

Contraceptive use dynamics and effect of counseling on use- continuation of contraception in Assiut Governorate, Upper Egypt

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Abstract: Background: Egypt's family planning programs have followed a similarly unsteady course. Debated by Egyptian social scientists since the 1930s, Egypt's high population growth became widely viewed as an acute problem in the 1960s, when the government acknowledged the serious economic and social problems associated with it. **Objectives:** analyzing the factors associated with contraceptive methods discontinuation among women aged 15- 49 years in study area and contraceptive use dynamics. We also examined the effect of counseling on percent of continuation. **Study design:** A cross sectional survey was carried out among the eligible women. **Study setting:** The study areas included Assiut Governorate family planning units in different places providing contraceptive methods. **Study population:** One thousand and ten women in reproductive age from 15-49 who used contraceptive methods once or more, has one child or more were included. **Study tools:** An interview questionnaire were constructed including data about used contraceptive methods, discontinuation and its causes, failure and its fate. We asked about ten steps of counseling. Data entry –after revising and editing -was done via Excel software while data analysis was carried out via SPSS program version 11. **Results:** the most commonly used modern method was IUD (43.0%). The results revealed that (69.7%) of methods had been stopped within 2 years of starting for various reasons. The percent of discontinuation decreased significantly with increasing age. Discontinuation was the lowest when there were four or more living children and increased significantly by decreasing number of living children. It decreased significantly with increasing the number of sons. As regards infant deaths, discontinuation was insignificant among those who did not experience infant deaths, and presence of one and two deaths respectively. University graduated women showed least discontinuation level. As regards causes of discontinuations, side effects and health concerns was the most common reason of discontinuation. Most of method failure as expressed by pregnancy ended in live births. The results indicated that a higher score on counseling was significantly associated with continuation. **Conclusion:** Counseling should emphasize the possibility of side effects, stressing the fact that most will be transient, and the need to identify a backup method. Follow-up visits should be scheduled for 1 to 2 months after a prescription is written.

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1. Introduction

Strengthening of reproductive health and family planning services in developing countries is repeatedly highlighted as a priority for reducing maternal mortality and improving maternal and child health. Effective implementation of appropriate services requires an understanding of the factors affecting reproductive outcomes among women at risk and their patterns of behavior⁽¹⁾.

Improvement in the quality of contraceptive use is an important goal of Egypt's family planning program. Information on the level of current use of contraception is important for understanding the key determinants of fertility and for measuring the success of the national family planning program⁽²⁾.

Contraceptive use in Egypt doubled from 24% in 1980 to 48% in 1995. The change was rapid in 1980, but virtually no change occurred in the use rate

during 1991-1995. The shift toward more effective methods which was evident in the 1980 continued during the first half of 1990. Although at slower pace in Assiut, 12.7% of married women use family planning method in 1988, 28.2% in 1992, 32.9% in 2000⁽³⁾.

In spite of unmet need for family planning remains a useful tool for identifying and targeting women at high risk of unintended pregnancy and used as a standard measure for evaluating programs effectiveness in meeting of reproductive needs of the individuals, it's validity and accuracy in identifying women most at risk of unintended pregnancy have been questioned⁽⁴⁾.

Counseling is an important element of providing good quality family planning services. For counseling to be effective, however, policy markers need to support clients ability and right to make decisions

about their reproductive health as well as allocate funding for counseling materials, services, and provider training/supervision⁽⁵⁾.

High rates of discontinuations are recognized as a major problem facing family planning programs and there is need to search for associated factors. Discontinuation is an indicator of method acceptability. Changing methods denotes dissatisfaction with specific method. Stopping all contraceptive use while at risk of an unintended pregnancy marks a more general dissatisfaction. The present research aimed at analyzing the factors associated with contraceptive methods discontinuation among women aged 15- 49 years in study area and contraceptive use dynamics. We also examined the effect of counseling on percent of continuation.

2. Subjects and Methods:

Definitions:

We adopt these definitions in our study:

Contraceptive method discontinuation: is the stoppage of use of method within two years of starting its use for any reason.

Contraceptive method switching : is the use of another method within the period of twelve months following discontinuations of the method.

