Factors Associated with Discontinuation of Using Hormonal Contraceptive Methods in Alexandria Governorate.

Maha Mohamed El HabashyProfessor Emeritus

Obstetrics and Gynecologic Nursing, Faculty of Nursing, Alexandria University**.**

Abeer Hassan Shamekh ,Lecturer

Obstetrics and Gynecologic Nursing, Faculty of Nursing, Alexandria University**.**

Rokaia abd elkhalek abdo, Demonstrator

Obstetrics and Gynecologic Nursing, Faculty of Nursing, Alexandria University.

Sohair Ibrahim Sobhy Ezzi,Professor Emeritus

Obstetrics and Gynecologic Nursing, Faculty of Nursing, Alexandria University

Prof. Dr. Manal Hassan Ahmed,Professor

Obstetrics and Gynecologic Nursing, Faculty of Nursing, Tanta University

Abstract:

Background: Discontinuation of contraception is an issue of public health significance, since it often leads to unintended pregnancies that are costly to the individual and public as a whole. ***Objective:*** explore the factors associated with discontinuation of using hormonal contraceptives. ***Settings:*** The study was carried out at 20 Family Planning Clinics; 4 outpatient clinics affiliated to 4 hospitals, The remaining 16 Family Planning outpatient clinics affiliated to Family Health centers**.** ***Tools:*** Three main tools were used in this study, **The first tool** was Socio-demographic and reproductive history. **The second tool** Women's knowledge about hormonal contraceptive methods. **The third tool** was Factors associated with discontinuation of hormonal contraceptive methods**.** ***Results:*** findings of the present study revealed that the most (94.5%) of the studied subjects had poor knowledge about the hormonal contraceptive methods, and the majority (86%)of the studied women discontinued hormonal contraceptive methods due to health factors. ***conclusion***: the current study showed that there is statistical significance between women's knowledge and the factors affected discontinuation of using hormonal contraceptive methods. ***Recommendations:*** Strengthening health education and improving counseling, conclusion practice for women and couples seeking FP services, especially on hormonal contraceptive methods .

Key words: Hormonal contraceptive methods, Discontinuation.

Introduction

Rapid population growth and over population have remained topical issues of great concern to many national governments and the international community, high population growth rates, especially in the face of low productivity, with different kinds of social problems ranging from poverty, scarcity of land, hunger and environmental degradation to political instability. In order to arrest the dangers inherent in high population growth family planning was adopted as a strategy to curb the high rate of population growth that it is presently experiencing (Okezie., et al 2010).

Family planning is therefore a central component of a healthy and sustainable society it also considers a feasible solution to control such a fast-growing population and its associated consequences. In addition to fewer unintended pregnancies, fewer maternal and newborn deaths, greater family savings and productivity, and better prospects for educating children, strengthening economies and reducing the pressure on natural resources in developing countries. Because of these far-reaching benefits, increased investment in family planning and maternal and newborn health services could accelerate progress toward achieving the Millennium Development Goals (MDGs) . (Frost et al., 2014).

In recent decades, hormonal contraception (HC) has made a difference in the control of female fertility, taking an unequivocal role in improving contraceptive efficacy. All Hormonal contraceptives An effective methods of contraception with perfect use and have good and well-defined overall safety and tolerability profiles, they have many forms of hormonal contraceptive methods (HCM) such as: pills, injectables, implants, transdermal patches and vaginal rings (Yousif & Mansour, 2018). The use of hormonal methods increased from 19.7% to 27.4% for pills and from 12.3% to 14.5% for injectables over the period 2008–2014 (Khalifa et al., 2020). Contraceptive discontinuation is the dilemma behind the full utilization of family planning services, leading to an unnecessary increase in fertility rates, unwanted pregnancies, discontinuation is defined as switching a method of contraception or stopping a method altogether (Nascimento Chofakian et al.,2019).The 12-month contraceptive discontinuation rate in Egypt fluctuated around 30% over the period 1991 to 2005, and decreased to 25.9% in 2008. An unexpected increase to 30.1% was observed in the most recent Egyptian Demographic and Health Survey (EDHS 2014).

various factors are known to influence a woman's decision when choosing Hormonal Contraceptive Methods , exploring these factors and reducing the barriers to HC use could highlight the importance of looking beyond physical access to examining barriers that arise from sociodemographic, administrative, cognitive and cultural factors as well as physical barriers and barriers related to the method itself (Regidor et al.,2021).

Aims of the study Explore the factors associated with discontinuation of using hormonal contraceptive methods in Alexandria Governorate

Research question*:* what are the factors associated with discontinuation of using hormonal contraceptive methods in Alexandria Governorate?

Materials and Method

Materials:

Design*:*A descriptive exploratory research design was utilized .

