

Fertility awareness and family planning use among post abortion women in Egypt

Ghadah A. Mahmoud^{1*} and Soad S. Byomy²

^{1*} Obstetrics and Gynecological Nursing Dept., Faculty of Nursing, Assiut University, Egypt.

² Community Health Nursing Dept., Faculty of Nursing, Assiut University, Egypt.

*Ghadah_omar2008@yahoo.com

Abstract: The annual number of unsafe abortions is increasing due to the growing number of women of reproductive age globally, according to the World Health Organization. The WHO estimated 21.6 million unsafe abortions in 2008. The aim of the study was to assess the hospital rate of abortion for one year at the Woman's Health Hospital, Assiut University, Egypt and to assess the knowledge of post abortion women about the timing of fertility return and their intention for using post abortion family planning methods. Subjects and methods: A Cross Sectional study was used in carrying out this study. The following tool was used in the current study: Structured interviewing questionnaire which included the following data: Data related to fertility return awareness and the intention of these women for the future use of family planning methods. Results: The hospital based rate of abortion is 9.4% according to the hospital statistical based data, 2011. More than half of women (56.7%) didn't know any type of post abortion family planning methods, nearly two thirds of them (61.4%) didn't know the time of fertility return after abortion, three quarters of women (78.6%) want to postponing childbearing and nearly two thirds of them (62.9%) had no intention for using post abortion family planning methods. Conclusions: Based on the results of the present study, it can be concluded that there is a lack of knowledge of these women about the time of fertility return after abortion and the family planning methods should be used after abortion. Recommendations: In Upper Egypt, there is a need of postabortion family planning counseling programs as an essential part of postabortion care.

[Ghadah A. Mahmoud and Soad S. Byomy. **Fertility awareness and family planning use among post abortion women in Egypt.** *Life Sci J* 2013;10(1):143-150] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 21

Key words: Unsafe abortion, postabortion, fertility return, family planning.

1. Introduction

Induced abortion, safe or unsafe, is a universal phenomenon and has existed throughout recorded history [1]. Each year, throughout the world, approximately 210 million women become pregnant [2] and over 135 million [3] of them deliver live born infants. The remaining 75 million pregnancies end in stillbirth, or spontaneous or induced abortion. It was estimated that in 2003 approximately 42 million [4] pregnancies were voluntarily terminated: 22 million safely and 20 million unsafely. Unsafe abortions are frequently performed by providers lacking qualifications and skills to perform induced abortion, and some abortions are self-induced. Worldwide, one in five pregnancies (20 percent) ends in abortion, and one in 10 pregnancies ends in unsafe abortion [5]. An estimated 358,000 girls and women die from pregnancy-related causes each year, almost all of them in the developing world. About 47,000 of these deaths are due to unsafe abortion. Globally, abortion-related deaths account for 13 percent of all pregnancy-related deaths, but the percentage can be much higher at country levels [6]. Two thousands study estimated that unsafe abortions were responsible for nearly one-third of maternal deaths in West Africa, and WHO reports that in the countries of sub-Saharan Africa unsafe abortions are responsible for as much as 50 percent of maternal deaths. Women in developed and

developing regions of the world turn to abortion at similar rates; annually, 29 abortions are performed per 1,000 women in developing countries, compared with 26 per 1,000 women in developed countries [7]. In developing countries, two in five unsafe abortions occur among women under age 25, and about one in seven women who have unsafe abortions is under 20.8

In Africa, about one-quarter of the unsafe abortions are among teenagers (ages 15 to 19), a higher proportion than in any other world region [8]. The annual number of unsafe abortions is increasing due to the growing number of women of reproductive age globally, according to the World Health Organization. The WHO estimated 21.6 million unsafe abortions in 2008. However, the rates of unsafe abortions (the number per 1,000 women of reproductive age) remained largely unchanged during the period [9]. Each day 192 women die because of complications arising from unsafe abortion; that is one woman every eight minutes, nearly all of them in developing countries. These women are likely to have had little or no money to procure safe services; many of them are young, perhaps in their teens, living in rural areas and having little social support to deal with their unplanned pregnancy [10]. The tragedy of unsafe abortion could not be ignored by the world government community when they gathered in Cairo in 1994 for the International Conference on

