

Sexual and Reproductive Health Knowledge, Attitudes and Practices among Internally Displaced Female in Biyem-Assi Health District, Centre Region of Cameroon

Caroline Teh Monteh^{1,2}, Nicholas Tengdonfor¹, Asu Carine Ndu³, Joy Sofa Keufeu-Yin^{4,5}, Vincent Siysi Verla¹, Anne-Cécile Zoung-Kanyi Bissek^{2,6}

¹Department of Public Health and Hygiene, Faculty of Health Sciences, University of Buea, Cameroon

²Division of Operational Research in Health, Ministry of Public Health, Yaounde Cameroon

³Department of Public health and Administration, BIAKA University Institute, Buea, Cameroon

⁴Jacarole Humanitarian Foundation, Yaoundé, Cameroon

⁵Faculty of Sciences, Université des Montagnes, Baganté, Cameroon

⁶Faculty of Medicine and Biomedical Sciences, University of Yaounde I, Yaounde, Cameroon

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ABSTRACT

Background: Reproductive health (RH) is a human right for women and girls around the world, but it is particularly critical for internally displaced persons (IDPs) because they have a significant unmet need for contraceptive services as a result of their displacement from their homes. Cameroon is counted among the countries with the highest number of internally displaced persons in Africa. This study aimed at assessing the level of knowledge, attitudes and practices of internally displaced women and girls on reproductive health in the Biyem-Assi Health District, Centre Region of Cameroon.

Methods: This was a cross-sectional study conducted from April 2022 to June 2022. A structured questionnaire was administered to selected internally displaced women and girls of reproductive age to collect data on their knowledge, attitudes and practices regarding family planning and sexually transmitted diseases. The data was analysed using SPSS version 26.

Results: A total of 594 participants were enrolled into the study of which 485 (87.7%) respondent had poor knowledge of family planning, 464 (83.3%) had a positive attitude and 485 (81.6%) good practice toward family planning. They had poor knowledge of modern contraceptive methods like female/male sterilization, implants and IUD. With regards to STIs, IDPs had a good knowledge of STIs such as gonorrhoea (70.4%), syphilis (66.1%) and HIV (57.8%), but had little knowledge of hepatitis (19.4%) and chlamydia (41.1%) infections. Majority, 464 (83.3%) of the respondents had a positive attitude towards STIs. Good knowledge of family planning was associated with IDPs raised by father (AOR= 3.01, p=0.002, CI=3.01-1.50) and age above 21 years (AOR= 9.94, p<0.001, CI=3.55-27.81). Good practice of family planning was linked to age with IDPs aged 40 years and above (AOR= 6.87, p<0.001, CI=2.42-19.55) and 30-39 years were (AOR= 14.50, p<0.001, CI=5.19-40.49) having good practice compare to those <20 years. Respondents within the age group 30-39 years (AOR= 3.22, p=0.002, CI=1.51-6.87) and those in the age group. 20-29 years old (AOR= 2.88, p<0.001, CI=1.67-4.98) had a positive attitude towards STIs compared to those <20 years. Good knowledge of STIs was linked to the level of education with those in the second cycle of secondary school (AOR=1.83, p=0.048, CI= 1.01-3.31) having good knowledge compared to those in the primary school.

Conclusion: Internally displaced women of reproductive age in the Biyem-Assi Health District have poor knowledge of sexually transmitted diseases and family planning methods. Condom use is the mostly practice

family planning method. There is a need for health education programs oriented towards the different methods which would enhance a change of attitudes towards family planning and improve on the uptake of family planning by IDPs.

Keywords: Reproductive Health; Internally Displaced Women and Girls (IDWG), Knowledge, Attitude and Practice, Biyem-Assi Health District (BAHD).

BACKGROUND

Reproductive health (RH) is a human right for women and girls around the world, but it is particularly critical for internally displaced persons (IDPs). The sexual and reproductive health and rights (SRHR) of this population require particular considerations [1]. In times of crisis, women are often the first to be affected, due to their particularity in being vulnerable to physical and sexual violence as well as exploitation. There is a significant need for SRH services in humanitarian settings, but also a severe dearth of rigorous evaluation of the effectiveness of SRHR programming. While SRH services have increased for women in crisis situations broadly, these services have largely failed to reach internally displaced women and girls. IDPs have a significant unmet need for contraceptive services, including an unmet need for modern contraceptives totalling nearly 50% [2]. This is a critical concern, as the inability to access to modern contraceptives can lead to unplanned pregnancies, poor child spacing, unsafe abortions, and increased prevalence of sexually transmitted infections.

Negative attitudes regarding contraception significantly affect utilization, but targeted education campaigns can decrease negative stereotypes and increase uptake family planning (FP). For example, many women cite religious and cultural beliefs as well as their husbands' desires as reasons for having large families [3]. Negative attitudes about long-acting reversible contraception (LARC) have also contributed to low utilization, but some studies show that implants are more well received than intrauterine devices [3]. SGBV is also prevalent among IDPs in, leading to physical and mental health problems [4].

