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Impact of Family Adoption Program on Community-Based Learning Outcomes among Phase I Undergraduate Medical Students in India: A Mixed Method Study

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ABSTRACT

Background

Family Adoption Program (FAP) emphasizes communication skills and community-based learning and also provides medical students with longitudinal exposure to community living conditions, cultural beliefs, lifestyle practices, and health challenges. However, its impact on student learning outcomes remains under-explored, particularly using mixed-method approaches, and context-specific assessment tools require further evaluation. This mixed-method study aimed to assess the impact of FAP on community-based learning, explore barriers and facilitators to its implementation, evaluating its effectiveness in teaching Family Health & Environmental Survey and assessing communication skills among the medical students.

Methods

A mixed method study was conducted at a tertiary care hospital in Uttar Pradesh, India over a period of 10 months from October 2024 to July 2025. Among Phase I MBBS students. Knowledge was assessed using a semi open ended questionnaire, while communication skills were evaluated using the Observation-based Communication Skills Checklist (OCSC) from 93 students. Reflective narratives of 73 students were analyzed thematically.

Results

Knowledge scores improved modestly (16.1 to 17.4; not significant), while communication scores increased significantly (26 to 28). Over two-thirds of students reported meaningful learning. Qualitative findings showed improved rapport-building, empathy, and confidence, often facilitated by using local language. Key strengths included family engagement and faculty support, while challenges involved time constraints, dialect barriers, and community expectations.

Conclusions

FAP effectively promotes community-oriented learning, enhances communication skills, and fosters empathetic, socially responsible medical professionals. Program improvements should focus on communication training, logistical support, and strengthened community engagement.

Keywords: Community-Based Learning; Family Adoption Program; Communication Skills; Community Medicine; Observation-Based Communication Skills Checklist.

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INTRODUCTION

The National Medical Commission Competency-Based Medical Education guidelines emphasize effective communication with patients, families, colleagues, and communities through activities such as family visits, the Family Adoption Program (FAP), clinic-social cases, and AETCOM training.[1] Community-based learning is central to community medicine, promoting clinical competence, leadership, empathy, cultural understanding, and readiness for family medicine practice.[4] FAP provides students with first-hand exposure to community living conditions, beliefs, and health challenges, where communication skills are essential. However, India's sociocultural diversity limits the applicability of many Western communication assessment tools, most of which focus on hospital-based interactions.[5] The Observation-based Communication Skills Checklist (OCSC), developed for early medical learners, offers a more contextually relevant alternative.[6] Despite the nationwide implementation of FAP, evidence regarding its educational impact remains limited,[2, 3] and no previous study has comprehensively evaluated its outcomes using a mixed-methods approach. To assess the effectiveness of FAP in Phase I medical undergraduate students' learning on Family Health & Environmental Survey. To measure the impact of FAP on communication skills of the students. To explore the barriers and facilitators of the Family Adoption Program's implementation.

METHODS

Study Area

The study was carried out in the Department of Community Medicine of Rajarshi Dashrath Autonomous State Medical College, Ayodhya. The village of Mau Yaduvanshpur, Ayodhya district has been allotted to the Phase I students as part of the Family Adoption Program

Study Design

Mixed Method Study - Observational and Qualitative Study.

Sample size and sampling

All available students consenting to participate in the study were included in the study to have maximum power. Convenience (Purposive) Sampling including all Phase I students consenting to participate in the study were enrolled. For Quantitative aspect responses were obtained from 93 students (pre-test) and 95 students (post-test). For qualitative aspect responses were obtained from 73 students of Phase I. The study was done among students of Phase I medical undergraduate students of Batch 2024 at RDASMC, Ayodhya.

Data Collection

A total of 8 FAP family field visits for Phase I students were planned in the data collection period over the study period of 10 months from October 2024 to July 2025. A semi structured questionnaire was used as a tool for quantitative aspect. The students were evaluated on a pretested set of questions (Google form based) before and after 8 field visits (1 visit/month) of Family Adoption Program for the knowledge domain (Tool A-Annexure I). For communication skills students were evaluated at start of study and after 8 months on OCSC (Observation based Communication Skills Checklist) (Tool B -Annexure II). OCSC has content validity ratio of 0.78, face validity of 0.80, and Cronbach's alpha of 0.91, indicating good internal consistency and reliability of the checklist. [5] A Google form based Structured Feedback Question guide was created (Tool C: AnnexureIII) to capture students' reflective narratives based on Gibbs Reflective Cycle Figure 1 for qualitative aspect of the study. Identifiable information such as name of the student was removed and replaced with numeric codes before data analysis. All narrative reflections were anonymized prior to analysis. Verbal consent was obtained from families to collect socio demographic and other health related parameters. Informed consent was obtained from the study participants before collecting data from them. The study was approved from the Institute Ethical Committee of Rajarshi Dashrath Autonomous State Medical College, Ayodhya. (Ref.No.: RDASMC/IEC/EA/2025/2).

