

Determinants and Outcomes of Unintended Pregnancy among Women in Helwan District

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Abstract: Background: Unintended pregnancy is an important public health issue in both developing and developed countries because of its negative association with the social and health outcomes for both mothers and new-born. **Aim:** The aim of this study is to explore the determinants of unintended pregnancy and estimate its risk of developing adverse pregnancy outcomes. **Subject and Methods:** A correlational study was conducted at Helwan general hospital (from September 2010 to February 2011) on 253 pregnant women at third trimester. Of them 82 women had unintended pregnancy, and 171 women had intended pregnancy. Data were collected by using a structured interview questionnaire to collect data about sociodemographic characteristics, pregnancy intention status as well as complains associated with pregnancy. At time of delivery, weeks of gestation and mode of delivery were recorded. After birth, the newborns were assessed for birth weight and if they had any neonatal complication. **Results:** Nearly one-third (32.4%) of study sample had unintended pregnancy with mean age of 29.89 ± 4.20 years compared to 26.51 ± 4.8 years for intended. Comparing with intended pregnancies group, they had low educational and economical levels, and they had high parity and previous unintended pregnancies ($P < 0.05$, $P < 0.001$, $P < 0.0001$, and $P < 0.0001$, respectively). In addition, they had increased risk to develop gestational diabetes, hypertension during pregnancy, and to be hospitalized during pregnancy. (AOR= 4.26, 4.19, 2.67 respectively). Their infants had increased risk to have low birth weight and to admit to Intensive Care Unite (OR= 3.03 and 2.33 respectively, $P = < 0.05$), but these associations were no longer significant when the mother's socioeconomic status and their receiving to antenatal care are also taken into account (AOR=1.76 and 1.64 respectively). **Conclusion and Recommendation:** Previous unintended pregnancies, increasing age and high fertility, in addition to lowering educational and economical level were determinants of unintended pregnancy. Women with unintended pregnancies were more likely to develop some adverse pregnancy outcomes than women with intended pregnancy. Exploring the causes of unintended pregnancies and developing strategy to reduce its occurrence is recommended to improve the maternal and newborn health.

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Key words: Pregnancy intention, unintended pregnancy, determinants, prenatal outcomes

1. Introduction

Unintended pregnancy is an important worldwide public health problem that affects women, their families, and society. It has been estimated that each year 80 million women in the world experience unintended pregnancy. [1] Women and men want to plan their pregnancies, and improving their ability to do so remain a key goal of the national Healthy People initiative. [2, 3]

At the time of conception, pregnancy may be intended or unintended. Unintended pregnancy or unplanned pregnancy is defined as pregnancies that, at the time of conception, are either mistimed or unwanted pregnancy. A woman is assumed to have a mistimed pregnancy, if the woman did not want to become pregnant at the time when she became pregnant because she wanted to become pregnant later [4]. On the other hand, a woman is assumed to have an unwanted pregnancy if the women did not want to become pregnant at all, or in other words the pregnancy occurred when she wanted to have no more

children. Pregnancies that occur to women at the right time, later than desired, or to women who are indifferent about the pregnancy are considered to be intended pregnancies. [5].

It has been estimated that, globally the highest unintended pregnancy rates were found for Eastern and Middle Africa and the lowest for Southern and Western Europe and Eastern Asia. [6]. However, this rate varies from one community to another, according to the characteristics of the surveyed population. The Egyptian rate of unintended pregnancy is closer to that found in the Islamic Republic of Iran, where the rate was 35% [7]. This prevalence does not reflect the true magnitude of the problem, but can rather be considered as an underestimate since it was only calculated among ever-married women, and those whose pregnancies ended in birth. [4]. According to the studies by World Health Organization, close to one-third of the pregnancies in the third- world countries are unwanted [8]. Nationally, 53 percent of unintended pregnancies are a result of contraceptive failure [9].