IDPs are people who have been forced to leave their homes, but have remained within the borders of their country of origin. Host country governments often lack the ability to serve these IDPs as a result of needing to prioritize the conflict or disaster that has displaced their citizens. Further, as they lack the status of refugees and the associated protections, many multilateral agencies and nongovernmental organizations are unable to offer the same resources that they provide to refugee populations. Additionally, the needs of IDPs differ in meaningful ways from those of the general population. For example, IDPs frequently lack access to SRH services, including specifically contraception and safe abortion care. Similarly, IDPs often lack access to adequate maternal care, which can increase maternal and infant morbidities and mortalities. Further, sexual and gender-based violence (SGBV) is common among IDPs and IDPs are vulnerable to abuse and exploitation, yet SGBV services are often the least developed of services available for women in crisis environments. There is also evidence that the conditions of displacement lend to increased risk of infectious disease, including STIs like HIV/AIDS.

The World Health Organization defines health emergencies as sudden-onset events from naturally occurring or man-made hazards, or gradually deteriorating situations through which the risk to public health steadily increases over time [5]. It is estimated that 1 billion, or about 14% of the world's population, live in areas affected by conflict[6]. According to the United Nations High Commissioner for Refugees, the number of forcibly displaced people has nearly doubled in the past two decades (from 33.9 million in 1997 to 65.6 million in 2016), with numbers remaining at a record high [6]. Given the changing nature of conflict and protracted crises, the average time spent in displacement has now reached 20 years [6]. The United Nations Population Fund estimates that of the more than 100 million people in need of humanitarian assistance in 2015, 32 million were women and girls aged 15±49 years [7].

Cameroon is counted among the countries with the highest number of internally displaced persons as of December 31, 2019 [8] after South Sudan (1,352,000) and Turkey (1,099,000). In the North West and South West Cameroon regions, the security situation has deteriorated over the past two years. Indeed, clashes between English-speaking separatists and the security forces increased in forcing more and more people to flee

their homes to seek refuge elsewhere in other towns. This is the case of the Central region that hosts most of the displaced people of this conflict [9]. It is at this back drop of the above analysis that this research work focused on analysing the situation of displaced women and girls in the Biyem-Assi Health District. The BAHHD hosts most of the refugee of the Anglophone crisis in Yaoundé [10]. This study assessed the level of knowledge, attitudes and practices of Internally Displaced Women and Girls (IDWG) on Reproductive Health in the Biyem-Assi Health District of the Centre Region of Cameroon. Such data may inform government and health care practitioners' policy direction to develop appropriate interventions for reducing maternal mortality in the country and address health inequality.

METHODOLOGY

Study design and sampling

A cross-sectional study was done from April 2022 to June 2022 in Biyem-Assi Health District (BSHD) in Yaoundé, Cameroon. The population included for this study was Internally Displaced Women and Girls (IDWGs) of reproductive age group (15 - 49 years old). Most of this population are women and young adolescent girls who constitute more than two third of the population [11]. A survey carried in September 2020 showed that Biyem-Assi is the most populated quarter with IDPs in the city of Yaoundé [10]. Included in the study were female IDPs of reproductive age who consented to participate in the study. IDPs who faced difficulty understanding the questions or who were ill were not included in the study; refugees.

Data collection

Data was collected using a pretested and validated questionnaire. It contains five main domains such as socio-demographic characteristics, sexual behavior characteristics, knowledge, attitude and practice on sexually transmitted diseases, knowledge, attitude and practice on family planning. Questions regarding sources of information and services of contraception were included under the knowledge domain. Each of the questions were verbally asked to each of the participants with the help of trained data collectors in the preferred languages (English/Pidgin/Fulfulde and French). One session took about 10 - 15 minutes to complete the questionnaire.

Data analysis

Data collected were entered in a CSpro 7.7.3 software, and later on exported into a Microsoft Excel spreadsheet for cleaning/editing and finally analysed using the Statistical Package for Social Sciences (SPSS) Version 26 for Windows.

In order to evaluate participant knowledge of STIs, a total of 8 questions were asked. Each good answer was graded 1 and a wrong answer 0. Those who scored 4 and above had correct knowledge and less than 4 were considered poor knowledge.

For attitude, those with an attitude score of 3 and above had a good attitude and those with less had a poor attitude. Those with good practice had from 4 and above and those with less than 4 had poor practices.

To evaluate participant's knowledge of STI 19 questions were asked. Those who scored above 9 were considered having good knowledge otherwise poor knowledge.

Knowledge of FP was evaluated using 13 questions. Those who scored below ≤ 6 points were considered having poor knowledge otherwise good knowledge.

