

IMPACT OF FAMILY MEDICINE TRAINING PROGRAMS ON HEALTHCARE OUTCOMES: A SYSTEMATIC REVIEW

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Abstract

Background: Family medicine (FM) has been identified as a vital component of primary health care (PHC) and a prerequisite for achieving Universal Health Coverage. Despite growing evidence of its usefulness in improving healthcare outcomes, a rigorous analysis of family medicine training programs' influence on health indicators is still absent.

Objective: The purpose of this systematic review was to describe the impact of family medicine training programs on healthcare outcomes, with a focus on patient health indicators, healthcare access, and healthcare system responsiveness.

Methods: A systematic review was conducted using PRISMA principles, including studies published between 2020 and 2024. Databases such as PubMed, Scopus, and Google Scholar were searched to find relevant literature. The inclusion criteria centered on studies that assessed family medicine training programs and their associated healthcare outcomes in a variety of worldwide locations. Five studies were selected for examination after a rigorous screening process.

Results: The study found that well-structured family medicine training programs considerably improve healthcare outcomes. For example, training resulted in better treatment of chronic diseases like diabetes, as indicated by improved patient health indicators (e.g., HbA1c). Studies also found that training family physicians (FPs) improved healthcare access and responsiveness, allowing them to better fulfill the requirements of their communities. Holistic training techniques that include person-centered care and address socioeconomic determinants were underlined as critical for responding to changing health concerns.

Discussion: The review emphasizes the transformative power of family medicine education in enhancing healthcare delivery. Investment in family medicine training improves health outcomes while also promoting equitable access to care. Continuous evaluation and customization of training curricula are critical for meeting the changing needs of healthcare systems.

Conclusion: Family medicine training programs are essential for improving healthcare outcomes. A continuous commitment to developing these training paths is critical for maximizing health services and increasing health equity. Policymakers and educational institutions must work together to match training with community health needs and develop a diverse physician workforce capable of addressing existing and developing health concerns.

Keywords: Family Medicine, Training, Programs, Healthcare, Outcomes, Systematic Review.

Introduction

In the last 30 years, hospital admissions have been utilized as a valuable measure of the effectiveness of primary health care (PHC) (Jantsch et al., 2023). Family medicine (FM) is the established specialty in primary care, but it will always be a reform movement (Kahn et al., 2021). While the core role of the family physician remains unchanged, the environment constantly demands that newly identified needs and challenges be addressed (Kahn et al., 2021). (FM) has been identified as an important specialty for improving the quality of (PHC) physicians worldwide (AlSharief et al., 2018).

(FM) has played and continues to play an important role in primary health care (PHC) and Universal Health Coverage (UHC) in healthcare delivery (Sanoe et al., 2021). Over the previous ten years, the discipline has examined the actual abilities required of family physicians as they interact with patients and the health system, mostly at the primary health care and district hospital levels (Mash et al., 2021). Empirical research demonstrates the role of empathy in health care outcomes and finds several changing factors of empathy. Individual empathy can be improved through training; however, there are few organizational-level interventions for systematic enhancement (Nembhard et al., 2023).

Physician training is becoming increasingly crucial in ensuring high-quality care for patients (Al-Ali et al., 2020). This will be extremely efficient if clinical skills and needs are offered to physicians during residency training. Institutions around the world that have residency training programs focus on increasing training and education (Saeedi et al., 2019). Black individuals are underrepresented in health professions that require advanced training, such as medicine, due to various barriers (Morris et al., 2021). To address this, universities can implement holistic admissions, hiring, and promotion processes, as well as improve educational and training opportunities (Xierali & Nivet, et al., 2018). Creating equitable health career opportunities and a

diverse physician workforce has been shown to improve health outcomes, including care access, patient adherence, physician communication, and patient experience (Snyder et al., 2023).

Educational funding streams at both the state and federal levels influence priorities and health equity outcomes (Pittman et al., 2021). For example, federal and state graduate medical education financing for residency training is the single greatest public investment in health workforce development (Pittman et al., 2021). Medical specialist training should be regularly re-aligned with the demands of the community and the health system (Mash et al., 2021).

Some organizations collaborate with regular academic medical centers, while others develop their own programs (Velasquez et al., 2024). Oak Street Health, a publicly traded care delivery firm, for example, collaborates with medical schools in multiple states, including an Education Centered Medical Home with Northwestern's Department of Family and Community Medicine to provide medical students with continuity experiences (Velasquez et al., 2024). Resident physicians rotate around their clinics to gain expertise in population health and primary care redesign (Lassner et al., 2022).