Population and Development. The Program of Action, agreed upon at the end of the conference, recommended that: All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health impact of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services. Prevention of unwanted pregnancies must always be given the highest priority and every attempt should be made to eliminate the need for abortion [11]. In Egypt, induced abortion, except to protect the health or life of the mother, is prohibited by law [12]. Despite this legal restriction, clandestine abortions are fairly widely available in Egypt. Illegal abortions in Egypt vary greatly in price and in safety. Poor women, who cannot afford even the most minimum level of safety, induce abortions with indigenous methods that place their lives at great risk [13]. Because of a growing cultural and religious sensitivity and controversy over reproductive health issues, particularly abortion, this area remains relatively unexplored in Egypt. Very little is known about the morbidity and determinants of abortion in the community. Abortion has only been mentioned in reports from verbal autopsy studies of causes of maternal mortality. 2-6 or from hospital based studies [14]. Millions of unsafe abortions continue to take place globally every year despite the high prevalence of contraception and the existence of safe and effective methods of abortion. This is not only because all contraceptive methods occasionally fail and people fail to use them correctly or consistently, leading to unintended pregnancies, but also because millions of women around the world do not have access to safe abortion services when they decide to terminate a pregnancy [7]. Most women who experience abortion, especially induced abortion of an unintended pregnancy, do not desire to become pregnant immediately. In a few circumstances, immediate pregnancy may be contraindicated on medical grounds. Post abortion family planning is therefore an integral part of comprehensive abortion care to avoid an overreliance on abortion for preventing unwanted pregnancies. Offering contraceptive information, services and referrals with abortion services for unwanted pregnancies can reduce the consequent need for abortion [15].

A more timely use of contraceptives is necessary following abortion, especially for adolescent girls. In many cases, ovulation resumes within 2 weeks of an early abortion, and it can resume within 4 weeks of a second-trimester one. Therefore, post abortion family planning services would be a key to helping women prevent subsequent unwanted pregnancies and

improving their reproductive health [16]. There are few researches study the level of fertility awareness of women in reproductive age group in women experiencing abortion particular in Egypt. So the investigator will report the women's knowledge about their fertility return after abortion and intention to family planning use.

Aim of the study:

The aim of the study was to assess the hospital rate of abortion for one year at the Woman's Health Hospital, Assiut University, Egypt and to assess the knowledge of post abortion women about the timing of fertility return and their intention for using post abortion family planning methods.

Research Questions:

1. What is the hospital rate of abortion at the Woman's Health Hospital, Assiut University, Egypt?
2. What is the knowledge of post abortion women about the timing of fertility return and their intention for using post abortion family planning methods?

2. Subjects and Methods:

Research Design:

A Cross Sectional study was used in carrying out this study.

Setting:

The study was conducted at the post abortion ward, Woman's Health Hospital, Assiut University, Egypt. This ward received post abortion women who are seeking post abortion care. It received nearly 3-5 patients / day.

Sample:

This prospective study comprised 412 simple random samples of post abortion women who admitted the post abortion ward, Woman's Health Hospital, Assiut University, Egypt.

This sample was recruited according to the sample size equation which is calculated by the researcher through the use of Epi Info program version 3.3 with power 80%, CI 95%.

Sample size:

Simple random sample will be conducted among all prospective post abortion women who attended to the Women's Health Hospital at Assiut City, Egypt by using Epi- info version 3.3 with power 80%, CI 95%, and prevalence 16%, worst acceptable 26%, so sample size will 450 individual which will be inflated with 10% to avoid drop out 520.

Tools:

The following tool was used in the current study:

1. **A Structured interviewing questionnaire which included the following data:**

- **Part A: Sociodemographic data:** (Name, age, address, educational level, residence and occupation)
- **Part B: Obstetric history:** (Gravidity, parity, abortions, stillbirths, neonatal deaths and number of living children).
- **Part C: Data related to family planning history:** (Previous use of family planning methods, duration of use, cause of discontinuation)
- **Part D: Data related to current abortion:** (Type and method of abortion and the procedure done for management)
- **Part E:** Data related to fertility return awareness and the intention of these women for the future use of family planning methods

The Procedure:

The investigator interviewed the post abortion women at the post abortion ward, Woman's Health Hospital, Assiut University, Egypt. All ethical considerations were clarified to each woman before explanation of the nature of the study. The investigator asked the women about their sociodemographic data to determine the sociodemographic classes for these women.

