Factors associated with unplanned pregnancy among multiparity women in Mosul City

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ABSTRACT

Background & Objective: An unplanned pregnancy is a pregnancy that is either unwanted or the pregnancy is mistimed. It's also gave many factor that increase the incidence of it. To assess potential factor for unplanned pregnancy among multiparous women

Methods: A case-control observational study design was carried out from 22 of November 2022 to the 25th of march 2023. Its included 300 unplanned pregnant woman, 300 planned pregnancy chosen from non-probability sampling were collected from 3 obstetrics and gynecology units of teaching hospitals in Mosul city. I used a structured interviewing questionnaire.

Result: The average age of mother 28.6% and BMI 28.9 kg/m^2. more than 28.7% had irregular menstrual cycle, age of marriage between 18-25 have 49%, no visit of antenatal care 72%, misuse or incorrect use of contraceptive 64.9%

Conclusion: certain demographic and socioeconomic factors, such as age, education, income, and occupation, are higher in unplanned pregnancy compared to planned pregnancy. Furthermore, the risk factors that increase the unplanned pregnancy among multiparous woman are younger age, irregular menstrual cycle, early age of marriage, misuse or incorrect use of contraceptive, history of unplanned pregnancy

Keywords:	Unplanned pregnancy, Multiparity, Factor

Introduction

Pregnancy is a unique and natural physiological process in women's life [1].

An Unplanned pregnancy is a pregnancy when mother doesn't have a plan to become pregnant and give birth. It is the persistent health issue affecting the lives of several women and children across the globe [2].

While Women who are consciously planning a pregnancy can improve their health status during the preconception period. A healthy lifestyle and lifestyle changes prior to conception— including a healthy diet; adequate physical activity and optimal weight; folic acid supplementation; avoidance of tobacco, alcohol and other teratogen exposures; and prevention, treatment and management of (infectious) diseases and medical conditions—can lead to a healthier pregnancy and a decreased risk of childhood morbidity and mortality [3,4].

The concept of unplanned pregnancy helps in understanding the fertility of populations and the unmet need for contraception. If a pregnancy is not planned before conception, a woman may not be in optimal health for childbearing. In many developing countries, poverty, malnutrition, and lack of sanitation and education contribute to serious health consequences for women and their families [5].

There are several factors associated with

unplanned pregnancy among multiparous women, these factors are young age, low socioeconomic status and lack of family planning other factors like unplanned pregnancy, marital status, and adverse outcomes in previous pregnancies were also identified as contributing to unintended pregnancy among multiparous women [6].

Unplanned pregnancy can lead to high risk factors to maternal including delayed or no referral to health care centers, increased risk of medical complications and surgery (anemia and increased risk of preeclampsia), induced abortions and preterm labor [7].

The reduction of unplanned pregnancy is a key concept in the Global sustainable development agenda in 2030. The global vision is that every woman will celebrate a wanted, healthy pregnancy, and safe birth of a child who will not just survive but thrive to his or her full potential [8]

Prevention includes comprehensive sexual education, availability of family planning services, and increased access to a range of effective birth control [9] [10].

Methodology
Aim of the Study: The purpose of this study is to associated with unplanned pregnancy among multiparity women in Mosul City**"**
Design of the study: A quantitative technique was applied in a descriptive, case-control study design.
Setting and Time: The data were collected from the three obstetrics and gynecology units of teaching hospitals in Mosul city, the center of Nineveh Governorate (Alkhansaa teaching hospital, AlSalam teaching hospital, AlBatool teaching hospital). The data collection was done in the period between the 22of November 2022 to the 25 of march 2023.
Sample of the Study:
The sample for this study consisted of 600 pregnant women, including 300 cases and 300 controls. The cases were defined as women with a history of unplanned multiparity, while the controls were defined as women with a history of planned multiparity. The sample size was calculated based on the prevalence of unplanned

