Changes in Contraceptive Discontinuation in Egypt between 2008 and 2014

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Abstract

A recent rise in the contraceptive discontinuation rate in Egypt from 25.9% in 2008 to 30.1% in 2014 was reported by the Demographic and Health Survey (EDHS). This paper's objective is to examine the dynamics behind the increase in the contraceptive discontinuation rate and highlight conditions that should be met to prevent any further increase. Life tables net rates of discontinuation were applied to the calendar data for both EDHS2008 and 2014. Discontinuation, switching and failure rates were calculated by reason, and for the three main contraceptive methods. The paper also examines to what extent has the act of discontinuing a contraceptive method left a user at risk of an unintended pregnancy. The results show that although the discontinuation rate increased for the three main contraceptive methods, the discontinuation rate due to "method/service-related reasons" has remained constant at about 18%, while "reduced need" has significantly increased from 8% to 12%. About half of the discontinued segments due to "service quality" switch to another contraceptive method. The results indicate an improvement in switching behavior in Egypt, However, most IUD switchers move to a less effective method. Discontinuation due to method failure increased from 2.9% to 4.3%. This increase varied according to each method. The findings suggest that the National Family Planning Program should continue to exert effort to improve the quality of service and provide better counselling to decrease method failure rates and discontinuation. Counseling regarding side effects is still an issue that is likely to provoke discontinuation. In addition, the results stress the need for more advocacy efforts that highlights the benefits of small families. Increases in the level of wanted fertility pose a great challenge facing the realization of the national population goals.

Key words: Discontinuation – Egypt - Family Planning – Life table.

المستخلص

في ظل الارتفاع الأخير في معدل التوقف عن استخدام وسائل تنظيم الأسرة في مصر من 25.9٪ عام 2008 إلى 30.1٪ عام 2014، اهتمت الورقة بدراسة هذا الارتفاع المفاجيء خلال نفس الفترة، مع التركيز على الأوضاع التي ينبغي تفاديها لمنع أي زيادة أخرى. تم تطبيق أسلوب جداول الحياة لحساب صافي معدلات التوقف من خلال بيانات المسح السكاني الصحي لعامي 2008 و2014. وقد تم حساب هذه المعدلات حسب الأسباب ولكل وسيلة من الوسائل الثلاثة الأكثر استخداما (اللولب– الحبوب – الحقن) كلا على حده. كما اهتمت الورقة بتوضيح إلى أى مدى التوقف عن الاستخدام يعرض السيدة لخطر الحمل غير المرغوب فيه. وقد أظهرت النتائج أنه على الرغم من ارتفاع معدل التوقف عن الاستخدام للوسائل، فقد ظل معدل التوقف بسبب "الأسباب المتعلقة بالوسيلة/ الخدمة" ثابتًا عند حوالي 18٪، بينما ارتفع "الرغبة في الانجاب/ غير معرضة لخطر الانجاب" بشكل كبير من 8٪ إلى 12٪، وأن حوالي نصف السيدات المتوقفات بسبب جودة الخدمة تحولن إلى وسيلة أخرى. ولكن ما يثير القلق أن الغالبية العظمى من مستخدمات اللوالب تحولن إلى وسيلة أقل فعالية. كما ارتفع معدل التوقف بسبب فشل الوسيلة من 2.9% إلى 4.3%، وقد اختلف مستوى اهذا الارتفاع حسب كل وسيلة. وقد ووفقا لنتائج الدراسة فينبغى على البرنامج القومي لتنظيم الأسرة أن يستمر في بذل الجهود لتحسين جودة الخدمة وتقديم المشورة بشكل أفضل لخفض معدلات فشل الوسيلة. كما يجب أن يحتل تقديم المشورة بشأن الآثار الجانبية أولوية أولى لتأثيره السلبي على معدلات التوقف. بالإضافة إلى ذلك، تؤكد النتائج على الحاجة إلى المزيد من جهود الدعوة التي تبرز عوائد تبنى مفهوم الأسرة الصغيرة حيث تشكل الزيادة في مستوى الخصوبة تحديا كبيرا يواجه تحقيق الأهداف القومية للسكان.

الكلمات الدالة: التوقف عن الاستخدام – مصر – تنظيم الأسرة – جداول الحياة

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1. INTRODUCTION

Studying contraceptive discontinuation is essential to understand how well the family planning program fulfills the users' needs and concerns. In Egypt, the Demographic and Health Survey (EDHS) reported that the twelve months contraceptive discontinuation rate has been fluctuating around 30% during the period 1991-2005 and decreased to 25.9% in 2008. However, this drop was followed by an unexpected increase observed in 2014, when it retreated to be 30.1% which is almost equal to the 30% rate observed in the year 2000.

