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Individual and Household Factors Associated with the Utilization of Sexual and Reproductive Health Services of Internally Displaced Women in North-central Nigeria

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Abstract

Internally displaced persons (IDP) are increasing in Nigeria. Women of reproductive age are vulnerable to sexual and reproductive health (SRH) challenges. Little is known about the utilized SRH services, and their associated factors in North-central, Nigeria. Quantitative data was collected using a structured questionnaire. Data were analyzed and descriptive analysis and Logistic regression were performed at p-value < 0.05 to identify significant factors associated with SRH utilization. The finding revealed that the utilized SRH services at the IDP camps were family planning, antenatal care, and HIV testing/voluntary counseling, and 82.40% of the displaced women have used at least one SRH service, while antenatal care was the most utilized (74.60%). At the individual level, the age, marital status, and education of respondents are significantly associated with the utilization of SRH services. At the household level, spousal employment status, age, and education determine the utilization of SRH services. In conclusion, the overall utilization of SRH services among displaced women in the IDP camps is high. Individual and household factors are associated with SRH uptake. Community awareness and addressing the issue of empowerment among women in the IDP camps can help augment the issue of financial incapacity, hence encouraging utilization.

Keywords: *Internally Displaced Women, IDP Camps, North Central, Nigeria, Sexual and Reproductive Health, Utilization.*

Background

Globally, the uprising of insurgency and other forms of violence have led to the displacement of several people even in their home country. It is estimated that worldwide, there are about 38 million internally displaced persons (IDPs) [1]. In Africa, the issue of internal displacement is of remarkable concern. Although, individuals or sets of persons experience one form of hardship or another during conflict and displacement, the extremely affected folks are commonly women and girls [2]. A great part of Nigeria has been thrown into ruins since the emergence of the Boko Haram insurgency. Over 3.3 million persons have been made homeless in the past years, with the Northern region of the country recording about 2.5 million internally displaced persons [3]. In Nigeria, natural disasters, internal war, and increased communal violence have been identified as causes for the internal displacement of people [4]. Internal displacement aggravates the vulnerabilities of the sexual and reproductive health (SRH) of people, especially, girls and women. There

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is a strain to access services and supplies, damage to health facilities, increased risks of early and forced marriage, sexual exploitation, aggravated sexual abuse and unsafe abortion, early childbearing, etc. for women as a result of insurgency [5].

The Northern regions of the country being in a state of destitution as a result of insurgency has led into many challenges, one of which is internal displacement. In this displacement also lies the issue of sexual and reproductive health services available to women in the IDP camps. Particularly, the North-central region of the country has been recognized as underserved in the provision of SRH services and the utilization thereof [6]. More so, the observed in this North-central region is that the level of sexual risky behavior is poor among women, with many of them reporting to involve with multiple sexual partners and that an unprotected sexual intercourse. In addition, the level of utilization of SRH services among women in this region was also minimal making it difficult for women to have an improved sexual and reproductive health life [7].

Sexual and reproductive health (SRH) services remain a concerned health issue experienced by women at IDP camps. It is widely spread in IDP camps as a result of the devastated standard of living of the people in the camps, especially, IDP camps in the Northern Nigeria [1]. Sexual and reproductive health (SRH) is a broad concept that is inclusive of the ability of an individual to have a sex life that is satisfying and safe, reproductive ability, and the liberty of decisions concerning when, if, and how frequently to participate in reproductive activity [8]. Sexual and reproductive health (SRH) services are basic services such as pregnancy tests and care, family planning counseling, STI treatments, contraceptive services, etc. made available to people to maintain a healthy sexual and reproductive life [9]. Women and girls in IDP camps are exposed to diverse sexual health hazards such as contracting sexually transmitted diseases, unwanted pregnancies, rape, unsafe abortions, etc. Despite these risks, however, health facilities in the IDP camps are not efficient in addressing this issue, hence, limited access to appropriate SRH services by women [10]. Access to SRH services by women and girls in IDP camps has been challenging, and utilisation of these services is also difficult as a result of the quality of the services being offered [11]. Several factors could be linked to the deficiency in access to and the effective utilization of the services.

In past years, several interventions, policies, and programs implementation have been taken by the government, international bodies, non-governmental bodies, etc. to address the health challenges and needs of women at the IDP camps. Efforts have been in responding to the reproductive health needs of displaced persons by the United Nations Population Fund (UNFPA), United Nations Children's Emergency Fund (UNICEF), and WHO with aid from the United States Agency for International Development (USAID). This effort in the past year especially in the North-east part of Nigeria targeted about 1.1 million in three states of the region, addressing the SRH needs of displaced persons [4]. Similarly, the Northeastern region of Nigeria has also witnessed interventions from the Ministry of Women of Affairs (MOWA) regarding the SRH needs of women at the IDP camps [3]. In addition, agencies like Grassroots Initiative for Strengthening Community Resilience (GISCOR), Danish Refugee Council (DRC), United Nations High Commissioner for Refugees (UNHCR), Nigeria National Emergency Management Agency (NEMA), Borno State Emergency Management Agency (B-SEMA), Centre for Integrated Development and Research (CIDAR), etc. have also been instrument in contributing to the health needs of displaced persons and especially women in the Northeastern Nigeria IDP camps [5]. However, none of this concerted efforts by government and international bodies in addressing the SRH challenges of women have been directed towards the North-Central part of Nigeria, leaving women in this part of the country, and especially the IDP camps disadvantaged and destitute of SRH services. The vulnerability discovered about these women and their underprivileged state in respect of SRH services provision was crucial in conducting the assessment of SRH utilization services among

women of reproductive ages in the IDP camps of the North-central part of Nigeria.

