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ORIGINAL ARTICLE

Health worker's knowledge on adolescent health, services provision and challenges in Kumbungu District, Ghana: An observational study

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Adolescents are persons between 10 and 19 years of age. In Ghana, about 23% of the total population are adolescents. They often experience a higher risk of sexual and reproductive health problems. Health worker's knowledge on adolescent health, services provision and challenges are critical. Thus, this study explored health worker's knowledge on adolescent health, services provision and challenges in Kumbungu District, Ghana. A purposive sampling technique was used to select eight key informants from five sub-districts. The sample was determined based on pragmatic considerations such as limited availability of participants. The interviews were transcribed and data analyzed using thematic analysis. The study was conducted between June and September 2017. All participants had heard of adolescent health. They said adolescent health covers teenagers between 10 and 19 years of age, their sexual lifestyle, teenage pregnancy, family planning, sexually transmitted infections, counselling services, personal hygiene and general curative care. The participants rated their knowledge as low due to inadequate training. The health services include family planning, counselling, nutrition education, menstrual hygiene and curative care due to the type of health facility, capacity, resources and demands of the adolescents. Challenges health workers face include low knowledge, inadequate staff, lack of separate rooms to ensure privacy/confidentially, language barriers and inadequate logistics. In conclusion, the participant's knowledge on adolescent health was low, while some challenges were experienced. Thus, health workers should be trained on adolescent health in the district and there is the need for more resources to improve availability and variety of services.

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INTRODUCTION

Adolescents are persons between 10 and 19 years of age (Denno et al., 2015; WHO, 2018). In Ghana, about 23% of the total population are adolescents (Ghana Health Service, 2016: Kyilleh et al., 2018). Adolescence is a period of rapid development including sexual maturity and physical growth (National Academies of Sciences et al., 2019). It covers the developmental period between the onset of puberty and the establishment of social independence, which is characterized by physical, psychological, and emotional changes (Jaworska & MacQueen, 2015). Adolescents often experience a higher risk of sexual and reproductive health problems (Tobergte & Curtis, 2013; Abajobir & Seme, 2014; WHO, 2018)). Some challenges affecting adolescent health include teenage pregnancy, early marriage, unsafe abortion, sexually transmitted infections (STIs), human immunodeficiency virus (HIV), acquired immune deficiency syndrome (AIDS), nutrition, mental health, substance abuse, injuries, violence and other sexual related health problems (Dida et al., 2015;

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Ghana Health Service, 2016; WHO, 2018). Many adolescents are less informed, inexperienced, and uncomfortable accessing or utilizing health services because of negative attitudes of health workers, lack of privacy, stigmatization and abuse (Mannava et al., 2015; Sahile et al., 2019). These problems are partly due to health workers lack of knowledge on adolescent health. Health workers knowledge and ability to adopt innovative strategies is essential for providing adolescents with their physical, emotional and psychological needs (Motuma et al., 2016; Kyilleh et al., 2018). A study conducted in Botswana reported that health workers have low knowledge on contraceptive use, particularly among adolescents (Tshitenge et al., 2018). Therefore, health workers knowledge, services provision and approaches to overcome challenges are critical for adolescent health (Tshitenge et al., 2018). One of the main reasons for the lack of health worker's knowledge on adolescent health is inadequate or no training, which contributes to poor adolescent health care delivery. It has been reported that barriers to adolescent health services provision include inadequate space, infrastructure, and logistics (Geary et al., 2014). In addition, health workers negative attitudes affect their willingness to provide sexual and reproductive health services to adolescents (Tilahun et al., 2012). Until 2016 when the adolescent health policy and strategy was developed, the health sector did not have adolescent health policy which prioritizes and addresses adolescent health problems in Ghana. The first National Adolescent Health and Development program was launched in 2001 (Ghana Health Service, 2016). Generally, the health services are limited to sexual and reproductive health and STIs. It does not cover health and health-related problems faced by adolescents in Ghana (Ghana Health Service, 2016). The provision of adolescent health services depend on health workers' knowledge, availability of resources, privacy/ confidentiality and ability to overcome challenges (Geary et al., 2014). Thus, this study explored health workers' knowledge on adolescent health, services provision and challenges in the Kumbungu District, Ghana.

MATERIALS AND METHODS

Study setting

Ghana is a West African nation with a population of about 30 million and divided into 16 administrative regions . The country is bordered by the Ivory Coast, Burkina Faso, Togo, and the Atlantic Ocean (GSS et al., 2015, 2018). Ghana's health care system is organized in a three-tier structure – primary, secondary and tertiary levels. The main Implementing agency is the Ghana Health Service (GHS) which is also at three levels - district, region, and national. A district is supposed to have a District Hospital, Health Centres, Private or Faith-based Clinics, and Community-based Health Planning and Services (CHPS) compounds. The smallest unit of the health system is the CHPS (Couttolenc, 2012). The primary level entails CHPS which is the smallest unit of the health system, Health Centres, Polyclinics, Private Clinics, and District Hospitals run by the Government, faith-based organizations and individuals. Each health centre provides services to a population of about 20,000 while the district hospital serves an average population of 100,000 to 200,000 persons (Couttolenc, 2012). This study was conducted in the Kumbungu district, which is one of the 16 districts/municipalities in the northern region, Ghana. The Kumbungu district was purposively selected because it has no district hospital. It has five sub-districts – Gbullung, Voggu, Gupanerigu, Dalun, and Kumbungu with an estimated total population of 46,171 and 13,631 adolescents. There are 24 health facilities in the district with one major referral center (Ghana Statistical Service, 2014).