Contraceptive method failure: is defined as a pregnancy occurring while contraception being practiced by using a contraceptive method .

Study design:

A cross sectional survey was carried out among the eligible women.

Study setting:

The study areas included Assiut Governorate family planning units in different places providing contraceptive methods which included:

1. Contraceptive units of Ministry of Health and Population (MOHP): Ministry of Health has 237 family planning units in Assiut Governorate, of them 12 mobile units, 7 urban health units, 12 units in general and central hospitals, 7 health office units, 12 units in urban health centers, 187 rural health units. Simple random sample of primary health care units, hospital units and mobile units were included in the study.
2. Assiut University Hospital Contraceptive Clinic (AUHs).
3. Clinical Service Improvement Project (CSI) in Assiut Governorate.
4. Sample of private clinics (PCs).

Study population:

By Epi Info 2000, at a confidence level = 95%, a power of 90%, a contraceptive prevalence rate

(CPR) = 38%⁽⁷⁾. In addition, the Egypt DHS sampling policy recommends that a minimum of 450 completed interviews with eligible women be obtained to provide reliable estimates for estimation of contraceptive prevalence rate and other health indicators⁽⁷⁾.

One thousand and ten women in reproductive age from 15-49 who used contraceptive methods once or more, has one child or more were included in the study of them; 710 women were selected from MOHP units, 100 from Assiut University Center (AUH) 100 from CSI centers and 100 from private clinics were included in the present study.

Study tools:

An interview questionnaire were constructed including data about socio-background characteristics of studied women. Other data included reasons of discontinuation, initiatives of switching and failure.

Ten counseling steps were tested in the form of either done or not done. We give one if done and zero if not done through asking the clients the following questions of counseling: Counseling and examination done in privacy, Telling about type and person who do physical examination, Complete flexibility to accept or refuse the service, Telling about useful function of family planning, Telling about all methods available in and outside the unit, Telling in a descriptive manner about each method and how to be used, Telling about effectiveness of each method, Discussion about rumors of different methods, Telling about side effects and complications of chosen method.

Data collection:

Data collection was done through personal interview with eligible women.

Data analysis and study hypothesis :

Data analysis phase was carried out via Statistical Package of Social Science (SPSS) version 11. A plan for data analysis was established based upon the objectives of the study and the conceptual framework.

Data analysis began by obtaining frequency distribution and descriptive statistics for most variables. Several cross tabulations were also included. Chi-square was the test of statistical significance of the observed association in some cross tabulations of the bivariate analysis. A significance level of 95% with a P value < 0.05 was considered.

Ethical issue:

Each client informed about the aim of the study and the client consented either orally or by written consent and she had a full chance to stop giving information about her method.

3. Results:

The total number of clients included in the present study was 1010 distributed as follow: 710 (70.3%) clients were taken from MOHP outlets. One hundred clients (9.9%) were selected from each sector, AUHS, CSI, and private clinics. The total number of methods used during reproductive age

group was 1728 distributed as follow: MOHP (59.3%), AUHS (13.8%) , CSI (17.7%) and private clinics (9.3). Most of clients used only one method (43.6%) or two methods (43.2%). Only 13.3% used three or more methods (Table 1).

Table (1): Percent distribution of ever users of modern contraceptive methods according to source of supply, Assiut Governorate, 2006.

	Sectors								Total	
	MOHP		AUHS		CSI		PCs		No.	%
	No.	%	No.	%	No.	%	No.	%		
-Total number of clients per sector	710	70.3	100	9.9	100	9.9	100	9.9	1010	100.0
-Total number of methods per sector	1024	59.3	238	13.8	305	17.7	161	9.3	1728	100.0
Number of methods:										
One method only	288	40.6	58	58.0	57	57.0	37	37.0	440	43.6
2 methods	309	43.5	23	23.0	41	41.0	63	63.0	436	43.2
3 methods and more	113	15.9	19	19.0	2	2.0	0	0.0	134	13.3

Table (2) shows Percent distribution of modern contraceptive methods according to source of supply. On the total level, the most commonly used modern method was IUD (43.0%) followed by injectables (28.4%), then OCPs (16.1%), followed by Norplant (7.6%) and barrier methods (5.0%).

