Reproductive Health

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Services availability and readiness assessment of adolescent sexual and reproductive health in primary healthcare facilities: evidence from selected districts in Ghana

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Abstract

Background Globally, adolescent health remains a public health priority given that adolescents often face unique vulnerabilities to health issues like mental disorders, substance abuse, and sexual health risks. In developing countries like Ghana, primary healthcare facilities (PHCs) are often the first point of contact for addressing these issues. However, there is a lack of literature examining the capacity of PHCs to address adolescent sexual and reproductive health (ASRH) issues. This study aims to fill this gap in the literature by assessing the availability and readiness of ASRH services within Ghana's PHCs.

Methods The study utilized a multi-stage sampling approach to select 67 PHCs across four districts in the Greater Accra region, reflecting Ghana's broad demographic diversity. We employed the WHO's Services Availability and Readiness Assessment (SARA) tool to measure the availability and readiness of ASRH services. This framework focused on key domains including service availability and readiness, assessing aspects such as HIV testing, family planning, and availability of contraceptives and necessary staff training. Data analysis was conducted using Stata version 17.0, analysing frequencies and percentages to capture the extent of service provision across the selected facilities.

Results The study highlighted significant disparities in the availability and readiness of essential ASRH services (HIV services, family planning, contraceptive pills, IUCD provisions, and male condoms) across selected districts and facility types. In Shai Osudoku, 65% of facilities offered a full range of selected ASRH services, the highest among the districts, whereas Ningo Prampram had the lowest at just 16%. In terms of facility types, 57% of CHPS facilities, 59% of health centres, and 44% of clinics provided all the selected ASRH services. Urban areas reported a 51% provision rate of these services, slightly less than the 54% observed in rural areas. Additionally, readiness disparities were evident: only 21% of urban facilities had adequate service guidelines compared to 29% in rural areas, and a higher percentage of rural facilities (46%) had trained staff, compared to 23% in urban areas.

Conclusion This study examined the availability and readiness of ASRH services in PHCs across the Greater Accra region, revealing significant disparities by location and facility type. Particularly, rural and public facilities demonstrated a higher availability of ASRH services compared to urban and private facilities. These findings suggest

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an uneven distribution of resources and highlight a potential urban underutilization of public health services. Moreover, the study identified a critical lack of service guidelines and trained staff across many facilities, emphasizing the need for enhanced training and resource allocation to improve service readiness. Targeted interventions are necessary to elevate the quality and accessibility of ASRH services, ensuring equitable health care delivery across all regions. Future research should expand to other regions to validate these findings and inform nationwide health strategies.

Keywords Adolescent health services, Availability, Readiness, Primary Health Care

Background

Adolescents' health remains a public health priority globally, given that it is a pivotal life stage characterized by substantial physical, mental, and societal transitions [1]. Consequently, adolescence is often associated with increased susceptibility to various health hazards, including mental health disorders, substance abuse, and concerns related to sexual and reproductive health [2]. Recognizing these vulnerabilities, the World Health Organization (WHO) has emphasized the enhancement of health systems for adolescents as a crucial step towards ameliorating health outcomes and curtailing morbidity and mortality [3]. In this context, primary healthcare facilities (PHCs) are vital, serving as the first interaction point with the healthcare system and provide services to underserved populations [4]. These facilities also play a significant role in providing vital services such as sexual and reproductive health education, family planning, and HIV prevention and treatment, all contributing to the comprehensive well-being of adolescents[5].

The Ghanaian health system has made strides in integrating PHC (including health posts, Community Health Planning and Services (CHPS) compounds, health centres, and clinics) into its broader health care strategy. There are 6500 CHPS spread throughout the country's urban and rural areas, delivering essential healthcare services, including maternal and child health, disease prevention and control, and basic curative care services. The CHPS program, initiated in 1999, is a particularly innovative approach to delivering primary health care in Ghana. It involves training community health officers to deliver basic healthcare services directly to communities, particularly those in rural areas with limited access to health facilities [6]. However, the realization of this objective hinges on the availability and readiness of these services. Beyond financial barriers to healthcare, physical access and readiness of these facilities play a significant role in the decision to seek care from formal institutions.