Table 1. Categorisation of knowledge, attitude and practice of reproductive health

Domains	Categories	Categories	Scores
STI	Knowledge Level	Good	10-19

		Poor	0-9
Family planing	Knowledge Level	Good	7-13
		Poor	0-6
	Attitude Level	Positive	≥ 3
		Negative	≤ 3
	Practice Level	Good practice	≥ 4
		Poor practice	≤ 4

Ethical Consideration

The ethical clearance for the study was obtained from the Centre Regional Delegation of Public Health (Reference number CE N°E-182/CRERSHC/2022 du 25 Jan 2022). In addition, administrative authorization was obtained from the Faculty of Health Sciences of the University of Buea, the Biyem-Assi District Health Services and the Yaoundé 6 Council. Participants were informed of the various aspects of the study and were anonymously included in the survey after they had signed the informed consent form.

RESULTS

Socio-demographic characteristics of IDWG in the Biyem-Assi Health District

Of the 594 IDPs included in the study, majority 458 (77.1%) were from North West Region. With respect to the distribution of IDWG in the Biyem-Assi Health District, 165 (27.8%) were from Biyem-Assi 2, followed by 145 (24.4%) from Melen. Out of the 594 respondents, 554 (93.3%) were Christians, 426 (71.7%) were single. With regards to the level of education of the respondents, 367 (61,8%) of them were at the secondary level. More, 287 (48.3%) of the respondents had ages within 20-29 years with the mean age of 26.50 ± 9.044 years (Table 2).

Table 2: Demographic characteristics of female IDPs in the Biyem-Assi Health District

Variable	Categories	Frequency	Percentage
Religion	Christian	554	93.3
	Muslim	13	2.2
	No religion	11	1.9
	Other	16	2.7
	Total		594
Marital status	Divorced	5	0.8
	Married	149	25.1
	Single	426	71.7
	Widow	14	2.4

	Total	594	100
Highest level of education	Less than Primary	36	6
	Primary	78	13.1
	Secondary	367	61,8
	University	113	19
	Total	594	100
Age group (Years)	<20	143	24.1
	20 - 29	287	48.3
	30 - 39	106	17.8
	40 +	58	9.8
	Total	594	100

Characteristics of first sexual intercourse among IDPs in the Biyem-Assi Health District

A total of 426 (71.70%) participants have had sexual intercourse of which 305 (75.3%) had their first sexual intercourse between 15-20 years. Above average 229 (58.3%) of the respondents did not use condom during their last sexual intercourse. Of the 197 (46.2%) who had used condom during their last sexual intercourse, 130 (61%) used it to avoid STI/HIV. The main reason raised by Participants who said they did not use condom during their last intercourse was that the intercourse was not planned 38(31.4%), also they did not know about this method 23 (19%) (Table 3).

Table 3: Characteristics of first sexual intercourse among IDPs in the Biyem-Assi Health District

Variable	Categories	Frequency	Percentage
Had sexual intercourse	No	168	28.3
	Yes	426	71.7
	Total	594	100
Age at first sexual intercourse	< 15	16	4
	> 20	84	20.7
	15 - 20	305	75.3
	Total	405	100
Description of the first sexual intercourse	No response	25	5.9
	I Force my partner	4	0.9
	I persuaded my partner	10	2.3
	My partner forced me	38	8.9

	My partner persuaded me	58	13.6
	We were both equally willing	291	68.3
	Total	426	100
Reasons for sexual intercourse	Love	300	76.1
	Curiosity	91	23.1
	Friend(s)	51	12.9
	Family member(s)	9	2.3
	Other IDP	3	0.8
	Boy/girl friend	129	32.7
	Total	583	148
Was condom used during last intercourse	No	229	53.8
	Yes	197	46.2
	Total	426	100
If yes was It to avoid sexually transmitted infection/HIV	No	83	39
	Yes	130	61
	Total	213	100
Reasons for not using condoms	Wife/husband/stable partner	24	19.8
	Intercourse not planned	38	31.4
	Condom not available	17	14
	Condom too expensive	1	0.8
	Partner opposed to the use of condom	4	3.3
	I did not dare to propose	4	3.3
	Coerced intercourse	15	12.4
	I did not know about this method	23	19
	I did not like condom	7	5.8
	Total	133	109.9

Knowledge and attitudes towards STIs among IDPs in the Biyem-Assi Health District

With regards to knowledge of STIs, most, 557 (93.8%) of the respondents have heard of STIs and HIV/AIDS. Regarding the means of transmission of STIs, 488 (88.2%) said it was sexually transmitted. Also 380 (70.4%) and 357 (66.1%) of the respondents knew gonorrhoea and syphilis respectively as STIs, while 54 (10 %) of them did not know any STI. As per the means of prevention of STIs, 380 (70.6%) of the respondents mentioned the use of condoms (Table 4). With regards to the source of information on STIs, 51.3% of the respondents got information on STIs from TV, 47.6% from radio, 40.1 % from health centre/workers (Figure

1). Overall, 411 (69%) of the IDWG had a poor knowledge of STIs and 464 (83%) of respondent had a positive attitude.

