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Assessment of Contraceptive Method Mix among Women of Reproductive Age in Secondary Public Health Care Facilities of Zamfara State

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Abstract
The study was conducted to find out the number of women that received contraceptive method mix in family planning clinics of secondary public health care facilities of Zamfara state. A retrospective research design was employed for the study. Two sampling stages were used to select the facilities and the service delivery registers respectively. Multi-stage sampling technique was used to select seven secondary health facilities out of the 22 available public hospitals in the state and total enumerative sampling was used to scrutinized service delivery registers for availability of contraceptive method mix in the last six months prior to survey. Findings revealed that 3994(%) clients were offered various contraceptive method mix in which the injectable was the commonest method accounting for 50% of these clients followed closely by the implant with 34.7%. In conclusion, there is need for adequate provision of various forms of contraceptives to enable informed choices by women.

Keywords: *Contraceptive, Family Planning, Implant, Injectables, Method Mix*

Introduction

The distribution of contraceptive use across methods provides an evidenced that women or couples have some degree of freedom of choice to select a method that suits them best and change methods as their circumstances and needs change. However, there is often a concern at the international level when a single method predominates in a country, suggesting some systematic limitation of contraceptive choice, belief and norms, religious factors, the value placed on modesty, insufficiency of alternative methods or provider bias (Bertrand, Rice, Sullivan, & Shelton, 2010).

Family planning clients are offered a range of contraceptive methods. "Method mix" refers to the distribution of contraceptive methods used by a population (i.e., the percentage that uses each method), (Bertrand, Rice, Sullivan, & Shelton, 2010). Method mix provides information on the relative level of use of different contraceptive methods. There is no "optimal" or "ideal" method mix recognised as such by the International Reproductive Health community, (Bertrand, Rice, Sullivan, & Shelton, 2010). Indeed, conventional wisdom holds that there is no single "best" contraceptive; rather, couples are encouraged to adopt the method with the most benefits

and the fewest drawbacks or side effects, based on their individual perceptions.

Moreover, the popularity of a method can be traced to a number of factors; such as length of effectiveness, discretion and knowledge of a method. On a global basis, the most widely used contraceptive methods are female sterilisation, the pill, and the IUD (Robey *et al*. 1992; Ross *et al*., 1999 as cited in Bertrand, Rice, Sullivan, Shelton, 2010). One-third of developing countries have a much-skewed method mix, in which a single method accounts for more than half of contraceptive use. The injectable, a highly effective and reversible method that meets the needs of women who want to space rather than limit their births, is the leading method in a number of Sub-Saharan African countries. The rapid increase in injectable use is largely attributable to its widespread accessibility. Furthermore, women can use this method without others knowing about it and the quality of counselling service provided by the family planning providers is not inclusive of all contraceptive choices, (Gebremariam & Addissie, 2014).

Contraceptive methods used for family planning can be grouped into two categories programmatically. These are long-acting and permanent methods (intrauterine devices, implants, and sterilisation) and short-term methods (pills, condoms, spermicides, injectables, other modern methods, and all traditional methods). Long-acting and permanent methods are usually used to limit childbearing, whereas short-term methods are better suited for women who want to delay but not forfeit having a child, (Gebremariam & Addissie, 2014).

On average, a Nigerian woman or man aged 15-49 knows about 5 out of the above-mentioned methods of contraceptives. On top of this, the most common methods cited were those that carry the highest risks of pregnancy. The most common method women cited was the pill (71%) which has a failure rate of 9% and can lead to nine unintended pregnancies per one hundred women a year. For men, the most common method cited was the male condom (91%), which has a failure rate of 18%. This can lead to 18 unintended pregnancies per one hundred women in a year.

Among the least known methods by both men and women in Nigeria was the long-acting reversible implants method which can last between three to five years for women who use it. Implants have a 0.05% failure rate. However, only 17.9% men and 24.7% women knew about it, (Nigeria family planning blueprint, 2014).

