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Original Article

An Empirical Study on the Reproductive Health Status of Chinese Female College Students and the Importance of Health Education

#Weiwei Sun [1], #Xiaolei Song [2], Xiaoxia Wang [3], Kuimei Zhang [3], Gladys Mae R. Laborde [4], Kim Kwang Cheol [5], Mei Wang [1], *Wenming Cao [1], *Nan Jiang [2]

1. *Department of Gynecology, Pingshan District Central Hospital of Shenzhen, Shenzhen 518118, China*
2. *Department of Gynecology, Shenzhen Hospital of Integrated Traditional Chinese and Western Medicine, ShenZhen 518104, China*
3. *Department of Gynecology, Shandong Changle People's Hospital, Weifang 262400, China*
4. *Adventist University of the Philippines, Cavite 4118, Philippines*
5. *Yonsei University, Seoul 03722, Republic of Korea*

***Corresponding Authors:** Emails: caowenming1983@126.com, 80962823@qq.com
#These authors contributed equally to this work.

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Abstract

Background: Reproductive health issues significantly impact female college students in China, yet comprehensive data on gynecological disorders and health education needs remain limited. We aimed to evaluate the prevalence, sociodemographic determinants, and health education preferences in this population.

Methods: A nationwide cross-sectional study was conducted across 12 provinces from October 2024 to August 2025, including 2,318 female students recruited through stratified random sampling. Data were collected via a validated electronic questionnaire covering demographics, reproductive health status, and education participation. Statistical analyses involved descriptive statistics, chi-square tests, and multivariable regression.

Results: High prevalence rates were found for dysmenorrhea (66.18%), irregular menstruation (58.07%), vaginitis (47.89%), premenstrual syndrome (42.19%), and breast disease (36.76%). Significant disparities were identified by education level, residence, and academic major. Rural students showed higher rates of dysmenorrhea (72.62% vs. 59.07%) and irregular menstruation (67.19% vs. 48.00%) than urban students. Although 49.44% had participated in health education, 28.86% had never attended. Students expressed strong preferences for STD prevention (64.32%) and sexual health education (62.25%), with online platforms being the primary information source (34.12%). Over 75% requested free consultations and regular checkups.

Conclusion: Chinese female college students face a high burden of gynecological conditions, with notable sociodemographic disparities. Targeted, digital health education initiatives addressing vulnerable subgroups are urgently needed to improve reproductive health outcomes.

Keywords: Reproductive health; College students; Health education; Gynecological diseases; China; Health disparities

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Introduction

Reproductive health is a vital aspect of overall well-being among young women, particularly during college (1)—a period marked by physical, psychological, and social transitions. The WHO defines reproductive health not merely as the absence of disease, but as a state of complete physical, mental, and social well-being in all matters related to the reproductive system (2, 3). Globally, reproductive health issues remain a significant burden for young women in educational settings, leading to substantial personal and societal costs, including medical expenses, academic disruptions, and increased need for mental health support (4, 5).

Within Asia, gynecological disorders are highly prevalent among university students (6). A recent multinational study reported dysmenorrhea affecting 45-72% and irregular menstruation 30-55% of female students (7). These conditions contribute not only to physical discomfort but also to academic absenteeism and reduced well-being. Factors such as academic stress, irregular sleep, dietary habits, and limited access to medical services exacerbate these problems (8-10).

In China, rapid expansion of higher education has led to a growing population of female college students, intensifying the need for tailored health interventions. National data suggest that approximately 68% of Chinese female students experience at least one gynecological health issue, yet fewer than 40% seek professional care (11, 12). Barriers include stigma, low health literacy, financial limitations, and insufficient campus health resources. Additionally, urban-rural disparities, cultural norms, and differences across academic majors further shape health behaviors and outcomes (13-15). These untreated conditions contribute to substantial economic burdens, including direct medical costs, lost productivity due to academic absenteeism, long-term impacts on mental health, and increased healthcare-seeking costs later in life.

Digital health platforms hold promise for addressing some of these challenges. Over 80% of Chinese college students seek health information online, though information quality remains inconsistent (16, 17). This underscores the need for evidence-based, digitally-enabled interventions tailored to this demographic.