Unfortunately, PHC facilities in developing countries continue to face several challenges that limit their effectiveness. Previous studies have identified challenges including poor infrastructure, lack of clinical inputs, poor human resource incentives, irregular funding among others in the rendering of general services [7–9]. Interestingly, adolescents also face several unique challenges in accessing adolescent sexual and reproductive health services (ASRH) services in PHCs. Stigma and fear of judgment from healthcare providers and community members often discourage adolescents from seeking SRH services [10–12]. The lack of confidentiality in some PHC settings further compounds this issue, as adolescents may fear that their privacy will be compromised [13–15]. Additionally, limited youth-friendly services and the absence of trained adolescent health providers reduce the accessibility and quality of care for this age group [16, 17]. Logistical barriers such as inconvenient operating hours and long distances to PHCs also hinder adolescents' ability to access timely and essential SRH services [10]. Most of these studies have examined the unique challenges adolescents face in accessing ASRH services in fragments rather than providing a holistic analysis.

To address this gap, the World Health Organization (WHO) developed the Service Availability and Readiness Assessment (SARA), a standardized tool used to systematically measure the availability and readiness of health services, including ASRH, within healthcare facilities. This tool provides a robust framework to gauge and track the preparedness of healthcare services, thereby generating evidence to facilitate the planning and management of health systems (WHO, 2013). SARA indicators have widely been used across different countries and service areas including Madagascar [18], Sierra Leone [19] focused on service availability and readiness of health facilities in Moyamba district, Sierra Leone. Other studies have investigated the availability of essential medicines [20] and the quality of antenatal care service provision [21] in sub-Saharan Africa.

Despite the widespread application of SARA to various healthcare services, its use in assessing the availability and readiness of ASRH services remains limited. This gap is significant given the unique vulnerabilities faced by adolescents and the critical importance of tailored ASRH services to address their specific health needs. Adolescents require comprehensive and youth-friendly services that go beyond the traditional focus on family planning and pregnancy prevention. These services should

encompass access to contraceptives, sexual health education, STI prevention and treatment, menstrual health management, and support for survivors of gender-based violence. Given that adolescents are at a crucial stage of physical, emotional, and social development, the absence of such services places them at higher risk of early pregnancies, sexually transmitted infections, and other adverse health outcomes.

ASRH in Ghana remains a critical area of concern due to the unique vulnerabilities faced by adolescents and the structural challenges within the health system [22–25]. Adolescents aged 10–19 years make up approximately 22% of Ghana's of Ghana's population [26], and their health needs require targeted attention. Teenage pregnancy is a pressing issue, with recent data indicating that approximately 15.2% of adolescent girls aged 15–19 in Ghana have begun childbearing [27]. This high prevalence poses serious health, educational, and socioeconomic consequences for adolescent girls, affecting their future prospects and well-being. Sexual and reproductive health (SRH) services in Ghana is delivered through a network of health facilities, including health posts, CHPS, health centers, and clinics [28, 29]. However, adolescents face significant barriers to accessing these services. Financial constraints often limit their ability to pursue care, particularly when out-of-pocket payments are required [24, 30]. Policy-related barriers, such as the need for parental consent to access contraceptives, further impede their access. Additionally, insufficient healthcare infrastructure, forces adolescents to travel long distances to access health facilities. Stigma and fear of judgment from healthcare providers also discourage adolescents from seeking care due to confidentiality concerns. While PHC facilities serve as the first point of contact for healthcare, there is limited data on their readiness to effectively address ASRH needs. This knowledge gap raises concerns about PHC capacity to deliver timely and appropriate care to adolescents. Strengthening the PHC system is essential to ensure the availability, accessibility, and readiness of ASRH services.

Given the unique health challenges faced by adolescents and the importance of improving health services for this population, it is essential to assess the availability and readiness of ASRH services within PHC facilities. This study aims to address this gap by evaluating the availability and readiness of ASRH services in PHCs in selected districts in Ghana. The findings of this study will contribute to the growing body of literature on adolescent health services in sub-Saharan Africa and support ongoing efforts to improve health service readiness and availability for vulnerable and marginalized population groups. By providing evidence on the availability of delivery points for ASRH services, this research will assess whether existing facilities are sufficient to meet the needs of the adolescent population. The findings will inform policy decisions and enhance strategies aimed at improving access to and the quality of ASRH services within primary healthcare settings.