Research has shown that as access to a range of modern contraceptive methods improves, modern contraceptive prevalence increases and a high concentration of contraceptive use on one or two methods may be a sign of a limited range of available methods (Biddlecom & Kantorova, 2013). The study further revealed that female sterilisation and Intra-Uterine Contraceptive Devices (IUCD) were the two most common methods used by women worldwide who were aged 15-49 and married or in a union.

The most commonly used modern methods of contraception among currently married women in Nigeria are injectables and implants (3% each), while the most common modern method used by sexually active unmarried women is the male condom (19%) (Nigeria Demographic and Health Survey (NDHS) 2018). Contraceptive use among currently married women increased from 15% in 2013 to 17% in 2018. Use of any modern method of contraception also increased, from 10% to 12%. In addition, there has been a noticeable rise in the use of implants since 2008, from 0% to 3%.

Studies conducted from 1999 to 2008 in Northern Nigeria submitted that contraceptive prevalence was 31.6% among women attending antenatal care. The most common method was injectables (noristerate and depo-provera) used by 68% of the client, oral contraceptive accounting for 10.4%, male condom 2.8%, female sterilisation 3.4%, IUCD 16.6%, followed by implant

contributing 2% only. The study further revealed that oral contraceptive, male condom, IUCD and implant sharply dropped during the subsequent 2 years of the study, while injectable contraceptives contribution to the method mix increased from 52.4% at the beginning of the study to 54.4% and it's used increased over time through 63.9% to 72.1% during the year 2007 to 2008 due mainly to subsidy provided for the method and ease of administration. Female sterilisation despite been popular worldwide, it contributed the least quota (3.5%) to the contraceptive mix in the study, reasons given were due to cost, socio-cultural belief and premium given to childbirth in our environment, (Muhammad and Maimuna, 2014).

A study to assess family planning use in Bauchi and the Sokoto States by (United States Agency for International Development (USAID), 2015) revealed that, in most of the included facilities understudy, injectables were reported as the most preferred method by family planning clients, followed by implants and then oral contraceptives. A facility that offers all methods of family planning is best able to meet up the needs of the clients.

Furthermore, a study by Ferreira, Souza, Lima and Braga, (2010) revealed that despite the availability and provision of all contraceptive methods, only four methods were accepted by the women after counselling. The most popular methods were oral contraceptives and injectables, followed by condom and IUD. High acceptance of injectables may be due to a more fool-proof method and is likely to be easier to use. The most known methods were also the most chosen ones except for the IUD, despite being the fourth most known method (92.6%) only one woman chose it. A range of factors influences contraceptive prevalence and method mix. According to Sullivan *et al*. (2006) as cited in (Mackenzie, Drahota, Pallikadavath, Stones and Dean, 2013), these factors are:

Policies and Programmes:
government promotion of certain methods at the expense of others, regulatory barriers, capacity and motivation to provide a range of methods.

Provider Bias
Provider preference for specific methods.

History
Length of time since the introduction of each method in a country.

Property of Methods Themselves
Ease of distribution, high programme cost, side-effects, effectiveness.

Client Characteristics
Knowledge of alternative methods, desire for limiting vs spacing, religious beliefs, personal preferences, age and life stage.

Availability of family planning methods is associated with adoption, continuation and switching of contraceptive methods, as the high concentration of contraceptive use on one or two methods may be a sign of a limited range of available methods, (Biddlecom & Kantorova, 2013). In line with this, the study seeks to find out the most common offered contraceptive method mix in Zamfara state public health care facilities.

Materials and Methods

Research Design
Retrospective research design was adopted which entailed scrutinising the FP service delivery registers/records in the selected facilities.

Target Population
The target population constitute all the available records of women who visited family planning clinics across the twenty-two (22) secondary public health care facilities in Zamfara State six (6) months preceding the conduct of the study.

Sampling Technique
Two sampling stages were considered to select the facilities and the service delivery registers, respectively.

