



Contraception Usage: Knowledge, Attitude and Associated Factors among Women of Reproductive Age Attending a Health Facility in Benin City, Nigeria

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Authors' contributions

This work was carried out in collaboration between both authors. Author OAI designed the study, mapped out the study objectives and wrote the first draft of the manuscript. Authors OAI and LA managed the literature searches, analyses of the study, study discussions, conclusion and recommendation. Both authors read and approved the final manuscript.

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ABSTRACT

Background: Contraceptive usage remains a challenge in developing countries. Despite high contraceptive awareness and knowledge, studies have shown disappointingly very low contraceptive usage. The 2013 Nigeria Demographic and Health Survey (NDHS) report places modern contraceptive usage in Nigeria at 10%, amounting commutatively as a 6% increase over a 24 year period. This study was conducted to assess knowledge, attitude, contraceptive usage and associated factors among women of reproductive age attending a health facility in Benin City, with the goal of developing programs and interventions to improve contraceptive usage.

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Methods: A health facility based descriptive cross sectional study design was utilized for this study, involving researcher administration of semi-structured questionnaires to 161 consenting women (15-49 years) attending immunization clinics in a health facility in Benin City. The data collected were analyzed using IBM SPSS version 21.0 statistical software with statistical significance set at $p < 0.05$ and 95% Confidence Interval.

Results: One hundred and thirty eight (85.7%) women studied were aware of contraception with 128 (92.8%) having correct knowledge of contraception. One hundred and fourteen (82.6%) women had positive attitudes towards contraception use while (17.4%) had negative attitudes. Furthermore, the per cent of contraceptive users was calculated to be 64.5% ($n=89$) among women studied. Multivariate analysis following bivariate analysis identified being single ($OR=0.136$; 95% CI = 0.026 - 0.719; $p=0.019$) and having negative attitude ($OR=0.367$; 95% CI = 0.147 - 0.917; $p=0.032$) towards contraception to be negatively associated with contraception usage when compared to being married and having positive attitude towards contraception.

Conclusion: The level of awareness and knowledge on contraception among women studied was high, with gaps identified to exist between knowledge, attitude and contraceptive usage. There is need to develop interventions to sustain and improve contraception usage among women in Benin City, Edo State.

Keywords: Associated factors; attitude; Benin city; contraceptive usage; knowledge; Nigeria; women of reproductive age.

1. BACKGROUND

Two hundred million pregnancies are reported to occur annually globally, of these 50% are unplanned while 25% unwanted; unsafe abortion has become an immediate response to address these pregnancies arising from poor or no contraceptive use especially in developing countries, these unsafe abortion practices have been identified to contribute significantly to maternal deaths globally [1-3]. Hence, the need for client oriented contraceptive information based services to influence fertility control [4]. Globally, contraceptive usage can help prevent an estimated 2.7 million infant deaths, avert 32% maternal deaths and prevent the loss of 60 million healthy life years annually.[5,6] Contraceptive usage is therefore, a major index for assessing reproductive health services; this has remained very low over the years in developing countries resulting in the rising reported cases of unsafe abortion with the attendant morbidities and mortalities as consequences [2-3,7-11].

In Nigeria abortion is illegal (unless indicated as medical abortion to save a mother's life) and a large proportion of these act are being carried out in unsafe environments, the consequences of this can be grave and life threatening often leading to maternal deaths with current report indicating that abortion contributes 20-40% of these deaths annually [12-14]. Generally, contraceptive awareness and knowledge is high among women of reproductive age in Nigeria

[8,9,12]. Despite this high contraceptive awareness and knowledge, studies have also shown disappointingly very low contraceptive usage in Nigeria [7-9,15-18]. This fact was further buttressed by 2013 NDHS report which placed modern contraceptive usage in Nigeria at 10%, amounting commutatively as a 6% increase over a 24 year period [19].

Furthermore, studies have identified that perception and attitude can have significant influence on the level of adoption and utilization of health interventions such as contraceptive use [20-25]. The low contraceptive usage in Nigeria has been attributed to a number of factors such as lack of access to contraceptive services, socio-cultural and religious factors, socio-demographic factors, perceptions, misinformation, partner opposition, and fear of contraceptive side effects among others [11-12,21-29]. This study was therefore conducted to assess knowledge, attitude, contraceptive usage and associated factors among women of reproductive age attending a health facility in Benin City with the goal of developing interventions and programs to improve contraceptive usage.