This recent increase in contraceptive discontinuation was accompanied by a slight decrease in the level of contraceptive prevalence from 60% to 58% and changes in the method mix were observed. The use of hormonal methods increased from 19.7% and 12.3% for pills and injectables respectively to 27.4% and 14.5%, and the share of IUD dropped from 59.9% to 51.5%. An alarming increase in the total fertility rate (TFR) from 3.0 to 3.5 children per woman was documented during the period 2008 -2014 (Ministry of Health and Population et al., 2015a). This recent setback created a serious puzzling situation for the Egyptian policy makers. The UNDP report confirmed that "it was evident that Egypt is unlikely to achieve the MDG target of reaching a contraceptive prevalence rate of 72%, which is considered the required level to achieve the replacement level of 2.1 children per woman in 2017" (United Nations Development Program (UNDP) and the Ministry of National Planning, 2015:27).

Therefore, Egypt's National Strategy for Population and Development 2015-2030 and the executive plan for the years 2015-2020 called for accelerated efforts to reduce the TFR to 2.4 children per woman by the year 2030. Three strategic objectives were defined: increasing contraceptive prevalence to 72%, reducing the discontinuation rate (within 12 months of use) to 18%, and reducing the proportion of unmet need for family planning from 13% to 6% (National Population Council, 2015).

The strategy has thus acknowledged that an increase in the availability of family planning services is not enough to promote higher levels of "utilization'' unless discontinuation is reduced. In order to achieve the target of reducing the discontinuation rate from 30.1% in 2014 to 18% in 2030, the family planning program must provide good quality family planning services and also ensure that favorable attitudes to the use and acceptance of contraception are maintained. This is in order to encourage users to continue using their chosen contraceptive method so as to fulfill their own reproductive needs. Considering both the "supply" and the "demand" factors will ensure that the utilization of the family planning services is affected.

Most evaluation efforts and their related conceptual frameworks are concerned mainly with the contribution of family planning program activities "supply factors" to the desired results. However, "In the real world, the success of programs is also determined by "demand factors (social, economic, and other non–program variables that affect demand for the service in question). Thus, an increase in the availability of family planning services is more likely to translate into higher levels of use in a country where these other factors exert a positive (rather than negative) influence on demand" (Bertrand et al., 1996:17). When contraceptive discontinuation reaches high

levels, a negative influence on demand is indicated leading to lower levels of utilization. Service utilization of a family planning program can be assessed by several methods including contraceptive discontinuation rates (Bertrand et al,. 1996). However, contraceptive discontinuation rates provide a useful summary measure of the overall effectiveness of program services in enabling clients to sustain contraceptive use even though they may switch from one method to another. (Family Planning and Reproductive Health Indicators Database, Measure Evaluation: available at https://www.measureevaluation.org/prh/rh_indicators/indicator-summary).

2. RESEARCH QUESTIONS

Previous studies in Egypt regarding discontinuation dynamics were conducted during periods of increasing contraceptive prevalence and decreasing TFR (El-Tawila, 1995; Sayed and Abdel Aziz, 2011; and Way, 2003). However, the current paper considers contraceptive discontinuation during the recent period of rising TFR and a drop in contraceptive prevalence within a mature family planning program. It seeks to establish whether recent changes in discontinuation of use and switching can be considered as an important part of the overall unexpected change in contraceptive dynamics. Within this context, this paper attempts to answer the following questions:

1. What are the changes in the level and pattern of method-specific contraceptive discontinuation and switching?
2. What are the main reasons for discontinuation/switching? Have these reasons changed over the study period?
3. To what extent has the act of discontinuing a contraceptive method left a user at risk of an unintended pregnancy?

3. OBJECTIVES

The objective is to examine the increase in the contraceptive discontinuation rate that took place during the period 2008 -2014 and highlight the conditions that should be met to prevent any further increase. Specifically, the study focuses on the following:

1. Calculating contraceptive discontinuation rates for each specific contraceptive method.
2. Exploring the main reasons for discontinuation/switching over the study period for each specific contraceptive method.
3. Examining contraceptive behavior following a discontinuation or method failure according to contraceptive methods.