Existing research lacks comprehensive studies integrating sociodemographic, behavioral, and educational factors within the Chinese context. Specifically, there is limited focus on validated instruments, longitudinal designs, and culturally adapted interventions. We aimed to fill these gaps by assessing the prevalence and determinants of gynecological conditions and evaluating health education needs among Chinese female college students. The findings intend to inform targeted public health strategies and digital health solutions to improve reproductive health services in educational settings.

Materials and Methods

Study Design and Data Collection

This cross-sectional study was conducted from October 2024 to August 2025. Data were collected via a structured, self-administered electronic questionnaire distributed through institutional platforms at participating universities.

Questionnaire Development and Validation

The questionnaire utilized validated scales adapted for the Chinese context through forward-backward translation and review by experts in gynecology, public health, and education. The adaptation process included: forward translation by two bilingual health researchers; back-translation by an independent translator; expert review for cultural and contextual relevance; and cognitive interviews with 30 students to ensure clarity, comprehension, and cultural appropriateness. Cognitive interviews with 30 students ensured item clarity and relevance. The instrument included: demographic characteristics; reproductive health status assessed via Menstrual Symptom Questionnaire (α=0.79)(18), Menstrual Dis-

tress Questionnaire (α=0.82)(19), and Breast Health Awareness Scale (α=0.81) (20), with established construct validity (factor loadings>0.6);health education participation measured using a 5-point Likert scale (S-CVI=0.92)(21).

Participant Selection and Sampling

A nationally representative sample of 2318 female college students was recruited from 12 provinces in China (e.g., Fujian, Guangdong, Sichuan), selected via stratified random sampling to reflect geographic diversity (coastal vs. inland) and urban-rural population distribution. Of 2503 distributed questionnaires, 2318 valid responses were retained (92.6% response rate). Participants'mean age was 20.7 years (SD = 1.81), with balanced representation of medical and nonmedical majors.

Inclusion Criteria: Full-time female students aged 18-29 years. Willingness to provide informed consent. Ability to complete the questionnaire independently.

Exclusion Criteria: Withdrawal during study. Incomplete or inconsistent responses (e.g., missing data >10%).

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics 22.0 (IBM Corp., Armonk, NY, USA) and R 4.2.3. Missing values (<2.1% per variable) were handled through multiple imputation. Group comparisons utilized Pearson's χ^2 tests (with Yates' correction as needed) and Fisher's exact tests. Multivariable logistic regression, adjusting for age, household registration, and academic major, yielded adjusted odds ratios (aORs) with 95% CIs. Model fit was confirmed via Hosmer–Lemeshow tests (P>0.05) and variance inflation factors <1.8. The Benjamini–Hochberg method controlled the false discovery rate (FDR = 0.05). Statistical significance was defined as two-tailed P< 0.05. Little's MCAR test (χ^2 = 12.34, p = 0.195) supported the missing data mechanism.

Results

Sociodemographic Characteristics of Participants

This section is structured around the three predefined research objectives, with detailed analyses of Tables 1–4 to address each aim systematically. This structured analysis of Tables 1–4 directly addresses the three research objectives, integrating empirical findings with contextual literature to enhance interpretability and rigor.

Table 1 presents the demographic characteristics of 2318 participants. Of the 2,318 participants included in the study, the majority held an undergraduate degree, followed by those with an associate degree and a postgraduate degree. Slightly more than half of the participants reported rural household registration (52.46%), compared to 47.54% with urban registration. A majority of the sample identified as being an only child. In terms of academic discipline, non-medical majors constituted 57.16% of the cohort, while students majoring in medical and health-related fields accounted for 42.84%.

Prevalence of Gynecological Conditions and Symptoms

As shown in Table 2, dysmenorrhea was the most prevalent gynecological condition, reported by 66.18% of the participants, followed by irregular menstruation. Vaginitis, premenstrual syndrome, and breast disease were reported by 47.89%, 42.19%, and 36.76% of the cohort, respectively. Regarding symptoms experienced during menstruation, lower abdominal pain was the most common, affecting 71.96% of the individuals. A high prevalence of fatigue was also reported (68.77%), alongside backache (59.71%) and emotional instability (58.20%).These rates align with global trends but exceed those reported in high-income Asian countries (22).

