

## Adverse Pregnancy Outcome and Maternal Age among Women Attended Kirkuk City Hospitals: A Comparative Study

Batool Medhat Rafaat<sup>1</sup>, Jenan Akbar Shakoor<sup>2</sup>

### Abstract

*Objective: To identify and contrast unfavorable pregnancy outcomes between two age groups of pregnant women who visited Kirkuk city hospitals. Methods: A sample of 280 women with ages ranging from 19 to 35 years old were subjected to a quantitative (descriptive) study design between October 2022 and May 2023. from the three main hospitals in Kirkuk City, a deliberate sample was chosen. A structured questionnaire was used as a data collection tool. Data input and analysis were conducted using SPSS version 22.0. Statistical techniques that are both descriptive and inferential are employed. Results: A total of 280 mothers took part; both groups were housewives with low incomes and elementary school graduates. While the older age group had between 3 and 4 pregnancies and deliveries by CS for both groups, the adolescent group only had 1-2. Placenta previa, gestational hypertension, eclampsia, and olighydrominos were complications before delivery that were significantly related to the mother outcome. Conclusions: No significant relationship were accounted between distribution of maternal outcome among both groups, expectation for some complications before labor.*

**Keywords:** Maternal age, adverse pregnancy outcomes, adolescent, elder age.

### Introduction

Adolescent pregnancy is a prevalent public health concern worldwide, posing risks to both the mother and the newborn. The World Health Organization (WHO) defines adolescents as individuals between the ages of 10 and 19. It is estimated that approximately 20% of the global population falls within this age group. (UNICEF,2005). Each year, approximately 16 million adolescents between the ages of 15 and 19, as well as two million adolescents under the age of 15, experience childbirth. These births account for approximately 11% of all deliveries that take place in Azadi and Nasir Hospitals. It is important to note that 95% of these adolescent births occur in developing countries. (WHO, 2013). Adolescent pregnancies are more prone to experiencing a higher incidence of antenatal and postnatal complications compared to pregnancies in adult women. These complications include preterm birth, intrauterine growth retardation, neonatal death, abortion, chronic fetal distress, fetal congenital anomalies, placental abruption, and a higher rate of caesarean births. These complications are more prevalent in adolescent pregnancies. (Çift et al., 2017).

Women who are older than 35 years are considered to have advanced maternal age (AMA) and are at a higher risk of experiencing adverse pregnancy outcomes. The trend of increasing advanced maternal age has been observed in recent decades, particularly in

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<sup>1</sup> Department of maternity health nursing, College of Nursing, University of Kirkuk, City of Kirkuk, Iraq, batoolmedhat7@gmail.com

<sup>2</sup> Department of maternity health nursing, College of Nursing, University of Kirkuk, City of Kirkuk, Iraq

high-income countries. Numerous studies have investigated the association between advanced maternal age and various adverse pregnancy outcomes. These outcomes include miscarriage, stillbirth, pre-eclampsia, gestational hypertension, gestational diabetes mellitus (GDM), preterm birth, delivering a small- or large-for-gestational-age neonate, as well as the likelihood of requiring an elective or emergency Cesarean section. (Khalil et al., 2013). The aim of this study was to identify and compare the adverse pregnancy outcomes among two specific groups: adolescents and women of advanced maternal age. The study focused on individuals attending hospitals in Kirkuk city. The objective was to examine and compare the negative consequences associated with pregnancy in these two distinct age groups.

## Method

A descriptive study was carried out in the maternity units of Kirkuk city hospitals, namely Kirkuk General Hospital, Azadi Hospital, and Al-Nasir Hospital. The study was conducted from December 12th, 2022, to March 10th, 2023. The sample consisted of 280 inpatient women who were either 19 years old or younger or 35 years old or older. Purposive sampling technique was employed to select the participants. Data were collected within 24 hours after delivery, whether it was through normal vaginal delivery or caesarean section. The women were directly interviewed while they were in the maternity units or delivery room on the days when the researcher was present at the hospital, which was six days a week, covering different shifts. The researcher also obtained the patients' phone numbers and followed up with the mothers for a full week after the birth, conducting phone interviews. A pre-tested questionnaire was utilized to gather the necessary data. The statistical analysis was performed using the Statistical Package for Social Sciences (SPSS) version 22.0, employing both descriptive and inferential statistical methods. A p-value of  $\leq 0.05$  was considered statistically significant.

## Result

Table 1. Soci- Demographic characteristics related to participants

Groups	< 20 yrs	> 34 yrs
<b>1- Educational levels</b>		
Illiterate	10 (11.6%)	15 (7.7%)
Read and write	8 (9.3%)	39 (20.1%)
Primary school graduate	47 (54.7%)	94 (48.5%)
Intermediated school graduate	7 (8.1%)	5 (2.6%)
Secondary school graduate	13 (15.1%)	0 (0.00%)
Institute	0 (0.00%)	12 (6.2%)
College	1 (1.2%)	19 (9.8%)
Post graduate	0 (0%)	10 (5.2%)
<b>2- Occupations</b>		
House wife	79 (91.9%)	156 (80.4%)
Student	7 (8.1%)	0 (0.00%)
Government employee	0 (0.00%)	30 (15.5%)
Private job	0 (0.00%)	8 (4.1%)
<b>3- Monthly Income ID</b>		

