

Research Article

Knowledge of Correct Use among Hormonal Contraceptive Users in a Kenyan Referral Hospital

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Background: Contraception is the intentional use of temporary, long-term or permanent methods to prevent pregnancy. The consistent and correct use of contraceptives ensures that unintended pregnancies and pregnancy-related health risks are prevented.

Objectives: To assess the prevalence, types and level of knowledge on the correct use of hormonal contraceptives among women of reproductive age at Kenyatta National Hospital.

Methodology: A cross-sectional study was carried out targeting 400 women in their reproductive age at Kenyatta National Hospital, Nairobi, Kenya. Data was collected using an interviewer administered questionnaire and analyzed using SPSS version 20 into descriptive and inferential statistics.

Results: The prevalence of contraceptive use was 42.8%. Contraceptive use was associated with number of children [OR 1.7 (1.3-2.1)] $p < 0.001$. 56.1% of contraceptive users were on hormonal contraceptives. Injectable contraceptives were the most preferred followed by implants and pills. The choice of contraceptive methods was associated with age [OR 2.003 (1.330-3.017)] $p = 0.001$ and level of education [OR 1.697 (1.135-2.539)] $p = 0.010$. The level of knowledge on the correct use of hormonal contraceptive use was limited and was associated with the level of education [OR 1.389 (1.144-2.051)] $p = 0.000$.

Conclusion: Contraceptive use is low compared to knowledge of contraceptives. Injectable contraceptives are the most preferred hormonal contraceptives. The level of knowledge on the correct use of hormonal contraceptive is low.

Key words: contraceptive use, hormonal contraceptives, knowledge, correct use

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1. Introduction

Contraception is the intentional use of temporary, long-term or permanent methods to prevent pregnancy by inhibiting viable sperm from coming into contact with a mature ovum or by preventing a fertilized ovum from implanting successfully in the endometrium (Dipiro et al., 2008). Hormonal contraceptives exert their contraceptive action by interfering with the feedback mechanism that regulates the release of progesterone

and oestrogen consequently interfering with either ovulation, fertilization, implantation or all the three processes. Hormonal contraceptives include combined oral contraceptives (CoCs), combined injectable contraceptives (CiCs), contraceptive patch, combined vaginal ring, progestin only pills (PoPs), implants, progestin only injectable contraceptives (PoICs) and progestin Intrauterine device (IUD) (WHO, 2009; Zieman and Hatcher, 2012; WHO, 2013).

Contraception plays a major role in preventing pregnancy-related health risks. Women's health and well-being are affected negatively by occurrence of unintended pregnancies. Reduction of unintended pregnancies proportionately reduces the rate of unsafe abortions. Contraception allows for delaying and spacing of pregnancies in young women who are at an increased risk of health problems and maternal mortality from early child bearing while it prevents high risk pregnancies in older women (United Nations, 2013a). Closely spaced and ill-timed pregnancies and births which contribute significantly to infant mortality can be prevented by use of contraception since it allows for the spacing of pregnancies. Reduction in infant mortality contributes to the achievement of millennium development goal 4 (United Nations, 2013b).

The knowledge of contraception in Kenyan women is 95% according to Kenya Demographic and Health Survey (KDHS) 2008-09. This is not commensurate to the prevalence of contraceptive use in sexually active women which is 51.1%. It is therefore not surprising that the prevalence of unintended pregnancy in married women is at 43% due to the gap between contraceptive awareness and contraceptive use (KNBS and ICF Macro, 2010). Unintended pregnancies are mainly caused by contraceptive failure and non-use of contraceptives (Klima, 1998).

Variation in the type of hormonal contraceptives used is present. This variation is due to personal preference, source of contraceptive information, health status, socioeconomic and cultural differences, changing contraceptive trends with time and provider bias (Khawaja et al., 2004; Orji and Onwudiegwu, 2002).

Appropriate use of contraceptive methods is critical to ensure there is no contraceptive failure which is one of the main causes of unintended pregnancies. Contraceptive failure is either method failure or user failure. Unfortunately, the level of knowledge on the correct use is generally poor among contraceptive users (Fikree et al., 2005; Al-Shaikh et al., 2012; Américo et al., 2013)

This study sought to determine the prevalence of contraceptive use, to find out the type of hormonal contraceptives used and to assess level of knowledge on the correct use among hormonal contraceptive users.

Appropriate and consistent use of hormonal contraceptives ensures that contraception is achieved and occurrence of unintended pregnancies is prevented.