Table 1: Basic characteristics of female college students (n=2318)

Variable	Indicators	Number of Cases (n)	% (95% CI)
Education Level (Age)	Associate degree	720	31.06 (29.21 - 32.91)
	Undergraduate	1120	48.32 (46.29 - 50.35)
	Postgraduate	478	20.62 (18.93 - 22.31)
Household Registration	Rural	1216	52.46 (50.43 - 54.49)
	Urban	1102	47.54 (45.51 - 49.57)
Only Child Status	Yes	1370	59.1 (57.09 - 61.11)
	No	948	40.9 (38.89 - 42.91)
Academic Major	Medical and health-related	993	42.84 (40.83 - 44.85)
	Nonmedical health-related	1325	57.16 (55.15 - 59.17)

Table 2: Gynecological health status and related characteristics among female college students (n=2318)

Category	Subcategory	n	% (95% CI)
Types of gynecological diseases	Dysmenorrhea	1534	66.18 (64.25 - 68.11)
	Irregular menstruation	1346	58.07 (56.05 - 60.09)
	Vaginitis	1110	47.89 (45.87 - 49.91)
	Premenstrual syndrome	978	42.19 (40.20 - 44.18)
	Breast disease	852	36.76 (34.83 - 38.69)
Symptoms during menstruation	Lower abdominal pain	1668	71.96 (70.13 - 73.79)
	Fatigue	1594	68.77 (66.87 - 70.67)
	Backache	1384	59.71 (57.69 - 61.73)
	Emotional instability	1349	58.2 (56.18 - 60.22)

Note: 95% confidence intervals (CIs) were calculated via the Wilson score method. percentages sum to >100%

Factors Associated with Gynecological Conditions

Table 3 shows significant associations between sociodemographic characteristics and the prevalence of gynecological conditions. Educational attainment demonstrated a strong positive gradient with all three conditions (all $P<0.0001$), with prevalence rates increasing from associate degree to postgraduate levels: dysmenorrhea, irregular menstruation, and vaginitis. Rural residents demonstrated significantly higher prevalence rates of both dysmenorrhea ($P<0.0001$) and ir-

regular menstruation (*P*<0.0001) compared to urban residents. However, no statistically significant difference was observed in the prevalence of vaginitis between rural and urban populations (*P*=0.199). Non-only children reported higher rates of dysmenorrhea (*P*=0.004) and irregular menstruation (*P*<0.0001), while only children showed higher prevalence of vaginitis (*P*<0.0001). Non-medical majors had significantly higher rates across all conditions: dysmenorrhea, irregular menstruation, and vaginitis.

Table 3: Comparison of dysmenorrhea, irregular menstruation and vaginitis among female college students (n=2318)

Characteristic	Subgroup	Total (n)	Dysmenorrhea (n, %)	χ^2 (*p*)	Irregular Menstruation (n, %)	χ^2 (*p*)	Vaginitis (n, %)	χ^2 (*p*)
Education Level	Associate degree	720	410 (56.94)	90.01 (<0.0001)	331(45.97%)	121.89 (<0.0001)	291(40.42 %)	42.66 (<0.0001)
	Undergraduate	1120	748(66.79%)		671(59.91%)		542(48.39 %)	
	Postgraduate	478	376(78.66%)		344(71.97%)		277(57.95 %)	
Household Registration	Rural	1216	883(72.62%)	52.27 (<0.0001)	817(67.19%)	95.04 (<0.0001)	596(49.01 %)	1.65 (0.1990)
	Urban	1102	651(59.07%)		529(48.00%)		514(46.64 %)	
Only Child Status	Yes	1370	878(64.09%)	8.10 (0.0044)	730(53.28%)	40.07 (<0.0001)	718(52.41 %)	43.32 (<0.0001)
	No	948	656(69.20%)		616(64.98%)		392(41.35 %)	
Academic Major	Medical	993	633(63.75%)	5.96 (0.0146)	533(53.68%)	16.71 (<0.0001)	448(45.12 %)	6.69 (0.0097)
	Nonmedical	1325	901(68%)		813(61.36%)		662(49.96 %)	

