Practices of community pharmacists toward adolescent-friendly sexual and reproductive health services: A cross-sectional study in Ghana

Bridget Boatemaa Boahen[1], Mark Anum Nortey[2]
[1]Pharmacy Directorate, Sunyani Teaching Hospital, Sunyani, Ghana
[2]Department of Social and Behavioural Sciences, School of Public Health, University of Ghana, Legon, Accra, Ghana

Abstract

Background: Adolescents face significant barriers in accessing sexual and reproductive health services (SRHS), despite being a critical population group with unique healthcare needs. As accessible healthcare providers, community pharmacists can play an essential role in delivering adolescent-friendly SRHS (AFSRHS). Evidence on their actual practices in this area, however, especially in Ghana, remains limited. This study assessed the practices of community pharmacists toward adolescent-friendly SRHS and explored factors influencing their practices in four regions of Ghana.

Methods: An analytical cross-sectional study was conducted among 357 licensed community pharmacists in the Ashanti, Bono, Bono East, and Ahafo regions of Ghana. Data were collected using a structured, self-administered electronic questionnaire between January and March 2023. Descriptive statistics were used to summarize the data, while logistic regression analysis was conducted to identify factors associated with good practices related to AFSRHS.

Results: Out of 357 pharmacists approached, 192 participated, yielding a response rate of 54%. The proportion of pharmacists demonstrating good practices related to AFSRHS was 45.3% (95% CI: 38.1%–52.6%). Although a majority (52.1%) reported treating adolescents with respect and confidentiality, only 47.4% strongly agreed that their facilities maintained adequate stocks of contraceptives and reproductive health commodities. Notably, 46.4% of pharmacists lacked referral formats for adolescents needing specialized care, and 34.4% admitted to never receiving post-graduate training on adolescent SRHS. Logistic regression analysis revealed no statistically significant association between pharmacists' practices and socio-demographic or professional factors ($p > 0.05$).

Conclusions: There are gaps in the provision of adolescent-friendly SRHS by community pharmacists, particularly regarding training, referral systems, and community engagement. Strengthening the role of pharmacists in adolescent SRHS will require targeted capacity-building interventions and policy integration.

Keywords: adolescent health, community pharmacists, Ghana, sexual and reproductive health, youth-friendly services

Introduction

Adolescents constitute a significant segment of the global population, accounting for nearly 1.2 billion individuals worldwide, with a majority residing in low- and middle-income countries (LMICs).[1] This age group undergoes critical physical, emotional, and social transitions that significantly impact their health and well-being. Among the essential aspects of adolescent health is access to comprehensive sexual and reproductive health services (SRHS), which are crucial for preventing early pregnancies, preventing sexually transmitted infections (STIs), including HIV, and promoting safe sexual practices.[2]

Corresponding Author:
Bridget Boatemaa Boahen
Sunyani Teaching Hospital
P.O. Box 27
Sunyani, Ghana
Email: drbbb77@gmail.com

Despite these needs, adolescents in many LMICs, including Ghana, continue to face substantial barriers in accessing SRHS, including widespread stigma, concerns about confidentiality, lack of adolescent-friendly services, fear of judgment by healthcare providers, and inadequate knowledge of available services.[3,4]

In Ghana, despite the availability of policies and guidelines that are intended to prioritize adolescent-specific care, these barriers are further intensified by structural limitations within the health system, including insufficiently trained healthcare professionals and the lack of adolescent-sensitive healthcare infrastructure and centres.[5,6] According to the World Health Organization (WHO) and UNAIDS, adolescents are entitled to health services that are respectful, confidential, non-discriminatory, and responsive to their evolving needs.[4] These global standards emphasize the necessity of integrating adolescents' perspectives into healthcare service delivery to ensure that care is both accessible and acceptable to them.

