Discontinuation of family planning rate in Baqlia village: associated factors and causes

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Abstract:

Background: Family planning or contraception methods are remarkably effective in the prevention of unintended pregnancies; however, some women never use it or inconsistently use it. This improper use increases the risk of unintended pregnancies that harm the mother and child's health. This problem is understudied in Egypt. **Objectives:** We aimed to assess the rate, risk factors for family planning discontinuation, and side effects of contraceptive methods in Baglia village, Egypt. **Subjects and methods:** This was a descriptive cross-sectional study. It was conducted in Baqlia Family Health Center among 400 married women aged between 15 and 49 who attended the place in 2019 for any health service and never used family planning methods (pills, injectables, or intrauterine device IUD). They were asked about socioeconomic and reproductive parameters, in addition to the causes of discontinuation and side effects related to contraception. **Results:** Discontinuation was detected in 106 400 participants (discontinuation rate = 26.5%). Discontinuation was significantly associated with working ladies, living alone, older age of the last child, older age at initiating family planning and using other methods rather than pills. In the multivariate analysis, the age of the last child was the only significant independent predictor of the discontinuation of family planning. Conclusion: Our study found a relatively high rate of family planning discontinuation. Health authorities should increase public awareness of the importance of family planning for mothers and children.

Keywords: Discontinuation rate; Family planning; Participants; Predictors.

Introduction

Family planning is crucial for the health of the mother and the child, as proper planning is associated with a 40% reduction in maternal mortality and a 20% reduction in mortality in children aged less than five years.⁽¹⁾

Although the use of family planning or contraception methods is incredibly

effective in the prevention of unintended pregnancies, some women never used contraception, while others inconsistently used it.⁽²⁾ This improper use increases the risk of unintended pregnancies, which is associated with negative impacts on the mother and child's health.^(3, 4)

The discontinuation of family planning methods has become a significant problem

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for family medicine physicians, and the prevalence of that problem is rising, as it was reported to be up to 53.3% in some reports. (5)

Several risk factors have been incriminated in association with discontinuation, including demographic and socioeconomic parameters, in addition to the type of contraception method itself.^(6,7)

According to DHS (2014), the most common causes for discontinuation vary according to the type of method. About (16%) of females using prolonged breastfeeding are the most likely to discontinue, mainly due to a desire for a more effective method (16 percent) and method failure (13 percent).

The proportion of users who stop use because of method failure is higher for the pill (8 percent) than for the IUD and injectable (about 1 percent each). Pill users are more likely than users of other methods to discontinue use because they want to become pregnant or for other fertility-related reasons. The rate of discontinuation due to side effects or health concerns is most significant among injectable users (21 percent). (8)

There is a paucity of studies evaluating the prevalence and predictors for such problems in our locality, which was a fair motive for us to conduct the current study. Herein, we aimed to assess the associated factors and causes of—family planning discontinuation in Baqlia village, Mansoura, Egypt.

Subjects and methods

This descriptive cross-sectional study with an analytic component was conducted at Baqlia Family Health Center (BFHC). Baqlia—is a 4000 square meter residential area that 11885 individuals inhabit. The study was designed for married women aged between 15 and 49 who were using family planning methods (pills, injectables, or intrauterine device IUD) at BFHC in 2019.

Before initiating the study, we obtained approval from the local health authorities of BFHC after explaining the research objectives. Also, the study received ethical approval from the Institutional Review Board (IRB) of Mansoura University (which is the highest education center in the same governorate) (IRB code: MS.18.11.356)

We estimated the required sample size using the Daniel formula⁽⁹⁾ based on the previously published data by Belete *et al.*, who reported that the family planning discontinuation rate was 38%.⁽¹⁰⁾ A minimal sample size of 362 ladies was required to achieve a 5% margin of error, and that number was increased to 450 participants to compensate for the non-response rate.

Sample size calculation for the FP users and discontinuers according to (Daniel, 1999), the calculated sample

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where:

n = sample size (362)

Z = 1.96 for 95% confidence interval.

P = discontinuity level in previous studies (0.38) by Belete *et al.* BMC Women's Health (2018)

d = precision or margin of error (5% or 0.05).