2. MATERIALS AND METHODS

A health facility based descriptive cross sectional design was utilized for this study, involving 161 consenting women of reproductive age (15-49 years) attending immunization clinic at Central Hospital, Benin City. This health facility was

selected from a list of the two State Government owned health facilities located in the heart of the city metropolis by simple random sampling technique. The health facility offer free immunization services daily on week day basis with an average attendance of 150 mothers and caregivers with their babies per clinic day. The immunization clinics are well patronized by residents within and outside the city metropolis and as such it can provide a fair representation of women from the city metropolis bearing in mind the "iceberg phenomenon". This health facility is centrally located and also provides primary, secondary and specialist health care services to intending clients within and outside Benin metropolis. It is located along Sapele road, Benin City in Oredo Local Government Area of Edo State.

This study was conducted between November and December 2013. The sample size was calculated using Cochran's formulae for descriptive study [30] based on a 10% contraceptive prevalence from a previous study [19]. Women studied comprised those attending the immunization clinics with their children and other women that accompanied them, they were recruited from the daily list of women attending immunization clinic who reported early daily before 9am, this provided a rough estimate that served as sampling frame. An average of 15 women were selected by systematic sampling technique from the daily sampling frame for interview, with estimated interview time of 30 minutes per respondent till the required sample size was achieved. Interviewer administered semi-structured questionnaires developed by researcher comprising of closed and open ended structured questions on socio-demographic characteristics, knowledge, attitude and contraceptive usage were administered to these women after obtaining written informed consent. Ethical approval was obtained prior to the commencement of the study from the Department of Health Services, Edo State Ministry of Health, while Institutional approval was obtained from the Management of Central Hospital Benin City before the commencement of study.

Data collected were subsequently sorted for completeness, coded, entered and analyzed using IBM SPSS version 21.0 statistical software; statistical tests of association such as chi square test and fishers exact test (i.e variables with cells having frequencies less than 5 that exceeded 25% of total cells) were carried out for bivariate

analysis followed by logistic regression analysis for multivariate analysis to rule out confounders' and identify significant predictors for knowledge, attitude and contraceptive usage among women studied. Level of significance was set at $p < 0.05$ and 95% confidence interval. Correct knowledge on contraception was defined to mean "any method, intervention and or technique to prevent pregnancy following sexual intercourse" while incorrect knowledge does not capture this definition. Attitude towards contraception was assessed using a seven point score system involving seven questions on attitude towards contraception, a point score of "1" was given for either a positive or negative response to a positive or negative question respectively while a point score of "0" was given to positive or negative response to a negative or positive question respectively. A cumulative point score of "4-7" was graded as positive attitude towards contraception while "1-3" as negative attitude towards contraception.

Finally, contraceptive usage was assessed as a measure of whether a woman was using or had used any method of contraception ((oral pill, emergency contraceptives (i.e Postinor) intrauterine device, condom, female or male sterilization, implant, or injectable, traditional methods etc)) from the last intercourse before commencement of study. These traditional methods of contraception include all forms of natural contraception such as coitus interruptus, monitoring basal temperature rhythm, calendar based methods, observing safe period etc.

3. RESULTS

In relation to socio-demographic characteristics of respondents Table 1 (see appendix) shows that mean age of women studied was 29.6 ± 5.6 years, with Christianity 148 (91.9%) being the predominant religion, followed by Islam 11 (6.8%) and African Traditional Religion 2 (1.2%) respectively. One hundred and thirty five (83.9%) of these women were married women, 18 (11.2%) cohabiting and 8(4.9%) single women. In terms of employment status of these women; 112 (69.6%) of them were self-employed, with 29 (18.9%) employed and 20 (12.4%) unemployed respectively. Furthermore, in terms of educational status 68 (42.2%) had secondary completed level of education, 47 (29.2%) had primary completed level of education, 32 (19.9%) had tertiary completed level of education while 14 (8.7%) had no formal education.

One hundred and thirty eight (85.7%) of women studied were aware of contraception while 23 (14.3%) were not aware; health care providers 95 (68.8%) were the predominant source of information, followed by media 38 (27.5%), family and friends 32 (23.2%) and place of worship 14 (10.2%). In relation to knowledge on contraception, 128 (92.8%) women studied had correct knowledge while 10 (7.2%) had incorrect knowledge of contraception. In terms of knowledge on contraception use, the following responses were obtained; 135 (97.8%) reported its use to prevent pregnancy, 89 (64.5%) to terminate pregnancy, 58 (42.0%) as emergency contraception following rape, 124 (89.9%) to space pregnancy, 44 (31.9%) to prevent infection and 4 (2.9%) to treat sexually transmitted diseases and population control respectively.