Methods:

Before implementation of the study, an official permission was obtained from the Dean of the Faculty of Nursing directed to the director of Woman's Health Hospital, Assiut City, Egypt after full explanation of the aim of the study. The pilot study was carried out on 42 women before implementation of the study to test the validity and reliability of the tools. The purpose of the pilot test was to: evaluate the time needed for conducting the interview and the validity of the questions to create an easy flowing instrument. The necessary modifications were done based on the results of the pilot study. Women who participated in the pilot study were not included in the main study. The data were collected over one year, January 2011 to December 2011. The investigator started to introduce herself to the woman and explained the nature of the study to obtain an oral consent from them to participate in the study. Some women refused to participate in the research, so they were excluded from the research. The investigator met the women in post abortion ward. The investigator began to collect the questionnaire which included the socio demographic characteristics such as name, age, education and occupation. The obstetric history such as gravidity, parity, abortion, and other issues related to obstetric history. Then the investigator began to collect the data related to family planning history such as previous use of family planning methods, duration of use, cause of discontinuation. The data related to

current abortion such as Type and method of abortion and the procedure done for management were collected from the hospital patient's records. The last part of the questionnaire was focused on assessing the patient's knowledge about her awareness about fertility return awareness and her intention for future use of family planning methods. The number interviewed per day was 2-3 women. The average time taken for filling each tool was around 15-20 minutes depending on the response of the woman. Each woman was reassured that the information obtained was confidential and used only for the purpose of the study.

Statistical analysis:

Statistical analysis was done by using SPSS version 16 Software Package. Data collected were coded and analyzed. The results were tabulated and statistically compared using student t-test to compare difference between two mean and chi-square to compare differences in distribution of frequencies among postpartum women. A significant P-value was considered when it is less than or equal 0.05.

Ethical consideration

1. Risk – benefit assessment. There is no risk at all during application of the research.
2. Confidentiality was mentioned during all stages of the study.

Informed consent was taken from women for their approval to participate in this study.

3. Results

The hospital based rate of abortion is 9.4% according to the hospital statistical based data, 2011. A total of 210 post abortion women participated in the study. Their age ranged from 18-47 years, with mean age of 27.2 ± 6.02 years. The majority of them (90%) were rural residents and housewives (90% and 96.2%) respectively. As regards education, nearly two thirds of women (65.2%) were illiterate (Table 1). Concerning Obstetric history, the results indicate that more than two thirds of women (79.6%) were multigravida. As for parity, more than two thirds of women (69%) were multipara. Nearly half of women (49.5%) had a previous history of abortions. Concerning the history of living children, nearly half of women had a history of 1-3 male and female (49.5% and 47.7%) respectively. Concerning history of previous deliveries, more than two thirds of women (78.2%) had a history of previous normal vaginal deliveries from 1-3. As regards family planning history, table 2 shows that nearly one half of women (31.4%) had previous use of family planning methods. Nearly half of women (45.5%) had previous use of IUDs and 36.4% of them had previous use of hormonal contraceptive pills. As regards the duration of use, the majority of women (81.8%) used family

