

DETERMINANTS AND HEALTH RELATED OUTCOMES OF UNINTENDED PREGNANCY IN ZAGAZIG CITY AND NURSING IMPLICATION

Hala Saber Mohamed Metwaly⁽¹⁾, Sanaa Ali Nour Eldin⁽²⁾ & Amina Saad Gonied⁽³⁾

⁽¹⁾Clinical instructor in Directorate of Health ⁽²⁾professor of Obstetrics&Gynecology- Faculty of Nursing- Zagazig University. ⁽³⁾professor of Obstetrics&Gynecology- Faculty of Nursing- Zagazig University.

Abstract: Unintended pregnancy is usually referred to both unwanted and mistimed pregnancy. It is estimated that each year almost 80 million women experience unintended pregnancy worldwide, jeopardizing the health and well-being of women and their families. **The aim** was to assess the determinants and health related outcomes of unintended pregnancies. **Subjects and method;** Across section and quasi experimental designs were used in this study. The study was conducted at the Maternal and Child Health clinics in Zagazig city. The first sample consisted of 800 females selected by simple random sampling. The second sample; consisted of 60 women for whom the intervention program was implied. **Tools** include the interviewing schedule and the educational program for the intervention. **Results** revealed that almost one third of women (32.0%) were exposed to unintended pregnancy, they had a mean of age, and higher percentage of gravida and para (≥ 4). They were significantly more likely to have low education, insufficient income, antenatal care utilization (28.5%) compared to those who had intended pregnancy (69.3%). Meanwhile, they were more apt to have pregnancy, labor and neonatal complications. A statistically significant improvement was observed in the post-intervention knowledge of women, in all tested elements about the unintended pregnancy, OCPs and IUD and ECPs. **Conclusion;** almost one third of women were exposed to unintended pregnancy. Age, educational status of women, economy of the household, children ever born, contraceptive use were significantly associated with unintended pregnancy. Trial of abortion and adverse maternal and newborn outcomes were associated with unintended pregnancy. **Recommendation;** the educational program should be integrated in the family planning clinic in the study setting and in similar ones.

Key words: Unintended pregnancy; intended pregnancy; family planning; contraceptive methods.

Introduction:

unintended pregnancies occur for a variety of reasons, in particular the lack of access to a preferred contraceptive method or incorrect use of a method. In addition, some women are vulnerable to social pressure from their husbands or other family members on family planning issues and do not have the power to decide for themselves whether or when to become pregnant. Moreover, factors such as; household structure, community

norms, gender roles, legal and policy environment have huge implications of unintended pregnancy(7)

Social scientists believe that combating unmet need will benefit women, especially in developing countries, as they may limit the health risks (8) Meeting the unmet need for FP is therefore an effective intervention for reducing unintended pregnancy and induced abortion. The overall objective is

to decrease maternal mortality among women in the reproductive age in Egypt by reducing unintended pregnancies and their negative consequences on the health of women, especially the risk of induced abortion. This will be a step toward planning and evaluating the policies of FP programs in Egypt.(6)

Family planning (FP) is critical for the health of women and their families. Because of its importance, universal access to reproductive health services, including FP, is identified as one of the targets of the United Nations Millennium Development Goals (1)

Unmet need for FP continues to persist, despite having declined somewhat. It is defined in two ways: unmet need for limiting childbearing, comprising the proportion of currently married women who do not want any more children but are not using an effective form of FP, and unmet need for spacing childbearing, comprising the proportion of currently married women who want to postpone their next birth for 2 years or more but are not using an effective FP method (2)

Unmet need for contraception can lead to unintended pregnancies, with their harmful consequences such as unsafe abortions and unwanted births. In less developed regions, about one-fourth of pregnancies are unintended (unwanted or mistimed) and 18 million undergo unsafe abortions each year, contributing to high rates of maternal death (3). The WHO estimates that in 2008, 13% of maternal mortality worldwide or 47 000 deaths were due to unsafe abortions (4). In developing countries, 11% of women report an unmet need for FP.