Table 2 (See appendix) further highlights the knowledge on type of contraception, who should use contraception and contraceptive usage by women studied; it shows that condom (Male condom 129 (93.5%) and female condom 91(65.9%)), Oral contraceptive pills 93 (67.4%) and postinor an emergency contraceptive 74 (53.6%) were the predominant contraceptives known by women studied. Furthermore, married women 130 (94.2%), those in a relationship and not married 98 (71.0%) and students 89 (64.5%) were the predominant category of women mentioned that should use contraceptives. In terms of actual contraceptive use; condom 67 (male condom 54 (60.7%) and female condom 13 (14.6%)), Oral contraceptive pills 34 (42.7%) and postinor an emergency contraceptive 34 (38.2%) were the predominant contraceptive commodities utilized by the women.

Furthermore, in relation to attitude towards contraception (see Fig. 1 in appendix) 114 (82.6%) women studied had positive attitudes while 24 (17.4%) had negative attitudes towards contraception. In terms of actual contraceptive usage among women studied (see Fig. 2 in appendix) the prevalence for usage of any form of contraception was 64.5% (89) while 35.5% (49) had not used contraceptives previously, the drop in sample size from n=161 women to n=138 was in relation to only those women who were aware of the term contraception and it applied to other statistical analysis carried in relation to objectives of study. Apart from 81 (91.0%) women studied who agreed to continue contraceptive usage, another 8 (9.0%) stated they would discontinue usage for the following reasons; religious reasons 1 (12.5%), safe period

is better 4 (50.0%), it is not effective 2 (25.0%), side effects 7 (87.5%), dislike for contraceptives 5 (62.5%) and that it promotes promiscuity 2 (25%).

In relation to factors associated with knowledge of contraception among women Table 3 (See appendix) shows that none of the following factors assessed significantly influenced knowledge of contraception viz; age grouping in years ($p=0.275$), marital status ($p=0.784$), religion ($p=0.781$), employment status ($p=0.597$) and educational status ($p=0.726$).

Similarly, in relation to factors associated with attitude towards contraception Table 4 (See appendix) shows that none of the following factors assessed significantly influenced attitude towards contraception use viz; age grouping in years ($p=0.805$), religion ($p=0.557$), marital status ($p=0.893$), employment status ($p=0.989$), educational status ($p=0.857$) and knowledge of contraception ($p=0.275$).

Finally, in relation to contraceptive usage among women Table 5 (See appendix) shows that age grouping in years ($p=0.021$), marital status ($p=0.019$) and attitude ($p=0.036$) towards contraception were the significant factors associated with contraceptive usage while educational status ($p=0.184$), employment status ($p=0.760$), religion ($p=0.658$) and knowledge of contraception ($p=0.320$) were not. Multivariate analysis following bivariate analysis identified being single (OR=0.136; 95% CI = 0.026 - 0.719; $p=0.019$) and having negative attitude (OR=0.367; 95% CI = 0.147 - 0.917; $p=0.032$) towards contraception to be negatively associated with contraceptive usage when compared to being married and having positive attitude towards contraception (See Table 6 in appendix).

4. DISCUSSION

A high level of awareness and knowledge of contraception was identified among women studied, with health care providers reported as predominant source of information. This finding in relation to knowledge on contraception reported in this study have been similarly reported in previous studies [2,3]. This high level of awareness and knowledge of contraception identified in this study may be attributed to the study being urban and health facility based, as these women may have been exposed to health information from health care providers during

previous health visits; in addition to the relatively high educational status of respondents reported. This finding on awareness and knowledge of contraception is in contrast to findings from community based studies in Northern Nigeria which identified poor awareness and knowledge of contraception among women studied [27-28].

In relation to attitude towards contraception majority of women studied had positive attitudes towards contraception. Attitude and perception towards health intervention have been reported to have possible influence on adoption and utilization of health interventions [20-21]. This study identified positive attitude towards contraception as a significant predictor for increased contraceptive usage among women studied, this finding is similar to reports from a previous study in Central Tanzania [22]. In addition negative attitude have also been reported from other studies to influence contraceptive use [23-25].