planning methods. Concerning the cause of termination, nearly half of women (43.9%) discontinued the family planning method to get pregnant. Table 3 shows that nearly half of women (41.4%) had 9-14 weeks of gestation, while the mean of gestational weeks was 13.25 ± 5.34 weeks. More than half of women (59.5%) had first trimester abortion and the vast majority of them (97.6%) had spontaneous abortion. As regards the pregnancy desire, more than two thirds of women (76.2%) wanted this pregnancy. Concerning the type of abortion, more than half of women (51%) had inevitable abortion and the majority of them (85.7%) had D& C. Figure 1. shows that nearly two thirds of women (61.4%) didn't know the time of fertility return after abortion. As regards the desire of future pregnancy, figure 2. indicates that more than three quarters of them (78.6%) want to postponing childbearing. Fig. 3, 4 and 5 show that more than half of women (56.7%) didn't know any type of post abortion family planning methods. As regards the intention for using post abortion family planning methods, nearly two thirds of women (62.9%) had no intention for using post abortion family planning methods. Concerning the reasons for refusing usage of post abortion family planning methods, the majority of them (90.1%) want to get pregnant. Concerning the relation between sociodemographic characteristics of women and the previous use of family planning methods. There is highly significance difference between both groups as regards age group ($P.V > 0.05$), while there are no significance differences between both groups as regards residence, education and occupation respectively ($P.V < 0.05$). As regards the relation between the Obstetric history and the desire for the future pregnancy. There are highly significance differences between both groups as regards the gravidity and parity ($P.V > 0.05$), while there are no significance differences between both groups as regards abortion, neonatal deaths respectively ($P.V < 0.05$). The relation between the Obstetric history and the pregnancy desire indicates that there are highly significance differences between both groups as regards the gravidity and parity ($P.V > 0.05$), while there are no significance differences between both groups as regards abortion, neonatal deaths respectively ($P.V < 0.05$). As regards the relation between the sociodemographic characteristics and the time of fertility return. There is highly significance difference between both groups as regards education ($P.V > 0.05$), while there are no significance differences between both groups as regards age group, residence and occupation respectively ($P.V < 0.05$).

Table (1): Sociodemographic characteristics of post abortion women participating in the study (n = 210)

Sociodemographic characteristics:	No.	%
Age (years):		
<20	7	3.3
20 –	70	33.3
25 –	64	30.5
30 –	39	18.6
35 – 40	25	11.9
<40	5	2.4
Range (Mean \pm SD)	(18-47) (27.2 \pm 6.02)	
Residence:		
Urban	21	10.0
Rural	189	90.0
Education:		
Illiterate	137	65.2
Read & write	10	4.8
Basic education	25	11.9
Secondary	31	14.8
University	7	3.3
Occupation:		
Housewife	202	96.2
Working	8	3.8

Table (2): Distribution of post abortion women according to their Family Planning history:

Family planning history	No	%
Previous use of family planning methods		
1. Yes	66	31.4
2. No	144	68.6
Total	210	100.0
If yes, a. the type of family planning method		
1. Hormonal contraceptive pills	24	36.4
2. Hormonal contraceptive injectables	11	16.7
3. Intrauterine Device (IUDs)	30	45.5
4. Norplant	1	1.5
5. Barrier methods	0	0.0
6. Traditional methods	0	0.0
7. Others	0	0.0
8. Total	66	100.0
b. Duration of use		
1. 2-6 months	5	7.6
2. 1-3 years	54	81.8
3. > 3 year	7	10.6
c. Cause of discontinuation		
1. Irregular uterine bleeding	22	33.3
2. To get pregnant	29	43.9
3. Other side effects	15	22.8
Total	66	100.0

Table (3): Distribution of post abortion women according to their current history of abortion:

Data related to current abortion	No.	%
1. Weeks of gestation		
3-8 wks	47	22.4
9-14 wks	87	41.4
15-20 wks	60	28.6
20-26 wks	16	7.6
Mean \pm SD	13.25 \pm 5.34	
2. Type of abortion by gestational age		
1. 1 st trimester abortion	125	59.5
2. 2 nd trimester abortion	85	40.5
3. Method of abortion:		
1. Spontaneous	205	97.6
2. Induced	5	2.4
4. The pregnancy desire:		
1. Wanted	160	76.2
2. Unwanted	50	23.8
5. Type of abortion:		
1. Threatened abortion	19	9.0
2. Inevitable abortion	107	51.0
3. Incomplete abortion	25	11.9
4. Complete abortion	6	2.9
5. Missed abortion	32	15.2
6. Recurrent abortion	21	10.0
6. The procedure done for management		
1. Dilatation and Curettage (D & C)	180	85.7
2. Medical drugs	30	14.3