4. DATA

The analysis is based on data from EDHS 2008 and EDHS 2014. Both surveys have a multi-stage sample design. A total of 16,527 and 21,762 ever married women age 15-49 were successfully interviewed in 2008 and 2014, respectively (El-Zanaty and Way, 2009; Ministry of Health and Population et al., 2015a). Details of contraceptive use were recorded in the contraceptive calendar section. It contains information about monthly contraceptive use and birth history for the five years preceding the survey. For each month, the respondent was requested to indicate whether she was pregnant, gave birth, had a terminated pregnancy, or used a contraceptive method. If she used a method, she was asked to specify the contraceptive method used. If she

stopped using a method in that month, she was asked to give a reason for this discontinuation. From this information data, segments of use were calculated. Segments of use refer to uninterrupted periods (in months) of use/nonuse for a particular contraceptive method. EDHS 2008 calendar data included 7,597 users who experienced 10,704 segments of use. Pills were used in 26% of these segments, IUDs in 45%, injectables in 15%, and "other methods" in 13% of the segments. EDHS 2014 included 10,570 users who experienced 15,236 segments of use. The distribution of these segments by method was: 40% pills, 36% IUDs, 17% injectables, and 8% "other methods". The segment of use is the unit of the analysis. The distribution of the segments for 2008 and 2014 shows that there are enough segments to allow for the examination of discontinuation rates by methods in both EDHS rounds. The number of segments in 2008 for IUDs, pills and injectables are 4833, 2880 and 1609, respectively. These numbers increased to 5505, 6038 and 2524 in EDHS 2014. Sample weights are used to make the results nationally representative of ever married women in the reproductive age (15-49).

It worth to mention that there are several limitations, which are related to the retrospective nature of DHS calendar data that should be kept in mind when interpreting the results of this paper. First, women who used a method were asked to specify the contraceptive method used and if more than one method were used during the month of observation, only the most effective one was recorded. In such an instance a switching episode within the month-period is missed. Second, only one reason for discontinuation was collected. There are often multiple reasons for discontinuing contraceptive methods (Bradley et al., 2009). Hereby a comprehensive analysis of reasons of discontinuation is unexploited.

5. METHODOLOGY

Single/multiple decrement life tables were built to calculate discontinuation rates as well as to examine various net rates of contraceptive discontinuation by reasons. These reasons for discontinuation are treated as competing risks and discontinuation probabilities in months are additive across the reasons for discontinuation. If there are less than 125 unweighted segments of use for a method, rates for that method are not shown (Rutstein and Rojas, 2006).

The segments of contraceptive use that are used to construct life tables are those that began (3-59) months prior the survey. The period (0-2 months) prior to the interview is excluded from the analysis to eliminate any bias that might be introduced by unrealized pregnancy (Rutstein and Rojas, 2006). Segments of use that started before 59 months prior the survey in EDHS 2014 are excluded to ensure a consistent study time period between the 2008 and the 2014 surveys. A woman may contribute more than one segment during the study period. The paper used Greenwood's formulae to estimate the asymptotic standard error of S(t) "Cumulative survival function" (Kalbfleisch and Prentice, 2002) and used Stata command *stcompet* (Coviello and Boggess, 2004) to estimate the standard error for each reason - specific 12-month discontinuation rate. However, Stata commands do not consider the complex sample design which is a limitation. The study used the estimated standard errors to test the null hypothesis that there is no significant difference in the discontinuation rates between the 2008 and 2014 surveys.

This paper focuses on the discontinuation of the three most widely used contraceptive methods: IUDs, pills and injectables. These three contraceptives together accounted for 92% of

the method mix in EDHS 2008 and 93% in EDHS 2014. The other modern methods and traditional methods are not common and their numbers of segments of use are too small to allow the use of life table analysis. These methods accounted for 8% in EDHS 2008 (1% condoms, 2% female sterilization, 1% other modern methods, and 4% traditional methods including prolonged breastfeeding), and 7% in EDHS 2014 (1% condoms, 2% female sterilization, 1% other modern methods, and 3% traditional methods including prolonged breastfeeding.

Almost all studies that measure discontinuation rates using life table analysis adopted the DHS methodology of data restriction where only right censored segments were included in the analysis and segments of use that started before the beginning of the calendar (left censored) were excluded, (see for example, Curtis and Hammerslough 1995; Bradley et al., 2009). This study follows the same DHS methodology as well. It is worth mentioning, however, that Curtis and Hammerslough 1995 indicated that the omission of these segments of use has little effect on discontinuation rates at short durations and Bradley et al. 2009 found that excluding these segments will bring about an overestimation of the discontinuation rates.

6. RESULTS

6.1 Method - specific discontinuation rates

Table 1 presents life tables estimates of the probability of discontinuation of use measured during the five-year period before the survey. The 12 months discontinuation rate in the 2014 survey is 30.3% for all methods. It is lowest for the IUD segments (14.3%), and highest for the pill segments (41.8%) followed by injectables (37.9%). This is true for all periods of use; 6, 12, 18, 24, and 36 months, respectively in both 2008 and 2014.

Table 1: Life table discontinuation rates for 6, 12, 18, 24, and 36 months by contraceptive method during five years preceding the survey, Egypt DHS 2008 and DHS 2014.

