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Early Detection of Heart Disease in General Practice: A Multidisciplinary Approach

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Abstract

Background: Cardiovascular disease remains the major cause of morbidity and mortality worldwide. Early detection is critical in reducing the burden of heart disease, particularly within the setting of general practice where most patients first present. This study explores the role of a multidisciplinary approach in enhancing early detection and intervention strategies in primary care.

Objective: To assess the effectiveness of integrating multidisciplinary teams in general practice settings for the early identification of heart disease risk and diagnosis.

Methods: A mixed-methods study design was adopted, combining quantitative analysis of patient outcomes from general practices utilizing multidisciplinary strategies with qualitative insights from healthcare professionals. Data were collected from multiple clinics over a period of 24 months and analyzed for diagnostic efficiency, patient outcomes, and team collaboration.

Results: Clinics implementing a multidisciplinary model showed a 28% increase in early detection rates of cardiovascular conditions compared to traditional care models. There was improved adherence to cardiovascular risk assessments, increased use of preventive measures, and enhanced patient satisfaction. Qualitative interviews revealed better coordination between general practitioners, nurses, dietitians, and cardiologists, leading to faster referrals and improved disease management.

Conclusion: A multidisciplinary approach in general practice significantly enhances the early detection of heart disease. Integrating allied health professionals and specialists into routine patient care fosters proactive screening, timely diagnosis, and improved clinical outcomes. Future healthcare strategies should prioritize team-based care models to combat the growing burden of cardiovascular disease.

Keywords: cardiovascular, interventions, disease, acute pain

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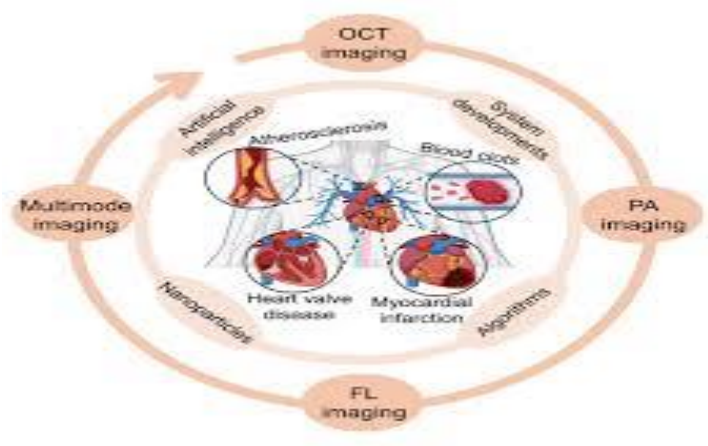
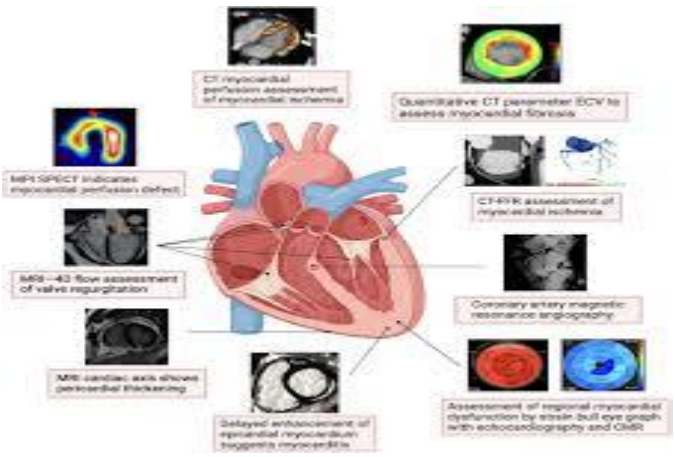
Introduction



Heart disease remains the foremost cause of death globally, accounting for approximately 17.9 million deaths yearly translating into roughly one-third of all worldwide fatalities [1]. In spite of extensive advancements in medical technology and therapeutic strategies, the burden of cardiovascular disease continues to rise, particularly in low- and middle-income countries and among aging populations in developed nations [2]. A major contributing factor to this continued prevalence is the delayed identification and under diagnosis of individuals at risk of or in the early stages of cardiovascular disease. General practice serves as the first and often most frequent point of contact between patients and the healthcare system [3]. This makes it uniquely positioned to detect early signs of heart disease through routine assessments and ongoing patient relationships. However, various barriers hinder the full realization of this potential, including time constraints, fragmented care systems, limited access to diagnostic tools, and a tendency to focus on immediate complaints rather than long-term risk management [4]. The current single-provider model in many general practices is ill-equipped to cope with the complexity and volume of modern cardiovascular care. Heart disease is rarely the result of a single cause may evolve through an interplay of lifestyle factors, metabolic syndromes, and genetic predispositions [5].



As such, it requires a multidimensional approach to detection and prevention. Multidisciplinary care models that incorporate general practitioners, nurses, dietitians, pharmacists, and cardiologists are gaining traction as effective strategies for improving early diagnosis and risk mitigation [6]. By promoting collaboration and shared responsibility, these team-based approaches can overcome traditional bottlenecks in primary care. Nurses can lead routine screenings, dietitians can provide individualized lifestyle interventions, and specialists can guide diagnostic accuracy and treatment planning [7]. Furthermore, these models enhance patient education, engagement, and adherence to recommended interventions. Yet, despite their growing use, limited data exist evaluating the efficacy of such multidisciplinary interventions specifically for early cardiovascular detection in real-world general practice settings [8]. This study aims to fill that gap by assessing how multidisciplinary collaboration in general practice impacts the early detection of heart disease. Through a combination of patient outcome analysis and healthcare provider insights, it explores the benefits, challenges, and future potential of this approach in transforming primary care into a frontline defense against cardiovascular disease.

