

Assessment of contraceptive methods choice among women during childbearing age in Mosul, Iraq

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ABSTRACT

الأهداف: تقييم العوامل المؤثرة على اختيار طرق منع الحمل عند النساء في الموصل، العراق.

المنهجية: تم اعتماد الدراسة المقطعية التحليلية في الفترة الممتدة من يوليو 2022 إلى مارس 2023 وتم جمع عينة إجمالية مكونة من 100 امرأة تتراوح أعمارهن ما بين سن (15-49 سنة) من النساء المراجعات لعيادة تنظيم الأسرة في مستشفى الخنساء التعليمي في الموصل وإجراء مقابلة مباشرة معهم لجمع البيانات باستخدام استمارة استبيان خاصة. أجرينا جدولة البيانات وتحليلها باستخدام برنامج احصائي لإيجاد النسبة المئوية لاستخدام كل وسيلة وكذلك استخدام اختبار (كاي) لإيجاد العلاقة الاحصائية للعامل الأكثر تأثيراً في اختيار طريقة منع الحمل.

النتائج: كانت الطريقة الأكثر شيوعاً المستخدمة هي تنظيم الأسرة الطبيعي، انقطاع الجماع (السحب) في 43% من النساء المشاركات، 21% يستخدمون الحبوب، كان العامل الأكثر تأثيراً على اختيار وسيلة منع الحمل في 78% من النساء هو مدى أمانة الوسيلة والأقل تأثيراً جانبي (قيمة $p=0.001$).

الخلاصة: على الرغم من توفر طرق مختلفة من وسائل منع الحمل الحديثة، إلا أن انقطاع الجماع (السحب) كان الطريقة الأكثر استخداماً بين المشاركات في الدراسة بسبب أمانيتها. تبني برنامج وطني لزيادة الوعي لطرق منع الحمل الحديثة الأخرى وتطبيقه في كل وحدات رعاية الحوامل في المراكز الصحية الأولية على النساء الحوامل وتشجيعهم على استعمال هذه الطرق بعد الولادة.

Objectives: To assess factors influencing choice of contraceptive methods among women in Mosul, Iraq.

Methods: An analytic cross-sectional study was conducted during the period extending from July 2022 to March 2023, and a convenience sample of 100 women at child-bearing age (15-49 years) was collected from those attending the Family Planning Clinic at Al-Khansaa Teaching Hospital in Mosul. A direct interview was used to collect data required by using a special questionnaire form. Data was tabulated and analyzed using Excel 2010 and Statistical Package of the Social Sciences, version 24.0. The frequency and percentage of variables have been calculated. Together with calculating factors influencing choice of contraceptive method by using the Chi-Square test

to compare different factors, p -value of <0.05 was considered significant.

Results: The commonest method used was coitus interruptus (43%), follow by pills in 21%. The most important factor influenced the choice of the contraceptive method was the safety of method with fewer side effects ($p=0.001$).

Conclusion: Although different modern contraceptive methods are available, coitus interruptus (withdrawal) was found to be the most frequent method used owing to its safety. Adapting a national program to increase women's awareness for other method is needed to be applied in all antenatal care unit in Primary Health Center for pregnant women and encouraging them to decided using these methods after delivery.

Keywords: contraceptive method, contraceptive pill, intrauterine device, withdrawal method

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One of the major strategies for population control, both at the national and global levels, is through family planning and the effective use of contraceptive methods.¹ Family planning is an intentional action taken by the husband and wife for spacing or limiting the number of pregnancies via the use of contraceptive methods.²

It is estimated that globally more than 200 million women in developing countries wish or intended to use a contraceptive method, but are reluctant, owing to the restricted choices of methods available, or restriction in their access, and the fear of side effects.^{2,3}

In Iraq, different modern family planning method and counseling are available free of charge in primary health care center and public hospital for obstetrics and gynecology. Misconception on contraception as fear from cancer or infertility with use of pills, IUCD, or injection was found in about half of those women non-using family planning.⁴

On an individual level family planning helps husband and wife get the intended number of children and determine the inter-pregnancy intervals.^{4,5} On a national level, one of the important strategies for lowering maternal and infant morbidity and mortality, is the decrease in number of unplanned pregnancies by adapting an effective family planning program and the use of a suitable contraceptive method.^{4,6,7}