Methods

Design and sampling

The sample for this research was determined through a multi-stage sampling approach. In the first stage, the Greater Accra region, comprising 29 administrative districts and a population of 5,455,692 [31], was purposefully selected as the focal area for the study. The selection of Greater Accra was justified by its diverse population which mirrors Ghana in its entirety. The region reflects the country's broad demographic and socioeconomic diversity. It hosts a mix of ethnic groups, languages, and economic activities ranging from urbanized, industrial sectors in Accra to more traditional, agricultural practices in its outskirts. In the second stage, four districts were randomly selected from the Greater Accra region. The aim was to obtain a representative sample that captured both rural and urban populations. Consequently, two rural districts (Ningo Prampram and Shai Osudoku) and two urban districts (Ga East and La Nkwantanang) were included in the sample. The selection of these districts was made with the intention of providing an all-encompassing picture of adolescent sexual and reproductive health services in the region, as well as allowing for the analysis of disparities in service provision across rural and urban locations. In the final stage, all functional primary health facilities in the selected districts were included in the research. This is largely due to the limited number of primary health care facilities in each of the different districts. In total, we collected data from 67 PHC facilities.

Data analysis

The SARA tool, as outlined in the SARA Reference Manual [32] was used to evaluate the availability and readiness of adolescent sexual and reproductive health services in primary healthcare facilities in selected districts in Ghana. This standardized approach provided a framework for assessing two key domains: service availability and service readiness. The manual pre-defines a list of domains and tracer indicators for each of the domains. We focus on the domain for adolescent sexual and reproductive health services. Tables 1 and 2 present all the tracer indicators for service availability and readiness, respectively.

Service availability refers to the presence of specific ASRH services within PHCs. It measures whether such services as HIV testing and counselling, family

Table 1 SARA domains and tracer indicators for service availability

Domain	Trace indicator	Definition
Service availability	Adolescent health services (AHS)	Frequency of PHC facilities that offer AHS
	HIV testing and counselling services to adolescents	Frequency of PHC facilities that offer HIV testing and counselling services to adolescents
	Family planning services to adolescents	Frequency of PHC facilities that offer Family planning services to adolescents
	Provision of combined oral contraceptive pills to adolescents	Frequency of PHC facilities that provide combined oral contraceptive pills to adolescents
	Provision of male condoms to adolescents	Frequency of PHC facilities that provide male condoms to adolescents
	Provision of emergency contraceptive pills to adolescents	Frequency of PHC facilities that provide emergency contraceptive pills to adolescents
	Provision of intrauterine contraceptive device (IUCD) to adolescents	Frequency of PHC facilities that provide intrauterine contraceptive device (IUCD) to adolescents
	Provision of ART to adolescents	Frequency of PHC facilities that provide ART to adolescents

In terms of the domains, 85% of the data concerning service availability for adolescent health services, HIV testing and counselling, family planning, and provision of contraceptives was available

Source: [32]

Table 2 SARA domains and tracer indicators for service readiness

Service readiness		
Domain	**Trace indicator**	**Definition**
Staff and guidelines	Guidelines for service provision to adolescents	Percentage of facilities with adapted guidelines
	Staff trained in provision of adolescent health services	Percentage of facilities with at least one staff trained in adolescent health in the last two years
	Staff providing family planning services trained in adolescent sexual and reproductive health	Percentage of facilities with at least one staff trained in adolescent sexual and reproductive health in the last two years
	Staff providing HIV testing and counselling services trained in HIV/AIDS prevention, care, and management for adolescents	Percentage of facilities with at least one staff trained in HIV prevention, care, and management for adolescents in the last two years
Diagnostics	HIV diagnostic capacity	Percentage of facilities with RDT kit or ELISA test with ELISA washer, ELISA reader, incubator, specific assay kit
Medicines and commodities	Condoms	Percentage of facilities with male condoms available

In terms of the domains, approximately 70% of the data related to service readiness across staff, diagnostics, and medicines and commodities was accessible

Source: SARA Reference manual

planning, and provision of contraceptives are offered at the facility level while Service readiness pertains to the capacity and preparedness of these facilities to deliver ASRH services effectively. This encompasses the existence of adapted guidelines for service provision to adolescents, appropriately trained staff, and the availability of necessary diagnostics, medicines, and commodities to provide such services.

