

Perception of the Impact and Challenges of the Family Adoption Programme among Medical Students of a Medical College in Rural Assam

Syeda Jesmin Rahman¹, Rinku Borah²

^{1,2}Department of Community Medicine,
Dhubri Medical College & Hospital, Dhubri, Assam.

Corresponding Author: Dr. Rinku Borah

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ABSTRACT

Introduction: The Family Adoption Programme was introduced to strengthen community-based learning by enabling medical students to understand household-level health needs through regular family visits. This study assessed students' perceptions of its impact on learning and the challenges encountered during its implementation in a rural medical college in Assam.

Methodology: A mixed-method cross-sectional study was conducted among undergraduate students who had completed at least one year of programme activities. A semi-structured questionnaire measured perceived improvements in knowledge, skills, attitudes, and community orientation, along with difficulties faced during fieldwork. Quantitative data were analysed using descriptive and inferential statistics, and qualitative responses were examined through thematic content analysis.

Results: A total of 280 students participated. Most reported substantial gains in knowledge related to physical environment, diseases, lifestyle factors, government schemes, and socio-economic conditions. Skills such as communication, empathy, teamwork, and problem-solving showed high positive ratings, with mean scores above 4.0 in most domains. Orientation sessions, three or more field visits, shorter distance to communities, and consistent faculty accompaniment were associated with higher perceived impact. Major challenges included unavailability of laboratory tests, limited logistics, language barriers, non-cooperation from families due to timing, and coordination issues with local staff.

Discussion: The programme positively influenced students' learning by enhancing practical competencies and community understanding. However, recurrent logistical constraints and inconsistent supervision limited the overall experience, indicating the need for stronger operational support.

Conclusion: The Family Adoption Programme significantly improved students' knowledge, skills, empathy, and community orientation. Strengthening logistics, supervision, and coordination mechanisms will enhance its educational value and effectiveness.

Keywords: Family Adoption Programme; Medical students; Community-based learning; Perceived impact; Implementation challenges

INTRODUCTION

India faces persistent disparities in healthcare access, especially in rural areas where issues such as health illiteracy, limited infrastructure, and workforce shortages remain major barriers.¹ The World Health Organization (WHO) recommends that Primary Health Care systems, emphasize on universal coverage, person centered care, robust public policy, and leadership to ensure high-quality and accessible services.² Aligning with this vision, the National Medical Commission (NMC) introduced the Family Adoption Programme (FAP) in the undergraduate medical curriculum, a strategic initiative aimed at bridge the gaps between medical education and community health needs.^{1,3}

Under this initiative, undergraduate students are assigned to adopt three to five families, providing them with hands-on experience in patient management, community health, communication skills and public health competencies^{1,4}. This learning opportunity is designed to develop students' clinical competencies and foster empathy by deepening their understanding of social determinants of health within family and community settings^{5,6}. The program also strengthens links between medical colleges and local communities, further operationalizing national and global policy recommendations for community engagement in healthcare.^{2,3}

Despite its strengths, FAP implementation can be challenged by logistic limitations and resource constraints, such as irregular availability of families, limited access to medicines and equipment, and inadequate faculty supervision^{4,6}. These barriers are particularly pronounced in newly established rural medical colleges, which often serve populations most in need of accessible healthcare.^{5,6}

Given that students at Dhubri Medical College spend significant time conducting family visits during their training, it is essential to evaluate both the perceived impact and challenges of FAP in this context. This study seeks to assess how FAP

influences the knowledge, skills, and attitudes of medical students, while identifying obstacles experienced in a rural academic setting.

MATERIALS & METHODS

A mixed-method cross-sectional study was conducted among the undergraduate MBBS students over a period of six months at Dhubri Medical College and Hospital (DMCH), Assam, a teaching institution located in a rural area of an aspirational district of lower Assam. The FAP activities were implemented in nearby adopted villages under the supervision of the Department of Community Medicine, in coordination with local health workers such as Accredited Social Health Activists (ASHAs) and Auxiliary Nurse Midwives (ANMs). This rural setting provided a relevant context for evaluating community exposure and experiential learning among medical students.