Although Egypt has a strong FP program and lower rates of unmet need than other countries in the region, women in the poorest fifth of the population are twice as likely to experience unmet need as those in the richest fifth (5) It also shows that 9% of women in reproductive

age have unmet needs: 3% for spacing and 6% for limiting (5) . Some may end up having unwanted births and others may resort to unskilled healthcare providers to undergo an abortion. In such cases, because of legal restrictions and the stigma linked to having an abortion, women may be reluctant to seek timely medical care, with subsequent post-abortion complications exposing them to a significant risk for death or disability.(6)

Significance of the problem

Ensuring that pregnancies are planned and wanted is not only a human right; it is also an important maternity nurse crucial role for woman health and gender equity. With an annual population growth rate of 1.8 and a total fertility rate of 3.3 (11) unplanned pregnancy in Egypt-the most populous Arab country is important reproductive issue to address. Women with unintended pregnancies are at even higher risk of death due to the pregnancy than those whose pregnancies are planned. Young women in unconventional marriages are particularly at risk of unintended pregnancy and its negative consequences because of their limited access to reproductive health services. Therefore, this study was carried out to investigate the aforementioned parameters of unintended pregnancy and demonstrate nursing role in its solution.

Aim of the study:

The aims of the current study were:

- 1-To estimate the prevalence of unintended pregnancies among women in Zagazig city.
- 2- To explore some health-related outcomes of unintended pregnancy.
- 3- To plan, design and implement an educational program for upgrading women's knowledge pertaining to the prevention of the occurrence of unintended pregnancy and disseminating family planning information

Subjects and Methods: The study followed two research designs: The first design was a

cross section design where the phenomenon of interest was explored and described as it exists.

The second design a quasi-experimental design with pre and post assessment, and was used to plan and implement the program for raising women awareness to the prevention of unintended pregnancy and to ensure their access to effective use of contraception.

Study setting:

The study was conducted at the following Maternal and Child Health clinics, affiliated to the Ministry of Health and population in Zagazig city these clinics were:

- *Alnahal medical centre,
- * Third care child,
- * Second care child,
- *Alesharah Clinic.

Study subjects: Two samples were used for this study.

The first sample; was restricted to women who fulfilled the following inclusion criteria:

- Age ranged from 15-44 years
- At least one pregnancy
- Accept the follow up having a cell phone

The cross sectional study was conducted on 800 females selected by simple random sampling (200 woman from each one of the above mentioned settings) to fulfill the minimum required sample size assuming the prevalence of unintended pregnancy 35% (EDHS, 2000) with a precision (maximum acceptable difference of 2% $\alpha=0.05$ and power of 95%.

The second sample; consisted of 60 women for whom the intervention program was implied, who were potentially at risk for unintended pregnancy. Four women were excluded from this sample because they were not reachable. Thus the final sample was 56 women.

The field work of this study was carried out

on two phases;

In the first phase, the sample was chosen according to the previously mentioned criteria. The researcher was responsible for collecting data during the whole period of the study which took a period of twelve months - from first of March 2015 to the beginning of March 2016 The researcher started data collection during 4 days per week from 9.30Am to 1Pm. The researcher interviewed women and explained the purpose of the study, and obtained their verbal consent. **As for the second phase,** the program construction was classified into 4 steps:

- **Program assessment,** where **Women information booklet** was prepared by the researcher in the light of the recent literature on the subject and was submitted to women in the beginning of the program together with the pretest. It was an instructional tool to give them information about unintended pregnancy and the effective use of contraception.

- **Program Development**

Title of the program

Educational Program for Women about Unintended Pregnancy and the role of the nurse in counseling women about contraception.

Number of participants: 60 women who were potentially at risk for unintended pregnancy.

Duration of program:4 months for final evaluation of the program

Program Design:

women were interviewed three days per week the purpose of the study was explained for them, and their verbal consent was obtained.

Pre-test is used to assess knowledge before the implementation of the program.

Post – test is used for assessment of changes that would happen after the program. Final evaluation is used to evaluate the continuation rate of

contraceptive.