Several studies have investigated the factors that are associated with the utilization of SRH services among women and young girls within the African context. These studies identified some individual and contextual factors that are associated with the utilization of SRH services such as age, marital status, wealth status of the family, religion, place of residence, occupation, partner's occupation, educational status, parents' level of education, partner's education, the belief that SRH services are not necessary, the inability to ascertain partner's desire for more children, poor family communication habit on SRH issues, socio-cultural norms, geographical accessibility, knowledge of and attitude to SRH services, and harmful cultural practices [12], [13], [14], [15], [16], [17], [18], [19], [20]. However, these studies focused on women of reproductive age and adolescent girls who are not displaced and considered only one aspect (either family planning, VCT (Voluntary Counseling and testing), or STI (Sexually Transmitted Infections) treatment) of the SRH services. While there have been studies on SRH utilization in other geo-political zones within the Northern regions [5], [8], [21], [22] with focus on knowledge of SRH and factors affecting utilization, there is a sparse of study on the utilization of SRH services among women of reproductive ages in the North-Central region, and especially, the IDP camps. Even, recent studies found in respect of the North-central region, [23], [24], [25] streamlined its focus on prevalence and pattern of contraceptive uptake. More explicitly, the insufficiency of studies, the under-sight of the situation of women of reproductive ages in the North-central part of Nigeria, and particularly the despicable state of IDP camps in terms of SRH services in the North-central part of the country triggered the quest for this study. The quest of this study was to unravel the factors (particularly, individual and household) contributing to the sexual reproductive health life of women in IDP camps of North-central Nigeria and their level of utilization of SRH services. Alongside this, the study also uncover the SRH services that are prevalent within the IDP Camps. In addition, the studies done only focus on understanding the factors affecting the utilization of SRH services and contraceptive uptake. This limitation in coverage and scope hence forms the strength of this study. This study is focused on women of reproductive ages in IDP camps of the North Central part of Nigeria where a chunk of IDP camps are located, and also on the exclusively determining components of SRH services.

This study therefore investigated individual and household factors that affect the utilization of SRH services of internally displaced women of reproductive age in the North Central part of Nigeria. The study also examined the prevalence of the overall and specific utilization of SRH services among internally displaced women of reproductive ages.

Methodology

Study Setting and Design

This study was conducted in the Federal Capital Territory and Benue in Nigeria, a country located in West Africa with a landmass of 923,768 km² and a population predominantly distributed across 36 states and the Federal Capital Territory (FCT). Nigeria shares borders with Benin, Chad, Cameroon, and Niger, while its southern coast borders the Atlantic Ocean.

Abuja, the capital city, and Benue were chosen as study locations due to their significant populations of Internally Displaced Persons (IDPs) in the Northern part of the country. Abuja, known for its rapid urban growth, boasts relatively better healthcare infrastructure. Also, Abuja is one of the major cities in Nigeria identified by MacArthur Foundation as harboring those who have been displaced by conflicts in the North [26]. On the other hand, Benue which recently suffers numerous attacks by herdsmen which has caused a significant number of locals and outsiders to be displaced violently and seek shelter in IDP camps [27]. More than half of the IDPs in Benue as at 2023 are females indicating a need to assess the SRH services at the IDP camps[28]. The study employed a cross-sectional research design integrating quantitative

methods to understand the factors influencing the utilization of sexual reproductive health services in the context of humanitarian crises affecting IDP camps in Abuja and Benue.

Study Population

The study population consisted of Internally Displaced Persons (IDPs) residing in IDP camps in Abuja and Benue State camps, Nigeria, focusing on women of reproductive age (15-49 years). In the Federal Capital Territory, there are at least four functioning IDP camps housing over 13,481 individuals, including the Lugbe, Area One, New Kuchingoro, and Kuje IDP camps. Benue State also hosts a significant number of Internally Displaced Persons (IDPs), with the IDP camps housing about 23, 280 individuals at Ortese and Daudu camps among others.

Inclusion and Exclusion Criterion

Women of the reproductive age group (15-49 years) residing in the IDP camps in Abuja and Benue State were included in the study. Females below the age of 15 and above the reproductive-age group (15-49 years) were excluded from the study due to potential limitations in providing detailed and relevant information.

Sample Size Determination, Sampling Technique and Procedure

The sample size was calculated using Leslie Fischer's formula, where **P** is the prevalence rate of women of reproductive age in IDP camp, which is set at 0.53 [29], a 95% confidence interval, 5% marginal error, and a 10% non-response rate was considered. Then, the final sample size with this assumption was 421. The sample size for both locations was a total of 842 sample size for the study. A multistage sampling technique was applied to achieve a representative and systematic selection of respondents. The study locations, Abuja and Benue were selected using a purposive sampling technique due the significant number of IDP camps available and the peculiarity of the camp as regards recent conflicts. The availability of comprehensive data from local authorities, NGOs, and government agencies also influence selecting these states. These locations were also chosen based on practical considerations such as convenience, availability, and the timeliness of data collection.

The selection of households within these camps was conducted systematically. A household listing was gathered, and every kt^h household was selected from this list. The value of k was determined by dividing the total number of households by the sample size, allowing for a random selection process. For the selection of individual eligible women between the ages of 15-49 years within each household, a simple random sampling was used. This approach ensured that every eligible woman had an equal chance of being included the study for better representativeness.

Study Variables

The outcome variable is the uptake of sexual and reproductive health services (SRH). Individual factors like Age, Marital status, Religion, ethnicity, employment status, IDP camp of residence, monthly income, duration of stay in IDP camp, level of education, household factors like age of spouse, employment status of spouse, income of spouse, educational level of spouse, number of children ever born, number of pregnancy ever had type of marriage were explanatory variables for utilization of SRH. The different SRH services utilized were also examined.

Data Collection Tools & Procedure

A primary data collection method was adopted for this study. The data collection for this study was done using an appropriate and structured questionnaire to elicit information from the respondents, this enabled a more detailed quantifiable measurement of the selected variables, which was identified based on an empirical review. Survey participants were women of reproductive ages 15-49 years. The instrument used for the data collection was a combination of well-structured questions designed to answer questions on the socio-demographic characteristics of respondents, household characteristics, and the SRH services in place and utilized by women of reproductive age. The questionnaire was pretested outside the study

location before the start of the actual data collection with a reliability score of 0.79.

