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Review Article

Evaluating the family adoption programme in competency-based medical education: a structured evidence review and implementation framework for undergraduate medical training in India

Sonali Kar[1]*, Smruti R. Nayak[1], Ipsa Mohapatra[1], Rama C. Das[2], Dilip Panda[3], Angana Ray[1]

[1]Department of Community Medicine, Kalinga Institute of Medical Sciences (KIMS), KIIT Deemed to be University, Patia, Bhubaneshwar, Odisha, India
[2]Department of Psychiatry, Kalinga Institute of Medical Sciences (KIMS), KIIT Deemed to be University, Patia, Bhubaneshwar, Odisha, India
[3]Kalinga Institute of Medical Sciences (KIMS), Patia, Bhubaneshwar, Odisha, India

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***Correspondence:**
Dr. Sonali Kar,
E-mail: sonsam72@yahoo.co.uk

ABSTRACT

Community-oriented medical education is a vital part of the competency-based medical education (CBME) curriculum introduced in India in 2019. The family adoption programme (FAP) was added as a key component of CBME to give undergraduate medical students an in-depth, long-term experience with household health factors and primary community health systems. This structured review evaluates the available evidence on the educational impact of the FAP, identifies key implementation challenges across institutional settings, and proposes strategic reforms to enhance its sustainability and effectiveness. A structured evidence review with thematic synthesis was conducted using PubMed, Scopus, and Google Scholar. The search targeted policy documents, descriptive studies, experiential reports, and empirical evaluations related to the family adoption programme and community-based medical education in India, focusing on publications from 2000 to 2024. Relevant studies on community-based and experiential learning models worldwide were also included. Evidence shows that the FAP enhances students' understanding of social determinants of health, health-seeking behaviors, and healthcare services. Students demonstrate improved communication skills and community engagement. However, implementation varies between institutions, with challenges such as logistical barriers, insufficient faculty supervision and mentorship, lack of standardized documentation and assessment tools, and weak integration with national and state health programmes. The family adoption programme is a promising approach to improve medical education in India. However, its educational impact is limited by inconsistent implementation. Overcoming these challenges requires systemic reforms, including structured learning modules, digital documentation and monitoring tools, faculty mentoring systems, and linkage with primary health care services.

Keywords: Family adoption programme, CBME, Community-based education, Undergraduate medical training, India, Experiential learning, Social determinants of health

INTRODUCTION

Traditionally, medical education has focused heavily on hospitals, which often restricts students' exposure to the important social, economic, and environmental factors that greatly influence health and disease. This historical focus hampers the development of a well-rounded perspective needed for effective public health and primary care. Increasing international recognition of the value of community-based learning has led to the development of alternative educational models that highlight community

participation, preventive healthcare, and a deeper understanding of health within its context.[1,2]

In India, a pivotal shift occurred with the adoption of the competency-based medical education (CBME) curriculum. The goal of CBME is to realign medical training more closely with national health priorities and the specific needs of the population.[3] A major, innovative aspect of the CBME curriculum is the Family Adoption Programme (FAP), launched in 2021.

Under this initiative, undergraduate medical students are assigned specific households within defined urban or rural field practice areas. Students are expected to "adopt" and follow these families sequentially throughout their training. Updated guidelines restrict allocations to rural households, with a preference for communities located more than 50 km from a primary health care facility.[4]

The FAP involves scheduled visits over seven semesters, during which students actively record demographic details, environmental conditions, health behaviours, and disease patterns within their assigned families. The main goal is to provide real experiential learning opportunities that foster a deep, practical understanding of social determinants of health. Community-based strategies worldwide have demonstrated effectiveness in improving students' empathy, communication skills, and awareness of public health programmes.[5-7]

For Indian trainees, ongoing engagement with families offers valuable insights into socioeconomic contexts, vulnerability to specific conditions, and ongoing barriers to healthcare access. This is especially important in a large, diverse country like India, where much of the disease burden is primarily influenced by social and environmental factors.

While promising in theory, the practical implementation of the FAP has varied greatly across India's numerous medical colleges. Discrepancies often relate to institutional ownership (private versus government), revealing significant inconsistencies in infrastructure, dedicated faculty support, and evaluation mechanisms, all of which weaken educational outcomes.[8]

This structured review examines the existing evidence regarding the impact of the FAP, key implementation challenges, and strategic opportunities for improvement, providing actionable insights for policymakers and educators.

Therefore, this structured review aims to assess the reported impact of the FAP on undergraduate medical students' competencies; to identify recurring implementation challenges across different institutional settings in India; and to suggest actionable, evidence-based reforms to improve the program's quality, sustainability, and educational effectiveness.

METHODS

A structured evidence review with thematic synthesis was conducted. Databases searched included PubMed, Scopus, and Google Scholar to identify and analyse literature concerning community-based undergraduate medical education, with a specific focus on the FAP in India.

Data sources and search strategy

The search strategy utilised combinations of the following key terms and phrases: "Family Adoption Programme", "Community-based medical education", "Competency-based medical education in India" (or "CBME India"), "Undergraduate community training" and "Experiential learning in medical education"

Inclusion and exclusion criteria

Literature considered for inclusion comprised official policy documents from regulatory bodies, descriptive studies of programme implementation, implementation reports and commentaries, and empirical research evaluating student or community outcomes.