In terms of service availability, the study examined the percentage of facilities offering various adolescent health services, including HIV testing and counseling services, family planning services, combined oral contraceptive pills, male condoms, emergency contraceptive pills, intrauterine contraceptive devices (IUCDs), and antiretroviral therapy (ART).

The assessment of service readiness focused on determining the percentage of facilities providing adolescent health services with the necessary staff and guidelines in place. This involved evaluating the availability of guidelines for service provision, staff training in adolescent health, family planning, and HIV/AIDS prevention, care, and management, as well as the diagnostic capacity for HIV testing and the presence of male condoms and other essential commodities.

To compute these tracer indicators from our data, we used Stata version 16.0 (Stata MP/StataCorp LLC), a widely used statistical software package. We computed frequencies, and percentages, enabling the analysis of the data collected.

Results

Characteristics of PHCs

About 44.78% of the PHC facilities sampled were public while 55.22% were private. The healthcare facilities were distributed across four districts: Ga East (28.21%), Shai Osudoku (21.79%), Ningo Prampram (24.36%), and La Nkwantanang (25.64%) (See Table 2). There were three types of PHC facilities in the data: CHPS (31.34%), Health Centre (25.37%), and Clinics (43.28%). Most of the health facilities were located in urban areas (58.21%), while 41.79% were situated in rural areas (see Table 3).

Table 3 Characteristics of primary healthcare facilities

Variable	Frequency	Percent
Operating authority		
Government	37	44.78
Private	40	55.22
District		
Ga East	16	23.88
Shai Osudoku	17	25.37
Ningo Prampram	19	28.36
La Nkwantanang	15	22.39
Facility type		
CHPS	21	31.34
Health Centre	17	25.37
Clinics	29	43.28
Location of facility		
Urban	39	58.21
Rural	28	41.79

Source: Authors' computation from field data

Adolescent sexual and reproductive health services availability assessment

Table 4 reveals that in the Ga East district, about 94% of PHC facilities have AHS available. However, we observed significant variation in the specific types of AHS provided: only 31% of facilities offer HIV services, 69% provide family planning, 56% furnish contraceptive pills, 56% deliver IUCD services, and 56% supply male condoms.

In Shai Osudoku district, adolescent health services were available in 100% of the PHC facilities. There was variation in specific health service availability including HIV services (65%), family planning (94%), contraceptive pills (88%), IUCD services (65%), and male condom (88%). In Ningo Prampram, 89% of facilities offer adolescent health services. HIV and family planning services was available for 79% of facilities. About 21% provide contraceptive pills, 16% offer IUCD provisions, and 21% had male condoms available. La Nkwantanang district had the lowest adolescent service availability across facilities (47%). Of these facilities that offered adolescent services, 53% had HIV services available, 47% had family planning, 67% had contraceptive pills, 67% had IUCD services and 67% had male condoms available. Ga East and Shai Osudoku districts stand out for their higher availability of Adolescent Sexual and Reproductive Health (ASRH) services, with all services offered in 5 and 11 facilities, respectively. In contrast, Ningo Prampram and La Nkwantanang districts face more significant challenges, with all services available in only 3 and 7 facilities, respectively. However, a consistent theme across all districts is the relative accessibility of contraceptive supplies, including pills, IUCDs, and male condoms. Notably, Ga East and Shai Osudoku maintain this availability in over half of their facilities, and La Nkwantanang notably offers these supplies in 10 out of its 15 facilities, highlighting