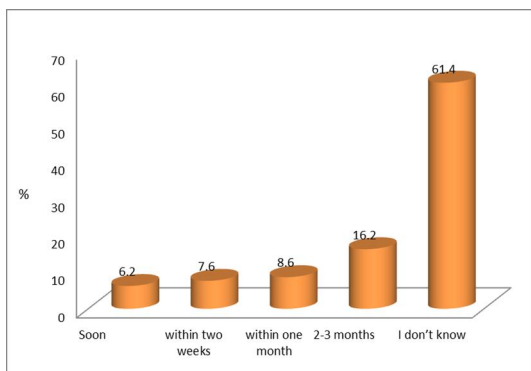


Fig 1: Time of fertility return after abortion

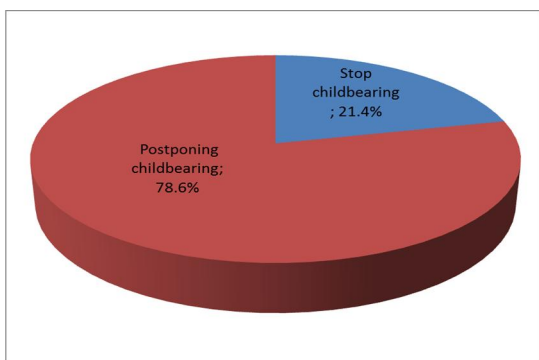


Fig 2: Desire for future pregnancy

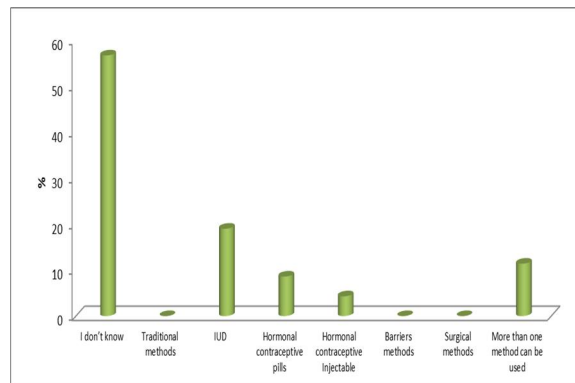


Fig 3: Post-abortion family planning methods known by the patients

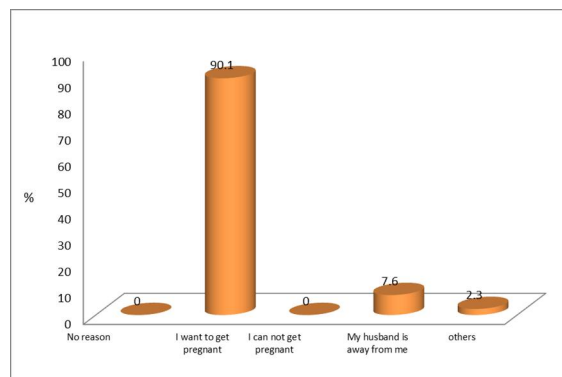


Fig 4: Reasons for refusing usage of post-abortion family planning methods

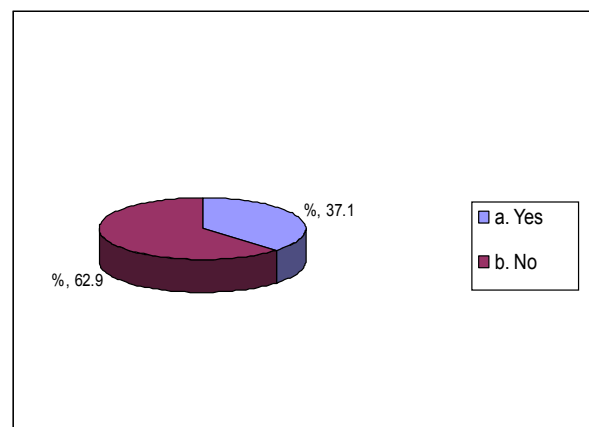


Fig 5. Intention for using Post-abortion family planning methods

4. Discussion:

Every year, around 500 000 women are estimated to die from pregnancy related causes, the majority in the developing world and many as a result of unsafe abortion. Around 25% of maternal deaths in Asia and 30-50% of maternal deaths in Africa and Latin America occur as a result of induced abortion [17]. A rise in the overall abortion rates over the last