Settings:The study was carried out at 20 Family Planning Clinics; 4 Family Planning outpatient clinics affiliated to 4 hospitals were selected randomly .The remaining 16 Family Planning outpatient clinics affiliated to Family Health centers

Subjects:

A convenient sample of 400 women attending the selected settings (20 women from each clinic)

Tools: **Tool (one) Socio-demographic and reproductive history structured interview schedule:** It contain **two main parts** as follows: **- Part one: Socio-demographic data** to obtain basic information of the subject's. **-Part two:** Menstrual, reproductive, and family planning history.**Tool (2): Women's knowledge about hormonal contraceptive methods structured interview schedule.**This tool was developed and used by the researcher after a thorough review of the relevant literature (Toerien et al., 2019), (Guzzo & Hayford, 2018), (Shartzer et al., 2016) to assess women's knowledge about hormonal contraceptive methods. It was consisted of 42 items. Women's response to each item varies between correct & complete (3), correct & incomplete (2), and incorrect or don't know (1).The total score ranged from 42-126. Women's responses was ranked as follows: - **Poor** for a total score of < 70.

- **Fair** for a total score of 70 < 98.

- **Good** for a total score of ≥ 98.

Tool (3): Factors associated with discontinuation of hormonal contraceptive methods structured interview schedule. This tool was developed and used by the researcher based on the review of current related literature (Toerien et al., 2019), (Yousif & Mansour, 2018) to explore the factors associated with discontinuation of hormonal contraceptive methods. It covered factors which include: Sociodemographic and economic factors, Cognitive factors, Factors related to the contraceptive method, Health factors, Cultural factors. Administrative factors and Sexual factors.

Method:

• Approval to carry out the study was obtained from the Ethical Research Committee, Faculty of Nursing

Alexandria University. An official letter from the Faculty of Nursing , University of Alexandria was directed to the responsible authorities of the study settings to obtain their permission to collect data after explaining the research purpose.

- Development of the study tools,Tools I, II and III were developed by the researcher based on extensive review of current relevant literature.

•The tools of the study were tested for content validity by five experts in obstetrics and gynecologic nursing field.

•The reliability of the study tools was ascertained by measuring the internal consistency of the items using cronbach's alpha test which equal $r = 0.878$,$r = 0.791$,$r = 0.852$ which indicate the tools are reliable.

•A pilot study was carried out on 10% (40 women) excluded from the study subjects to ascertain the clarity, practicability and applicability of the study tools and to identify the obstacles that may be faced during data collection .

•Data collection

-The Collection of data was done after an explanation of the purpose of the study to each woman, and take informed written consent.

-The researcher asked the woman about socio demographic data and reproductive history using tool I. and asked the women about their knowledge of hormonal contraceptive methods using tool II, finally asked the woman about the factors associated with discontinuation of using hormonal contraceptive methods using tool III .

- The average time needed to complete the questionnaire sheet ranged between 20-30 minutes depending upon the degree of understanding and response of the sheet.

-The Collection of data covered a period of 5 months from the beginning of March to the end of Juley 2022.

•Ethical considerations:

Securing the woman's informed consent. Keeping the woman's privacy. Assuring the woman's data confidentiality.The right to withdraw from the study at any time.

•Statistical analysis

After the completion of data collection, the necessary statistical analysis was applied. The collected data was revised, categorized, coded, computerized, tabulated and analyzed using Statistical Package for Social Sciences (SPSS) version 20. The given graphs were constructed using Microsoft excel software version 2013The necessary tables were then prepared. The significance of the obtained results was judged at the 5% level using the Chi-square test.

Results:

Table(1) distribution of the study subjects according to their socio-demographic characteristics. it was observed that more more than one half of the subjects (53.3**%**) were in their thirties, Less one fifth of them (16.5**%**) were in their forties. The majority of women (83.3%) were from urban, concerning their educational level more than one-third (38.3%) of them completed their secondary education, compared to one third (33.5%) of them were illiterate, while 11.5% of them were primary educated Almost, the majority of women (86.5%) were housewife .In relation to Age at marriage more than three quarters (77.3%) of them married 20years old and more.

Table (2) distribution of the studied women according to their **reproductive history** It was noticed from the table that more than three fifth (62%) of the women were pregnant three to less than five times while less than one third (30.3 %) of study subjects were pregnant more than five times or more. In relation to parity, 67.3 % of women delivered three to less than five times.It was also noticed that the majority (89.5%) of women never had abortion.Concerning, the number of living children, it was found that 67.3% of the women had three to less than five children, Slightly more than three fifth (65.0%) of the studied subjects had both male and female. and the last delivery was normal among the half (50.3%) of the studied subjects .

Figure (1):
Distribution of the studied women according to the level of Women's knowledge about hormonal contraceptive methods

The figure shows the majority (90.3%, 86.3% ,82%) of the women had incorrect knowledge about the injection, the pills and the implant respectively. It was observed that 18%,13.5% and 9.5% of the subjects had correct but incomplete knowledge about contraceptive implant, the pills and the injection respectively .