Research design

This study employed a phenomenological design to collect data from key informants based on their experiences in the Kumbungu District. The data was collected through face-to-face in-depth interviews. This sought to allow the researchers to

gain insightful information from the perspective of the health workers. This explored the experience, knowledge, services and attitudes of adolescent health.

Participants and sampling techniques

Two sampling techniques were used to select the health facilities. Firstly, the Kings Medical, Gbullung Health and Kumbungu Health Centres were purposively selected. The Kings Medical Centre was chosen because it serves as the only referral health facility in the district. While the Gbullung and Kumbungu Health Centres were selected due to their relatively far distance from the Kings Medical Centre. Another consideration was the position of the two health centres. That is, they are situated on the opposite side of the Kings Medical Centre. Secondly, the team labeled the health facilities and placed the labels in an opaque polythene at each sub-district. One health facility was randomly selected per sub-district. These are the Mbanayili Health Centre, Voggu CHPS, Gbullung CHPS, Bovnaayili CHPS, Cheshegu CHPS, and Jakpahi CHPS. The head of each health facility was purposively selected to participate in the study. The participants were one public health nurse, four nurses, and three midwives. These participants were targeted due to their experiences at the health facilities. Though some literature shows that there is no mean difference between 4-6 and 12-15 key informant interviews, the sample size was determined based on pragmatic considerations such as time constraints, limited availability of participants and resources (Vasileiou et al., 2018; Muellmann et al., 2021; Hennink & Kaiser, 2022).

Data collection procedure and tools

At health facilities, the study purpose was explained to the heads. They consented using a written form and were recruited to participate in the study. An interview guide was used to collect the data from the participants .Permission was also sought for the interview to be recorded using a tape recorder during each session. Personal identifiers of the key informants were not collected. All interviews were conducted by second-year graduate students. The participants were asked questions regarding their knowledge on adolescent health. These included "What does the term adolescent health mean or entail to you? What does the term adolescent health services mean to you? Can you describe the type of training you have received on adolescent health? How will you rate your knowledge level on adolescent health? What are the characteristics of a conducive environment for providing adolescent health services? How will you describe your knowledge on the concerns of adolescents on health services? What are the ways to improve health workers' knowledge on adolescent health?" Data were recorded using a Cenlux digital voice recorder and transcribed verbatim. This ensures accuracy, consistency, and data quality. The interview guide was pre-tested at a different health facility in the same district and appropriate corrections made. Data were collected between June and September 2017.

Data analysis

The data were analyzed using thematic analysis. This involves data reduction, display and conclusion-drawing/verifying (Creswell & Garrett, 2008;Vaismoradi et al., 2016; Berhe et al., 2016; Nowell et al., 2017; Williamson et al., 2018). The transcribed data were read repeatedly to familiarize with the text and then, initial codes were generated. Further, we organized and combined the codes based on similarities to search for themes. Finally, the themes were reviewed, defined and named. In a word document, headings for the various themes were created, categorized, coded and relevant quotes cited.

Ethical consideration

Ethical approval was received from the Navrongo Health Research Centre Institutional Review Board (NHRCIRB310). Permission was also obtained from the Kumbungu District Health Directorate. All participants gave written informed consent. Privacy and confidentiality were maintained during data collection and analysis.

RESULTS

Demographic characteristics of participants

In this study, eight participants were interviewed These include mitigating the challenges to the health services provision, and improvement of health services provision at the facility and community levels. All participants had between 2 and 10 years of work experience. The average number of work experience was 5.6 years with Ghana Health Service.

Main themes and corresponding subthemes

Table 1 below shows three main themes including knowledge of health workers on adolescent, provisions of health services and challenges. Under each main theme, there are corresponding subthemes. Some of the subthemes on health worker's knowledge of adolescent health include age of clients, sexual life style, pregnancy, family planning and infections related; counselling services, personal hygiene, curative care, capacity building through training, conducive environment, and concerns during health seeking and knowledge improvement activities. The second main theme on health services provision by health workers has two corresponding subthemes. These subthemes show the types and reasons of health services that are provided to adolescents in the Kumbungu District. The third main theme focuses on the challenges health workers face in the provision of health services to adolescents. In addition to the subtheme on barriers health workers face in the provision of health services, there are three others. These include mitigating the challenges to health services provision, and improvement of health services provision at facility and community levels.