As frontline healthcare providers, community pharmacists hold great potential in expanding access to SRHS for adolescents.[7] Embedded within communities and often

serving as the first point of contact for health advice, pharmacists are well-positioned to offer a range of services, including contraceptive counselling, provision of emergency contraception, STI prevention education, and appropriate referrals to specialized care.[8,9] Their ability to provide confidential services without an appointment makes them uniquely suited to bridge gaps in adolescent SRHS, especially in settings where adolescents avoid formal healthcare facilities due to fears of stigma or breaches of privacy.[9]

Despite this potential, the role of community pharmacists in Ghana related to adolescent SRHS remains underexplored and underutilized. Limited empirical evidence exists on pharmacists' preparedness to deliver adolescent-friendly services, the extent to which their current practices align with global standards, and the challenges they encounter in service provision.[10] Studies from other sub-Saharan African contexts have identified significant gaps in pharmacists' capacity, including limited involvement in SRHS promotion, lack of referral systems, absence of private consultation spaces, and inadequate training on adolescent-specific needs.[11,12] Nevertheless, some of these studies also highlight pharmacists' willingness and positive attitudes toward contributing to adolescent SRHS when provided with appropriate support and training.[8,13]

Although community pharmacies are widely distributed across Ghana and often serve as primary access points for healthcare among adolescents, their potential role in adolescent-friendly sexual and reproductive health services (AFSRHS) has not been fully examined or leveraged. There is a pressing need to understand current pharmacy practices, identify the barriers pharmacists face, and assess their capacity to contribute effectively to adolescent health goals.

Given the pivotal role that community pharmacists can play in improving adolescents' access to SRHS, this study aimed to assess the current practices of community pharmacists toward AFSRHS in selected regions of Ghana. Additionally, it sought to identify socio-demographic and professional factors associated with pharmacists' practices, offering insights into areas where targeted interventions may be necessary to strengthen pharmacists' capacity and role. Understanding these dynamics is essential for informing national strategies to integrate community pharmacists into broader adolescent SRHS frameworks and enhance their contribution to meeting the sexual and reproductive health needs of young people in Ghana.

Methods

Study Design and Setting

This study utilized an analytical cross-sectional design to assess the practices of community pharmacists in delivering adolescent-friendly SRHS across the Bono, Bono East, Ahafo, and Ashanti regions of Ghana. Data were collected using a structured, self-administered electronic questionnaire, designed to evaluate pharmacists' practices related to adolescent SRHS provision, including the readiness of their facilities to offer these services.

Sampling Approach and Study Period

A census approach was employed, targeting all 357 licensed community pharmacists practicing within the specified regions. Data collection was conducted over a 12-week period, from January 9 to March 31, 2023, facilitated through the Community Practice Pharmacists Association (CPPA) WhatsApp platform. Only pharmacists who provided informed consent were included in the study.

Sampling Rationale and Ethical Considerations

The sampling method was selected based on the relative homogeneity of the target population and practical considerations related to time and resource constraints. Ethical approval was granted by the Committee for Human Research and Ethics of the University of Energy and Natural Resources (CHRE/AP/0117/023), and official permission was obtained from the CPPA.

Study Population

Using CPPA records, the study was conducted among the 357 community pharmacists[14] practicing across four regions in Ghana—Ashanti, Bono, Bono East, and Ahafo (Table 1). The Ashanti region had a disproportionately high number of participants due to its large population size, urbanization, and higher density of community pharmacies compared to other regions, making it a focal point for health service delivery.[15,16]

Table 1. Regional Distribution of Community Pharmacists in the Ashanti, Bono, Bono East, and Ahafo Regions

Region	Total Number of Community Pharmacists
1. Ashanti Region	295
2. Bono, Bono East, and Ahafo Regions	62
Total	**357**

Data Analysis

The collected questionnaire data were first processed and cleaned in Microsoft Excel, ensuring accuracy and completeness through meticulous data validation, then exported to STATA version 16 for statistical analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were employed to summarize the quantitative data.

Pharmacists' practices were assessed using a modified Bloom's cut-off framework, with a threshold of ≥75% indicating good practice, as adapted from prior studies. [17–19] The practice assessment section of the questionnaire comprised 10 items,

each rated on a five-point Likert scale (*strongly disagree, disagree, neutral, agree,* and *strongly agree*), scored from 1 to 5. The total obtainable score thus ranged from 10 to 50, with higher scores reflecting more good practices toward the provision of AFSRHS.

To identify factors associated with pharmacists' practices toward AFSRHS, logistic regression analysis was performed. Both crude odds ratios (COR) and adjusted odds ratios (AOR) were computed, along with their corresponding 95% confidence intervals (CIs) and p-values, to assess the strength and significance of associations between socio-demographic/professional variables and the likelihood of engaging in good practice.

RESULTS

Of the 357 community pharmacists who received the questionnaire across the four regions, 192 completed and returned the questionnaires, yielding a response rate of 54%.