Pilot study:

After the development of the tools, a pilot study was carried out on 10% of the sample. These were not included in the main study sample. The purposes of the pilot study were to ascertain the relevance and content validity of the tools. Estimating the exact time needed for each session. Detect any problem peculiar to data collection tools that might face the researcher and interfere with data collection.

▪ **Program Implementation:**

All of the education sessions were conducted by the researcher who had adequate experience in the field of health education and full understanding of this problem. At the beginning of the session, the researcher explained the aim of the study to each woman to have their oral consent. This was obtained after a brief explanation of the study to assure them that the information obtained were confidential and used only for the purpose of the study.

content validity of the tools. Estimating the exact time needed for each session. Detect any problem peculiar to data collection tools that might face the researcher and interfere with data collection.

▪ **Program evaluation:**

This was done 4 months afterwards to evaluate the continuation rate of contraceptive utilization and problems encountered and to assess the woman knowledge about unintended pregnancy and contraceptives. For the knowledge items, a correct response was scored 1 and the incorrect zero. For each area of knowledge, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score, and means and standard deviations were computed. Knowledge was considered:-

*Poor: score < 35%

*Fair: score 35% - <70%

*Good: score \geq 70%

Ethical consideration:

All ethical issues were taken into consideration during all phases of the study; the researcher maintained an anonymity and confidentiality of the subjects. The researcher introduced herself to the women and briefly explained the nature and aim of the study to every woman before participation and women were enrolled voluntarily after the written informed consent process. Women were also assured that the information obtained during the study will be confidential and used for the research purpose only.

Statistical design:

The data which were obtained reviewed, prepared for computer entry, coded, analyzed, and tabulated using SPSS (Statistical Package for Social Sciences)

version 15. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables comparison between groups was done by Chi-Square test which is more appropriate and useful for testing the hypotheses in nominal data. Wilcoxon signed ranks test was used for comparison within group. and means \pm SD for quantitative variables. Student t-test was used to compare between two groups. Statistical significance difference was considered when p- value < 0.05.

Results:

almost one third of the studied women (32.0%) were exposed to unintended pregnancy. As regards age, it was observed that women who had unintended pregnancy were more likely to have an older mean age than those who had intended pregnancy (31.4 \pm 4.7 vs. 29.9 \pm 4.5 respectively) and the difference observed is statistically significant p=<0.001* Almost one third (29.3%) of

them were illiterate or living in urban areas (92.2%), compared to those who had intended pregnancy (14.0% & 82.4% respectively). Difference observed is statistically significant. They also had more insufficient family income (42.0%) compared to those with intended pregnancy (10.0%), the difference observed is statistically significant (0.001). Women with an unintended pregnancy were more likely to have higher percentages of gravida and para ≥ 4 (28.1% & 17.2% vs. 21.3% & 15.4% respectively) and the difference observed is statistically significant $P < 0.001$. Women with an unintended pregnancy were more likely to suffer from medical or surgical condition but with no statistical significant differences (15.2% & 25.8% vs. 12.3% & 14.7% respectively). (**figure 1 & tables 1-3**)

Table (4) displays the utilization of antenatal care during current pregnancy among women in the studied groups. It shows that women in the unintended pregnancy group had statistically lower percentage of antenatal care utilization (28.5%) compared to those who had intended pregnancy (69.3%). The difference observed is statistically significant ($X^2 = 117.670$, $p < 0.05$).

On assessing problems encountered during last pregnancy (**table 5**), it was observed that women with unintended pregnancy group were more likely to have anemia, hypertensive disorders of pregnancy and hyperemesis gravidarum compared to those who had intended pregnancy (34.9%, 24.4% and 12.8% vs. 23.9%, 17.7% & 9.7% respectively). Differences observed are statistically significant.

Table (6) shows that more than two thirds (68.8%) of women with unintended pregnancy had previous cesarean section compared to 57.4% of women with intended pregnancy, with statistically significant difference. Meanwhile, they

had higher percentage of postnatal complications compared to the control group (14.1% vs. 8.1% respectively). Difference observed is statistically significant.