Figure 1: Gibbs Reflective Cycle.

Data Analysis

Quantitative data was analysed on SPSS 22.0. For qualitative data QDA Miner was used. The reflective narratives were analysed using thematic analysis. Paired t test was used to compare pre-test and post test scores. For the qualitative data, structured narratives were analyzed using Gibbs reflective cycle.

RESULTS

The study participants were Phase I undergraduate medical students of Rajarshi Dashrath Autonomous State Medical College, Ayodhya. Mean age of the students (n=94) was 21.4 ± 2.4 years. More than half of the students were Males 53 (56.4%). The scores of the students on the set of Questions for knowledge domain is presented by Box & Whisker plot in Figure 2.

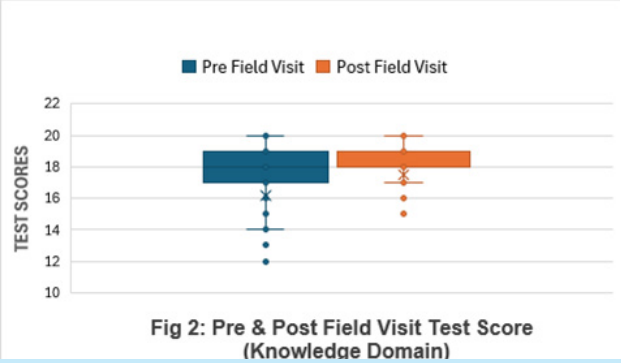

Figure 2: Box & Whisker plot showing pre &

The score of the students at baseline before the family visit was 16.1 ± 4.3 (n=93) and after 8 family visits was Post test 17.4 ± 4.1 (n=95). The increase in scores was not statistically significant (p=0.63).

The total maximum score of Observation based Communication Skills Checklist is 35 over 8 domains. The students scored between 24-31 and OCSC Scores comparison in 8 domains before and after 8 family/field visits is demonstrated in Figure 3.

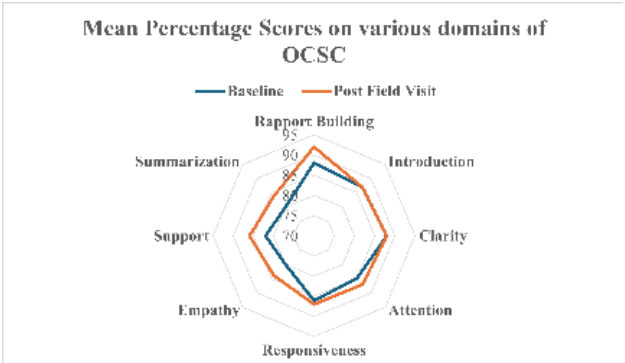

Figure 3: OCSC (Observation based Communication Skills Checklist) scores before and after 4 family field visits.

The baseline mean score was 26±2.4 and post visit score was 28±3.1. There was an increase in the mean score after 8 family field visits and the difference was statistically significant on Paired sample t test (p=0.04).

Out of the total of 100 students of Phase I, 73 students responded to the structured reflection based on Gibbs Reflective Cycle Figure 4 in Google form (Annexure III).

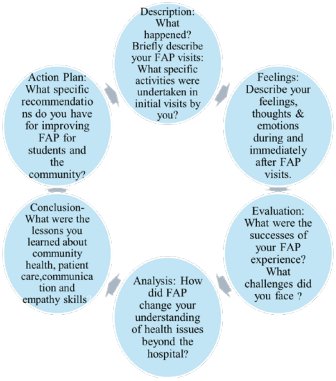

Figure 4: Structured narrative based on Gibbs Reflective cycle.

Below is a thematic analysis of the students' narratives regarding FAP. The initial Family Adoption Program (FAP) visits primarily focused on establishing rapport, comprehensive data collection,

and providing immediate basic health support as reported by most of the students.