< 500000	53 (61.6%)	83 (42.8%)
500000 – 1000000	27 (31.4%)	47 (24.2%)
> 1000000	6 (7.0%)	64 (33.0%)
<b>4- Para</b>		
1 _ 2	82 (95.3%)	38 (19.6%)
3 _ 4	4 (4.7%)	95 (49.0%)
3 _ 4	0 (0.00%)	36 (18.6%)
> 6	0 (0.00%)	25 (12.9%)
<b>5- Mode of Deliveries</b>		
Vaginal Delivery (VD)	16 (18.6%)	82 (42.3%)
Vaginal delivery with the Episiotomy	26 (30.2%)	3 (1.5%)
Caesarean Section (CS)	44 (51.2%)	109 (56.2%)

Table (2): Maternal Outcomes among adolescents and advanced age women

Maternal Outcomes	Groups Classes	< 20 yrs.		> 34 yrs.		C.S. (*) P-value
		No.	%	No.	%	
1. Gestational Diabetes	No	82	95.3	183	94.3	CC = 0.021 P = 0.727 (NS)
	Yes	4	4.7	11	5.7	
2. Gestational Hypertension	No	78	90.7	163	84	CC = 0.089 P = 0.137 (NS)
	Yes	8	9.3	31	16	
3. Medical condition : Hypertension	No	85	98.8	187	96.4	CC = 0.068 P = 0.257 (NS)
	Yes	1	1.2	7	3.6	
4. Medical condition : Diabetes mellitus	No	83	96.5	192	99	CC = 0.085 P = 0.152 (NS)
	Yes	3	3.5	2	1	
	Yes	0	0	4	2.1	
5. Complications before labor : Pre rupture of membrane (PROM)	No	84	97.7	190	97.9	CC = 0.008 P = 0.888 (NS)
	Yes	2	2.3	4	2.1	
6. Complications before labor : Abruption placenta	No	86	100	193	99.5	CC = 0.040 P = 0.505 (NS)
	Yes	0	0	1	0.5	
7. Complications before labor : Oligohydramnios	No	77	89.5	186	95.9	CC = 0.122 P = 0.040 (S)
	Yes	9	10.5	8	4.1	
8. Complications before labor : Polyhydrominous	No	86	100	189	97.4	CC = 0.089 P = 0.113 (NS)
	Yes	0	0	5	2.6	
9. Complications before labor : Gestational hypertension	No	81	94.2	165	85.1	CC = 0.128 P = 0.031 (S)
	Yes	5	5.8	29	14.9	
10. Complications before labor : Pre Eclampsia	No	85	98.8	194	100	CC = 0.090 P = 0.132 (NS)
	Yes	1	1.2	0	0	
11. Complication after labor : Post partum hemorrhage (PPH)	No	82	95.3	188	96.9	CC = 0.039 P = 0.517 (NS)
	Yes	4	4.7	6	3.1	

### Discussion

The findings of the current study indicate that a significant proportion of women in both age groups had completed primary school education. The educational level of the mother is considered an important factor that influences the quality of life and has a positive impact on both maternal and infant outcomes. This finding is consistent with a study conducted in the United States, which found that a higher rate of adolescent pregnancies was associated with adverse pregnancy outcomes among women with low educational levels (Tetsuya, et al., 2015).

Regarding occupation, the majority of both adolescent and older pregnant women were classified as housewives. This result aligns with a study conducted by Shawky & Milaat (2000), which revealed that the majority of their study sample were housewives (92.4%). Furthermore, the Iraqi Women Integrated Social and Health Survey (I-WISH) conducted by the Central Statistical Organization (CSO) in 2011 reported that approximately one in every five girls aspired to become housewives in the future, representing 21.9% of the sample.

In terms of parity, the results showed that most of the adolescent pregnant women had 1-2 children, while the older age pregnant women had 3-4 children. A study conducted in Romania also found that adolescents were more likely to have one child compared to adults (Suciu et al., 2016).

Regarding the mode of delivery, the study found that approximately half of the adolescent women gave birth via cesarean section (CS) compared to 56.2% of the older age women. Additionally, 30.2% of adolescent women had vaginal delivery with episiotomy compared to 1.5% of the older age women. It has been suggested that due to the immaturity of their pelvis, adolescent pregnancies are associated with an increased risk of prolonged labor and cesarean deliveries, which are often indicated for failure to progress or descent (Ganchimeg et al., 2014).

Concerning gestational diabetes, the current study showed that 11.5% of the older age women were affected compared to 4.7% of the adolescent pregnant women, although no relationship was found. This finding is in agreement with Abdelsataar 'M. (2016), who reported that 1.8% of older age women had gestational diabetes compared to 0.6% of teenage women with gestational diabetes, as observed in a study by Rasheed et al. (2011). However, the current study's results differ from the findings reported by Abdelsataar 'M. (2016) regarding gestational hypertension. The current study did not find a significant correlation between the distribution of the two groups when a significance level of  $P > 0.05$  was used. This aligns with the findings of Webster et al. (2019), who found no significant relationship ( $P > 0.05$ ) between pregnant individuals with chronic or gestational hypertension and blood pressure self-monitoring when comparing two groups

## Conclusion

No significant relationship were accounted between distribution of maternal results among two groups exceptional for placenta previa, olighydrominos, gestational hypertension and eclampsia complications before labor, with showing significant relationship at  $P < 0.05$

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