The second method of choice was injectable methods in all sectors except AUHS in which OCPs was the second method. Norplant method was not recorded in CSI and private clinics but it represented 13.9% and 9.6% of methods used in AUHS and MOHP. Barrier methods was the least in use constituting 6.1%, 4.6%, 3.7% and 1.7% in MOHP, CSI, private clinics and AUHS respectively.

Table (3) shows the percent of discontinuation of modern contraceptive methods according to background characteristics. As regards age, the percent of discontinuation decreased significantly with increasing age ($P= 0.000$). It was 83.2% among those aged < 20 years, 70.5% in 20-34 years and 54.0% in 35-49 years.

As regards the **number of living children**, discontinuation was the lowest when there were four or more living children and increased significantly by decreasing number of living children ($P= 0.000$). It increased from 59.3% among women who had four children to 87.8 % among women who had only one child.

According to **number of sons**, discontinuation decreased significantly from 84.9% among those who did not have sons to 63.3% among those who have three or more sons ($P= 0.000$).

As regards **infant deaths**, discontinuation was (70.1%), (62.3%) and (64.7%) among those who did not experience infant deaths, and presence of one and two deaths respectively. This difference was statistically insignificant ($p= 0.313$).

As regards **education**, 67.8% were illiterate and 80.3% were primary graduated. Preparatory, secondary and university education represented (71.3%, 97.0%, and 41.9 of women respectively). The difference was statistically significant ($p= 0.000$).

Table (4) shows the percent distribution of contraceptive method discontinuation according to sector and method in use. The results revealed that (69.7%) of methods had been stopped within 2 years of starting for various reasons. It was found that, 95.4% of CSI methods, 68.9% of private clinics methods, 68.4% of AUHS and 62.5% of MOHP methods had been stopped within 2 years of starting use.

On comparing percentage of discontinuation according to different types of methods, it was 76.6%, 75.5%, 67.3%, 61.6% and 36.6% in OCPs, IUDs, Injectables, Barriers and Norplants methods respectively.

As regards causes of discontinuations (Table 5), side effects and health concerns (50.4%) was the most common reason of discontinuation. The desire to become pregnant was also frequently mentioned for discontinuing use (25.2%). An unintended pregnancy (method failure) as a reason for discontinuation was mentioned by (5.6%). Personal reasons as husband disapproved the method, wanted

more effective method, inconvenient to use, cost access availability, marital dissolution, infrequent sex, husband away, or menopausal were mentioned by (18.8%).

Table (5) also shows causes of discontinuation in different methods. Health side effects as a cause of

discontinuation was the highest among injectables (55.5%) followed by IUDs users (54.2%), Norplant (50.0%) and then OCPs (43.2%). Method failure was the main cause of discontinuation in barrier methods (73.6%).

Table (2) : Percent distribution of modern contraceptive methods by source of supply, according to specific method, Assiut, 2006.

contraception method	Sectors								Total	
	MOHP		AUHS		CSI		Private clinics			
	No.	%	No.	%	No.	%	No.	%	No.	%
OCP	159	15.5	55	23.1	39	12.8	25	15.5	278	16.1
IUDs	417	40.7	110	46.2	146	47.9	70	43.5	743	43.0
Injectables	288	28.1	36	15.1	106	34.8	60	37.3	490	28.4
Norplant	98	9.6	33	13.9	0	0.0	0	0.0	131	7.6
Barrier	62	6.1	4	1.7	14	4.6	6	3.7	86	5.0
Total	1024	59.3	238	13.8	305	17.7	161	9.3	1728	100.0

Table (3) : Percent distribution of discontinuation of modern contraceptive methods according to background characteristics of women, Assiut Governorate, 2006.