Table 1: Main themes and subthemes

Main themes	Subthemes on adolescent health
Health worker's knowledge	• Description of adolescent health by clients' age • Based on sexual life style • Pregnancy, family planning and infections related • Context of counselling services • Perspective of their personal hygiene • Adolescent health as curative care • Health worker's self-perceived knowledge and training • Conducive environment for adolescent health • Concerns of adolescents when seeking health • Health worker's knowledge improvement
Health services provision by health workers	• Type of health services for adolescents • Reasons for type of health services
Challenges faced in the provision of health services by health workers	• Barriers to services provision • Mitigating the challenges to health services provision • Improvement of health services at the facilities level • Improvement of health services at the communities' level

Health workers' knowledge on adolescent health

The participants were able to explain the term "adolescent health". They said it was about the services that health workers provide to adolescents or teenagers between the ages of 10 and 19 years. In addition, they reported that adolescent health is about the sexual lifestyle of adolescents. Adolescent health entails health education, drug abuse, menstrual cycle, health problems, family planning, teenage pregnancy, sexually transmitted infections, counselling services, personal hygiene, and curative care. Others viewed adolescent health to include home visits, peer pressure, nutritional needs and antenatal care for pregnant adolescents. Broadly, they described "adolescent health services" as health workers going to schools or communities to give health talks to adolescents. Others also reported that they are services or activities that are supposed to be provided to adolescents by health workers at the health facilities. The participants' knowledge on adolescent health is shown below.

Participants described adolescent health as age related

The participants described adolescent health by the ages of their clients. Generally, they reported different age ranges to represent the classification of adolescent health. These include 12 to 17 years, 10 to 19 years and 13 to 19 years. Thus, adolescent health refers to services which are provided to clients between 10 and 19 years of age.

"For me, adolescent health is about health services that are provided to teenagers from the ages between 12 and 17 years when they visit the health facility" **(Health Worker 1).**

"What I will say is, adolescent health talks about the health of adolescents. We look at it from the ages of 10 to 19 years" **(Health Worker 6).**

"In my opinion, adolescent health means taking into consideration the lifestyle and behaviors of children between the ages of 13 to 19" **(Health Worker 3).**

Adolescent health based on sexual life style

The participants also described adolescent health based on their sexual life style. They said it is a transition into adulthood. This includes sexual organ development, hormonal changes as well as adolescent's desire to experiment adult activities. Their sexual desires become strong with varied health issues that the providers have to address.

"Adolescent health has to do with issues that concern the adolescents and it covers the transition into adulthood in terms of health" **(Health Worker 2).**

"In my opinion, adolescent health means taking into consideration the lifestyle and behaviors of children. Generally, I will say their sexual lifestyle" **(Health Worker 3).**

"It is about the physical, social and psychological wellbeing and the adolescent sexuality" **(Health Worker 8).**

Adolescent health as pregnancy, family planning and infections-related

According to the participants, teenage pregnancy and family planning are used to differentiate adolescent health activities from the general public. There is separate categorization of adolescent health activities in the antenatal care registration documents. It is also about teaching of family planning and its related factors to adolescent. This includes education at the various schools on teenage pregnancy, antenatal care and family planning. The participant also reported adolescent health in the context of sexually transmitted infections (STIs) due to a higher risk of related infections.

"It covers school health where we go to their schools to give talks and health education concerning family planning, teenage pregnancy, sexually transmitted diseases. We talk about nutrition, personal hygiene, menstrual hygiene and then a whole lot of issues" **(Health Worker 6).**

"We give family planning services, we give them health education, counselling, and sometimes home visit services and ANC services for pregnant adolescents" **(Health Worker 7).**

"Generally, I will say their sexual lifestyle. It includes education of adolescents on sexually transmitted diseases and peer pressure. It means service offered to adolescents to help them grow into healthy adults in the society" **(Health Worker 3).**

Adolescent health involves counselling services

The participants also reported that adolescent health includes outreach activities by health workers in the communities or schools. During such outreach activities, talks are given to the adolescent on their health.

"It is the services that are provided to adolescents when we (health workers) go to them to provide health care on their health and social problems. Adolescent health services are like when the health worker goes to gather adolescents in the school or community to give them healthy talks based on their age and what they encounter and what their problems are" **(Health Worker 1).**

"I will say it includes education of adolescents on drugs abuse and peer pressure and their nutritional needs" **(Health Worker 3).**

"It covers counselling services, education and curative aspects like the actual care adolescents receive when they come to the hospital for treatment. It is the kind of services or activities that the health facilities and health workers are supposed to provide to the adolescents" **(Health Worker 5).**

Adolescent health covers personal hygiene

The participants also reported that adolescent health is about their personal hygiene. During adolescence, there are various physiological changes and thus, proper personal hygiene practice is required.

"It is about their personal hygiene, menstrual hygiene and then a whole lot of issues" **(Health Worker 6).**

"It is the kind of services or activities that the health facilities and health workers are supposed to provide to the adolescents" **(Health Worker 5).**

Adolescent health is about curative care

The health workers said adolescent health also concerns the type of curative care services that are provided to them during visits to the facilities, particularly when they are ill.