The consequences of unintended pregnancy are an important issue to address, because the risk factors of unintended pregnancies are similar to those of maternal mortality [10]. Women who did not intend to become pregnant often resorted to an abortion, typically carried out beyond the reach of health services or providers [11], and that women who decide to carry their pregnancy to term tend to place less value on their pregnancy, as reflected in their lower tendency to seek antenatal care [12]. Researches also argue that unplanned pregnancy leads to adverse impacts on antenatal care, breast-feeding and infant mortality. [10, 13]. The effects on the mother's health have not been researched in any depth, but the existing studies show an increased risk of depression and anxiety. [14]. Thus, reductions in unintended pregnancy rates could have widespread positive effects on the women's health and safety of childbirth. Planning pregnancy is a major factor in creating healthy communities. [15]. All nurses should have a responsibility to understand importance of reproductive health care of women, and to be prepared to respond to patients' needs for prevention and management of unintended pregnancy. [16].

Although several studies have examined the associations between pregnancy intention and birth outcomes, such as low birth weight, preterm delivery, and small for gestational age, the findings are inconsistent, and information still limited. Moreover, research focused specifically on the relationship between unintended pregnancy and maternal outcomes is restricted. So, this study aimed to examine the association between pregnancy intention and maternal and birth outcomes. If such an association does prove, pregnancy intention can be considered a factor that can be used to identify women at risk for adverse pregnancy and birth outcomes.

Aim of the study:

This study aims to explore the determinants of unintended pregnancy and estimate its risk of developing adverse pregnancy outcomes.

The study hypothesized that:

Women with unintended pregnancies will have a risk to develop some adverse maternal and birth outcome comparing to intended pregnancies.

2. Subjects and Methods

This part presents the design that was adopted to achieve the study objectives. It also includes description of the study sitting, population, sample, data collection procedures, ethical considerations, field of work and statistical design.

Study designs and setting:

The study was carried out using correlational research design. It was conducted at antenatal clinic, obstetric inpatient department and labor ward of Helwan general hospital. Helwan general hospital was chosen to be the study site since it is the main hospital in Helwan district that offering maternal and newborn

services; and it was receiving referred cases from other health care centers in Helwan district. So the rate of admission was expected to be high.

Subjects:

A convenience sample of 253 third trimester pregnant women who attaining the above- mentioned setting for routine prenatal care, within a period of 6 months were recruited in the study. Based on pregnancy intention the women were classified into two groups. The first group, study group, consisted of those pregnant women had unintended pregnancy (n=82). The second group, control group, included pregnant women had intended pregnancy group (n=171). Potential participants were excluded if they were high-risk group; including primipara over 35 years, twin pregnancy, or who suffer from any medical disease.

Tools of data collection:

Data collection was obtained by using:

A structured interviewing questionnaire that developed by the researchers after reviewing the related literatures and it consisted of three sections. Section I covered socio-demographic characteristics of enrolled women, including age, education and economical level, their occupation, and residence. Section II covered the obstetric history and history of present pregnancy, including pregnancy intention status, as well as complains associated with pregnancy.

Labor and neonatal record: to collect data about the labor and neonate condition; as weeks of gestation at delivery, and mode of delivery, birth weight and any neonatal complication.

The tools were revised for content validity by 5 juries who were experts in the related field, for clarity, relevance, comprehensiveness, and applicability. According to their suggestions, the modifications were applied. Since the tool did not contain a scale, no reliability testing could be applied to it.

Pilot study:

A pilot study was performed on ten pregnant women, at their third trimester, and followed until delivery. Those who participated in the pilot study 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 case and detect any problem peculiar to data collection tools that might face the researchers or their assistant and interfere with data collection. After conducting the pilot study, the necessary changes were performed and the tools were reconstructed and made ready for use.

Administrative and ethical considerations:

An authorized permission was obtained by submission of an official letter from the Faculty of Nursing to the responsible authorities of the study setting to obtain the authorization for data collection. The aim of the study was explained to every woman

before participation, and voluntary participation was emphasized and an oral consent was obtained. Data collection was anonymous, and confidentiality of the data was secured.