	Number of methods	Discontinuation		Sig.
		No.(1728)	No.(1205)	
Age:				
<20 years	393	327	83.2	79.088 P= 0.000
20-34 years	950	670	70.5	
35-49 years	385	208	54.0	
No. of living children				
1	74	65	87.8	90.164 P= 0.000
2	269	224	83.3	
3	550	421	76.5	
4+	835	495	59.3	
No. of sons				
0	225	191	84.9	60.425 P= 0.000
1	426	333	78.2	
2	467	295	63.2	
3+	610	386	63.3	
No. Infant deaths				
0	1634	1146	70.1	2.324 P= 0.313
1	77	48	62.3	
2	17	11	64.7	
Education				
Illiterate or just read	742	503	67.8	53.928 P= 0.000
Primary school	300	241	80.3	
Preparatory school	216	154	71.3	
Secondary school	200	194	97.0	
University	270	113	41.9	

Table (4) : Percent distribution of contraceptive discontinuation in different sectors according to type of method, Assiut Governorate, 2006.

Contraceptive Methods	Sectors								Total	
	MOHP		AUH		CSI		P Cs			
	No.	%	No.	%	No.	%	No.	%	No.	%
OCP	100	15.6	43	26.4	44	15.1	26	23.4	213	76.6
IUDs	299	46.7	70	42.9	139	47.8	53	47.7	561	75.5
Injectables	181	28.3	26	15.9	98	33.7	25	22.5	330	67.3
Norplant	36	5.6	12	7.4	0	0.00	0	0.00	48	36.6
Barrier	24	3.8	12	7.4	10	3.4	7	6.3	53	61.6
Total	640	62.5	163	68.4	291	95.4	111	68.9	1205	69.7

Table (5): Causes for discontinuing use of contraceptive method according to specific methods, Assiut Governorate, 2006.

Reasons of discontinuation	Contraceptive methods										Total	
	OCP		IUDs		Injection		Norplant		Barriers			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Side effects, health concerns	92	43.2	304	54.2	183	55.5	24	50.0	4	7.5	607	50.4
Method Failure	16	7.5	13	2.3	0	0.00	0	0.0	39	73.6	68	5.6
Desire for another child	52	24.4	167	29.8	67	20.3	14	29.2	4	7.5	304	25.2
Personal reasons	53	24.9	77	13.7	80	24.2	10	20.9	6	11.9	226	18.8
Total	213	17.7	561	46.6	330	27.4	48	4.0	53	4.4	1205	100.0

Regarding events within 12 months after use; (44.3%) of them switched to another method, (42.8%) got pregnant and (1.1%) returned to the same method, (11.8%) of discontinuation ended their use of any method (Fig.1).

Table (6) shows event within 12 months of discontinuation according to contraceptive method; it was as follow:

For **OCPs**; 47.9% switched to another method, 42.3% got pregnant, 7% did not use any methods and 2.8% returned to the same method.

For **IUDs**; 45.9% switched to another method, 43.5% got pregnant, 11.9% did not use any methods and 0.7% returned to the same method.

For **Norplant**; 33.3% switched to another method, 43.7% got pregnant, 16.7% did not use any methods and 6.3% returned to the same method.

For **barrier** methods; 9.4% switched to another method, 83.1% got pregnant, 7.5% did not use any methods and no woman returned to the same method.

Out of 1010 women, 68 (6.7%) stopped using contraceptive method due to method failure. Failure represented (3.9%) of all studied methods (1728) and (5.6%) of all reported discontinuation (1205).

Out of 1010 women, 68 (6.7%) stopped using the contraceptive method due to method failure. Failure

represented (3.9%) of all studied methods (1728) and (5.6%) of all reported discontinuation (1205). **Failure** was the main cause of discontinuation among barrier methods users (73.6%) followed by OCPs (7.5%) and then IUDs (2.3%). There was no failure cases reported among norplant and injectables method. (Table 5).

Most of method failure as expressed by pregnancy ended in live births (72.1%) and only (27.9%) ended in abortion. Events occurring within 12 months of end of pregnancy of failure : In general : Switching to another method (64.7%) constituted the highest percentage followed by no events occurred (20.6%) followed by another pregnancy (10.3%). Returning to the same method represented only 4.4% of failure cases. (Table 7) .

Table (8) shows effect of counseling on continuation of contraceptive methods. On the basis of 10 questions of counseling steps; the results of the quantitative assessment indicated that a higher score on counseling was associated with continuation. Mean score was 4.61 ± 4.11 among women who continue use of contraceptive methods as compared to 3.01 ± 3.86 Among those who discontinue ($p=0.0001$).