Stage 2
The multistage sampling procedure was used for the selection of secondary public health care facilities as follow;

Stage 1: Cluster sampling of the state into 3 existing senatorial districts;

- Northern senatorial district
- Central senatorial district
- Eastern senatorial district

Stage 2: Clustering of 22 secondary public health care facilities across the 3 senatorial districts in Zamfara state as shown below;

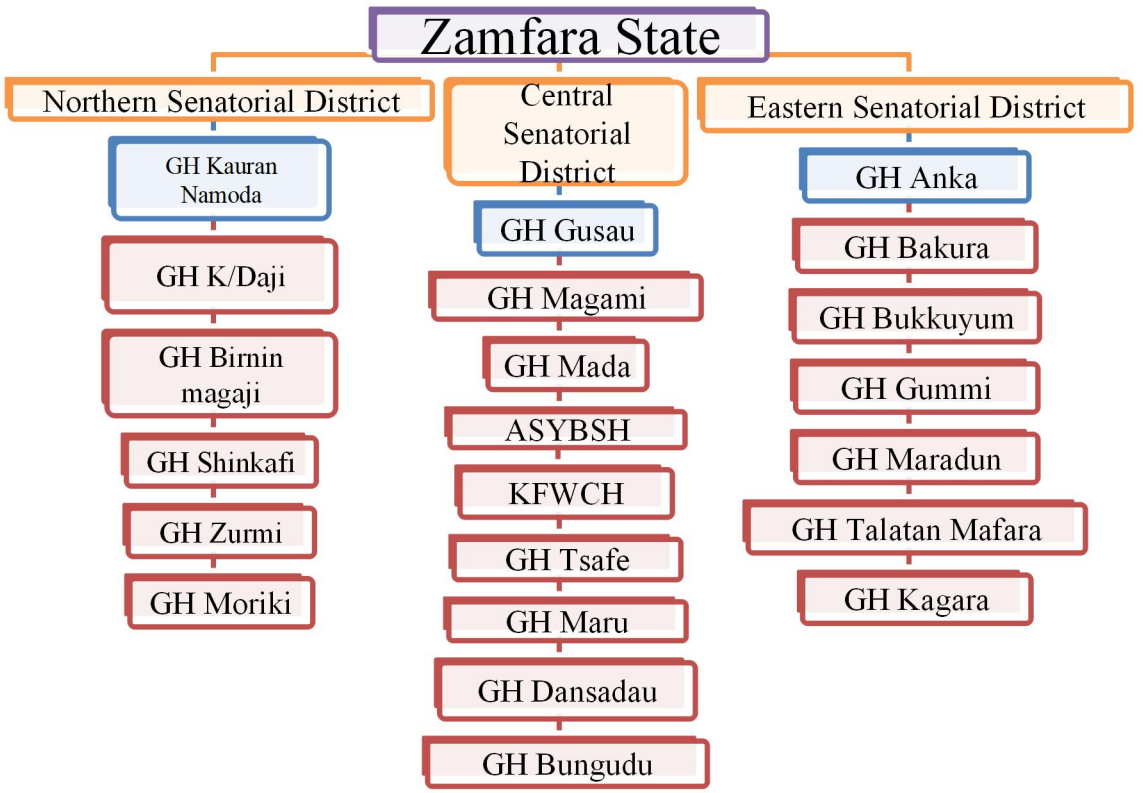

Figure 1.1: Secondary Public Health Care Facilities Across the 3 Senatorial Districts

Stage 3: Proportionate allocation according to the highest number of client's turnout was used to select secondary health care Facilities by utilising Isaac and Micheal, (2008) 30%.

$30/100 \times 22 = 6.6 \approx 7$

Therefore 7 facilities were selected for the study.

Stage 4: Two facilities from the northern zone, three from the central zone and two facilities from the eastern zone were randomly selected based on the highest number of facilities available in each zone as shown on the table below.