Field of work:

Research assistant was prepared to use the tools of data collection by explanation and clarification of all items of the tools and participated in pilot study to ensure the perfect using of the tools.

Within a period of 6 months (from September 2010 to February 2011), data were collected from the previously mentioned sitting. Women who accepted to participate in the study and hadn't any exclusion criteria were recruited in the study. Women were interviewed during their third trimester at antenatal clinic, or obstetric inpatient department where we asked them about demographic and socioeconomic data, obstetric history, and history of present the pregnancy. History of the present pregnancy included: intention of pregnancy, antenatal follow up visits and any problems associated with the pregnancy as: threatened abortion, hypertension, gestational diabetes, or antepartum hemorrhage. Additionally, we asked them about any hospitalization during pregnancy and the cause of hospitalization. Antenatal records were reviewed, general assessment was performed, and lab tests required were performed to confirm the women condition. Pregnancy intention status was determined by asking about her intention when they known by their pregnancy. The pregnancy considered 'intended' when it was planned, and considered 'unintended' when it was unplanned whether mistimed or unwanted at all. In addition, we asked them about her perception of the pregnancy during their third trimester. Interview lasted an average of 40 minutes for each woman. Each woman was followed during subsequent visits or by telephone until delivery. At labor ward, data about gestational age and mode of delivery were collected. Newborns' condition was assessed for birth weight and any complications as low birth weight or respiratory distress.

Statistical design:-

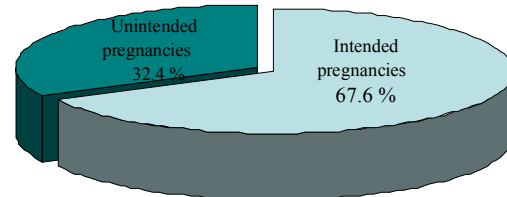
Data entry and statistical analysis were done using SPSS 16.0 statistical software package. "t" tests were used for comparing of quantitative variables, and chi-square tests were used for qualitative categorical variables. Whenever the expected values in one or more of the cells in a 2x2 table was less than 5, Fisher exact test was used instead of chi-square test. Bivariate associations between pregnancy intention and outcomes were described by computing odds' ratios (OR) with 95% confidence intervals (CI) and *P* values, where *P* < 0.05 indicated a significant association between unintended pregnancy and each of the determinants and outcomes were checked. Logistic regression model was used for variables that were significant at the bivariate level.

3. Results:

This study aims to explore the determinants of unintended pregnancy and its adverse maternal and newborn outcomes. This part will describe the determinants of unintended pregnancy through comparison between the study and control groups regarding socio-demographic and obstetrical data. Also the risk of developing adverse pregnancy outcomes among mothers with unintended pregnancy was estimated comparing to intended pregnancy by using the odd ratio.

As shown in figure (1) 67.6% of study sample had intended pregnancy and 32.4% had unintended pregnancy.

Figure 1 : Distribution of women according to pregnancy intention



As shown in table (1), a statistical significant difference was observed between the two groups regarding women age, level of education and economic level of the family. The mean of age for women had unintended pregnancy was 29.98 year compared to 26.51 years for women had intended pregnancy, Illiteracy was represented by 13.4% and high education was represented by 19.5% for women had unintended pregnancy compared to 4.1% and 32.2% respectively for women had intended pregnancy. Family income wasn't enough for basic needs for 15.9% of women had unintended pregnancy compared to 4.1% of women had intended pregnancy.

* Statistically significant

Table 2 revealed that the mean numbers of pregnancies, deliveries, and previous unintended pregnancies were higher in women had unintended pregnancy than who had intended pregnancy (3.56, 3.17 and 1.01 compared to 2.21, 1.77, and 0.03 respectively) (*p* =0.000). The results also indicated that more than half of women had unintended pregnancy (52.4%) start antenatal visits during first trimester compared to 87.7% of women had intended pregnancy (*p*=0.000). Regarding the total number of antenatal visits, 9.8% of the unintended pregnancy group hadn't any antenatal visit compared to 1.8% of the intended pregnancy group. The mean number of antenatal visits were 4.49 visits for women had unintended pregnancy compared to 6.74 visits for who had intended pregnancy (*p*=0.000).