Table 4 ASRH availability by district and facility type

	District				Facility type		
	Ga East (16)	Shai Osudoku (17)	Ningo Prampram (19)	La Nkwantanang (15)	CHPS (21)	Health centers (17)	Clinics (29)
Adolescent health services	94% *(15)*	100% *(17)*	89% *(17)*	47% *(7)*	100% *(21)*	88% *(15)*	69% (20)
HIV services	31% *(5)*	65% *(11)*	79% *(15)*	53% *(8)*	71% *(15)*	63% *(10)*	62% (18)
Family planning	69% *(11)*	94% *(16)*	79% *(15)*	47% *(7)*	100% *(21)*	76% *(13)*	51% (15)
Contraceptive pills	56% *(9)*	88% *(15)*	21% *(4)*	67% *(10)*	57% *(12)*	59% *(10)*	44% (13)
IUCD provisions	56% *(9)*	65% *(11)*	16% *(3)*	67% *(10)*	57% *(12)*	59% *(10)*	44% (13)
Male condoms	56% (9)	*88% (15)*	*21% (4)*	*67% (10)*	90% (19)	94% (16)	79% (23)
All selected ASRH services	31% *(5)*	65% *(11)*	16% *(3)*	47% *(7)*	57% *(12)*	59% *(10)*	44% (13)

This table summarizes the availability of ASRH services across districts and facility types. Percentages indicate service availability, and numbers in parentheses represent the frequency of facilities providing each service. The row labeled "All Selected ASRH Services" shows facilities offering the full range of assessed ASRH services

The italicized values represent the absolute number of facilities meeting specific criteria or offering particular services, providing context to the percentages and allowing for clearer interpretation, comparison, and understanding of the scale of service availability or readiness

a focused effort to ensure contraceptive access amid the broader context of ASRH service provision disparities.

Also, as seen in Table 4, evidence on service availability by facility types was presented. In general, adolescent health services were available in 100% of CHPS facilities, 88% of health centres and 69% of clinics. HIV services were available in 73% of CHPS compounds, 63% of health centres and 62% of clinics. Family planning services was also available in CHPS compounds (100%), health centres (76%) and clinics (51%). Availability of contraceptive pills and IUCD was similar across all three facility types with health centres having the highest (59%) followed by CHPS compounds (57%) and clinics (44%). Male condoms were also available in health centres (94%), CHPS (90%) and clinics (79%). CHPS facilities stand out in ASRH service provision, with all services offered in 12 of 21 facilities, and complete AHS availability. In contrast, Health Centres face obstacles, providing a full-service range in only 10 of 17 facilities, with two lacking AHS services entirely. Clinics encounter more severe challenges, offering complete services in 13 of 29 facilities, with 9 completely devoid of AHS.

Table 5 presents the availability of adolescent health services by location (urban and rural). In urban areas, 72% of facilities offered adolescent health services, while 100% of rural facilities provided these services. The availability of other services in urban areas was as follows: HIV services (51%), family planning (59%), contraceptive pills (51%), IUCD provisions (51%), and male condoms (87%). In rural areas, the availability of other services was HIV services (68%), family planning (93%), contraceptive pills (54%), IUCD provisions (50%), and male condoms (93%). The results indicate a higher availability of adolescent health services and related services in rural areas compared to urban areas.

Regarding the availability of ASRH services, both urban and rural areas show more than 50% coverage, with all selected ASRH services being offered in 20 urban facilities and 15 rural facilities. Remarkably, all facilities in rural settings provide AHS, highlighting a gap in urban areas where 11 facilities lack AHS provision. When it comes to the accessibility of contraceptive supplies—such as pills, IUCDs, and male condoms—both urban and rural localities exhibit a moderate performance, with both settings offering a full range of contraceptive services in the same number of facilities (20 urban and 15 rural). In government facilities, 100% offered adolescent health services, while 73% of private facilities provided these services. A breakdown of service availability in government facilities include HIV services (70%), family planning (100%), contraceptive pills (66%), IUCD provisions (73%), and male condoms (37%). In private facilities, the breakdown includes HIV services (49%), family planning (51%), contraceptive pills (46%), IUCD provisions (49%), and male condoms (65%). Regarding the availability of ASRH services, both government and private run-facilities show some disparities in coverage, with all selected ASRH services being offered in 11 government facilities and 17 private facilities. Remarkably, all government facilities provide AHS, highlighting a gap in privately operated where 10 facilities lack AHS provision.