Furthermore, this study identified a high contraceptive prevalence of 64.5% (n=89) among women studied, with gaps identified between knowledge, attitude and contraception usage. The high contraception use identified among women in Benin City, may be attributed to the study design in terms of it being health facility based and in an urban setting, also result findings show that majority of the women studied were married; it was also identified that a significant increase in contraception usage was observed with increasing age of respondents in years and parity of these women; these factors in addition to the increasing contraception campaigns by Non-Governmental Organizations recently in the past 4 years in the study area may have contributed to the high contraceptive usage identified in this study when compared to the country average. This finding in relation to the significant association of age and parity with contraceptive use has also been reported in south western Nigeria [31]. Finding of high contraceptive usage among women studied though encouraging, were predominantly short acting options such as condoms, emergency contraceptives (i.e postinor) as against long acting reversible contraceptives such as IUCDs, Implants etc. These short acting contraceptives may not significantly influence fertility control measures when compared to longer acting contraceptives in the long term. The finding on contraception usage from this study is in contrast to findings from the 2013 NDHS report that gave a 15% contraception usage in Nigeria, other

research findings have also identified low contraception usage among women in Nigeria [2,7-9,27-28]. Furthermore, a recent review of the Demographic and Health Survey reports for 2003, 2008 and 2013 respectively, identified low contraceptive usage in Nigeria with a high unmet need for contraception with an estimated 84.9% of currently married women not using any form of contraception, hence the high total fertility rate of 5.4 children per woman reported in Nigeria [32].

Furthermore, this study identified higher male condom (47.2%) preference among women studied as opposed to other forms of contraception; similar findings in this regard have been reported in south-west Nigeria [9,29] and Ethiopia [23]. This finding may be due to the fact that condoms generally are inexpensive, readily accessible, help prevent sexually transmitted infections and believed to have lesser side-effects if any when compared to the other forms of contraception than for its usage in relation to birth control. This study also identified that marital status of women as a significant predictor for contraception usage as married women significantly had higher contraceptive usage when compared to those cohabiting or single. This may be most likely connected to the increased desire and intention to control conception and family size among married couples when compared to the other category of women studied, this possibly buttresses the observation that increasing parity of respondents was significantly associated with higher contraception usage among women studied. Several studies have identified the significant increase in contraception usage with increasing parity of married women for several reasons including socio-cultural and religious concerns [28,32-34].

This study also identified a 35.8% non-usage of contraception among women; this finding is in contrast to the higher contraception non-usage of 80.5-82% reported in previous studies in Central America [11], Northern Nigeria [20,28] and Enugu [24]. The high non-usage of contraceptives identified among women in previous studies have been attributed to a number factors such as fear of side-effects [11,12], perceptions, religious beliefs and misinformation on contraception [21-28]. The low non-usage of contraception identified among women in this study may be due to the fact that the study was urban and health facility based, in addition to the relatively high educational status of women studied as evident in their knowledge

of contraception; furthermore the positive attitude identified among these women towards contraception may have contributed to the high contraceptive usage. It is also pertinent to mention that easy access to affordable contraceptive commodities from patent medicine stores, shopping stores, pharmacies and health facilities present within the urban study area which may have been attributed to the high programmatic support and drive for contraception, by some Non-Governmental Organizations in Benin City. This could have also contributed to the high contraception usage identified in this study; the influence of programmatic intervention for increased contraceptive usage has also been reported in a previous study [29].

Finally, this study revealed that employment status of women studied did not significantly influence the level of knowledge, attitude towards contraception and the actual contraception usage by women studied. This finding was in contrast to those from a study in Ibadan which identified being educated, wealthy and a working class woman as being significantly more likely to utilize contraceptives when compared to other women [34]. The low non-usage of contraception identified in this study is encouraging considering the important role contraception play in reducing the burden of maternal deaths, which still remains a challenge in developing countries such as Nigeria; a current research indicate that a 26% reduction in maternal death through contraception usage have been reported in Nigeria [35]. This finding therefore re-echoes the important role well-articulated programmatic interventions can have to enhance contraception usage for improved reproductive health and socioeconomic development.

5. CONCLUSION

A high level of knowledge and contraception use was identified among women in this study. Although, a high proportion of women studied had positive attitude towards contraception, gaps were identified to exist between knowledge and contraception use. This study identified that being single and having a negative attitude toward contraception were negatively associated with contraception use when compared to being married and having a positive attitude toward contraception. There is need to develop interventions and programs (such as behavior change communication activities etc) to sustain

and improve contraceptive usage among women in Benin City, Edo State.