Period	IUD			Pills			Injectables			All method[1]		
	2008	2014	Δ (2014-2008)	2008	2014	Δ (2014-2008)	2008	2014	Δ (2014-2008)	2008	2014	Δ (2014-2008)
6 months	5.4	6.3	0.9***	26.9	27.9	1.0***	26.7	25.2	-1.5***	15.4	18.3	2.9***
12 months	12.0	14.3	2.3***	39.9	41.8	1.9***	37.2	37.9	0.7***	26.1	30.3	4.3***
18 months	21.7	26.4	4.7***	52.6	55.0	2.4***	47.3	46.8	-0.4***	38.0	43.0	5.0***
24 months	34.0	37.3	3.3***	63.6	65.7	2.1***	55.2	56.3	1.1***	50.1	53.6	3.5***
36 months	51.8	53.6	1.8***	75.1	78.0	2.9***	69.8	69.6	-0.2***	64.5	67.4	2.9***
Median duration of use (months)	35	33	-	17	16	-	20	20	-	24	22	-
Total Segments	4833	5505	-	2880	6038	-	1609	2524	-	10704	15236	-

* p<.05, ** p<.01, *** p<.001

[1] *All methods include IUD, pills, injectables, condom, female sterilization and other modern and traditional methods*

By the end of the first year after beginning contraceptive use, 12% and 14.3% of the IUD segments, 39.9% and 41.8% of the pills segments, and 37.2% and 37.9% the injectable segments were discontinued in both surveys respectively. By the end of the second year, more than one-third of the IUD segments, slightly above fifty percent of the injectable segments, and about two-thirds of the pill segments were discontinued in both surveys. By the end of three years, slightly more than half of the IUD segments, about 70% of the injectables segments and more than three quarters of the pill segments, were discontinued. Additionally, the gaps in discontinuation rates for all durations are larger between IUD and injectables than those between injectables and pills.

The median duration of contraceptive use was 24 months at the time of the EDHS 2008 and dropped to 22 months at the time of 2014. It dropped for all contraceptive methods. Although IUD users have the longest duration of use, the median duration of use dropped from 35 to 33 months. For pill users, the median duration of use dropped from 17 to 16 months and for injectable users it remained almost constant at 20 months.

The detailed comparison in table 1 shows that 12 month discontinuation rose by 2.3% for IUDs, 1.9% for pills and by 0.7% for injectables. Although statistically significant, the effect on the all method discontinuation is larger at 4.3%. When the all method discontinuation rate is standardized by applying the segment method mix of 2008 to 2014 method specific discontinuation rates, the all method discontinuation rate of 2014 will drop from 30.3% to 27.5%. The difference between the all method discontinuation rate of 26.3% in 2008 and its standardized level of 27.5% in 2014 shows that the observed difference of 4.3% % is mainly (65.1%) due to the shift away from IUDs to the hormonal methods which have higher discontinuation, and the remaining effect (34.9%) is due to the recent rise in the method specific discontinuation rates.

6.2 Reasons for contraceptive discontinuation

The EDHS calendar data includes five main reasons that respondents gave for discontinuing use. Each includes specific responses as follows:

1. Contraceptive failure: became pregnant while using the method.
2. Side effects/health concerns: had side effects or health concerns.
3. Other method/service-related reasons: wanted a more effective method, lack of access/ too far, cost too much, inconvenient to use, husband disapproved, and up to God/ fatalistic and other. The responses "husband disapproved" and "up to God" are not service-related but were added to this reason because of their small share (0.5% and 0.1%, respectively in 2008; 0.6% and 0.2% in 2014).
4. Desire to get pregnant: wanted to become pregnant.
5. Not exposed to pregnancy: marital dissolution/ separation, difficult to get pregnant/ menopausal, infrequent sex/ husband away.

These five reasons can be further aggregated to reflect the two main groups of factors that influence a woman's decision whether to stop or continue using a method. The first three reasons can be considered as "supply" factors, related to methods or services, while the last two can be considered as "demand" factors, related to reduced need for contraception. This categorization,

although may seem broad, serves the purpose of differentiating between elements related to family planning service delivery and those related to women's family planning desires and needs.

6.2.1 All-method discontinuation rates by reason of discontinuation

Figure 1 presents the change in the all-method 12- month discontinuation rates by the two broad categories of reasons. The "method/service related" category remained almost unchanged at about 18% in both surveys, while the "reduced need" category increased from 8.1% in 2008 to 11.8% in 2014. This is a meaningful shift in the reasons for discontinuation away from reasons related to contraceptive methods and service toward need-based reasons.