Data Analysis and Presentation

After being coded and thoroughly examined for accuracy, the data was imported into Excel and then exported to SPSS (Statistical Product for Service Solution) version 25 software for further analysis. Data is arranged and displayed via charts, graphs, and tables. Using a cut-off $p<0.05$ in the bivariable analysis to identify candidate variables for multivariable logistic regression, bivariable and logistic regression were used to detect statistically significant variables. The multivariable logistic regression model's adjusted odds ratio with a 95% confidence interval is used to identify factors that meet the threshold of $p<0.05$ as statistically significant.

Result

Individual and Household Characteristics of Respondents

The majority of respondents fell within the age group of 15–34 years combined (67.7%). A significant proportion of respondents were married (85.9%), followed by singles (9.3%), with the remaining 4.9% reporting being separated. In terms of religious affiliation, 55% of respondents identified as Christians, while 45% identified as Muslims. Regarding ethnicity, the vast majority (99.2%) of respondents were Hausa, with 0.8% belonging to other ethnic groups. Employment status varied among respondents, with 52.4% being self-employed, 43.8% unemployed, and 3.8% reporting being employed. When considering monthly income, slightly over half of the respondents (50.5%) earned less than #35,000, while 46.7% reported no income, and 2.9% earned #35,000 or more monthly. Lastly, more than half of them were self-employed (52.4%), while a significant number of them were unemployed (43.8%).

The results indicate that 39.3% of husbands were aged 37–47, with 29.2% falling within the 26–36 age group, 11.5% above 58 years, and 3.9% aged 15–25 years. Regarding employment status, a majority (63.2%) of husbands were self-employed, followed by 26.6% unemployed and 10.2% employed. In terms of monthly income, 64.6% of husbands earned less than $35,000, while 23% reported no income, and 12.4% earned $35,000 or more. Education levels varied among spouses, with 38.7% having secondary education, 33.1% having no formal education, 18.3% with primary education, and 10% with tertiary education. More than half of households (54.5%) reported having more than three children, while 32.1% reported 1-3 children, and 13.4% reported no children. Additionally, 60% of households had experienced more than three pregnancies, 29.5% had experienced 1-3 pregnancies, and 10.6% reported no pregnancies. In terms of marital status, 56.5% practiced monogamous marriage, 33.5% practiced polygamous marriage, and 10% were not married (Table 1).

Utilization of SRH Services among the Respondents

The majority of the respondents reported that they've utilized at least one of the available sexual reproductive health services (82.4%). Of those reported to have utilized these services, 74.6% utilized antenatal care services, 69.6% utilized postnatal care services 68.7% HIV testing with voluntary counseling services, 56.6% utilized family planning services, and the remaining 32.6% utilized STI treatment services **(Fig.1 &2).**

Individual Factors Associated with Utilization of SRH Services and Specific SRH Services

About 41% of respondents residing in Abuja use family planning, while 72.5% of respondents residing in Benue utilize family planning. There was a significant difference in the utilization of family planning between women residing in the IDP camp in Abuja and Benue ($X^2=70.045$, $p<0.001$). As regards age, Respondents who were between the age of 40-44 had a higher utilization of family planning compared to 15-19 (41%), 20-24 years (52.5%), 25-29 years (64.9%), 30-34 years (58.3%), 35-39 years (53.7%), and 45-49 years (40.6%). Also, there was a

significant association between the age of the respondents and utilization of family planning in the IDP camps (X^2=18.499, p<0.005). The majority of respondents who were separated utilized family planning (77.1%), 57.2% of those who were married utilized family planning, while 27% of those who were single had the lowest utilization rate (27%). Seventy percent of the respondents who were employed utilized family planning, 52.4% of those who were self-employed, and 61.1% of those who were unemployed utilized family planning. Marital status and employment status were also significantly associated with family planning uptake (X^2=81.912, p<0.001) and (X^2=7.273, p=0.026) respectively. A higher percentage of those who resided in Abuja camps utilized antenatal care compared to 68.7% of those who lived in Benue camps. Respondents who were between 15-19 years had a lower portion of antenatal care utilization compared to the higher proportion of utilization among the older age group except for the terminal age group 45-59 years (53.1%). Looking at their marital status, the majority of those who were married (78.9%) utilized antenatal care compared to those who were single (13.7%). Majority of the respondents who practiced Islam compared to 68.7% who practiced Christianity. Antenatal care was another utilized SRH service, camp of residence, age, marital status, and religion were all significantly associated with the uptake (X^2=12.806, p<0.001; X^2=58.087, p<0.001; X^2=70.112, p<0.001; and X^2=15.737, p<0.001 respectively). Lastly, respondents who lived in the Benue camps utilized HIV testing/counselling more (74.5%0 compared to 63% in the Abuja camps. Respondents in the younger age group utilized HIV testing/counseling more (80.3%) compared to other age groups with those in the 20-24 years age group having the lowest proportion 55.7%. The majority of the Christians' HIV testing/counseling service utilization was significantly associated with respondents camp of residence, age, and religion (X^2=10.594, p=0.001; X^2=19.164, p=0.004; and X^2=11.730, p=0.001 respectively). **(Table 2).**

Household Factors Associated with Utilization of SRH Services and Specific SRH Services

The majority of respondents whose husbands were unemployed utilized family planning, compared to 53.1% of those whose husbands were employed. Also, respondents whose husbands earned no income utilized family planning, compared to 50.1% of respondents whose husbands earned <#35000. Respondents who had between 1-3 children utilized family planning compared to 26.2% of those who had no children. Similar to the number of children, respondents who had between 1-3 children utilized family planning compared to 25% of those who never had any pregnancy. Respondents who owned a monogamous family utilized family planning more (59.5%). Husband's employment status, husband's monthly income, the number of children ever had, and number of pregnancies ever had were significantly associated with the utilization of family planning (X^2=22.977, p<0.001; X^2=35.627, p<0.001; X^2=27.403, p<0.001; and X^2=20.107, p<0.001 and X^2=10.754, p=0.005 respectively). As regards husband's age, the majority of respondents across the age groups had higher utilization of antenatal care compared to a lower proportion (54.8%). Respondents whose husbands had tertiary education utilized antenatal care more (87.5%), compared to 69.4% utilization of respondents whose husbands had no formal education. Respondents who had 1-3 children utilized antenatal care (81.7%) more than 37.7% of those who had no child. Similar to the number of pregnancies ever had, respondents who have had 1-3 pregnancies utilized antenatal care more compared to 10% of those who never had any pregnancies. Lastly, the majority of respondents whose husbands were unemployed (77.2%) utilized HIV testing/counselling more compared to 54.7% whose husbands were employed. Also, respondents who had no income utilized HIV testing/counselling more compared to 59.5% of those whose husbands earned above #35000. Respondent's husband's age, husband's level of education, number of children ever had, and number of pregnancies ever had were significantly associated with the uptake of antenatal

