

Effect of Contraceptive use on Menstrual Cycle Pattern among clients attending Family Planning Clinics at Assiut City

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Abstract

Services of Family planning have an essential role for improving the quality of family's lives and also their economic welfare. Family planning methods may lead to menstrual changes such as menorrhagia, oligomenorrhea or inter-menstrual spotting. **Aim of the study:** to assess the effect of contraceptive use on menstrual cycle patterns among clients attending family planning clinics in Assiut City and to assess the effect of menstrual cycle side effects on contraceptive discontinuation among these clients. **Subject and Methods:** This prospective study was conducted on 1570 clients in F.P. clinics serve the west sector of Assiut city by using a structured interviewing and follow up questionnaires. **Results:** There are statistical significant differences between case & control group as regards Monthly Injectable, the combined pills and Progestin-Only Injectable used and menstrual disorders respectively. There is statistical significant difference between different method of family planning methods and discontinuation rate ($P.V=0.008$) and between contraceptive methods and its side effects at the first and second follow up ($P.V<0.001$ and 0.001) respectively. **Conclusions:** Contraceptive use significantly affects the menstrual cycle and discontinuation rate of its users. **Recommendations:** Contraceptive counseling must be included knowledge about menstrual pattern changes. More researches should be done to assess the impact of family planning counseling on reducing the rate of unwanted pregnancy.

Key Words: Family Planning, Menstrual changes and Discontinuation.

Introduction

Family planning (FP) is an effective factor for reducing child and maternal mortality. The role of family planning as an international strategy for safe motherhood and child survival is remarkable. There are more than 100 million women in developing countries, 17 % of all married women, would prefer to avoid pregnancy, but without using any form of FP. Unmet need for contraception can lead to unintended pregnancies, i.e. unwanted pregnancy can raise maternal, familial, and social risks. About 25% of pregnancies in developing countries are unintended (El-Zanaty, 2008).

According to the Population Reference Bureau's Family Planning Worldwide 2008 Data Sheet, female sterilization is the most public method used by about one-fifth of the married women of reproductive age. Intrauterine devices (IUDs), pills, condoms, injectable, male sterilization, and several traditional methods are the followed methods respectively. Other recent methods: such as hormonal implants, diaphragms and spermicidal represent as a very small percentage of them (FPWDS, 2008).

Current contraceptive use reported by EDHS, 2014 explored that 59 % of Egyptian married women in are using a contraceptive method. The most public method is IUD 30 %, then the pill 16 % and injectable 9 % respectively. There are significant

differences at the level of family planning use by residence. Women lived in urban areas (61%) are more using than women lived in rural areas (57 %) (EDHS, 2014).

There are different types of Family planning methods such as: Hormonal oral contraceptives "pills, injectable; sub dermal implants"; mechanical method "intrauterine devices (IUDs)"; surgical method "female and male sterilization; and barrier methods such as male and female condoms, diaphragms and spermicidal. Other recent methods include: Lactation Amenorrhea Method (LAM) & fertility awareness methods (Johns, et al., 2012).

In Egypt every 23.5 seconds; there is a baby born. It means an increase of 3680 people every day. The dramatic increasing in population rose from 64.6 million people in 2001 to 78.7 million in 2008. According to EDHS, 2008, the total fertility rate is 3.1 children. Woman unplanned births reached 17% and unmet need for family planning is 10% (El-Zanaty, 2008).

According to EDHS, 2014; the total population in Egypt is about 82.541 million in 2012, while Assiut governorate which is one of the middle populated governorate with a number of population about 3.953 million. It represents 5% of total population in Egypt (El-Zanaty, 2014).

Contraceptives methods have numerous side effects especially hormonal methods. These side effects include: breast tenderness ,menstrual disorders, abdominal cramps, nausea, acne, headaches dizziness, reduced libido and mood changes (WHO, 2007).

