ORIGINAL RESEARCH ARTICLE

Ethics, empathy, and empowerment: the role of ideological and political education in preparing medical students for adolescent female reproductive health care

DOI: 10.29063/ajrh2026/v30i16.8

Shouwei Guo[1] and Juan Yan[2]*

School of Medical Technology and Engineering, Henan University of Science and Technology, Luoyang 471000, Henan, China[1] ; Business School and MBA Education Center, Henan University of Science and Technology, Luoyang 471000, Henan, China[2]

***For Correspondence:** Email: *lychong25@163.com*

Abstract

This study explores how ideological and political education contributes to equipping medical students with ethical sensitivity in providing adolescent reproductive healthcare. Using a quantitative cross-sectional design, the research surveyed Chinese medical students through a structured questionnaire assessing their exposure to such education, along with measures of ethical competence, empathy, empowerment orientation, and preparedness for care delivery. Data analysis encompassed descriptive statistics, correlation assessments, regression analysis, and mediation modeling. Results indicated a positive link between ideological and political education and enhanced preparedness for adolescent care. Ethical competence, empathy, and empowerment orientation served as mediators in this relationship, with empathy emerging as the most significant mediator. The findings highlight the importance of integrating values-based training into medical curricula to enhance students' readiness for ethical, gender-sensitive, and adolescent-centered care. This approach aligns strongly with the objectives of Sustainable Development Goals 3 and 5. *(Afr J Reprod Health 2026; 30 [16]: 93-103).*

Keywords: Ethics, Empathy, Empowerment, Political Education

Résumé

Cette étude explore comment la formation idéologique et politique contribue à préparer les étudiants en médecine à offrir des soins de santé reproductive aux adolescents avec une sensibilité éthique. Employant une méthode quantitative transversale, la recherche a sondé des étudiants en médecine chinois via un questionnaire structuré évaluant leur exposition à cette formation, ainsi que leur compétence éthique, leur empathie, leur orientation vers l'autonomisation et leur préparation aux soins. L'analyse des données a inclus des statistiques descriptives, des analyses de corrélation, de régression et de modélisation par médiation. Les résultats ont indiqué un lien positif entre la formation idéologique et politique et une meilleure préparation aux soins pour les adolescents. La compétence éthique, l'empathie et l'orientation vers l'autonomisation ont agi comme médiateurs dans cette relation, l'empathie émergeant comme le médiateur le plus significatif. Les conclusions soulignent l'importance d'intégrer une formation axée sur les valeurs dans les programmes médicaux pour améliorer la préparation des étudiants à des soins éthiques, sensibles au genre et centrés sur l'adolescent. Cette approche correspond aux objectifs des Objectifs de Développement Durable 3 et 5. *(Afr J Reprod Health 2026; 30 [15]: 93-103).*

Mots-clés: Éthique, Empathie, Autonomisation, Formation politique.

Introduction

Training future doctors to deliver ethical, empathetic, and enabling services in teenage female reproductive health is becoming a more significant issue in the field of the medical education. Adolescence is a critical phase of development when reproductive health concerns overlap with vulnerability, social stigma, and intricate ethical issues. Unless medical students are given proper ethical background, empathy and social cultural insight, they might not provide effective and respectful reproductive health care to adolescent girls, which may substantiate inequalities and distrust in care systems.Over the past years, it has become increasingly recognized that technical and biomedical competence is not adequate to deal with sensitive reproductive health problems. Rationality and morality, compassion, and the respect of patient autonomy are the cornerstones of high quality reproductive health care of adolescents. The

medical education literature underlines that, students, in addition to clinical exposure, develop professional values and ethical orientations by undergoing systematic educational interventions that touch upon moral reasoning, social responsibility, and humanistic views.[1, 2] In the absence of intentional education models, medical education threatens to give rise to clinicians who, in spite of their clinical ability, are poorly equipped to handle the emotional and ethical aspects of adolescent reproductive health.

In the Chinese medical education setting, ideological and political education is a formalized and institutionalized way of establishing values, social responsibility, and professional identity among students. Contrary to traditional courses in ethics, ideological and political education brings together moral philosophy, civic responsibility and social values in disciplinary courses. According to emerging studies, this kind of education may have a huge impact on the formation of ethical concepts, development of empathy, and patient centered care knowledge in medical students.[1, 3] The implications of these outcomes are especially applicable to reproductive health care, as practitioners are forced to deal with cultural expectations and gender relations and delicate ethical realms when working with adolescent patients.