Four important stakeholders must be convinced of the need for family medicine education and training (Mash et al., 2025). These include higher education and training institutions, medical practitioner registration bodies, the government's health department, and other health professions. Higher education and registration agencies are frequently dominated by other disciplines that may not recognize the role of family physicians in their own health systems (Sururu & Mash, 2017). Furthermore, private practitioners from other disciplines may feel threatened by the advent of family physicians because their scope of practice naturally extends into a variety of specialized areas (Mash et al., 2025).

In many nations, family medicine contributes significantly to the strengthening of local health care systems (Von Pressentin et al., 2020). Although the duties of family physicians vary by country and are still being debated, they frequently play different roles in higher-resource countries and are rarely the initial point of contact, which is usually with a nurse or clinical officer (Von Pressentin et al., 2020). Health and education equity are critical components of a fair and flourishing society (Olaboye et al., 2024). These two pillars significantly impact human well-being, society development, and economic advancement (Germain et al., 2024). Despite breakthroughs in healthcare and education, inequities still exist, making it challenging to achieve equitable outcomes for all (Olaboye et al., 2024).

(FM) covers a wide age range and type of care. As a result, curriculum must cater to patients' different demands throughout their lives (Ohta & Sano, 2021). Well-designed curricula guarantee that family practitioners receive thorough training, can adapt to changing healthcare landscapes, and provide high-quality care to their patients (Schoenmakers et al., 2025). The curriculum must strike a balance between teaching important topics thoroughly and avoiding overburden. Prioritizing content while maintaining depth of knowledge is difficult. Furthermore, ensuring enough clinical exposure is critical (Schoenmakers et al., 2025).

While numerous studies emphasize the value of family medicine training programs in enhancing primary health care quality and supporting universal health coverage, there is a considerable gap

in the systematic examination of these programs' direct impact on health care outcomes. The dearth of reliable evidence tying the effectiveness of family medicine training to actual health care outcomes emphasizes the importance of conducting a systematic study to elucidate these links. This systematic review will be used as a reference by authors to draw on and build appropriate policies based on the suggestions of various studies, as well as to undertake studies based on the findings of earlier studies. As a result, our study sought to summarize the influence of family medicine training programs on healthcare outcomes, with a particular emphasis on patient health indicators, healthcare access, and the responsiveness of healthcare systems.

Rationale of the study

(FM) is a medical specialty that provides the community with comprehensive, accessible, and inexpensive treatment, which is crucial for the success and sustainability of any healthcare system (Khan et al., 2018). Over the past decade, there has been a greater emphasis on improving family physician education and training, the (WHO) has also underlined the need for trained primary care personnel (Khan et al., 2022).

However, policymakers in low- and middle-income nations continue to be concerned about a dearth of skilled human resources in basic health care. Recent strategies have sought to boost the availability and retention of doctors in neglected areas (Wollmann et al., 2020). However, the vast majority of doctors in FHS are not trained in family medicine (FM) (Jantsch et al., 2023). Family medicine residency training (FMRT) improves coordination and continuity of care by increasing family physicians' proficiency in maintaining health conditions that can be adequately managed in primary care, as well as identifying health conditions that necessitate specific biomedical techniques and skills, which increases demand for those services, it also raises the possibility that patients will have follow-up appointments in primary care (Jantsch et al., 2022).

The rationale for this systematic review is based on family medicine's crucial role in providing high-quality primary health care and achieving global health equity. With rising healthcare demands and changing patient expectations, assessing the efficacy of family medicine training programs is critical for improving healthcare outcomes. Despite indications that well-trained family physicians can have a major impact on patient care, there have been no thorough assessments linking these training programs to improved health indicators. Bridging this gap is critical for informing instructional methods, guiding policy decisions, and eventually improving the overall performance of primary health care systems. This study's comprehensive assessment of the influence of family medicine training on healthcare outcomes will provide significant insights that may be used to inform curriculum creation, improve residency programs, and contribute to the current discussion about health equity and access in medicine.

Aim

To summarize the influence of family medicine training programs on healthcare outcomes, with a particular emphasis on patient health indicators, healthcare access, and the responsiveness of healthcare systems.

Methods

Study Design

This systematic review assesses the impact of family medicine training programs on healthcare outcomes, drawing on findings from publications published between 2020 and 2024. The review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards to ensure methodological rigor and a thorough synthesis of findings.