The variations of menstrual changes based on some factors as: clients, methods and duration of use. These factors require good counseling for these contraceptive clients. For example, IUDs may increase menstrual bleeding and cramping In contrast, the implant and the injectable can lead to slight bleeding or temporary amenorrhea. (Stacey, et al., 2012).

Egypt Demographic Health Survey report 2014 , discontinuation rate of family planning use represents 30% within 12 one year of starting use (EDHS, 2014B).

The main cause of family planning discontinuation and the occurrence of unintended pregnancy are changing in bleeding patterns. So the good counselor should focus on this topic during client's session. (NHS, 2010).

Many factors can affect contraceptive discontinuation such as: women's socioeconomic status including: education, occupation and the family's income. Other factors as: the wrong knowledge about family planning method, the women's autonomy (Sakar, 2008).

The main reasons for discontinuing use of contraceptive method are: a desire to get pregnant, method failure of use ,desire for a another family planning method ,side effects, and health concerns reasons for contraceptive discontinuation have changed in these years, with more women stopping contraceptive use due to get pregnant or the bad experience of its side effects (USAID,2007).

Aims of the Study were to

- Assess the effect of contraceptive use on menstrual cycle pattern among clients attending family planning clinics in Assiut City.
- Assess the effect of menstrual cycle side effects on contraceptive discontinuation among these clients.

Research questions

- What is the relation between contraceptive use and menstrual cycle pattern?
- What is the relation between contraceptive side effects and its discontinuation?

Subject and Methods

Research design: Descriptive research design was utilized in this study.

Setting of study

This prospective study was applied at F.P. clinics which serves the west sector of Assiut city. This sector includes. Kolta MCH, Hay Gharb MCH

,Elarbaeen MCH and Assiut General Hospital. These clinics provide family planning services for about 15481 clients during 2012 Kolta MCH received (990 Client's), Hay Gharb MCH received (6536 Client's),Elarbaeen MCH received (6116 Client's) and Assiut General Hospital received (3166 Client's) respectively.

Sample

Purposive sample of all Clients attending Family Planning Clinics in Assiut City during the period of data collection were evaluated for eligibility .their total number was 1570 women with the following criteria:

Inclusion criteria

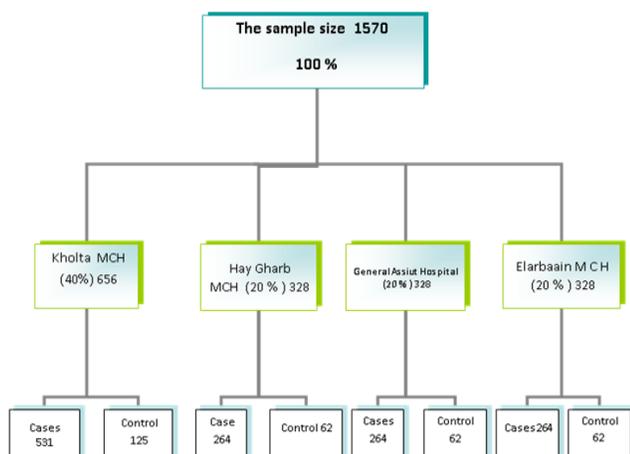
- All women in reproductive age from 15 -45 years and used contraceptive methods
- Women who will agree to participate in the study

Exclusion criteria

- Pregnant women at the time of study
- Old age women more than 45years
- History of menstrual disorder
- Blood disease

Sample size

The sample was calculated by using Epi-Info statistical package ,version 3.3 with power 80% value of 2.5 is chosen as the acceptable limit of precision (D) at 95% level of confidence (CI),with expected prevalence 50% and worst acceptable 60%. Accordingly, sample size is estimated to be 1550+10% individuals to guard against non-response rate. The computed sample size plus expected dropout rate was 1570 prospective women.



