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**Original Article** 

## OUTCOMES OF TEENAGE PREGNANCY IN AL-SADR CITY/ BAGHDAD, IRAQ 2018

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## ABSTRACT

**Background:** Teenage pregnancy is one of the most important social and public health problem all over the world. In Iraq, teenage marriage is culturally, religiously and socially accepted and practiced. It is exacerbated after widespread violence. Publication on teenage pregnancy is scarce in Iraq. **Objectives:** This study aims to measure the prevalence of teenage pregnancy and study adverse birth outcomes and complications of teenage pregnancy. **Methodology:** A cross-sectional study was conducted in PHCC in Al-Sadr City. The data was collected for the period from  $1^{st}$  of May to  $31^{th}$  of August 2018. A total of 300 women at reproductive age were included in the study. Each participant was interviewed. The impact of the independant variable (maternal age) on the dependant variables (outcomes, complications and mode of delivery) was investigated. P-value of less than 0.05 was considered significant. **Results:** The prevalence of teenage pregnancy (p=0.001) and low occupational opportunities (p=0.001) were associated with early teenage marriage. Inadequate ANC was significantly associated with early teenage pregnancy (p=0.009). PPH, anemia, preterm labor, LBW, neonatal mortality, cesaerean delivery and congenital anomalies were associated with early teenage pregnancy, (p= 0.008, 0.001, 0.002, 0.001, 0.02, 0.03, 0.02), respectively. No impact of maternal age on the rate of APH, GDM and gestational hypertension, (P= 0.2, 0.7, 0.5), respectively. **Conclusion:** Maternal and neonatal complications are higher during the early teenage years.

KEYWORDS: Outcomes, Teenage, Pregnancy, Al-Sadr City.

#### INTRODUCTION

Adolescence is a crucial stage of physical and psychological development, encompassing multiple transitions such as education, employment, and changing living circumstances.<sup>[1]</sup> Teenage pregnancy is a significant public health issue, often occurring in the context of poor social support and maternal well-being, with increased reproductive risks due to the dual burden of growth and reproduction.<sup>[2,3]</sup> Pregnancy and childbirth complications are the leading causes of mortality among adolescent girls in developing countries.<sup>[3]</sup> Poor nutrition combined with early childbearing heightens health risks, leading to complications such as anemia, pregnancyinduced hypertension, prolonged or preterm labor, cephalo-pelvic disproportion, and maternal morbidity and mortality.<sup>[4,5]</sup> In the Arab world, marriage is closely linked to childbearing, often leading to the early termination of girls' education and increasing their vulnerability to intimate partner violence.<sup>[6,7]</sup> Early marriage perpetuates cycles of poverty, low education, high fertility, and poor health, hindering social and economic development.<sup>[8]</sup> In Iraq, early marriage significantly impacts reproductive health. with

psychological and social challenges.<sup>[9,10]</sup> Factors contributing to early marriage include poverty, religious influence, tribal traditions, civil conflicts, low education, gender inequality, and societal pressure.<sup>[11]</sup> Teenage pregnancy has severe social, psychological, and health consequences, including stunted growth, depression, educational discontinuation, and increased reliance on public assistance, negatively affecting community health.<sup>[12]</sup> An estimated 21% of females aged 15-19 in Iraq are currently married.<sup>[13]</sup> Religious leaders sometimes promote child marriage without formal registration, complicating legal recognition and underreporting actual rates.<sup>[14]</sup> While global adolescent marriage rates have declined over the past 30 years, Iraq still has one of the highest child marriage rates in the Middle East.<sup>[15]</sup> Adolescent pregnancy remains a worldwide issue, with 11% of global births occurring among 15-19-year-olds, primarily in low- and middleincome countries.<sup>[16]</sup> Recent Iraqi studies show that 10.4% of deliveries in Baghdad<sup>[17]</sup> and 30.6% of primigravida deliveries in Wasit<sup>[18s]</sup> involve teenage pregnancies. The incidence of child marriage in Iraq has

consequences including unplanned pregnancies and

risen since 2003, yet research on this topic remains scarce.<sup>[19]</sup> This situation underscores the need for further study on adolescent pregnancy and marriage in Iraq. the aim of study is to study the impact of teenage pregnancy on mother and fetal health.

## METHOD

A cross-sectional study was conducted at two randomly selected Primary Health Care Centers (PHCCs) from Al-Sadr Health Sector, one of the nine health sectors in Baghdad. The study population included all reproductive-age women attending these PHCCs, with inclusion criteria requiring participation after delivery. Women with chronic diseases such as diabetes mellitus. hypertension, bleeding disorders, cardiovascular, or renal diseases were excluded. Sampling: The sample size was calculated based on a 21% teenage pregnancy rate using the standard formula for cross-sectional studies. With a 5% margin of error and accounting for 15% nonresponse rate, the final sample size was 300 women (150 from each PHCC). Participants were selected randomly during routine visits.