Empathy has also been proposed as one of the core competency of effective reproductive health care particularly among adolescents who might feel fear, embarrassment or lack of autonomy when making health related decisions. There is evidence that compassionate communication enhances patient trust, disclosure, and compliance to care recommendations in sexual and reproductive health settings [4, 5]. Educational strategies that incorporate the role of ethical reflection with social and political awareness have demonstrated to enhance the empathy and professional responsibility in medical students indicating a possible avenue of enhancing the provision of reproductive health care among the adolescents.[2, 6]

Simultaneously, empowerment has become a central value in the field of adolescent reproductive health, noted as the respect of the agency of young women, informed choice, and agency over their bodies. Ethical and ideological aspects included in medical education may prepare future doctors to assist adolescent girls as patients, as well as as individuals with rights and voices in healthcare experiences [7, 8]. Nevertheless, there is a paucity of empirical studies regarding the role of ideological and political training as a specific measure of preparing medical learners to participate in providing reproductive health care to adolescent females.

The study will examine the importance of ideological and political education as a way of promoting ethics, empathy, and empowerment of medical students concerning adolescent female reproductive health care. Through synthesizing the views of medical education, ethics and reproductive health literature, this study aims at providing evidence on how value based learning techniques can make future physicians better placed to provide compassionate, ethical and gender sensitive reproductive health care to adolescent girls.

Literature review

Gaps in health care and medical education of adolescent females reproductive health care

The clinical, ethical, and psychosocial aspects of adolescent female reproductive health care have a complicated, like issues of confidentiality and informed consent, gender sensitivity, and the provision of culturally-competent communication. Notwithstanding its significance, numerous researches indicate that undergraduate medical training offers inconsistent and inadequate training on how to tackle the issue of adolescent sexual and reproductive health issues.[1,2] Medical students also often complain of discomposure and incompetence in dealing with menstruation, contraception, sexual health counseling, and reproductive autonomy in adolescent patients, which points to discrepancies between the content of the required curriculum and clinical needs in real life.[3]

Recent scholarly reviews of sexual and reproductive health education indicate that competence in adolescent care goes beyond biomedical knowledge in terms of ethical reasoning, skills of communicating with adolescents, and the ability to place oneself in other people's shoes.[1,4] In the absence of systematic

educational solutions, which deal with these areas, medical graduates might not be able to offer respectful, patient-centered reproductive health services to adolescent girls.

Reproductive health training ethics and humanism

The concept of ethical competency is at the heart of adolescent reproductive health care since a clinical decision may often entail the weighting of patient autonomy, parental involvement, and institutional or legal restrictions. The literature on medical education is beginning to acknowledge ethics and humanistic values as a primary concern in the reproductive health practice especially in delicate situations that involve adolescents.[2,5] Research indicates that education based on values fosters better attitude to ethical decision making and curbs stigmatizing attitudes towards young female patients who seek reproductive care.[6]

Reproductive health education is also made difficult by this notion of the hidden curriculum. The implicit attitudes and informal rules in medical training settings may unwillingly support moral judgement or unease of adolescent sexuality.[7] Enhancing explicit ethics training and reflective learning has thus been suggested as one of the strategies to overcome such influences and encourage respectful provision of reproductive health care.[5,7]

Empathy as a core competency in adolescent reproductive care

The importance of empathy has been extensively considered to be a main factor of effective patient-provider communication especially during sexual and reproductive health consultations. Empathy can be developed using systematic reviews that show that empathy can be built by use of structured educational interventions which comprise reflective learning, humanities based education and ethics based curriculum.[8, 9]Compassionate care has been reported to enhance trust, patient disclosure and compliance with treatment directions in reproductive healthcare among adolescents. [4,10]

Additional meta-analytical findings and evidence also suggest medical humanities and value-based teaching methods to be linked to quantifiable changes in empathy of medical students and healthcare professionals [11]. The findings are particularly applicable in the context of reproductive health care of female adolescents, in which the clients might feel anxious, stigmatized, or fearful to open up.