"It covers health services and curative aspects like the actual care adolescents receive when they come to the hospital for treatment. It is the kind of services or activities that the health facilities and health workers are supposed to provide to the adolescents" **(Health Worker 5).**

Participants' self-estimated knowledge level and training

The participants were also asked to rate their knowledge on adolescent health and describe any training they have received. Four of the participants reported that their knowledge was below average while the remaining had either average or above average. It was found that three of the participants have ever been trained on adolescent health. According to those who have been trained, their trainings covered nutrition, teenage pregnancy, personal hygiene (e.g. menses), management of adolescents, education on physical, social and psychological needs as well as formation of adolescent clubs in their settings.

"I have not received any specific training but I have been taught on filling and completing of adolescent health reports by my supervisor. Though I am not trained, I learnt somethings from my senior who said she received some training in the past" **(Health Worker 1).**

"I have attended a number of workshops on adolescent health. I have been trained on nutrition, teenage pregnancy and personal hygiene specifically during menses for adolescents" **(Health Worker 6).**

"I have been trained on how to manage adolescents. I was taught on how to form adolescent clubs, identification of a particular day for meetings and what to educate them on their physical, social and psychological needs" **(Health Worker 8).**

"Personally, since I started working, I have not been trained on adolescent health but I have acquired the knowledge from working with friends, listening to radio, and reading the graphic newspapers" **(Health Worker 4).**

Conducive environment for adolescent health
The participants were asked to answer questions about their knowledge on the characteristics of a conducive environment for providing adolescent health services. They reported that, adolescents require a special place/room and a separate time schedule for health care. They also stated that politeness of the service providers and presence of health corners are enabling attributes for health care at the health facilities. From the perspective of the participants, adolescents prioritize their privacy very high. Thus, they do not want to meet family relatives when seeking adolescent health services. They further reported confidentiality as a conducive characteristic for adolescent health services. According to the participants, the existence of social and recreational amenities creates a conducive environment for adolescent health at the health facilities.

"Adolescents often need a special place and a suitable time at the health facility. There should be more health workers who are trained on adolescent health. This will ensure that when the adolescents come to the health facility, we (health workers) can speedily provide the services to them" **(Health Worker 1).**

"A conducive environment should be a place where adolescents have privacy. They should not meet their mothers, fathers and sisters at the health facility. There should be a separate place or corner for only adolescents. They should have games for recreational services at the health facility or nearby to benefit them. We have to also work beyond our closing time to make the health care services available for adolescents" **(Health Worker 6).**

"It should be devoid of intimidation, harassment and the services should be provided without any judgment of the adolescent. It should also be integrated with the normal services so that when they go in, no one will be able to determine the specific service they are going for" (Health Worker 2).

Concerns of adolescents during health seeking
The participants were asked about their understanding of the concerns of adolescents when they are seeking health services. According to the participants, adolescents are shy and concerned about delays during visits, negative attitudes of health workers (e.g. shouting, judging), privacy, confidentiality, unavailability of some health services (e.g. lack of some family planning methods) and parental control.

"When they come to the health facility and there are many clients including their mothers, they feel shy to open up particularly on services like family planning. At times the health workers ask the adolescents to wait. This leads to delays at the facility" **(Health Worker 1).**

"Sometimes, the attitude of health workers such as shouting at the adolescents is considered a concern to them. This behavior drives them away from seeking health services" (Health Worker 1).

"Most of the issues they bring, we (health workers) think they are too young to be doing what is meant for adults. So we judge them and do not have time to listen. And most of them shy because there is no privacy" **(Health Worker 6).**

"Adolescents are concerned about their privacy and confidentiality. You know, they are sometimes afraid that if they talk to this person (health worker), someone will hear it. So we sometimes explain to them that there is confidentiality at the health facility. Some of the services they need are sometimes unavailable" **(Health Worker 7).**

Knowledge improvement on adolescent health
The participants were asked about how their knowledge on adolescent health could be improved. They reported that their knowledge may be improved through in-service training and education. Others also reported that supervision and monitoring may help them to implement the knowledge received from adolescent health trainings.

"Like the training I have gone through, I wish most health workers will also go through this training because when you go to do the training, your understanding of an adolescent changes. You would not be judgmental to an adolescent. You

will open up to an adolescent. If they are able to organize such training for us, and when adolescents come to visit the health facilities, we will have much time to listen to the person. So it is the training and also when we come from the training, we should brief our colleagues" **(Health Worker 6).**

"I think an in-service training will help a lot of us. Because we have little knowledge on adolescent health. It will boost our knowledge on this issue" **(Health Worker 4).**

"There should be training and education for the health workers. There should also be supervision or monitoring to make sure that the training we received is actually being implemented" **(Health Worker 5).**

Adolescent health services provision by health workers

At different levels of the health system in Ghana, variety of health services are provided to clients. This section presents information on the type of health services that are provided to adolescents in the study setting. It also focuses on the reasons and factors accounting for the type of health services being provided to adolescent clients in the Kumbungu District.

Type of health services provided to adolescents

The participants reported that various health services are provided to adolescents at the health facilities. They listed family planning, counselling, social service, nutrition education, personal hygiene and curative care. For example, at the schools for health education activities; and at the health facilities for family planning services.

