IAP Journal of Medical Education and Research
Volume 3, Issue 1 - 2026, Pg. No. 27-32
Peer Reviewed & Open Access Journal

Review Article

Enhancing Medical Education Through Adolescent-Friendly Initiatives, Globally and India: A 2026 Perspective

Shankar Prasad Bhattacharya

MBBS, DCH, MD, Associate Professor Community Medicine, West Bengal Medical Education Service, West Bengal, India

I N F O

E-mail Id:
spbhattacharya2012@gmail.com
Orcid Id:
https://orcid.org/0009-0003-4506-4059
How to cite this article:
Bhattacharya S P. Enhancing Medical Education Through Adolescent-Friendly Initiatives, Globally and India: A 2026 Perspective. IAP J. Med. Educ. Res. 2026;3(1):27-32.

Date of Submission: 2026-04-06
Date of Acceptance: 2026-04-27

E D I T O R I A L

Introduction:Adolescents constitute nearly one-fifth of the global population and face unique health challenges that require tailored, accessible, and sensitive healthcare services. Despite global progress, integration of adolescent-friendly health services (AFHS) into medical education remains inadequate, particularly in low- and middle-income countries such as India.

Objective: To explore the role of adolescent-friendly initiatives in enhancing medical education globally and in India, and to highlight the need for integrating AFHS principles into medical curricula.

Methods: A narrative review was conducted using literature from 2000 to 2026, including World Health Organization reports, PubMed-indexed journals, and public health databases. Studies focusing on adolescent health, AFHS, and medical education were included. A thematic synthesis approach was used to analyze evidence related to policy frameworks, educational integration, and service delivery.

Results: Findings indicate that although global frameworks such as WHO's AA-HA! emphasize adolescent-responsive care, structured incorporation of AFHS into medical education is inconsistent. In India, national programs like RKSK exist, but training remains fragmented and limited. Key competency gaps were identified in communication skills, confidentiality, psychosocial assessment, and cultural sensitivity. Integration of AFHS into curricula was associated with improved provider competence, enhanced adolescent health-seeking behavior, and reduced stigma.

Conclusion: Integrating adolescent-friendly initiatives into medical education is essential for developing competent and empathetic healthcare providers. Strengthening curriculum frameworks, faculty training, and standardized evaluation aligned with global guidelines is crucial, particularly in India, to achieve equitable adolescent healthcare outcomes by 2030.

Keywords: Adolescent Health, Medical Education, Adolescent-Friendly Services, India, Health Systems

Introduction

Adolescence (10–19 years) represents a dynamic developmental phase characterized by significant physical, psychological, and social transitions. Globally, adolescents face preventable health challenges, including mental health disorders, substance use, and reproductive health issues.[1,7,8] Despite this, health systems often fail to address their unique needs due to structural, cultural, and educational barriers.

Adolescent-friendly health services (AFHS) are designed to be accessible, acceptable, equitable, and appropriate for young people.[2,11] However, the integration of AFHS principles into medical education remains suboptimal, particularly in India, where adolescents form a substantial proportion of the population.[3,17]

Literature Review

Global Scenario

The World Health Organization (WHO) emphasizes that adolescent health services must be accessible, acceptable, and effective, addressing barriers such as stigma, lack of confidentiality, and provider bias[12]. The AA-HA! framework advocates integrating adolescent health into national policies and training systems.[1,8]

"Digital innovations such as e-health platforms and conversational tools are emerging as effective strategies to engage adolescents and improve health behaviours. [5,10]

Indian Scenario

India has implemented AFHS through programs like the Rashtriya Kishor Swasthya Karyakram (RKSK), yet challenges remain in implementation and training. Studies show that although awareness exists, structured training is limited and services remain fragmented. [3,4,12,14]

A scoping review of AFHS initiatives in India revealed improvements in service quality and adolescent knowledge but highlighted variability in evaluation and implementation. [6,11,20]

Methodology

This study was conducted as a systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines.

Search Strategy

A comprehensive literature search was performed between January and March 2026 across multiple databases:

- PubMed/MEDLINE
- Scopus
- Web of Science
- Google Scholar
- WHO Global Health Library

Search Terms

A combination of MESH terms and keywords was used:

- "Adolescent-friendly health services"
- "Adolescent health AND medical education"
- "AFHS training healthcare providers"
- "Competency-based medical education for adolescent care"
- "Rashtriya Kishor Swasthya Karyakram OR RKSK"

Boolean operators (AND, OR) and filters (year, language) were applied.