care (X^2=39.753, p<0.001; X^2=14.310, p=0.003; X^2=44.186, p<0.001; and X^2=84.338, p<0.001 respectively). As regards HIV testing/counselling, employment status, and husband's monthly income (X^2=11.351, p=0.003; and X^2=13.934, p=0.001; respectively) **Table 3.**

Out of the total of 8 variables identified as individual factors associated with utilization of SRH in bivariate analysis at p<0.05, only 3 of the individual characteristics were significantly associated with the utilization of SRH services at the IDPs after controlling for confounders. Those factors are age, marital status, and educational level. Also, at the household level, out of the 5 variables that were significant at the bivariate level (p-value <0.05) only the employment status, and educational level of their spouses were significantly associated with the uptake of SRH services at the IDPs **(Table 4 &5).**

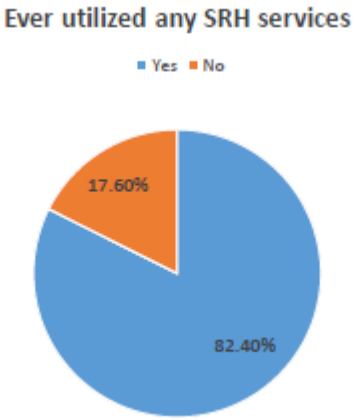

Figure 1. Utilization of Sexual Reproductive Health Services

Figure 2. Available Sexual Reproductive Health Services Utilized

Table 1. Socio-demographic and Household Characteristics of the Respondent in the Internally Displaced Camps

Variable	Frequency(n=842)	Percentage
Socio-demographic characteristics		
Study Location		
Abuja	421	50.0
Benue	421	50.0
Age group		
15-19 years	96	11.4
20-24 years	152	18.1
25-29 years	162	19.2

30-34 years	160	19
35-39 years	128	15.2
40-44 years	99	11.8
45-49 years	45	5.3
Marital Status		
Married	723	85.9
Single	78	9.3
Separated	41	4.9
Religion		
Christianity	463	55.0
Islam	379	45.0
Ethnicity		
Hausa	835	99.2
Non-Hausa	7	.8
Employment status		
Employed	32	3.8
Self employed	441	52.4
Unemployed	369	43.8
Monthly income		
No income	393	46.7
<35, 000	425	50.5
>/= 35,000	24	2.9
Level of Education		
No formal education	446	53

Primary	216	25.7
Secondary	168	20
Tertiary	12	1.4
Household Factors of Women in the Internally Displaced Camp		
Husband's age		
15-25 years	28	3.9
26-36 years	211	29.2
37- 47 years	284	39.3
48- 58 years	117	16.2
> 58 years	83	11.5
Husband's employment status		
Employed	74	10.2
Self-employed	457	63.2
Unemployed	192	26.6
Husband's monthly income		
No income	166	23.0
<35000	467	64.6
>/=35000	90	12.4
Spousal level of education		
No formal education	239	33.1
Primary	132	18.3
Secondary	280	38.7
Tertiary	72	10.0
The number of children ever had		

No child	113	13.4
1-3	270	32.1
>3	459	54.5
The number of pregnancies ever had		
No pregnancy	89	10.6
1-3	248	29.5
>3	505	60.0
Type of marriage		
Monogamous	476	56.5
Polygamous	282	33.5

Table 2. Association between Individual Factors and Family Planning, Antenatal Care, HIV Testing, and Voluntary Counseling Services

Individual factors	Family planning		Statistics	Antenatal care		Statistics	HIV testing/counseling		Statistics
	No	Yes		No	Yes		No	Yes	
Camp of residence									
Abuja	206(59)	143(41)	X^2=70.045	68(19.5)	281(80.5)	X^2=12.806	129(37)	220(63)	X^2=10.594
Benue	95(27.5)	250(72.5)	P<0.001	108(31.3)	237(68.7)	P<0.001	88(25.5)	257(74.5)	P=0.001
Age group									
15-19 years	36(59)	25(41)	X^2=18.499	31(50.8)	30(49.2)	X^2=58.087	12(19.7)	49(80.3)	X^2=19.164
20-24 years	58(47.5)	64(52.5)	P=0.005	25(20.5)	97(79.5)	P<0.001	54(44.3)	68(55.7)	P=0.004
25-29 years	52(35.1)	96(64.9)		19(12.8)	129(87.2)		49(33.1)	99(66.9)	
30-34 years	60(41.7)	84(58.3)		22(15.3)	122(84.7)		38(26.4)	106(73.6)	
35-39 years	50(46.3)	58(53.7)		33(30.6)	75(69.4)		36(33.3)	72(66.7)	
40-44 years	26(32.9)	53(67.1)		31(39.2)	48(60.8)		17(21.5)	62(78.5)	