The study population included students of Phase II, Phase III Part I and Part II, who participated in FAP as part of their Community Medicine curriculum. Those students who had completed at least one year of Family Adoption Programme (FAP) activities and provided written informed consent to participate were included in the study. Students who were on long-term leave or unavailable during the data collection and those who declined to give consent were excluded from the study. All eligible students were invited, utilizing universal sampling for complete representation and minimizing sampling bias.

As part of FAP, each student was allotted five rural families for longitudinal follow-up. The students were required to conduct periodic visits to the assigned families and maintain detailed family health records. During these visits, they identified health problems and underlying determinants at the household level, counselled families on preventive, promotive, and curative aspects of health, and actively participated in field-based activities such as health education

sessions and local health camps, all under the supervision of faculty members.

A mixed-method approach was employed using a semi-structured questionnaire to capture both numerical responses and narrative reflections, allowing for triangulation of findings and a more comprehensive understanding of students' experiences with the FAP. Data were collected using a semi-structured, pretested questionnaire developed by the investigators after reviewing relevant literature and FAP competency documents prescribed by the NMC.

The questionnaire used in the study comprised four sections. Section A captured the demographic details of the participants, including age and gender. Section B focused on assessing the students' perception of the impact of the Family Adoption Programme (FAP) on various learning outcomes such as knowledge, skills, attitude, empathy, and community orientation. Section C explored the challenges perceived by students during the implementation of FAP, including logistical constraints, adequacy of faculty support, communication difficulties, and the level of community cooperation. Section D consisted of open-ended questions designed to elicit qualitative feedback on students' overall experiences and their suggestions for improvement. The perceptions in Sections B and C were measured using a five-point Likert scale ranging from "Strongly Agree" to "Strongly Disagree." The questionnaire was reviewed by a panel of three experts in Community Medicine to ensure content validity. It was pilot-tested among 30 Phase-II MBBS students (not included in the main study) to assess clarity, relevance, and comprehension. Modifications were made based on feedback. The internal consistency of the tool was found to be good, with a Cronbach's alpha of 0.82.

Ethical clearance was obtained from the Institutional Ethics Committee of Dhubri Medical College and Hospital (DMCH/IEC/2025/39). Participation was voluntary, and informed written consent was secured. Anonymity and confidentiality of

responses were maintained throughout. Data were utilized solely for academic and research purposes.

Operational Definitions

Perceived Impact: The student's subjective understanding of how FAP influenced their learning of knowledge, skills, attitudes, empathy, and community orientation.

Challenges: Any logistical, operational, or interpersonal difficulties encountered during FAP activities.

Positive Response: A Likert score of *Agree* or *Strongly Agree*.

Statistical Analysis

Quantitative data were entered in Microsoft Excel and analysed using SPSS version 26.0. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize demographic data and perception scores. The Chi-square (χ^2) test was applied to determine associations between categorical variables such as gender and perception domains. A p-value < 0.05 was considered statistically significant. Binary logistic regression analysis was performed to identify predictors of high perceived challenges. Variables with p < 0.2 in bivariate analysis were included in the multivariable regression model. Adjusted Odds Ratios (AOR) with 95% confidence intervals (CI) were reported. A p-value < 0.05 was considered statistically significant. Internal consistency of the questionnaire was assessed using Cronbach's alpha. Likert-scale responses were summarised using means and standard deviations. Chi-square test was used to assess associations between categorical variables. Binary logistic regression analysis was used to determine predictors of high challenges. Qualitative data from open-ended responses were analysed through thematic content analysis, following an inductive approach. Codes and categories were generated from student narratives, and emergent themes were identified to complement quantitative findings.

RESULT

A total of 280 students participated in the study, with the majority being male and belonging to the 21–23-year age group. (Table 1). Students reported high levels of knowledge and skill enhancement across multiple domains. More than 40% “highly agreed” with improvements in physical-environment knowledge, disease knowledge, government schemes, lifestyle practices, and socio-economic understanding, with weighted mean scores above 4.0 for most items (Table 2). Skills such as communication, empathy, teamwork, and problem-solving also showed strong positive ratings. Regarding field logistics, 60% reported consistent

faculty accompaniment, and most (58.9%) travelled less than 1 km to reach community households (Table 3). Students experienced several challenges during community visits. The most frequently reported difficulties were unavailability of lab tests (82%), insufficient logistics (76%), language barriers (74%), and non-cooperation due to timing (74%). Other common issues included locked houses, unmet expectations, and transportation problems (Table 4). Overall perception of community posting was positive, with the majority agreeing that activities such as health camps, screening, and family interactions significantly contributed to their practical learning and confidence (Table 5 and 6).