Rapport Building & Introduction

Students introduced themselves as medical students, explained the program's purpose, and actively built trust to encourage open communication. This often involved 'talking in their local language' to foster comfort, aiming 'to make ourselves familiar with the family so that they can talk about their problems easily'. They also familiarized themselves with living conditions.

'Introduced myself to the adopted family and established a rapport' (S 21)

Data Collection & Assessment

More than two-thirds of the students 71.2% (52) reported performing household surveys and collected socio-demographic information including: 'family details', 'ages', 'income', and 'occupation'. Did Health assessments and documented medical history, chronic diseases, immunization status, and hygiene practices. All data was recorded-'maintained initial health records' or logbooks.

Health Education & Needs Identification

Students provided basic healthcare information and health tips related to hygiene, nutrition, and disease prevention, aiming to make families aware with modern day medical facilities. Visits also identified immediate needs and concerns and priority areas for future interventions, establishing contact for ongoing medical need. This offered a real-world perspective on community health.

'I conducted basic health assessments, including checking blood pressure, BMI, and dietary habits'. (S 8)

During and immediately after Family Adoption Program (FAP) visits, medical students experienced a complex spectrum of emotions, thoughts, and reflections, profoundly shaping their understanding of community health and their professional identity.

Spectrum of Emotional Responses & Adaptation

Students often felt very excited and eager to learn, combined with slight nervousness or being anxious. Some were a little overwhelmed or unsure how the family will respond. Positive feelings of excitement or curiosities were reflected by majority of students 86.3% (63) while others reported anxiousness to face the families. As interactions progressed, initial shyness gave way to feeling more confident, with everything went very well.

Empathy & Awareness of Realities

Seeing 'the realities of people's lives first-hand', 'family's struggles up close', and 'health challenges due to lack of awareness or resources' evoked a 'strong sense of empathy' and 'concern'.

Visits were a 'new and eye-opening experience', revealing 'how different real-life situations are from textbook knowledge'. This led to feelings of being 'blessed and lucky' and 'grateful for the life I have'.

Sense of Purpose & Professional Identity

A significant 'sense of responsibility' emerged, recognizing 'how major responsibility I have on my shoulders' as a medico.

Students 'felt like a doctor' or a 'responsible doctor' due to the 'respect we got from villagers who looked at us like doctors'. This experience 'strengthening my commitment' and motivated them 'to become a great but grounded doctor'.

Positive Aftermath & Fulfilment

'Many felt a deep sense of satisfaction' and 'happiness' from 'helping people', finding the feeling 'unmatchable'. There was a strong urge 'to contribute meaningfully' and 'to help them in times of need', aiming to 'make a positive difference'.

The third component of Evaluation yielded rich tapestry of successes and challenges, offering valuable insights into community engagement and medical education. The successes primarily revolved around the cooperation of the families and the support from teachers (faculty & residents), interns & staff members leading to significant learning and skill development for the participating students.

Strong Family Engagement and Cooperation

Students consistently reported that the families they were allotted were very cooperative and behaved very well. Many described the families as warm, receptive, and open to sharing personal details, which made initial visits smooth and productive. The 'major success of this program comes from the

cooperation of the family', with reports of families being humble, friendly, open to talk about their family, and even offering tea and biscuits. This welcoming environment helped build mutual trust, allowing families to open up, share everything, and even develop a 'sense of belief' in the program. This openness facilitated discussions and information gathering.

Teachers & Staff Support and Guidance

Teacher's support was repeatedly cited as a major success by nearly two thirds of the students. Faculty provided clear guidance on documentation and communication, which helped build confidence during interactions. Residents & staff offered continuous guidance to approach situations with sensitivity and practical solutions. They also guided students on managing language and interacting with people, were 'very knowledgeable and understanding', and provided 'timely feedback and encouragement'.

Significant Learning and Skill Development

Students noted improved communication skills and gradually becoming 'more comfortable in explaining health-related concepts in simple, understandable terms'. The program fostered trust building, leading to the family trusting them with health queries. The FAP experience taught 'compassion how to listen, how to understand, and how to care, not just cure', effectively bridging 'the gap between theory and reality'. Students applied 'theoretical knowledge in a real-world setting', developing practical skills like 'communication, documentation, and problem-solving'. This program was recognized for providing 'early community exposure and social accountability' and valuable insights into 'the social determinants of health'.