Socio-Demographic Characteristics of Respondents

The majority of respondents (44.8%) were within the 25–34 years age bracket. Male pharmacists constituted 62.5% of respondents, while female pharmacists accounted for 37.5%. In terms of professional experience, 39.6% of participants reported having 1 to 5 years of work experience as community pharmacists. More than half (56.3%) of respondents were married. Geographically, 74.5% of pharmacists were practicing in the Ashanti Region, followed by 14.6% in the Bono Region, 8.9% in Bono East, and 2.1% in Ahafo. Nearly 39% (n = 74) of the participants held a Bachelor of Pharmacy degree (see Table 2).

Practices of Community Pharmacists Toward Adolescent-Friendly Sexual and Reproductive Health Services

As presented in Table 3, more than half of the respondents (52.1%, n = 100/192) strongly agreed that they treat adolescents with respect, safeguard their privacy, and ensure confidentiality when providing SRHS at their pharmacies.

Additionally, 46.4% (n = 89/192) strongly agreed that they dedicate time and effort to delivering professional pharmaceutical care to adolescents and young people seeking SRHS. Concerning training, 34.4% (n = 66/192) agreed that they had not received any additional training on ASRH following the completion of their university pharmacy education, while 29.7% (n = 57/192) disagreed with this statement.

Table 2. Socio-Demographic Characteristics of Respondents (n = 192)

Variables	Frequency (n)	Percentage (%)
Age (years)		
18–24	6	3.1
25–34	86	44.8
35–44	46	24.0
45–54	28	14.6
55–64	17	8.9
65–74	6	3.1
≥75	3	1.6
Years of Experience in Community Pharmacy Practice		
Less than 1 year / Newly qualified	7	3.7
1–5 years	76	39.6
6–10 years	43	22.4
11–15 years	28	14.6
16–20 years	16	8.3
More than 20	22	11.5
Sex		
Male	120	62.5
Female	72	37.5
Marital Status		
Married	108	56.3
Single	80	41.7
Divorced	3	1.6
Widowed	1	0.5
Region		
Bono	28	14.6
Bono East	17	8.9
Ashanti	143	74.5
Ahafo	4	2.1
Educational Level		
Bachelor of Pharmacy	74	38.5
Doctor of Pharmacy	44	22.9
Master's Degree	51	26.6
Specialization with Ghana College of Pharmacy	15	7.8
PhD	5	2.6
Other higher qualifications	3	1.6

Table 3. *Practices of Community Pharmacists Toward Adolescent-Friendly Sexual and Reproductive Health Services (n = 192)*

Variables	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Time constraints should not be a limiting factor	78 (40.6%)	98 (51.0%)	11 (5.7%)	4 (2.1%)	1 (0.5%)
Support in the navigation and care of adolescents & youth during referral	86 (44.8%)	79 (41.2%)	19 (9.9%)	8 (4.2%)	0 (0.0%)
No additional training on AFSRHS received after school	34 (17.7%)	66 (34.4%)	9 (4.7%)	57 (29.7%)	26 (13.5%)
Showing respect and regard for youth when they access SRHS	100 (52.1%)	87 (45.3%)	3 (1.6%)	0 (0.0%)	2 (1.0%)

Table 4. *Community Pharmacies Set Up to Provide Adolescent-Friendly Sexual and Reproductive Health Services (n = 192)*

Variables	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Private areas for consultations and counselling for adolescents and youth	62 (32.3%)	85 (44.3%)	19 (9.9%)	21 (10.9%)	5 (2.6%)
Available referral formats/forms to link adolescents to reproductive health centers	12 (6.3%)	32 (16.7%)	26 (13.5%)	89 (46.4%)	33 (17.2%)
Participation in health promotion campaigns on SRHS	15 (7.8%)	42 (21.9%)	43 (22.4%)	64 (33.3%)	28 (14.6%)
Soliciting views of adolescents to shape SRHS provision	21 (10.9%)	35 (18.2%)	37 (19.3%)	66 (34.4%)	33 (17.2%)