Postnatal care visits are a good opportunity for the discussion and education of a newly delivered mother about the contraceptive methods available and a means to offer to help her with the appropriate choice of method.^{4,8}

Many studies assess certain factors that influence women's choices of contraceptive methods, several of them reported that women of low socioeconomic status tend to use contraception less, and consequently have the highest risk of unwanted pregnancies due to the usage of less effective contraceptive methods.^{9,10} Most studies showed a positive association between the selection of the contraceptive method and the effective counselling on family planning advice given by the health workers.¹¹

Iraqi total population is 44,496,112 during 2022 with a projected increase of 67% to be nearly 74,500,000 by the year 2050, and the population growth rate 2.2%.¹² And for the last 25 years, the population has been increased by greater than 50%, this increase in numbers of birth associated with an increase in pregnancy related complication and women death as it is estimated that 76 women die/100,000 live births owing to pregnancy-related causes in Iraq.¹² The population in Iraq is, young women, at 15-49 years

are 24.7% from total population, with a total fertility rate (TFR) of 3.6 and adolescent fertility rate 70/1000 15-19 girls.^{12,13}

The prevalence of modern contraceptive is 44% versus 14% traditional method in Iraq, this total contraceptive prevalence rate (CPR) of 58% makes Iraq less than global average (63%) as well as less than other regional countries like Jordan (63%).⁴ According to the policy of Iraqi ministry of health and environment, Family planning unit offer a free of charge services in primary health center and in public hospital.^{4,14} The Republic of Iraq adopt Program and Action of the "Sustainable Development Goals", which recognize Birth Spacing/ Family Planning as a "human right" and to have the information and means to achieve this goal, and to ensure different methods are available.¹⁴ Accordingly, the Iraqi Government is committed to improve mother health and identify Birth Spacing /Family Planning a critical part of health strategy 2016-2020.¹⁴

As the choices of contraceptive methods available increase, this opens up more options for couples to choose a suitable method, depending on their specific demand, which in turn increases the responsibilities of the family planning physicians to offer more counselling to women on the contraceptive methods available.^{11,15,16}

Several factors influence the choice of the contraceptive method, like convenience, ease of usage, and fewer side effects and most women prefer hormone-free contraceptive method.¹⁶⁻¹⁹ Identifying most prevalent contraceptive method and factors affecting its choice will help national strategy resources to be applied effectively in the Iraqi family planning program to increase knowledge and practice of family planning.

The current study aims to assess factors influencing choice of contraceptive methods among women in Mosul.

Methods. Databases such as Google Scholar, Research gate, PubMed, WHO strategy, Women's Health and the Iraqi Academic Scientific Journals database were reviewed about the family planning topics, its type, choice, and factors influencing its use. The principle of study is according to principles of Helsinki Declaration.

An analytic cross-sectional study was conducted during the period extending from July 2022 to March 2023, and a convenience sample of women at child-bearing age (15-49 years) was collected from those visiting the Family Planning Clinic at Al-Khansaa Teaching Hospital in Mosul, who are seeking a contraceptive method for first-time use or those who are already using contraceptives and are coming to refill their pills or

those taking injection; some come to check the position of the intra-uterine contraceptive device (IUCD).

To calculate the required adequate sample size, the following formula has been used: $n = Z^2 \times P(1-P)/d^2$, as “n” represents the size of the sample, “Z” is the statistic corresponding to the level of confidence, “P” is the expected prevalence, and “d” is precision. Since the prevalence of contraceptive use in Iraq is 58%, the total population of women at 15-49 years in Mosul is 909698, and we selected one of 4 Family planning centers in Mosul governmental hospitals, so the calculated sample size was found to be 100 women.¹³

Ethical approval has been gained from the Medical Research Ethical Committee (MREC) of Mosul Medical College. Women were informed about the research and its aim; those who agreed to share in the study were included after a signing written consent was obtained; a direct interview was done with them to collect data on contraception use using a special questionnaire form, women who refused to share in the study were excluded.