Table (1) Socio-demographic characteristics of study sample according to their pregnancy intention (n= 253)

Sociodemographic characteristics		Intended(171)		Unintended(82)		test	p
		N	%	N	%		
Mothers Age	20 or less	13	7.6	0	0	t- test -5.51	*0.000
	>20 - 25	72	42.1	16	19.5		
	>25 - 30	52	30.4	31	37.8		
	>30-35	26	15.2	26	31.7		
	>35-40	8	4.7	9	11		
	Mean \pm SD	26.51 \pm 4.8		29.98 \pm 4.20			
Mothers education	Illiterate	7	4.1	11	13.4	X ² = 10.1	*0.017
	Basic education	16	9.4	7	8.5		
	Diploma degree	93	54.4	48	58.5		
	Higher education	55	32.2	16	19.5		
Mothers occupation	Work	27	15.8	12	14.6	X ² = 0.567	0.812
	Housewife	144	84.2	70	85.3		
Residence	Rural	35	20.5	26	31.7	X ² = 4.51	0.105
	Urban	89	52	33	40.2		
	Center	47	27.5	23	28.1		
Economic level of the family	More than basic needs	33	19.3	5	6.1	X ² = 16.1	*0.000
	Enough for basic need	131	76.6	64	78		
	Not enough for basic needs	7	4.1	13	15.9		

Table (2) Obstetric data of the study sample according to their pregnancy intention (n= 253)

Obstetric data		Intended(171)		Unintended(82)		t - test	P
		N	%	N	%		
Number of deliveries	1-2	130	76	14	17.1	-11.0	*0.000
	3-4	40	23.4	59	72		
	>4	1	0.6	9	11		
	Mean \pm SD	1.77 \pm 0.91		3.17 \pm 0.97			
Number of abortions	0	138	80.7	54	65.9	-1.3	0.194
	1	28	16.4	25	30.5		
	> 1	5	2.9	3	3.7		
	Mean \pm SD	0.26 \pm 0.70		0.38 \pm 0.56			
Previous unintended pregnancy	0	166	97.08	8	9.8	89.72	* < .0001
	1	5	2.9	67	81.7		
	2 or more	0	0	7	8.5		
	Mean \pm SD	0.03 \pm .169		1.01 \pm .509			
Onset of starting antenatal visits (by months)	No visits	3	1.8	8	9.8	-5.16	*0.000
	1-3	150	87.7	43	52.4		
	4-6	18	10.5	21	25.6		
	7-9	0	0	10	12.2		
	Mean \pm SD	2.14 \pm 1.13		3.54 \pm 1.98			
Total number of antenatal visits	0	3	1.8	8	9.8	6.24	*0.000
	1-3	9	5.3	25	30.5		
	4- 6	69	40.4	31	37.8		
	7-9	65	38	15	18.3		
	10 or more	25	14.6	3	3.7		
	Mean \pm SD	6.74 \pm 2.56		4.49 \pm 2.93			

* Statistically significant

Women who had unintended pregnancies differed significantly from women with intended pregnancies in some pregnancy complaints. As shown in table 3, women with unintended pregnancy were at increased

odds of gestational diabetes mellitus (OR 2.76, 95% CI 1.14 - 6.69), hypertension (OR 3.31, 95% CI 1.67- 6.58), and hospitalization during pregnancy (OR 2.20, 95% CI 1.22- 3.97).