The study design was a hospital-based cross-sectional study. The sample size was calculated using Daniel's 1999 formula with the following assumptions: The minimum desired sample with this assumption was 362. By adding a 10% non-response rate, a total of 400 study participants were included in the study.

The following study was nested casecontrol between FP methods users (n=294) and discontinuers (n=106) to study different factors and their significance.

Four hundred ladies with the previous characteristics were finally enrolled in the study. We obtained their oral consent before participating in the survey after ensuring their confidentiality and explaining the benefits of this study.

All participant ladies were asked to complete a questionnaire based on previous

studies. The questionnaire included four main categories covering socioeconomic status, reproductive characteristics, cause of family planning discontinuation, and side effects related to the contraception method.

Regarding the socioeconomic parameters, the ladies were asked about their age, education level (illiterate, can read and write, or high education), employment status (working or not working), living state (alone or with the family), and family income (enough or not enough based on their subjective evaluation).

We also evaluated some reproductive parameters, including the duration of the marriage, number of living children, age of the last child, age at starting family planning, duration of family planning, and the previous contraceptive method used.

The participants were also asked about the leading cause of discontinuation of family planning and if they suffered any side effects related to the method used. Discontinuation was defined as switching a method of contraception or stopping a technique altogether.

Data collection approach: A list of ladies who used contraception during 2019 was compiled from the family planning records. All women were contacted from January to April 2021 by Raeda Refea to complete the

questionnaire at a home visit. The response rate was 88% (400 females from a total of 450)

We used the SPSS software for data tabulation and analysis. Categorical data was expressed as numbers and percentages and compared between the study groups via the Chi-Square Fischer or exact tests. Multivariate logistic regression analysis was done to determine the independent discontinuation predictors. Any p-values less than 0.05 were considered significant.

Results

106 out of the 400 subjects reported discontinuing family planning, for a total incidence of 26.5%.

We noticed that age, educational level, family income, marriage duration, and number of living children did not significantly impact family planning discontinuation. Nonetheless, the same problem was significantly associated with working ladies, living alone, older age of the last child, older age at initiating family planning, and using other methods rather than pills, as illustrated in Table 1.

Table 2 shows the etiology of discontinuation in discontinuers. These cases included changing the source of family planning (16%), travel of the husband (19%), desire to have a baby (30.1%),

pregnancy while using the method (3.8%), occurrence of complication (11.3%), changing the technique itself (1.9%), and others (divorce, husband death, or surgical sterilization) (17.9%).

On multivariate analysis, the age of the last child was the only significant risk for discontinuation of family planning (p < 0.001)

Table 3 shows that the incidence of side effects increased significantly in the discontinued group compared to the current contraceptive users (p < 0.05). These side effects included vaginal discharge, burning urine, lower abdominal or pelvic pain, bony pain, weight gain, headaches, dizziness, and mood changes.

Discussion

The discontinuation of family planning methods is a growing problem. (11) The proper knowledge of the magnitude of the problem and its risk factors is crucial to creating an effective solution to avoid its negative consequences (unintended pregnancy).

The rate of family planning discontinuation was 26.5% in the current study. Our rate lies within the reported discontinuation rates reported in the literature, which range between 13% and 53.3%. (5) A previous study reported a rate

near ours, as the authors reported a 25.5% discontinuation rate. (12)

Other studies reported rates higher than ours, like 32.2% in Ethiopia, (13) 36.9% in Kenya, (14) and 39.1% in Myanmar, (15) while others reported lower rates (20% in Nepal. (16) The difference in the sample size, availability of family planning methods, and public health awareness could explain the previous difference in the rate among studies.

The current study noted no significant relationship between age and discontinuation. Another previous study reported that discontinued users were between 25 and 34 years old. (17) Contrarily, other authors noted that discontinuation was more common in ladies aged less than 25 years. They attributed their findings to the fact that younger women often use short-term family planning methods. (18)

Our findings showed no significant association between the education level of the mother and family planning discontinuation. Contrarily, Yideta and his colleagues reported that women with primary education were more likely to discontinue the family planning method than illiterate women (CI: 1.01, 2.49).⁽⁵⁾

However, another study reported that women without formal education were

likelier to discontinue their family planning method (CI: 1.3 - 2.17). It is reasonable that women with poor education lack the autonomy to make decisive decisions regarding their reproductive health, but this finding was not evident in our setting.