Search Strategy

A thorough literature search was undertaken using electronic databases such as PubMed, Scopus, and Google Scholar. The search technique focused on terms and phrases like "family medicine training," AND "healthcare outcomes," OR "primary healthcare," and "patient care." This search was limited to papers published between 2020 and 2024 in order to find the most recent data relevant to family medicine training programs.

Inclusion and Exclusion. Criteria

Inclusion criteria:

- Research on family medicine training programs included cross-sectional research, observational cohort studies, explanatory studies, literature reviews, workshops, surveys, and longitudinal evaluations.
- Research on healthcare outcomes such as patient health indicators, healthcare access, and system responsiveness.
- Research was undertaken in multiple geographic places to obtain unique viewpoints on family medicine training.

Exclusion criteria:

- The studies did not primarily focus on family medicine training.
- Editorials, commentary, non-peer-reviewed articles, or articles containing insufficient data.
- The research was not published in English.

Data Extraction

Two independent reviewers assessed titles and abstracts for eligibility using the inclusion criteria, followed by full-text evaluations to confirm eligibility. Data extraction was performed using a standardized form to obtain critical information from each trial, including:

- Author(s) and Year of Publication
- Geographic setting and study design.
- Key findings and conclusions about healthcare delivery and patient health.

Selection Process

In 2025, a thorough literature search produced 80 items. After removing duplicate entries, 50 studies remained for further analysis. After evaluating the titles and abstracts, 41 papers were removed because they did not match the set inclusion criteria. Following that, the remaining papers were thoroughly examined, and ten studies were determined to be eligible. One research was removed because it did not report original investigations, leaving us with a total of nine papers for our systematic review (see Table 1 and Figure 1).

Quality Assessment

The quality of each included study was evaluated based on its design and implementation. The following is a summary of the assessment criteria (Table no.1) used for different research kinds in a tabular format:

Study Reference	Setting	Study Design	Conclusions
Al-Ali et al. (2020)	AlJafer Training Center, AlAhssa, Saudi Arabia	Cross-sectional	Family medicine training improves care quality for diabetic patients, indicating FPs provide superior care.
Jantsch et al. (2022)	Public primary care system, Rio de Janeiro, Brazil	Observational cohort study	RTFM enhances primary care effectiveness, suggesting investment in training improves healthcare systems.
Khan et al. (2022)	Khyber Pakhtunkhwa, Pakistan	Mixed-method explanatory study	DFM program beneficial for primary care, emphasizing need for training opportunities; recommends further long-term impact studies.
Mash et al. (2021)	South Africa	Review	Commitment to improving family medicine training quality to address

			South African healthcare needs.
Ohta & Sano (2021)	Global perspective	Literature review	Need for enhanced focus on person-centered care and integration of family medicine principles into practice.
Von Pressentin et al. (2020)	PrimaFamed network, Africa	Workshop	Highlights ongoing need for tailored support in family medicine training across African contexts.
Daines et al. (2021)	United States	Survey	Early experiences play a crucial role in shaping adult family health, indicating need for promoting positive childhood experiences.
Murad et al. (2022)	Saudi Arabia	Cross-sectional	General awareness of family medicine is present; utilizing findings to improve educational efforts is crucial.
Sulaiman et al. (2024)	University of Sharjah, UAE	Longitudinal evaluation study	Successful implementation and evaluation of family medicine program; emphasizes its importance in medical curricula.

