

Knowledge of Family Adoption Program among First Year MBBS Students: A Pre and Post Intervention Study

¹Dr. Sonia Tiwari, Professor, Department of Community Medicine ESIC Medical College, Indore, Madhya Pradesh, India, <https://orcid.org/0009-0009-3096-0014>

²Dr. Mayank Rahul, SAIMS Medical College, Indore, Madhya Pradesh, India, <https://orcid.org/0000-0002-2383-2657>

³Dr. Subham Rai, Consultant Radiologist, Vijay Shree Imaging and Diagnostic Centre, Damoh, India,

⁴Dr. Sonam Tiwari, Government Medical College, Damoh, Madhya Pradesh, India

Corresponding Author: Dr. Mayank Rahul, SAIMS Medical College, Indore, Madhya Pradesh, India, <https://orcid.org/0000-0002-2383-2657>

How to citation this article: Dr. Sonia Tiwari, Dr. Mayank Rahul, Dr. Subham Rai, Dr. Sonam Tiwari, “Knowledge of Family Adoption Program among First Year MBBS Students: A Pre and Post Intervention Study”, IJMACR– October– 2026, Volume – 9, Issue – 5, P. No. 654 – 657.

Open Access Article: © 2026 Dr. Sonia Tiwari, et al. This is an open access journal and article distributed under the terms of the creative common’s attribution license (<http://creativecommons.org/licenses/by/4.0>). Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background: The Family Adoption Programme (FAP) is an important component of undergraduate medical education that familiarises students with family-oriented and community-based healthcare. Structured teaching may help students understand the programme's objectives and practical components.

Objective: To assess change in FAP-related knowledge scores among first-year MBBS students following a teaching session at ESIC Medical College, Indore.

Methods: A single-group pre-test–post-test assessment was conducted among 49 first-year MBBS students. The same 10-item knowledge assessment was used before and after teaching. Pre-test and post-test records were paired by row order, as confirmed by the study team. Scores were summarised using means and standard

deviations. A paired-samples t-test was used for the primary comparison, with the Wilcoxon signed-rank test as a sensitivity analysis.

Results: The mean score increased from 8.08 (SD 1.19) out of 10 before teaching to 8.94 (SD 0.72) after teaching. The mean paired increase was 0.86 points (95% CI 0.46 to 1.26; paired t-test $p < 0.001$). The Wilcoxon signed-rank test also indicated a difference ($p < 0.001$). Scores increased in 29 students, were unchanged in 13, and decreased in 7.

Conclusion: The teaching session was associated with higher immediate post-test knowledge scores. The findings should be interpreted cautiously because of the single-group design, possible ceiling effects, and lack of assessment of longer-term retention.

Keywords: Family Adoption Programme, Undergraduate Medical Education, MBBS Students, Pre-Test, Post-Test, Knowledge Assessment

Introduction

The Family Adoption Programme is intended to strengthen undergraduate medical students' understanding of health and illness within the context of families, communities, and social and environmental determinants. Students require an understanding of family composition, vital events, kinship diagrams, socioeconomic assessment, clinical assessment of an index case, rapport-building during family visits, and environmental health risks. Orientation and structured teaching can provide a foundation for subsequent field-based learning. Assessing knowledge before and after teaching offers a practical way to evaluate immediate learning, although score changes alone do not establish that the intervention caused the improvement.^{1,2,4-8}

Objective

To compare FAP-related knowledge scores before and immediately after a teaching programme among first-year MBBS students at ESIC Medical College, Indore.

Methods

Study design and setting: A single-group pre-test–post-test educational assessment was conducted among first-year MBBS students at ESIC Medical College, Indore.

Assessment tool and procedure

The assessment comprised 10 multiple-choice questions addressing the purpose of FAP, family composition, vital events, kinship diagrams, family environmental assessment, socioeconomic-status assessment, clinical assessment of the index case, the first step during a family visit, environmental health risks, and the appropriate approach to an adopted family. The recorded score was treated as a score out of 10.¹

Statistical analysis

Continuous scores are reported as mean and standard deviation. The mean paired difference was calculated as post-test minus pre-test score, with a 95% confidence interval. A paired-samples t-test was used as the primary comparison and the Wilcoxon signed-rank test was used as a sensitivity analysis. Two-sided $p < 0.05$ was considered statistically significant. Analyses were conducted using the scores recorded.

Ethical considerations

The study team reports that verbal consent was obtained from participants. The requirement for Institutional Ethics Committee review was exempted by their members.

Results

A total of 49 pre-test records and 49 post-test records were available. The mean knowledge score increased from 8.08 ± 1.19 before teaching to 8.94 ± 0.72 after teaching. This corresponds to an increase in the mean score percentage from 80.8% to 89.4%, a difference of 8.6 percentage points.