Figure (2): Distribution of the studied women according to overall knowledge about hormonal contraceptive methods It was observed that the most (94.5%)of the studied subjects had poor knowledge about the hormonal contraceptive methods.

Table (3) distribution of the studied women according to factors associated with discontinuation of hormonal contraceptive use In relation to *socio-demo graphic* and economic factors, it was found that 22% ,17.5% and 17.3% of the women had discontinued the HCM due to level of education ,income of family and the woman had more children respectively. AS regards to the *cognitive factors* it was observed that around one tenth(10.8%, 9%)of them had not participated in educational session about family planning or heard about HCM in the past six months.

concerning *contraceptive factors* it was noticed that less than one third (30.5%)of the studied subjects had forgotten to take the HCM compared to Only(8.3%,5%,4.5%)of them had found the methods were expensive ,complained from getting or check it every month and The method reduces fertility and delays occur in pregnancy occurs long after it stops .Regarding

health factors less than three quarters (73.3%) of the study subjects had discontinued HCM due to the fear of side effects and more than one half (51.8%), less than one third (30%) and more one tenth(12%)of them had complained of Menstrual disorders , over weight and high blood pressure respectively . As regards to *cultural factors* It was noticed that , less than one third (30.5%) of the women had myths about HCM and About one-fifth (22.8%) ,(17.5%) of them reported had fear from changing body image and wanted to have more children respectively. As much as 5.8%,2.8% 2.5%of the women had discontinued the HCM due to the desire to have male children, the Believing that childbearing at a young age is more comfortable and The husband's threat to the woman to marry another if she does not bear him more children respectively. Where the minority (0.8%) of them ashamed of being examined by male doctor

Turning to *administrative factors* more than three fifth only (57.3%) of the women had complained of not receive information and guidance from health care providers , also only 20.3%,15.8%,15.8% of them had discontinued the HCM due to waiting more time to receive the service, suffering from bad communications of health care providers and poor quality of the services respectively ,and about one tenth (10.3%) of them complained of lack of stock at facility .Finally, the *sexual factors*, it was found that 2.5% of the women had discontinued the HCM due to worry about decreased sexual desire .

Table (4) Illustrates the relationship between the overall knowledge and factors associated with discontinuation of hormonal contraceptive use, There was statistically significant difference were detected between overall knowledge and **Cognitive factors** (**p =0.049)**, **Contraceptive factors (p =0.001)** and **administrative factors <0.001***

Figure (3): shows the Distribution of the studied women according to factors associated with discontinuation of hormonal contraceptive use, it was found that the majority (86%)of the studied women complained of health factors and more than three fifth(65.8%)of them had discontinued the HCM due to administrative factors as well as more than one half (56%) of the women had discontinued it due to cultural factors ,beside sociodemographic and economic factors were represent less than one half (48.3%)of all factors while 44.3%of study subjects had complained of contraceptive factors .the majority(97.6%,80.8%)of them does not complained from sexual and cognitive factors respectively.

Discussion

Several factors may have contributed to high rates of fertility in Egypt in recent years, including decreased use of contraceptives among women who already have two or more children, increased use of short-term methods, and a general discontinuation of family planning methods among women. These factors may have been driven by reduced public messaging about family planning, norms around fertility and a change in family size preferences, continued misconceptions about family planning methods, and economic considerations, such as a decrease in public sector employment opportunities for women, among other factors. (Khaled, & Al Khalifa, 2022). **The main finding of the current study** showed that.

the majority of women had poor overall knowledge about hormonal contraceptive methods**.** Whereas the minority of women in the study had fair knowledge in addition to overall knowledge had a statistically significant positive correlation with cognitive, contraceptive and administrative factors.This study's findings about the contraceptive knowledge gap can be related to myths and misperceptions, a lack of contraceptive knowledge, and a lack of proper FP counseling services (Akilimali et al.,2021).

This result comes in the same vein with the findings of Al Basri et al.,(2022) They reported that, with an emphasis on knowledge of OC, which was the most widely used contraceptive method among the respondents. They found that women lacked awareness of contraceptive methods and that their understanding of the benefits and side effects of OC was inadequate.

Discontinuation of HCM is associated with **health factors**. More than four fifth of the study subjects expressed fear of side effects **about** HCM use.**This finding is in** harmony with the study done by Schrumpf et al., 2020 ,Who found that experiencing fear of side effects that result from using hormonal methods is areal factor leading to discontinuation . The present study revealed that most common adverse effects of HCM were menstrual disorder, over weight, increase blood pressure and the risk of cancer This finding is consistent with the study done by Zimmerman et al., (2021) they reported that women using a hormonal method reported currently experiencing at least one side-effect, and that the associations between the experience of side-effects and switching or discontinuation varied substantially based on the nature of the side-effect.