Table 1. Socio-demographic Characteristics of Medical Students (n = 280)

Variable	Categories	Frequency (%)
Gender	Male	179 (63.9)
	Female	101 (36.1)
Age Group (years)	18–20	70 (25.0)
	21–23	170 (60.7)
	24–25	40 (14.3)
Phase of Study	Phase II	94 (33.6)
	Phase III Part I	96 (34.3)
	Phase III Part II	90 (32.1)

Table 2. Participation Profile of Students in Family Adoption Program (n = 280)

Participation Indicator	Frequency (%)
Number of families assigned	4–5 families: 280 (100)
Field visits completed	≥3 visits: 220 (78.6); <3 visits: 60 (21.4)
Orientation received	Yes: 240 (85.7); No: 40 (14.3)
Faculty accompaniment	Always: 168 (60.0)
	Sometimes: 87 (31.1)
	Never: 25 (8.9)
Distance to community	<1 km: 165 (58.9)
	≥1 km: 115 (41.1)
Time spent per visit	<1 hr: 90 (32.1); 1–2 hr: 150 (53.6); >2 hr: 40 (14.3)

Table 3. Perceived Impact of Family Adoption Program (n = 280)

Impact Domain	Highly Agree	Agree	Neutral	Disagree	Highly Disagree	Mean Score
Physical environment knowledge	118 (42.1)	93 (33.2)	47 (16.8)	22 (7.9)	0 (0)	4.10
Disease knowledge	118 (42.1)	72 (25.7)	53 (18.9)	23 (8.2)	14 (5.0)	3.92
Govt. schemes knowledge	116 (41.4)	100 (35.7)	53 (18.9)	12 (4.3)	0 (0)	4.15
Communication skills	127 (45.4)	85 (30.4)	46 (16.4)	19 (6.8)	3 (1.1)	4.12
Understanding local culture	138 (49.3)	79 (28.2)	39 (13.9)	17 (6.1)	8 (2.9)	4.16
Lifestyle knowledge	137 (48.9)	77 (27.5)	43 (15.4)	23 (8.2)	0 (0)	4.17
Attitude toward immunization	126 (45.0)	73 (26.1)	29 (10.4)	31 (11.1)	21 (7.5)	3.90
Socio-economic knowledge	137 (48.9)	80 (28.6)	31 (11.1)	25 (8.9)	7 (2.5)	4.13
World Environment Day participation	124 (44.3)	90 (32.1)	31 (11.1)	33 (11.8)	2 (0.7)	4.08
Empathy toward families	134 (47.9)	81 (28.9)	44 (15.7)	21 (7.5)	0 (0)	4.17
Teamwork & coordination	119 (42.5)	79 (28.2)	47 (16.8)	26 (9.3)	10 (3.6)	3.98
Problem-solving ability	152 (54.3)	80 (28.6)	37 (13.2)	8 (2.9)	4 (1.4)	4.33

Table 4. Challenges Faced by Students During FAP Implementation (n = 280)

Challenge	Yes (%)	No (%)
Locked house	126 (45.0)	154 (55.0)
Non-cooperation due to timing	207 (74.0)	73 (26.0)
Expectations not met (medicines)	132 (47.1)	148 (52.9)
Insufficient logistics	213 (76.1)	67 (23.9)
Lab tests unavailable	230 (82.1)	50 (17.9)
Faculty not available	148 (52.9)	132 (47.1)
Limited role in health camps	154 (55.0)	126 (45.0)
Too many families	151 (53.9)	129 (46.1)
Language barrier	207 (74.0)	73 (26.0)
Coordination issues with local staff	196 (70.0)	84 (30.0)
Transportation issues	162 (57.9)	118 (42.1)

Table 5. Association of Participation Profile with Perceived Impact and Challenges

Factor	High Impact (%)	Low Impact (%)	Chi-square	p-value
Age group	72	28	1.28	0.52
Gender (Female vs Male)	68	32	2.14	0.14
Orientation received	76	24	7.12	0.008*
≥3 field visits	81	19	10.41	0.001*
Faculty accompaniment (always)	74	26	6.43	0.011*
Distance ≥1 km	82	18	5.89	0.015*

*p value <0.05 were taken as significant.