Chinese medical training ideological and political education

In the Chinese tertiary education, institutionalized ideology and political education is a form of inculcating moral reasoning, social responsiveness and professional moral standards across the disciplines. This strategy is meant to incorporate ethical values and humanistic outlook in technical training in medical education.[12,13] In contrast to the solitary courses of ethics, ideological and political training is pervaded through the syllabus, making a difference in forming the professional identity and value orientation of students.

The emerging evidence indicates that ideological and political education can aid the formation of the ethical concepts and empathy of medical students, based on the recent empirical researches. Quantitative results reveal that students who have been exposed to integrated ideological and political curriculum have a better bioethical knowledge and have a better ethical decision making capacity.[14] Further studies indicate that these educational methods can also increase empathy and professional responsibility which are two crucial components in adolescent reproductive health care.[15]

Even though this is accumulating, the majority of the research is on general ethical development but not on how ideological and political education equips students with particular clinical areas like adolescent female reproductive health.

Gender-based violence and its effects on adolescent reproductive health

Present-day reproductive health systems prioritize the empowerment, autonomy and rights-based care among the adolescent girls. Empowerment-based care identifies the adolescents as self- determining

health decision makers and emphasizes informed consent, confidentiality and respectful communication practices.[3,16] The research in medical education states that explicit incorporation of the elements of ethics, empathy, and sociopolitical awareness into the training programs is the key to preparing students to provide a care that is empowerment-oriented.[2,5]

The use of educational strategies that preempt empowerment has been linked with better attitudes of providers with adolescent patients and increased sensitivity to gender-based health inequities.[16,17] Yet, there is minimum empirical studies that examined the way ideological and political education can be used as an organized avenue of instilling the principles of empowerment into medical education in adolescent reproductive health.

Synthesis and research gap

The literature generally suggests that the provision of reproductive health care needs ethics, sensitive communication and empowerment-oriented practice in teenage clientele. Although empathy training and ethics education have been demonstrated to positively impact medical education, ideological and political education in China is specifically intended to influence professional values, the effectiveness of these two strands of research has little in common.

Empirical literature on the role played by ideological and political education in preparing medical students in the specific aspects of preparing adolescence female reproductive health care by using ethics, empathy and empowerment is evidently lacking. Having no knowledge about this gap will hamper progress of value-based medical training and enhance better reproductive health outcome among adolescent girls.

Conceptual framework

The following study conceptualizes the Ideological and Political Education (IPE) as a value-based educational process that determines the readiness of the medical students to provide adolescent female reproductive health care. Based on ethics training, empathy building, and empowerment theory, the framework suggests that IPE can affect clinical preparedness in direct and indirect ways using three fundamental psychosocial competencies, i.e. ethical competence, empathy, and empowerment orientation.

IPE has been conceived as a concerted educational methodology that incorporates moral reasoning, social responsibility and professional values throughout medical education. It is in this way that the students become better equipped in terms of their ethical judgment, empathic communication, and a rights-based approach to adolescent patients. Such skills are especially important in adolescent reproductive health care of females, as confidentiality, autonomy, and delicate communication are vital here.Ethical competence is used to show how the students can resolve moral dilemmas, uphold confidentiality and practice professional ethics. Empathy is the ability of students to learn and react to the emotional and social vulnerabilities of adolescent girls. The sense of empowerment orientation is the spirit of commitment of the students to help adolescent girls achieve agency, informed decisions and reproductive rights. A combination of these competencies has been theorized to raise the readiness of students in the adolescent female reproductive healthcare that is characterized by confidence, sensitivity and competence in offering patient-centered ethical care. The figure illustrates the multidimensional structure of ideological and political education in medical colleges, highlighting how this form of education is delivered through several interconnected elements rather than a single instructional channel. At the center of the model is *ideological and political education in medical colleges***,** which serves as the core value-based framework shaping medical students' professional identity, ethics, and social responsibility.