The questionnaire was prepared by authors depending on available references from WHO regarding the contraceptive use in addition to certain published research questionnaires.¹² This includes demographic data: age, residency, education, and occupation. The second part covers the obstetric history including parity, age of the mother at first delivery, and menstrual history, regarding cycle regularity, menorrhagia or inter-menstrual bleeding.

The third part of the questionnaire includes the contraception history, type of contraceptive method and why she has chosen this type, whether economic, medical, or social reason. The Family and Community Medicine Department Scientific Committee checked and accepted the questionnaire’s validity, resulting in an overall validity rate of 93.3% (Table 1), no translation has been made for the questionnaire form.

Statistical analysis. Data has been tabulated and analyzed using Excel 2010 and Statistical Package of the Social Sciences, version 24.0 (IBM Corp, Armonk, NY, USA). The frequency and percentage of variables have been calculated. In addition to calculating factors influencing choice of contraceptive method by using

the Chi-square test to compare different factors, *p*-value of <0.05 was considered significant.

Results. Table 2 shows that 43% of participant woman were mainly in the 35- to 45-year-old age group, and 51% of them had higher education. Moreover, 47% of the study population were employed.

Regarding the past obstetric history of the participants, 53% of them had 1 to 3 children, 64% delivered their first child at age 20-35 years, and 65% had 2-5 years inter-pregnancy interval, as shown in Table 3.

For factors influencing choice of contraceptive method, Table 4 reveals that safety of the method was the most common factor found in 78%, with *p*-value

Table 2 - Demographic parameters of the participants women.

Parameters	n	%
<i>Age</i>		
15-24	6	6%
25-34	40	40%
35-45	43	43%
45+	11	11%
<i>Residency</i>		
Mosul	99	99%
Outside Mosul	1	1%
<i>Education</i>		
Not read or write	9	9%
Read and write	5	5%
Primary	19	19%
Secondary	16	16%
Higher education	51	51%
<i>Occupation</i>		
Employed	47	47%
Housewife	53	53%

Table 3 - Past obstetric history of the participants women.

Variables	n	%
<i>Parity</i>		
1-3	53	53%
4-6	38	38%
>6	9	9%
<i>Age of mother at 1st labor:</i>		
15-19 year (y)	35	35%
20-34 y	64	64%
35 y+	1	1%
<i>Inter-pregnancy intervals:</i>		
<i>primipara</i>	9	9%
1y	16	16%
2-5 y	65	65%
>5 y	10	10%
<i>Have you any menstrual irregularity?</i>		
Yes	41	41%
No	59	59%

Table 1 - Questionnaire validity.

Validity rate	Percent
Clarity rate	95%
Coverage rate	95%
Reliability rate	90%
Overall validity rate	93.3%

Table 4 - Factors influencing choice of contraceptive method.*

Why you chose this type of contraception?	n	%	P-value**
It is safe.	78	78%	0.001
I'm a lactating mother.	6	6%	0.10
It is cheap and available.	20	20%	0.02
Easy to use	7	7%	0.10
I have menstrual irregularity	9	9%	0.07
I have chronic disease: HT, DM	8	8%	0.08

*Some has more than one reason, **Chi-square test used. DM: diabetes mellitus, HT: hypertension

0.001 other factors like availability and cost of the method, found in 20% of the participants women.

Discussion. The study revealed that 43% of the participant women were in the 35- to 45-year age group, as this group had highest frequency of consultation for contraception, which could be due to completion of their family at this age. Another study which assessed the choice of the contraceptive method was conducted in