According to the findings of the current study, women who use hormonal contraceptives are complained of headache, nausea, menstrual abnormalities, This result is congruent with the findings of (Odwe et al., 2020) They emphasized that increased menstrual bleeding was associated with discontinuation, Excessive bleeding arose as a major barrier to contraceptive use.

The present study revealed that more than one tenth of women using hormonal contraceptive methods experienced more than one episode of elevated blood pressure . The current result is nearly congruent with the findings of a study carried out in the United States by Shufelt& LeVee, (2020).They had found an increased risk of hypertension among current users of oral contraceptives that was highest among long-term users and decreased shortly after HC cessation. Risk of hypertension increased with increases in the potency of progestin .

In the current study the minority of studied women discontinued hormonal contraceptive methods due to fear of using hormonal contraceptive methods that may be linked with a slight increased risk of cancer with women had family history `compared to people who do not take it. The current finding relatively conforms to a study done by Grant, (2017) they had revealed that Women who have used oral contraceptives for 5 or more years have a higher risk of cervical cancer than women who have never used oral contraceptives. The longer a woman uses oral contraceptives, the greater the increase in her risk of cervical cancer. In the current study finding also revealed that the **administrative factors** increase the rate of discontinuation of hormonal contraceptives.it was found that more than the half of the study subjects complained of health service providers do not give advice and guidance on the hormonal contraceptive methods . This finding is in line with Solo& Festin,(2019). they reported that, providers lack of adequate knowledge and training, level of confidence and access to updated clinical guidance may also influence their recommendations and delivery of sexual and reproductive health services.

Also the current study revealed that more than tenth of women complained of bad attitude of Health service providers. The current result is in harmony with Uwajeneza et al .,(2023)they reported that the slow uptake of contraceptive use among married women has been attributed to their limited access to FP services, gender-based barriers, limited choice of methods, fear or experience of side-effects, cultural or religious opposition, low quality of services, and health care

providers (HCP) and clients' bias against some contraceptive methods .

In the current study, one fifth of the women complained of spending too much time waiting at public health setting obtaining FP services. This result is relatively matching with Williams et al., (2022) Who reported that Long wait times for family planning services are a barrier to high quality care and client satisfaction. **Regarding cultural factors** in the present study around one third of the study subjects reported hearing myths from the use of hormonal contraceptives, including: total or temporary infertility, birth defects and abnormalities, disruption of their normal body processes or inability to menstruate regularly.

In agreement with the result of astudy done by Stevens et al., (2023). They stated However, pernicious, difficult-to-address myths and misconceptions around modern contraception still discourage or prevent millions of women from beginning or continuing to use a method. the finding of the current study showed that more than one fifth of the women had fear from changing body image .This finding is congruent with a study conducted by Nowosielski, (2022) they had reported that women using hormonal contraceptives had a worse body image.

According to **Sociodemographic and Economic factors .** In the current study the majority of women who discontinued the hormonal contraceptive methods were unemployed. This result is supported by the finding by McDougal et al., (2021). they had reported that Generally, contraceptive use was positively associated with employment. In relation to **Cognitive factors** The finding of the present study illustrated that a majority of the study subjects discontinued the hormonal contraceptive methods due to cognitive factors .This finding is in harmony with Rattan et al., (2022) who had They had reported a wareness generation through mass media campaigns can be employed to improve awareness and attitude of the reproductive population.

According to **Contraceptive factors** In the present study about one third of the studied women discontinued hormonal contraceptive methods due to complain from forgetting to take it like the pills , the women missed pills due to forgetfulness.

This finding is in line with Chabbert-Buffetet al.,(2017)They found that Oral hormonal contraception is an effective contraceptive method as long as regular daily intake is maintained. However, a daily routine is a constraint for many women and can lead to missed pills, pill discontinuation and/or unintended pregnancy.

As regard to **sexual factors ,** Female sexual dysfunction is a common condition that negatively impacts the emotional health and quality of life of the affected individuals. The finding of present study revealed that the minority of the women were experienced sexual-related factors. That leads to discontinue hormonal contraceptive methods (Decrease/increase or loss in sexual desires, fear of sexually transmitted diseases, decreased sexual pleasures, vaginal dryness/irritation).

This result is compatible with the Malmborg et al., (2020) they found that two main reported influences on sexual function. First, a decrease of willingness to engage in sexual activity due to few or a complete lack of sexual thoughts or sexual interest, often associated with mood symptoms such as feeling low and initiative-less. Second, a decreased ability to achieve genital arousal, and non-responsiveness to physical or mental sexual stimulation.

Conclusion

The present study clarified that women obtained poor score of knowledge about hormonal contraceptive methods . the current study also showed that the factors such as health ,socio economics, administrative and sexual factors are associated with discontinuation of using hormonal contraceptive methods .there is statistical significance between women’s knowledge and the factors affected discontinuation of using hormonal contraceptive methods.