Table 1.1: Enrolments for Counselling in each Senatorial District of Zamfara State from January 2017 to December 2017

Zone	Health Facility	Number of women served with FPs
Northern zone	GH BIrnin Magaji	4896
	GH Kauran namoda	2020
	GH kasuwandaji	520
	*GH Shinkafi	4897
	*GH Zurmi	1654
	GH Moriki	189
Central zone	*GH Bungudu	2784
	GH Gusau	2061
	GH Mada	659
	GH Magami	2510
	*ASYB Specialist	3171
	King Fahad WCH	733
	GH Dansaadu	299
	GH Maru	2417
	*GH Tsafe	4197
Eastern zone	GH Anka	1625
	GH Bakura	953
	GH Bukkuyum	1694
	*GH Gummi	3748
	GH Maradun	1890
	*GH T/mafara	3156
	GH Kagara	613
Total		48,644

*=sampled hospital selected from each zone

Stage 2
A total enumerative sampling was used to scrutinise the available records of women who patronised the selected family planning clinics.

Instrument and Method of Data Collection
A checklist designed by the researchers and validated by jurors from department of nursing, department of community medicine and department of obstetrics and gynaecology Ahmadu Bello University and Ahmadu Bello University Teaching Hospital (ABUTH) respectively was used to scrutinise the family planning delivery registers in each of the sampled health care facilities to collect information on the number of women who received different forms of contraceptive methods within six months prior to the conduct of the study.

Method of Data Analysis
The data collected was analysed using Excel spreadsheet 2010 and presented in a table and simple percentages, while chi-square was used to test the relationship of method mix across the selected facilities.

Ethical Consideration
Permission to conduct the study and Ethical clearance was obtained from Zamfara state Ministry of Health Ethical Committee. An official permission letter was obtained and directed to the head of nursing in the studied secondary public health care facilities. Communication was also made with the officers' in-charge of family planning units to inform them about the objectives and procedures of the study to get their cooperation and facilitation throughout its practical aspect. All information provided was treated with the utmost confidentiality and was used only for the purpose of this study.

Result

Table 1.2 Socio-Demographic Characteristics of the Respondents (n=3994)

Variables	Frequency	%
Age		
10-14 years	259	6.5
15 -19 years	1200	30.0
20-29 years	2260	56.6
30-39 years	205	5.1
40 years and above	70	1.8
Marital Status		
Married	3994	100
Single	0	0
Divorced	0	0
Separated	0	0
Level of education		
Non-formal	2996	75.1
Primary	548	13.7
Secondary	369	9.2
Tertiary	81	2.0
Occupation		
Civil servant	191	4.8
Unemployed	3591	89.9
Housewife	212	5.3
Others	0	0
Religion		
Islam	3865	96.8
Christianity	129	3.2
Others	0	0
Parity		
1-3	711	17.8
4 – 6	3112	77.9
7 – 10	75	1.9
11 and above	96	2.4

The table above display the Socio-demographic characteristics of the respondents as recorded in the service delivery registers. Majority of the respondents are between the age range 20-29years with 56.6%. All the respondents 3994 are married with 100%. In terms of education, more than half 75.1% had no formal education. When the occupation is considered, most of the respondents are unemployed (89.9%). For religion, 96% practice Islam, while only 3.2% practice Christianity. With regard to a number of living children, women with 4-6 children representing 77.9% have the highest, while women with 7-10 children have the lowest % (1.9).