45-49 years	19(59.4)	13(40.6)		15(46.9)	17(53.1)				
Marital Status									
Married	266(42.8)	356(57.2)	X^2=19.840	131(21.1)	491(78.9)	X^2=70.112	199(32)	423(68)	X^2=1.542
Single	27(73)	10(27)	P<0.001	32(86.5)	5(13.5)	P<0.001	9(24.3)	28(75.7)	P=0.463
Separated	8(22.9)	27(77.1)		13(37.1)	22(62.9)		9(25.7)	26(74.3)	
Religion									
Christianity	106(27.9)	274(72.1)	X^2=81.912	119(31.3)	261(68.7)	X^2=15.737	98(25.8)	282(74.2)	X^2=11.730
Islam	195(62.1)	119(37.9)	P<0.001	57(18.2)	257(81.8)	P<0.001	119(37.9)	195(62.1)	P=0.001
Ethnicity									
Hausa	300(43.6)	388(56.4)	X^2=0.832	173(25.1)	515(74.9)	X^2=0850	216(31.4)	472(68.6)	X^2=0.111
Non-Hausa	1(16.7)	5(83.3)	P=0.362	3(50)	3(50)	P=0.356	1(16.7)	5(83.3)	P=0.739
Employment status									
Employed	8(29.6)	19(70.4)	X^2=7.273	5(18.5)	22(81.5)	X^2=3.293	5(18.5	22(81.5)	X^2=2.496
Self employed	182(47.6)	200(52.4)	P=0.026	89(23.3)	293(76.7)	P=0.193	119(31.2)	263(68.8)	P=0.287
Unemployed	111(38.9)	174(61.1)		82(28.8)	203(71.2)		93(32.6)	192(67.4)	
Monthly income									
No income	118(39.5)	181(60.5)	X^2=2.359	87(29.1)	212(70.9)	X^2=4.919	89(29.8)	210(70.2)	X^2=0.716
<35, 000	175(46.9)	198(53.1)	P=0.501	82(22)	291(78)	P=0.085	120(32.2)	253(67.8)	P=0.699
>/= 35,000	8(36.4)	14(63.6)		7(31.8)	15(68.2)		8(36.4)	14(63.6)	
Level of Education									
No formal education	151(41.1)	216(58.9)	X^2=2.359	99(27)	268(73)	X^2=2.527	107(29.2)	260(70.8)	X^2=3.109
Primary	83(43.9)	106(56.1)	P=0.501	41(21.7)	148(78.3)	0.470	63(33.3)	126(66.7)	P=0.375
Secondary	64(48.9)	67(51.1)		35(26.7)	96(73.3)		46(35.1)	85(64.9)	
Tertiary	3(42.9)	4(57.1)		1(14.3)	6(85.7)		1(14.3)	6(85.7)	

Table 3. Association between Household Factors and Family Planning, Antenatal Care, and HIV Testing, and Voluntary Counseling Services

Individual factors	Family planning		Statistics	Antenatal care		Statistics	HIV testing/counseling		Statistics
	No	Yes		No	Yes		No	Yes	
Husband's age									
15-25 years	10(40)	15(60)	X^2=3.837	4(16)	21(84)	X^2=39.753	6(24)	19(76)	X^2=1.786
26-36 years	67(37.4)	112(62.6)	P=0.429	26(14.5)	153(85.5)	P<0.001	61(34.1)	118(65.9)	P=0.775
37- 47 years	110(43.1)	145(56.9)		38(14.9)	217(85.1)		82(32.2)	173(67.8)	
48- 58 years	46(47.4)	51(52.6)		34(35.1)	63(64.9)		32(33)	65(67)	
> 58 years	30(48.4)	32(51.6)		28(45.2)	34(54.8)		17(27.4)	45(72.6)	
Husband's employment status									
Employed	30(46.9)	34(53.1)	X^2=22.977	12(18.8)	52(81.2)	X^2=0.794	29(45.3)	35(54.7)	X^2=11.351
Self-employed	197(48.2)	21(51.8)	P<0.001	84(20.5)	325(79.5)	P=0.672	136(33.3)	273(66.7)	P=0.003
Unemployed	39(26.2)	110(73.8)		35(23.5)	114(76.5)		34(22.8)	115(77.2)	
Husband's monthly income									
No income	34(22.5)	117(77.5)	X^2=35.627	30(19.9)	121(80.1)	X^2=4.321	31(20.5)	120(79.5)	X^2=13.934
<35000	194(49.9)	195(50.1)	P<0.001	90(23.1)	299(76.9)	P=0.115	143(36.8)	246(63.2)	P=0.001
>/=35000	38(46.3)	44(53.7)		11(13.4)	71(86.6)		25(30.5)	57(69.5)	
Spousal level of education									
No formal education	71(39.4)	109(60.6)	X^2=5.116	55(30.6)	125(69.4)	X^2=14.310	63(35)	117(65)	X^2=0.583
Primary	59(50.4)	58(49.6)	P=0.164	21(17.9)	96(82.1)	P=0.003	32(27.4)	85(72.6)	P=0.586
Secondary	105(40.2)	156(59.8)		47(18)	214(82)		84(32.2)	177(67.8)	
Tertiary	31(48.4)	33(51.6)		8(12.5)	56(87.5)		20(31.2)	44(68.8)	

The number of children ever had									
No child	45(73.8)	16(26.2)	X^2=27.403	38(62.3)	23(37.7)	X^2=44.186	20(32.3)	41(67.2)	X^2=0.196
1-3	89(36.9)	152(63.1)	P<0.001	44(18.3)	197(81.7)	P<0.001	77(32)	164(68)	P=0.907
>3	167(42.6)	225(57.4)		94(24)	298(76)		120(30.6)	272(69.4)	
The number of pregnancies ever had									
No pregnancy	30(75)	10(25)	X^2=20.107	36(90)	4(10)	X^2=84.338	8(20)	32(80)	X^2=2.793
1-3	82(37.1)	139(62.9)	P<0.001	38(17.2)	183(82.8)	P<0.001	69(31.2)	152(68.8)	P=0.247
>3	189(43.6)	244(56.4)		102(23.6)	331(76.4)		140(32.3)	293(67.7)	
Type of marriage									
Monogamous	167(40.6)	244(59.4)	X^2=10.754	77(18.7)	334(81.3)	X^2=63.250	138(33.6)	273(66.4)	X^2=3.222
Polygamous	107(44)	136(56)	P=0.005	67(27.6)	176(72.4)	P<0.001	70(28.8)	173(71.2)	P=0.200
Not married	27(67.5)	13(32.5)		32(80)	8(20)		9(22.5)	31(77.5)	