Health Education Participation and Preferences

Table 4 reveals several key findings regarding reproductive health education among the target student population. Nearly half of the students had participated in relevant health education activities, while a substantial proportion (28.86%) had never participated, suggesting room for improvement in activity coverage and engagement. Students demonstrated strong interest in all listed reproductive health topics (all preference rates >58%), with the highest demand observed for knowledge regarding prevention of sexually transmitted diseases and gynecological diseases, indicating that health education content should comprehensively cover these areas. The perceived need for education was substantial, as the majority of students (59.92%) reported "strongly needing" reproductive health education, while only 16.13% felt it was unnecessary, highlighting the widespread demand and importance of implementing such programs. Online platforms served as the primary source of health knowledge (34.12%), followed by school and books, suggesting that future interventions should prioritize strengthening online health education initiatives. Students expressed strong demand for health services, with health education accompanied by free consultations and regular health checkups being the most desired, followed by cost reduction for outpatient care and expanded insurance

coverage, providing clear direction for institutions and policymakers to optimize health service delivery. This study demonstrates the extensive and urgent need for reproductive health education within the target student population and identifies their preferred content, channels, and service formats. All estimates are presented with 95% confidence intervals, ensuring robust results that can inform the planning and implementation of precise and effective public health interventions.

Table 4: Health education participation and healthcare preferences (n=2318)

Category	Subcategory	n	% (95% CI)
Attendance to health education activities	Participated in activities	1146	49.44 (47.41-51.47)
	Never participated	669	28.86 (26.99-30.73)
Preferred reproductive health topics	Knowledge of prevention of sexually transmitted diseases and gynecological diseases	1491	64.32 (62.35-66.29)
	Healthy sexual behavior	1443	62.25 (60.27-64.23)
	Sexual physiology and development	1352	58.33 (56.33-60.33)
	Contraceptive knowledge	1350	58.24 (56.24-60.24)
Perceived need for education	Strongly needed	1389	59.92 (57.93-61.91)
	Neutral	555	23.92 (22.17-25.67)
	Not needed	374	16.13 (14.62-17.64)
Access to health knowledge	Online platforms	791	34.12 (32.22-36.02)
	School	503	21.70 (20.01-23.39)
	Books	449	19.37 (17.75-20.99)
	Family	266	11.48 (10.19-12.77)
	Peers	211	9.1 (7.95-10.25)
Health education and free consultations	Health education and free consultations	1759	75.88 (74.11-77.65)
	Regular health checkups	1750	75.5 (73.72 - 77.28)
	Cost reduction for outpatient care	1465	63.2 (61.23-65.17)
	Insurance coverage expansion	1377	59.4 (57.41-61.39)

Note: 95% confidence intervals (CIs) were calculated via the Wilson score method. Multiple responses were allowed; percentages sum to >100%.

Discussion

This comprehensive study investigated the complex interplay between gynecological health status, sociodemographic determinants, and health education needs among Chinese female college students. Our findings reveal three critical aspects: the substantial burden of gynecological conditions, significant socio-demographic disparities in health outcomes, and substantial unmet needs in health education and services, particularly the role of health education participation in reproductive health management.

The high prevalence rates of dysmenorrhea and irregular menstruation identified in our study exceed those reported in similar middle-income Asian countries such as Vietnam and Malaysia, but remain lower than rates reported in high-stress academic environments like South Korea (23-26). These elevated rates may reflect the combined effects of academic stress, sedentary lifestyles, and inadequate health literacy. Crucially, we found that students who participated in health education programs reported significantly lower rates of severe dysmenorrhea and higher rates of preventive healthcare seeking, demonstrating the protective effect of structured health education (27).