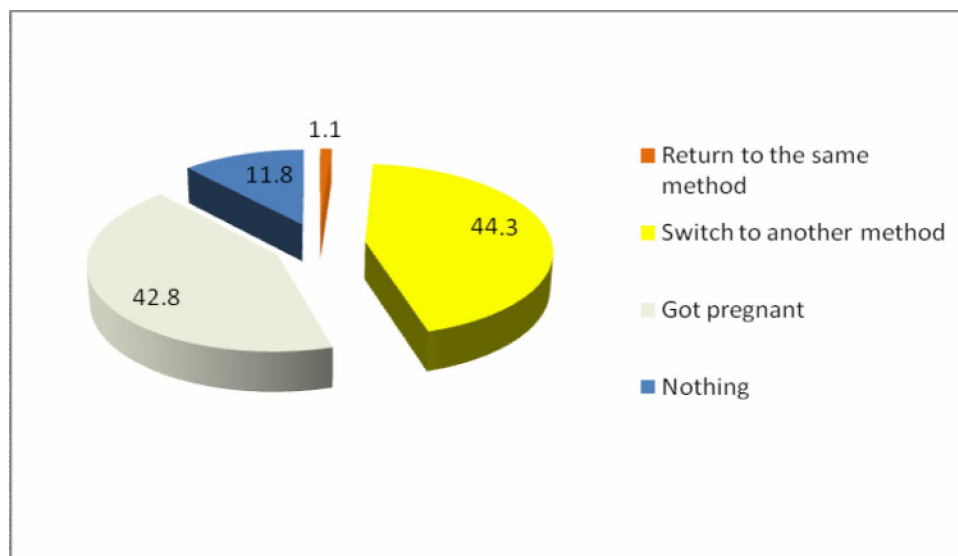


Fig. (1): Events within 12 months of discontinuation of contraceptive method.

Table (6): Events within twelve months of discontinuation according to type of contraceptive method, Assiut Governorate, 2006.

Events within 12 months of stopping use	Contraceptive methods										Total	
	OCP		IUDs		Injs		Norplant		Barriers		No.	%
	No.	%	No.	%	No.	%	No.	%	No.	%		
Return to the same method	6	2.8	4	0.7	0	0.0	3	6.3	0	0.00	13	1.1
Switch to another method.	102	47.9	244	45.9	167	50.6	16	33.3	5	9.4	534	44.3
Got Pregnant.	90	42.3	246	43.5	115	34.9	21	43.7	44	83.1	516	42.8
Nothing	15	7.0	67	11.9	48	14.5	8	16.7	4	7.5	142	11.8
Total	213	17.7	561	46.6	330	27.0	48	4.0	53	4.4	1205	100.0

Table (7) : Outcome of failure and events within twelve months of failure

Variables	Total	
	No. of failure cases (68)	%
Fate of failure		
Live birth .	49	72.1
abortion	19	27.9
Events within 12 months		
Return to the same method	3	4.4
Switch to only method	44	64.7
Got pregnant	7	10.3
Nothing	14	20.6
Percent of failure out of total number of women	1010	6.7
Percent of failure out of total number of methods	1728	3.9
Percent of failure out of total number of discount.	1205	5.6

Table (8): Distribution of discontinuation of contraceptive methods according to counseling score, Assiut Governorate, 2006.

Score of counseling	Contraceptive method continuation	
	Continue	Discontinue
Mean \pm SD	4.61 \pm 4.11	3.01 \pm 3.86
Minimum	0	0
Maximum	9	9
T test	7.5707	
P value	0.0001	

4. Discussion

Egypt's family planning programs have followed a similarly unsteady course. Debated by Egyptian social scientists since the 1930s, Egypt's high population growth became widely viewed as an acute problem in the 1960s, when the government acknowledged the serious economic and social problems associated with it. The government soon established the National Family Planning Program as one response to the economic problems⁽⁶⁾.