Table 4. Regression Table that shows the Individual Factors Associated with the Utilization of Sexual Reproductive Health Services

Variable	**Utilization of SRH**		**AOR**	**COR**
	Yes	**No**		
Age group				
15-19 years	61(63.5)	35(36.5)	2.185(0.825-5.789)	0.708(0.329-1.525)
20-24 years	122(80.3)	30(19.7)	1.898(0.845-4.267)	1.652(0.774-3.527)
25-29 years	148(91.4)	14(8.6)	3.493(1.433-8.512)*	4.295(1.843-10.009)*
30-34 years	144(90%)	16(10%)	2.951(1.251-6.960)*	3.656(1.601-8.352)*
35-39 years	108(84.4)	20(15.6)	1.941(0.845-4.459)	2.194(0.984-4.892)
40-44 years	79(79.8)	20(20.2)	1.448(0.621-3.375)	1.605(0.714-3.608)
45-49 years	32(71.1)	13(28.95)	1.000	1.000
Marital status				

Married	622(86)	101(14)	1.153(0.451-2.952)	1.056(0.433-2.574)
Single	37(47.4)	41(52.6)	0.157(0.048-0.512)*	0.155(0.058-0.409)*
Separated	35(85.4)	6(14.6)	1.000	1.000
Employment status				
Employed	27(84.4)	5(15.6)	0.772(0.249-2.392)	1.592(0.594-4.261)
Self-employed	382(86.6)	59(13.4)	0.559(0.265-1.181)	1.908(1.323-2.753)*
Unemployed	285(77.2)	84(22.8)	1.000	1.000
Monthly income				
No income	299(76.1)	94(23.9)	0.207(0.039-1.102)	0.289(0.067-1.253)
<35000	373(87.8)	52(12.2)	0.664(0.142-3.113)	0.652(0.149-2.854)
>/= 35000	22(91.7)	2(8.3)	1.000	1.000
Educational level				
No formal education	367(82.3)	79(17.7)	4.165(1.158-14.976)*	3.318(1.027-10.725)*
Primary	189(87.5)	27(12.5)	7.135(1.897-26.839)*	5.000(1.481-16.875)*
Secondary	131(78)	37(22)	4.409(1.177-16.517)*	2.529(0.758-8.432)*
Tertiary	7(58.3)	5(41.7)	1.000	1.000

Table 5. Regression Table that shows the Household Factors Associated with the Utilization of Sexual Reproductive Health Services

Variable	**Utilization of SRH**		**AOR**	**COR**
	Yes	**No**		
Husband's age				
15-25 years	25(89.3)	3(10.7)	3.962(0.714-21.967)	2.823(0.773-10.313)
26-36 years	179(87.3)	26(12.7)	1.178(0.468-2.965)	2.332(1.225-4.438)*
37- 47 years	255(89.8)	29(10.2)	1.306(0.574-2.968)	2.978(1.592-5.572)*
48- 58 years	97(82.9)	20(17.1)	0.807(0.345-1.885)	1.643(0.824-3.276)

> 58 years	62(74.7)	21(25.3)	1.000	1.000
Husband's employment status				
Employed	64(86.5)	10(13.5)	4.137(1.482-11.549)*	1.847(0.874-3.902)
Self-employed	409(89.5)	48(10.5)	6.474(3.006-13.943)*	2.459(1.564-3.865)*
Unemployed	149(77.6)	43(22.4)	1.000	1.000
Husband's monthly income				
No income	151(91)	15(9)	7.893(2.352-26.482)*	0.982(0.400-2.414)
<35000	389(83.3)	78(16.7)	0.600(0.258-1.398)	0.487(0.226-1.046)
>/=35000	82(91.1)	8(8.9)	1.000	1.000
Spouse's level of education				
No formal education	180975.3)	59(24.7)	0.409(0.166-1.007)	0.381(0.173-0.842)*
Primary	117(88.6)	159(11.4)	0.886(0.322-2.437)	0.975(0.392-2.424)
Secondary	261(93.2)	19(6.8)	1.873(0.722-4.858)	1.717(0.719-4.099)
Tertiary	64(88.9)	8(11.1)	1.000	1.000
The number of children ever had				
No child	61(54)	52(46)	0.453(0.090-2.266)	0.330(0.171-0.637)*
1-3	241(89.3)	29(10.7)	0.781(0.288-2.118)	1.511(0.916-2.494)
>3	392(85.4)	67(14.6)	1.000	1.000
Number of pregnancies ever had				
No pregnancy	40(44.9)	49(55.1)	0.128(0.021-0.773)	0.161(0.071-0.362)
1-3	221(89.1)	27(10.9)	1.066(0.367-3.096)	1.445(0.867-2.410)
>3	433(85.7)	72(14.3)	1.000	1.000
Type of marriage				
Monogamous	411(86.3)	65(13.7)	4.744(0.066-338.532)	6.387(0.394-103.439)

Polygamous	243(86.2)	39(13.8)	7.278(0.099-533.079)	5.921(0.363-96.694)
Not married	40(47.6)	44(52.4)	1.000	1.000

Discussion

This study revealed the utilization level, different sexual reproductive health services used, and the factors associated with their utilization. Eight-hundred and forty-two women of reproductive health living in IDP camps across Abuja and Benue state were recruited for this study. About two-thirds of the respondents were within the age range of 15-34 years, indicating that the majority of the respondents at the IDP camps were young fellows. In their respective clusters, respondents who were between ages 25 and 29 years had higher representation (19.2%) emphasizing the youthful profile of these communities, similar to a study by Pierce (2019) [30] 52.5% (more than half of the respondents) were between 25-29 years old. This study revealed that the majority of the respondents were married (85.9%) similar to a study by [31] With 68% of the refugee women married. Also in the same study, the majority (92%) of the refugee women attained primary education, and 64% were employed compared to this current study which had a higher proportion of the respondents with no formal education and 52.4% were self-employed instead. These differences may be due to the recalcitrant attitude to education of people in Northern Nigeria and their enthusiasm for business instead. The majority of the women in the IDP camps were Christians, according to an analysis of the respondents' religious beliefs. The findings of the study by Odo et al (2020) conducted at the IDP camp in Borno state [1], where most of the participants were Muslims, are at odds with this report. This discrepancy could be explained by the demographic makeup of the camps, since Benue and Abuja, the study's settings, are not known to be Muslim-majority states, unlike Borno state.