Data Collection: Data were collected 4-5 times per week, interviewing 4-5 pregnant women per visit. A structured questionnaire with validated reliability was used, consisting of three parts.

1. Socio-demographic data: maternal and paternal age, education, occupation, and consanguinity.

2. Medical and obstetric history: antenatal care visits, gestational diabetes, hypertensive disorders, antepartum hemorrhage, anemia, postpartum hemorrhage, mode and place of delivery.

3. Neonatal outcomes: gestational age, birth weight, viability, and congenital anomalies.

Statistical Analysis: Data were analyzed using SPSS version 24. Chi-square ( $\chi 2$ ) tests were applied to assess associations between maternal age and pregnancy complications, neonatal outcomes, and delivery mode. When required, Yate's Chi-square correction was applied. A p-value  $\leq 0.05$  was considered statistically significant. Ethical Considerations: Approvals were obtained from the Scientific Board of Community Medicine, Iraqi Ministry of Health, and Al-Rusafa Health Directorate. Informed written consent was obtained from all participants, ensuring confidentiality and anonymity. Time Frame: The study spanned six months, with three months for data collection and three months for analysis and manuscript preparation.

#### RESULTS

Age characteristics of the studied women are shown in Table 1. Adolescent mothers were 101 (33.7%). Women's age was  $23.7 \pm 6.4$  year and husband's age was  $29.9 \pm 6.4$  year. The highest percent of women was 43% (129 women) at (20-29) years age group, while the less one was 11.7% (35 women) at (14-16) years age group.

Table 1: Age characteristics of study sample, Al-Sadr City/ Baghdad, Iraq 2018.						
Age		No.	%	Mean (years)		
	14.16	25	117	15 1		

Age		No.	%	Mean (years)	SD (years)±
Adolosoont	14-16 years	35	11.7	15.1	0.7
Auolescelli	17-19 years	66	22.0	18.2	0.8
Adult	20-29 years	129	43.0	23.9	2.8
Adult	30-39 years	70	23.3	32.7	3.7
Total		300	100.0	23.7	6.4
Husband's Ag	ge	No.	%	Mean (years)	± SD (years)
Adolosoont	14-16 years	35	11.7	23.8	3.9
Adolescent	17-19 years	66	22.0	26.2	4.6
Adult	20-29 years	129	43.0	30.3	5.1
Adult	30-39 years	70	23.3	35.5	5.9
Total		300	100.0	29.9	6.4

Distribution of women's and husband's educational level is shown in Table 2. All women aged (14-16 years) were below secondary education. Fifty-eight (87.9%) of women aged (17-19 years) were below secondary education and 8 (12.1%) had secondary education and above. Fifty-two (40.3%) of women aged (20-29 years) were below secondary education and 77 (59.7%) of women aged (20-29 years) had secondary education and above. Thirty-nine (55.7%) of women aged (30-39 years) were below secondary education and 31 (44.3%) had secondary education and above. Significantly, early teenage (14-16 years) women were with lower level of education. Regarding husband's educational level: one hundred ninety-eight (66%) were below secondary education and 102 (34%) had secondary education and above. No significant association between age of women

and husband's educational level. The occupation of women, all teenager women were housewives and 109 (84.5%) of women aged (20-29 years) were housewives and 20 (15.5%) of them were employee. Fifty-eight (82.9%) of women aged (30-39 years) were housewives and 12 (17.1%) of them were employee. unemployment was significantly associated with teenage mothers. Concerning the husband's occupation: two hundred twenty-two (74%) of all husbands were self-employee. There was no significant difference in husband's occupation between different maternal age groups.