Table (3) Odd Ratios for the association between unintended pregnancies and pregnancy complaints (n= 253)

Pregnancy complaints	Intended (171)		Unintended (82)		Odd ratio (95% confidence interval)	Test Chi ²	P
	N	%	N	%			
• Threatened abortion	18	10.5	6	7.3	0.67 (0.26-1.76)	0.665	0.415
• Gestational DM	10	5.8	12	14.6	2.76 (1.14- 6.69)	5.39	*0.020
• Antepartum hemorrhage	7	4.1	8	9.8	2.53 (0.89- 7.24)	3.19	0.074
• Hypertension	18	10.5	23	28	3.31 (1.67- 6.58)	12.5	*0.000
• Persistence vomiting	31	18.1	14	17.1	0.93 (0.46- 1.86)	0.422	0.837
• Dysuria	65	38	38	46.3	1.41 (0.83- 2.40)	1.59	0.207
• Preterm labor	18	10.5	3	3.7	0.32 (0.09- 1.1)	3.43	0.064
• Hospitalization during pregnancy	34	18.7	29	35.4	2.20 (1.22- 3.97)	7.10	*0.008

* Statistically significant Not mutually exclusive

Table (4) shows the causes of hospitalization during pregnancy by pregnancy intention. The results revealed that ante partum hemorrhage was the main causes for hospitalization among the unintended

pregnancy groups compared to the other group, this differences was found statistically significant ($P=0.05$).

Table (4): Causes of hospitalization during pregnancy distributed by pregnancy intention (n= 63)

Causes of hospitalization	Intended (34)		Unintended (29)		Test	P
	N	%	N	%		
Antepartum hemorrhage	1	2.9	6	20.7	Fisher	*0.042
Fever	1	2.9	0	0	Fisher	1.0
Gestational DM	5	14.7	6	20.7	Fisher	0.740
Hyperemesis gravidarum	2	5.9	2	6.9	Fisher	0.999
Pregnancy induced hypertension	12	35.3	10	34.5	X ² =0.04	0.841
Premature rupture of membranes	12	35.3	4	13.8	Fisher	0.080
Threatened abortion	0	0	1	3.4	Fisher	0.460

* Statistically significant **Not mutually exclusive

As shown in table 5, labor outcomes weren't differing in the two groups except regarding to mode of delivery. Women who had an unintended pregnancy were significantly more likely to had elective cesarean delivery than women had an intended pregnancy (43.9%, 18.7% respectively) (OR= 3.40, 95% CI 1.90 -

6.08). Also their infants were at increased risk of low birth weight (OR= 3.03, 95% CI 1.62- 5.65) ($p<0.001$), and they were more likely to admit to Intensive Care Unite (OR=2.33, 95% CI 1.20- 4.55). ($p<0.05$)

Table (5): Odd Ratios for the association between unintended pregnancies and labor and birth outcomes (n= 253)

labor and birth outcomes	Intended(171)		Unintended(82)		Odd ratio (95% confidence interval)	Test Chi ²	P
	N	%	N	%			
labor outcomes							
Preterm birth	20	11.7	8	9.8	0.82 (0.34-1.94)	0.212	0.645

labor and birth outcomes	Intended(171)		Unintended(82)		Odd ratio (95% confidence interval)	Test Chi ²	P
	N	%	N	%			
labor outcomes							
Preterm birth	20	11.7	8	9.8	0.82 (0.34-1.94)	0.212	0.645
Vaginal delivery	105	61.4	26	31.71	0.29 (0.17- 0.51)	19.6	*0.000
Elective C.S**	32	18.7	36	43.9	3.40 (1.90- 6.08)	17.9	*0.000
Emergency C.S**	34	19.9	20	24.39	1.30 (0.69- 2.44)	0.671	0.413
Birth outcome							
New natal death	2	1.2	1	1.22	1.04(0.09-11.67)	Fisher	1.0
Birth weight (<2.5 kg)	25	14.6	28	34.2	3.03 (1.62- 5.65)	12.8	*0.002
Birth weight (2.5kg–3.5kg)	103	60.2	38	46.3	0.57 (0.34- 0.97)		
Birth weight (>3.5 kg)	43	25.1	16	9.4	0.72 (0.38-1.38)		
Admission to the (ICU) **	22	12.9	21	25.61	2.33 (1.20- 4.55)	6.38	*0.012
Respiratory distress	12	7	11	13.41	2.05 (0.86-4.87)	2.74	0.098