Table 1.3: Contraceptive Method Mix from August 2017 to January 2018

Method	Hospital								
	GHB /magaji	GH/ shinkafi	GHB/ ungudu	ASYB Specialist hosp.	GHT /safe	GHG/ ummi	GHT/ mafara	Total	%
Pills	22	83	38	90	180	90	79	582	14.57
Tubal ligation	-	-	-	-	-	-	1	1	0.03
Injectables	42	68	212	883	448	224	101	1978	49.52
Vasectomy	-	-	-	-	-	-	-	-	0.0
IUCD	-	-	1	4	17	2	-	24	0.60
Implant	-	-	42	179	702	241	223	1387	34.73
Diaphragm	-	-	-	-	-	-	-	-	0.0
Condom	3	12	-	7	-	-	-	22	0.55
Total	47	173	293	1163	1347	557	404	3994	100

Methods	Hospitals							Total
	GHB/ magaji	GH Shinkafi	GH Bungudu	ASYB Specialist hosp.	GH Tsafe	GH Gummi	GH T/mafara	
Pills	22	83	38	90	180	90	79	582
Tubal ligation	-	-	-	-	-	-	1	1
Injectables	42	68	212	883	448	224	101	1978
IUCD	-	-	1	4	17	2	-	24
Implant	-	-	42	179	702	241	223	1387
Condom	3	12	-	7	-	-	-	22
Total	67	163	293	1163	1347	557	404	3994

Table 1.3 shows the availability and utilisation of contraceptive. Injectable has the highest % of 49.52, followed by Implant with 34.73%, pills with 14.57%, while IUCD has 0.60%.

Table 1.4 shows the relationship of Contraceptive Method Mix across public health care facilities from August 2017 to January 2018

$\chi^2 = 1152.694$, df = 30, p = 0.000

Table 1.4 above shows the relationship between contraceptives method mix across the selected secondary health care facilities with p value of 0.00.

Discussion

Findings of this study demonstrated that almost 4000 women of reproductive age group patronised family planning services in the study area which signifies an increased awareness on the benefit and need for family planning among women and depicted several studies in the study area have reported remarkable improvement for the state as low patronage of Family Planning (FP) services. $\chi 2$ statistics depicted the relationship between hospitals for family planning method mix across the public hospitals visited during the period of data collection with p0.00. Injectables, Implant, pills and Intrauterine Contraceptive Device (IUCD), were available in all the sample health care facilities. This revealed a high concentration of only four methods. The most commonly offered family planning method is injectables with 49.52%, which is probably due to a policy change allowing CHEWs to administer injections. This finding contradicted a study by Bongaarts and Johansson, (2002) who mentioned that despite rising popularity of Depo-Provera, a three-month injectable it was relatively under-utilized, but in agreement with a study report by Muhammad and Maimuna (2014) studies from 1999 to 2008 in

Northern Nigeria who submitted that contraceptive prevalence was 31.6% among women attending antenatal care, the most common method were injectables (noristerate and depo-provera) used by 68% of the client, oral contraceptive accounting for 10.4%, male condom 2.8%, female sterilisation 3.4%, IUCD 16.6%, followed by implant contributing 2% only.

The finding from this study revealed that most women used Implant (34.73%), this is probably because implant is less invasive than IUCD, nobody will ever know that a woman is practising family planning except if told by the user, it does not require every day taking like the pills and has less side effect when it comes to bleeding. This finding is in line with a recent report by NDHS (2018) who ascertained that the most commonly used modern methods of contraception among currently married women in Nigeria are injectables and implants (3% each). But the finding of this study on pills which has 14.57% is not in congruence with Bongaarts and Kantorova, (2002) as they asserted that for reversible methods, the pill or the IUD often occupy the top position, with many countries showing a strong preference for one over the other.

Among the available and most accessible methods as revealed by the study finds, IUCD is the less used contraceptive with 0.60% because women complain of invasiveness of their privacy, discomfort and pelvic pain, whereas condom is seen in only one hospital. The implication as noted is a shortage of various contraceptive methods in the public health facilities; therefore, the need to provide more available method mix of contraceptives to enable switching of methods.

Conclusion

In conclusion, the number of women patronising available family planning methods in the state is remarkable, with injectables having the highest 49.52% of these women in the state.

Recommendation

The government should ensure the provision of various forms of family planning methods in all the public health care facilities to improve the client‘s mix method choice.

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