Overall Positive Program (FAP) Experience

'All went well' or that their 'FAP went very successful' and similar feelings were echoed from 78% (57) of the students. The program helped improve 'social status'. Some found that logistics were 'not a problem' as college provided bus services, and 'time duration, location and guidelines was well explained'. The experience was described as 'very good' and even 'way better than our expectations'.

Despite many successes, students identified several challenges, often related to practical logistics, communication, and managing expectations.

Practical Constraints and Logistics

A significant challenge was time constraints, specifically 'balancing academic workload with community visits' which were reported by nearly one-fifth of the students. Another frequent issue was family availability, as 'key members were not present during visits' or family members were 'busy or unavailable'.

Communication and Trust Barriers

Language barriers were a pervasive challenge, reflected upon by 32.8 % students, with students initially struggling with 'local dialects' or experiencing 'minor difficulties in communicating with elderly members'. They noted issues like 'low interest of people, thinking we were some kind of sellers', and initial hesitation or trust issues from families. Another challenge was managing expectations, as families sometimes 'expected immediate help or solutions', including 'curative treatment' or 'financial help', which was outside the students' scope.

The analysis section of the narrative revealed how FAP shifted students' understanding of health issues beyond a purely clinical and hospital-based perspective.

FAP as a Transformative Learning Experience

It highlights its success in shifting students from a purely clinical to a community-focused approach, providing a new understanding of health's ground reality and fostering values like empathy and service. It reveals the complexity of family dynamics and how socio-economic factors affect health, making healthcare information more accessible.

The Interconnectedness of Health and Socio-Environmental Determinants

Students understood health is not just clinical but deeply tied to social, economic, and cultural factors. They recognized how poverty, sanitation, nutrition, and living conditions significantly affect health outcomes, and that many illnesses stem from lack of

awareness and access issues within the community environment.

Challenges and Complexities of Community Healthcare Implementation

These include time constraints, logistical difficulties, language barriers, family reluctance due to stigma, lack of awareness, and economic backwardness. Environmental issues like poor sanitation also pose significant problems.

The Critical Role of Communication, Empathy, and Preventive Care

Success depends on strong rapport-building, empathy, and open communication, alongside effective faculty guidance. FAP emphasizes that true healthcare extends beyond hospitals, involving education, early intervention, and addressing root causes in the community. It highlights the importance of public health initiatives and building trust.

The Family Adoption Program (FAP) has significantly broadened participants' understanding of healthcare, patient care, and their future roles as medical professionals, moving beyond a purely clinical perspective to a more holistic, community-centred view.

Holistic & Community-Centric Healthcare highlights that health is fundamentally shaped by social determinants (e.g., social, economic, environmental factors). This includes understanding community health focus beyond hospitals and valuing prevention.

'There's a critical need to understand people's living conditions, beliefs, and barriers to care'. (S 71)

Human-Centred Patient Engagement underscores that effective patient care is built on empathy and trust. This involves holistic patient care beyond prescriptions, connecting with patients at a basic level, and the importance of listening.

'It is crucial to connect with patients at a basic, human level, to build trust' (S 7)

Transformative Interpersonal Skills

showcases significant communication improvement, including explaining simply and active listening.

'What matters most for a good doctor is to be a good communicator' (S 43)

Recommendations for improving the Family Adoption Program (FAP) revolve around these themes as emerged from the students' narratives regarding future action plan.

Student preparedness & training

focuses on better equipping students. Enhanced Training and Orientation is crucial, with suggestions to *'Provide basic training in communication skills and local language before visits'. (S 25)*

Optimizing logistics

highlights the need to address gaps in logistic issues by ensuring smooth transportation, scheduling, and resource allocation for students. Providing of printed health education materials, pamphlets, or visual aids in local language to help families better understand hygiene, nutrition, and disease prevention. Intimating the families before visit will make the visit fruitful.

Improving Community Health & Engagement aimed for tangible benefits for families. Consistent Follow-ups & Relationship Building is a priority, as 'regular visits build deeper trust'. Ownership & Commitment is essential, aiming to view FAP as 'a responsibility to take care of their family, rather than just a project'. Direct Health Services & Early Detection recommends, *'Provide basic medical facilities 'then and there' for families who need them'. (S 21) Rewarding community households with certificates will motivate them.*

DISCUSSION

The Family Adoption Program is designed to significantly enhance both community health outcomes and the learning experiences of medical students through direct engagement in the community settings. The students showed an increase in mean scores for the knowledge gain as assessed by pre and post field visit test, moreover in the reflective narratives more than two thirds of the students (53) reported FAP as an effective means to provide long lasting knowledge with practical community insights.