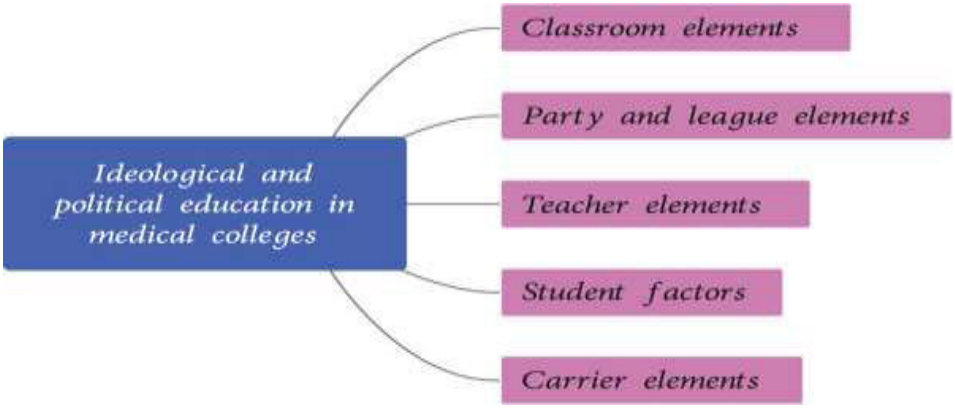

Figure 1: Conceptual framework of study

The classroom elements represent formal curricular activities, including lectures, case discussions, and integrated teaching that embed ideological values, medical ethics, and social responsibility into clinical and theoretical courses.

Hypothesis development

Based on the conceptual framework, the following hypotheses are proposed:

H1: Ideological and political education is positively associated with medical students' preparedness for adolescent female reproductive health care.

H2: Ideological and political education is positively associated with ethical competence among medical students.

H3: Ideological and political education is positively associated with empathy among medical students.

H4: Ideological and political education is positively associated with empowerment orientation toward adolescent female patients.

H5: Ethical competence is positively associated with preparedness for adolescent female reproductive health care.

H6: Empathy is positively associated with preparedness for adolescent female reproductive health care.

H7: Empowerment orientation is positively associated with preparedness for adolescent female reproductive health care.

H8: Ethical competence, empathy, and empowerment orientation mediate the relationship between ideological and political education and preparedness for adolescent female reproductive health care.

Methods

The research design used in this study was a quantitative cross-sectional study to address the issue of how ideological and political education prepares medical students to provide care to adolescent females in reproductive health involving ethics, empathy, and empowerment. Following the conceptual framework, the ideological and political education was addressed as a multidimensional construct that included classroom aspects, the activities of parties and leagues, teacher factors and student aspects, and career-based aspects. The researchers targeted undergraduate medical students pursuing their studies at the Chinese public medical colleges and had at least one year of ideological and political training as part of their academic training.

The sample size was determined using established guidelines for quantitative cross-sectional studies involving regression and mediation analysis. Assuming a medium effect size ($f^2 = 0.15$), a 95% confidence level, and 80% statistical power, the minimum required sample size was estimated at approximately 300 participants. To account for non-response, 400 questionnaires were distributed, of which 370 complete and valid responses were retained for analysis. A stratified convenience sampling technique was used, with stratification based on academic year and field of study to ensure representation across different stages of medical training. Undergraduate medical students from public medical universities in China who had completed at least one year of ideological and political education were eligible to participate.

Recruitment was conducted during scheduled academic sessions on a voluntary basis, and all questionnaires were self-administered anonymously after informed consent was obtained.

Following recommendations of a minimum of 10–15 participants per estimated parameter, and assuming a medium effect size ($f^2 = 0.15$), a 95% confidence level, and 80% statistical power, the minimum required sample size was estimated to be approximately 300 participants. To account for potential non-response and incomplete data, 400 questionnaires were distributed. A total of 370 complete and valid responses were obtained and included in the final analysis, exceeding the minimum requirement and ensuring adequate statistical power.

A structured self-administered questionnaire was used to gather data carrying the essence of the constructs of the research. Data were collected in public medical universities in China within a formal academic setting. Undergraduate medical students who had completed at least one year of ideological and political education were invited to participate. Data collection was conducted during scheduled class sessions to ensure a consistent and controlled environment.

The study employed a structured, self-administered questionnaire rather than qualitative interviews. Questionnaire administration was facilitated by trained research assistants. All data collectors underwent prior training by the principal investigator, which covered study objectives, ethical procedures, informed consent, standardized instructions for questionnaire administration, and methods to address participant queries without influencing responses. The research assistants were not involved in teaching or assessing the participating students, thereby minimizing response bias.

Each of the questionnaire items was also rated based on a five-point Likert scale that ranged between strongly disagree and strongly agree. The instrument was pilot tested to make it clear, reliable and contextually appropriate.