Recommendations:

- Strengthening health education and improving counseling practice for women and couples seeking FP services, especially on hormonal contraceptive methods.
- Improving the nurse-client relationship to increase positive attitude and reassurance by increasing women's satisfaction and contributing to improved hormonal contraceptive adherence.
- the nurse as a healthcare provider, is in a great position to detect factors affect hormonal contraceptive use .

Table (1): Distribution of the studied women according to their socio-demographic characteristics

socio-demographic characteristics	No.	%
Age		
• <30	118	29.5
• 30-	213	53.3
• 40-	66	16.5
• ≥50	3	0.8
• Min. – Max.	17.0 – 63.0	
• Mean ± SD.	33.04 ± 6.57	
• Median	32.0	
Level of education		
• Illiterate	134	33.5
• Read and write	12	3.0
• Primary education	46	11.5
• Secondary education	154	38.5
• University education	54	13.5
Occupation		
• Housewife	346	86.5
• Working	54	13.5
Current residence		
• Urban	333	83.3
• Rural	67	16.8
Origin		
• Urban	320	80.0
• Rural	80	20.0
Age at marriage		
• <20-	91	22.8
• ≥20	309	77.3
Religion		
• Muslim	378	94.5
• Christian	22	5.5

Table (2)Distribution of the studied women according to the reproductive history

reproductive history	No.	%
Number of pregnancies		
• 1-	31	7.8
• 3-	248	62
• ≥5	121	30.3
Numbers of deliveries		
• 1-	32	8.0
• 3-	269	67.3
• ≥5	99	24.8
Number of abortions		
• Non	358	89.5
• 1-	35	8.8
• ≥2	7	1.8
	(n = 42)	
• Min. – Max.	1.0 – 5.0	
• Mean ± SD.	1.33 ± 0.87	
• Median	1.0	
Number of living children		
• 1-	32	8.0
• 3-	269	67.3
• ≥5	99	24.8
• Min. – Max.	1.0 – 8.0	
• Mean ± SD.	2.84 ± 1.12	
• Median	3.0	
Sex of living children		
• Males	86	21.5
• Females	54	13.5
• Male and female	260	65.0
• Nature of birth		
• Vaginal	201	50.3
• Caesarian	199	49.8

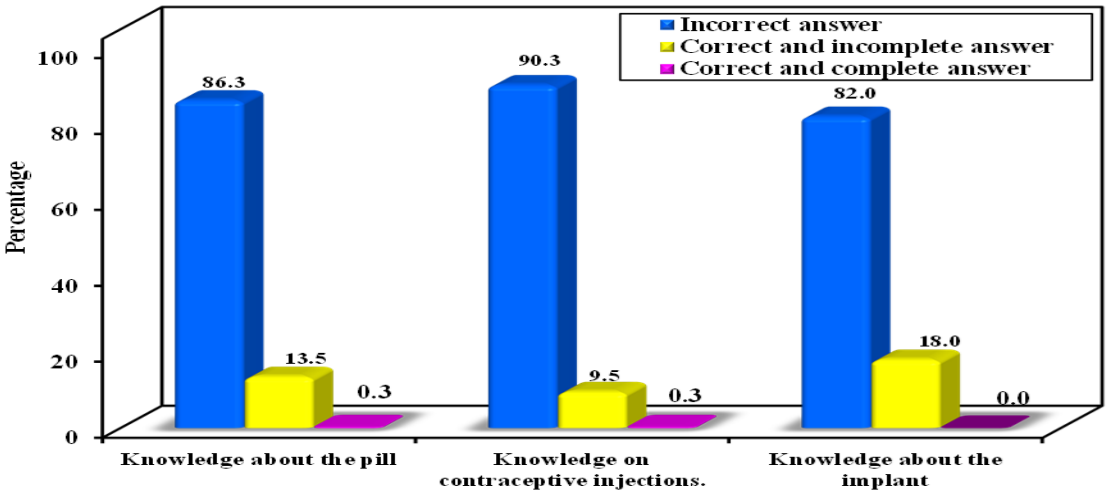

Figure (1): Distribution of the studied women according to the level of Women's knowledge about hormonal contraceptive methods

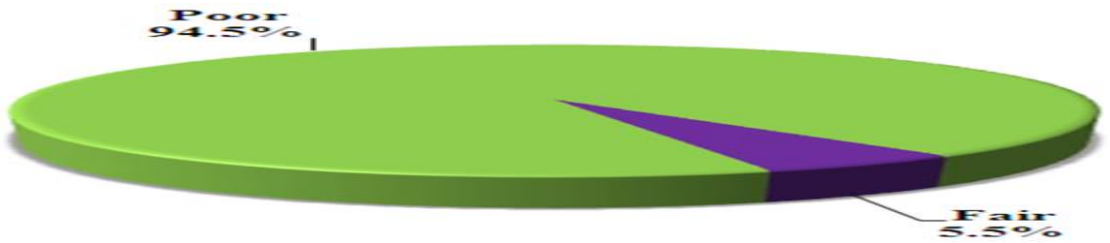

Figure (2): Distribution of the studied women according to overall knowledge about hormonal contraceptive methods