"We provide family planning services to them when they visit our health facility. We also give them nutrition education and personal hygiene information. We take them through what they should expect, how to prepare and make themselves clean" **(Health Worker 6).**

"We mostly provide sex education to adolescents. We also give them talks on personal and environmental hygiene as well as general health services. Also when the adolescents come for abortion service, we take the opportunity to give them education and we refer them to the health facility with the capacity to perform abortion since our level of health facility does not have the required tools to do it. Health education is given to the adolescents after school hours" **(Health Worker 4).**

Reasons for the type of health services for adolescents

The participants reported various reasons for providing health service for adolescents. The reasons include the type of health facility, knowledge level of health workers, inadequate resources and demands of the adolescents. They reported that adolescent health services are provided at different sites.

"We talk about the nutrition because as the adolescents menstruate, they lose blood and the need to replace it. With family planning, most of them follow their peers and get pregnant without knowing even that they are pregnant. So we educate them on the dangers of unprotected sex, family planning information and provide contraceptives to them" **(Health Worker 6).**

"I will say it is because of the limited knowledge. We do not want to give false information. The other reason is the level of our health facility which is CHPS (Community-based Health Planning and Service) compound. It has limited capacity and inadequate resources" **(Health Worker 1).**

"Generally, adolescents do demand for the services we

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provide. Our facility is the only referral center. So, we often give services that the health centers and CHPS refer to us. However, because it is a Christian facility, we are not allowed to offer certain services such as abortion and the rest" **(Health Worker 5).**

Challenges faced by health workers when providing adolescent health services

In the provision of health services to adolescents, health workers experience various challenges. This section presents some of the challenges, potential mitigation activities and strategies for improving adolescent's health services provision at the facility and community levels.

Barriers to health services provision

The participants reported various barriers that they experience when providing health services to adolescents. These include low knowledge on adolescent health, lack of separate rooms to ensure privacy, inadequate workforce, language barrier, lack of recreational facilities, unavailability of certain services, lack of registers to capture data, inadequate funds and lack of supervision for adolescent health activities.

"Aside the issue of inadequate knowledge, we do not have enough workforce to spend quality time with the adolescents. We do not also have a special room or corner whereby you will say this is their room to provide services to them. Then language barrier too. Sometimes when the adolescents come to the health facilities, health workers may have to get a third person thereby breaching confidentiality" (Health Worker 1).

"Sometimes when adolescents come, they demand certain services and we are unable to provide for them. There is also a problem with getting recreational and educational items. Frequent supply of the family planning commodities is needed to remove this challenges" **(Health Worker 7).**

"One challenge is funds. You know going on home visit, moving from one community to the other, school to school, you need fuel. Another thing is how to enter the data. We do not have the adolescent health registers" **(Health Worker 8).**

Mitigating the challenges to adolescent health service provision

The participants made various suggestions to mitigate the challenges they face when providing health services to adolescents. These include provision of more resources, upgrading health workers' knowledge, provision of adolescent corners, and posting of additional staff to deprived settings.

"I think we need to increase the resources such as funds and also update health workers on current issues concerning adolescent health" (Health Worker 1).

"The provision of adolescent health corner will help to ensure any services we want to render; we will just go there to provide to the adolescents. We need recreational items, educational leaflets and counselling cards" **(Health Worker 7).**

"Good relationship should be established with the communities so that once in a month, we will enter the nearby communities and talk to the adolescents" **(Health Worker 3).**

"They should also train the health workers. Also they should try and provide us with the basic things needed for education in the schools. Sometimes, you are giving education on adolescent health without the adolescents seeing pictures or

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images to help with the acquisition of the knowledge. You describe something and they do not understand it" **(Health Worker 6).**

Improvement of adolescent health service at the facility

In this study, the participants were asked to provide suggestions on how to improve adolescent health services at the health facilities. They stated that in-service training of health workers, creation of adolescent corners, provision of recreational materials**,** provision of equipment, supply of adolescent registers and formulation of policy guides maybe useful in improving adolescent health services at the health facility level.

"Yeah, the in-service training will be better. Many health workers should be trained so that if one is not there, others can take it up" **(Health Worker 1).**

"I think more interest should be given to adolescent health in general. They need to give us the registers and train us on how to fill it" **(Health Worker 8).**

"They should give us adolescent corners. Also, there should be recreational materials for the adolescents to come and play. While they are playing, we can talk to them on adolescent health" **(Health Worker 6).**

Improvement of adolescent health service at the community

In this study, the participants were asked to provide suggestion on how to improve adolescent health services at the communities. They proposed identification and training of individuals who are fluent in the local languages on adolescent health issues. They added education of the mothers and creation of peer clubs for adolescents may contribute to adolescent health in the district. They also proposed strong community engagement for trust and sustainability of adolescent health programs in the setting.