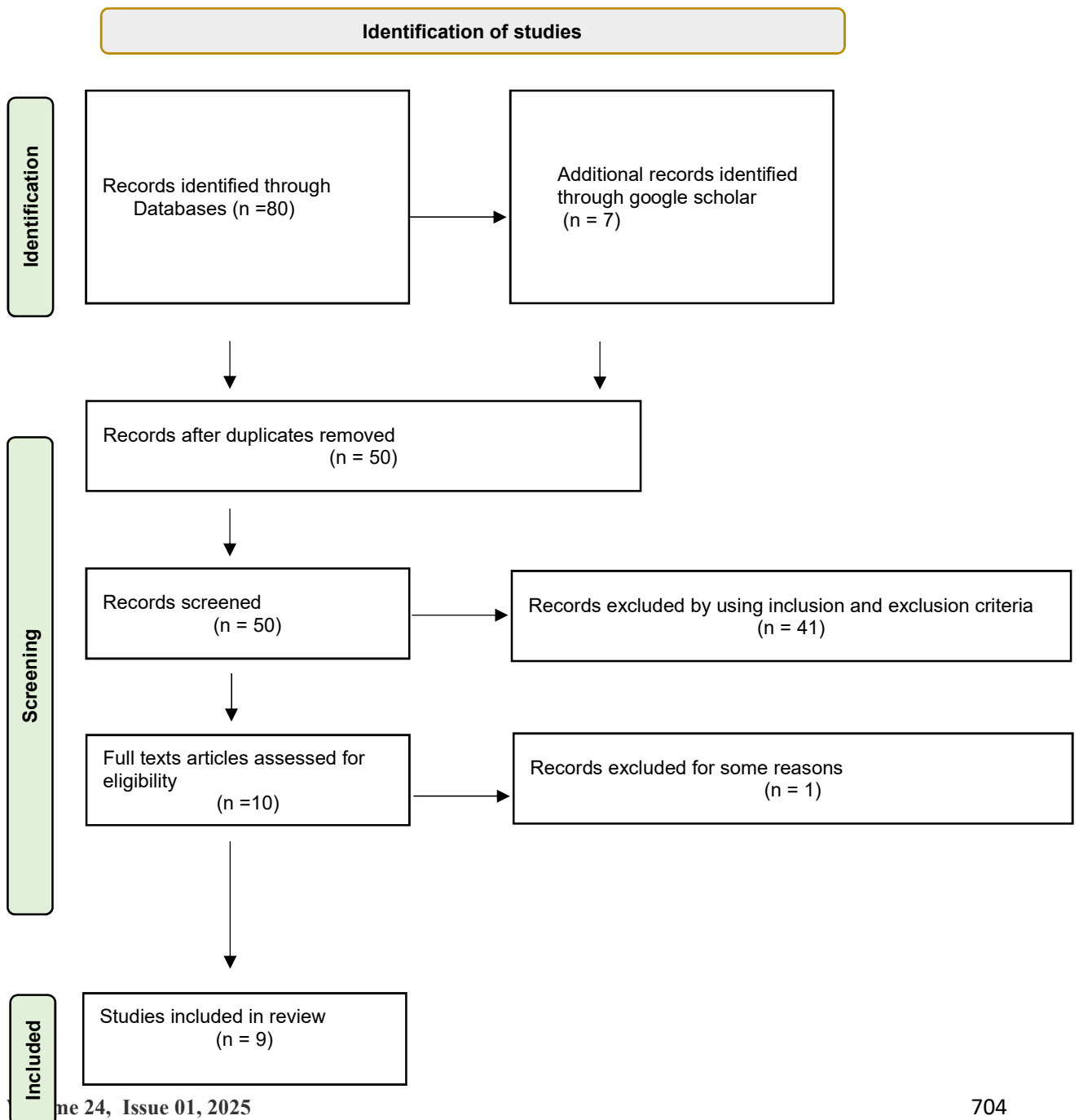


Fig. 1. PRISMA 2009 Flow Diagram

Results

The results chapter provides a thorough review of the data from numerous studies looking into the impact of family medicine training on healthcare quality and outcomes. An increasing body of research supports the importance of family medicine in improving care delivery, particularly in basic healthcare settings. This chapter summarizes major findings from cross-sectional studies, cohort analyses, and observational research undertaken in a variety of geographic regions, including Saudi Arabia, Brazil, Pakistan, and South Africa. The findings provide light on the transformative role of family physicians and the importance of strong training frameworks by assessing clinical metrics, patient satisfaction, and training program success. The chapter intends to highlight the crucial implications of these findings for policymakers, healthcare providers, and educators, emphasizing the importance of sustained investment in family medicine to enhance health outcomes and overall care coordination across varied healthcare systems. **See table no.2**

Table no. 2			
Study Reference	Setting	Study Design	Conclusions
Al-Ali et al. (2020)	AlJafer Training Center, AlAhssa, Saudi Arabia	Cross-sectional	Family medicine training improves care quality for diabetic patients, indicating FPs provide superior care.
Jantsch et al. (2022)	Public primary care system, Rio de Janeiro, Brazil	Observational cohort study	RTFM enhances primary care effectiveness, suggesting investment in training improves healthcare systems.

Khan et al. (2022)	Khyber Pakhtunkhwa, Pakistan	Mixed-method explanatory study	DFM program beneficial for primary care, emphasizing need for training opportunities; recommends further long-term impact studies.
Mash et al. (2021)	South Africa	Review	Commitment to improving family medicine training quality to address South African healthcare needs.
Ohta & Sano (2021)	Global perspective	Literature review	Need for enhanced focus on person-centered care and integration of family medicine principles into practice.
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Murad et al. (2022)	Saudi Arabia	Cross-sectional	General awareness of family medicine is present; utilizing findings to improve educational efforts is crucial.