Appropriate and effective communication with the patients is a crucial component for an effective

doctor patient relationship and medical care. This important skill is often overlooked as part of teaching and training of medical students. The OCSC scale can be used as a structured tool to assess communication skill in medical students. Students scored less on Summary, Support & Summarization domains of the checklist which provides us with valuable insight into scope of improvement in these domains by reinforcing these virtues. Feedback from faculty mentors can be given based on the assessment on OCSC checklist as part of formative assessment especially for medical students in early career stage. This checklist-based assessment for the students will help to bridge the gap between theoretical knowledge and practical application of components of effective communication. The user-friendly design with a single-page layout and dichotomous scale further enhances its practicality in objective structured clinical examinations and formative assessments.[6] It is an ideal tool to assess communication skills as it caters to verbal, nonverbal and paraverbal components of communication skill. In a study by *Nia et al.*, it was emphasized that nonverbal communication is an important component of communication especially in countries with linguistic diversity.[7]

Thematic analysis of the reflective narratives yielded a rich tapestry of the student's perspective of FAP as a tool to enhance community-based learning for the students. The Family Adoption Program (FAP) profoundly influences medical students' understanding of community health by fostering a transformative learning experience that moves them beyond a purely clinical perspective to a more holistic, community-centered view. This experiential learning facilitates in creating interest among students for community-based learning as was reflected by 63% (46) of the students in our study. FAP exposes students to the realities of people's lives, enabling them to understand how social, economic, cultural, and environmental factors influence health outcomes, a 'critical need to understand people's living conditions, beliefs, and barriers to care'. This aligns with the 'Re-orientation of Medical Education program (ROME)' which aimed to provide students with a first-hand experience of living conditions.[8] The World Health Organization (WHO) and the World Federation for Medical Education also recognize that community-centred medical education helps students understand medico-social determinants of health.[9]

FAP is widely reported to significantly improve students' communication, rapport-building, and listening skills with patients and families as it was evident in our study with an increase in mean score over communication domains with subsequent visits. This is a consistent finding across various studies. *Mudey A and Raut J* [10] and *Shikha S et al.,*[2] reported similar gains in communication skills. Furthermore, *Arora et al.,* concluded that FAP is instrumental in improving self-perceived communication skills and the ability to help the community. International models, such as Longitudinal Integrated Clerkships (LICs) in Australia and Canada, also demonstrate that students acquire 'strong communication skills' through community placements.[11] The program also contributes to increased health literacy, awareness, and improved health status within adopted communities.

Majority of students 78% reported positive overall program experience signifying the program as beneficial for personal and professional growth similar to study conducted by *Ganganahalli et al.,*[12] Families involvement and engagement acts as a facilitator for positive community-based learning experiences for the students as was evident from the students' narratives in our study. This can be further reinforced by involving the local leaders and panchayat ecosystem of the villages. Some of the common challenges found across studies needs to be addressed to make this program more robust. Logistical and resource constraints, students' motivation and proper coordination with faculty & staff are important key barriers that can be strengthened. Consistent follow up and family engagement should be enforced to prevent the families from being orphaned.

Limitations

The study findings cannot be generalized as it was limited to a particular village of the FAP with limited number of students as study participants. The faculty, staff and community members perspective were not explored in this study. Selection bias and response bias was there as the students and faculty were from the same institute. The gain of the community members in terms of health benefits and awareness as a proxy indicator for effectiveness of FAP is lacking in our study. The baseline data collected in our study was after the students had two family field visits and may not reflect the actual baseline data of Phase I undergraduate medical students.

Conclusions

Family Adoption Programme has potential to inculcate effective communication skills, community engagement for health-related activities and community oriented empathetic and socially responsible healthcare professionals. The challenges brought to light can be scoping base to reform the program in an effective and impactful way. The findings from this study can be used to address the gaps in Family Adoption Program's impact on community-based learning in students. Adapting the OCSC checklist as an assessment tool can be an effective way to emphasize the importance of communication skill. Constructive feedback from the mentors/peers can further increase the utility of the tool as a means of self-improvement for effective communication in students. Longitudinal future studies for the community health benefits and students experiential learning over time can be explored in future studies. A rubric to assess the impact of Family Adaption Program over all domains of Knowledge, Skill, Attitude & Communication can be developed and evaluated based on this study.

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