Table 5 ASRH service availability by location and operating authority

Variables	Location		Operating authority	
	Urban (39)	Rural (28)	Government (30)	Private (37)
Adolescent health services	72% (*28*)	100% (*28*)	100% (30*)*	73% (*27*)
HIV services	51% (*20*)	68% (*19*)	70% (*21*)	49% (*19*)
Family planning	59% (*23*)	93% (*26*)	100% (30*)*	51% (18*)*
Contraceptive pills	51% (*20*)	54% (*15*)	66% (*20*)	46% (*17*)
IUCD provisions	51% (20)	54% (*15*)	73% (22)	49% (18)
Male condoms	87% (34)	93% (26)	37% (11)	65% (24)
All selected ASRH services	51% (20)	54% (15)	70% (21)	46% (17)

This table presents the availability of ASRH services by location (urban and rural) and operating authority (government and private facilities). Percentages represent the proportion of facilities providing each service, while figures in parentheses indicate the frequency of facilities offering the service. The row labeled "All Selected ASRH Services" reflects facilities providing the full range of assessed ASRH services

The italicized values represent the absolute number of facilities meeting specific criteria or offering particular services, providing context to the percentages and allowing for clearer interpretation, comparison, and understanding of the scale of service availability or readiness

Adolescent sexual and reproductive health service readiness assessment

Table 6 presents the findings on the readiness of ASRH services across various districts. In Ga East, the study found that 6% of facilities had service guidelines, 31% had at least one staff member trained in AHS, 25% had FP staff with appropriate training, and 94% were equipped with male condoms at the day of the survey. In Shai Osudoku, a higher level of readiness was observed: 24% of facilities had service guidelines, 76% had staff trained in AHS, the same percentage had trained FP staff in AHS, and all facilities were stocked with male condoms, highlighting their preparedness in offering preventive services. In Ningo Prampram, the readiness assessment revealed that 42% of facilities had service guidelines, an equal percentage had trained AHS staff, 53% had trained FP staff in AHS, and all facilities were stocked with male condoms. Lastly, in La Nkwantanang, the assessment showed 20% of facilities with service guidelines, only 7% had trained AHS staff, the same low percentage for

Table 6 ASRH readiness by district and facility type

	District				Facility type		
	Ga East (16)	Shai Osudoku (17)	Ningo Prampram (19)	La Nkwantanang (15)	CHPS (21)	Health centers (17)	Clinics (29)
Service guidelines	6% (*1*)	24% (*4*)	42% (*8*)	20% (3)	38% (*8*)	24% (*4*)	14% (*4*)
Trained staff	31% (*5*)	76% (*13*)	42% (*8*)	7% (*1*)	71% (*15*)	47% (*8*)	14% (*4*)
Trained FP staff	25% (*4*)	76% (*13*)	53% (*10*)	7% (*1*)	71% (*15*)	47% (*8*)	14% (*4*)
Male condoms	94% (*15*)	100% (*17*)	100% (*19*)	67% (*10*)	90% (*19*)	94% (*16*)	100% (*29*)

This table shows ASRH readiness by district and facility type. Indicators include service guidelines, trained staff, trained family planning (FP) staff, and male condom availability. Percentages indicate service readiness, while figures in parentheses show the number of facilities

The italicized values represent the absolute number of facilities meeting specific criteria or offering particular services, providing context to the percentages and allowing for clearer interpretation, comparison, and understanding of the scale of service availability or readiness

Table 7 ASRH service availability by location

Variables	Location		Operating authority	
	Urban (39)	Rural (28)	Government (30)	Private (37)
Service guidelines	21% (*8*)	29% (*8*)	37% (*11*)	14% (*5*)
Trained staff	23% (*9*)	46% (*13*)	77% (*23*)	11% (*4*)
Trained FP staff	21% (*8*)	64% (*18*)	77% (*23*)	8% (3)
Male condoms	87% (*34*)	93% (*26*)	37% (*11*)	65% (*24*)

This table summarizes ASRH service readiness by location (urban and rural) and operating authority (government and private facilities). Indicators include the availability of service guidelines, trained staff, trained family planning (FP) staff, and male condom availability. Percentages represent service readiness, with figures in parentheses indicating the number of facilities meeting the criteria

The italicized values represent the absolute number of facilities meeting specific criteria or offering particular services, providing context to the percentages and allowing for clearer interpretation, comparison, and understanding of the scale of service availability or readiness

trained FP staff in AHS, and 67% were equipped with male condoms.

