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Prevalence of Unintended Pregnancies and Associated Risk Factors among Iraqi Women in Babylon

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ABSTRACT

Background: The implications of unwanted pregnancy are significant, placing considerable difficulties on children, women, men, and families. A woman experiencing an unwanted pregnancy is less inclined to pursue early prenatal care and is more prone to expose the fetus to detrimental chemicals, such tobacco or medicine.
Objective: To estimate the prevalence of unintended pregnancy and to identify the factors that may associated with unintended pregnancy.
Patients and method: a cross-sectional study with analytic elements. The study was conducted from the 15th July2025 to the 28th February. A multistage sampling approach was used. All hospitals in Babylon health directorate were stratified into two groups according to location: central and peripheral hospitals.one hospital was chosen from each stratum using simple random sampling. An equal number of participants were allocated to each of the selected hospitals (Babil teaching hospital for obstetrics and pediatrics, Al-Zahraa hospital for obstetrics).
Results: Majorities of participant mothers aged between 20-35 years old (69.7%), and the mean age of the studied group was (30.36+7.145) years old. (86.0%) have 1st pregnancy in the age between 20-35 years old, (23.6%) reported an unintended pregnancy, unintended pregnancies were more frequent among women with higher parity.
Conclusion: The prevalence of unintended pregnancy in this study was 23.6% (mistimed 13.0%, unwanted 10.6%). There was significant association between unintended pregnancy and maternal age, maternal educational level, husband's age and monthly family income.
Keywords: Unintended pregnancy, prevalence, Risk factors, Babylon.

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INTRODUCTION:

Unintended pregnancy defined as a pregnancy that is either mistimed (occurred earlier than desired) or unwanted (occurred when no children or more children were desired). (1) Unintended pregnancy remains a significant global health. Nearly half of all pregnancies worldwide are unintended, with variation in prevalence between countries. (2)

Evidence on unintended pregnancy in Iraq is limited, few studies done about this issue, one study conducted in Erbil in 2021 reported that 39.4% of all pregnancies were unintended. (3) Another study in Mosul in 2020 found prevalence of 49% (4), while it was 25.8%according to study conducted in 2006 in Basra. (5)

Unintended pregnancy is influenced by many different determinants, including non-use of contraceptive methods and contraceptive failure. (6-9)

Sociodemographic characteristics can also affect unintended pregnancy such as maternal age, residence, maternal educational level, employment status, husband's age, family income and religious factors. (10-14)

In addition to this, gender inequality, sexual violence and legal frameworks can affect the prevalence of unintended pregnancy. (15,16) The consequences of unintended pregnancy affect the individuals, families and communities. (17)

Adverse maternal outcomes include unsafe abortion, delayed or inadequate antenatal care, anemia, preeclampsia, postpartum hemorrhage, maternal depression and substance abuse. The mother may leave her education or employment, which can affect family income. (18-22)

The effect of unintended pregnancy on the child includes low birth weight, premature birth, incomplete immunization, breast feeding problems, also, maternal mental health and the quality of mother-child relationship can lead to psychosocial problems and this may affect the child's long –term wellbeing. (23-26) The reduction of unintended pregnancy will improve the reproductive health of the women which is part of the Global Sustainable Development Goals (SDGs) in 2030. (27,28)

PATIENTS AND METHODS:

This is a cross-sectional study with analytic elements. The study was conducted from the 15th July 2025 to the 28th February.

A multistage sampling approach was used. All hospitals in Babylon health directorate were stratified into two groups according to location: central and peripheral hospitals.one hospital was chosen from each stratum using simple random sampling. An equal number of participants were allocated to each of the selected hospitals (Babil teaching hospital for obstetrics and pediatrics, Al-Zahraa hospital for obstetrics).

The data collection process was conducted for two days a week, one day for each hospital. The researcher spends about five hours per day in the study site to meet a convenient sample of pregnant women who are attending the chosen hospitals.

The data was collected by structured questionnaires organized by the researcher and it was included four sections; sociodemographic characteristics, reproductive history pregnancy intention and contraceptive use by women with unintended pregnancy

Ethical approval and official considerations:

An official permission was obtained from the Research Ethics Committee at Babylon Health Directorate and the administration of the chosen hospitals.