Table 4: Knowledge of STI and HIV/AIDS among IDPs in the Biyem-Assi Health District

Variable	Categories	Frequency (n)	Percentage (%)
Heard of STI / HIV / AIDS	No	37	6.2
	Yes	557	93.8
	Total	594	100
Means of transmission of STI	Don't know how	11	2
	Sexual transmission	488	88.2
	Transmission from mother to child	130	23.5
	Injection with contaminated equipment	126	22.8
	Unverified blood transfusion	147	26.6
	Unsterilized blades	195	35.3
	Total	1097	198.4
Name some STI you know	I don't know any STI	54	10
	Gonorrhoea	380	70.4
	Syphilis	357	66.1
	Chlamydia	222	41.1
	Hepatitis	105	19.4
	HIV	312	57.8
	Total	1430	264.8
Prevention of STI	Abstain from sex	253	47
	Use condoms	380	70.6
	Stay faithful to one non-infected partner	233	43.3
	Limit the number of sexual partners	66	12.3
	Control blood before transfusion	103	19.1
	Prevention of transmission from mother to child	43	8
	Sterilize all equipment for surgery or injection	76	14.1
	Total	1154	214.5

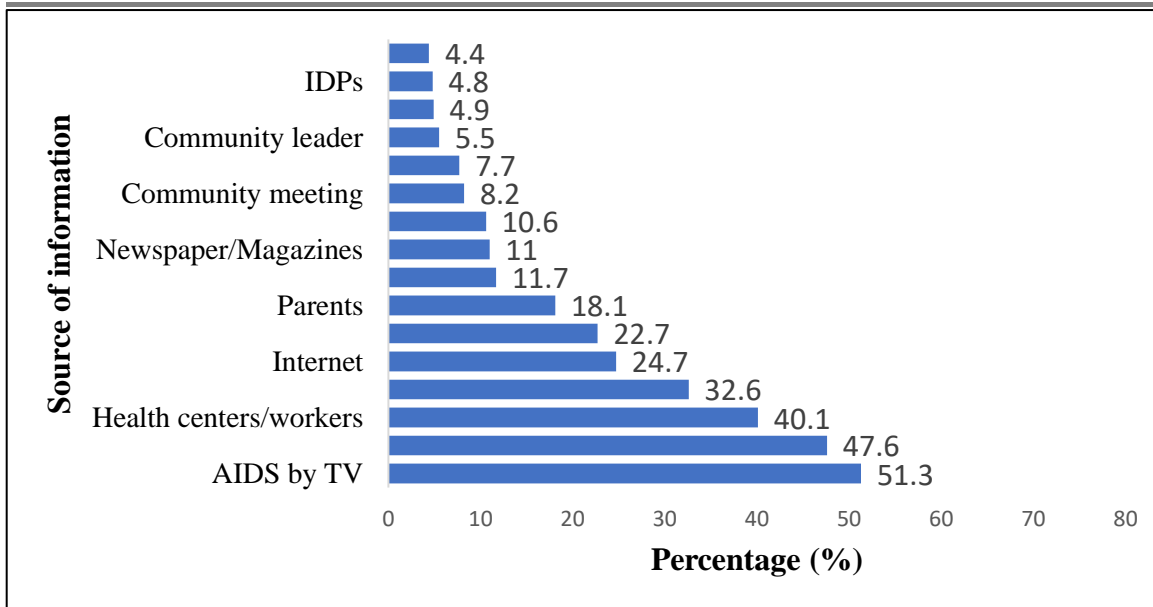


Figure 1: Source of information on HIV/AIDS among STIs in the Biyem-Assi Health District

With regards to respondent attitudes and practices towards STIs, 503 (90.3%) of the respondents were afraid of becoming infected with HIV/AIDS. A greater proportion 424 (76.1%) of the respondents said they had been tested for HIV, 213 (50.2%) did the test less than 12 months ago and 398 (93.9%) got their test results. Most, 489 (82.3%) of the respondents said they currently accept an HIV test. Of the 44 respondents that were not ready to do their HIV test, 35 (51.5%) said they don't want to know their status. Also, 44 (64.7%) out of 68 respondents said they do not think they were not at risk of being infected with HIV (Table 5).