2. Methods

2.1 Study design, site and population

The study design was a cross sectional study that was carried out between May and June 2014 at the Kenyatta National Hospital's (KNH) departments of Obstetrics and gynaecology, Internal medicine, Paediatrics and Surgery wards, as well as the General Outpatient clinic for walk-in patients.

The study population comprised of women aged between 18 and 49 years within the study locations.

2.2 Inclusion and Exclusion criteria

Women between 18 and 49 years who consented to the study were included. Women who were using hormonal contraceptive methods for any other indication besides contraception, pregnant women, post-menopausal women, women who had undergone hysterectomies and those who didn't give consent were excluded from the study.

2.3 Sample size and sampling procedure

The sample size was calculated using the Fischer's formula. At a prevalence of 51.1% with a confidence interval of 95% and degree of precision of 5%, the sample size was determined to be 400 women. Convenient sampling was used to identify study sites while participants were selected using simple random sampling until 400 participants were sampled.

2.4 Data collection

The research instrument was a pre-tested interviewer-administered questionnaire. Women who consented were interviewed face to face and their responses entered in the questionnaire. The interview data recorded included sociodemographic information, contraceptive use and knowledge on the correct use of hormonal contraceptives.

2.5 Data analysis

A database of the data collected was created using Epi Info version 7. The data was then analysed using SPSS version 20. Descriptive statistics which included frequencies and percentages were derived from the data. P-values were calculated using Chi-square with the significance level set at 0.05. Multivariate analysis was done using logistic regression.

2.6 Ethical considerations

Authorisation to conduct the study was sought from the Kenyatta National Hospital/ University of Nairobi Ethical and Research Committee. Informed consent from the study participants who met the inclusion criteria was sought. Confidentiality was maintained by using serial numbers instead of participants' names.

3. Results

3.1 Sociodemographic characteristics of the study population

Majority of the participants (40.8%) were aged between 28 and 37 years (**Table 1**). 62% were married while the rest were either formerly married or had never been married. Most of the respondents had either tertiary level education or secondary level education. More than half (68.0%) of the women were Christian-protestant whereas Muslims and Hindus were both below 5%. Most of the participants were either unemployed or formally employed. Majority of the women (44.0%) had 1-2 children while only 2.3% had more than 6 children. Over 80% were non-breastfeeding participants. Almost all of the women (99.2%) were non-smokers. Most of the respondents (44.8%) had normal weight while 131 (33.0%) were overweight.

Table 1: Sociodemographic characteristics

Characteristics	Frequency (n)	Percentage (%)
Age (years)		
18-27	140	35.0
28-37	163	40.8
38-47	72	18.0
48-57	25	6.2
Marital status		
Never married	100	25.1
Currently married	249	62.4
Formerly married	50	12.5
Highest Education		
None	5	1.3
Primary	99	24.8
Secondary	125	31.3
Tertiary	170	42.6
Employment status		
Unemployed	152	38.2
Informal employment	49	12.3
Formal employment	110	27.6
Self-employed	87	21.9
Religion		
Christian-Protestant	268	68.0
Christian-Catholic	109	27.7
Muslim	13	3.3
Hindu	4	1.0
Number of children		
0	99	24.9
1-2	175	44.0
3-4	91	22.9
5-6	24	6.0
>6	9	2.3
Breastfeeding		
Yes	68	17.2
No	328	82.8
Smokes		
Yes	3	0.8
No	397	99.2
Body Mass Index (BMI)		
<18.5	8	2.0
18.5-24.9	178	44.8
25-29.9	131	33.0
>30	80	20.2

3.2 Prevalence of contraceptive use

The use of contraceptives among the study population was at 42.8%. Contraceptive use was found to be associated with marital status, employment status, number of children, breastfeeding and the BMI after bivariate analysis (**Table 2**, Supporting Information). However, after logistic regression the only independent predictor of contraceptive use was number of children [OR 1.7 (1.3-2.1)] $p < 0.0001$.

3.3 Types of hormonal contraceptives

Ninety-six (56.1%) of the contraceptive users were on various hormonal contraceptives (Figure 1). POICs and implants were used by majority of the hormonal contraceptive users while the contraceptive patch, POPs and progestin IUD had less the 5 users each.

The choice of contraceptive methods was found to be associated with age, marital status, level of education, number of children and breast feeding after bivariate analysis (**Table 3**, Supporting Information). Multivariate analysis revealed that the independent predictors of use of hormonal contraceptives were age [OR 2.003 (1.330-3.017)] $p = 0.001$ and level of education [OR 1.697 (1.135-2.539)] $p = 0.010$.