Figure 1: Grouped reason specific 12 months discontinuation – all method- rates, 5 years preceding the survey, Egypt DHS 2008 and DHS 2014.

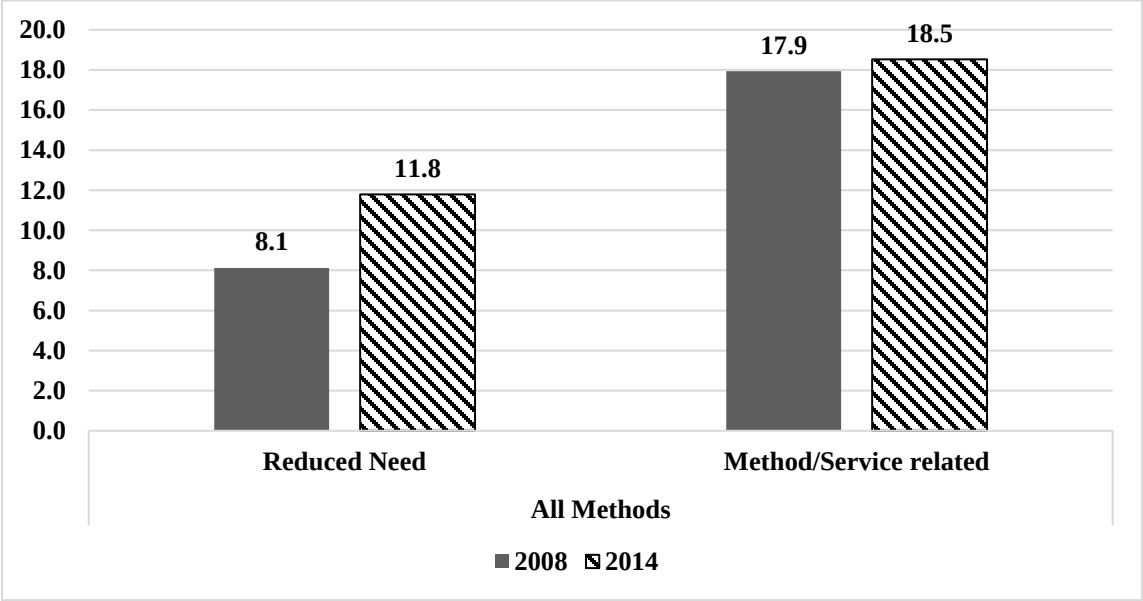


Table 2 presents the 12-month discontinuation rates by reasons. Two points are in order. First, the ranking of the cited reasons for discontinuation significantly changed between 2008 and 2014. The top ranked reason, which has the highest discontinuation rate is "side effects/health concerns" at 9.5% and 10.8% respectively. The second ranked reason highlights the changing pattern between two surveys. In the 2008 survey the discontinuation rate for "other method/service-related reasons" was 5.6%, and it significantly dropped to 3.4% to occupy the third rank in 2014. At the same time, the largest significant increase was among users who discontinued for a need-based reason, and "the desire to get pregnant" becomes the second highest reason-specific discontinuation rate in 2014, followed by "not exposed to pregnancy". This result reflects an increase in the "demand" element of the family planning model.

Table 2: Reason-specific 12 months discontinuation rates during five years preceding the survey, Egypt DHS 2008 and DHS 2014.

Reason	Year		Δ (2014-2008)
	2008	2014	
Method/service-related reasons	**17.9**	**18.5**	**0.6*** **
Contraceptive failure	2.9	4.3	1.4***
Side effects/ health concerns	9.5	10.8	1.4***
Other Method / Service-related reasons	5.6	3.4	-2.2***
Reduced Need	**8.1**	**11.8**	**3.7*** **
Desire to get pregnant	4.4	6.3	1.9***
Not Exposed to Pregnancy	3.7	5.5	1.8***
All Reasons Discontinuation Rates	**26.1**	**30.3**	**4.3*** **
Number of Segments	10704	15236	