6. LIMITATION OF STUDY

The findings of this study were based on self-report as it was not possible to validate claims made by respondents in the course of questionnaire administration. In addition the study was health facility based as such subject to the "ice-berg phenomenon", a community based study would have enriched research findings. Finally, the fact that the study was health facility based implies that the findings may not be generalizable as being reflective for Benin City.

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COMPETING INTEREST

We wish to state that this study is free of any competing interest and was fully sponsored by the Authors.

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APPENDIX

Table 1. Socio-demographic characteristics of women (n= 161)

Variable	Frequency	Percent (%)
Age group in years		
15-24	28	17.4
25- 34	108	64.0
35- 44	27	16.8
≥ 45	3	1.9
Religion		
Christianity	148	91.9
Islam	11	6.8
Africa Traditional Religion (ATR)	2	1.2
Marital status		
Single	8	5.0
Cohabiting	18	11.2
Married	135	83.8
Employment status		
Employed	29	18.0
Self Employed	112	69.6
Unemployed	20	12.4
Educational status		
None	14	8.7
Primary Completed	47	29.2
Secondary Completed	68	42.2
Tertiary Completed	32	19.9

Table 2. Knowledge of contraception options with category of persons for usage and contraception utilization by women in Benin City, Edo State (n=138)

Variable	Frequency	Percent (%)
Knowledge of category of women that use contraception? (n =138) multiple response apply		
Married women	130	94.2
Unmarried women in a relationship	98	71.1
Students	89	64.5
Persons who have completed their family size	6	4.5
Transactional sex workers	3	2.2
Rape victims	3	2.2
Knowledge of contraception options (n =138) multiple response apply		
Male condom	129	93.5
Oral contraceptive pills	93	67.4
Female condom	91	65.9
Postinor *(Emergency Contraceptive pill)	74	53.6
**Misoprostol	21	15.2
Traditional Methods	12	8.7
**Drugs: Ampiclox, Quinine, Buscopan and Piriton	8	5.8
Implants, Copper T (IUCD)	7	5.1
Withdrawal methods	2	1.5
Safe period	1	0.7

Type of contraception utilized by women (n=89) Multiple Response apply		
Male condom	54	60.7
Oral contraceptive pills	38	42.7
Postinor* (Emergency contraceptive pill)	34	38.2
Female condom	13	14.6
**Drugs: Ampiclox, Quinine, Buscopan and Piriton	10	11.2
**Misoprostol	9	10.1
Traditional method	9	10.1
Safe period	4	4.5
Withdrawal method	3	3.4

N.b: It is important to note that misoprostol and drugs such as Ampiclox, Quinine, Buscopan and Piriton are not conventional contraceptives known and should not be used. Since they were mentioned by respondents they were included in the above table.

Table 3. Factors associated with knowledge of contraception among women in Benin City, Edo State (n=138)

Variable	Knowledge of contraception		p	Test statistic
	Correct knowledge (Freq.%)	Incorrect knowledge (Freq.%)		
Age group in years				
15-24	20(87.0)	3(13.0)	0.275	fisher's exact =3.893
25- 34	84(95.5)	4(4.5)		
35- 44	22(88.0)	3(12.0)		
≥ 45	2(100.0)	0(0.0)		
Religion				
Christianity	119(93.0)	9(7.0)	0.781	$\chi^2=0.494$
Islam	7(87.5)	1(12.5)		
Africa traditional Religion (ATR)	2(100.0)	0(0.0)		
Marital status				
Single	8(100.0)	0(0.0)	0.784	fisher's exact =0.783
Cohabiting	14(100.0)	0(0.0)		
Married	106(91.7)	10(8.6)		
Employment status				
Employed	22(91.7)	2(8.3)	0.597	fisher's exact =1.225
Self employed	88(91.7)	8(8.3)		
Unemployed	18(100.0)	0(0.0)		
Educational status				
None	11(91.7)	1(8.3)	0.726	fisher's exact =1.385
Primary completed	34(89.5)	4(10.5)		
Secondary completed	56(93.3)	4(6.7)		
Tertiary completed	27(96.4)	1(3.6)		

Table 4. Factors associated with attitude of women towards contraception use among women in Benin City, Edo State. (n=138)