3.4 Level of knowledge on the correct use of hormonal contraceptives

Level of knowledge was assessed on an "all or none" basis. The Ministry of Public Health and Sanitation Division of Reproductive Health National Family Planning Guidelines for Service Providers and the World Health Organization Family Planning Global Handbook for Providers were used as the standard references for the correct use of hormonal contraceptives.

CoCs users were knowledgeable on the timings of initiation and daily intake of the pills but not on the instructions to follow and measures to take after missing pills, vomiting and having diarrhoea (**Table 4**). POICs users were conversant with duration of effectiveness of the method but not on the grace period between repeat injections and measures to take if they delayed the repeat injection. Implant users were conversant with the duration of effectiveness of the methods but did not know how to take care of the insertion site and the warning signs to look to for.

The two women who were using the contraceptive patch knew the sites of applying the patch, duration of action of each patch, how many weeks one should and should not apply the patch and measures to take after a patch detached for more than 24 hours during the first week of the menstrual cycle. However, both women did not know the measures to take if a patch detached for less or more than 72 hours during the second and third week of the menstrual cycle.

The three women who were using POPs knew the timing of daily intake of the pills. However, only one was conversant with the measures to take if they missed one or more pills by three hours despite their menses having resumed or not.

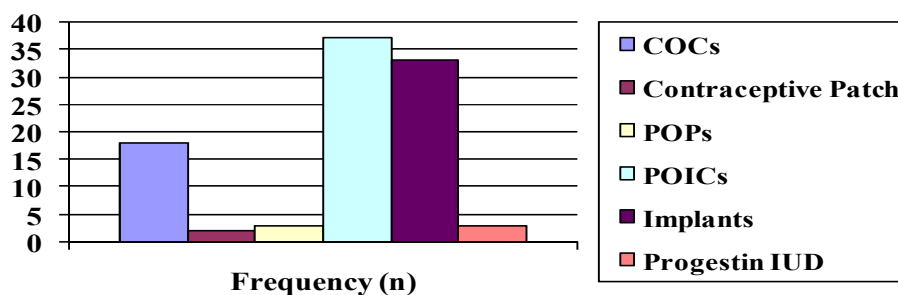


Figure 1: Type of hormonal contraceptives

Table 4: Level of knowledge on the correct use of Hormonal contraceptives

Instruction	Frequency (n)	Percentage (%)
Combined oral contraceptives (N=18)		
Timing of initiation of COCs	16	88.9
Time to take COCs	12	66.7
Warning signs of COCs	7	38.9
What to do after missing one or two pills or starting a new pack one or two days late	9	52.9
What to do after missing three or more pills in the first or second week or starting a new pack three or more days late	2	11.1
What to do after missing three or more days in a row in the third week	4	22.2
What to do after vomiting within two hours of taking the pill	4	22.2
What to do after vomiting or diarrhoea for more than two days	4	22.2
Progestin only injectable contraceptives (N=37)		
Duration of effectiveness	37	100
How early or late the repeat injection can be given	11	28.9
What to do after going later than the stipulated time for the repeat injection	23	62.1
Implants (N=33)		
Duration of effectiveness	32	97.0
What to do after insertion; duration to keep the point of insertion dry	5	15.1
What to do after insertion; duration to keep the adhesive on	2	6.2
Signs to look out for at the point of insertion	19	61.3

The three women who were on the progestin IUD knew the duration of effectiveness of the method while two were conversant with how to confirm if the device was still in position and the warning signs to look out for.

Level of knowledge on the correct use of hormonal contraceptives was found to be associated with type of hormonal contraceptive, level of education, employment status and religion after bivariate analysis (Table 5, Supporting Information). After logistic regression, the independent predictor of correct use of

hormonal contraceptives was level of education [OR 1.389 (1.144-2.051)] $p=0.000$.

4. Discussion

Consistent and accurate use of contraceptives is crucial in the prevention of unintended pregnancies and consequently reduction in maternal and infant mortality (Klima, 1998).

Prevalence of contraceptive use in this current study was at 42.8%. This was close to the findings of KDHS 2008-09 (KNBS and ICF Macro, 2010). In another study at KNH, 44.2% of the women were using a form of contraceptive method (Mutiso et al., 2008). The results are comparable to the rate of contraceptive use in the other countries in the region (United Nations, 2012; Tilahun et al., 2013; Beekle and McCabe, 2006). The rate is higher than the use in some African countries but lower than in others (United Nations, 2012). The findings are similar with those of some countries in Asia and Latin America (United Nations, 2012; Sarella and Prasanna, 2014; Balgir et al., 2013) probably due to the similarity in the social and demographic characteristics. However, this rate was lower than the levels of contraceptive use in Americas, Australia and Europe since the latter are developed (United Nations, 2012). These variations are possibly due to the differences of social, economic and cultural backgrounds (Khawaja et al., 2004). Knowledge of contraceptives is high in most African countries but utilisation is low. The difference arises from poor accessibility to family planning services and poor fertility knowledge (Orji and Onwudiegwu, 2002).