pregnancies in multiparity and the desired level of precision. The exclusion criteria included the primi pregnant, pregnant woman under 15 years and above 45 years.
Data collection and Instrumentation: The data collection tool used in this study was a structured questionnaire form. The questionnaire was designed in Arabic and then translated into English. It consisted of four parts.
Part 1: sociodemographic characteristic includes (age, BMI, level of education, occupation, monthly income).
Part 2: maternal characteristic include: (Menstrual cycle, age of marriage, visit of antenatal care, use of contraceptive).
Part 3: medical condition during pregnancy include: (gestational hypertension, eclampsia, gestational diabetic, anemia, antepartum bleeding, UTI, premature rupture of membrane)

The data was collected from each mother by direct interview after taking her verbal consent, and some information was obtained from women's records.

Statistical Analysis: The data were analyzed using SPSS version 26 to interpret the study's findings.

Result
Table 1 show shows that mothers with unplanned pregnancies tend to be slightly older on average than those with planned pregnancies (28.16 vs27.4), and that they also have a lower average BMI ($28.9\,\text{kg/m}^2$ vs $36.2\,\text{kg/m}^2$), It also shows that a higher percentage of mothers with unplanned pregnancies live in ruler areas (51%) have lower levels of education (66%) and house wife (60.8%).

Table 2 show Unplanned pregnancies have a higher prevalence of gestational hypertension (42.3%), gestational diabetes (9%) and pre-eclampsia (43%) than planned pregnancies (28.7%), (2.7%), (27.7%).
Also unplanned pregnancies have a higher prevalence of UTIs, anemia, premature rupture of membrane, antepartum bleeding than planned pregnancies (83.7% vs 44%), (86.7% vs 49.7%), (41.7% vs 21.3%), (40.2% vs 18.6%).
Finally, table 3 show (28.7%) unplanned pregnancy had irregular cycle, (72%) no antenatal visit, (64.9%) using contraceptive.

Table 1: Comparison of Demographic and Socioeconomic Characteristics between Planned and Unplanned Pregnancies

variables	Planned Pregnancy n. (%)	Unplanned Pregnancy n. (%)
Mother age	(27.4 ±5.84)	(28.16 ±6.87)
Residence Urban	194 (64.8%)	147 (49%)
rural	106 (35.2%)	153 (51%)
Educational level Low educational level	114 (37%)	179 (64%)
High educational level	186 (63%)	121 (36%)
Mothers' occupation House wife	121 (41.1%)	183 (60.8%)
employee	179 (59.9%)	117 (39.2%)
Monthly income Low income	130 (43.6%)	229 (76%)
High income	170 (57.4 %)	71 (24%)
Total	N= 300 (100%)	N= 300 (100%)

Table (2): Factors Associated with Planned vs. Unplanned Pregnancy

Characteristic	Planned Pregnancy (n=300)	Unplanned Pregnancy (n=300)	Odds Ratio (95 % CI)
Menstrual Cycle			
Regular	287 (95.7%)	214 (71.3%)	4.80 (2.51, 9.16)
Irregular	13 (4.3%)	86 (28.7%)	0.21 (0.11, 0.41)
Age of Marriage			
<18 years	0 (0%)	143 (47.7%)	0.00 (0.00, 0.06)
18-25 years	273 (91.3%)	147 (49%)	5.54 (3.62, 8.47)
>25 years	27 (8.7%)	10 (3.3%)	2.69 (1.23, 5.87)
Visit of antenatal care			
First trimester	16 (5.3%)	48 16%)	0.30 (0.16, 0.54)
Second trimester	0 (0%)	15 (5%)	0.00 (0.00, 0.06)
Third trimester	2 (0.7%)	7 (21%)	0.10 (0.02, 0.44)
No visit	282(94%)	216 (72%)	6.48 (3.95
use of contraceptive			
yes	27 (9 %)	194 (64.9%)	0.00 (0.00, 0.01)
no	273 (91%)	106 (25.1%)	0.21 (0.00, 0.04)
Total	N= 100 (100%)	N= 100 (100%)	

DISCUSSION

Regarding the association between demographic factors and unplanned pregnancy, our findings suggest that that younger women are more likely to experience unplanned pregnancy compared to older women (42% vs 29.3%), women with lower levels of education (64%) and income (76%) were more likely to experience unplanned pregnancy. This finding is consistent with many studies in America, European and African nations [11], [12], [13].