All women participating in this study was interviewed after obtaining their oral consent and all questionnaires was explained to them.

Statistical methods:

Data were analyzed using (spss version 26). Chi-square test was used to assess the relationship between unintended pregnancy and relevant variables, Fisher's exact test used when chi-square was inapplicable. P. value of less than 0.05 was used as a threshold for significance level.

RESULTS:

A total of more than five hundred respondents were included in the study, the majorities of them were in the age between 20-35 years old (69.7%), and the mean age of the studied group was (30.36+7.145) years old. Rural were represented in (52%), Institute or college level of education found in (48.3%), about two-thirds of women were unemployed

(64.9%), 57.3% of their husband were in the age between 20-35 years old, more than half of the family (56.3%) were with monthly income is sufficient without saving, (**Table 1**).

Majority, (86.0%), of women had their 1st pregnancy at the age between 20-35 years with a mean age of 24.32+4.436 years, 66.3% with 2-3 gravity, 57.7% with 2-3 parity, 16.0% with history of abortion, and 33.7% with history of C/S route of delivery, (**Table 2**).

Among the participant women, 383 (76.4%) had intended pregnancy and 118 (23.6%) reported an unintended pregnancy. Among those with unintended pregnancies, 65 cases (13.0%) were mistimed, while 53 cases (10.6%) were unwanted pregnancies, (**Table 3**).

A statistically significant association was found between pregnancy intention and maternal age (P=0.004), maternal educational level (p=0.010) and husband's age (p=0.007). No significant association between unintended pregnancy and each of maternal and husband's employment status, husband's educational level, residence of respondents and family income, (**Table 4**). A highly statistically significant association was observed between pregnancy intention and gravidity (P<0.001), women with four or more pregnancies accounted for a higher proportion of unintended pregnancy. Similarly, parity had a highly significant association with pregnancy intention (P<0.001), unintended pregnancies were more frequent among women with higher parity. Also, statistically significant association was found between pregnancy intention and previous history of cesarean section (p=0.023). Unintended pregnancies were more common among women with a previous cesarean section. In contrast, no significant association was found between unintended pregnancy with age at first pregnancy and history of abortion. All these findings are summarized in (**Tables 5**). Using contraceptive prior to the current unintended pregnancy was reported by 85 women (72.0%), while 33 women (28.0%) were not using any contraceptive method. Condom was the most used contraceptive method, it was reported by 28 women(32.9%). The safe period was the least frequently used method, by only 2 women (2.4%), (**Table 6**). Our findings showed that the most frequently reported cause for non-using contraceptives was fear of side effects mentioned by 11 women (33.3%), (**Table 7**).

Table 1. Socio-demographic characteristics of the participants (N=501).

Variable	Category	No.	%
Maternal Age (year)	< 20	27	5.4
	20-35	349	69.6
	> 35	125	25.0
	Range: 15 - 44	-	-
	Mean (SD): 30.4 (7.2)	-	-
Residence	Urban	237	47.0
	Rural	264	52.0
Maternal education	Primary or less	81	16.2
	Intermediate, secondary	165	32.9
	Institute, college	242	48.3
	Postgraduate	13	2.6
Maternal Employment	Unemployed	325	64.9
	Governmental employee	151	30.1
	Private sector employee	14	2.8
	Self-employee	11	2.2
Husband's age	<20	2	0.4
	20-35	287	57.3
	>35	212	42.3
	Range: 19 - 54	-	-
	Mean (SD): 33.8 (7.5)	-	-
Husband's education	Primary or less	60	12.0
	Intermediate, secondary	164	32.7
	Institute, college	249	49.0
	Postgraduate	28	5.6
Husband's employment	Unemployed	112	22.4
	Governmental employee	273	54.5
	Private sector employee	11	2.2
	Self-employee	105	21.0
Monthly family income	Insufficient	98	19.6
	Sufficient without saving	282	56.3
	Sufficient with saving	121	24.2

Table 2. Reproductive characteristics of the pregnant women

Variable	Category	No.	%
Age at 1st pregnancy	< 20	60	12.0
	20-35	431	86.0
	> 35	10	2.0
	Range: 15 - 39	-	-
	Mean (SD): 24.3 (4.4)	-	-
Gravidity	1	34	6.8
	2-3	332	66.3
	4	135	26.9
	Range: 1 - 7	-	-
	Mean (SD): 3.0 (1.0)	-	-
Parity	1	184	36.7
	2-3	289	57.7
	4	28	5.6
	Range: 0 - 5	-	-
	Mean (SD): 1.85 (1.0)	-	-
History of abortion	Yes	80	16.0
	No	421	84.0
History of C/S	Yes	169	33.7
	No	332	66.3

Table 3: Distribution of unintended pregnancy among the participants (N=501).