Table (7) demonstrates the reasons given for the unintended pregnancy. The most common reason was the failure of the method used for contraception (43.8%), followed by the mistiming of pregnancy or refusal of the woman herself (40.6% & 38.3% respectively). Other reasons cited include; refusal of the husband, woman was sick or she received insufficient help (17.8%, 6.3% & 4.7% respectively).

Figure (2) shows that more than half (57.1%) of contraceptive failure was due to forgetting the pills or injection, followed by stopping the method due to its side-effect or the occurrence of pregnancy with the method used especially IUD (25.0%, 17.9%) respectively

Discussion:

The present finding revealed that almost one third of the studied women were exposed to unintended pregnancy. This is in coherence with previous study Abdallah IM et al (2011) in Egypt, where over one-third of all pregnancies were reported to be unintended pregnancies, Johnson et al (2004) in Jordan and Abbasi-Shavazi et al (2004) in Islamic Republic of Iran where the rate was 35.0%.

The study finding showed a significant association between pregnancy intention and the socio-demographic determinants such as women's age, education and economic status of the family. Women with unintended pregnancy were more likely to be older (30- \leq 40). This is partially in agreement with Jaeni et al (2009) study from Indonesia, Adhikari et al (2009) from Nepal, Najafian M et al (2010) from Iran and Geda NR and Lako TK (2012) from Ethiopia.

Almost one third of illiterate women had unintended pregnancy, compared to nearly one eighth of those who had intended pregnancies. This corresponds well with the study of Metwally AM, et al (2015) in upper Egypt, who demonstrated that illiteracy was one of the main predictors of unintended pregnancy and increased the risk of unintended pregnancy by almost two-fold. In contrast Abdallah IM et al (2011) reported that more than one eighth of unintended pregnant women were illiterate comparing to few percent of women who had intended pregnancy.

It is obvious that the majority unintended pregnant women were living in urban areas. This is in agreement with the study of Dixit P et al (2012) in India. Conversely, Adhikari R, et al (2009), found that women in rural areas experience more unintended pregnancies than those living in urban areas, which might be due to insufficient utilization of contraceptive methods. Whereas Youssef RM et al (2002) and Tebekaw Y et al (2014), studies found no significant associations between the place of residence and unintended pregnancy. Among the factors that may affect the occurrence of unintended pregnancy are; the high rate of insufficient family income. This is matching with the findings of the present study, and it is quite expected since it is often due lack of access to culturally appropriate and qualified reproductive health information and services. The aforementioned findings are in congruence with Ayoola A. B et al (2006) and Finer, LB. and Henshaw, S K. (2006) that hypothesized that low economic level may lead to lower rates of using effective contraceptive methods. The present study finding indicates that women with unintended pregnancy had higher percentage of having four or more of gravida and para comparing with those

with intended pregnancy. This is similar to Goicolea, I., & San Sebastian, M. (2010) and Abdallah IM et al (2011) who reported that more than two thirds of women with unintended pregnancy had 3-4 deliveries compared to one-quarter of women with intended pregnancy. Concerning the utilization of antenatal care during current pregnancy it was noticed that nearly one third of women with unintended pregnancy had antenatal care visits compared to more than two thirds of those who had intended pregnancy. The difference observed is statistically significant ($p < 0.05$). Similarly, Abdallah IM et al (2011) found that a few percentage of unintended pregnant women utilized antenatal care during their current pregnancy. Also, Shaheen AA et al (2007) reported that more than two fifths of unintended pregnant women utilized antenatal care during current pregnancy. On assessing problems encountered during last pregnancy, it was observed that women with unintended pregnancy were more likely to have anemia, hypertensive disorders of pregnancy and hyperemesis gravidarum. The relation between pregnancy complications and pregnancy intention was not studied by the most of other studies except Mohlajee A. P., et al (2007). The present study demonstrated that women with unintended pregnancy were more likely to have cesarean birth. This result was constant with the study results of Abdallah IM et al (2011). This could be attributed to the multiple births, lack of ante natal care as well as the psychological problems encountered. The current study revealed that more than two fifths of the unintended pregnancy was due to failure of the contraceptive methods. Dixit P et al (2012) and Tebekaw Y et al (2014) studies in India and Ethiopia showed a positive relationship between use of contraceptives