Eligibility Criteria

Inclusion Criteria

- Peer-reviewed articles published between 2000 and 2026
- Studies focusing on adolescent health services, medical education, or training interventions
- Global and Indian studies
- English language

Exclusion Criteria

- Editorials, commentaries without an empirical basis
- Non-peer-reviewed preprints (unless policy documents such as WHO reports)
- Studies not addressing education, training, or AFHS delivery

Study Selection Process

- All identified records were exported to a reference manager, and duplicates were removed.
- Titles and abstracts were screened independently.
- Full texts were assessed for eligibility.
- Discrepancies were resolved through consensus.

Data Extraction and Synthesis

Data were extracted using a structured template, including

- Study design
- Geographic setting
- Type of intervention (educational/service)
- Key outcomes

A thematic synthesis approach was used to identify patterns across:

- Educational strategies
- Competency development
- Service delivery outcomes
- Contextual challenges

Quality Assessment

Included studies were appraised using appropriate tools:

- **Observational studies**: STROBE checklist
- **Interventional studies**: CONSORT guidelines

- **Reviews**: AMSTAR framework (where applicable)

Only studies meeting acceptable methodological quality were included in the final synthesis.

PRISMA Flow Diagram (Word Template)

Identification

- Records identified through database searching (n = 132)
- Additional records identified through other sources (n = 12)
- Total records (n = 144)

Screening:

- Records after duplicates removed (n = 110)
- Records screened (title/abstract) (n = 110)
- Records excluded (n = 72)

Eligibility

- Full-text articles assessed (n = 38)
- Full-text articles excluded (n = 16)
- Not relevant to education (n = 7)
- Poor methodological quality (n = 5)
- Non-peer-reviewed (n = 4)

Included

Studies included in qualitative synthesis (n = 22)

Results

Table 1.Global vs Indian Status of Adolescent-Friendly Initiatives

Parameter	Global Scenario	Indian Scenario
Policy Framework	Strong WHO-led frameworks (AA-HA!)	National programs like RKSK
Training Integration	Increasing inclusion in curricula	Limited structured training
Service Accessibility	Improving but uneven	Fragmented and variable
Digital Innovations	Rapid growth (apps, AI tools)	Emerging but limited reach
Evaluation Systems	Standardized frameworks evolving	Heterogeneous evaluation methods

Table 2.Key Competencies Required in Medical Education for AFHS

Competency Domain	Description
Communication Skills	Youth-friendly, non-judgmental interaction
Confidentiality & Ethics	Ensuring privacy and trust
Clinical Competence	Managing adolescent-specific conditions
Psychosocial Assessment	Addressing mental and social determinants
Cultural Sensitivity	Understanding socio-cultural contexts

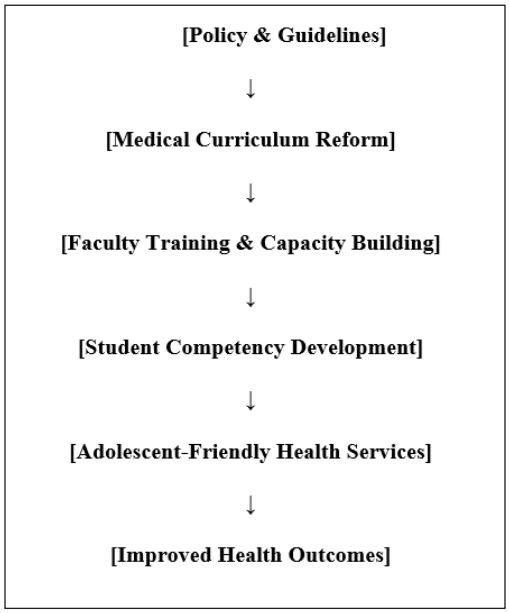

Figure 1.Conceptual Framework for Integrating AFHS into Medical Education

Discussion

The findings underscore a critical gap between policy intent and educational implementation. While global frameworks provide a strong foundation, their translation into medical curricula remains inconsistent.

In India, the absence of structured adolescent health training contributes to provider discomfort and suboptimal service delivery.[4,12,17] Adolescents often face barriers such as lack of confidentiality, judgmental attitudes, and inadequate communication.[1,15,16]

Integrating AFHS into medical education offers multiple benefits:

- Enhances provider competence and confidence
- Improves adolescent health-seeking behavior
- Reduces stigma and discrimination
- Strengthens preventive healthcare

Digital innovations further offer opportunities to engage adolescents effectively, especially in urban and semi-urban settings.[5,10,18] However, challenges such as the digital divide, cultural barriers, and resource constraints must be addressed.

To operationalize adolescent-friendly health services (AFHS) within medical education, a structured, competency-based training framework is essential. This framework should integrate knowledge, skills, and attitudes through longitudinal and experiential learning approaches.

Curriculum Integration (What to Teach)

Adolescent health should be embedded across undergraduate and postgraduate curricula within disciplines such as community medicine, paediatrics, psychiatry, and obstetrics & gynaecology. Core content areas include:

- Growth, development, and puberty
- Mental health and substance use
- Sexual and reproductive health
- Nutrition and lifestyle disorders
- Violence, injury, and social determinants

A spiral curriculum model is recommended, where topics are revisited with increasing complexity across training years.