In this study, the rate of contraceptive use was associated with marital status, level of education, employment status, number of children, breastfeeding and BMI. On multivariate analysis, the independent indicator of contraceptive use was the number of children. This is similar to what has been observed in other studies (Mutiso et al., 2008). Education level of Sudanese couples was the major determinant in the use of contraceptives (Ali et al., 2011). Indicators of contraceptive use among Ethiopian married women were comparable to this study (Tilahun et al., 2013). According to a Nigerian study, use of family planning was influenced by similar factors (Orji and Onwudiegwu, 2002). Employment status and education have the greatest impact on contraceptive use (Al Sheeha, 2010). Education is a common predictor in the use of contraceptives (Al-Shaikh et al., 2012).

Injectable contraceptives were most used followed by implants and CoCs. This was consistent with the findings of KDHS 2008-09 (KNBS and ICF Macro, 2010). According to studies in South and South eastern Nigeria, injectables were preferred by the participants (Chigbu et al., 2010; Oghenekobaro, 2012). A Nepali study also revealed that injectables were preferred by the respondents (Tuladhar and Marahatta, 2008). The method is preferred since it is not coitus or user dependent, has long duration of action, high effectiveness, privacy, easy availability and affordability (Chigbu et al., 2010; Oghenekobaro, 2012). However, the findings differed with observations at another section of KNH and in Kisumu (Mutiso et al., 2008; Oindo, 2002). In various parts of Nigeria, the different patterns of contraceptive use deviated from this study (Orji and Onwudiegwu, 2002; Umoh and Abah, 2011; Adinma et al., 1998). In a European study, oral contraceptive pills, condoms and IUDs were popular (Lopez-del Burgo et al., 2011). Indian women used condoms and tubal ligation as their preferred methods while some Pakistani women preferred copper IUD (Sarella and Prasanna, 2014; Balgir et al., 2013; Prateek and Saurabh, 2012). The variation is due to personal preference, source of contraceptive information, health

status, socioeconomic and cultural differences, changing contraceptive trends with time and provider bias (Khawaja et al., 2004; KNBS and ICF Macro, 2010; Orji and Onwudiegwu, 2002).

The form of contraceptive used was associated with age, marital status, level of education, number of children and breast feeding. The independent predictors of choice of contraceptive were age and level of education. These findings were similar to the observations of other studies (Oddens, 1997; Srikanthan and Reid, 2008). Social, demographical and cultural factors have influence on the choice of contraceptive methods consequently having an effect on the pattern of contraceptive use.

The findings on the knowledge of correct use of hormonal contraceptives were consistent with other studies done to explore the knowledge of correct use of contraceptives (Fikree et al., 2005; Al-Shaikh et al., 2012; Américo et al., 2013; Davis et al., 2006). The simple instructions of contraceptive use were well understood but as they become more complex, fewer women were conversant with them. In an effort to make the instructions understandable various measures have been put in place but the knowledge on correct use of contraceptives is still limited (Davis et al., 2006; Zapata et al., 2013).

Level of knowledge on the correct use of hormonal contraceptives was associated with type of hormonal contraceptive, level of education, employment status and religion. After logistic regression, the independent predictor of correct use of hormonal contraceptives was level of education. This was similar to a Saudi study (Al-Shaikh et al., 2012). In Brazil the correct use of contraceptive was correlated positively with high education levels and family income (Américo et al., 2013). On the contrary the literacy levels did not have an effect on the understanding of contraceptive use in an American study probably due to the high levels of education (Davis et al., 2006).

5. Conclusion

The gap between knowledge of contraceptives and contraceptive use is still wide. Knowledge of contraceptives in Kenya is almost universal yet contraceptive use is still low. Hormonal contraceptive users prefer injectables, implants and CoCs. The level of knowledge on the correct use of hormonal contraceptives is very low therefore reducing the effectiveness due to inconsistent and incorrect use. During initiation and subsequent continued use, hormonal contraceptive users should be taken through the instructions of use to ensure correct and consistent use.

Conflict of Interest declaration

The authors declare no conflict of interest.

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