Household Factors

Respondents whose husbands had no formal education were quite significant in number (33.1%) compared to the study by [30], which had only 1.67% of the respondent's husbands with no education. This disparity may be due to the availability and accessibility of education and the economy in Nigeria. A higher proportion of the respondent's husbands were between the age of 37-47 years which shows that most of the young women were married to older partners which is commonly the practice in the northern part of Nigeria. Another plausible reason is the ideology of men getting married to younger women and vice versa in most African cultures. [32]. This is somewhat similar to a study by [33] Which showed that a higher proportion (37.6%) of the partners were between the age of 30-39 years.

SRH Services Utilized

This study shows that the majority (84.2%) have ever utilized SRH services. This is in contrast to a study conducted among female adolescent refugees in Uganda which shows that just 30% of the respondents have ever visited the health centre for SRH services with most visits being for HIV testing and seeking medical aid for menstrual problems. The disparity in our studies may be due to geographic factors and the target population of the studies. The female adolescents were reported in the same study to shy away from expressing their sexuality which may have influenced the SRH services utilization [34]. Another study conducted in northeastern Nigeria is not in tandem with the high utilization rate found in our study; the SRH services were significantly low due to their knowledge and perception of SRH services. It may mean that our study participants may have good knowledge of SRH services influenced by a series of interventions done in the past [5]. About 56.6% of the IDP women

utilized Family planning services compared to 72% of a study by Sampson et al., (2023) who did not utilize family planning services. This may be due to the study population involved; only one IDP camp was explored in their study [35]. Similar to a study by Pierce et al (2019) which had a higher proportion of refugees utilizing IUDs; a family planning method is the modern method of contraception [30]. The use of contraceptives was only 6.2% in the most recent Demographic and Health Survey (DHS) data from Borno state which is quite different from this study [5]. This may be due to the socioeconomic differences and the interventions carried out over the years. The higher utilization of Family planning may be due to the availability and access to sexual reproductive services available at the camps. Prenatal (74.6%) care was optimally utilized by the women which is similar to a study by Ene and Ejibo (2023) [36]. This revealed that most women at the prenatal stage utilize maternal healthcare services. Other SRH services utilized are HIV testing and voluntary counselling (68.7%). This may be due to the implication of HIV testing as an integral part of antenatal care for pregnant women. Since most of the women were married and had had at least one pregnancy, it is expected that they must have utilized HIV testing as a sexual and reproductive health service [37].

This study is similar to a study that revealed parity as a significant factor for the utilization of family planning, the number of pregnancies and number of children ever had were significantly associated with family planning usage. [38], [39], [40]. Given that the majority of study participants utilized family planning techniques from the three SRH services, one explanation could be that mothers who had more children were married, had reached the intended family size, or wished to have fewer children overall compared to the younger age group which don't see a necessity as they are still expectant for more children. Monthly income as a measure of financial stability was also significantly associated with the uptake of family planning which is in sync with the study by [41]. In most cases, when women are to utilize Family planning services they pay some amount of money which some individuals might not be able to afford due to their poverty level. [42]. Age was also a significant factor associated with the use of family planning as shown in a study by [39]. This may be due to their awareness of the poor outcome of birth at an older age compared to when you are younger age of reproductive age(at least 25 years) [43].

As regards antenatal care, marital status, being educated, and having an educated partner were significantly associated with its utilization. This is similar to a study by [40] That shows that being married, and having an educational partner are factors that influence uptake of antenatal care. Respondents who were single or separated may not need antenatal care as they are less likely to get pregnant compared to respondents who were married and currently living with their husbands. Educational status and spouse's educational status a significant measures of awareness of certain basic health needs like antenatal care [40], [44].

IDP camp of residence was a significant factor associated with the uptake of HIV testing and counselling services. This may be due to the availability of the services in the camps across the two states.

Individual Factors Influencing Utilization of SRH Services

A study by [45] identified some social-ecological barriers to realizing optimal utilization of SRH and accessing SRH services, including intrapersonal factor (e.g., low literacy) levels which is similar to this study which shows that the educational level of women of reproductive age that were internally displaced are associated with the utilization of SRH services. Respondents who had no formal education were 4.165 times more likely not to utilize SRH services compared to those who had tertiary education, those who had primary education were five times more likely, and those who had secondary education were 7.135 times more likely not to utilize available SRH services compared to those who had tertiary education. This indicates that a higher educational level helps us to be well informed about our health, sexual reproductive health inclusive [44], [46], [47]. Averting early marriage and gender

discrimination may help influence getting higher education in turn increasing SRH services utilization [48]. As regards age, women who were between 25-29 years were 3.493 times more likely not to utilize SRH services compared to the older age group (45-49 years) same with those who were between 30-34 years with 2.951 likelihood which is in sync with the study by [33] that showed that older women were more likely to utilize modern contraceptives; a form of SRH service. This is in contrast to a study by [31] that revealed that the younger age group was more willing to seek care compared to the older age group. Women living in the IDP camp who were single were 0.157 times less likely not to utilize SRH services compared to those who were separated. This is odd with a study by [31] and [33] that showed that women refugees who were single were more likely to seek care. Additionally, some of the older, married women are more likely to have "experienced the health system" previously and to have been upset by Health Care Providers' racism, implicit bias, and stereotyping as well as their ignorance of their cultural differences [49]. This current study shows that women's employment status is not a significant factor associated with contributing to the utilization of SRH which is not in sync with a study by [33] that showed unemployment as a factor of SRH utilization. This may be due to the sole decision-making process of husbands in the northern state in doing things. Hence, why employment status does not significantly influence the utilization of sexual and reproductive health services [50], [51].