Table 5: Attitudes and practices related to sexually transmitted diseases and HIV

Variable	Categories	Frequency	Percentage
Afraid of becoming infected for HIV / AIDS	Does not want to respond	9	1.6
	No	45	8.1
	Yes	503	90.3
	Total	557	100
If yes, a lot or little	Yes, A little	94	18.4
	Yes, A lot	418	81.6
	Total	512	100
Tested for HIV test	Does not want to respond	13	2.3
	No	120	21.5
	Yes	424	76.1
	Total	557	100
Last HIV test	< 12 Months	213	50.2
	> 24 months	117	27.6
	12 _ 24 months	94	22.2

	Total	424	100
Accept an HIV test currently		37	6.2
	Does not want to respond	44	7.4
	No	24	4
	Yes	489	82.3
	Total	594	100
If not, the main reason	Concern about test quality	2	2.9
	Does not want to respond	35	51.5
	I am afraid of a positive result	2	2.9
	I did not have risky intercourses	5	7.4
	I don't want to know my status	11	16.2
	Lack of confidentiality	1	1.5
	Other	11	16.2
	The test is too expensive	1	1.5
	Total	68	100
Do you think about the risk of being infected with HIV	Don't know	17	25
	Not at all	44	64.7
	Yes, a little	5	7.4
	Yes, a lot	2	2.9
	Total	68	100
If yes, why	Because I am IDP woman / girl	4	6
	My partner is engaged in risky behaviours	2	3
	Other	61	91
	Total	67	100

Knowledge and use of family planning among IDPs in the Biyem-Assi Health District

Of the 594 respondents, 485 (81.6%) defined family planning as a method to delay / avoid a pregnancy. About the use of contraceptive methods, 223 (75.5%) and 188 (63.5%) of the respondents said they knew and have used male condoms respectively (Figure 4). The next mostly used contraceptive were pills (29.3%), periodic abstinence/rhythm/temperature (27.6%), withdrawal method (27.4%), and injections (25.1%) (Figure 2).

For those who did not use contraceptives, were not sexually active 66 (11.1%), 4(4.3%) had no knowledge of any family planning methods, 2 (2.2%) and 1 (1.1%) complained of the cost and not knowing where to get family planning methods respectively. Overall, the knowledge of respondents on family planning was poor 521 (88%). Contrary to the poor knowledge, 485 (81.6%) had good practice of family planning.

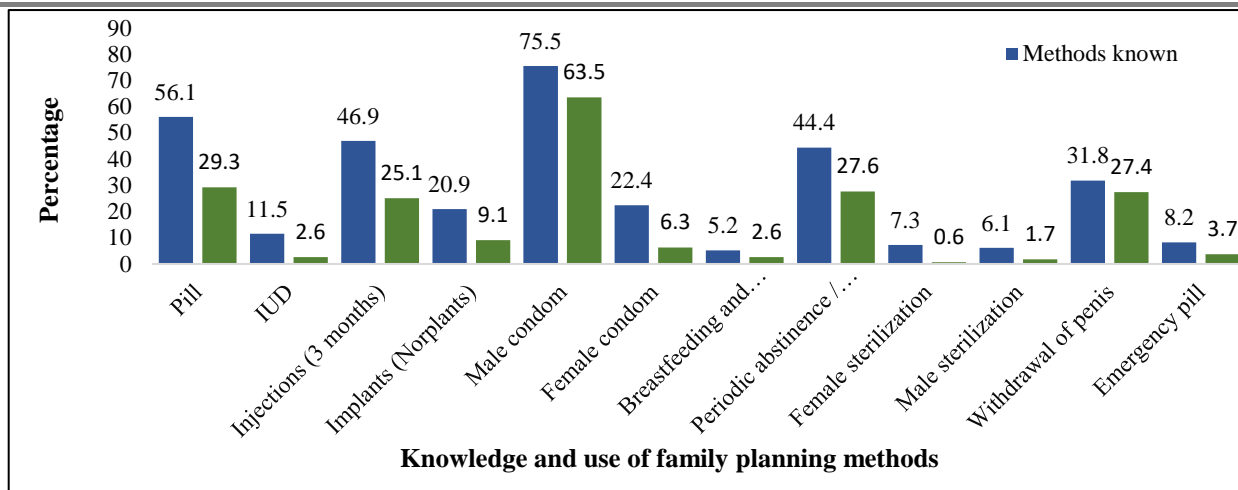


Figure 2: Knowledge and use of contraceptive methods among IDPs in the Biyem-Assi Health District.

Table 6: Summary overall knowledge of STI and family planning among IDWG in the Biyem-Assi Health District

Variable	Levels	Frequency	Percentage
Knowledge of STIs	Good	183	30.8
	Poor	411	69.2
	Total	594	100
Knowledge of family planning	Good	73	12.3
	Poor	521	87.7
	Total	594	100
Attitude towards STIs	Negative	93	16.7
	Positive	464	83.3
	Total	557	100
Practice of Family planning	No	109	18.4
	Yes	485	81.6
	Total	594	100

Factors independently associated with knowledge of STIs planning among IDWG

With regards to the factors independently associated with knowledge of FP among IDWGs in the BAHD, only education level was significantly associated with family planning. The odds of respondents in the secondary level of education to have a good knowledge of family planning was 1.82 higher compared to respondents at the primary level of education (AOR=1.83, p=0.048, CI= 1.01-3.31) (Table 7).