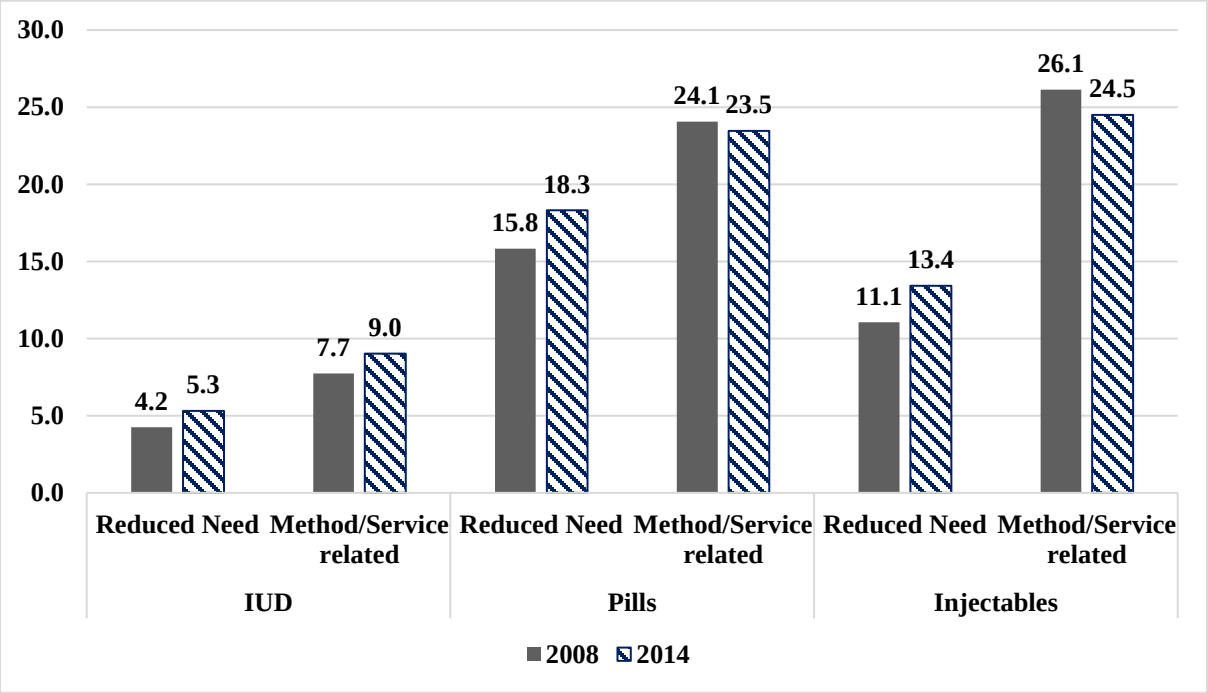
* p<.05 ** p<.01 *** p<.001

Second, is that discontinuation rates because of "method/service-related reasons", which represents the "supply" element, remained almost constant. This is due to an increase in "contraceptive failure" and in "side effects/health concerns"—both of which are related to the quality of counseling—offset by the drop in "other method/service-related reasons"—which are related to contraceptive logistics and accessibility. This result suggests that while the cost and accessibility of family planning methods and services have become less likely to cause discontinuation, counseling regarding side effects of contraceptive methods is still an issue that is likely to provoke discontinuation.

6.2.2 Method-specific discontinuation rates by reason for discontinuation

Figure 2 shows the grouped reasons for discontinuation within the first year of beginning of use for each contraceptive method separately. The figure highlights several points of interest. First, it shows that for each of the three contraceptive methods in both surveys, segments of use are more likely to be discontinued due to "method/service-related" reasons rather than to reasons of "reduced need". Second, the relative share of "reduced need" reasons has increased for all three methods. This increase is especially large among pill users, where the discontinuation rates significantly increased from 15.8% to 18.3% between surveys, and for Injectable users from 11.1% to 13.4%. Third, within the "method/service-related" reasons of discontinuation the rate slightly increased for IUD users (from 8% to 9%), and slightly decreased for hormonal methods. For the pill users, it dropped from 24.1% to 23.5%, and for Injectable users there was a drop from 26.1% to 24.5%. This result may indicate that discontinuing the use of pills and Injectable is more responsive to demand factors while discontinuation among IUD users remained motivated by both "demand and supply" factors.

Figure 2: Grouped reason specific 12 months discontinuation by contraceptive method, 5 years preceding the survey, Egypt DHS 2008 and DHS 2014



The reported reasons for discontinuation differ among the methods, as might be expected. However, reasons of "side effects and health concerns" remain the major reason for discontinuation for all three contraceptives methods in both surveys, as shown in Table 3.

There has been a significant drop in discontinuation for this reason among pill and injectables users, however, and a significant increase among IUD users. Additionally, the discontinuation-specific rates due to method failure (becoming pregnant while using the method) significantly increased for all methods, with the pill users having the highest rates and the IUD users having the lowest. On the other hand, "desire to get pregnant" has significantly changed, its reason-specific discontinuation rate are 4.3%, 8.6%, and 6.1% in the 2014 survey among IUD, pill, and injectable users, respectively, compared with 3.3%, 7.3%, and 5.2% in the 2008 survey.

Table 3: Reason-specific 12 months discontinuation rates during five years preceding the survey by contraceptive method, Egypt DHS 2008 and DHS 2014.