Variable	Attitude towards contraception use		p	Test statistic
	Positive attitude (Freq.%)	Negative attitude (Freq.%)		
Age group in years				
15-24	18(78.3)	5(15.9)	0.807	fisher's exact =0.991
25- 34	74(84.1)	14(15.9)		
35- 44	20(80.0)	5(20.0)		
≥ 45	2(100.0)	0(0.0)		
Religion				
Christianity	104(81.3)	24(18.7)	0.557	fisher's exact =1.473
Islam	8(100.0)	0(0.0)		
Africa Traditional Religion (ATR)	2(100.0)	0(0.0)		
Marital status				
Single	7(87.5)	1(12.5)	0.893	fisher's exact =0.401
Cohabiting	11(78.6)	3(21.4)		
Married	96(82.8)	20(16.7)		
Employment status				
Employed	20(83.3)	4(16.7)	0.989	$\chi^2=0.022$
Self employed	79(82.3)	17(17.7)		
Unemployed	15(83.3)	3(16.7)		
Educational status				
None	10(83.3)	2(16.7)	0.857	$\chi^2=0.767$
Primary Completed	33(86.8)	5(13.2)		
Secondary Completed	48(80.0)	12(20.0)		
Tertiary Completed	23(82.1)	5(17.9)		
Knowledge of contraception				
Correct Knowledge	107(83.6)	21(16.4)	0.275	$\chi^2=1.193$
Incorrect Knowledge	7(70.0)	3(30.0)		

Table 5. Factors associated with contraception use among women in Benin City, Edo State (n=89)

Variable	Contraception use		p	Test statistic
	Yes (Freq.%)	No (Freq.%)		
Age group in years				
15-24	9(39.1)	14(60.9)	0.021	$\chi^2=9.718$
25- 34	63(71.6)	25(28.4)		
35- 44	15(60.0)	10(40.0)		
≥ 45	2(100.0)	0(0.0)		
Religion				
Christianity	82(64.1)	46(35.9)	0.658	$\chi^2=1.125$
Islam	5(62.5)	3(37.5)		
Africa Traditional Religion (ATR)	2(100.0)	0(0.0)		
Marital status				
Single	2(25.0)	6(75.0)	0.019	fisher's exact =7.392
Cohabiting	7(50.0)	7(50.0)		
Married	80(69.0)	36(31.0)		

Employment status				
Employed	17(70.8)	7(29.2)	0.760	$\chi^2=0.549$
Self Employed	61(63.5)	35(36.5)		
Unemployed	11(61.1)	7(38.9)		
Educational status				
None	5(41.7)	7(58.3)	0.184	$\chi^2=4.836$
Primary Completed	22(57.9)	16(42.1)		
Secondary Completed	42(70.0)	18(30.0)		
Tertiary Completed	20(71.4)	5(28.6)		
Knowledge of contraception				
Correct Knowledge	84(65.6)	44(34.4)	0.320	$\chi^2=0.989$
Incorrect Knowledge	5(50.0)	5(50.0)		
Attitude towards contraception use				
Negative Attitude	11(45.8)	13(54.2)	0.036	$\chi^2=4.417$
Positive Attitude	78(68.4)	36(31.6)		

Table 6. Predictors of contraceptive use among women in Benin City, Edo State

Variable	Odd ratio (OR)	95%CI (Confidence interval)
Marital status of respondents		
Single	0.136	0.026-0.719
Cohabiting	0.299	0.043-2.071
Married	1	
Attitude towards contraception use		
Negative	0.367	0.147-0.917
Positive	1	