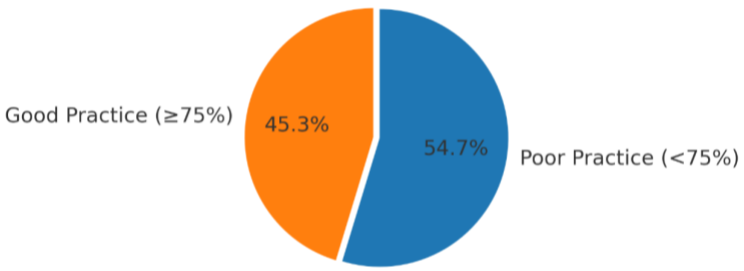
Community Pharmacies Set Up to Provide Adolescent-Friendly Sexual and Reproductive Health Services

As shown in Table 4, a combined 76.6% (n = 147/192) of respondents agreed or strongly agreed that their pharmacies have private areas for consultations and counselling. A total of 63.6% (n = 122/192) of respondents disagreed or strongly disagreed that they had available referral formats or forms to link adolescents to reproductive health centres. Regarding participation in proactive activities, a combined 47.9% (n = 92/192) of pharmacists either disagreed or strongly disagreed with their participation in health promotion campaigns. A similar proportion, 51.6% (n = 99/192), reported not soliciting the views of adolescents to shape SRHS provision.

Overall Practice of Community Pharmacists Toward Adolescent-Friendly Sexual and Reproductive Health Services

The proportion of community pharmacists demonstrating good practice toward adolescent-friendly AFSRHS was found to be 45.3% (95% CI: 38.1%–52.6%), indicating that less than half of the respondents met the threshold for satisfactory practice based on the modified Bloom's cut-off criteria (≥75%).

Figure 1. Proportion of Good Practice Toward Adolescent-Friendly Sexual and Reproductive Health Services Among Respondents (n = 192



Note: Classification based on a 75% threshold for good practice score.

Factors Associated with Community Pharmacists' Practices Toward Adolescent-Friendly Sexual and Reproductive Health Services

The study explored various socio-demographic and professional factors that may influence community pharmacists' practices in delivering AFSRHS. The analysis was conducted using both COR and AOR, with corresponding 95% CIs and p-values, to assess the strength and significance of associations (see Table 5). Overall, none of the factors examined were found to be statistically significantly associated with pharmacists' practices toward AFSRHS (p > 0.05).

Pharmacists aged 35–64 years were more likely to exhibit good practices compared to those aged 18–34 years (AOR = 1.34, 95% CI: 0.49–3.65), while those aged above 65 years had even higher odds (AOR = 4.23, 95% CI: 0.74–24.36). However, these associations were not statistically significant (p = 0.567 and p = 0.106, respectively). Pharmacists with more than 5 years of experience in community pharmacy practice showed slightly lower odds of engaging in positive practices compared to those with less than 5 years of experience (AOR = 0.83, 95% CI: 0.32–2.16; p = 0.700), although this was not statistically significant.

Female pharmacists were less likely to report good practices compared to their male counterparts (AOR = 0.64, 95% CI: 0.34–1.21), but this association did not reach statistical significance (p = 0.170). Unmarried pharmacists demonstrated reduced odds of engaging in satisfactory practices relative to married pharmacists (AOR = 0.66, 95% CI: 0.30–1.46; p = 0.306), though this difference was also not statistically significant.

Pharmacists practicing in Bono East (AOR = 0.46, 95% CI: 0.12–1.80; p = 0.264) and Ashanti (AOR = 1.39, 95% CI: 0.59–3.32; p = 0.453) had varying odds compared to those in Bono (reference category), but these findings were not statistically significant. Pharmacists from Ahafo were used as a comparison group in the crude analysis but were excluded from the adjusted model because of the small subgroup size; Bono region was used as the reference category. Finally, pharmacists with higher educational qualifications had lower odds of engaging in good practices compared to those with lower educational levels (AOR = 0.64, 95% CI: 0.33–1.27; p = 0.207), although this result was not statistically significant.