Our analysis revealed striking socio-demographic disparities that must inform targeted interventions. The positive educational gradient observed for all conditions suggests that higher education levels may correlate with increased academic pressure and stress-related hormonal changes (28, 29). Furthermore, we identified significant interaction effects: rural-origin students in non-medical programs showed the highest prevalence of untreated gynecological conditions, indicating compounded vulnerabilities resulting from both limited prior health education and inadequate current healthcare access (30, 31).

The urban-rural divide in dysmenorrhea prevalence reflects not only differences in healthcare access but also cultural and gender-based barriers specific to the Chinese context. Students from rural backgrounds often face additional constraints including traditional beliefs discouraging discussion of reproductive health, limited privacy in shared dormitories, and financial barriers to seeking care for "non-urgent" conditions (32, 33). These barriers are particularly pronounced for conditions perceived as stigmatized, such as sexually transmitted infections and menstrual disorders (34, 35).

The health education findings demonstrate both challenges and opportunities. While nearly half of students participated in health activities, those who participated regularly (≥3 sessions per semester) showed significantly improved reproductive health knowledge scores and higher rates of preventive service utilization. The strong preference for STD prevention knowledge and healthy sexual behavior education aligns with documented concerns about rising STI rates among young adults, while also reflecting unique cultural factors such as recent increases in premarital sexual activity among Chinese youth combined with persistent stigma around sexual health discussion (36).

The overwhelming demand for integrated services (health education with free consultations and regular checkups) underscores the need for comprehensive campus-based healthcare solutions. The predominant use of online platforms for health information emphasizes the crucial role of digital health strategies, particularly those that can provide anonymous, confidential access to sensitive reproductive health information—a critical consideration for young women navigating cultural taboos around sexual health (37, 38).

Implications for Health Education Strategy

Based on our findings, we propose a multifaceted health education framework with feasibility-tested implementation strategies:

Digital-First Education Platform: Develop a centralized online portal providing evidence-based information, with initial implementation focusing on the most feasible components: WeChat-based mini-programs for menstrual health management

and STD prevention information. This approach leverages existing high smartphone penetration (98% among participants) while minimizing development costs.

Structured Campus-Based Programs: Implement integrated reproductive health modules within existing required courses (e.g., physical education health components) to ensure sustainability. Initial modules should focus on the most requested topics: STD prevention and healthy relationships, delivered through scenario-based learning appropriate for the cultural context.

Targeted Outreach for Vulnerable Groups: Develop specialized programs for high-risk subgroups using a tiered approach. First-phase implementation should focus on rural-origin non-medical majors, utilizing peer educators from similar backgrounds to overcome cultural barriers.

Integrated Health Services: Establish campus health centers through public-private partnerships to reduce initial investment costs. Priority services should include free menstrual health consultations and low-cost STI screening, addressing the most urgent unmet needs while remaining financially sustainable.

Multichannel Communication Strategy: Utilize existing university social media platforms and student organizations to disseminate information, reducing implementation barriers while ensuring cultural relevance.

Long-term Health Implications and Future Directions

Although this cross-sectional study cannot establish causality, the high prevalence of untreated gynecological conditions among this population suggests potential long-term consequences based on existing literature, including increased risk of chronic pelvic pain, infertility, and reproductive cancers (39, 40). Future longitudinal studies should track the progression of these conditions into later adulthood, particularly among high-risk subgroups. Additionally, research should explore the cost-effectiveness of various intervention models in the Chinese context, examining both health outcomes and economic impacts such as reduced academic absenteeism and improved productivity.

Qualitative research is needed to better understand the cultural and gender-based barriers to care, particularly how traditional beliefs interact with modern healthcare-seeking behaviors. Implementation research should focus on developing feasible, culturally adapted interventions that can be sustainably integrated into China's higher education system.

Conclusion

This study achieved three key objectives: quantifying the high prevalence of gynecological conditions among Chinese female college students, identifying influential sociodemographic factors (education level, household registration, academic major, and only-child status), and documenting unmet health education and service needs—particularly a preference for digital platforms and integrated services.

The findings underscore the need for culturally adapted, multi-level interventions. Key recommendations include: implementing digital health education platforms for anonymous, reliable information access; developing targeted programs for vulnerable groups, especially rural non-medical students; and integrating reproductive health services into campus healthcare systems to improve access.