"Individuals who understand the local languages should be identified and trained as community health volunteers so that there will be no need to use third persons when providing adolescent health services" **(Health Worker 1).**

"We should try and at least organize durbars for the parents. This will help parents to know what this special age for the girls or boys demand. So if the parents are enlightened to know the challenges adolescents face, they can also help" **(Health Worker 6).**

"I think we need to educate all the community members. Even if we will not include men, we should add the mothers and talk to them about adolescent health. But it should be all of them because the men even have the final say. We can also do more home visits. We can also carry out school health where we will meet only the adolescents" **(Health Worker 7).**

"They should form peer groups in the community where leaders can come to give education on adolescent health. This will help the adolescents to also give accurate information to their peers. They should invite counsellors to talk to them so that the adolescents who are not schooling can also benefit" **(Health Worker 2).**

DISCUSSION

In this study, we explored health workers' knowledge on adolescent health, services provision and challenges in Kumbungu District, Ghana. The participants included one public health nurse, three

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midwives and four nurses. Five of the participants were females and all had heard of adolescent health. Health workers' knowledge on adolescent health is important for health services provision and mitigation of challenges. Some of the activities under adolescent health include family planning, teenage pregnancy, menstruation, antenatal care, infections and health education. Some of the challenges the participants faced when providing adolescent health services were low knowledge on adolescent health, inadequate staff, language barrier, unavailability of certain services, inadequate resources, inadequate infrastructure, lack of recreational facilities, limited training on adolescent health and poor supervision of health activities.

Health worker's knowledge on adolescent health

Though all study participants have heard of adolescent health, they described their knowledge level as below average. This finding is similar to a previous study which reported that health workers have heard of the concept of adolescent health but lack adequate knowledge (Geary et al., 2014; Nalwadda et al., 2011). The below average description of health workers' knowledge on adolescent health may be due to lack of confidence or no formal training. In the current study, the majority of the key informants have not received training on adolescent health. This may lead to a situation in which health workers provide adolescents health services inappropriately. A study conducted in South Africa reported that the lack of training for health workers leads to incomplete services provision to clients or not getting the method they wanted (Lince-Deroche et al., 2020). Consequently, this affects the utilization of the existing health services including contraception (Godia et al., 2013; Ansha et al., 2017; Kyilleh et al., 2018). Thus, pre-service and in-service training of health workers on adolescent health is critical (Loi et al., 2015).

Adolescent health services provision

In this study, the participants provided family planning, antenatal care, counselling, nutrition education, personal hygiene, treatment of STIs, health education and curative care to adolescents. However, comprehensive abortion care was unavailable in the district. This finding is similar to studies that found that family planning and treatment of general diseases are the services often provided at the health facilities (Bukenya, 2017; Kyilleh et al., 2018). A possible explanation for the lack of comprehensive adolescent health services at the health facilities may be due to the lack of resources and low knowledge. Furthermore, peripheral levels of the health care system has limited capacity to provide adolescent health services (Couttolenc, 2012). In the mist of lack of clarity on health issues, planning, decision-making and allocation of resources, the provision of adolescent health services are often affected (WHO, 2015). Sometimes, health workers are hesitant to provide adolescents health services in a comprehensive manner due to lack of capacity and skills (Nalwadda et al., 2011). In addition, there is a lack of equity between urban and rural settings in the provision of health services (GSS et al., 2015; Tlaye et al., 2018). Our study was conducted in a rural setting that lacks the capacity to provide

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comprehensive abortion care. In Ghana, all districts are supposed to have a district hospital (Couttolenc, 2012). However, the Kumbungu District does not have a hospital and this may explain the lack of comprehensive care for adolescents in the study. Health facilities with different schedules for adolescents and a variety of health services including abortion, often experience increased utilization of existing adolescent health services. This is partly due to assurance that adolescents may have privacy during services provision and health workers may also protect their confidential information. A previous study reported that adolescents prefer to access health services at different times during the day. However, many communities lack the capacity to practice separate sessions of adolescents (Bukenya, 2017). Improving health workers skills to promote and address adolescent health at the community level is very critical (Koon et al., 2013). To enhance access and utilization of the existing health services by adolescents, the health workers proposed local solutions. These include access to health workers after the regular working hours, politeness of health workers and creation of separate rooms.

In this study, adolescent health services were provided under somewhat safe conditions though there were no separate rooms. This finding differs from other studies that found the majority of adolescent health services being provided under unsafe environments (WHO, 2012; Geary et al., 2014). However, the flexible working hours' sessions introduced by the health workers may be the reason for the perceived safe conditions in this study. Though there were no designated separate places at the health facilities in the study setting, adolescents received their services in secured rooms such as the palpation or counselling rooms or at the residence of the service providers for privacy and confidentiality. This is similar to other studies which used separate consulting rooms and adolescents seeking health services at the residence of female health workers as a measure of ensuring privacy and confidentiality (Geary et al., 2014; Sujindra & Bupathy, 2016). The use of local solutions such as existing safe rooms has the potential to increase health services utilization among adolescents (WHO, 2015; Fuentes et al., 2018). The absence of health corners contributes to shyness, doubts and uncertainty due to stigmatization of adolescent users (Fuentes et al., 2018).