Table 5. Factors Associated with Practices of Community Pharmacists Toward the Provision of Adolescent-Friendly Sexual and Reproductive Health Services (n = 192)

Variables	COR (95% CI)	p-value	AOR (95% CI)	p-value
Age (years)				
18–34 (Ref)	1.00	—	1.00	—
35–64	1.27 (0.71–2.28)	0.418	1.34 (0.49–3.65)	0.567
>65	2.84 (0.67–12.08)	0.157	4.23 (0.74–24.36)	0.106
Years of Experience				
<5 years (Ref)	1.00	—	1.00	—
≥5 years	1.05 (0.59–1.87)	0.858	0.83 (0.32–2.16)	0.700
Sex				
Male (Ref)	1.00	—	1.00	—
Female	0.66 (0.36–1.19)	0.167	0.64 (0.34–1.21)	0.170
Marital Status				
Married (Ref)	1.00	—	1.00	—
Unmarried	0.84 (0.47–1.49)	0.547	0.66 (0.30–1.46)	0.306
Region				
Bono (Ref)	1.00	—	1.00	—
Bono East	0.56 (0.15–2.01)	0.370	0.46 (0.12–1.80)	0.264
Ashanti	1.28 (0.56–2.89)	0.556	1.39 (0.59–3.32)	0.453
Ahafo	1.00	—	—	—
Educational Level				
ǂ Lower learning (Ref)	1.00	—	1.00	—
† Higher learning	0.80 (0.44–1.43)	0.451	0.64 (0.33–1.27)	0.207

Discussion

Good practices in healthcare, including SRHS, are essential to ensure that adolescents receive high-quality care, accurate information, appropriate treatment, and timely follow-up.[4] Such practices improve access to care, reduce stigma and discrimination, and foster a patient-centred approach.[5]

Findings from this study suggest that a majority of community pharmacists surveyed in the Bono, Bono East, Ahafo, and Ashanti regions of Ghana do not meet the threshold for good practice in the delivery of AFSRHS. This is a notable gap, especially considering Standard 3 of the Global Standards for Quality Health-Care Services for Adolescents, which requires that health facilities provide comprehensive, accessible, and referral-linked SRHS for adolescents.[20] Although many pharmacists reported offering support and referrals to adolescents needing further care, few had formal referral formats or procedures, indicating a weak referral system within community pharmacies.

Furthermore, community pharmacists' engagement in health promotion campaigns and adolescent sexual and reproductive health (ASRH) education forums was limited, and many reported that their facilities did not solicit input from adolescents on improving service delivery. These findings contradict Standard 8 on Adolescents' Participation, which mandates active involvement of adolescents in the design, monitoring, and evaluation of health services.[20] Similar gaps in adolescent engagement and SRHS promotion among community pharmacists have been observed in other sub-Saharan African contexts, including Rwanda and Ethiopia.[11,12,21]

It is encouraging to note that some pharmacists reported providing private areas for consultation and counselling, and that a notable proportion reported respecting adolescent privacy and confidentiality. These positive practices align with international standards for adolescent care, which emphasize confidentiality, non-discrimination, and respect for adolescents' rights.[20] Nonetheless, these favourable practices were not uniformly adopted, pointing to inconsistency in service quality and the need for standardized guidelines and training.

The mixed nature of pharmacists' practices in this study mirrors findings from other settings, with some studies reporting strong pharmacist engagement in SRHS,[8,22–25] while others highlight significant gaps in counselling, referrals, and adolescent-specific education.[22,25–27]

These findings highlight the critical role of community pharmacists as an accessible and trusted source of SRHS for adolescents. To optimize their contribution, there is a need for targeted capacity-building interventions, including formal training on AFSRHS, development of referral systems, and use of adolescent engagement strategies.[8,9] Policymakers should also integrate pharmacists into national adolescent health frameworks and promote collaboration between pharmacies and other health service providers to ensure continuity of care. [6] Strengthening pharmacists' roles in SRHS could significantly improve adolescent access to essential health services in Ghana and other LMICs.

A key strength of this study is its large and regionally diverse sample of community pharmacists, providing insights across multiple regions of Ghana. The use of a validated structured questionnaire and robust analysis adds rigor to the findings. However, the study has some limitations. First, the response rate of 54% may introduce response bias, as pharmacists more interested in AFSRHS may have been more likely to respond. Second, the self-reported nature of the data may be subject to social desirability bias, with pharmacists potentially overreporting favourable practices.

While individual pharmacist practices are important, system-level support—including policies, training structures, and institutional incentives—may be more critical in enabling adolescent-friendly SRHS delivery. Future research should explore systemic barriers and facilitators, including whether community pharmacists are incentivized to offer these services. Additionally, qualitative studies involving adolescents could provide deeper insights into their experiences with community pharmacies and identify areas for service improvement. Collaborative studies involving multi-sector stakeholders (pharmacists, adolescents, health officials) may help design effective models for integrating community pharmacists into national adolescent health strategies.