Standard statistical software was used to perform statistical analysis. The characteristics of the participants and the variables of the study were summarized with the help of descriptive statistics, where reliability was evaluated with Cronbach alpha to determine internal consistency of the measurement scales. The Pearson correlation analysis was used to assess the correlation between the ideological and political education components, psychosocial competencies, and readiness to adolescent reproductive health care. A series of multiple regression and mediation tests was then performed to test the expected relationships (direct and indirect) identified in the conceptual framework which were first hypothesized to be statistically significant ($p = 0.05$).

Ethical considerations

This research adhered to the ethical principles established in the Declaration of Helsinki. Before commencing data collection, ethical approval was secured from the Henan University of Science and Technology Ethics Committee (Approval No. HUST-2025-EC-089). Participants received comprehensive information about the study's objectives, procedures, measures to ensure confidentiality, and their right to withdraw at any point without repercussions. Informed consent was obtained in writing from all participants. The anonymity and confidentiality of participant responses were rigorously upheld during data collection, analysis, and reporting. No personally identifiable information was gathered, and all data were securely stored with access restricted to the research team.

Results

The results are presented in alignment with the conceptual framework, which posits that ideological and political education influences medical students' preparedness for adolescent female reproductive health care directly and indirectly through ethical competence, empathy, and empowerment orientation.

Descriptive statistics and reliability analysis

Table 1 presents descriptive statistics and reliability coefficients for all study constructs. Cronbach's alpha values ranged from 0.81 to 0.91, indicating strong internal consistency across all scales.

Table 1: Descriptive statistics and reliability of study variables (N = 370)

Variable	Mean	SD	Cronbach's α
Ideological and political education	3.6	0.7	0.8
Ethical competence	3.7	0.6	0.8
Empathy	3.8	0.6	0.9
Empowerment orientation	3.6	0.7	0.8
Preparedness for adolescent reproductive health care	3.7	0.6	0.8

Table 2: Correlations among ideological and political education, psychosocial competencies, and preparedness

Variable	IPE	Ethics	Empathy	Empowerment	Preparedness
Ideological and political education	1				
Ethical competence	0.48**	1			
Empathy	0.52**	0.56**	1		
Empowerment orientation	0.46**	0.51**	0.49**	1	
Preparedness	0.54**	0.59**	0.62**	0.57**	1

Note: p < 0.01

Table 3: Regression results predicting preparedness for adolescent reproductive health care

Predictor	β	t	p
Ideological and political education	0.31	6.8	<0.001
Age	0.05	1.1	0.263
Academic year	0.07	1.5	0.115
R^2	0.36		

Table 4: Mediation effects of psychosocial competencies

Mediator	Indirect Effect	95% CI
Ethical competence	0.11*	[0.05, 0.19]
Empathy	0.14**	[0.08, 0.23]
Empowerment orientation	0.10*	[0.04, 0.18]

Note: *p < 0.05, ***p < 0.01***

Explanation and literature linkage

The relatively high mean scores indicate that students generally perceived moderate to strong exposure to ideological and political education and corresponding psychosocial competencies. These findings are consistent with prior research demonstrating that value-based and ethics-oriented education contributes to professional value formation and empathetic capacities in medical students [15,16] The strong reliability coefficients align with earlier studies measuring ethics, empathy, and empowerment in medical education contexts.[17, 18]

Correlation analysis

Pearson correlation analysis was conducted to examine bivariate relationships among the key variables.

Explanation and literature linkage

Ideological and political education showed significant positive correlations with ethical competence, empathy, empowerment orientation, and preparedness. These findings support existing evidence that integrated ideological and ethics education enhances moral reasoning and professional identity in medical students [15, 19]. The strong association between empathy and preparedness echoes prior research demonstrating that empathetic capacity is central to effective adolescent reproductive health care [20, 21].

Regression analysis: direct effects

Multiple regression analysis was conducted to examine the direct effect of ideological and political

education on preparedness for adolescent female reproductive health care.

Explanation and literature linkage

Ideological and political education emerged as a significant predictor of preparedness, supporting Hypothesis 1. This finding aligns with studies showing that ideological and values-based education strengthens ethical awareness and confidence in handling sensitive clinical encounters.[16,19] The non-significant effects of age and academic year suggest that value-oriented education plays a more decisive role than demographic factors in shaping preparedness for adolescent reproductive health care.