Table 6. Predictors of High Challenges

Predictor	AOR	95% CI	p-value
Distance ≥1 km	2.35	1.32–4.18	0.003
No orientation	2.80	1.45–5.40	0.002
No faculty accompaniment (never)	1.96	1.10–3.45	0.021

DISCUSSION

In this study, the Family Adoption Program (FAP) demonstrated a strong positive impact on students' knowledge, skills, and community exposure. More than 40% of students "highly agreed" on improvements across multiple domains, and weighted mean scores exceeded 4.0 for most items, indicating a high level of educational benefit. These findings are consistent with early literature on experiential and community-based learning. For instance, medical students in Uganda reported enhanced understanding of rural health needs and improved motivation to engage with underserved communities during community placements.⁷ Similar positive attitudes toward community-based experiences were also documented in Pakistan, where students perceived such exposure as valuable for developing competence and considering rural service.⁸ A study from Maharashtra likewise found favourable attitudes toward serving rural

areas after community engagement activities.⁹

Our study showed particularly strong gains in communication skills, empathy, teamwork, and understanding of socio-economic and cultural contexts. These outcomes align with earlier evaluations of FAP in Indian medical colleges, which highlighted improvements in communication, cultural sensitivity, and student-patient interaction following community placements.^{3,4,6} The high empathy scores in our study parallel observations that community immersion fosters compassion and professional identity formation among medical learners.^{7,10} Similarly, Shikha et al. reported that FAP led to increased confidence, better interpersonal skills, and improved sociocultural understanding among students in Jharkhand.¹⁰ In a recent national study, Hullali et al. also reported high student satisfaction, improved soft skills, and

strengthened community orientation—findings very similar to our results.¹¹

Logistical and field-level challenges were common in our study, with lack of laboratory tests, insufficient logistics, and language barriers reported by a majority of students. Comparable barriers have been described in previous studies implementing FAP or community-based programs in India. Shikha et al. identified resource constraints, limited transport, and operational issues as major weaknesses of the program.¹⁰ Hullali et al. also found coordination difficulties with staff and variability in faculty involvement, challenges that closely reflect our findings.¹¹

The association in our study between high challenges and inadequate orientation or lack of faculty accompaniment underscores similar concerns reported in earlier evaluations where supervisory gaps reduced the effectiveness of community postings.⁵

Our analysis also revealed that orientation, ≥ 3 field visits, shorter distance to communities, and consistent faculty accompaniment significantly increased the perceived impact. These determinants echo findings from prior studies emphasizing the importance of structured planning, faculty mentorship, and accessible field sites for effective community-based learning.^{3,10,11} The positive influence of field exposure in our study is also consistent with evidence from Uganda and Pakistan, where repeated community interactions enhanced skill acquisition and deepened student engagement.^{7,8}

Taken together, the results affirm that FAP continues to serve as a valuable educational intervention, aligning with national expectations and reinforcing the potential of community-based medical education to develop socially accountable physicians. However, recurrent challenges across studies indicate the need for strengthening infrastructure, faculty support, and coordination mechanisms to optimize program outcomes.

Limitations

This study has several limitations. First, the findings are based on self-reported perceptions, which may be influenced by social desirability or recall bias. Second, as the study was conducted in a single institution, the results may not be generalizable to other settings with different academic environments or student demographics. Additionally, the cross-sectional design restricts the ability to explore changes in perceptions over time. Future research should include longitudinal follow-up and multi-institutional samples to enhance the robustness and external validity of the findings.

CONCLUSION

The Family Adoption Program significantly enhanced medical students' knowledge, skills, and understanding of community health. Students reported substantial gains in communication, cultural sensitivity, empathy, and problem-solving abilities, indicating that FAP effectively complements classroom learning by fostering practical and socially responsive competencies. Orientation sessions, repeated field visits, accessible community locations, and consistent faculty accompaniment were key determinants of higher perceived impact, while gaps in logistics, laboratory support, and coordination contributed to challenges in field implementation.

Overall, the findings reaffirm the value of FAP as a powerful experiential learning strategy within competency-based medical education. Strengthening operational support, ensuring structured supervision, and improving field-level infrastructure will further enhance the educational quality and community engagement achieved through the program.

Declaration by Authors

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