	Education of women				
Age	Less than second	dary education	Secondary educ	ation and above	
	No.	%	No.	%	
14-16 years	35	100.0	0	0.0	
17-19 years	58	87.9	8	12.1	
20-29 years	52	40.3	77	59.7	
30-39 years	39	55.7	31	44.3	
Total	184	61.3	116	38.7	
	$x^2 = 66.6$	, d.f = 3	, p = 0.001		
		Education	of husband		
Age	Less than secon	dary education	Secondary educ	ation and above	
	No.	%	No.	%	
14-16 years	21	60.0	14	40.0	
17-19 years	46	69.7	20	30.3	
20-29 years	91	70.5	38	29.5	
30-39 years	40	57.1	30	42.9	
Total	198 66		102	34	
	$x^2 = 4.6$	, d.f = 3	, p = 0.2		
		Occupation	n of women		
Age	Hou	sewife	Employee		
_	No.	%	No.	%	
14-16 years	35	100.0	0	0.0	
17-19 years	66	100.0	0	0.0	
20-29 years	109	84.5	20	15.5	
30-39 years	58	82.9	12	17.1	
Total	268	89.3	32	10.7	
	$x^2 = 18.3$	, d.f = 3	, p = 0.001		
		Occupation	n of husband		
Age	Self-e	mployee	Governmen	ital employee	
	No.	%	No.	%	
14-16 years	27	77.1	8	22.9	
17-19 years	50	75.8	16	24.2	
20-29 years	97	75.2	32	24.8	
30-39 years	48	68.6	22	31.4	
Total	222	74	78	26	
	$x^2 = 1.5$	, d.f = 3	, p = 0.7		

## Table 2: Educational level and occupation distribution of study sample, Al-Sadr City/ Baghdad, Iraq 2018.

Distribution of ANC services is shown in Table 3. Out of the total, 199 (66.3%) received adequate ANC. Twenty (57.1%) of women aged (14-16 years) and 35 (53%) of women aged (17-19 years), received adequate antenatal care. Eighty-nine (69%) of women aged (20-29 years) and 55 (78.6%) of women aged (30-39 years), received adequate antenatal care. Receiving adequate ANC was significantly increasing with maternal age, the age distribution of GDM. The rate of GDM was 15% (45

cases). GDM was detected in 6 (17.1%) of women aged (14-16 years), 8 (12.1%) of women aged (17-19 years), 18 (14%) of women aged (20-29 years) and in 13 (18.6%) of women aged (30-39 years). Maternal age had no significant effect on GDM, the age distribution of gestational hypertension. The highest rate of gestational hypertension is 9 (12.9%) at age (30-39 years). No significant association between maternal age and gestational hypertension.

Table 3:	association	between	age and	study	variables.
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	Antenatal care				
Age	Adequate ( $\geq$ 4 visits)		Inadequa	te ( < 4 visits)	
	No.	%	No.	%	
14-16 years	20	57.1	15	42.9	
17-19 years	35	53.0	31	47.0	
20-29 years	89	69.0	40	31.0	
30-39 years	55	78.6	15	21.4	
Total	199	66.3	101	33.7	

	$x^2 = 11.7$	, d. f = 3	, p = 0.009	
		G	DM	
Age	Yes	5		No
	No.	%	No.	%
14-16 years	6	17.1	29	82.9
17-19 years	8	12.1	58	87.9
20-29 years	18	14.0	111	86.0
30-39 years	13	18.6	57	81.4
Total	45	15	255	85
	$x^2 = 1.4$	, d.f = 3	, p = 0.7	
		Gestationa	l hypertension	
Age	Ye	es		No
	No.	%	No.	%
14-16 years	4	11.4	31	88.6
17-19 years	4	6.1	62	93.9
20-29 years	11	8.5	118	91.5
30-39 years	9	12.9	61	87.1
Total	28	9.3	272	90.7
	$x^2 = 2.1$	, $d.f = 3$	, p = 0.5	

The age distribution of APH is shown in Table 4. APH was seen in 7 (13%) of women aged (14-16 years), 4 (8.5%) of women aged (17-19 years), 8 (5.3%) of women aged (20-29 years) and in 6 (12.2%) of women aged (30-39 years). There was no significant association between maternal age and APH, Anemia was detected in 155 women (51.7%). Forty-three (79.6%) of women aged (14-16 years), thirty-three (70.2%) of women aged (17-19 years), fifty-eight (38.7%) of women aged (20-

29) years and twenty-one (42.9%) of women aged (30-39 years) had anemia. Significantly, early teenage (14-16 years) women associated with higher rates of anemia, Age distribution of PPH is shown in Table 9. PPH was found in eighteen (33.3%) of women aged (14-16 years), in eighteen (38.3%) of women aged (17-19 years), in twenty-six (17.3%) of women aged (20-29 years) and in 10 (20.4%) of women aged (30-39 years). Significantly, PPH was more prevalent in teenage mothers.