Table 7: Factors independently associated with knowledge of STIs among IDWG in the BAHD

Variable	Levels	AOR	95% CI		p-value
			Lower	Upper	
Raised by	Yes	0.69	0.41	1.16	0.162

mother	No	1			
Raised by family support	Yes	1.54	0.95	2.49	0.080
	No	1			
Age group	40 +	1.56	0.72	3.38	0.265
	30 - 39	1.72	0.90	3.29	0.101
	20 - 29	1.39	0.80	2.42	0.248
	<20	1			
Education level	University	1.49	0.78	2.87	0.231
	Secondary 2nd cycle	1.82	1.01	3.31	0.048
	Secondary 1st cycle	0.98	0.53	1.82	0.956
	Primary	1			
Religion	Other	2.45	0.61	9.91	0.209
	No religion	1.90	0.48	7.55	0.364
	Muslim	1.93	0.56	6.64	0.297
	Christian	1			

Factors independently associated with attitude towards STIs among IDWG

With regards to the factors independently associated with attitude towards STIs respondents within the age group 30-39 years were 3.22 times more likely to have a positive attitude towards STIs compared to those <20 years (AOR= 3.22, p=0.002, CI=1.51-6.87). Also, respondents within the age group 20-29 years old were 2.88 times more likely to have a positive attitude towards STIs compared to those <20 years (AOR= 2.88, p<0.001, CI=1.67-4.98) (Table 8).

Table 8: Factors independently associated with good attitude towards STIs among IDPs in the Biyem-Assi Health District

Variables	Level	AOR	95% CI		p-value
			Lower	Upper	
Raised by mother	Yes	0.42	0.16	1.09	0.073
	No	1			
Raised by family friend	Yes	0.27	0.06	1.27	0.096
	No	1			
Age group	40 +	1.82	0.81	4.06	0.146
	30 - 39	3.22	1.51	6.87	0.002
	20 - 29	2.88	1.67	4.98	0.000

	<20	1			
Source of income	Yes	0.68	0.34	1.37	0.280
	No	1			
Raised by other family members	Yes	0.45	0.20	1.03	0.058
	No	1			
Raised in an institution	Yes	0.10	0.01	1.46	0.093
	No	1			

Factors independently associated with knowledge of family planning among IDWGs in the BAHD

Regarding the factors independently associated with knowledge of family planning among IDWGs in the BAHD, respondents that were raised by their father were 3.01 times more likely to have a good knowledge on family planning compared to those that were not raised by their father (AOR= 3.01, p=0.002, CI=3.01-1.50). Also, respondents that were aged 40 years and above were 6.48 times more likely to have a good knowledge on family planning compared to those <2 years of age (AOR= 6.48, p=0.001, CI=2.10-20.05). Respondents that were within the age group 30-39 years were 9.94 times more likely to have a good knowledge on family planning compared to those <20 years of age (AOR= 9.94, p<0.001, CI=3.55-27.81). More so, respondents that were within the age group 20 -29 years were 3.64 times more likely to have a good knowledge on family planning compared to those <20 years of age (AOR= 3.64, p=0.010, CI=1.36-9.70) (Table 9).

Table 9: Factors independently associated with knowledge of family planning among IDWG

Variable	Category	AOR	95% CI		p-value
			Lower	Upper	
Raised by father	Yes	3.01	1.50	6.05	0.002
	No	1			
Raised by mother	Yes	0.46	0.19	1.10	0.082
	No	1			
Raised by family member	Yes	0.77	0.26	2.30	0.637
	No	1			
Raised by family friends	Yes	2.29	0.40	13.08	0.353
	No	1			
Age group	40 +	6.48	2.10	20.05	0.001
	30 - 39	9.94	3.55	27.81	<0.001
	20 - 29	3.64	1.36	9.70	0.010
	<20	1			
Source of Income	Yes	0.70	0.3	1.5	0.320
	No	1			

Factors independently associated with the practice of family planning among IDPs in the Biyem-Assi Health District

With regards to the factors independently associated with the practice of family planning among IDPs in the the BAHD, respondents that were raised by a family member were 0.55 times less likely to practice family planning compared to those that were not raised by a family member (AOR= 0.55, p=0.04, CI=0.31-0.97). Respondents aged 40 years and above were 6.87 times more likely to practice family planning compared to those <20 years (AOR= 6.87, p<0.001, CI=2.42-19.55). Respondents within the age group 30-39 years were 5.19 times more likely to practice family planning compared to those <20 years (AOR= 14.50, p<0.001, CI=5.19-40.49). Also, respondents within the age group 20-29 years old were 4.55 times more likely to practice family planning compared to those <20 years (AOR= 4.55, p<0.001, CI=2.53-8.18) (table 10).