The distribution of the sample size will be as the following:

Data collection tools:

The tools used for data collection consisted of structured interviewing questionnaire and follow-up sheet:

I. **A structured interviewing questionnaire** was designed and developed by the researcher after reviewing different related researches, pertinent literature, and revision from three experts in Obstetrics and Gynecology professors in Nursing and Medical science at Assiut University. According to the opinions of experts necessary modifications were done to ensure validity and reliability to collect the following data:

Part 1: Socio demographic data :(Name, age, occupation, address, telephone number, education Level, residence, date of admission and duration of marriage).

Part 2: Menstrual History :(Age at menarche, duration of menstrual blood flow, menstrual rhythm, amount of menstruation and menstrual disorder).

Part 3: Obstetric History :(Number of Gravidity, parity, Living children, Abortion, normal vaginal deliveries and Cesarean section) .

Part 4: Medical History :(Diabetes mellitus, hypertension, Heart disease, Epilepsy, lever diseases, varicose veins and history of breast tumors)

Part 5: Family planning :(The type of contraceptive methods used, duration of use /month and the causes of discontinuation of contraceptive methods (Side effects of menstruation, to get pregnant, desire of her husband, other side effects of the method, travel of her husband and others).

Part 6: Data related to present F.P use: type of contraception used such as :(Hormonal contraceptive pills, IUD, injectabl, implanon, natural methods and others). Duration of use, side effects, menstrual disorders and discontinuation

II-Follow up sheet:

The investigator interviewed the Client again at the Clinics for two times. The 1st time after one month to ask the client about the F.P method still continued or not? Presence of any side effects (Yes/No), The method correctly used and consistently, Discontinuation (Yes/No), Causes of discontinuations. Then the investigator gave the client information about family planning issues through health education's session.

At the 2nd time, the client came again after 2 months and the researcher repeat the same questions to the Client.

Operational design

This design involved description of the preparatory phase, the pilot study and filed work.

Preparatory phase

The researcher reviewed related literature local &international using textbooks, web articles and scientific magazines. The tools were designed.

Validity

The tools were reviewed for validity by 3 experts in Obstetrics and Gynecology to test validity and reliability of the research, necessary modification were done.

Pilot study

Pilot study was conducted on the 10% of the study sample during the first two week to test the clarity of the questions and to detect any further problems or difficulties that help in making the necessary modification in the questionnaire that was reconstructed. The pilot study was excluded from the total sample.

Ethical consideration

The purpose of this study was explained to all women. The women have ethical rights to agree or refuse to participate in the study; oral consent was taken from all women who were participated to the study and informed that the information and data obtained will be confidential and used only for the purpose of the study.

Field work

- The study was carried out during the period from first of June 2013 and ended in January 2014.

Methods: An official permission was obtained from pertinent authorities. The researcher introduced herself to the eligible woman, greeted client and then obtained informed consent of woman (verbal) to participate in the research after full explanation of the nature of the research .Two days per week were specified for data collection. The researcher attended MCH to meet clients.

- The investigator interviewed the women face to face; each interview took 15 minutes with each woman. The investigator recorded Socio-demographic, Obstetric history, Medical history,

F.P history, Present F.P data. During the interview determination of the Client's knowledge about sources of information regarding family planning methods, the type of previous contraceptive method used and the reasons of discontinuation if present (To get pregnant, desire of her husband, Side effects of the method, Travel of her husband and others).

- The investigator asks the Client's about any side effects of method used, focusing on menstrual disorders.
- The investigators provided health education about family planning methods (Method of administration, advantages, disadvantages, side effects, efficacy, suitable birth spacing, and factors to consider when selecting a birth control method and benefits of F.P) and the client supplied with a follow-up card indicating the date of next visit. The card also includes general information about F.P and the phone numbers of the researcher to answer any urgent questions. The woman was asked to leave her contact phone number in case she was unable to attend her follow-up visit to complete the missed data.

Follow up

The same client in the study was met again by the researcher for two times, the 1st time after one month from the time of enrolment and the 2nd time, after another 2 months to complete the required data. Those who did not attend the clinic were contacted by phone. The investigator interviewed the client to ask her about The F.P method still continued or not?, Presence of any side effects, The method correctly used and consistently, discontinuation and its causes if present The investigator was sure that the client understood F.P; discovered how much she can recall correctly, Identify her acceptance and misunderstanding knowledge about F.P.