* Statistically significant**C.S: cesarean deliveries **ICU: Intensive Care Unite ***Not mutually exclusive

Table 6 shows a using of logistic regression analysis to estimate the adjusted odd ratio for the association between unintended pregnancies and significant maternal and birth outcomes. It is observed that women with unintended pregnancies have increasing risk to develop gestational diabetes,

hypertension, C.S deliveries, and to be hospitalized during pregnancy. The models was controlling for women age, education, number of delivery, family income, time of starting antenatal care, and total number of antenatal visits.)

Table (6): Adjusted odd ratio for the association between unintended pregnancies and selected maternal and birth outcomes

Maternal and birth Out come	Coefficients	Standard Errors	Adjusted OR (95% confidence interval)	P
Gestational D	1.4482	0.6316	4.26 (1.23- 14.67)	*0.0218
Hypertension	1.4331	0.4843	4.19 (1.62- 10.83)	*0.0031
Hospitalization during pregnancy	0.9833	0.4056	2.67 (1.21 -5.92)	*0.0153
C.S deliveries (elective and emergency)	1.6902	0.3918	5.42 (2.52- 1.68)	*0.0000
Low birth weight	0.5639	0.4184	1.76 (0.77- 3.99)	0.1778
Admission to neonatal ICU	0.4932	0.4441	1.64 (0.69- 3.91)	0.2668

* Statistically significant ICU: Intensive Care Unite

(All outcomes controlling for women age, education, number of delivery, family income, time of starting antenatal care, and total number of antenatal visits.)

4. Discussion

In spite of the improvement of family planning services in the last decades, the prevalence of unintended pregnancies was about one-third of our sample. This rate isn't reflecting the actual magnitude of the problem in our country, because it is only among ever-married females and who their pregnancies were ended by birth. The prevalence of unintended pregnancies in our study is similar to Egypt Demographic and Health Survey 1995, where over one-third of all pregnancies were reported to be unintended pregnancies [17]. Moreover in Islamic countries the rate of unintended pregnancy was closed

to our result (35% in Iran) [7], but in USA and Japan were nearest to fifty percent because of high incidence of teenage pregnancy among unmarried girls [18, 19].

The study findings 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 aged >30 - 40 years were more likely to have unintended pregnancies compared to those aged >20–30 years. This result was corresponding to other studies [20,21] who reported that percentage of unintended pregnancy in ages more than 35 years was approximately three times more than the intended

pregnancy. From the researcher point of view, the women over thirty years could have achieved their desired number of children or may need to space between the pregnancies. Occurring pregnancies at this age can put the pregnancy at risk. So, **Bennett et al.**, [22] stated that prevention of unwanted pregnancy is more necessary and becomes more vital with the increase of age. On the other hand, **Finer. et al.**, [23] stated that the rate of unintended pregnancy was highest among women 18–19 and 20–24 years and this rate generally decreased with age.

The study results indicated that illiteracy was represented by more than one eighth for women had unintended pregnancy compared to few percent of women had intended pregnancies, but high education was about one fifth in women had unintended pregnancy compared to about one-third for women had intended pregnancy. This result agreed with other studies [24, 25] who reported that women with less than a high education level are over 3 times more likely to have an unintended birth than women with a college degree. According to the researcher point of view, increasing level of education will help in improving the women's awareness regarding the using of family planning methods effectively and planning their pregnancies as well. In addition, the study finding revealed that one-sixth of women had unintended pregnancy were low economic level (family income that did not enough for their basic needs) compared to few percent of women had intended pregnancy. This result agreed with many studies [26 -29]. **Finer et al.**, [27] hypothesize that low economic level may lead to lower rates of using effective contraceptive methods.