Working was a significant discontinuation risk factor in our study, which was evident in univariate analysis. Although the previous parameter is understudied in the current literature, working is an additional life burden besides the basic home demands provided by women that could lead to missed doses or noncommitment to follow-up in the family planning clinic.

Another point to consider is that Egypt is a country where men are the main working force. Working women may reflect low socioeconomic status, which is a risk for discontinuation in previous reports.^(11, 19)

In the current study, family income did not significantly affect family panning discontinuation (p = 0.08). However, Stevens *et al.* reported that high income and wealth were protective against family planning discontinuation. (20) Kungu *et al.* contradicted the prior findings, as wealth was associated with a higher risk of discontinuation. The authors attributed their findings to the better access of that group to

services and information, and hence experimentation. (21)

Our data showed that women living alone are at higher risk of discontinuing family planning. This is reasonable, as the absence of the husband eliminates the risk of having an unintended pregnancy.

Therefore, such women seek discontinuation for fear of contraception-related side effects and to decrease financial costs spent on contraception, especially in countries with low socioeconomic status like Egypt. On the other hand, another study reported that single women are more likely to keep family planning methods because they are more careful not to get pregnant. (17, 22, 23)

Nonetheless, that is not applicable in our country because of the religious beliefs that necessitate a woman's marriage to get pregnant.

The current study found no significant relation between discontinuation and marriage duration. Kupoluyi contradicted our findings, as longer marital duration was a significant risk factor for discontinuation (CI: 2.26 - 10.57). (24)

Our study showed that the number of living children did not affect contraception discontinuation. In contrast to our findings, Mekonnen and Wubneh reported an inverse

relationship between the number of children and the possibility of discontinuing contraception. Discontinuation was more common in women with no children compared to those who had.⁽¹³⁾

Other multiple studies also confirmed the same perspective. (10, 15, 25) That could be explained by the need of these women to get the desired number of children, leading to the cessation of family planning methods.

Our results showed that having a young child (1 - 2 years) is protective against discontinuation, while the prevalence of older children was higher in the discontinued group. Rothschild *et al.* confirmed our findings regarding the increased risk of discontinuation in women with older children, as not having a child aged less than six months was a significant risk factor for family planning discontinuation. (14)

In our study, the duration of family planning was much longer in the discontinued group. Yideta *et al.* agreed with our findings, as the authors noted an increased discontinuation rate with the increased time of contraception used.

Discontinuation was detected in 11.5% of their ladies by the end of the first year, and it increased to 27.4% by the end of the second year. (5) This was also confirmed by Kungu *et al.*, who reported that 12- and 36-month

discontinuation rates were 37% and 74%, respectively. (21)

In the current study, the use of pills was protective against discontinuation. In contrast to our findings, another study reported that contraceptive pills were more associated with discontinuation compared to injectables (CI: 2.16 - 4.15).⁽⁵⁾ The authors reported that pills require no provider involvement, which is the main reason for their discontinuation compared to other methods. Other studies also confirmed the previous findings regarding contraceptive pills. ^(15, 26, 27)

The cause of discontinuation in our study varied between changing the source, the husband's travel, the desire for pregnancy, pregnancy while using the method, a medical complication, and changing the method.

Another study also reported that changing the family planning method to a more effective one, besides the side effects, was among the most common causes of discontinuation.⁽⁵⁾

In addition, Mekonnen and Wubneh reported that side effects were the most common etiology of discontinuation (25.2%), followed by the desire for a more effective method (20.6%) and the desire to get pregnant (17.1%).⁽¹³⁾

Tin *et al.* also reported that side effects accounted for 31% of the discontinued cases, followed by the desire for pregnancy (26.7%). Other causes included requiring more effective methods (12.5%), other fertility-related reasons (12.4%), other method-related (6.3%), and pregnancy on top of the process (6.2%), while the remaining portion did not justify their discontinuation. (15)

It is acceptable to find some differences among studies in the literature regarding the cause of discontinuation, which differ according to the sample included and available contraceptive methods in each country, as each method has its specific drawbacks.