Mediation analysis: indirect effects through ethics, empathy, and empowerment

Mediation analysis was conducted to examine whether ethical competence, empathy, and empowerment orientation mediated the relationship between ideological and political education and preparedness.All three psychosocial competencies were very strong intermediaries of the relationship between ideological and political education and preparedness, which validated Hypothesis 8. The strongest mediating effect was attributed to empathy which points to its core nature in the adolescent reproductive health care. This finding aligns with previous research findings indicating that empathy is an important process by which ethics education is associated with patient-centered care outcomes.[20,21] The intermediary status of the empowerment orientation complements the rights-based and adolescent-centered care models highlighted in the literature of reproductive health education.[22, 23]

Discussion

Under conceptual framework, the research explored the role of ideological and political education (IPE) in medical colleges in the readiness of medical students to the care of adolescent female reproductive health care in terms of ethical competence, empathy and orientation on empowerment. The results are very well empirically supported with both the direct and indirect paths suggested as part of the framework proving that value-based education can translate into clinical significance of competencies in sensitive reproductive health situations.

To begin with, the high level of direct correlation between IPE and preparedness poses the idea that integrated ideological and political curriculums increase the confidence and capability of students to handle adolescent reproductive health issues. This result is consistent with the previous studies that ideological and political education reinforces the process of establishing professional identity and promoting the sense of ethics in medical students, which both are the keys to solving morally ambiguous clinical cases.[15,16] Through incorporation of social responsibility and moral reasoning throughout medical Training programs, IPE seems to develop preparedness (that goes beyond training and technical knowledge) and incorporation of judgment, accountability, and patient-centered care.

Second, ethical competence mediates the relationship between ethical development theories which seek to establish moral reasoning as the core of the effectiveness of caring to adolescent reproductive health care. The ethical competence can help the clinicians to deal with issues of confidentiality, informed consent, and protection in cases involving the treatment of adolescent girls. In line with previous research, students that were more ethically competent said they were better prepared to provide reproductive health care [17, 19]. These results support the true claim that ethics education should be situational and closely associated with actual clinical issues encountered in the treatment of adolescents.

Third, as an important mediating variable, empathy was found to be the most influential variable in the relationship between IPE and preparedness, with a significant role in reproductive health care of adolescent women. Empathy theory lays a strong focus on perspective-taking and emotional attunement as the most important elements of effective clinical communication. The findings correspond to the available literature that indicates that empathetic clinicians are more likely to establish trust, minimize stigma, and promote open communication in sexual and reproductive

health visits.[20, 21,24] It is also hypothesized by previous studies that empathy may be developed with the help of reflective and value-based education, which confirms the apparent effect of IPE on the development of empathy.[18, 20.25]

Fourth, the relationship between IPE and preparedness was greatly mediated by the empowerment orientation which provides empirical evidence that supports the rights-based and empowerment frameworks in adolescent reproductive health. Clinicians focusing on empowerment acknowledge the adolescent girls as active stakeholders of their health decisions and emphasize on autonomy and respectful communication. This result coincides with the literature underlining the importance of empowerment as one of the central tenets of adolescent reproductive health and gender-responsive care.[22, 23] IPE can assist the future physicians by enabling them to overcome the paternalistic predisposition and create more balanced health care dynamics through the establishment of the empowerment orientation.

When combined, the results support the conceptual framework of the study as it shows that IPE functions as a complex set of inter-psychosocial processes and not as a separate educational source. The combination of ethical competence, empathy and empowerment orientation in promoting preparedness to teenage female reproductive health care works in synergy. These findings can build upon existing literature because they strictly connect ideological and political education with a particular field of clinical practice and fill in the gap between the theory of values-based education and the practice of reproductive health.[15- 23]

Strengths and limitations

This study has several strengths. First, it empirically examines the role of ideological and political education in preparing medical students for adolescent female reproductive health care by integrating ethical competence, empathy, and empowerment orientation within a single analytical framework. Second, the use of a sufficiently large sample enhances the statistical power and reliability of the findings. Third, the application of mediation analysis provides deeper insight into the mechanisms through which value-based education influences clinical preparedness.

Despite these strengths, certain limitations should be acknowledged. The cross-sectional design limits causal inference, and the reliance on self-reported measures may introduce response and social desirability bias. In addition, the use of a stratified convenience sampling approach restricts the generalizability of the findings beyond the studied institutions. Future research employing longitudinal or mixed-methods designs and more diverse sampling strategies is recommended to validate and extend the present findings.