In the present study, clients used one or two contraceptive methods in 43.6% and 43.2% respectively and only 13.3% used three or more methods (Table 1). As in agreement with our results, El-Zanaty and Way⁽⁷⁾ showed that half of ever user women have had experience with only one method while (33%) have used two methods and (19%) have tried three methods or more.

The most commonly used method was the IUD (43.0%) followed by injectables (28.4%), OCPs (16.1%), Norplant (7.6%) and Barriers (5.0%) and this was true for all sectors (Table 2). The second method of choice was injectable contraceptive methods in all sectors except AUHS in which OCPs was the second method. Norplant was not recorded in CSI and private clinics but it represented 13.9% and 9.6% of methods used in AUHS and MOHP. Barrier methods was the least in use constituting 6.1%, 4.6%, 3.7% and 1.7% in MOHP, CSI, private clinics and AUHS respectively.

Regarding sectors supplying methods in the present study, it is similar to previously mentioned by El-Zanaty and Way⁽⁸⁾ as IUDs and injectables are the common method supplied by MOHP and AUHS (Governmental units). Norplant were not available in non governmental units (CSI, private clinics). Therefore our population are in great need for implant to be supplied to all sectors especially in private, semi-private and public units. Training of the service providers to insert and remove norplant is also needed.

The recent El-Zanaty and Way⁽⁷⁾ survey showed that 59% of currently married women in Egypt are using contraception. The IUD, pill, and injectables

are the most widely used methods. There is dramatic shift from pill to IUD use that occurred during the past two decades. In 1980, almost 70 percent of current users relied on the pill, more than four times the percentage of users who relied on the IUD. By 2005, more than 60 percent of current users relied on the IUD compared to 17% who preferred the pill. The relatively rapid expansion of the use of injectables is also evident. Twelve percent of current users relied on injectables in 2005, compared to five percent in 1995 and only one percent in 1992 (El-Zanaty and Way)⁽⁷⁾.

In contrast to western societies the popularity of IUD among women of reproductive age in Europe varies from 5% in Great Britain to 19% in France and 21% in Finland⁽⁹⁾. In The United States of America, IUD use is very low as some think that this method is abortifacient and it increases the risk of pelvic inflammatory diseases and ectopic pregnancy⁽¹⁰⁾.

The higher rate of IUD use in our population has been attributed to its images as a safe, effective, inexpensive and long acting method which is independent of coitus. Injectables and norplant develop more accessibility after providing the clients more information about their rumors and emphasis on their advantages, but still need more efforts of counseling about their side effects especially amenorrhea. Injectables have several advantages, they are simple to administer, require minimum patient compliance with an administration schedule and reduce use error. In addition, they are independent of coitus, do not interfere with lactation and are highly effective⁽⁷⁾.

Back ground characteristics of clients:

Current contraception use is the net difference between acceptance and discontinuation. It is in fact a dynamic process, involving the decision to adopt contraception, the selection of the method and over time the decision to continue or discontinue contraception use. The nature of behaviour relating to contraception is complex as it is affected by a large set of factors and shows

considerable variation throughout the childbearing period ⁽¹¹⁾.

Contraception practice is mainly governed by women's reproductive status as the combined impact of age and number of surviving children ^(12, 13, 14). Surveys conducted in Egypt ⁽²⁾, Pakistan ⁽¹⁵⁾ and Bangladesh ⁽¹⁶⁾ revealed that women over the age of 30 years consistently maintain higher continuation rates. These findings are consistent with that of the current research. Generally, women opt for contraception either to end childbearing or to maintain adequate spacing ⁽¹⁷⁾. It is then expected to observe an ever use of modern contraceptives, longer duration of use and lower probability of discontinuation among older women who have more than four living children as they tend to use contraception to end childbearing. In contrast, younger women who have less number of living children may have a tendency to use contraception for child spacing as they are still in the phase of family formation.

Previous studies have indicated the higher likelihood of discontinuation of contraception among women of low parity ⁽¹⁶⁾ and those who had not achieved their desired family size at the start of use ⁽¹⁸⁾. Asari suggested that family size preference is apparently more important than preference about sex of children in determining contraception use ⁽¹⁹⁾. The current survey revealed that the representation of sons among surviving children was significantly associated with longer duration of contraception use and lower probability of discontinuation. It is true that Egyptian women express a higher preference for sons. This finding is in agreement with previous reports which documented the influential role of sons in the initial acceptance and maintenance of contraception use ⁽¹⁶⁾⁽²⁰⁾.