Table 10: Factors independently associated with the practice of family planning among IDPs in the Biyem-Assi Health District

Variable	Levels	AOR	95% CI		p-value
			Lower	Upper	
Raised by mother	Yes	1.39	0.69	2.82	0.357
	No	1			
Raised by father	Yes	1.56	0.90	2.69	0.113
	No	1			
Raised by family member	Yes	0.55	0.31	0.97	0.04
	No	1			
Age group	40 +	6.87	2.42	19.55	<0.001
	30 - 39	14.50	5.19	40.49	<0.001
	20 - 29	4.55	2.53	8.18	<0.001
	<20	1			
Education level	University	2.75	1.00	7.62	0.051
	Secondary 2nd cycle	1.13	0.52	2.45	0.755
	Secondary 1st cycle	1.34	0.64	2.81	0.446
	Primary	1			

DISCUSSIONS

Our study sought to identify the sexual and reproductive health needs and problems of internally displaced women and girls in Biyem-Assi Health District, Yaoundé, Cameroon. This study was deemed necessary as a starting point to a proposed implementation of sexual and reproductive health education for the IDPs. We found their sexual and reproductive health KAP very important because their life makes them too vulnerable to many sexual and reproductive health problems and diseases.

Most of the IDWGs surveyed had gone to school up to secondary level of education. This is contrary to the study carried out in Somalia where most of them were illiterate [1]. This study provides information identified that most of the respondents were into businesses and some were jobless and very worried about their feeding and their health. All of this further explains the risks that this target group faces from predators in search of

survival. This must draw the attention of the government and humanitarian partners to more intervention in material, health and nutritional resources for this target in order to limit the morbidity and mortality rate among internally displaced women of childbearing age. This group could be more vulnerable to assault and therefore need skills and services to protect themselves [11][12]. Studies have demonstrated that poverty leads girls to engage in sexual relations with elderly men (“sugar daddies”) in order to meet their basic needs. Also, as a result of poverty from the parents’ part, it predisposes their adolescent girl children vulnerable to unintended pregnancies since the means to afford basic needs, and sometimes contraceptives is a challenge, this situation of poverty results in this “sugar daddies” taking advantage of this situation to provide basic needs to unsuspecting/naïve girls and hence engage in sexual relationships with them [13]. Lack of food and poverty affect girls and young women’s sexual and reproductive health in that it can lead to exchange of sex for food or money. Lack of food or money can drive them to exchange sex for food or money. IDWGs in other setting face similar vulnerabilities of prostitution and child abuse [14][15][16]. These sexual encounters leave girls and young women extremely vulnerable to unwanted pregnancies, unsafe abortion, STIs, and gender-based violence.

Early marriage and teen pregnancy are common amongst the IDP girls because of poverty and exposure to risky sexual behaviours. It therefore, implies that adequate attention should be given to SRH of girls living out of their home town in order to prevent SRH problems and maintain healthy sexual and reproductive life. In- and out-of-school sexuality education, quality antenatal, intranatal and postnatal services, and family planning services especially contraceptive provision, are essential and should be effectively provided to the IDP women and girls. Three quarter of the interviewed had been sexually active before the age of 21, which is different from the study carried out in US [17], which found positive practice towards early sexual relationship and early sexual debut as factors contributing to adolescent pregnancy, consistent with findings from some developed countries [13]. Half of the respondents had not used condom at the time of first sexual intercourse. This is similar to the study carried out in Nepal [18]. Some of them had used condoms at their first sexual intercourse, with obvious implications for the spread of STIs. The majority of respondents knew about the existence of STIs other than HIV, also their most rampant means of transmission. This is contrary to the study on Knowledge of HIV/AIDS, sexual behaviour and prevalence of sexually transmitted infections carried among female students of the University of Buea, where their knowledge was highly deficient and low [19]. The most common STIs they knew of were; gonorrhoea, syphilis and HIV. Hepatitis B and chlamydia infections were not really known by the respondents. Generally, they had a poor knowledge with regards to STI. As per means of prevention, nearly three quarter of the respondents mentioned the use of condoms even though most of them did not used it at their sexual intercourse. The mother to child transmission of STIs/HIV/Aids and the limitation of several sexual partners is still unknown to this target; this appeal to sensitisation and more education among this group since these circumstances in turn lead to poor SRH outcomes for girls and young women, including unwanted pregnancies, STIs, gender-based violence, and unsafe abortion.

Our study demonstrated that IDWGs reported gaps both in knowledge, especially relating to Chlamydia the most common STI amongst women and between knowledge and practice. While the vast majority of this group were aware of STIs, and many reported awareness and knowledge of HIV, Hepatitis B, Syphilis and Gonorrhoea, only eight percent of them had heard about chlamydia [20]. The knowledge, attitudes and practices of the respondents related to sexually transmitted diseases and HIV was evaluated and half of the population at least has been tested for HIV in less than 12 months ago. Basic sexual education for young women and girls could improve SRH knowledge and information, and combined with skills building and empowerment, have been shown successful at improving SRH for young people in refugee settings [14][21].