Table (3): Distribution of the studied women according to factors associated with discontinuation of hormonal contraceptive use

Factors	There are		There is no	
	No.	%	No.	%
Social, demographic and economic factors	**193**	**48.3**	**207**	**51.8**
Women's profession	15	3.8	385	96.3
Educational level	88	22.0	312	78.0
Income	70	17.5	330	82.5
Family size	52	13.0	348	87.0
Having more children	69	17.3	331	82.8
Cognitive factors	**77**	**19.3**	**323**	**80.8**
Women hear or see any announcement about hormonal contraceptives in the past six months	36	9.0	364	91.0
Participated in an educational session on family planning over the past six months	43	10.8	357	89.3
Contraceptive factors	**177**	**44.3**	**223**	**55.8**
The means were expensive.	33	8.3	367	91.8
There was a monthly complaint to get it or check it out.	20	5.0	380	95.0
The way he took the means was hard.	3	0.8	397	99.3
The medium needed to remember my day.	122	30.5	278	69.5
The method reduces fertility and delays occur in pregnancy occurs long after it stops	18	4.5	382	95.5
Health factors	**344**	**86.0**	**56**	**14.0**
Fear of side effects	293	73.3	107	26.8
Overweight	120	30.0	280	70.0
Menstrual disorders	207	51.8	193	48.3
Cancer risk	8	2.0	392	98.0
The risk of high blood pressure.	48	12.0	352	88.0
cultural factors	**224**	**56.0**	**176**	**44.0**
The desire to have male children	23	5.8	377	94.3
Wanting to have a lot of kids.	70	17.5	330	82.5
Fears of changing body image and fertility, especially in the eyes of the husband	91	22.8	309	77.3
Myths (have you heard any myths or myths related to your cessation of the use of the medium?)	122	30.5	278	69.5
Husband threatens to marry another woman if wife doesn't have more children	10	2.5	390	97.5
Reproduction is more comfortable at a younger age.	11	2.8	389	97.3
A woman is ashamed to undergo a male doctor's examination or discuss anything related to sexual relations.	3	0.8	397	99.3

Factors	There are		There is no	
	No.	%	No.	%
administrative factors	**263**	**65.8**	**137**	**34.3**
Difficulty in accessing the place that provides family planning services	26	6.5	374	93.5
Transportation was expensive.	35	8.8	365	91.3
The means you were using are not available.	2	0.5	398	99.5
Suffering from poor quality of services provided at the facility	63	15.8	337	84.3
Previous bad experience with the Family Planning Centre	31	7.8	369	92.3
The treatment of the workers in the place is bad.	63	15.8	337	84.3
Health service providers do not give advice and guidance on the method	229	57.3	171	42.8
There's a lack of privacy during the tests.	3	0.8	397	99.3
Lack of contraceptive stock always at the facility	41	10.3	359	89.8
Waiting times at the health facility were long	81	20.3	319	79.8
Sexual factors	**12**	**3.0**	**388**	**97.0**
The means do not provide protection against sexually transmitted diseases	1	0.3	399	99.8
The means cause a lack or increase in libido.	9	2.3	391	97.8
The method causes vaginal dryness.	2	0.5	398	99.5