Household Factors Influencing Utilization of SRH Services

As regards, partner's employment status as a factor that influences utilization of SRH service, respondents who were employed were 4.137 times more likely not to utilize SRH services compared to those who were unemployed and the same with those who were self-employed who were 6.474 times more likely not to utilize SRH services. This is in contrast to a study conducted in southern African countries that showed that partners who had skilled or unskilled manuals were 1.25 and 1.45 times more likely to utilize SRH services compared to those who were unemployed. [20]. This disparity could be attributed to the contextual differences between the study populations in Southern African countries and among the women in IDP camps in Nigeria. Another salient reason may be due to the involvement of husbands in the uptake of SRH services. So, husbands who were employed or self-employed may not be available for decision-making as they would have gone about their day-to-day businesses/activities. Respondents whose husbands had no income were 7.893 times more likely not to utilize SRH compared to those who earned above #35000. Poverty and scarce financial resources are important factors. Financial obstacles may prevent women whose husbands are unemployed from receiving SRH services. The expenditures of these services sometimes include those for prenatal care, contraception, consultations, and deliveries.

One of the strengths of this study is that it employed a primary method of data collection which affords a detailed and inclusive curation of data from the internally displaced women and gives a feel of the state of things in the camps. Primary data offers more up-to-date information about a population compared to the secondary data, hence, a level of timeliness of the report of this study. More so, the study was able to give an overview of the state of women in IDP camps in the North central part of Nigeria, a case which has not been in the past years. This study conducted, it has opened up a path of exploration for researchers and scholars to delve into examining and investigating women of reproductive ages in IDP camps in the central part of Nigeria. In addition, this study did a comprehensive investigation of the components of the SRH services, which have not been for studies that have worked on this subject matter. The study was able to examine individual and contextual factors affecting the whole components of SRH services, and this makes this study a comprehensive and all-inclusive piece.

Limitations of the Study

Considering the limitations of the study. One of the limitations is the acuteness of studies on SRH

services in IDP camps and the North Central region of Nigeria. The dearth of literature to examine the concept of SRH services within the context of North Central was one of the major challenges experienced in writing this paper. Due to the sensitive nature of certain questions engaged in the study, the accuracy of some information might be limited. This also could add up to another limitation of the study. Additionally, the study was also limited in terms of coverage. This study was only able to cover two states (Abuja and Benue) in the North Central region of Nigeria, and also a few proportions out of the thousands of women living in these camps. This limitation is a result of funding and resources needed to cover a large sample and study location. The quality and availability of SRH services vary widely between different IDP camps and regions which the study does not account for. The causal relationship of SRH services is limited due to the cross-sectional study design employed. Lastly, participants may not have accurately recalled their experiences or they might have provided responses they perceived as socially acceptable.

Conclusion

The findings of the study showed that a large proportion of the women in the IDP camps were young women between the ages of 15-34 and had utilized at least one of the SRH services available at the camp. SRH services available at the IDP camps are family planning, antenatal care, HIV testing, and voluntary counselling. The most utilized SRH services among the women was antenatal care and the least engaged by the women was family planning. Our study identified that the individual factors that affect the overall utilization of SRH services among women at the IDP camps are age, marital status, employment status, and educational level. The household factors associated are the partner's age, partner's employment status, partner's level of education, and parity. More so, individual factors associated with family planning and antenatal care services are camp of residence, age, marital status, and religion, while HIV testing and voluntary counselling services were affected by the camp of residence, age of respondents, and religion of respondents. Household factors associated with family planning services are the partner's employment status, the partner's income, parity, and marriage type. Antenatal care services were associated with the partner's age, partner's level of education, parity, and type of marriage. HIV testing/voluntary counselling services were majorly affected by the partner's employment status and partner's income.

Recommendations

The study recommends that future researchers investigate the understanding of the SRH needs of women in this study location. More so, recommendations are for future researchers to explore other IDP camps in other states of the North Central region and investigate the prevalence of SRH needs and services among women. In recent times, there has been technological evolvement in the health sector, with the emergence of telemedicine and telehealth. These platforms and other mobile health apps offer a range of services that include SRH services provision, which can be employed by women. Hence, recommendations are that these platforms should be promoted and advanced by the government, stakeholders, and health professionals for use among women. More so, we are in the era of remote monitoring and self-testing, where individuals can remotely assess and self-test their health needs through the guidance of a health professional. With the emergence of self-monitoring devices and self-testing kits as innovative solutions to health services, there is bound to be an increased accessibility of SRH services to women in unreached places. It is therefore recommended that advocacies should be made to encourage the use of these technologies among women. In addition, policymakers, stakeholders, and government, efforts should be made to give attention to the IDP camps in the North Central as it seems as though they are sidelined in the concerted efforts made to attend to the health needs of women in IDP camps.

Women of the younger age group and single ladies were reported to have lower utilization of SRH services. Specialized you-friendly centres and

outreach programs may be established to suit the needs of this category. Initiatives such as mobile health units and peer education programs may be developed to ensure SRH services are more approachable.

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Authors' Contribution

KAO conceptualized and owned this study JO supervised the entire research, OFF has made substantial contributions to the analysis and interpretation of data, TFR read and edited the work, and KAO, OFF, JO, and TFR reviewed and edited. All authors have approved the submitted version of the manuscript and are accountable for their contributions and the accuracy of the work.

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Availability of Data and Materials

The data sets used for the analysis of this study are available from the corresponding author upon reasonable request.

Ethics Approval and Consent to Participate

Ethical clearance was obtained from the Federal Capital Territory Health Research Ethics Committee (Approval no: FHREC/2023/01/231/13-11-23). An ethical clearance was also obtained from the National Health Research Ethics Committee of Nigeria (NHREC) with approval no: NHREC/01/01/2007. Written informed consent was obtained from the participants who can read and write while verbal consent was taken from those who cannot read and write. NHREC approved the consent form. Study participant's confidentiality and privacy were ensured throughout the study.

Consent for Publication

Not applicable

Competing Interests

All the authors declare that they have no competing interests.

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