and unintended pregnancy. In contrast Cu Le L, et al. (2004). *and* Ali S et al (2015). studies from, Pakistan and Ecuador found an inverse association between the use of contraceptives and unintended pregnancy. Moreover Kassa N et al (2012) *and* Exavery A et al. (2014). studies from Tanzania and Ethiopia showed no relationship between the use of contraceptives and unintended pregnancy.

Women exposure to side effects, their lack of awareness and dissatisfaction about the care given in the FP centers, were the most common reason mentioned by women for their reluctance of using contraceptive method before the current unintended pregnancy. Other reason cited for unintended pregnancy include; infrequent intercourse and misconception of using LAM for a long period without following its criteria and refusal of the husband which reported by more than one eighth in the present study, which is in agreement with studies done in Bangladesh and Pakistan Rahman M. (2012) *and* Ali S et al (2015) In the same context Tilley IB ,. et al. (2009). found that more than half of women didn't use contraceptives because of relying on lactational amenorrhea without following its criteria to prevent pregnancy.

Conclusion:

In the light of the present study findings, it can be concluded that: Almost one third of the studied women were exposed to unintended pregnancy. They were significantly more

likely to have old age, insufficient income, para4and more as well as they had experience more history of previous abortion, more living childrens as well as short inter-pregnancy interval. Meanwhile, they had lower percentage of antenatal care utilization and encounter pregnancy, labor as well as neonatal complications.

The most common reason for the unintended pregnancy was the failure of the method used for contraception followed by the mistiming of pregnancy or refusal of the woman herself

Recommendations:

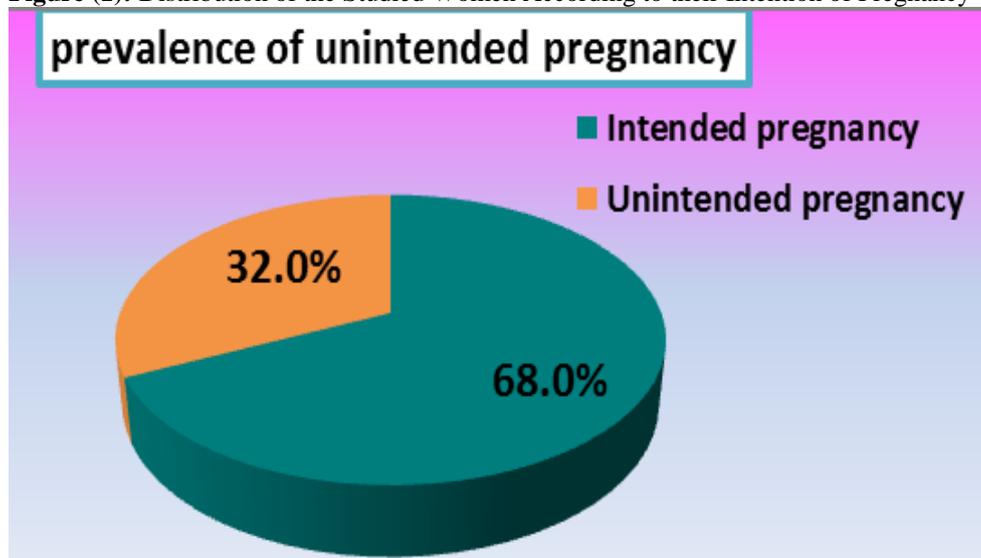
In the light of the study findings, the following recommendations are suggested:

- More interventions concerning reproductive health programs and services, whereby qualitative aspects of the programs should be taken into consideration and more care given to promoting reproductive health awareness of women in Zagazig city.
- Raising women awareness about contraceptive is imperative. Particular attention should be given about ECPs in case of unprotected intercourse to prevent unintended pregnancy.