Conclusion

This study highlights the untapped potential of community pharmacists in expanding access to AFSRHS in Ghana. Despite being highly accessible frontline providers,[7] pharmacists often operate in systems lacking structured referral mechanisms and ongoing professional development, limiting their capacity to deliver comprehensive adolescent care. Addressing these systemic gaps offers an opportunity to strengthen pharmacists' roles within Ghana's national adolescent health strategies. Developing national guidelines, implementing targeted capacity-building programs, and formally integrating pharmacists into adolescent health referral networks are essential steps to optimize pharmacists' contribution. Future research should explore intervention-based models to assess the impact of structured training and supportive policy environments on pharmacists' capacity to deliver AFSRHS. Such efforts could inform scalable models of adolescent-friendly care in resource-limited settings, aligning community pharmacy services with global health standards for youth-centred care.

Conflict of Interest: None

Funding Statement: None.

Disclaimer: The statements, opinions, and data contained in all publications are those of the authors.

Author Contributions Statement: Bridget Boatemaa Boahen is the lead author and contributed substantially to the conceptualization, study design, data collection, data analysis, interpretation of findings, and drafting of the manuscript.

Mark Anum Nortey contributed to the data analysis, interpretation of results, and critical revision of the manuscript for important intellectual content.

All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work, ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

References

1. Shinde S, Harling G, Assefa N, et al. Counting adolescents in: The development of an adolescent health indicator framework for population-based settings. *EClinicalMedicine*. 2023;61:102067. doi:10.1016/j.eclinm.2023.102067
2. Okyere J, Yeboa NK, Nikoi C, et al. Adolescent sexual and reproductive health needs and utilisation of health services in the Bono East Region, Ghana. *Reproductive Health*. 2024;21(1):1-15. doi:10.1186/S12978-024-01822-0
3. Agbenu I, Kyei J, Naab F. Female adolescent sexual reproductive health service utilization concerns: A qualitative enquiry in the Tema metropolis of Ghana. *PLoS One*. 2024;19(2):e0292103. doi:10.1371/journal.pone.0292103
4. WHO. Sexual and Reproductive Health and Research (SRH). 2023. Accessed March 16, 2025. https://www.who.int/teams/sexual-and-reproductive-health-and-research-(srh)/areas-of-work/adolescent-and-sexual-and-reproductive-health-and-rights
5. Abuosi AA, Anaba EA. Barriers on access to and use of adolescent health services in Ghana. *J Health Res*. 2019;33(3):197-207. doi:10.1108/jhr-10-2018-0119
6. Agblevor EA, Darko NA, Acquah PA, Addom S, Mirzoev T, Agyepong IA. "We have nice policies but…": Implementation gaps in the Ghana adolescent health service policy and strategy (2016–2020). *Front Public Health*. 2023;11:1198150. doi:10.3389/FPUBH.2023.1198150
7. Okai GA, Abekah-Nkrumah G, Asuming PO. Perceptions and trends in the use of community pharmacies in Ghana. *J Pharm Policy Pract*. 2019;12(1):1-9. doi:10.1186/S40545-019-0186-X
8. Navarrete J, Hughes CA, Yuksel N, et al. Community pharmacists' experiences and attitudes towards the provision of sexual and reproductive health services: An international survey. *Healthcare (Switzerland)*. 2023;11(11):1530. doi:10.3390/healthcare11111530
9. Adje D, Chinenye UV. An assessment of community pharmacists' competence and involvement in adolescent sexuality education and reproductive health services. *Innov Pharm*. 2023;14(1):10.24926/iip.v14i1.5092. doi:10.24926/IIP.V14I1.5092
10. Boahen BB, Asante L, Nortey MA, Ireland EK. Assessing attitudes of community pharmacists towards adolescent-friendly sexual and reproductive healthcare services in Ghana. *West African Journal of Pharmacy*. 2024;35(2):19-30. doi:10.60787/wajp.vol35no2.352
11. Nsengimana A, Biracyaza E, Hategekimana JC, Tuyishimire J, Nyiligira J, Rutembesa E. Attitudes, perceptions, and barriers of community pharmacists in Rwanda towards health promotion: A cross sectional study. *Archives of Public Health*. 2022;80(1):1-14. doi:10.1186/S13690-022-00912-4
12. Habtu Y, Kaba M, Mekonnen H. What do service providers in Southern Ethiopia say about barriers to using youth-friendly sexual and reproductive health services for adolescents?: Qualitative study. *Reprod Health*. 2021;18(1):1-15. doi:10.1186/S12978-021-01092-0
13. Gauly J, Ross J, Hall I, Soda I, Atherton H. Pharmacy-based sexual health services: A systematic review of experiences and attitudes of pharmacy users and pharmacy staff. *Sex Transm Infect*. 2019;95(7):488-495. doi:10.1136/sextrans-2019-054096
14. PSGH. Governing Board Report (2021/2022) of the Pharmaceutical Society of Ghana (PSGH) 2022 Annual General Meeting (AGM). Published online 2022.
15. Ashiagbor G, Ofori-Asenso R, Forkuo EK, Agyei-Frimpong S. Measures of geographic accessibility to health care in the Ashanti Region of Ghana. *Sci Afr*. 2020;9:e00453. doi:10.1016/j.sciaf.2020.E00453
16. Profile- Ashanti Region – Ghana Health Service. Accessed May 19, 2025. https://ghs.premiercaregh.org/profile-ashanti-region/
17. Olum R, Chekwech G, Wekha G, Nassozi DR, Bongomin F. Coronavirus Disease-2019: Knowledge, attitude, and practices of health care workers at Makerere University Teaching Hospitals, Uganda. *Front Public Health*. 2020;8. doi:10.3389/fpubh.2020.00181
18. Feleke BT, Wale MZ, Yirsaw MT. Knowledge, attitude and preventive practice towards COVID-19 and associated factors among outpatient service visitors at Debre Markos compressive specialized hospital, north-west Ethiopia, 2020. *PLoS One*. 2021;16(7):e0251708. doi:10.1371/journal.pone.0251708
19. Ashebir W, Yimer B, Alle A, Teshome M, Teka Y, Wolde A. Knowledge, attitude, practice, and factors associated with prevention practice towards COVID-19 among healthcare providers in Amhara region, northern Ethiopia: A multicenter cross-sectional study. *PLOS Global Public Health*. 2022;2(4). doi:10.1371/journal.pgph.0000171