Competency-Based Learning Outcomes (What Students Should Achieve)

Training should align with clearly defined competencies as seen in table 3.

Table 3.Expected competencies in the following domain

Domain	Expected Competency
Knowledge	Understand adolescent health needs and national programs
Clinical Skills	Diagnose and manage common adolescent conditions
Communication	Conduct nonjudgmental, youth-friendly consultations
Ethics	Maintain confidentiality and informed consent
Professional Attitude	Demonstrate empathy and cultural sensitivity

Teaching–Learning Methods (How to Teach)

A multimodal approach enhances learning effectiveness:

Simulation-Based Training

- Objective Structured Clinical Examinations (OSCEs) with adolescent case scenarios
- Standardized patients to practice sensitive communication (e.g., mental health, sexual health)

Case-Based Learning (CBL)

- Real-life scenarios focusing on confidentiality dilemmas, consent, and psychosocial issues
- Encourages critical thinking and ethical reasoning

Skills Workshops

- Counselling techniques (motivational interviewing)
- Screening tools for mental health and substance use

Clinical Exposure

- Mandatory postings in adolescent-friendly clinics (AFHCs)
- Participation in school health programs and outreach services

Digital and E-Learning Tools

- Mobile-based modules for adolescent health
- Telemedicine simulations for remote consultation skills

Assessment Strategies (How to Evaluate Learning)

Robust evaluation ensures competency acquisition:

- **Formative Assessment**: Mini-CEX, reflective journals, case discussions
- **Summative Assessment**: OSCE stations on adolescent counseling and ethics

- **360-Degree Feedback**: Inputs from faculty, peers, and patients
- **Portfolio-Based Assessment**: Documentation of clinical exposure and learning reflections

Faculty Development (Who Will Teach)

Faculty training is critical for effective implementation:

- Workshops on adolescent-friendly communication
- Training in competency-based medical education (CBME)
- Sensitization to gender, cultural, and psychosocial issues

Contextual Adaptation for India (Where and How to Apply)

To ensure applicability across diverse settings:

Rural and Resource-Constrained Settings

- Use low-cost simulation and role-play
- Train providers in task-sharing and community engagement
- Integrate training with primary healthcare and school health services

Sub-Himalayan and Hard-to-Reach Areas

- Emphasize telehealth-based training
- Prepare providers for sociocultural sensitivities and access barriers
- Focus on outreach and mobile health units

Addressing Cultural Barriers

- Incorporate gender-sensitive communication training
- Use community-based participatory learning approaches

Expected Outcomes of Structured Training

Implementation of structured adolescent health training can lead to:

- Improved provider competence and confidence
- Enhanced adolescent satisfaction and trust
- Increased utilization of health services
- Reduction in stigma and health disparities

Conclusion

Adolescent-friendly initiatives represent a transformative opportunity to strengthen medical education and health systems. Integrating AFHS principles into curricula is essential for developing competent, empathetic, and responsive healthcare providers.

India, with its large adolescent population, must prioritize curriculum reform, faculty training, and standardized evaluation mechanisms. Aligning medical education with global frameworks will be critical in achieving adolescent health goals and ensuring equitable healthcare by 2030. [1,8,20]

To address these issues, the following context-sensitive recommendations are proposed:

Curriculum Reform with Contextual Adaptation

Medical curricula should incorporate structured adolescent health modules aligned with competency-based medical education. These modules must include context-specific case scenarios, such as rural health challenges, early marriage, gender norms, and access barriers in sub-Himalayan and tribal regions.

Training for Rural and Hard-to-Reach Settings

Healthcare providers should be trained to deliver AFHS in low-resource environments, emphasizing the following:

- Task-sharing with community health workers
- Outreach services through school health and mobile clinics
- Syndromic management and referral systems This is particularly relevant for sub-Himalayan and geographically difficult terrains, where access to specialized care is limited.

Bridging the Digital Divide

Medical education should adopt hybrid training models, combining:

- Offline learning modules and printed job aids for low-connectivity areas
- Mobile-based and telemedicine training for urban and semi-urban settings Students should be trained in teleconsultation skills to extend adolescent care to underserved populations.

Addressing Cultural and Gender Barriers

Training programs must emphasize culturally sensitive, gender-responsive communication, including the following:

- Confidentiality in adolescent consultations
- Addressing stigma around mental health and sexual health
- Engaging families and communities where appropriate

Faculty Development and Capacity Building

Faculty across disciplines should be trained in adolescent health competencies and contextual teaching methodologies, ensuring uniform delivery of AFHS principles across institutions.

Strengthening Community-Based Learning

Medical students should be exposed to community and school-based adolescent health programs, particularly

in rural and underserved regions, to enhance real-world understanding and service delivery skills.