The review covered publications from 2000 to 2024 to capture both early context and recent developments related to CBME implementation.

While the main geographic focus was India, foundational or comparative studies on community engagement and experiential learning models from other countries were included when highly relevant to the context.

Data selection and analysis

Abstracts of retrieved articles were screened for relevance to the objectives. Relevant full-text articles were then reviewed in detail. Key themes—such as educational impact, implementation experiences, and identified challenges—were extracted and synthesized.

Tables were created to capture the range of findings from the selected literature and to systematically present challenges alongside proposed reforms.

Conceptual framework

The learning process within the FAP can be conceptualized as a continuous, cyclical experiential learning model.

The various stages are logically sequenced, beginning with preparatory and introductory steps and moving through practical engagement and reflective components.

Community entry and line listing

Introduction to the community and initial listing of all households in the selected rural village or Gram Panchayat.

Family allocation

Each student is assigned a specific group of families (at least 3-5 per student).

Household health assessment

Detailed assessment during family visits, covering demography, environment, health practices, and access to health facilities.

Health education and service linkage

Practical application including the delivery of health education (immunisation, maternal and child health, NCD screening) and facilitating linkage to existing health services, including the observance of public health days

Follow-up visits

Continuity of care through long-term observation of health outcomes and reiterations of recent public health updates.

Reflection and faculty feedback

Structured processing of the experience.

Enhanced community health understanding

Consolidation of practical and theoretical knowledge.

This entire sequence forms a continuous cycle: enhanced understanding feeds back into more effective future assessments and interventions in subsequent semesters, ensuring ongoing learning.

REVIEW OF FINDINGS

This structured review identified a clear dichotomy in the existing literature: enthusiastic support for the theoretical educational potential of the FAP alongside significant documentation of practical implementation barriers.

Table 1 provides a critical appraisal of themes identified from key sources, illustrating the divergence between desired educational outcomes and observed limitations. The literature consistently supports the position that community-based medical education is a fundamental requirement for training socially responsible physicians.[9] For students, early exposure to real-world community settings allows them to observe and understand the complex interplay between socioeconomic status, environment, and health.[10] Studies have shown that this activity led to a positive shift in students' attitudes towards primary health care and preventive medicine, making these concepts more tangible.[11]

Within the specific framework of the FAP in India, initial reports are positive, demonstrating that consistent engagement with households strengthens students' practical comprehension of the social determinants of health and community health-seeking behaviors.[12] Field reports suggest that students gain invaluable firsthand exposure to vital, yet often overlooked, issues such as basic sanitation, nutrition standards, localized occupational risks, and specific barriers hindering access to essential health services. This immersion directly contextualizes the theoretical concepts taught in community medicine.[16] Longitudinal follow-up, a core feature of the FAP, also allows students to witness disease progression and the long-term effects of preventive interventions.

Additionally, consistent with global findings on community-based learning, reports on the FAP highlight tangible improvements in crucial professional competencies, including communication skills and cultural sensitivity among trainees.[13] Distributed and community-engaged educational models further enhance student exposure to rural health systems and strengthen professional identity formation.[17-20]

Implementation challenges across India

Despite its theoretical promise, the review identified several recurring and significant challenges that threaten the consistent delivery and sustainability of the FAP. These are summarized and addressed with recommendations in Table 2.

The findings reveal that the experience of the FAP varies greatly across medical colleges, with success heavily dependent on factors such as institutional commitment, resources, and ownership (private versus government).

Key systematic barriers identified include

Logistical hurdles

Managing student transportation, addressing inevitable interpersonal conflicts, ensuring student safety, and finding adequate time in a dense curriculum are consistent operational issues.[15]

Faculty workload and mentorship

Dedicating faculty to supervise large numbers of students during extensive community visits significantly increases an already heavy workload.[14] A shift towards smaller, dedicated mentorship groups is widely recommended but challenging to implement.

Lack of standardization

There is substantial variability across medical colleges regarding the exact structure, expectations, and operational strategies of the FAP, leading to inconsistent educational experiences.[8]

Table 1: Critical appraisal of themes and findings from selected literature on community-based and experiential medical learning models.

Theme/study focus	Typical findings/expectations	Recurring limitations/reality
CBME curriculum (2019) (India)	Goal: strengthen community exposure and understanding of public health	Limited evaluation of actual learning outcomes; high variability in implementation
Community-based teaching studies (India)	Improved practical understanding of social determinants of health and community health dynamics	Variable methodology; often small sample sizes; primarily self-reported student perceptions.
Experiential learning models (global)	Development of communication skills, empathy, and cultural competence in medical students.	Resource-intensive; requires strong institutional commitment and logistical support.
Community engagement programmes (various countries)	Strengthening of professional ethics and sense of social accountability.	Significant workload on faculty supervisors; needs structured integration to avoid simplistic observation.

Table 2: Summary of implementation challenges across India.