On the other hand, Rahman et al., observed that parental preference is not monotonically son-biased but is rather for a balanced composition of sons and daughters ⁽²¹⁾. It is not unlikely that women who have both boys and girls are also those who have a larger number of surviving children. Actually, the effect of sex composition of surviving children was eliminated when the number of surviving children was considered ⁽²¹⁾.

Chowdhury, Fauveau and Aziz & Rahman ⁽²²⁾ pointed out the negative effect of infant mortality on the initial acceptance and continuation of contraception use. In the present study, women who experienced the loss of a child were relatively short with high probability of discontinuation; this was not, however, statistically significant owing to the very few events reported.

The results show that the risk of discontinuing contraception methods will decrease by increasing

the woman's education level. In the present research university graduated women showed the least percent of discontinuation. Similar results have been shown in a study by Kijuan and Yue in 1994 ⁽²³⁾. Couples who had had 9 or more years of formal education each were more likely to report ever use of modern contraceptives. Several studies have documented the role of education in this respect ^{(24) (12)(17)(25)}. Education is likely to influence contraception use through its effect on women's preference for small family size, desire to be gainfully employed and the attainment of higher socioeconomic status.

In contrast to our results, Mahdy ⁽²⁾ found that contraceptive methods use were not significantly related to the level of education.

Discontinuation:

Table (4) shows the percent distribution of contraceptive method discontinuation according to source of supply and method in use. It was found that (69.7%) of methods had been stopped within 2 years of starting for various reasons. According to El-Zanaty and Way⁽⁷⁾ one third of users 33% in Egypt stop using methods within 12 months of starting use. In our study out of 1728 method only 523 (30.3%) continued up to 2 years. Mahdy⁽²⁾ found that (57.8%) of women continued using contraceptive method up to 2 years.

On comparing percentage of discontinuation according to different types of methods, it was 76.6%, 75.5%, 67.3%, 61.6% and 36.6% in OCPs, IUDs, Injectables, Barriers and Norplants methods respectively.

It was found that, CSI showed the highest percent as compared to other sectors (95.4%). On the other hand, 68.9% of private clinics methods, 68.4% of AUHS and 62.5% of MOHP methods had been stopped within 2 years of starting use (Table 4). Quality of the service may have slight impact on percentage of the discontinuation (Blanc)⁽²⁶⁾. A higher rate of method discontinuation among contraceptive users may indicate good quality service and availability of multiple choices methods rather than discontinuation itself (Kost) ⁽²⁷⁾.

Adequate counseling especially on side effect is significantly related to decision to continue contraception. The rate of discontinuation among women who reported that they had not been adequately counseled about side effects in high. In Ghana 51% of these who felt that they had not been properly counseled discontinue use compared with 14% who reported retrospectively on the information at the initial adoption of their contraception status (Cotton) ⁽²⁹⁾.

Side effects and Complications :

As regards **causes of discontinuations** side effects and health concerns was the most common reason of discontinuation (50.4%) (Table 5).

As in agreement with our results, Mahdy⁽²⁾ found that health concerns were the leading cause of discontinuation. He reported that the most common complaints were nausea, headache, weight gain, leg pain and breast fullness among OCPs users. Injectable users reported side effect as amenorrhea or bleeding problems. The majority of women had norplant implants removed because of health concern including amenorrhea followed by bleeding problems. Among IUD users women requested removal of device, because side effects, the greatest proportion of them do so because of bleeding problems or pelvic infection.

The same results were reported by Blanc⁽²⁶⁾ They stated that, one of the drawbacks of IUD was the increase in menstrual bleeding leading to discontinuation of method. As regards Injectables the commonest side effects was amenorrhea, followed by severe bleeding. For norplant severe bleeding was the commonest complaint. Change of libido was mentioned in women only using barriers.