The assessment of ASRH service readiness across different types of health facilities revealed varying levels of preparedness. For CHPS facilities, 38% of them had service guidelines, 71% of their staff were trained in AHS, 71% had FP staff with relevant ASRH training, and 90% were stocked with male condoms. Clinics, on the other hand, showed lower readiness levels, with only 12% having service guidelines, 15% having trained staff, 12% with trained family planning staff, and 77% equipped with male condoms. Health centres presented a moderate level of readiness, with 24% having service guidelines, 47% of the staff trained in adolescent health, an equal percentage having trained family planning staff, and 94% equipped with male condoms.

Table 7 highlights the readiness of adolescent services by location, distinguishing between urban and rural areas. In urban locations, 21% of facilities had service guidelines, 23% of the facilities had staff trained in adolescent health services, 21% had family planning staff with the necessary training, and 87% were equipped with male condoms. Rural areas showed a higher level of readiness, with 29% of facilities possessing service guidelines, 46% having trained staff, 64% with trained family planning staff, and 93% equipped with male condoms. Among public facilities, there was a 37% readiness with service guidelines, 77% of the staff were trained in adolescent health, another 77% had family planning staff with appropriate training, and 37% were equipped with male condoms. In comparison, private facilities exhibited lower readiness levels: 14% had service guidelines, 11% had trained staff, 8% had trained family planning staff, and 65% had male condoms in stock.

Discussion

This study set out to evaluate the availability and readiness of ASRH services in primary healthcare facilities across four districts in the Greater Accra region of Ghana. We followed the WHO SARA framework to evaluate ASRH services in 67 PHC facilities. We computed 6 indicators of ASRH service availability and 4 ASRH service readiness indicators. The findings suggest that, in general, all the facilities included in the analysis provide some form of ASRH service. However, availability of these services and the specific type of service varied substantially across facility characteristics including location, ownership, and type. While some districts have facilities with a wide range of services available, others had less availability of service. Previous studies have identified similar disparities across facilities and attributed this to divergent resource allocation, infrastructure, and health policies among the districts [33, 34]. This also highlights the need to match resources to specific facility needs to ensure facilities without services available are improved to increase the range of services.

We found that ASRH service availability was higher in rural areas (compared to urban) and public facilities (compared to private). While the later was easily

intuitive, we cannot say the same for the former. There have been several efforts by the government to provide ASRH services through its facilities. There have been specific efforts to encourage adolescents to seek care in these facilities and make services available. The government has launched various initiatives aimed at enhancing the provision of ASRH services, particularly through public healthcare facilities. These include implementing reproductive and child health strategies to provide tailored health information, education, and services for adolescents and young people, as well as programs under the Family Health Division (FHD) for policy implementation and technical support [35, 36]. Moreover, there are collaborative efforts with international organizations like UNICEF and UNFPA on projects such as "Better Life for Girls" and anti-child marriage initiatives [37]. These concerted efforts, especially those encouraging adolescents to seek care in public facilities, have contributed to a relatively higher availability of services in public facilities compared to their private counterparts. In rural locations a possible reason for the high ASRH service availability may be the dominance of PHC facilities in this location to improve general service availability. In many rural areas, health centres, CHPS compounds and health posts are the only health care options and rural adolescents are forced to seek ASRH care from these facilities. This is contrary to urban locations where adolescents have options to visit private facilities including pharmacies to seek ASRH service when they need it.