More than two third of the women with unintended pregnancy had 3-4 deliveries compared to one-quarter of women with intended pregnancy ($P < 0.001$). In similar studies [14, 30], the increased prevalence of unintended pregnancy is observed with an increase in the number of children. High parity of women with unintended pregnancy in the study sample could reflect their achieving to desire number of children, and could be an indicator for the disconnection between maternal and child care, and family planning services. One-fourth of women had unintended pregnancy in this study started antenatal visits after 4th months and more than one tenth at 7th month. This result constant with the results of many studies [31-33]. From the researcher point of view, women who had unintended pregnancy are usually known by her pregnancy later, and the healthy behaviour, as receiving antenatal care, may be affected by the negative attitude to their pregnancies.

We found that women who had unintended pregnancies were more likely to develop gestational diabetes (AOR 4.26, 95% CI 1.23 - 14.67) and hypertension (AOR 4.19, 95% CI 1.62- 10.83). The relation between pregnancy complications and

pregnancy intention wasn't studied by the most of other studies except **Mohllajee et al.**, [34], and **Adenike et al.**, [35], who found that no significant increasing of the risk of pregnancy complications in women with unintended pregnancy. In our study, the increasing of the odds ratio regarding diabetes, hypertension in the group with unintended pregnancy may be related to psychological stress and anxiety they may feel. This interpretation was supported by **Geller**, [36] who stated that anxiety in which women experienced during unintended pregnancy has been associated with a complication during pregnancy including gestational diabetes and pre-eclampsia.

Women who were unwanted their pregnancies had increased odds of delivering a low birth weight infant (OR 3.03, 95% CI 1.62- 5.65).), but the association is no longer significant when women's age, education, number of delivery, family income, time of starting antenatal care, and total number of antenatal visits are also taken into account (the adjusted odd became 1.76). So, unwanted pregnancy has no independent effect on birth weight, but it reduces its odds. Many studies [4, 34, 37, 38, 39] found an association between unintended pregnancies and low birth-weight and others [40, 41,] found that this association was independent where they found that maternal behaviors with unintended pregnancy including non-use of prenatal care had a additional risk to low birth weight. Other interpretation [42] suggests that, mothers with unplanned pregnancies may ate a less nutritious diet than women with planned pregnancies and gained inadequate weight during pregnancy.

The absence of statistical significant difference between the intended and unintended pregnancies regarding the risk of premature births is not observed in our study. This result was constant with the study results of **Allen et al.**, [43]. On the other hand, the result was not constant with many studies [34, 39, 40, 44] that found significant increased risk of premature birth with unintended pregnancy. This increasing risk of preterm delivery which is found in these studies may be due to unhealthy behaviors which women with unintended pregnancy were doing, especially smoking, that conceder a cofactor contributed to preterm birth [43]. The, significant association between maternal smoking and spontaneous preterm labor was proven by **Kyrklund-Blomberg et al.**, [45]. In Egyptian community, where our study conducted, women smoking is rare behavior, so the absence of statistical significant difference between the intended and unintended pregnancies regarding preterm birth is accepted.

Conclusions and recommendations:

In our study, unintended pregnancy was reported by about one-third of study sample. The mean age of women had unintended pregnancy was higher than the

mean age of women with intended pregnancy, but their educational and economical level were lower than women with intended pregnancy. The majority of them had three or more previous deliveries and more than ninety percent of them had previous unintended pregnancies. They were more likely to delay antenatal care with a low total number of visits, to develop pregnancy complications as gestational diabetes, hypertension, and to be hospitalized during pregnancy. The majority of them delivered by cesarean section compared to women with intended pregnancy. Their infants were at increasing risk to have low birth weight and admit to Intensive Care Unit than infants of women had intended pregnancy, but the association is no longer significant when the mother's socioeconomic status and their receiving antenatal care are also taken into account. Explore the causes of unintended pregnancies and developing strategy to reduce its occurrence is recommended to improve the maternal and newborn health and welfare.

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