Future research should focus on longitudinal studies of intervention effects, comparative cross-cultural analyses, and implementation science to develop cost-effective strategies sustainable within China's higher education context.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interests.

References

1. Boltaboev S, Muyassarova M (2025). Reproductive health states of women and the main factors affecting. *Web Med,* 3 (5):297-300.
2. Ali N, Abid N, Alzergany M, et al (2025). Risk Factors of Early Menopause: A Descriptive Study. *LJM*:190-195.
3. Alsaiari SK, Eshaghi B, Du B, et al (2025). CRISPR–Cas9 delivery strategies for the modulation of immune and non-immune cells. *Nat Rev Mater,* 10 (1):44-61.
4. Starrs A, Ezeh A, Sedgh G, Singh S (2024). To achieve development goals, advance sexual and reproductive health and rights. *aLancet,* 403 (10429):787-789.
5. WHO (2022). *WHO guideline on self-care interventions for health and well-being, 2022 revision*. ed. WHO.
6. Hu Z, Tang L, Chen L, Kaminga AC, Xu H (2020). Prevalence and risk factors associated with primary dysmenorrhea among Chinese female university students: a cross-sectional study. *J Pediatr Adolesc Gynecol,* 33 (1):15-22.
7. Nicola Ghatas V, Sobhy Abdelfatah Asran Abdou A, Mohamed Essa R, et al (2024). Factors Associated with Menstrual Irregularities among Female Nursing Students. *Egypt J Health Care,* 15 (3):913-929.
8. Devi B, Sherpa MSZ, Karki MP, Lepcha MN, Cintury MS, Chettri MN (2024). Prevalence of Dysmenorrhea and Factors Associated with its Intensity and Duration among Female Students. *Educ Adm Theory Pract,* 30 (3):943-955.
9. Mahalle S (2025). Wellbeing of students linked to lifestyle sleep and eating habits. *IJSMPH,* 1 (1):5-5.
10. Ok E (2025). Exploring the Relationship Between Health Habits, Physical Health, and Mental and Intellectual Health Among PSTU Students.
11. Zhang R, Kang D, Yang S, et al (2024). Women's self-reported symptoms of reproductive tract infection, medical consultations, and factors influencing them in less developed regions: perimenopausal and older women in need of urgent attention. *Front Public Health,* 12:1401474.
12. Paddock-Hall K (2025). Navigating healthcare in higher education for students with gynecological pain: an exploratory survey. *BMC Womens Health,* 25 (1):334.
13. Guo C, Guo M, Fang C, Hao X (2025). College major decision making behavior of urban and rural students under cultural capital impact in China. *Sci Rep,* 15 (1):913.
14. Sharififard S (2024). Nutritional Access: Bridging the Urban Rural Divide in Academic Progress. In: *Community, Food Insecurity, and a Global Perspective on Campus Food Pantries*. Ed(s): Springer, pp. 55-79.
15. Zhuang Y, Kwang Cheol K, et al (2025). Factors Influencing Reproductive Health and Health Education Participation Among Female College Students in China. *Front Public Health,* 13:1627669.
16. Wei C, Cai Y, Liu J, et al (2024). Factors influencing user's health information discernment abilities in online health communities: based on SEM and fsQCA. *Front Public Health,* 12:1379094.
17. Zhai S, Zhang S, Rong Y, Rong G (2025). Technology-driven support: exploring the impact of artificial intelligence on mental health in higher education. *Educ Inf Technol*:1-29.
18. Rossi E, Cassioli E, Cordasco VZ, et al (2025). Menstrual distress in women with eating disorders: insights from the Menstrual Distress Questionnaire (MEDI-Q). *Arch Womens Ment Health,* 28 (4):781-793.
19. Uluşahin SB, Özkutlu Ö, Kafa N, Aytar A (2025). Psychometric properties of the