At the 2nd time, the client came again after 2 months and asked her the same questions. Through the process of collection of data, the investigator took cases as a control group (the group enrolled from outpatient clinic of Gynecology, these women at reproductive age, didn't use F.P.) to exclude the other causes for menstrual disorders rather than contraceptive methods.

Administrative design

An official permission will be obtained from the Dean of the faculty to manager of the Directorate of F.P clinics - Ministry of Health; the investigator will explain the nature and the aims of the study.

Oral consent of the participant will be obtained

Statistical design

Categorical variables were described by number and percent (N, %), where continuous variables described by mean and standard deviation (Mean, SD). Chi-

square test used to compare between categorical variables where compare between continuous variables by independent t-test. A two-tailed $p < 0.05$ was considered statistically significant. All analyses were performed with the SPSS 20.0 software.

Results

Table (1): Distribution of women regarding to Socio demographic characteristics (n=1570).

Socio demographic characteristics	Total (1570)	
	No.	%
Women age		
30 and less years	989	62.9
>30 - 40 years	442	28.2
>40 years	139	8.9
Total	1570	100
Range	17- >40	
Mean±SD	29.6±7.2	
Residence		
Rural	427	27.2
Urban	1143	72.8
Total	1570	100
Level of education		
Higher education	302	19.2
Secondary	658	41.9
Basic education	121	7.7
Read and write	111	7.1
Illiterate	378	24.1
Total	1570	100.0
Occupation		
House wife	1317	83.9
Employee	253	16.1
Total	1570	100
Range	20-68	
Mean±SD	35.6±7.5	
Duration of marriage		
1 – 10 years	1025	65.3
10 – 20 years	404	25.7
20 – 30 years	133	8.2
> 30± years	8	0.5
Total	1570	100

Table (2): The relationship between menstrual disorders in progestogen-only users and non contraceptives users

Menstrual disorders	The progestogen-only (“mini”) pill (n=216)		Control (n=311)		P. value
	No.	%	No.	%	
Amenorrhea	2	0.9	6	1.9	0.572
Inter menstrual bleeding	0	0.0	0	0.0	-
Inter menstrual spotting	4	1.9	1	0.3	0.185
Dysmenorrheal	0	0.0	2	0.6	0.645

Table (3): The relationship between menstrual disorders in Monthly Injectable users and non-contraceptives users.

Menstrual disorders	Monthly Injectable (n=33)		Control (n=311)		P. value
	No.	%	No.	%	
Amenorrhea	3	9.1	6	1.9	0.060
Inter menstrual bleeding	1	3.0	0	0.0	0.169
Inter menstrual spotting	3	9.1	1	0.3	0.001**
Dysmenorrheal	0	0.0	2	0.6	0.458

Table (4): The relationship between menstrual disorders in the combined pills and non contraceptives users

Menstrual disorders	The combined pill (n=200)		Control (n=311)		P. value
	No.	%	No.	%	
Amenorrhea	3	1.5	6	1.9	0.978
Inter menstrual bleeding	8	4.0	0	0.0	0.001**
Inter menstrual spotting	2	1.0	1	0.3	0.699
Dysmenorrheal	0	0.0	2	0.6	0.681

Table (5): The relationship between menstrual disorders in Progestin-Only Injectables users and non-contraceptives users

Menstrual disorders	Progestin- -Only Injectables (n=206)		Control (n=311)		P. value
	No.	%	No.	%	
Amenorrhea	54	26.2	6	1.9	<0.001**
Inter menstrual bleeding	7	3.4	0	0.0	0.004**
Inter menstrual spotting	1	0.5	1	0.3	0.667
Dysmenorrheal	0	0.0	2	0.6	0.667

Table (6): The relationship between menstrual patterns in IUDs users and non-contraceptives users.