Although our study handled a topic rarely evaluated in the Egyptian population, it has some drawbacks. We collected our participants from a single geographical region. Also, we should have assessed the consequences of discontinuation (unintended pregnancy rate). The previous drawbacks should be well evaluated in the upcoming studies.

Regarding the side effects of contraception, 32.07% had menstrual abnormality. This was in agreement with Al-Ghashri *et al.*, 2021 who found that menstrual abnormality was the most common adverse effect (38.1%).⁽²⁸⁾

Conclusion

The rate of family planning discontinuation is relatively high in our study. Women's employment, living alone, older last child, older age at starting contraception, and using another method rather than pills were the risk factors for discontinuation.

The health authorities should try to increase public awareness regarding the importance of family planning for mothers and children, with particular attention given to ladies with previous risk factors.

Declaration:

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Table (1): Overall discontinuation rate and its associated factors.

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Living state Alone 311 (77.8 With family 89 (22.2) Reproductive characters Duration of marriage 1-<3 years	2(1.9%) 17(16.0%)	P value=0.04	CI=.41 to 1.12 R OR = 1.6 CI=.94 to 3.04 r 0.14	
Alone 311 (77.8 With family 89 (22.2) Reproductive characters Duration of marriage 1-<3 years 17(4.2) 3-5 58(14.5) >5 325 (81.2) No. of Living children 1-2 3-4 >=5 Age of the last child 152 (38.0)	2(1.9%) 17(16.0%)	P value=0.04	R OR = 1.6 CI= .94 to 3.04 r 0.14	
Alone 311 (77.8	2(1.9%) 17(16.0%)	P value=0.04	OR = 1.6 CI= .94 to 3.04	
Reproductive characters Duration of marriage 1-<3 years 17(4.2) 3-5 58(14.5)	2(1.9%) 17(16.0%)		CI= .94 to 3.04 r 0.14	
Duration of marriage 1-<3 years 17(4.2) 3-5 58(14.5) >5 325 (81.2) No. of Living children 1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)	17(16.0%)		0.14	
1-<3 years 17(4.2) 3-5 58(14.5) >5 325 (81.2) No. of Living children 1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)	17(16.0%)		0.14	
3-5 58(14.5) >5 325 (81.2) No. of Living children 1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)	17(16.0%)		0.14	
>5 325 (81.2) No. of Living children 1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)	, , ,			
No. of Living children 1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)	87(82.1%)		CI=0.06 to 1.56	
1-2 3-4 >=5 Age of the last child 1-2 152 (38.0)			0.16 OR= 0.36 CI=0.081 to 1.62	
3-4 >=5 Age of the last child 152 (38.0)		P value=0.3		
>=5 Age of the last child 152 (38.0) 1-2	51 (48.1%)		CI= 0.15 to 1.82	
Age of the last child 152 (38.0 1-2	50 (47.2%)	P value=0.0	OR= 0.34 CI=0.10 to 1.18	
Age of the last child 152 (38.0 1-2	5 (4.7%)		R	
1-2		P value=	OR= 3.5	P < 0.001*
3-4 48(12.0)		<0.001*	CI= 1.62 to 7.55	AOR=3.853
	16 (15.1%)		R	
>4 200 (50.0	71 (67.0%)	P value=0.7	7 OR=1.1 CI= 0.56to 2.14	CI=(2.19-6.7)
Age at initiating FP use				
<20 y 224(56.0)	59 (55.7%)	P value=0.2	OR= 0. 16 CI=0.008 to 2.72	
20-30 y 168 (42.0)	47 (44.3%)	P value<0.00		
>30 y 8(2.0)	0		R	
The last used FP Method				
IUD	45(42.5%)	P value =0.8	OR=0.93 CI=0.53 to 1.64	
Pills		P value	OR= 0.44	
Injectable	31(29.2%)	=0.006*	CI=0.24 to 0.80	

R=reference group

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^{*}p value=<0.005

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Table (2): Causes of FP discontinuity among mothers who participated in the study in 2019.