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Figure (1): Distribution of the Studied Women According to their Intention of Pregnancy



Table(1): Distribution of Studied Women According to their Socio-demographic Characteristics (no=800)

Variables	Intended pregnancy (n = 544)	unintended pregnancy (n= 256)	χ^2	P
Age				
20-	292 (46.3%)	92(35.9%)	21.946	<0.001**
30- \geq 40	252 (53.7%)	164(64.1%)		
Mean \pm SD	29.9 \pm 4.5	31.4 \pm 4.7	4.327	<0.001**
Range	19-43	23 – 43		
Education				
Illiterate	76(14.0%)	75(29.3%)	31.385	<0.001**
Below secondary level	80(14.7%)	45(17.3%)		
Secondary school & higher	388(71.3%)	136(53.4%)		
Residence				
Rural	96(17.6%)	20(7.8%)	13.581	<0.001**
Urban	448(82.4%)	236(92.2%)		
Job status				
Housewife	392(72.1%)	192(75.0%)	0.764	0.382
working	152(27.9%)	64(25.0%)		
Income				
indept.	347(68.7%)	75(29.3%)	141.561	<0.001**
just meet their life	116(21.3%)	73(28.7%)		
insufficient	54(10.0%)	108(42.0%)		

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Table(2) .Distribution of Studied Women According to their Obstetrical History (no=800)

variables	Intended pregnancy (n=544)	Unintended pregnancy (n=256)	χ²	P
Gravidity				
1	180(33.1%)	44(17.2%)	22.118	
<0.001**				
2-3	248(45.6%)	140(54.7%)		
≥ 4	116(21.3%)	72(28.1%)		
Mean ± SD	2.2 ± 1.4	2.9 ± 1.8	5.490	
<0.001**				
Range	1 – 8	1 – 11		
parity				
≤3	460(84.6%)	212(82.8%)	0.395	
0.530				
≥ 4	84(15.4%)	44(17.2%)		
Mean ± SD	1.8 ± 0.9	2.4 ± 1.2	7.114	
<0.001**				
Range	1 – 5	1 – 8		
Number of abortions				
No	414(76.1%)	152(59.4%)	23.539	
<0.001**				
yes	130(23.9%)	104(40.6%)		
1	84(64.6%)	68(65.4%)	0.015	
0.902				
≥2	46(35.4%)	36(34.6%)		
Number of living children				
One	10(1.8%)	0(0%)		
Two & three	440(80.9%)	160(62.5%)	42.518	
<0.001**				
Four & more	94(17.3%)	96(37.5%)		
Duration between current and previous delivery (year)				
1-2	72(13.2%)	60(23.4%)	13.151	
<0.001**				
>2	472(86.8%)	196(76.6%)		
Mean ± SD	3.9 ± 2.0	3.9 ± 2.6	0.174	

** P < 0.05 (highly significant)

Table (3). Distribution of Studied Women According to their Medical and Surgical History (no=800)

variables	Intended pregnancy (n=544)	Unintended pregnancy (n=256)	χ^2	P
History of diseases	76(12.3%)	39(15.2%)		1.290
0.256				
Hypertension	15(22.5%)	14(35.8%)		
Virus c	2(2.9%)	2(5.1%)		
Lumbar disc	8(11.9%)	4(10.2%)		
Heart dis.	6(8.9%)	0(0%)		
Bronchial asthma	5(7.5%)	3(7.9%)		
Diabetes	14(20.9%)	9(23.1%)		
Anemia	17(25.4%)	7(17.9%)		
History of surgery	80(14.7%)	66(25.8%)		14.312
<0.001**				
Cholecystectomy	20(25%)	14(21.2%)		
Tonsillectomy	26(32.5%)	25(37.9%)		
Hernia	0(0%)	2(3.0%)	4.955	
0.292				
Piles	8(10%)	10(60.6%)		
Appendectomy	26(32.5%)	15(22.7%)		