Measure	Pre-test	Post-test	Change / test
Number of records	49	49	49 paired records
Mean score (SD)	8.08 (1.19)	8.94 (0.72)	Mean paired difference 0.86
Median score	8	9	Wilcoxon $p < 0.001$
Mean score percentage	80.8%	89.4%	+8.6 percentage points
Paired-samples t-test	Pre-test mean: 8.08	Post-test mean: 8.94	$t(48) = 4.29$; $p < 0.001$
95% CI for mean paired difference	Lower bound: 0.46	Upper bound: 1.26	Mean difference: 0.86 points

On an individual basis, 29 students (59.2%) had a higher post-test score, 13 (26.5%) had no score change, and 7

(14.3%) had a lower score. The mean paired difference was 0.86 points (SD of differences 1.40; 95% CI 0.46 to 1.26). The paired t-test was statistically significant ($t=4.29$, $df=48$, $p<0.001$); the Wilcoxon signed-rank sensitivity analysis was also statistically significant ($p<0.001$).

Discussion

The observed mean score increased by 0.86 points on a 10-point scale after the teaching session. The direction of change was favorable for most students: 29 of 49 students improved, 13 had no change, and 7 had lower scores. The paired analyses support evidence of an immediate difference between pre-test and post-test scores in this group.^{4,5,8}

The findings should not be interpreted as definitive proof of teaching effectiveness. This was a small, single-group assessment without a control group, so the observed change may also reflect test familiarity, short-term recall, or other influences. Baseline scores were relatively high and post-test scores clustered between 8 and 10, suggesting a possible ceiling effect that may limit the ability of the tool to detect further learning. The analysis evaluates total scores; item-level claims about which FAP concepts improved should only be made after confirming the answer key and reviewing each question's response data.⁴⁻⁸

Limitations

1. Small sample size from a single medical college, limiting generalizability.
2. No comparison group and no randomization; causal attribution to teaching is not possible.
3. Only immediate knowledge scores were assessed; retention and practical competence were not measured.

4. Potential ceiling effect because baseline scores were already high.

Declarations

Ethics approval/exemption: Done

Conclusion

In this group of 49 first-year MBBS students, mean FAP knowledge scores were higher immediately after teaching than before teaching. The result supports the usefulness of assessing learning around FAP orientation, but larger studies with a comparison group, a validated assessment tool, and follow-up testing are needed to establish the magnitude and durability of learning gains.

References

1. National Medical Commission. National Medical Commission (Undergraduate Medical Education) Guidelines, 2023: Curriculum for Family Adoption Programme. New Delhi: National Medical Commission; 2023. Available from: <https://www.nmc.org.in/MCIRest/open/getDocument?path=%2FDocuments%2FPublic%2FPortal%2FLatestNews%2FCBME+NEW+FILE.pdf>
2. National Medical Commission, Undergraduate Medical Education Board. Implementation of new Competency Based Medical Education for Undergraduate Course Curriculum. Circular No. U.11026/1/2022-UGMEB; 31 March 2022. Available from: <https://www.nmc.org.in/MCIRest/open/getDocument?path=%2FDocuments%2FPublic%2FPortal%2FLatestNews%2FImplementation.pdf>
3. Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP; STROBE Initiative. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational

- studies. PLoS Med. 2007;4(10):e296. doi: 10.1371/journal.pmed.0040296.
4. Ganganahalli P, Yankanchi SG, Yadavannavar M, Udgiri R. Perception and impact of the Family Adoption Program (FAP) among Indian medical students: benefits and challenges. Cureus. 2024;16(11):e73893. doi:10.7759/cureus.73893.
 5. Baruah A, Choudhari SG. Perceptions of stakeholders and the way forward to implementing the Family Adoption Programme in medical education: a study from Assam, India. Cureus. 2024;16(7):e63586. doi:10.7759/cureus.63586.
 6. Vanikar A, Kumar V. Unique program of Indian undergraduate medical education—family adoption through village outreach. Indian J Community Health. 2024; 49:459–460. doi: 10.4103/ijcm.ijcm_273_24.
 7. Chepuru R, Sushma KS, Vadlamani S, Manasa RV, Vennam BS. Family adoption program (FAP) as a learning tool—perceptions of students and faculty of community medicine. J Family Med Prim Care. 2025; 14:51–55. doi: 10.4103/jfmpc.jfmpc_510_24.
 8. Reshmi PS, Patel GK, Patel HK, Prajapati PR, Lunagariya RT, Gupta KI, et al. An investigation of the effectiveness of the family adoption program among undergraduate medical students. Cureus. 2025;17(5):e875. doi:10.7759/cureus.92582.