Reported Reasons	IUD			Pills			Injectables		
	2008	2014	Δ (2014-2008)	2008	2014	Δ (2014-2008)	2008	2014	Δ (2014-2008)
Method/service-related reasons	7.7	9.0	1.3***	24.1	23.5	-0.6***	26.1	24.5	-1.6***
Contraceptive failure	0.9	1.2	0.3***	6.0	7.7	1.7***	0.9	1.4	0.5***
Side effects/health concerns	6.1	7.5	1.5***	12.3	11.1	-1.2***	21.3	21.1	-0.2***
Other method/service-related reasons	0.7	0.3	-0.5***	5.8	4.7	-1.1***	3.9	2.0	-1.9***
Reduced Need reasons	4.2	5.3	1.1***	15.8	18.3	2.5***	11.1	13.4	2.4***
Desire to get pregnant	3.3	4.3	1.0***	7.3	8.6	1.3***	5.2	6.1	0.9***
Not exposed to pregnancy	0.97	1.0	0.04***	8.6	9.7	1.2***	5.9	7.3	1.4***
All reasons discontinuation rates	12.0	14.3	2.3***	39.9	41.8	1.9***	37.2	37.9	0.7***
Number of segments	4833	5505		2880	6038		1609	2524	

* p<.05, ** p<.01, *** p<.001

6.3 Status after discontinuation of contraceptive method

In this section, the analysis is concerned with women's contraceptive use status after one month of discontinuation. The major concern is whether the action of discontinuing the use of a contraceptive method has left a user at risk of an unintended pregnancy. The study assumes that women who reported that they are no longer in need to use a contraceptive method (whether for wanting to become pregnant or following their own assessment of inability to become pregnant) are not at risk of pregnancy. Those who reported method failure are currently pregnant and the resultant pregnancy is considered "unintended". Women who reported discontinuing contraceptive use for reasons related to "method/ service" have either abandoned use while in need and are therefore subject to the risk of an unintended pregnancy or discontinued use to switch to another contraceptive. Discontinuation followed by prompt switching does not affect the risk of an unintended pregnancy.

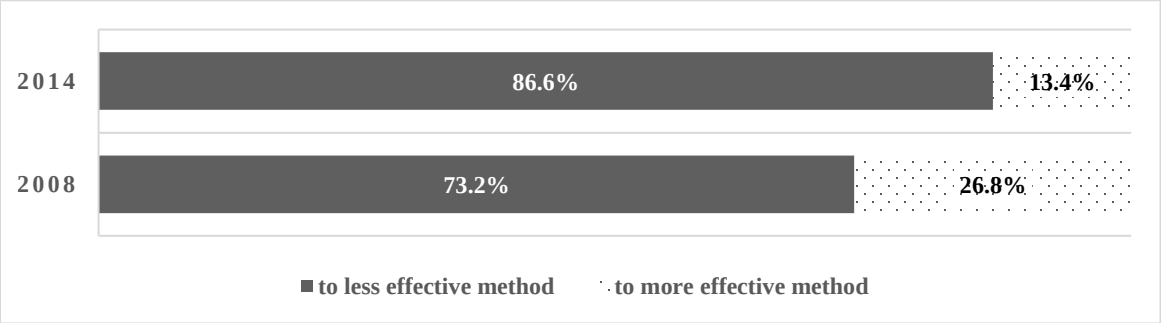
Table 4 displays switching and abandoned use while in need status within 12 month of initial use among women who discontinued due to quality reasons (side effects/health concerns or other method/service-related reasons). It shows that about half of those women switched to another method while the rest became subject to the risk of an unintended pregnancy. It is apparent that switching among women still in need of contraception has increased for IUDs from 48.8% to 58.9%, remained the same for pills at about 53% and increased slightly from 45.7% to 47.7% for injectables. This result indicates an improvement in switching behavior.

Table 4: Percent of switching and abandoned use while in need among women who discontinue within 12 month of use for method/service related reasons, during five years preceding the survey by contraceptive method, Egypt DHS 2008 and DHS 2014.

Status After Discontinuation	IUD		Pills		Injectables		All Methods	
	2008	2014	2008	2014	2008	2014	2008	2014
Switching	48.8	58.9	53.8	52.6	45.7	47.7	52.0	54.6
Abandoned use while in need	51.2	41.1	46.2	47.4	54.3	52.3	48.1	45.4
Total	100	100	100	100	100	100	100	100
Method/Service related reasons (count)	296	382	475	862	365	516	1443	1938

The analysis of the switching behavior of the IUD users requires more attention since its effect on fertility depends on whether the switching is to a more or a less effective method. The contraceptive methods were ranked according to effectiveness which is the extent by which a contraceptive method lowers the chances to become pregnant in a given month. The estimated contraceptive methods' effectiveness by the Spectrum Model (Centers for Disease Control and Prevention,2018) were used to rank all of the family planning methods used in Egypt. Among IUD switchers in 2008, 73.2% switched to a less effective method and 26.8% to a more effective method. In 2014, 86.6% switched to a less effective method and 13.4% to a more effective method as shown in Figure 3. This markedly high percent of switchers to less effective methods is worrisome and calls for further analysis.