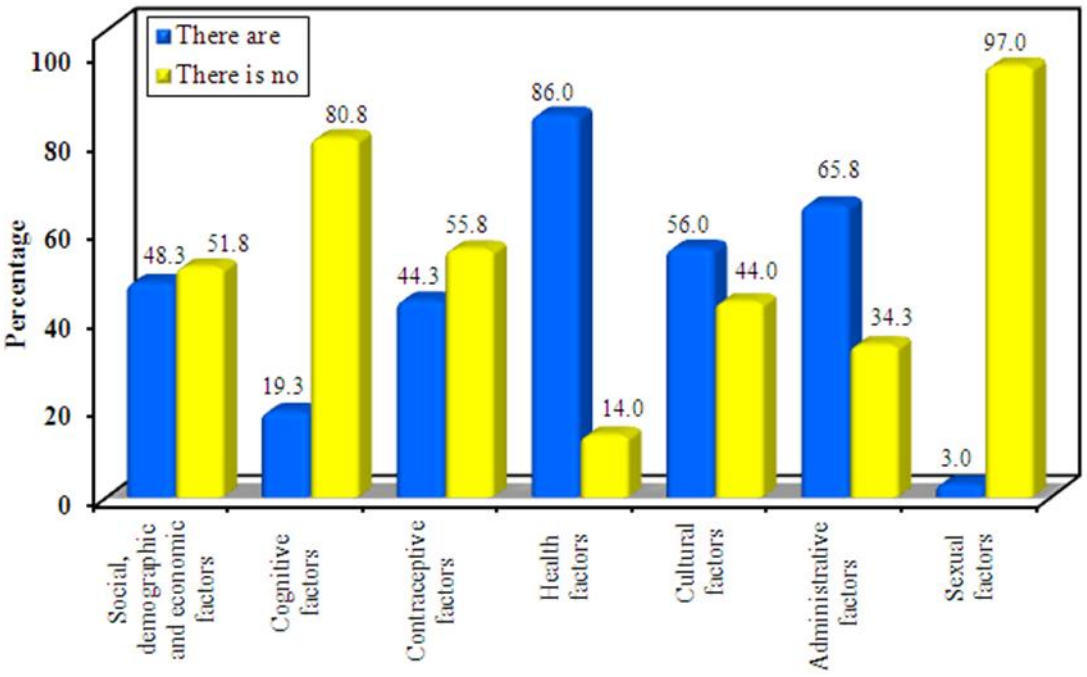

Figure (3): Distribution of the studied women according to factors associated with discontinuation of hormonal contraceptive use (n = 400)

Table (5): Relation between overall Women's knowledge about hormonal and factors associated with discontinuation of hormonal contraceptive use

Factors associated with discontinuation of hormonal contraceptive use	Tool II: - Women's knowledge about hormonal contraceptive methods.				χ^2	P
	Poor (n = 378)		Fair (n = 22)			
	No.	%	No.	%		
Social, demographic and economic factors						
There are	184	48.7	9	40.9	0.502	0.478
There is no	194	51.3	13	59.1		
Cognitive factors						
There are	69	18.3	8	36.4	4.386*	FEp= 0.049*
There is no	309	81.7	14	63.6		
Contraceptive factors						
There are	160	42.3	17	77.3	10.291*	0.001*
There is no	218	57.7	5	22.7		
Health factors						
There are	325	86.0	19	86.4	0.003	FEp= 1.000
There is no	53	14.0	3	13.6		
Cultural factors						
There are	212	56.1	12	54.5	0.020	0.888
There is no	166	43.9	10	45.5		
Administrative factors						
There are	257	68.0	6	27.3	15.305*	<0.001*
There is no	121	32.0	16	72.7		
Sexual factors						
There are	11	2.9	1	4.5	0.191	FEp= 0.498
There is no	367	97.1	21	95.5		

References

Ahmed, S., Choi, Y., Rimon, J. G., Alzouma, S., Gichangi, P., Guiella, G., ... & Tsui, A. (2019). Trends in contraceptive prevalence rates in sub-Saharan Africa since the 2012 London Summit on Family Planning: results from repeated cross-

Khaled, E. A., & Al Khalifa, W. M. (2022). The Awareness Toward Reproductive Health Concepts and Its Impact on Professional Family Planning. *Multi-Knowledge*

sectional surveys. *The Lancet Global Health*, *7*(7), e904-e911

Akilimali, P. Z., Nzuka, H. E., LaNasa, K. H., Wumba, A. M., Kayembe, P., Wisniewski, J., & Bertrand, J. T. (2021). The gap in contraceptive knowledge and use between the military and non-military populations of Kinshasa, DRC, 2016–2019. *Plos one*, *16*(7), e0254915.

Al Basri, S. F., Al Abdali, J. A., Alzubaidi, H. M., Almarhabi, A. A., Alzubaidi, M. A., Al Qarni, G., ... & AlNashri, Z. A. (2022). Knowledge of Reproductive Age Women About Oral Contraceptive Pills in Al-Qunfudah, Saudi Arabia. *Open Access Journal of Contraception*, 61-71.

Chabbert-Buffet, N., Jamin, C., Lete, I., Lobo, P., Nappi, R. E., Pintiaux, A., ... & Fiala, C. (2017). Missed pills: frequency, reasons, consequences and solutions. *The European Journal of Contraception & Reproductive Health Care*, *22*(3), 165-169.

do Nascimento Chofakian, C. B., Moreau, C., Borges, A. L. V., & Dos Santos, O. A. (2019). Contraceptive discontinuation: frequency and associated factors among undergraduate women in Brazil. *Reproductive health*, *16*(1), 1-12.

Frost, J. J., Sonfield, A., Zolna, M. R., & Finer, L. B. (2014). Return on investment: a fuller assessment of the benefits and cost savings of the US publicly funded family planning program. *The Milbank Quarterly*, *92*(4), 696-749.

Grant, E. C. (2017). Lifetime cancer risk with progestin and estrogen oral contraceptives and hormone therapy. *American Journal of Obstetrics & Gynecology*, *217*(2), 232-233.

Guzzo, K. B., & Hayford, S. R. (2018). Adolescent reproductive and contraceptive knowledge and attitudes and adult contraceptive behavior. *Maternal and child health journal*, *22*, 32-40.