Pregnancy intention	No.	%
Intended pregnancy	383	76.4
Unintended pregnancy	118	23.6
- Mistimed	65	13.0
- Unwanted	53	10.6

Table 4. Distribution of pregnancy intention according to sociodemographic characteristics of the participants (N=501)

Variable	Category	Intended pregnancy (N=383)		Unintended pregnancy (N=118)		P. Value
		No.	%	No.	%	
Maternal age (year)	< 20	22	5.7	5	4.2	0.004a
	20-35	279	72.8	70	59.3	
	> 35	82	21.4	43	36.4	
Residence	Urban	173	45.2	64	54.2	0.092a
	Rural	210	54.8	54	45.8	
Maternal education	Primary or less	64	16.7	17	14.4	0.010a
	Intermediate, secondary	118	30.8	47	39.8	
	Institute, college	195	50.9	47	39.8	
	Postgraduate	6	1.6	7	5.9	
Maternal Employment	Unemployed	241	62.9	84	71.2	0.162b
	Governmental employee	124	32.4	27	22.9	
	Private sector employee	9	2.3	5	4.2	
	Self-employee	9	2.3	2	1.7	
Husband's age	< 20	2	0.5	0	0.0	0.007b
	20-35	233	60.8	54	45.8	
	> 35	148	38.6	64	54.2	
Husband's education	Primary or less	45	11.7	15	12.7	0.814a
	Intermediate, secondary	129	33.7	35	29.7	
	Institute, college	189	49.3	60	50.8	
	Postgraduate	20	5.2	8	6.8	
Husband's employment	Unemployed	95	24.8	17	14.4	0.119a
	Governmental employee	204	53.3	69	58.5	
	Private sector employee	8	2.1	3	2.5	
	Self-employee	76	19.8	29	24.6	
Monthly family income	insufficient	67	17.5	31	26.3	0.084a
	sufficient without saving	224	58.5	58	49.2	
	sufficient with saving	92	24.0	29	24.6	

a: Chi-square test, b: Fisher's exact test used in comparison

Table 5. Distribution of pregnancy intention according to reproductive history

Variable	Category	Intended pregnancy (N=383)		Unintended pregnancy (N=118)		P. Value
		No.	%	No.	%	
Age at 1st pregnancy (year)	< 20	45	11.7	15	12.7	0.204
	20-35	328	85.6	103	87.3	
	> 35	10	2.6	0	0.0	
Gravidity	1	30	7.8	4	3.4	<0.001
	2-3	275	71.8	57	48.3	
	4	78	20.4	57	48.3	
Parity	1	162	42.3	22	18.6	<0.001
	2-3	211	55.1	78	66.1	
	4	383	100.0	18	15.3	
History of abortion	Yes	64	16.7	16	13.6	0.414
	No	319	83.3	102	86.4	
History of C/S	Yes	119	31.1	50	42.4	0.023
	No	264	68.9	68	57.6	

Table 6. Prevalence and type of contraceptive methods utilized by women with unintended pregnancy (N=85).

Variable	No.	%
Contraceptive use		
Yes	85	72
No	33	28
Type of contraceptive		
Condom	28	32.9
Withdrawal	26	30.6
Lactational amenorrhea	11	12.9
injection	10	11.8
Contraceptive pills	8	9.4
Safe period	2	2.4

Table 7. Causes of non-using contraceptives among women with unintended pregnancy (N=33)

Cause	No.	%
Fear of side effects	11	33.3
Access/cost problems	7	21.2
Lack of knowledge and misinformation	3	9.1
Not considered herself as fertile	5	15.2
Medical reason/chronic diseases	3	9.1
Husband/family refusal	2	6.1
Infrequent sex	1	3.0
Religious cause	1	3.0

DISCUSSION:

This research provided a clearer picture into a sensitive and under reported issue in Iraq.