Cause of discontinuation	No=106	
	(%)	
Use from other places to change the source	17 (16)	
Husband travel	20(19)	
Desire to have a baby	32(30.1)	
Pregnancy on top of the method	4(3.8)	
Medical complication	12(11.3)	
Change method	2(1.9)	
*Others	19(17.9)	

^{*}Others =divorced, death of husband, or surgical sterilization

Table (3): Types of side effects of the method used by both currently used and discontinued users of the studied mothers in 2019.

Side effects		Currently	Discontinued	P value
		using FP	using FP	
		N=294 (%)	N=106 (%)	
Increase weight	Yes	14(4.7%)	10 (9.4%)	P value=0.08
Pelvic Pain or lower abdomen	Yes	20(6.8%)	16 (15.09%)	P value=0.01*
Backache& bone pain	Yes	30 (0.1%)	23(21.6%)	P value=0.002*
Menstrual abnormality	Yes	45 (15.3%)	34(32.07%)	P value<0.001*
Headache and migraine	Yes	25(8.5%)	20(18.8%)	P value=0.003*
Mood changes	Yes	50(17%)	30(28.3%)	P value=0.01*

الملخص العربي التوقف في معدل تنظيم الأسرة في قرية بقليا: العوامل والأسباب المصاحبة

ايا احمد عبدالله ، واطفه بهلول العسيلي ، فريده عبدالوهاب السيد ، نيرمين احمد نيازى ا قسم الصحة العامة وطب المجتمع كلية الطب جامعة المنصورة

٢ طبيب مقيم تنظيم الأسرة بمركز صحة المنصورة

الخلفية: تعتبر وسائل تنظيم الأسرة أو وسائل منع الحمل فعالة بشكل كبير في منع الحمل غير المرغوب فيه ؟ بعض النساء لا تستخدمه أبدًا أو تستخدمه بشكل غير متسق. يزيد هذا الاستخدام غير السليم من مخاطر الحمل غير المرغوب فيه الذي يضر بصحة الأم والطفل ، وهذه المشكلة غير مدروسة في مصر. الأهداف: لقد هدفنا إلى تقييم المعدل وعوامل الخطر لوقف تنظيم الأسرة والأثار الجانبية للمحتودات المانعة للحمل في قرية البقلية ، مصر. الموضوعات والطرق :كانت هذه دراسة وصفية طولية. تم إجراؤه في مركز صحة الأسرة في بقليا بمشاركة ٠٠٠ سيدة حضرن المكان. كانوا نساء متزوجات تتراوح أعمار هن بين ١٥ و ٤٩ عامًا ، وكانوا يحضرون BFHC في عام ٢٠١٩ لأي خدمة صحية ويستخدمون طرق تنظيم الأسرة الحبوب أو الحقن أو اللولب الرحمي). تم سؤالهم عن العوامل الاجتماعية والاقتصادية والإنجابية بالإضافة إلى سبب التوقف والأثار الجانبية المتعلقة بمنع الحمل. النتائج: تم اكتشاف التوقف في ٢٠١ من أصل ٠٠٠ مشارك (معدل عدم الرضا عند بدء تنظيم الأسرة ، واستخدام طرق أخرى بدلاً من الحبوب. في التحليل متعدد المتغيرات ، كان عمر الطفل الأخير هو عند بدء تنظيم الأسرة ، واستخدام طرق أخرى بدلاً من الحبوب. في التحليل متعدد المتغيرات ، كان عمر الطفل الأخير هو ، يليها سفر الزوج (١٩١٩) ، وتغيير مصدر تنظيم الأسرة فيما يتعلق بأسباب التوقف ، كانت الرغبة في الإنجاب هي الأعلى (٢٠٠١٪) ، بليها سفر الزوج (١٩١٪) ، ونخيير مصدر تنظيم الأسرة الأسرة مرتفع نسبيًا في دراستنا. يجب على السلطات الصحية بذل الجراحي) (١٩٠٨٪) ، مدوث مضاعفات (٢٠١٪) ، تنظيم الأسرة الأم والأطفال.