Table (4) .Distribution of Studied Women According to the received antenatal care (no=800)

variables	Intended pregnancy (n=544)	Unintended pregnancy (n=256)	χ^2	P
Ante natal care visits				
No	167(30.7%)	183(71.5%)		
yes	377(69.3%)	73(28.5%)	117.670	
<0.001*\$				
private clinic	86(22.8%)	11(15.1%)		
MCH units	153(40.6%)	44(60.3%)	9.636	0.008*\$
public hospital	138(36.6%)	18(24.6%)		

Table (5) : Distribution of the Studied Women According to Associated Problems Encountered during last pregnancy (n=800)

variables	Intended pregnancy (n=544)	Unintended pregnancy (n=256)	χ^2	P
Problems during pregnancy	113(20.8%)	86(33.6%)		15.314
<0.001**				
Anemia	27(23.9%)	30(34.9%)		
Ante partum hemorrhage	10(7.8%)	7(8.1%)		
Hypertensive disorders	20(17.7%)	21(24.4%)		
Hypotension	9(2.7%)	7(8.1%)	7.597	
0.474				
Hyperemesis gravidarum	11(9.7%)	11(12.8%)		
Early uterine contractions	6(5.3%)	3(3.5%)		
Diabetes	10(7.8%)	3(3.5%)		
Fetal anomalies	2(1.6%)	0(0%)		
Polyhydramnios	8(6.2%)	4(4.7%)		

Table(6) : Distribution of the Studied Women According to Data Pertaining to last Delivery (n=800)

variables P	Intended pregnancy (n=544)	Unintended pregnancy (n=256)	χ^2
Mode of delivery			
Normal	232(42.6%)	80(31.2%)	9.505
0.002**			
Cesarean	312(57.4%)	176(68.8%)	
Problems during puerperium	44(8.1%)	36(14.1%)	6.904
0.009**			
Puerperal sepsis	20(45.5%)	15(41.7%)	
Breast complications	4(15.9%)	8(22.2%)	
Bleeding	9(20.4%)	4(11.1%)	
Anemia	0(0%)	4(11.1%)	
Hypotension	8(18.2%)	5(13.9%)	

Table (7): Reasons Given for Unintended Pregnancy (n=256)

Reasons of Unintended Pregnancy	Unintended Pregnancy (n=256)
Miss timed	104(40.6%)
Woman unwanted	98(38.3%)
Husband unwanted	45(17.8%)
Husband unwanted	15(6.3%)
No helping	14(4.7%)
Family problems	8(3.1%)
Studying	4(1.6%)
Contraceptive method failure	112(43.8%)
Total	400*(156.3%)*

*The sample size is not exclusive because some women had unintended pregnancy for more than one reason
Reasons Given For Contraceptive Failure

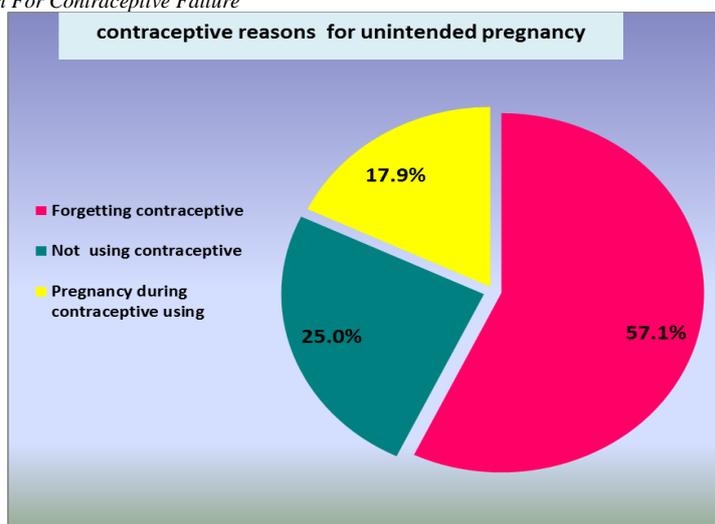


Figure (2): Reasons Given for Contraceptive Failure among Women with Unintended pregnancy (n= 256)

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