Menstrual disorders	IUDs (n=352)		Control (n=311)		P. value
	No.	%	No.	%	
Amenorrhea	2	0.6	6	1.9	0.212
Inter menstrual bleeding	6	1.7	0	0.0	0.057
Inter menstrual spotting	3	0.9	1	0.3	0.705
Dysmenorrheal	1	0.3	2	0.6	0.914

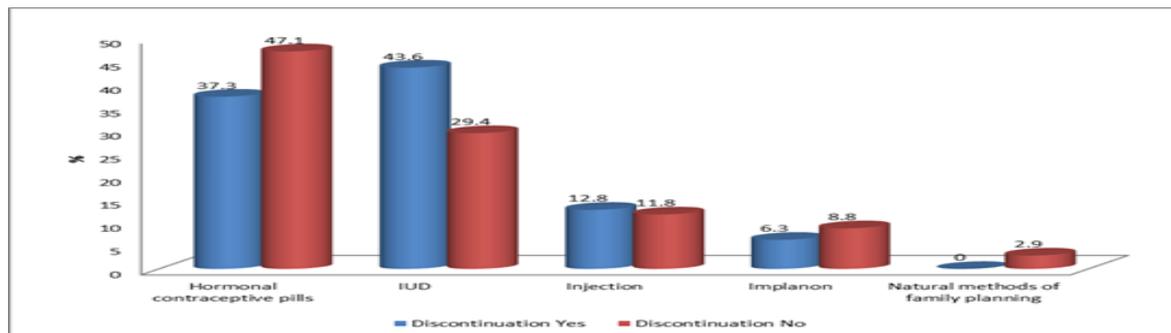
**Figure (1): Relation between History of contraceptive methods and discontinuation**

Table (7): The relationship between History F.P methods and causes of discontinuation causes (n=447)

	Hormonal contraceptive pills		IUD		Injection		Implanon		Others		P. value
	No	%	No	%	No	%	No	%	No	%	
To get pregnant	15	9.8	5	2.8	0	0.0	0	0.0	0	0.0	<0.001**
desire of her husband	87	56.9	113	62.8	25	47.2	9	34.6	1	100.0	
Side effects of the method	39	25.5	39	21.7	15	28.3	1	3.8	0	0.0	
Travel of her husband	4	2.6	2	1.1	6	11.3	1	3.8	0	0.0	
Others	8	5.2	21	11.7	7	13.2	15	57.7	0	0.0	
Total	153	100	180	100	53	100	26	100	1	100.0	

Table (8): The relationship between contraceptive methods and discontinuation in first follow up & second follow up.

Current method	The family planning method is still continued first follow up				P. value	The family planning method is still continued second follow up				P. value
	Yes		No			Yes		No		
	No.	%	No.	%		No.	%	No.	%	
progestogen-only ("mini") pill	105	97.2	3	2.8	0.081	98	93.3	7	6.7	0.008**
The combined pill	53	98.1	1	1.9		44	83.0	9	17.0	
Progestin- -Only injectable	51	100.0	0	0.0		48	94.1	3	5.9	
Monthly Injectable	20	87.0	3	13.0		18	90.0	2	10.0	
The Implant	15	100.0	0	0.0		15	100.0	0	0.0	
IUDs	141	94.6	8	5.4		138	97.9	3	2.1	
Male condom	15	100.0	0	0.0		14	93.3	1	6.7	
Total	400	96.4	15	3.6		375	93.8	25	6.3	

Table (9): The relationship between types of contraceptives methods and its side effect in the first and second follow up