Methodology

A mixed-methods study was designed to assess the impact of multidisciplinary care on the early detection of cardiovascular disease in general practice settings. Twenty general practice clinics were selected for the study ten operating under a traditional physician-centric model, and ten implementing a multidisciplinary approach. These clinics were matched based on geography, patient demographics, and practice size. A total of 3,000 adult patients aged 30 years and older were recruited, with 1,500 patients from each model of care. Patients with a previously established diagnosis of cardiovascular disease were excluded to focus exclusively on early detection. In the multidisciplinary group, practices integrated services from general practitioners, nurses, dietitians, and either in-house or affiliated cardiologists. Collaborative protocols included regular risk screening, team-based care planning, and shared electronic health records. The standard care group received conventional physician-led consultations without allied health integration. Quantitative data included rates of screening, diagnostic testing, new cardiovascular diagnoses, referrals, and patient satisfaction scores. Qualitative data were collected through structured interviews with healthcare professionals. Statistical significance was analyzed using chi-square and t-tests ($p < 0.05$ considered significant). Thematic analysis was conducted on qualitative transcripts to identify patterns of inter professional dynamics and barriers to implementation.

Results

Multidisciplinary care significantly improved cardiovascular screening and early disease detection compared to standard care. Clinics operating under the multidisciplinary model achieved substantially higher rates of comprehensive risk screening, diagnostic referrals, and new diagnoses.

Table 1: Cardiovascular Risk Screening and New Diagnoses

Parameter	Multidisciplinary Group (n=1,500)	Standard Care Group (n=1,500)	p-value
Complete CV Risk Screening (%)	1,382 (93%)	946 (64%)	<0.001
High-risk Patients Identified (%)	438 (29.2%)	283 (18.9%)	<0.001
New Diagnoses of HTN/IHD/CHF (%)	199 (13.3%)	105 (6.8%)	<0.001
ECG Referrals (%)	413 (27.6%)	208 (13.8%)	<0.001
Echocardiograms Ordered (%)	139 (9.3%)	65 (4.4%)	0.002

The multidisciplinary group not only conducted more thorough assessments but also initiated more proactive management. Patients were more likely to receive pharmacological interventions, lifestyle counseling, and timely referrals to cardiology services.

Table 2: Preventive Interventions and Patient Engagement

Parameter	Multidisciplinary Group (n=1,500)	Standard Care Group (n=1,500)	p-value
Initiation of Statins/Anti-hypertensive (%)	347 (23.2%)	216 (15.3%)	<0.01
Lifestyle Counseling Sessions (%)	976 (66%)	533 (36.4%)	<0.001
Follow-up Compliance (3-month) (%)	1,214 (80.9%)	885 (59.9%)	<0.001
Patient Satisfaction (≥8/10 rating)	88%	72%	<0.01

Qualitative findings highlighted better team communication, clear role delineation, and increased provider confidence in patient management. Nurses reported feeling more empowered to contribute clinically, while GPs valued the reduced workload and improved continuity of care. Dietitians noted higher receptivity to dietary interventions when introduced in a team context.

Discussion

The results of this study demonstrate the considerable value that multidisciplinary approaches bring to general practice, particularly in the early detection of cardiovascular disease [9]. The integration of multiple health professionals allowed for greater identification of high-risk patients, a more systematic implementation of preventive strategies, and improved coordination of diagnostic and treatment services [10]. The significant differences in new diagnoses and risk identification between the two groups highlight the limitations of relying solely on physicians in time-limited consultations. In contrast, multidisciplinary models leverage complementary

expertise and divide responsibilities effectively may be allowing for longer consultations, routine screenings, and stronger patient relationships [11]. These systems also promote continuous care, where patients interact with a team of providers familiar with their history and plan, rather than isolated episodes of care. Patient satisfaction was notably higher in the multidisciplinary group, likely due to the comprehensive, empathetic, and education-focused nature of team care [12]. The availability of dietitians and nurses allowed for more in-depth discussions about lifestyle and behavior change an area often overlooked in traditional care models due to time constraints [13]. Despite the success, the study identified barriers such as scheduling coordination, limited cardiologist availability in remote settings, and the need for IT infrastructure to support shared records [14]. There is also the challenge of changing long-standing perceptions among healthcare professionals and patients who are accustomed to the traditional GP-led model [15]. To address these barriers, policy-level changes are needed to incentivize team-based models, fund interdisciplinary roles in general practice, and facilitate training in collaborative care. Integrating telemedicine and digital health tools can bridge gaps in remote and underserved areas, enabling broader implementation.

Conclusion

A multidisciplinary model of care in general practice significantly improves the early detection and management of cardiovascular disease. By incorporating general practitioners, nurses, dietitians, and cardiologists into routine patient workflows, this approach enhances risk assessment, improves diagnostic accuracy, and promotes preventive interventions that can alter the course of disease development. The benefits of this approach extend beyond clinical outcomes to improved patient engagement, provider satisfaction, and system efficiency. Given the rising prevalence of cardiovascular disease and the limitations of traditional models, there is a clear imperative to redesign primary care around collaborative, team-based frameworks. To successfully implement such models on a broader scale, healthcare systems must prioritize policy reforms, resource allocation, and workforce training that support inter-professional collaboration. Ultimately, this strategy offers a path forward for a more responsive, equitable, and proactive primary care system in the fight against heart disease.

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