decades raises questions about availability, accessibility and quality of contraceptive services, especially for young people [18]. The present study revealed the knowledge of post abortion women about the timing of fertility return and intention of family planning use. As regards the socio demographic data, it explored that one third of women (33.3%) aged from 20 – 24 years old. The majority of them were rural residents and housewives (90% & 96.2%) respectively. Concerning education, nearly two thirds of women (65.2%) were illiterate. These findings are inconsistent with **Ceylan, et al. 2009 [19]** who mentioned in his study about post abortion women in Turkey that 23.2% of them aged from 20-24 years old and more than half of them (51.9%) were illiterate. On the other hand, **Luo, et al. 2000 [20]** reported in his study about abortion in China that one third of women (34%) aged from 20 – 24 years old which is congruent with our study. As regards socio demographic data in Ethiopia, **Melkamu, et al. 2003 [21]** mentioned in his study about post abortion women and their intention for pregnancy, nearly one third of women aged from 20-24 years old and were illiterate (30.1% and 29.4%) respectively. Moreover, nearly three quarters of women (73.3%) were unemployed. These findings are nearly congruent with our study. As regards the Obstetric history, nearly half of women (49.5%) has previous history of abortion. this finding is inconsistent with **Mareau, et al. 2010 [22]** who study the contraceptive use after abortion in France mentioned that nearly one third of women (32.7%) had previous history of abortion. On the same manner, **Ceylan, et al. 2009 [19]** reported that nearly one third of women had previous history of abortion. The annual number of induced abortion in Africa rose between 1995 and 2003 from 0.5 million to 5.6 million. In 2003, most of the abortion occurred in Eastern Africa (2.3 million), Western Africa (1.5 million) and Northern Africa (1 million) [5]. According to the hospital data base, 2011, the present study revealed that the rate of abortion is 9.3% which is congruent with **Nojomi, et al., 2006 [17]** who mentioned in his study about abortion in Iran that the rate of induced and spontaneous abortion is 9.4% and 33.9% respectively. On the other hand, the rate of abortion in France is 14.8% but recent data suggest a slight increase among younger women since the late 1990s. [22]. **Yassin, 2000 [14]** who studied the incidence and socioeconomic determinants of abortion in rural Upper Egypt, the results explored that the first incidence of abortion was estimated in two ways. The first incidence indicated that nearly 21% of pregnancies were aborted. The second incidence was expressed a rate per 1000 live births. This method revealed an incidence of 265 per 1000 live births. Most women who experience abortion, especially

induced abortion of unintended pregnancy, do not desire to become pregnant immediately. In a few circumstances, immediate pregnancy may be contraindicated on medical grounds. Postabortion family planning is therefore an integral part of comprehensive abortion care to avoid an overreliance on abortion for preventing unwanted pregnancies. Offering contraceptive information, services and referral with abortion services for unwanted pregnancies can reduce the consequent need for abortion [15]. Concerning family planning history, the present study revealed that nearly one third of women (31.4%) had previous history of using family planning methods. As regards the type of family planning methods, nearly half of women (45.5%) used Intrauterine device and nearly one third of them (36.4%) used hormonal contraceptive pills. These findings are inconsistent with **Bender, et al. 2004 [18]** who mentioned that the majority of women (89.6%) had previous history of using family planning methods, more than two thirds (67.2%) used oral contraceptive pills and only one tenths of them used hormonal contraceptive injection and condom (11.9% and 1.9% respectively). **Melkamu, et al. 2003 [21]** reported in his study that more than half of women (53.4%) had previous history of using family planning methods, which are inconsistent with our study. On the other hand, **Ceylan, et al. 2009 [19]** mentioned in his study about postabortion family planning that more than half of women (52.3%) used Intrauterine device and more than one tenths of them (11.4%) used condom. This study indicated that more than three quarters (59.5%) wanted this pregnancy. As regards the type of abortion, more than half of women (51%) had inevitable abortion. The vast majority of women (97.6%) had spontaneous abortion while only 2.4% had induced abortion. These findings are inconsistent with **Melkamu, et al. 2003 [21]** who reported that more than half of women (61.1%) wanted this pregnancy. The majority of women (82.8%) had spontaneous abortion while 17.2% had induced abortion. For women who wish to postpone or prevent future pregnancies, it is important to begin using a contraceptive method immediately after abortion [15]. As regards the knowledge of women about the time of fertility return after abortion, the present study explored that more than half of women had lack of knowledge about the time of fertility return after abortion. Concerning the desire for future pregnancy, more than three quarters of them wanted to postponing childbearing and more than one third of them wanted to get pregnant within 3months to 2 years (78.6% and 34.8% respectively). These findings are incongruent with **Melkamu, et al. 2003 [21]** who identified that only 22.9% of postabortion women had lack of knowledge about the time of fertility return after