In the present study, the desire to become pregnant was also frequently mentioned for discontinuing use (25.2%). Desire to be become pregnant was also frequently mentioned reason for discontinuing use (>25%)⁽³⁰⁾.

For other woman an unintended pregnancy (method failure) as a reason for discontinuation was mentioned by (5.6%) of methods. Ali and Cleland⁽³¹⁾ reported that discontinuation across six countries after one year due to desire for another child was relatively 5-10% except in Thailand 14%, but was higher after two years (11-24%).

Personal reasons as husband disapproved the method, wanted more effective method, inconvenient to use, cost access availability, marital dissolution, infrequent sex, husband away, or menopausal were mentioned by (18.8%)

Regarding events within 12 months after use; (44.3%) of them switched to another method, (42.8%) got pregnant and (1.1%) returned to the same method, (11.8%) of discontinuation ended their use of any method (Fig.1).

Failure and its fate :

Out of 1010 women, 68 (6.7%) stopped using the contraceptive method due to method failure. Failure represented (3.9%) of all studied methods (1728) and (5.6%) of all reported discontinuation (1205). **Failure** was the main cause of discontinuation among barrier methods users (73.6%) followed by OCPs (7.5%) and then IUDs (2.3%).

There was no failure cases reported among norplant and injectables method (Table 5).

According to El-Zanaty and Way⁽⁷⁾ 3% of users stop using due to method failure (they became pregnant while using the method). Method failure occurred most often with withdrawal, periodic abstinence, and other traditional methods^{(26),(31)}. This higher percentage of failure in barrier method (condom) may be related to low effectiveness either breakdown or in appropriate use.

Pill failure varied widely across countries but occurred much less frequently than withdrawal, periodic abstinence, and traditional methods. As in agreement with the present results, failure with IUDs and injectables was low across countries⁽³¹⁾.

In this research most of **failure** ended in live births (72.1%) and only (27.9%) ended in spontaneous abortion. Events occurring within 12 months of end of pregnancy of failure included: Switching to another method (64.7%) constituted the highest percentage followed by no events occurred (20.6%), got pregnant (10.3%) or return to the same method in 4.4% of cases (Table 7).

As in agreement with our research, Kost⁽²⁷⁾ reported that, after the end of pregnancy resulting from failure (82%) of women will become pregnant again. The probability of switching to another method after failure is high (24%). In contrast to the present results, kost⁽²⁷⁾ found that the probability of returning to the same method is twice great (48%). These means that these women consider that failure to be their own fault rather than of the method. Also Blanc⁽²⁶⁾ reported that Women who had experienced contraceptive failure and resumed using contraception after giving birth were most likely return to the same method. This was not the case in this study as returning to the same method represented only 4.4 of failure.

Clients' counseling:

Table (8) shows effect of counseling on continuation of contraceptive methods. On the basis of 10 questions of counseling steps; the results of the quantitative assessment indicated that a significant higher score on counseling was associated with continuation. Mean score was 4.61 ± 4.11 among women who continue use of contraceptive methods as compared to 3.01 ± 3.86 Among those who discontinue ($p=0.0001$).

Cotton⁽²⁹⁾ reported that adequate counseling especially on side effects is significantly related to decision to continue contraception. The rate of discontinuation among women who reported that they had not been adequately counseled about side effects is high. In Ghana 51% of these who felt that they had not been properly counseled discontinue use

compared with 14% who reported retrospectively on the information at the initial adoption of their contraception status.

Steel et al.,⁽³²⁾ reported that discontinuation are more likely with non-governmental sources of contraception as opposed to governmental sources (Clinic and hospitals) perhaps because of better and more counseling.

Recommendations:

for family planning programs were: 1) the focus should be on essential information and discussions that help the client make an adequate choice and properly use the method chosen; 2) the available time should be a factor in the number of issues discussed; 3) the client's ability to understand and retain information should be a factor in determining the amount of information; and 4) service providers must be aware of differing needs and levels of knowledge of clients 5) Counseling should emphasize the possibility of side effects, stressing the fact that most will be transient, and the need to identify a backup method. Follow-up visits should be scheduled for 1 to 2 months after a prescription is written.

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