opt out of primary care (Rouleau et al., 2018). Rehabilitation services combined with FM go hand in hand, strengthening the referral system, and, therefore, tertiary hospitals are offered only those cases that need a specific intervention (Dahhan et al., 2015).

Despite that potential, there are still obstacles. There are usually no trained rehabilitation personnel, an organized FM residency program, or referral guidelines in the district hospitals of Pakistan (Mohammadibakhsh et al., 2023). In addition, the cultural trends also affect the behavior of seeking healthcare; they create a bias

in favor of tertiary hospitals, thus undermining intervention at the district level. Poor infrastructure and lack of funds, and disincentive policies discourage the implementation of sustainability.

Several countries, including the United Kingdom and Canada, have made FM the foundation of healthcare provision, and a well-developed system of rehabilitation is built into local hospitals at the district level (Seyed-Nezhad et al., 2021) Pakistan is still in the infantile phase of such integration, although pilot projects have paid off well in eliminating referral pressure, in addition to enhancing accessibility of healthcare services in sparsely populated districts.

District hospitals can train and rehabilitate FM providers and reduce overcrowding in tertiary centers by scaling up FM training and rehabilitation services, thereby optimizing resource distribution and improving health equity. Investing in the traditions of FM residency, multidisciplinary rehabilitation units, and systemic referral directions, policymakers need to devote additional time and energy to systematizing a successful pyramid of health care services. Such reforms need to be aligned with the Sustainable Development Goals (SDGs), especially SDG 3 (Good Health and Well-being), to further enhance the momentum toward universal health coverage in Pakistan (Awan et al., 2022).

## 6. Conclusion

This review underscores the importance of rehabilitation services and the training of family physicians to empower district hospitals and minimize the number of unnecessary referrals to tertiary care hospitals. Rehabilitation can provide timely functional healing, and FM encourages comprehensive and prolonged treatment, such as prevention, hence a potent shield against a second wave of assault on health care.

The evidence indicates that the implementation of these services at the district level can not only reduce congestion in tertiary hospitals but also improve patient outcomes, patient satisfaction, and efficiency of the system. However, to ensure a sustainable impact, one should also address such issues as untrained professionals, poor infrastructure, and inefficient referral procedures.

It is preferable that Pakistan fund the FM residency programmes, design multidisciplinary rehabilitation units, and develop organized referral channels. The healthcare delivery system will be strengthened by reforms that align with best practices around the world and SDGs to promote fair access to quality care for all.

#### **Conflict of Interest**

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

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There were no funding contributions for this research from any source.

#### **Study Approval**

NA.

#### **Consent Forms**

NA

#### **Authors Contributions**

Conceptualization and experimental work by RAS and SZ; Statistical analysis and interpretation by ZUH, Original Draft by SZ and RAS, Review & Editing by SZ and RAS.

#### **Data Availability**

The authors have all the data.

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