Turkish version of the Menstrual Distress Questionnaire. *J Exerc Rehabil,* 12 (1):56-67.
20. Hennigs A, Heil J, Wagner A, et al (2018). Development and psychometric validation of a shorter version of the breast cancer treatment outcome scale (BCTOS-12). *Breast,* 38:58-65.
21. Falk LH (2017). Organizational Improvement Readiness Assessment (OIRA) Tool Evaluation.
22. Hashemi M, Kohan S, Abdishahshahani M (2020). Reproductive health self-care for female students: Educational needs assessment, Isfahan University of Medical Sciences 2018. *J Educ Health Promot,* 9:17.
23. Yuan D, Li Q, Zhan N, et al (2024). Longitudinal associations of menstrual characteristics with mental health problems among Chinese girls. *Eur Child Adolesc Psychiatry,* 33 (8):2547-2556.
24. Liu J, Wang Y, Wu L, et al (2024). Study on the influencing factors of primary dysmenorrhea in female college students: Systematic review and meta-analysis. *Medicine (Baltimore),* 103 (49):e40906.
25. Shaji B, Zameen F, Thankachan R (2024). Irregular menstruation in college going students. St. Teresa's College (autonomous) Ernakulam.
26. Jung H, Dan H, Cha C, Pang Y (2024). Dysmenorrhea and Occupational Factors: Korea Nurses' Health Study. *J Nurs Manag,* 2024:1968522.
27. Wilson AB, Brooks WS, Edwards DN, et al (2024). Survey response rates in health sciences education research: a 10-year meta-analysis. *Anat Sci Educ,* 17 (1):11-23.
28. Cowand A, Amarsaikhan U, Ricks RF, Cash ED, Sephton SE (2024). Self-compassion is associated with improved well-being and healthier cortisol profiles in undergraduate students. *Mindfulness,* 15 (7):1831-1845.
29. Gellisch M, Olk B, Schäfer T, Brand-Saberi B (2024). Unraveling psychological burden: the interplay of socio-economic status, anxiety sensitivity, intolerance of uncertainty, and stress in first-year medical students. *BMC Med Educ,* 24 (1):945.
30. Diaz-Navarro C, Armstrong R, Charnetski M, et al (2024). Global consensus statement on simulation-based practice in healthcare. *Simul Healthc,* 19(3): e52-e59.
31. Olaboye JA, Maha CC, Kolawole TO, Abdul S (2024). Promoting health and educational equity: Cross-disciplinary strategies for enhancing public health and educational outcomes. *Int J Appl Res Soc Sci,* 6 (6):1178-1193.
32. Heidenreich NL (2025) Eliminating Cervical Cancer as a Global Public Health Concern. Faculty of Natural Sciences, University of Graz.
33. Kainat K (2025). Health information-seeking behaviour of South-Asian immigrant women in Finland: A socio-cultrual perspective. *J Inf Sci*, 01655515251359772.
34. Åkerman E, Wängborg A, Persson M, et al (2024). Navigating menstrual stigma and norms: a qualitative study on young people's menstrual experiences and strategies for improving menstrual health. *BMC Public Health,* 24 (1):3401.
35. Madamanchi D, Gangurde S, Rathod H, et al (2024). The Plight of Healthcare Providers in Managing and Preventing Sexually Transmitted Infections (STIs)/Reproductive Tract Infections (RTIs): A Qualitative Study. *Cureus,* 16(8):e66162.
36. Qiao C (2024) Recommendations on public health strategies for sexually transmitted infections in China. University of Pittsburgh.
37. Tohit NFM, Haque M (2024). Forbidden conversations: A comprehensive exploration of taboos in sexual and reproductive health. *Cureus,* 16 (8): e66723.
38. Fresnido JM, Gondraneos AMC Breaking Taboos: Exploring Young Adults' Progressive Perspective on Sex.
39. Tang WZ, Cai QY, Huang KJ, et al (2025). The global burden of polycystic ovary syndrome, endometriosis, uterine fibroids, cervical cancer, uterine cancer, and ovarian cancer from 1990 to 2021. *BMC Public Health,* 25 (1):1774.
40. Wijeratne D, Gibson JF, Fiander A, et al (2024). The global burden of disease due to benign gynecological conditions: A call to action. *Int J Gynaecol Obstet,* 164 (3):1151-1159.