The present study found that 23.6% of pregnancies were unintended, indicating nearly one in four pregnancies was unplanned and this means that unintended pregnancy remains a significant public health problem.

The prevalence of unintended pregnancy in this study was lower than prevalence of the other limited studies conducted in Iraq, in Basra it was 25.8% (5), while it was39.4%in Erbil (3) and 49%in Mosul. (4)

According to regional data, ameta analysis across Middle East and North Africa (MENA) region showed overall prevalence of 27%with variation between different countries ranging from prevalence of 32.0%in Saudi Arabia, 27.0%in Egypt to8.0% in Qatar. also, another study done in subs Saharan Africa and the prevalence was 27.6%. (29)

In neighboring countries such as Iran, a recent study conducted in 2023 reported prevalence of 30.7%of unintended pregnancy. (13)

These comparative studies together illustrate that unintended pregnancies are global problem but their prevalence differ by regions according to multiple determinants.

The significant association between maternal age, husband's age and unintended pregnancy is similar to findings from other studies. (3-5, 13, 30-32) this study reported that women with

older couples age are more likely to get unwanted pregnancies may be due to completion of family size and not using contraceptive because the wife consider herself as infertile.

The finding that there is no significant statistical association between residence and pregnancy intention in this study is consistent with many studies. (11,13,31) However; another study reported higher unintended pregnancy in rural areas and this finding may vary due to difference in reproductive health programs and access to services. (30)

Regarding maternal educational level there was a significant association with pregnancy intention (p=0.01), which is a common finding with previous studies (31,32) which showed that unintended pregnancy was higher among women with low educational level, may be due limited information on contraception. In contrast there was no significant association between husband's educational level and pregnancy intention which is consistent with other studies which suggesting limited influence of husband's educational level on pregnancy intention.

Reproductive history was also affecting pregnancy intention, in this study high parity and high gravidity had strong statistical association with unintended pregnancy and these findings also observed in many studies may be due to completion of family number and misperception of fertility and contraceptive discontinuation. (3-5,32)

In the current study, unintended pregnancy was more frequent among women with previous history of cesarean section which indicate that women with history of surgical delivery delay using of contraceptive because of fear of side effects, false sense of longer infertility period after surgery, inadequate counseling about contraceptive by health workers due to focusing on pain control and wound healing.

Although, unwanted pregnancy outcome such as abortion may affect the future pregnancy intention, but there was no significant association between history of abortion and pregnancy intention in this sample. According to this study, 72.0% of the women with unintended pregnancy had used contraception before current pregnancy. But the more reported contraceptive is traditional methods. Such as condoms (32.9%), withdrawal (30.6%), and lactational amenorrhea (12.9%) and this indicating that these old contraceptive methods with high failure rates. Among our studied group,28% of women with unintended pregnancies were not using any contraceptives and the most frequent reason is fear of side effects (33.3%), followed by access/cost problems (21.2%). while, the infrequent sexual activity and religious

causes were the least reported causes with percentage of (3.0%) for each cause. In contrast there was no significant association between husband's educational level and pregnancy intention which is consistent with other studies which suggesting limited influence of husband's educational level on pregnancy intention. (4) Maternal and husband employment status, as well as, family income showed no significant association with pregnancy intention and similar findings was reported in other studies. (4,13)

CONCLUSION:

1. The prevalence of unintended pregnancy in this study was 23.6% (mistimed 13.0%, unwanted 10.6%).
2. There was a significant association between unintended pregnancy and maternal age, maternal educational level, husband's age and monthly family income.
3. Unintended pregnancy was significantly association with parity, gravidity and history of cesarean section.
4. The prevalence of contraceptive use among women with unintended pregnancies was 72 %.
5. Condom was the most frequently used contraceptive method and the least used method was the safe period.
6. Among women who did not use any contraceptive, the most frequently cause for non-using contraceptives was fear of side effects.

In light of our findings, we recommend increasing public awareness about unintended pregnancy and its complications with an educational program that combat misconceptions about contraceptive using and promoting reproductive health.Furthermore, we recommend providing a guidance and regular training for healthcare providers about good family planning counseling targeting women at reproductive age and improving the access to free and effective contraception methods in governmental health services.

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