In terms of ASRH, less than half of all facilities had service guidelines for ASRH care. Also, less than half of health centres and clinics had at least one staff trained in any adolescent health care or family planning services. This is quite worrying and raises concerns about the quality of care provided to adolescents who seek care from formal PHC facilities. The findings are also consistent with previous studies that assess the quality of care in primary health facilities citing staff motivation and training as some of the major challenges in PHC facilities[38–40]. This finding underscores the need to scale up efforts to improve service readiness in these facilities with special focus on ASRH services. Regular training on specific ASRH services should be provided to health workers to refresh their skills and introduce new technologies. The disaggregated findings by location and facility ownership were similar compared to what was observed for service availability with rural facilities and public facilities having relatively better service readiness assessment. Again, this is expected since most PHC facilities are in rural areas and ASRH services are predominantly present in public facilities.

The findings provide relevant details that could be useful for improving ASRH service availability and readiness in PHC facilities. As mentioned earlier, these facilities are important in the sense that they enable easy service delivery to marginalized communities and regions. They therefore bridge a long-standing challenge of inequity in health care delivery in Ghana. Enhancing these facilities and getting them ready is therefore beneficial to several health programmes including ASRH care. Our findings suggest that to improve the delivery of these services, additional resources should be invested in (i) making these services available and (ii) ensuring that the services are ready to be utilized. Ensuring that service guidelines are regularly updated and made available at all PHC facilities would be good readiness effort. The proportion of staff trained in these facilities needs particular attention too. To encourage adolescents to seek care from formal sources, it is important to ensure the service the receive when they eventually visit facilities are of good quality. This can be achieved through regular training on specific services and retaining these trained health workers to provide the needed service.

Our study has some limitations that is worth mentioning. First, we used data from the Greater Accra region of Ghana (one out of sixteen regions in the country). While we include both rural and urban samples to reflect situations in other parts of the country, our findings may not perfectly reflect the entire country. However, it is worth mentioning that PHC facilities are set up in very similar fashions across the country and challenges faced are largely consistent [41, 42]. Our findings are therefore relevant and could be used to gauge ASRH service availability and readiness across the country. Future studies should consider extending data to cover more regions in the country to assess the SARA indicators. Second, our indicators do not include all indicators recommended by the WHO SARA framework. We however include more than 90% of the indicators and therefore reflect a large majority of the indicators. Regardless of these shortcomings, the study adds valuable insights into the availability and preparedness of ASRH services in Ghana. It provides valuable highlights about the state of PHC facilities in the provision of ASRH services in the country.

Conclusion

In summary, this study sheds light on the availability and readiness of ASRH in primary healthcare facilities in selected districts of the Greater Accra region in Ghana. Rural and public facilities demonstrated higher availability and readiness compared to urban and private facilities. Overall, less than half of the facilities provided a comprehensive range of ASRH services, with 57% of CHPS facilities and 54% of rural facilities meeting this criterion, compared to 51% in urban and 46% in private facilities. Key readiness indicators, such as service guidelines and

trained staff, were notably low. To improve ASRH services, targeted resource allocation, enhanced training, and equitable distribution of services are critical. These findings provide a foundation for future research and interventions to achieve universal health coverage and equitable adolescent healthcare access in Ghana.

Appendix

See Table 8.

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Not applicable.

Author contributions
M.A.A. and J.N. conceptualized the study, curated the data, conducted the formal analysis, and developed the methodology. M.A.A., J.N., and A.P.F. drafted the original manuscript. All authors, including M.A.A., J.N., A.P.F., I.A.A., and T.E., reviewed and edited the manuscript. All authors approved the final version of the manuscript for submission.

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Availability of data and materials
The datasets used and/or analysed during the current study are available from the corresponding author on request.

Declarations

Ethics approval and consent to participate
Ethics clearance for this research was granted by the Ethical Review Committee of the Ghana Health Service. Prior to data collection, the respective district health directorates were approached for permission, and the heads of the participating primary healthcare facilities gave informed consent. Participation in the study was voluntary, and all participants were informed of their right to withdraw from the study at any time without any consequences. To ensure confidentiality, all data collected were anonymized, and any information that could potentially identify the participating facilities or individuals was removed from the data set. The data obtained from this study was secured in a restricted database, accessible solely to the investigators, and all digital documents were secured with passwords.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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Table 8 Total number of staff

Variable	Obs	Mean	Std. Dev	Min	Max
Clinical staff	67	11.731	15.415	0	52
Non-clinical staff	67	− 576.299	2324.727	− 9999	30

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