20. WHO. Global Standards for Quality Health-care Services for Adolescents Volume 1: Standards and criteria, A Guide to implement a standards-driven approach to improve the quality of healthcare services for adolescents. Published online 2015.
21. Obiezu-Umeh C, Nwaozuru U, Mason S, et al. Implementation Strategies to Enhance Youth-Friendly Sexual and Reproductive Health Services in Sub-Saharan Africa: A Systematic Review. *Front Reprod Health*. 2021;3:684081. doi:10.3389/frph.2021.684081
22. Navarrete J, Yuksel N, Schindel TJ, Hughes CA. Sexual and reproductive health services provided by community pharmacists: a scoping review. *BMJ Open*. 2021;11(7). doi:10.1136/bmjopen-2020-047034
23. Awusabo-Asare K, Abane AM, Kumi-Kyereme A. Adolescent sexual and reproductive health in Ghana: A synthesis of research evidence. Published online 2004. Accessed March 16, 2025. www.guttmacher.org.
24. Chin KL. Sexual/reproductive health and the pharmacist: What is known and what is needed? *J Pharm Health Serv Res*. 2011;2(2):65-69. doi:10.1111/J.1759-8893.2011.00050.X
25. Alshahrani AM, Alsheikh MY. Community Pharmacists' Perceptions, Barriers, and Willingness for Offering Sexual and Reproductive Health Services. *Int J Environ Res Public Health 2021, Vol 18, Page 10735*. 2021;18(20):10735. doi:10.3390/ijerph182010735
26. Conard LAE, Fortenberry JD, Blythe MJ, Orr DP. Pharmacists' attitudes toward and practices with adolescents. *Arch Pediatr Adolesc Med*. 2003;157(4):361-365. doi:10.1001/archpedi.157.4.361
27. Ehiawey JTB, Manu A, Modey E, Ogum D, Atuhaire E, Torpey K. Utilisation of Reproductive Health Services among Adolescents in Ghana: Analysis of the 2007 and 2017 Ghana Maternal Health Surveys. *Int J Environ Res Public Health 2024, Vol 21, Page 526*. 2024;21(5):526. doi:10.3390/ijerph21050526