Current method	Back pain		Vaginal infections		pain in lower abdomen		Nausea, Vomiting		More than symptoms		P. value
	No	%	No	%	No	%	No	%	No	%	
First month of follow up											
progestogen-only ("mini") pill	5	13.5	0	0.0	0	0.0	6	25.0	2	40.0	<0.001**
The combined pill	0	0.0	0	0.0	1	7.1	3	12.5	0	0.0	
Progestin- -Only injectable	1 5	40.5	0	0.0	3	21.4	1 0	41.7	0	0.0	
Monthly Injectable	4	10.8	0	0.0	2	14.3	2	8.3	0	0.0	
The Implant	0	0.0	0	0.0	1	7.1	2	8.3	0	0.0	
IUDs	13	35.1	15	100.0	7	50.0	1	4.2	3	60.0	
Second month of follow up											
progestogen-only ("mini") pill	6	14.0	0	0.0	3	27.3	9	36.0	0	0.0	0.001**
The combined pill	1	2.3	0	0.0	0	0.0	0	0.0	0	0.0	
Progestin- -Only injectable	1 7	39.5	2	14.3	6	54.5	11	44.0	0	0.0	
Monthly Injectable	1	2.3	0	0.0	0	0.0	3	12.0	0	0.0	
The Implant	2	4.7	0	0.0	1	9.1	0	0.0	0	0.0	
IUDs	16	37.2	12	85.7	1	9.1	2	8.0	4	100.0	

Table (1): shows the socio-demographic characteristics of the studied women. The mean age of recruited women was (29.6±7.2) years in studied women, more than half (55.9%) of the them between the age of 20-30 years, while the level of education explores that more than two fifth (41.9%) of women had secondary school, and it was observed that the majority of women were house wife's (83.9%) . As regards to residence, less than three quarters of the sample (72.8%) were living in urban areas.

Table (2): shows that there is no statistical significant difference between progestogen-only ("mini") users as a case group and non-contraceptive users as a control group and Menstrual disorders (P.v > 0.05)

Table (3): shows that there is a statistical significant difference between case &control group with Monthly Injectable used by women and Inter menstrual spotting (p.v= 0.001).

Table (4): shows that there is a statistical significant difference between case &control group with the combined pills used by women and Inter menstrual bleeding (p.v= 0.001).

Table (5): shows that there is a statistical significant difference between case control group with Progestin-Only Injectables used by women and Amenorrhea& Inter menstrual bleeding (p.v=<0.001&0.004)respectively .

Table (6): shows that there is no a statistical significant difference between case &control group with IUD used by women and menstrual disorders.

Table (7): shows that there is statically significant difference between causes of discontinuation and types of contraceptive methods (p.v=<0.001).

Table (8): clears that there is statistical significant difference between contraceptive methods and discontinuation in first follow up& second follow up (p.v=0.007).

Table (9) : shows that there is statistical significant difference between contraceptive methods and its side effects in the first and second follow up (P.v=<0.001 and 0.001) respectively.

Figure (1): shows that there is statistical significant difference between different method of family planning and discontinuation.

Discussion

Many factors can affect family planning use such as: customs and traditions, morals and mass media. The variations of acceptance and promotions of family planning methods depend on socioeconomic environment, especially economic and educational level (Ghosh, 2014).

The current study had two aims: the first was to assess the effect of contraceptive use on menstrual

cycle pattern and to assess the effect of menstrual cycle side effects on contraceptive discontinuation among clients attending family planning clinics in Assiut City .

The present study explored that more than half of women aged 30 years or less. This finding was congruent with **Lwelamira, et al., (2012)** who mentioned that half of participant aged 30 years or less in Tanzania. At the same line, **Elzanaty, 2008** who explored that more than half of women aged nearly the same age.

As regards contraceptive methods used by participants, the current findings illustrated that more than one third of women used contraceptive pills and IUDs respectively. Similar finding was reported by **Subir, (2010)** who revealed that IUDs was the commonly contraceptive methods used. At the opposite line with **Lwelamira, et al., (2012)** who noted that nearly three quarters of participants used contraceptive injectable followed by pills.

As regards side effect, the present study revealed that (4%) of women have inter-menstrual bleeding with OCPs users. This finding disagreed with study carried out in the United States by **Al-Rayyan et al., (2011)** who reported that more than half of participants have breast discomfort.