Sulaiman et al. (2024)	University of Sharjah, UAE	Longitudinal evaluation study	Successful implementation and evaluation of family medicine program; emphasizes its importance in medical curricula.
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Discussion

This discussion chapter brings together the findings of several research on the impact of family medicine training programs on patient health indicators, healthcare access, and overall healthcare system responsiveness. The overriding theme is the demonstration that increased family medicine training significantly contributes to better healthcare outcomes, implying that investing in these programs is critical for optimizing health services.

Patient Health Indicators:

Numerous studies show that family medicine training improves important health indices among patients. In Saudi Arabia, Al-Ali et al. (2020) discovered that patients cared for by family physicians (FPs) had better diabetes management than those managed by general practitioners. Key criteria such as HbA1c levels, blood pressure control, and the start of preventative treatments such as statins and aspirin all favored FP-managed care. This demonstrates the usefulness of FPs, particularly in chronic disease treatment, when continuous monitoring and comprehensive care are essential.

In Brazil, Jantsch et al. (2022) discovered that FPs not only managed referrals more efficiently, but also provided better follow-up treatment in primary settings. The study's large sample size and broad scope offered strong evidence that better continuity and coordination of treatment are directly related to good family medicine training. Such findings suggest that well-trained FPs can address a considerable number of health concerns formerly directed to specialists, improving overall health system efficiency.

Healthcare access and responsiveness

Family medicine training appears to improve healthcare access and response. Khan et al. (2022) found that graduates of the Diploma in Family Medicine (DFM) program were highly satisfied with how the training prepared them to face the demands of primary care, with documented increases in clinical skills and results. Notably, many FPs had difficulty reconciling service delivery with training. Nonetheless, the overall findings indicate that a structured DFM program can dramatically increase healthcare access for people who benefit from higher-quality clinical treatment.

Similarly, Mash et al.'s (2021) review underlines the necessity of matching training programs with public health requirements. The revision of training outcomes and skills for family physicians is a strategic endeavor to guarantee that educational frameworks evolve in response to demographic and health-care system changes, thereby improving service delivery and patient outcomes.

Holistic and Comprehensive Training

The reported literature emphasizes the importance of holistic training in family medicine. Ohta and Sano (2021) advocate for a comprehensive strategy that incorporates person-centered treatment, socioeconomic determinants of health, and a grasp of healthcare system difficulties. McWhinney's nine basic principles of family medicine emphasize the importance of practitioners adhering to these beliefs while adjusting to changing healthcare difficulties.

The Primafamed workshop in Africa highlighted various phases of development in family medicine training across nations, emphasizing the importance of personalized approaches that address individual settings (Von Pressentin et al., 2020). Such variety in training levels highlights the need of international collaboration and shared learning experiences in advancing family medicine education and practice in many settings.

Impact of Early Experiences on Community Health

Furthermore, Daines et al.'s (2021) results on the impact of early childhood experiences on adult family health emphasize that family medicine cannot be limited to clinical training; it must also include the larger socioeconomic determinants of health outcomes. Initiatives aimed at promoting family health should therefore combine efforts to promote healthy childhood experiences with professional training.

Curriculum Development and Student Feedback

The study undertaken at the University of Sharjah (Sulaiman et al., 2024) demonstrates the practical applications of a well-structured family medicine curriculum. The adoption of Kern's 6-step model for program creation emphasizes the significance of continual review and adaption based on stakeholder feedback to ensure the program's relevance and effectiveness.

Conclusion

The combined findings of these research highlight the importance of family medicine training programs in improving healthcare outcomes. These programs, by improving patient health indicators, facilitating access to care, and encouraging a responsive healthcare system, ultimately contribute to better health outcomes at the individual and community level. Continued investment in family medicine education and research is critical for addressing current and future health concerns, emphasizing the importance of policies that support structured training efforts targeted to the distinct healthcare needs of various populations.

Recommendations

To improve the influence of family medicine training programs on healthcare outcomes, governments should encourage standardized curricula that address current healthcare demands, with a focus on chronic illness management and preventative treatment. Investing in teacher development will boost teaching quality and encourage continuous improvement. Furthermore,

encouraging collaboration among family physicians and specialists might improve patient access and continuity of care. Encouraging medical students to pursue careers in family medicine through mentorship and incentives is critical to meeting the need for primary care physicians. Finally, continuous evaluation and customization of training programs is required to ensure responsiveness to the changing healthcare context.

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