The key findings from the study established that knowledge about family planning was poor. Whilst the vast majority of IDWGs had heard and was practicing male condom. A similar study was done in Nepal which revealed that a large proportion of young women were only aware of the short-acting contraceptive methods, including condoms, the oral contraceptive pill and injectable methods, which are the mainstay of contraceptive choice [22]. Long acting reversible contraception methods were not widely used among IDWGs in BAHD, and awareness of these in the Nepal Adolescents and Youth Survey was also low. Compared to studies in rural settings in Nepal, knowledge about contraception amongst our urban sample was relatively

good [23] [24] [25].

Majority of the respondents had a positive attitude towards STIs and practiced family planning.

Even though most of them don't know and don't practise modern methods like female/male sterilization, implants and IUD. Also, breastfeeding and amenorrhea method was not known as contraceptive methods by the internally displaced women and girls who lived at Biyem-Assi health area. More than half of the respondents knew of those methods and have mostly used male condoms. This finding is similar to some researches done in Cameroon [26][27][28]. Respondents' knowledge on family planning methods was low. Many of them need in-depth knowledge of all the available long-lasting reversible methods, their side effects, advantages, and how long they can last [26]. The reasons of not using contraceptive methods by some respondents were understandable since they have never had sexual intercourse. Half of the participants had children and majority of them had four with a maximum of seven children. Close to half of them said they did not want a child at that time. This confirms the fact that many don't practice family planning and are exposed to unwanted pregnancies, STIs and HIV.

Our population really had poor knowledge on STI and family planning, and positive attitude towards STIs. The practice of Family planning is really high even though not all the methods are known nor used.

Meanwhile concerning the source of information on STIs/HIV/AIDS, nearly half of them said they gotten information on STIs from television and radio. Similar finding was reflected in some previous studies [29][30][31] where radio and television were the main source of information. They prefer to receive more information on this topic from their parents as they mentioned. This shows the importance of encouraging parents to educate their children on issues related to sexual and reproductive health which is still a taboo to many parents, family head and leaders. There is a need to intensify and promote important information related to sex through journals, radio, televisions, other media, not forgetting in meeting houses, churches and community based organisations.

The study showed a significant difference in the responses of the respondents based on their socio-demographic variables of level of education, age and the person who raised them up. Age was a significant factor in previous similar studies [32] [33]. WHO suggested that to prevent unwanted pregnancies and other sexual and reproductive health risks, women and girls require information including comprehensive sexuality education [34]. Family planning services are special needs and regular use of contraceptives by girls can be increased by offering information, social support and counselling, in addition to other health and medical care [35]. The authors further suggested that family planning services for adolescents should be provided in a manner that will increase teens' sense of comfort, self-confidence and reduce any fear that may discourage regular and effective contraceptive use (e.g. the use of condom for dual purpose: prevention of unwanted pregnancy and protection against STIs including HIV and AIDS).

This study noted that those that were within the age group 30-39 years were very significant, 9.94 times more likely to have a good knowledge on FP and 5.19 times more likely to practice family planning compared to those <20 years of age. Also those aged 40 years and above were 6.87 times more likely to practice FP compared to those <20 years. The level of education and the person with whom the respondents were raised were significant to the level of knowledge of FP.

CONCLUSION

Internally displaced Women and Girls of reproductive age in the Biyem-Assi Health District had poor knowledge on sexually transmitted diseases especially concerning Hepatitis B infection. They also had poor knowledge on family planning methods. However, they have good practices as concern FP even though many of them knew and mostly practiced the usage of condom. Sex, age and the person who raised the IDWG were the factors that influence knowledge, attitude and practices of reproductive health. There is a need for health education programs oriented towards STIs and FP methods which would enhance a change of attitudes towards Sexual and Reproductive Health of IDWGs to reduce and prevent maternal morbidity, mortality, and unintended pregnancy. It is therefore timely to improve our understanding of IDWGs in the BAHD and to focus

on the political will in providing the essential sexual and reproductive health services to IDWGs in the district.

Limitation

This study was only done in one health district of Yaoundé city, therefore, the findings may not be generalized.

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Authors' contributions

CTM conceived and designed the study. CTM, JSK, ACN and NT contributed in the analysis and interpretation of the data and in writing the original manuscript. NT, VV and ACZKB contributed in the intellectual content of the manuscript. All the authors read and approved the final manuscript.

Ethical Approval

The study was conducted in accordance with the ethical standards of the Faculty of Health Sciences of the University of Buea. Written informed consent to participate in this study was provided by the participants and participant's legal guardian/next of kin.

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Conflict of interest:

The authors declare that they have no conflict of interest.

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