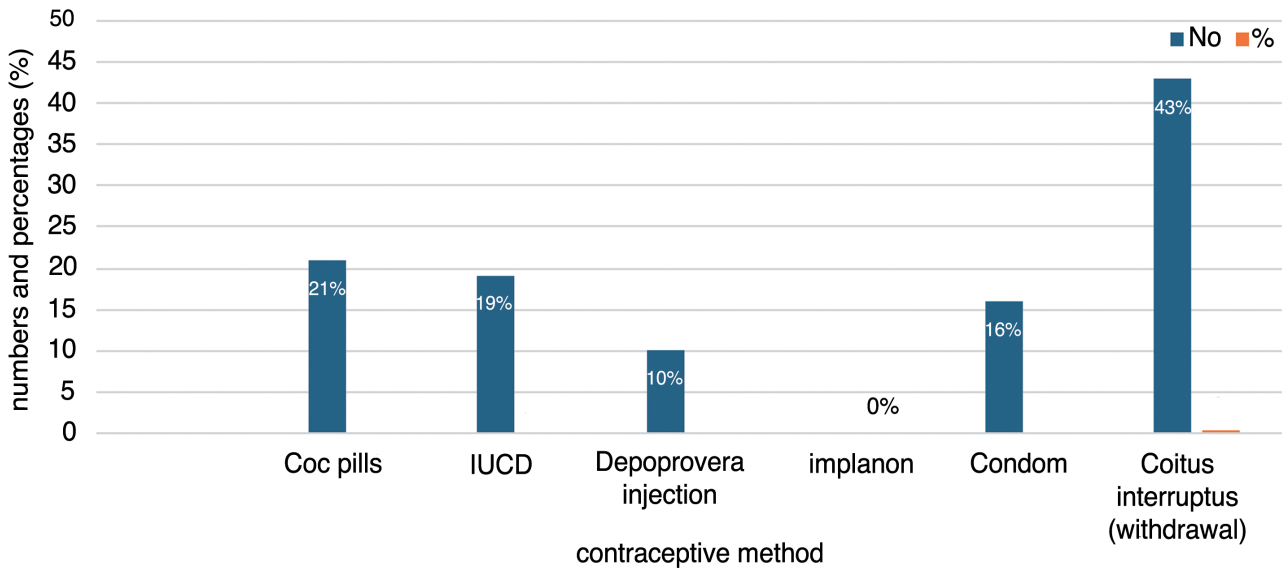


Figure 1 - Distribution of different contraceptive method among participants women *Some women use more than one method, IUCD: Intrauterine contraceptive device.

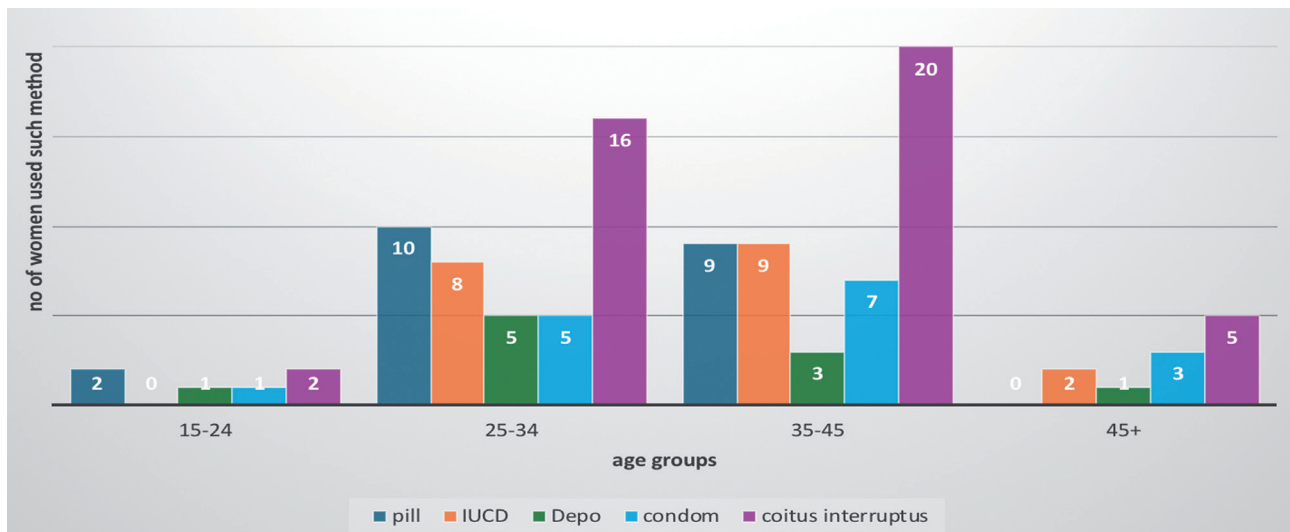


Figure 2 - Contraceptive methods used in different age group. Some women use more than one method. intra-uterine contraceptive device (IUCD) intrauterine contraceptive device.