Figure 3 Percent distribution of IUD switchers during the first year of contraceptive initiation, by relative effectiveness of the destination method, five years preceding the survey, Egypt DHS 2008 and DHS 2014.



7. DISCUSSION

This paper documents the recent rise in the discontinuation rates for the three most popular contraceptives in Egypt. The rise of all method discontinuation rate is mainly due to the shift away from IUDs to the hormonal methods which have higher discontinuation. Reasons for discontinuation concerned with the contraceptive method itself and with family planning service provision has remained almost constant at 18%. While the cost and accessibility of family planning methods and services became less reported as a reason for discontinuation, counseling regarding side effects is still an issue that is likely to cause method failure and also to provoke discontinuation. These results conform to the medians for 19 countries reported by the WHO study (Ali et al., 2012), with only two exceptions. Pill failure rates increased from 6% to 7.7% while the

reported median is 5.6%. Also, discontinuation due to the desire to get pregnant for the IUD segments rose from 3.3% to 4.3%, while the reported median was 1.3%.

On the other hand, reasons related to reduced need for contraception has significantly increased, from 8% in 2008 to 12% in 2014, which coincides with the recent increase in ideal family size in Egypt and could be a motive to stop using a family planning method. The mean ideal family size is 3.4 children among men and 3.1 among women of reproductive age, (Ministry of Health and Population et al., 2015b).

The IUD users were the least likely to discontinue within the first 12, 24, 36 months of use. This result conforms to international findings since removing an IUD requires a visit to a healthcare provider. In contrast, discontinuation of pills and injectables, is a passive act (World Health Organization, 2012). Additionally, IUD can be used for spacing because it is reversible, and this is common in Egypt. A comparative study about the discontinuation of IUD use (Ali et al., 2011), reported that in all countries studied, women were more likely to use modern methods rather than IUDs to space births—with the exception of Egypt.

This study has shown that about half of the discontinued segments due to "service quality" concerns switch to another contraceptive method. Analysis of the trend of percentages of women using modern methods who switched to another method for method-related reasons in 19 countries shows that it ranges from 72.5% to 40.5% (Ali et al., 2012). Although this result indicates an improvement in switching behavior in Egypt, this study finds that the majority of IUD switchers move to a less effective method.

8. POLICY IMPLICATIONS

Choices that family planning users make may have an impact on contraceptive discontinuation which is now considered a challenge facing the realization of the goals of the recent initiative FP2020 (Stover and Sonneveldt, 2017). Improving continuation is a particular challenge facing the Egypt Family Planning Program because it requires advances in many areas simultaneously, including logistics, counseling, quality of care, and choice (Stover and Sonneveldt, 2017).

While Egypt's family planning program has continued to pursue an increase in contraceptive prevalence, strategies aiming to ensure better use compliance and longer durations of use have not been as effective. Better counseling might have the potential to decrease failure rates and improve switching behavior. The program needs to shift its emphasis from increasing the number of contraceptive users to improving services to reduce the discontinuation rates and more importantly to improving advocacy efforts in favor of the correct use of contraceptive methods. If these issues are not given due attention, many women will be at greater risk of having an unintended pregnancy because they may abandon the method without immediately adopting another or by adopting less effective methods. Enabling current users to reduce method failure and facilitating switching among methods will play a critical role in reducing unmet need and meeting the goal of FP2020 (Jain and Winfrey, 2017; Jain et al., 2013).

Contraceptive security remains a financial challenge for Egypt and it is clear that plans to avoid unintended pregnancies among contraceptive current users are likely to require an increased allocation of resources. However, given the magnitude of the impact of discontinuation, the financial and health burden of unintended births may make program efforts to reduce unmet need quite cost effective. Past users with unmet need accounted for 71% of the unmet need in Egypt 2008 (Jain et al., 2013). The needed strategy is to "focus on encouraging past users with unmet need to resume use and supporting current users in continuing their use of the same method or change to a different one appears to be essential in reducing unmet need in the future" (Jain et al., 2013). In addition, the results of this study that confirmed use of IUDs in Egypt as a spacing method and that switchers tend to use a less effective method implies that improved counseling is needed not only at the time of insertion but also at the time of removal. It also proved that reducing the failure rate of hormonal methods is required.

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