Identification of core challenge	Summary of practical issue	Recommended reforms for sustainability and impact
Logistical barriers	Managing student transport, safety, and scheduling visits within a congested curriculum.	Develop a context-adaptable logistical framework, utilize block rotation or staggered scheduling where feasible.
High faculty workload	Faculty reporting an excessive burden due to supervisorial requirements for large numbers of students.	Implement a dedicated faculty mentor system assigned to smaller student groups, supported by professional development.
Lack of standardization	Extreme variation in FAP structure, visit checklists, documentation practices, and expectations across different institutions.[8]	Develop a national standardized FAP framework, including structured templates and clear competency-based objectives.
Inadequate assessment and evaluation	Reliance on simplistic, non-competency-based measures, such as basic attendance logs.	Transition to competency-based assessments, utilizing reflective portfolios, comprehensive case studies, and presentation of field projects.
Weak programme integration	The programme operates in relative parallel, with limited coordination with existing primary health services.	Actively link FAP activities (e.g., specific student roles) to national health programmes such as NCD screening and maternal health checks
Documentation burdens	Over-reliance on traditional paper-based record-keeping methods	Mandatory development of digital household health data platforms and electronic reflective portfolios for students.

Inadequate assessment tools

A critical deficit lies in the absence of robust and standardized assessment methods. Evaluations are frequently reduced to basic attendance checks rather than meaningful competency assessments.[6]

Weak integration with health programmes

The FAP operates largely in parallel with existing public health services, with limited coordination or integration, which reduces the potential impact for both students and the community.[6,7]

Documentation burden

Reliance on archaic paper-based documentation systems is a significant impediment to monitoring progress, ensuring quality control, and analyzing the data collected by students.

Recommendations for structured reforms

Based on the synthesis of identified challenges and global educational evidence, this review proposes five specific, strategic areas for reform to strengthen the FAP's effectiveness and sustainability in India.

National standardization of framework and visit content

The issue

Marked variability in implementation creates disparate educational quality.

Recommendation

A standardized, yet context-adaptable, national FAP framework must be developed. This should include standardized visit checklists for different semesters, uniform documentation templates, and clearly defined, competency-based learning objectives tailored to the student's level. For example, a student in early semesters might focus on basic assessment and relationship building, while later semesters involve implementing disease screening and coordinating care with the community health center.

Strengthening faculty mentorship and professional development

The issue

High faculty workload is a core challenge.

Recommendation

Transition from centralized, mass supervision to a faculty mentor model. Smaller groups of students (e.g., 10-15) can be assigned to a specific faculty mentor who provides ongoing guidance, reviews documentation, and facilitates reflective sessions throughout the student's trajectory. Furthermore, dedicated professional development is needed to equip faculty with the skills necessary for mentoring students in community-based, experiential learning settings.

Formal integration with primary health care programmes

The issue

Students may perceive visits as data collection rather than public health intervention.

Recommendation

Active integration of FAP activities with current national and local health initiatives (such as immunization drives, non-communicable disease screening campaigns, maternal health services) is vital. Students can play active, defined roles—such as assisting with screening, reinforcing health messages, or following up on referrals for NCD or maternal health care. Such participation reinforces the relevance of the programme, strengthens local primary care services, and gives students a more active and valued role within the community.

Adoption of digital documentation and monitoring systems

The issue

Paper records hinder real-time tracking, quality control, and data analysis.

Recommendation

Development of mobile-based applications for data collection and student use of electronic reflective portfolios is critical. Digital tools can facilitate real-time data entry of household health data, streamline monitoring by faculty, simplify reporting processes, and enable powerful, aggregated data analysis for community public health insights.[6,7]

Transition to competency-based assessment

The issue

Evaluations are often simplistic and reduce to attendance checks.

Recommendation

Introduce more robust, competency-based assessment methods that evaluate the actual application of knowledge and skills. This should include assessments of reflective portfolios, detailed community-based case studies, and presentations of student-led field projects that show progression in skills appropriate to their semester.

Limitations

As a narrative review, this work has inherent limitations. The search, while comprehensive, may not capture all available literature, particularly non-indexed grey literature or institutional reports. The variable quality and small sample sizes noted in some of the included studies limit the strength of certain conclusions. The lack of standardised outcomes across studies makes a more formal meta-analysis impossible. Despite these constraints, the consistent patterns of both impact and challenges identified across the retrieved literature reinforce the validity and relevance of the current findings for informing policy discussions.

CONCLUSION

The FAP marks a significant and innovative step toward integrating real community engagement into undergraduate medical education in India. By using experiential learning to expose students to household-level health determinants, the programme can help foster a deeper understanding of preventive medicine and primary health care systems.

However, the educational impact of the FAP is severely limited by highly inconsistent implementation, major logistical challenges, and a clear lack of standardized mentorship and assessment frameworks. Addressing these issues through specific, structural reforms—namely national standardization, stronger faculty mentoring systems, formal integration with primary healthcare programmes, and the essential adoption of digital documentation tools—could transform the FAP into a

sustainable, reliable, and highly effective part of medical training. With careful reform, the FAP could become a true cornerstone of community-oriented medical education, helping to develop a more responsive and culturally competent physician workforce in India.

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