Policy implications

The results have significant implications to medical education policy and health promotion among the adolescents. Consistent with SDG 3 (Good Health and Wellbeing), the research contributes to the role of values-based education as a prevention measure to enhance the quality of reproductive health care of adolescents. Policymakers and curriculum developers ought to acknowledge the fact that ethical competence and sensitive communication are important predictors of quality of care, especially in reproductive health sensitive situations.

Considering SDG 5 (Gender Equality), the findings feature IPE as a tool of creating gender-sensitive and empowerment-oriented medical practice. Educating future physicians to value the independence, and rights of adolescent girls will lead to the elimination of health inequities based on gender and enhancement of access to respectful reproductive health care services. It is therefore the role of medical colleges to fortify the curricula which PDF out rightly covers gender norms, reproductive rights, empowerment in the domain of ideological and political education.

Policies in the institutional level must promote closer coordination between IPE, clinical teaching, and reproductive health education. The culture of ethics and compassionate practice in teachers can be further developed through the faculty development programs. These policy actions may be used to make sure that medical graduates are empowered to provide just and rights-

based reproductive health services that promote the wellbeing of adolescents.

Conclusion

In this study, it has been established that ideological and political education is important in equipping the medical students with adolescent female reproductive health care through the establishment of ethical competence, empathy and empowerment orientation. The findings confirm the theoretical framework of the study, indicating that IPE has a direct and indirect effect in terms of preparation based on these psychosocial competencies. Empathy turned out to be one of the most powerful pathways, and the role of relational skills in the reproductive health care when it is sensitive should be noted. The empirical study connecting education based on values and the clinical preparedness adds some new evidence to the literature of medical education and adolescent health. By incorporating ethics, empathy, and empowerment into the medical education, the quality and equity of reproductive health care to the adolescent girls can be improved, along with other objectives of the overall good health and gender equality.

Funding

This research was supported by Henan Province Education and Teaching Reform Research and Practice Project (Grant No.2024SJGLX0090).

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The survey data supporting the findings of this study are not publicly available due to the sensitive nature of responses collected from medical students regarding ethical and reproductive health training, as well as confidentiality commitments made. Anonymised data may be made available to qualified researchers upon reasonable request to the corresponding author, subject to institutional ethics committee approval and the execution of an appropriate data-sharing agreement.

Authors' contributions

Shouwei Guo contributed to study conceptualisation, research design, data collection, and manuscript drafting. Juan Yan participated in data analysis, interpretation of findings, and critical revision of the manuscript. Both authors reviewed and approved the final version for submission.

References

1.Gong X, Wang J, Wang S and Wang Z. Ideological and political education's impact on medical students' bioethical concept formation: a GNN-based analysis. Mol Cell Biomech. 2025;22(4).

2.Bai X and Xu X. The impact of ideological and political education on the psychological and behavioral biomechanisms in medical students' life concept formation: a multidisciplinary exploration. Mol Cell Biomech. 2025;22(4).

3.Xue S and Li S. Exploration of the cultivation path of medical students' politico-ideological and humanistic quality based on deep learning. Comput Math Methods Med. 2022; 2022:5766675.

4.Bastien S, Ferenchick E, Mbassi SM, Plesons M and Chandra-Mouli V. Improving health worker motivation and performance to deliver adolescent sexual and reproductive health services in the Democratic Republic of Congo: study design of implementation research. Glob Health Action. 2022;15(1):2022280.

5.Rivenes Lafontan S, Jones F and Lama N. Exploring comprehensive sexuality education experiences and barriers among students, teachers and principals in Nepal: a qualitative study. Reprod Health. 2024;21(1):131.

6.Joodaki K, Nedjat S, Dastjerdi MV and Larijani B. Ethical considerations and challenges of sex education for adolescents in Iran: a qualitative study. J Med Ethics Hist Med. 2020; 13:2.

7.Pereira-Afonso MR, Fernandez-Cézar R, Lopezosa-Villajos V, Hermida-Mota M, de Almeida Peres MA and Gómez-Cantarino S. Sexual health education in nursing: a scoping review based on the dialectical structural approach to care in Spain. Healthcare (Basel). 2025;13(15):1911.