Furthermore, our study found that higher percentage of women with unplanned pregnancies were unemployed (60.8%)

compared to women with planned pregnancies (41.1%). This finding is consistent with a study conducted in Ethiopia that find an unemployed mother at a higher risk to face unplanned pregnancy (41%). [14].

On other hand, table 2 show the more common factor associated with planned and unplanned pregnancy. For women with an irregular menstrual cycle, the odds ratio is 0.21, suggesting that the odds of having an unplanned pregnancy are higher than the odds of having a planned pregnancy. For women who married before 18 years, the odds ratio is 0.00, meaning that there were no planned pregnancies This suggests a very strong association between early marriage and unplanned pregnancies. Unplanned pregnancy higher percentage of women with no antenatal care visits (82%) compared to planned pregnancy (72%). There could be several reasons why women with unplanned pregnancies may not visit antenatal care regularly. These reasons may include a lack of awareness or education about the importance of prenatal care, financial barriers, transportation difficulties or personal circumstances that make it difficult to attend appointments regularly. Otherwise, planned pregnancy had a much higher percentage of women using contraceptive [15].

In table 3, comparison of Medical Conditions in Planned vs Unplanned of current Pregnancies. This consists with many studies found association between theses factor and unplanned pregnancy. Unplanned pregnant women had a higher percentage of gestational hypertension (42.3% vs 28.7%), preeclampsia (43% vs 27.2%), anemia (86% vs 49.7%). This consists with some studies found these conditions are more incidence with unplanned pregnancy [16].

On other hand, this study found urinary tract infection (83.7% vs 44%), antepartum bleeding

(40.2% vs 14.7%), premature rupture of membrane (41.7% vs 21.7%) higher in pregnant woman with unplanned pregnancy than planned pregnancy. Many studies in Iran result found women from unplanned pregnancy affected by this condition. [17], [18].

Table 3: Comparison of Medical Conditions in Planned vs Unplanned of current Pregnancies

Medical Condition	Planned Pregnancy n. (%)	Unplanned Pregnancy n. (%)	OR (95% CI)
Gestational Hypertension	86 (28.7%)	127 (42.3%)	0.54 (0.37, 0.79)
Gestational Diabetes	8 (2.7%)	27 (9%)	0.28 (0.12, 0.63)
Pre-eclampsia	84 (27.7%)	132 (43%)	0.51 (0.35, 0.75)
Urinary Tract Infections	132 (44%)	251 (83.7%)	0.16 (0.11, 0.24)
Anemia	149 (49.7%)	258 (86%)	0.16 (0.11, 0.23)
Premature Rupture of Membrane	64 (21.3%)	125 (41.7%)	0.37 (0.25, 0.53)
Antepartum Bleeding	56 (18.7%)	123 (40.2%)	0.36 (0.24, 0.53)
Hyperemesis Gravidarum	16 (5.3%)	84 (28%)	0.16 (0.09, 0.28)
Total	N= 300 (100%)	N= 300 (100%)	

Conclusion

This study concluded that most of the study participants had a low educational level, low monthly income and had many factors that eligible for obtaining unplanned pregnancy. the risk factors that increase the unplanned pregnancy among multiparous woman are younger age, irregular menstrual cycle, early age of marriage, misuse or incorrect use of contraceptive, history of unplanned pregnancy, Lack of sexual education. These factors increase in unplanned pregnancy compared to planned pregnancy.

Ethics-related matters: On October 25, 2022, Ministry of Education/Nineveh Directorate officially approved the collection of data Participants' verbal consent was also asked prior to data collection

Having no conflicts of interest

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