Also, the present study shows that (1.7%) used IUD has menstrual disorder (inter menstrual bleeding). Similar findings was found in the study carried out in Tabriz by **Fardy et al., 2006** they found that the main cause of IUD discontinuation was irregular bleeding.

Similar findings were found in the study carried out in Nepal by **Thapa, (2012)** showed that the major side effects of IUD were bleeding, menstrual disorder, and abnormal vaginal discharge respectively. At the other line, it was disagreed about Causes of discontinuation of IUD. This finding was supported by **Naser et al., (2009)** who reported in their study that half of women used contraceptive injectable had amenorrhea.

The present study shows that one third of women used Depo-Provera have amenorrhea. This finding was adopted by **Azar et al., (2006)** & also supported by **Veisi, & Zangeneh, (2013)** who showed that the most important side effects in injectable group were menstrual cycle problems, like amenorrhea, weight gain, bone pains and vaginal dryness respectively. This result is supported by **Azar and Zanghi, (2006)** who noted that also one third of

minipills complications were due to irregular bleeding.

The present study supported by **Balogun & Raji, (2009)** who reported that menstrual irregularity was the commonest side effect of Progesterone Only Contraceptive (POC) and disagreed in causes of POC discontinuation.

The present study shows that 9.1% of side effect of Implanon were pain in lower abdomen in the first and second follow up, this result disagreed with **Pushpa, et al., (2011)** in the study carried out in India who reported that the commonest side effect was irregular bleeding, Prolonged spotting and complained of amenorrhea respectively.

The present study shows that the vast majority still continued family planning methods in the first and the second follow respectively. The present study supported by **Adeyemi, et al., (2012)** who reported that there is a good continuation rate of the contraceptive method, as more than three quarters of the women were still on the method after 12 months.

The present study shows that discontinuation was the highest among IUDs users followed by Hormonal contraceptive pills and then injectable. These findings were disagreed with the study done in Egypt by **El-shereef et al., (2011)** who mentioned that discontinuation was the highest among injectable followed by IUDs users, then OCPs.

The present study shows that more than half of women used IUD discontinue the contraceptive method as a result of desire of the husband. This result disagreed with **El-shereef et al., (2011)** who reported that as regards causes of discontinuations, side effects and health concerns were the most common reasons of discontinuation. The desire to become pregnant was also frequently mentioned for discontinuing use.

As regard to reasons of discontinuation, results revealed that more than half used IUD of the studied women discontinue the contraceptive method as a result of desire of the husband. This finding is similar to the results of **Al-Rayyan et al., (2011)** in the part of side effect of contraceptive method while this study is contraindicated to the present study as regards reasons of discontinuation .

Also this finding is disagreed with a study was carried out in Vietnamese by **Nguyen et al., (2011)** who found that the main reason for IUD removal, was excessive menstrual bleeding as a problem, infection. However, in disagreement with these findings **Al-Rayyan et al., (2011)** reported that one

third of pills users group stopped the Combined Oral Contraceptive due to desire for pregnancy.

Merits of the study:

- The sample size was large. The large sample represents many places in the west sector of Assiut city. This sector includes: Kolta MCH, Hay Gharb MCH, Elarbaeen MCH and Assiut General Hospital from different area according to map and flow, so it explores different socio- demographic classes.
- The participating women in the study were cooperative and the nurses help the researcher in collecting data and, facilitating follow up stage.

Limitation of the study:

- There was a contact barrier in follow up stage because the most of the women gave the researcher a wrong mobile number.
- The implant was not available in the family planning clinics during time of data collection, so the researcher can't assess the side effects of implant on menstruation.

Conclusions:

Contraceptive use significantly affect the menstrual cycle of its users as the main side effects encountered during contraceptive use and affects also their discontinuation rate with other causes.

Recommendations

- Contraceptive counseling must be included health information about menstrual disorders.
- More researches should be done to assess the impact of family planning counseling on reducing the rate of unwanted pregnancy.

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