8.Parida SP, Gajjala A and Giri PP. Empowering adolescent girls: is sexual and reproductive health education a solution? J Fam Med Prim Care. 2021;10(1):66-71.

9.Borkar RS, Patil CG and Meshram SA. Attitude of adolescent school students towards reproductive health education. Int J Community Med Public Health. 2017;2(4):484-488.

10.Onwuachi-Saunders C, Dang QP and Murray J. Reproductive rights, reproductive justice: redefining challenges to create optimal health for all women. J Healthc Sci Humanit. 2019;9(1):19-35.

11.Ryu H and Pratt W. Women's educating and coping strategies for cultivating supportive web-based spaces for discussing sexual and reproductive health: a co-design study. J Med Internet Res. 2025; 27: e62716.

12.Lassi ZS, Rahim KA, Stavropoulos AM, Ryan LM, Tyagi J, Adewale B, Kurji J, Bhaumik S, Meherali S and Ali M. Use of contraceptives, empowerment and agency of adolescent girls and young women: a systematic review and meta-analysis. BMJ sexual & reproductive health. 2024;50(3):195-211.

13.Morgan AK, Ibrahim R, Owusu AF, Awafo BA, Quartey T, Aziire MA, Katsekpor JT, Owusu AS and Katey D. Prevalence and associated factors of school re-entry among teenage mothers in Ghana's Volta Region: a cross-sectional survey. International Journal of Adolescence and Youth. 2023;28(1):2242476.

14.Rodríguez M and Contreras J. Teachers' social representations of gender, sexuality, and sexual diversity: a qualitative study on comprehensive sex education. Am J Sex Educ. 2025;20(1):1-30.

15.Afolabi AA, Ilesanmi OS and Ajala O. Sexual and reproductive health needs and desire for comprehensive sexuality education among adolescents in Ekiti State, Nigeria: a cross-sectional study. Discover Public Health. 2025;22(1):1-11.

16.Torres-Cortés B, Leiva L, Vaccarezza S, Canenguez KM and Zavala-Villalón G. Acceptability, feasibility, and health equity in the implementation of a sexuality education program: lessons learned from a mixed-methods experimental study. Am J Sex Educ. 2025;20(2):1-39.

17.Fjeld W, Holen MM, Klausen SW and Martinsen M. Norwegian student teachers' reflections on a three-day interdisciplinary programme to enhance understanding of comprehensive sexuality education as part of teacher education. Sex Educ. 2025;25(2):1-15.

18.Noonan M, Cotter P, Hegarty J, Mahony JO and Lambert S. Effectiveness of sexual health education interventions addressing sexual violence and sexual safety for adolescents: a systematic review protocol. medRxiv. Preprint posted June 2025.

19.Parker WJ. The moral imperative of reproductive rights, health, and justice. Best Pract Res Clin Obstet Gynaecol. 2020; 62:3-10.

20.Rivenes Lafontan S, Jones F and Lama N. Exploring comprehensive sexuality education experiences and barriers among students, teachers and principals in Nepal: a qualitative study. Reprod Health. 2024;21(1):131.

21.Kabelka H, Kok M, Chau K, Werner L, Bos H and Le Mat M. Adolescents' and young people's perspectives on school-based sexuality education in low- and middle-income countries: a scoping review. Reprod Health. 2025;22(1):205.

22.Bakhsh H, Altamimi SA, Aldosari FN, et al. Barriers and predictors of HPV vaccine uptake among female medical students in Saudi Arabia: a multi-center cross-sectional study. Healthcare (Basel). 2025;13(19):2408.

23.Afolabi AA, Ilesanmi OS and Ajala O. Sexual and reproductive health needs and desire for comprehensive sexuality education among adolescents in Ekiti State, Nigeria: a cross-sectional study. Discover Public Health. 2025;22(1):1-11.

24.Wang, X., Iftikhar, H., Shah, U., Hashmi, U., & Iqbal, M. S. (2025). Transforming reproductive healthcare in rural China: The impact of mobile health, telemedicine, and e-health innovations on family planning and maternal health services. *African Journal of Reproductive Health*, *29*(8s).

25.Wang, X., Iftikhar, H., Hali, S. M., Shah, U., & Iqbal, M. S. (2025). Impact of health policy reforms on telemedicine and AI integration for early cancer detection among low-income populations in South Asia: A comparative policy analysis. *African Journal of Reproductive Health*, *29*(8), 43-53