abortion. Regarding future pregnancy plan, 17.5% of women wanted to get pregnant within 3 months to 2 years. On the other hand, **Ceylan, et al. 2009 [19]** explored in his study that nearly one third of women after abortion wanted to postponing childbearing. Concerning the knowledge of women about return of fertility after abortion, only 26% of them knew correctly about return of fertility [18]. According to the **Egypt Demographic Health Survey (EDHS, 2008) [23]**, more than half of married women didn't want any more children (62%) and 32% of them wanted to wait two years or more to have the next birth. This study showed that more than half of women had lack of knowledge about postabortion family planning methods and no intention for using family planning methods after abortion (56.7% and 62.9% respectively). As regards, reasons for refusing usage of postabortion family planning methods, the majority of women (90.1%) wanted to get pregnant again. The explanation of lack of knowledge of these women may refer to the high percentage of illiteracy and lived in rural areas. These findings are in agreement with **Ceylan, et al. 2009 [19]** who mentioned that the main reason for not using contraceptive methods was the absence of husband. On the other hand, according to the Chinese study of **Cheng, et al. 2008 [16]** about the need for integrating family planning and postabortion care, the results revealed that 35% of women refused to use contraceptive methods and 11.4% had lack of knowledge of any contraceptive methods. One of the major concerns of family planning programs is to define the size of the potential demand for conception and to identify women who are the most in need of contraceptive services. According to **EDHS, 2008 [23]**, the total unmet need for family planning was 9%. This study has two strengths. First, the application of the study was done at the biggest tertiary center in Upper Egypt so by enrolling a hospital based sample with different sociodemographic characteristics. Second, the choice of the sample was based on the sample size equation. The limitation of the study focused on the short duration of hospital stay of these patients (less than 24 hours) so there no time to let the patients express their feelings and answering all their questions.

Conclusions:

Based on the results of the present study, it can be concluded that the hospital based rate of abortion at the Woman's Health Hospital, Assiut University, Egypt was 9.3%. On the other hand there is a lack of knowledge of these women about the time of fertility return after abortion and the family planning methods should be used after abortion. Also, nearly two thirds

of them had no intention for using postabortion family planning methods.

Recommendations:

In Upper Egypt, there is a need of postabortion family planning counseling programs as an essential part of postabortion care. Health care providers should increase the awareness of postabortion women about the time of fertility return. More researches should be done to assess the impact of postabortion family planning counseling on reducing the rate of unwanted pregnancy.

Acknowledgements:

We would like to express our deep appreciation to all patients who participate in succession my research. We would also like to thank the medical and nursing staffs who participate in highlighting the aims of my research.