Challenges faced by health workers when providing adolescent health services

In this study, the participants faced various challenges while providing adolescent health services in the district. The common challenges cited were low knowledge on adolescent health, inadequate staff, language barrier, lack of recreational facilities, inadequate resources and lack of supervision. This finding is similar to studies that reported of infrastructure and logistics as challenges in adolescent health services provision (Deogan et al., 2012; WHO, 2015; Bukenya, 2017). In another study, health workers reported of inadequate resources as a challenge hindering adolescent health services (Jonas et al., 2018). The issue of inadequate resources for the provision of adolescent health services may not improve soon due to decreasing

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donor funding for adolescent health (Deogan et al., 2012). Another challenge was untrained health workers on adolescent health issues. This is a cross-cutting challenge especially in developing countries including Ghana. This has been reported in a previous studies that health workers have not be trained particularly on adolescent health (Geary et al., 2014). Previous studies have reported that health workers have inadequate skills, competencies, and inadequate support from the overall health system (Sivagurunathan et al., 2015). As a result, health workers feel less confident when providing health services to adolescents (Godia et al., 2013; Paul et al., 2016; Kyilleh et al., 2018). In most Ghanaian societies pre-marital sex is unaccepted (Asare et al., 2020). In this study, the health workers did not consider pre-marital sex as unaccepted though they had to follow the instructions of their employer.

Strengths and limitations

This study has a number of strengths. The key informant approach provides data and insight that cannot be obtained by other approaches. It is simple and inexpensive to conduct. The findings revealed insightful information about the peripheral health worker's knowledge on adolescent health, services provision and challenges in the district. The study also had some limitations. The sample size was small and the participants were purposively selected. The findings are not generalizable. However, the findings are important for future research.

CONCLUSION

The participants' knowledge on adolescent health was low. In the study setting, participants provided various adolescent health services to their clients such as family planning, health education and counselling. During services provision, participants experience lack of health corners, inadequate training of health workers, and inadequate resources. Thus, health workers should be trained on adolescent health in the district. In addition, there is the need for more resources to improve availability and variety of adolescent health services.

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Competing interests

The author declares no competing interests.

REFERENCES

Abajobir, A. A., & Seme, A. (2014). Reproductive health knowledge and services utilization among rural adolescents in east Gojjam zone , Ethiopia : a community-based cross-sectional study. *BMC Health Services Research*, 14(1), 1–11. https://doi.org/10.1186/1472-6963-14-138

Ansha, M. G., Bosho, C. J., & Jaleta, F. T. (2017). Reproductive Health Services Utilization and Associated Factors Among Adolescents in Anchar District, East Ethiopia. *Journal of Family & Reproductive Health,* 11(2), 110–118. http://www.ncbi.nlm.nih.gov/pubmed/29282419%0Ahttp://www.pubmedcentral.nih.gov/

ISSN 2026-6294

articlerender.fcgi?artid=PMC5742664

Asare, B. Y. A., Aryee, S. E., & Kotoh, A. M. (2020). Sexual behaviour and the utilization of youth friendly health Services: A cross-sectional study among urban youth in Ghana. *International Journal of Africa Nursing Sciences,* 13. https://doi.org/10.1016/j.ijans.2020.100250

Berhe, S., Kahsay, K., & Alemayehu, M. (2016). Utilization of youth friendly services and assocated factors in Mekelle Town, Tigray, Northern Ethiopia. *International Journal of Therapeutic Applications,* 33, 49–59. https://doi.org/10.20530/IJTA

Bukenya, J. N. (2017). Health Facilities' Readiness to Provide Friendly Reproductive Health Services to Young People Aged 10-24 Years. *Global Journal of Reproductive Medicine,* 2(3). https://doi.org/10.19080/gjorm.2017.02.555588

Couttolenc, B. F. (2012). Decentralization and Governance in the Ghana Health Sector. In Decentralization and Governance in the Ghana Health Sector. https://doi.org/10.1596/978-0-8213-9589-9

Denno, D. M., Hoopes, A. J., & Chandra-Mouli, V. (2015). Effective strategies to provide adolescent sexual and reproductive health services and to increase demand and community support. *Journal of Adolescent Health,* 56(1), S22–S41. https://doi.org/10.1016/j.jadohealth.2014.09.012

Deogan, C., Ferguson, J., & Stenberg, K. (2012). Resource Needs for Adolescent Friendly Health Services: Estimates for 74 Low- and Middle-Income Countries. *PLoS ONE*, 7(12). https://doi.org/10.1371/journal.pone.0051420

Fuentes, L., Ingerick, M., Jones, R., & Lindberg, L. (2018). Adolescents' and Young Adults' Reports of Barriers to Confidential Health Care and Receipt of Contraceptive Services. Journal of Adolescent Health, 62(1), 36–43. https://doi.org/10.1016/j.jadohealth.2017.10.011

Geary, R. S., Gómez-Olivé, F. X., Kahn, K., Tollman, S., & Norris, S. A. (2014). Barriers to and facilitators of the provision of a youth-friendly health services programme in rural South Africa. *BMC Health Services Research,* 14(1), 1–8. https://doi.org/10.1186/1472-6963-14-259

Ghana Health Service. (2016). Adolescent Health Service Policy and Strategy (2016-2020). https://www.afro.who.int/sites/default/files/2017-10/ADOLESCENT HEALTH SERVICE POLICY AND STRATEGY.pdf