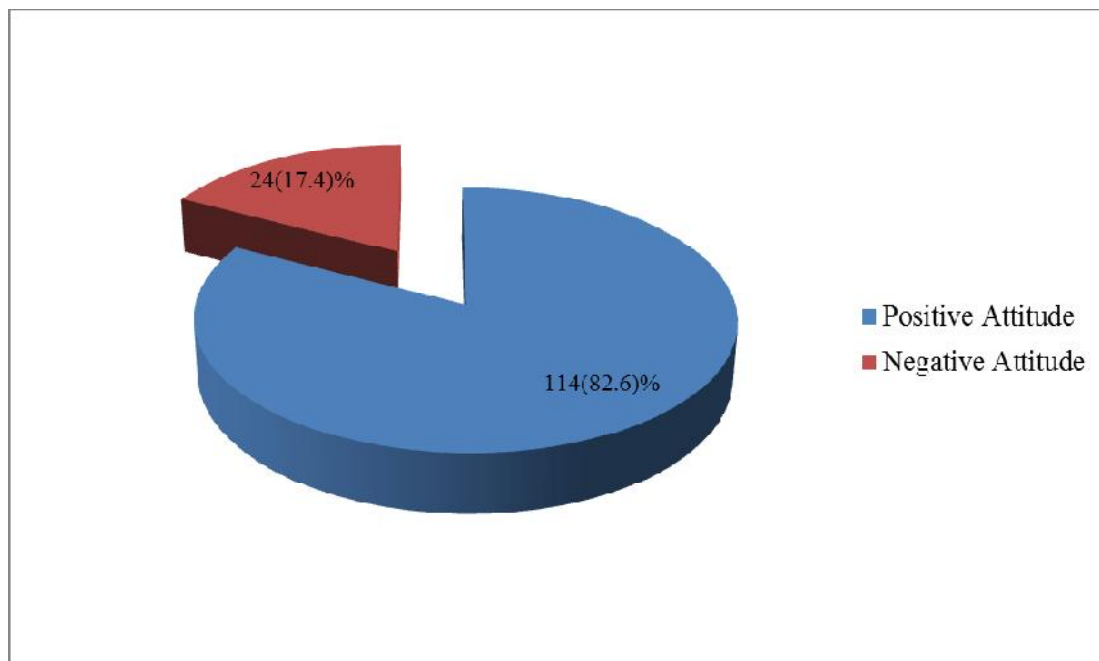


Fig. 1. Attitude of women towards contraception use in Benin City, Edo State (n=138)

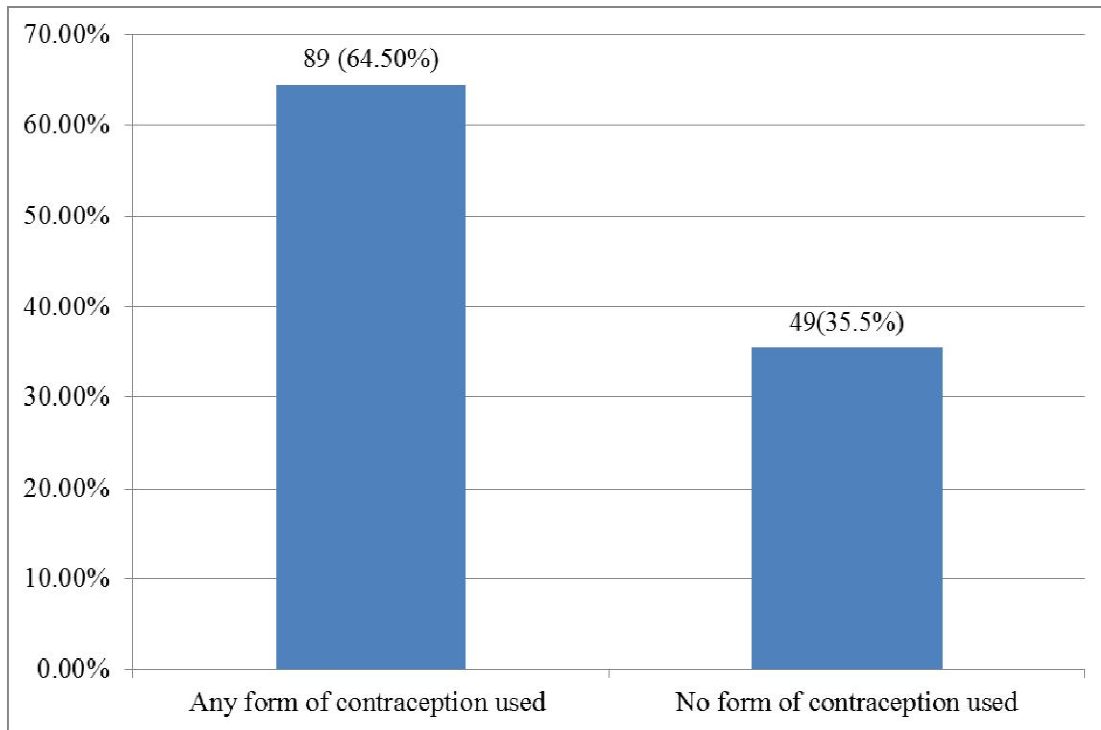


Fig. 2. Contraception use by women in Benin City, Edo State (n=138)

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