Corresponding author

Ghadah A. Mahmoud
Obstetrics and Gynecological Nursing Dept., Faculty of Nursing, Assiut University, Egypt.
Ghadah_omar2008@yahoo.com

References:

1. Joffe C. Abortion and medicine: a sociopolitical history. In: Paul M, Lichtenberg ES, Borgatta L, Grimes DA, Stubblefield PG, Creinin MR, eds. Management of unintended and abnormal pregnancy: comprehensive abortion care. Oxford: Wiley-Blackwell; 2009:1-9.
2. Singh S, Wulf D, Hussain R, Bankole A, Sedgh G. Abortion worldwide: a decade of uneven progress. New York, Guttmacher Institute, 2009.
3. United Nations Department for Economic and Social Information and Policy Analysis. World population prospects: the 2008 revision. New York, United Nations, 2009.
4. Sedgh G, Henshaw S, Singh S, Åhman E, Shah I. Induced abortion: estimated rates and trends worldwide. *Lancet*, 2007, 370(9595):1338-1345.
5. World Health Organization (WHO), Unsafe Abortion: Global and Regional Estimates of the Incidence of Unsafe Abortion and Associated Mortality in 2003, 5th ed. (2007).
6. WHO, UNICEF, UNFPA, The World Bank, Trends in Maternal Mortality: 1990 to 2008 (2010).
7. Shah, I. and Ahman, E. (2010): "Unsafe Abortion in 2008: Global and Regional Levels and Trends," *Reproductive Health Matters* 18, no. 35 (2010).

8. Susheela Singh et al., *Abortion Worldwide: A Decade of Uneven Progress* (Guttmacher Institute, 2009).
9. PRB (2011): *Usafe Abortion, facts and figures*. Population Reference Bureau
10. Shah, I. and Ahman, E. (2010): *Unsafe Abortion: Global and Regional Incidence, Trends, Consequences, and Challenges*," *WOMEN'S HEALTH*". Sept 2009, Pp 1149-1158.
11. Fathall, M. (2003): *Reducing the need for abortion*, *Contraception* 68 (2003) 397–399.
12. Labna, M. (1987) *The crime of aborting pregnant woman: A study in the policy of comparative legislation*. Ph.D. thesis, Faculty of Law, Ain Shams University, Cairo.
13. Lane, S., Jok, J. and Elmouelhy, M. (1998): *Buying Safety: The Economics of Reproductive Risk and Abortion in Egypt*. *Soc. Sci. Med.* Vol. 47, No. 8, pp. 1089-1099, 1998.
14. Yassin, K. (2000): *Incidence and socioeconomic determinants of abortion in rural Upper Egypt*, *Public Health*. 114, 269-272.
15. Mittal, S. (2006): *Contraception after medical abortion*, *Contraception* 74 (2006) 56– 60.
16. Cheng, Y., Xiao, X., Juncai, X, Françoise, W., Jinliang, Z, Gibson, D., and Temmerman, M. (2008) : *The need for integrating family planning and postabortion care in China*, *International Journal of Gynecology and Obstetrics* (2008) 103, 140–143.
17. Nojomi, M.; Akbarian, A. and Ashory-Moghadam, S. (2006): *Burden of abortion: induced and spontaneous*. *Arch Iranian Med.*, 9 (1): 39-45.
18. Bender, S. and Geirsson, R. (2004): *Effectiveness of preabortion counseling on postabortion contraceptive use*. *Contraception*, 69: 481-487.
19. Ceylan, A.; Ertem, M.; Saka, G. and Akdenz, N. (2009): *Postabortion family planning counseling as a tool to increase contraceptive use*. *BMC Public Health*, 9:20.
20. Luo, L., Shi-zhong, W. ; Chen, X.; Li, M. and Pullumt, Th. (2000): *A follow – up study of first trimester induced abortion at hospital and family planning clinics in Sichuan Province, China*. *Contraception*, 53: 267-273.
21. Melkamu, Y.; Enueselassie, F. and Yusuf, L. (2003): *Fertility awareness and postabortion pregnancy intention in Addis Ababa, Ethiopia*. *Ethip. J. Health Dev.*, 17 (3): 167-174.
22. Mareau, C.; Trussell, J.; Desfreres, J. and Bajos, N. (2010): *Patterns of contraceptive use before and after an abortion: results from a nationally representative survey of women undergoing an abortion in France*. *Contraception*, 82: 337-344.
23. EDHS, (2008): *Fertility Preferences, Egypt Demographic Health Survey, Maternal Health Care, National Population Council, Cairo, Egypt*. Marco International inc. Claverton, Mayland, USA, ch 9: 105-109.

11/21/2012