Rattan, S., Kalia, M., Rohilla, R., Grover, P. K., Dandona, S., Sharma, M. K., ... & Goel, N. K. (2022). Contraceptive awareness and practices in reproductive age couples: A study from urban slums of Punjab. *Journal of Family Medicine and Primary Care*, *11*(7), 3654-3659.

Electronic Comprehensive Journal For Education & Science Publications (MECSJ), (56).

Khalifa, M., Hussein, W. A. A., & Metwally, S. (2020). The impact of method choice on the risk of contraceptive discontinuation: Egypt 2014. *Journal of Humanities and Applied Social Sciences*

Malmborg, A., Brynte, L., Falk, G., Brynhildsen, J., Hammar, M., & Berterö, C. (2020). Sexual function changes attributed to hormonal contraception use–a qualitative study of women experiencing negative effects. *The European Journal of Contraception & Reproductive Health Care*, *25*(3), 169-175.

McDougal, L., Singh, A., Kumar, K., Dehingia, N., Barros, A. J., Ewerling, F., ... & Raj, A. (2021). Planning for work: Exploring the relationship between contraceptive use and women's sector-specific employment in India. *Plos one*, *16*(3), e0248391.

Ministry of Health and Population [Egypt], El-Zanaty and Associates [Egypt], and ICF International. (2015). Egypt demographic and health survey 2014. *Cairo, Egypt and Rockville, Maryland, USA.*

Nowosielski, K. (2022). Do oral combined contraceptive pills modify body image and sexual function?. *Reproductive Biology and Endocrinology*, *20*(1), 1-9.

Odwe, G., Obare, F., Machiyama, K., & Cleland, J. (2020). Which contraceptive side effects matter most? Evidence from current and past users of injectables and implants in Western Kenya. *Contraception: X*, *2*, 100030.

Okezie, C. A., Ogbe, A. O., & Okezie, C. R. (2010). Socio-economic determinants of contraceptive use among rural women in Ikwuano Local Government Area of Abia State, Nigeria. *International NGO Journal*, *5*(4), 74-77.

Uwajeneza, P., Evans, M., Meharry, P., Mukamana, D., Babenko-Mould, Y., Munezero, P., & Kanimba, A. M. (2023). Nurses andmidwives' experience in providing fertility awareness-based methods, including natural

Regidor, P. A., Colli, E., & Palacios, S. (2021). Overall and bleeding-related discontinuation rates of a new oral contraceptive containing 4 mg drospirenone only in a 24/4 regimen and comparison to 0.075 mg desogestrel. *Gynecological Endocrinology*, 1-7.

sciences, 15(4), 1056-1064.

Schrumpf LA, Stephens MJ, Nsarko NE, Akosah E, Baumgartner JN, Ohemeng-Dapaah S, Watt MH. Side effect concerns and their impact on women's uptake of modern family planning methods in rural Ghana: a mixed methods study. BMC Womens Health. 2020 Mar 20;20(1):57. doi: 10.1186/s12905-020-0885-0. PMID: 32192473; PMCID: PMC7082910.

Shartzer, A., Courtot, B., McMorrow, S., Benatar, S., & Kenney, G. M. (2016). Knowledge gaps and misinformation about birth control methods persist in 2016.

Shufelt, C., & LeVee, A. (2020). Hormonal Contraception in Women With Hypertension. JAMA, 324(14), 1451–1452. https://doi.org/10.1001/jama.2020.11935

Solo, J., & Festin, M. (2019). Provider bias in family planning services: a review of its meaning and manifestations. *Global Health: Science and Practice*, *7*(3), 371-385.

Stevens, R., Machiyama, K., Mavodza, C. V., & Doyle, A. M. (2023). Misconceptions, Misinformation, and Misperceptions: A Case for Removing the "Mis-" When Discussing Contraceptive Beliefs. *Studies in Family Planning*, *54*(1), 309-321

Toerien, M., van Zyl, P. M., Brisley, C., Matthysen, M., Halberg, L., & Joubert, G. (2019). The use, knowledge and attitudes regarding hormonal contraceptive products of female first-year students in a Faculty of Health Sciences. *South African Family Practice*, *61*(5), 190-196.

family planning methods in Rwanda. *International Journal of Africa Nursing Sciences*, *18*, 100537.

Williams, J. S., & MacDonald, M. J. (2021). Influence of hormonal contraceptives on peripheral vascular function and structure in premenopausal females: a review. *American Journal of Physiology-Heart and Circulatory Physiology*, *320*(1), H77-H89.

Yousif, A., & Mansour, F. (2018). Trends and Barriers in the Use of Hormonal Contraception Among Women In Mansoura-Egypt.

Zimmerman, L. A., Sarnak, D. O., Karp, C., Wood, S. N., Ahmed, S., Makumbi, F., & Kibira, S. P. (2021). Association between experience of specific side-effects and contraceptive switching and discontinuation in Uganda: results from a longitudinal study. Reproductive health, 18(1), 1-12.