India in 2019, showed that about half the participant's age from 25 to 29 years; other study done in Singapore in 2016 found that, the mean age of women seeking contraceptives was in the range of 25-40 years, while a study in Ethiopia showed that 76% of the participants were in the 20- to 29-year-old age group.^{6,10,11} This difference may be due to the differences in marital age in different countries.

About 50% of women in the present study had higher levels of education and were employed; therefore, they need a rest in between pregnancies or prefer low parity of three to four children, similar to a result reported by many another studies.^{10,16,20} Also, around half of the participants had parity of 1-3, and 65% of the women had an interpregnancy interval of 2-5 years; this goes with the results of a study conducted in Ethiopia in 2021, and in several other studies.^{6,21} Two to 5 years interpregnancy interval give mother enough time to regain their pre-pregnancy state and their body iron and minerals store.

Regarding the commonest method used for contraception, 43% of the participants women practiced coitus interruptus (withdrawal), as this is a safe method, with no serious side effects, especially if the woman has certain medical conditions that contraindicate the use of the hormonal method; moreover, withdrawal is reliable, cheap and has the benefit of immediate regaining of fertility upon discontinuation. This finding corresponds with the results of another studies.^{6,20-22} On other hand, this method carries high failure rate; this failure will be serious in high-risk pregnancy women; thus, it is of great importance to increase public knowledge and practice of coitus interruptus, it's benefit and it's failure rate together with their need to use additional method like fertility period awareness.

Combined oral contraceptive pills were used by 21% of the women in current study; another study carried out in Baghdad during 2021 found that pills were used in about 24% of the women.²² This might be due to fear from the side effects of the hormonal method in the developing countries; however, the pill still continues to be the most used contraceptive method in the European countries, due to its convenience, effectiveness, and non-contraceptive benefits like regulation of the cycle.^{21,23,24} Similar result (19%) has been obtained for the IUCD as this is a cheap, readily available method, with no hormonal side effects, and does not require a daily reminder for the woman as in the case of the combined oral contraceptive pills.^{6,25}

Only 16% of the participant women used condoms, and 10% of the women used Depo-Provera injection;

these findings are in accordance with the findings of another researches.^{6,21} Condoms may affect their sexual life and carry the risk of breakdown, whereas the injection can cause amenorrhea and delay in regaining fertility.^{10,21} No women in the current study use Implanon, while another study showed a less frequent use of it.²¹ This may be due to the fear of its insertion into the arm and the need for minor surgical procedures.²¹⁻²³

Different factors seemed to influence the choice of the contraceptive method; the commonest one was the safety of the method used. The current study revealed that 78% of participant women reported choosing a contraceptive method based mainly on its safety with fewer side effect ($p=0.001$). This is supported by other studies which showed that the side effects of a contraceptive method and its safety, without affecting fertility in any way, were frequently the reasons for choosing a particular contraceptive method.^{20,25,26} Twenty percent of study participants stated that the cost and availability of the contraceptive method were among factors that influence their choice of a specific method with p -value of 0.05. This goes with the findings of other studies, which found that cheap and readily available methods are the commonest factors influencing choices of methods used by women.^{10,20,26,27}

Other factors including the medical or gynecological condition of women concerning the presence of chronic diseases, like hypertension or thromboembolic events, menstrual history and especially menstrual irregularity and menorrhagia or being lactating mother, all show non-significant effect with p -value >0.05

Study limitations. The present study has certain limitations. First, the sample size was collected from only one family planning center at governmental hospital. This might affect the accuracy of the results. Second, the current study enrolled women from governmental hospital only, private clinic not included. As Implanon was not provided in governmental hospital, so no data available on this type of contraception. Third, there might be a bias in collecting the self-reported answers, as in any study. Fourth, even though we calculated the sample size, we cannot generalize the study's result. Further study is recommended with larger sample size and inclusion of family planning unit of private clinic and hospitals.

In conclusion, although different modern contraceptive methods are available, coitus interruptus (withdrawal) was found to be the most frequent method used among the participants owing to its safety and fewer side effect. Thus, adapting a national program to increase women's awareness for other method is needed

to be applied in all antenatal care unit in Primary Health Center for pregnant women and encouraging them to decide using these methods after delivery. Using a mass media, social media and an illustrating brochure all can help women choose modern contraceptive method.

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