Standardized Monitoring and Evaluation

National-level frameworks should be developed to assess competency in adolescent health training, including OSCEs, field-based evaluation, and service delivery outcomes.

Final Statement

By aligning medical education with ground realities—especially addressing the digital divide, cultural diversity, and resource limitations—India can build a cadre of healthcare providers **सक्षम** in delivering adolescent-friendly care across all settings. Such reforms are essential for improving adolescent health outcomes and achieving equitable healthcare goals by 2030.[7,17,20]

References

1. World Health Organization. Adolescent health. Available from: https://www.who.int/health-topics/adolescent-health
2. WHO. Making health services adolescent friendly. Available from: https://www.who.int/publications/i/item/9789241503594
3. Dixit G, et al. Adolescent friendly health services: where are we standing? Available from: https://www.ijcmph.com/index.php/ijcmph/article/view/543/0
4. Sujindra E, et al. Perceptions of adolescent health services among doctors. Available from: https://www.ijrcog.org/index.php/ijrcog/article/view/1566/0
5. Benavides C, et al. eHealth intervention in adolescents. Available from: https://arxiv.org/abs/2402.07923
6. Sharma V, et al. AFHS in India: A scoping review. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5111259/
7. Bali S, et al. Awareness of AFHS in India. Available from: https://pubmed.ncbi.nlm.nih.gov/36618224/
8. Mehra S, et al. Integrating AFHS in rural India. Available from: https://pubmed.ncbi.nlm.nih.gov/28615592/
9. WHO South-East Asia. Adolescent-friendly services. Available from: https://www.who.int/southeastasia/publications/i/item/adolescent-friendly-health-services
10. Sehgal NK, Kambhamettu H, Matam SP, Ungar L, Guntuku SC. Designing Mental-Health Chatbots for Indian Adolescents: Mixed-Methods Evidence, a Boundary-Object Lens, and a Design-Tensions Framework. arXiv preprint arXiv:2511.07729. 2025 Nov 11.
11. Hoopes AJ, Agarwal P, Bull S, Chandra-Mouli V. Measuring adolescent friendly health services in India: A scoping review of evaluations. Reproductive Health. 2016 Nov 15;13(1):137. Available from: https://pubmed.ncbi.nlm.nih.gov/27846848/
12. Bahl D, Bassi S, Manna S, Arora M. Adolescent Friendly Health Clinics (AFHCS) in India and their compliance with government benchmarks: A scoping review. F1000Research. 2023 Jul 6;12:517. Available from: https://pubmed.ncbi.nlm.nih.gov/37614564/
13. Nayak G, Bahl D, Bassi S, Maity H, Mason-Jones AJ, Arora M, Dutta A. Knowledge, attitude, and practices of adolescents and peer educators in relation to the components of the National Adolescent Health Program in India: findings from a cross-sectional survey. Frontiers in public health. 2024 Sep 11;12:1378934. Available from: https://pubmed.ncbi.nlm.nih.gov/39324169/
14. Dixit GT, Jain S, Mansuri F, Jakasania A. Adolescent friendly health services: where are we actually standing. Int J Community Med Public Health. 2017 Feb;4(3):820-4. Available from: https://www.ijcmph.com/index.php/ijcmph/article/view/543/0
15. Kumar R, Prinja S, Lakshmi PV. Health care seeking behavior of adolescents: comparative study of two service delivery models. The Indian Journal of Pediatrics. 2008 Sep;75(9):895-9. Available from: https://pubmed.ncbi.nlm.nih.gov/18581068/
16. Gupta M, Bhatnagar N, Bahugana P. Inequity in awareness and utilization of adolescent reproductive and sexual health services in union territory, Chandigarh, North India. Indian journal of public health. 2015 Jan 1;59(1):9-17. Available from: https://pubmed.ncbi.nlm.nih.gov/25758725/
17. Jain N, Bahl D, Mehta R, Bassi S, Sharma K, Arora M. Progress and challenges in implementing adolescent and school health programmes in India: a rapid review. BMJ open. 2022 May 1;12(5):e047435. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9083421/
18. Ramadass S, Gupta SK, Nongkynrih B. Adolescent health in urban India. Journal of family medicine and primary care. 2017 Jul 1;6(3):468-76. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC5787938/
19. Shah AR, Subramanyam MA. Community-level women's education and undernutrition among Indian adolescents: A multilevel analysis of a national survey. PloS one. 2021 May 20;16(5):e0251427. Available from: https://pubmed.ncbi.nlm.nih.gov/34014954/
20. Barua A, Watson K, Plesons M, Chandra-Mouli V, Sharma K. Adolescent health programming in India: a rapid review. Reproductive Health. 2020 Jun 3;17(1):87. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7271491/