Ghana Statistical Service. (2014). 2010 Population and Housing Census - District Analytical Report: Kumbungu district, Ghana. http://www2.statsghana.gov.gh/docfiles/2010_District_Report/Northern/Kumbungu.pdf

Godia, P. M., Olenja, J. M., Lavussa, J. A., Quinney, D., Hofman, J. J., & Van Den Broek, N. (2013). Sexual reproductive health service provision to young people in Kenya; Health service providers' experiences. BMC Health Services Research, 13(1). https://doi.org/10.1186/1472-6963-13-476

GSS, GHS, & ICF. International. (2015). Ghana Demographic and Health Survey 2014. Rockville, Maryland, USA: Ghana Statitiscal

ISSN 2026-6294

Service, Ghana Health Service, and ICF International. https://dhsprogram.com/pubs/pdf/FR307/FR307.pdf

GSS, GHS, & ICF. (2018). Ghana Maternal Health Survey 2017: Key Indicators Report. https://dhsprogram.com/pubs/pdf/SR251/SR251.pdf

Hennink, M., & Kaiser, B. N. (2022). Sample sizes for saturation in qualitative research: A systematic review of empirical tests. In Social Science and Medicine (Vol. 292). https://doi.org/10.1016/j.socscimed.2021.114523

Jaworska, N., & MacQueen, G. (2015). Adolescence as a unique developmental period. *Journal of Psychiatry and Neuroscience*, 40(5), 291–293. https://doi.org/10.1503/jpn.150268

Jonas, K., Crutzen, R., Krumeich, A., Roman, N., Van Den Borne, B., & Reddy, P. (2018). Healthcare workers' beliefs, motivations and behaviours affecting adequate provision of sexual and reproductive healthcare services to adolescents in Cape Town, South Africa: A qualitative study. BMC Health Services Research, 18(1), 1–13. https://doi.org/10.1186/s12913-018-2917-0

Koon, A. D., Goudge, J., & Norris, S. A. (2013). A review of generalist and specialist community health workers for delivering adolescent health services in sub-Saharan Africa. *Human Resources for Health,* 11(1), 1–9. https://doi.org/10.1186/1478-4491-11-54

Kyilleh, J. M., Tabong, P. T., & Konlaan, B. B. (2018). Adolescents ' reproductive health knowledge , choices and factors affecting reproductive health choices : a qualitative study in the West Gonja District in Northern region , Ghana. 1–12. https://doi.org/10.1186/s12914-018-0147-5

Lince-Deroche, N., Hendrickson, C., Moolla, A., Kgowedi, S., & Mulongo, M. (2020). Provider perspectives on contraceptive service delivery: Findings from a qualitative study in Johannesburg, South Africa. *BMC Health Services Research,* 20(1), 1–10. https://doi.org/10.1186/s12913-020-4900-9

Loi, U. R., Gemzell-Danielsson, K., Faxelid, E., & Klingberg-Allvin, M. (2015). Health care providers' perceptions of and attitudes towards induced abortions in sub-Saharan Africa and Southeast Asia: A systematic literature review of qualitative and quantitative data. *BMC Public Health,* 15(1). https://doi.org/10.1186/s12889-015-1502-2

Mannava, P., Durrant, K., Fisher, J., Chersich, M., & Luchters, S. (2015). Attitudes and behaviours of maternal health care providers in interactions with clients: A systematic review. *Globalization and Health,* 11(1), 1–17. https://doi.org/10.1186/s12992-015-0117-9

Motuma, A., Syre, T., Egata, G., & Kenay, A. (2016). Utilization of youth friendly services and associated factors among youth in Harar town, east Ethiopia: A mixed method study. *BMC Health Services Research,* 16(1), 1–10. https://doi.org/10.1186/s12913-016-1513-4

Muellmann, S., Brand, T., Jürgens, D., Gansefort, D., & Zeeb, H. (2021). How many key informants are enough? Analysing the validity of the community readiness assessment. *BMC Research Notes*, 14(1), 1–6. https://doi.org/10.1186/s13104-021-05497-

ISSN 2026-6294

9

Nalwadda, G., Mirembe, F., Tumwesigye, N. M., Byamugisha, J., & Faxelid, E. (2011). Constraints and prospects for contraceptive service provision to young people in Uganda: Providers' perspectives. *BMC Health Services Research,* 11. https://doi.org/10.1186/1472-6963-11-220

National Academies of Sciences, Engineering, & Medicine. (2019). The Promise of Adolescence: Realizing Opportunity for All Youth. Washington, DC: *National Academies Press*. https://doi.org/10.17226/25388

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1), 1–13. https://doi.org/10.1177/1609406917733847

Paul, M., Näsström, S. B., Klingberg-Allvin, M., Kiggundu, C., & Larsson, E. C. (2016). Healthcare providers balancing norms and practice: Challenges and opportunities in providing contraceptive counselling to young people in Uganda - a qualitative study. *Global Health Action,* 9(1). https://doi.org/10.3402/gha.v9.30283

Sahile, Y., Yitayih, S., Yeshanew, B., Ayelegne, D., & Mihiretu, A. (2019). Primary health care nurses attitude towards people with severe

ISSN 2026-6294