Table 4: association	between age	and study	variables.
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	History of APH					
Age	Yes	5	I	No		
	No.	%	No.	%		
14-16 years	7 13.0		47	87.0		
17-19 years	4	8.5	43	91.5		
20-29 years	8	5.3	142	94.7		
30-39 years	6	12.2	43	87.8		
Total	25	8.3	275	91.7		
$x^2 = 4.3$ , $d.f = 3$ , $p = 0.2$						
		Aner	mia			
Age	Yes		I	No		
	No.	%	No.	%		
14-16 years	43 79.6		11	20.4		
17-19 years	33	70.2	14	29.8		
20-29 years	58	38.7	92	61.3		
30-39 years	21	42.9	28	57.1		
Total	155	51.7	145	48.3		
	x <sup>2</sup> = 35.1 ,	d. f = 3 ,	p = 0.001			
		History	of PPH			
Age	Yes	5	1	No		
	No.	%	No.	%		
14-16 years	18	33.3	36	66.7		
17-19 years	18	38.3	29	61.7		
20-29 years	26	17.3	124	82.7		
30-39 years	10	20.4	39	79.6		
Total	72	24	228	76		

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$$x^2 = 11.8$$
 ,  $d.f = 3$  ,  $p = 0.008$ 

Age distribution of mode of delivery and delivery place is shown in Table 5. Two hundred and eleven (70.3%) of studied women delivered by normal delivery. It also shows that out of the total women aged (14-16 years), (17-19 years), (20-29 years) and (30-39 years) delivered by normal delivery 21 (60%), 54 (81.8%), 93 (72.1%) and 43 (61.4%), respectively. Early teenage (14-16 years) mothers had significantly higher rates of cesarean section, out of the total women aged (14-16 years), (17-19 years), (20-29 years) and (30-39 years) delivered at home 27 (50%), 20 (42.6%), 33 (22%) and 11 (22.4%), respectively. The early teenage women were significantly with higher rate of home deliveries. the distribution of preterm labor with maternal age. Preterm labor was seen in 12 (34.3%) of mothers aged (14-16 years), 12 (18.2%) of mothers aged (17-19 years), 13 (10.1%) of mothers aged (20-29 years) and 7 (10%) of mothers aged (30-39 years). Preterm labor was significantly associated with early teenager (14-16 years) women, Twenty-eight (80%) and 50 (75.8%) of babies for early and late teenage mothers delivered babies with LBW, respectively. Eighteen (14%) of mothers aged (20-29 years) and ten (14.3%) of women aged (30-39 years) delivered babies with LBW. Teenage women significantly had higher rate of LBW.

	Mode of delivery					
Age	Normal Delivery		Cesarea	n Section		
0	No.	%	No.	%		
14-16 years	21	60.0	14	40.0		
17-19 years	54	81.8	12	18.2		
20-29 years	93	72.1	36	27.9		
30-39 years	43	61.4	27	38.6		
Total	211	70.3	89	29.7		
	$x^2 = 8.8$	, d.f = 3	, p = 0.03			
		Place of	f delivery			
Age	Н	ome	Hos	pital		
	No.	%	No.	%		
14-16 years	27	50.0	27	50.0		
17-19 years	20	42.6	27	57.4		
20-29 years	33	22.0	117	78.0		
30-39 years	11	22.4	38	77.6		
Total	91	30.3	209	69.7		
	x <sup>2</sup> = 19.6	, d.f = 3	, p = 0.001			
		Preter	rm labor			
Age	J	Yes	No			
_	No.	%	No.	%		
14-16 years	12	34.3	23	65.7		
17-19 years	12	18.2	54	81.8		
20-29 years	13	10.1	116	89.9		
30-39 years	7	10.0	63	90.0		
Total	44	14.7	256	85.3		
	$x^2 = 14.8$	, d.f = 3	, p = 0.002			
		Birth	weight			
Age	No	rmal	LBW			
	No.	%	No.	%		
14-16 years	7	20.0	28	80.0		
17-19 years	16	24.2	50	75.8		
20-29 years	111	86.0	18	14.0		
30-39 years	60	85.7	10	14.3		
Total	194	64.7	106	35.3		
	$x^2 = 117.1$	, $d.f = 3$	p = 0.001			

 Table 5: association between age and study variables.

Age distribution of birth outcome is shown in Table 6. It also shown that two hundred eighty-five babies delivered live. Forty- seven (87%) of women aged (14-16 years)

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and forty- five (95.7%) of women aged (17-19 years) delivered live babies. One hundred forty- seven of women aged (20-29 years) and forty-six (93.9%) of

women aged (30-39 years) delivered live babies. A significant association in live birth with adult mothers. Distribution of congenital anomaly with maternal age is shown in Table 14. Congenital anomaly was seen in 6 (17.1%) and in 9 (13.6%) of babies of mothers aged (14-16 years) and (17-19 years), respectively. Congenital anomaly was significantly associated with early teenage mothers. The impact of ANC services on mode of delivery and vital status of neonate is shown in Table 8.

Out of those got adequate ANC, 149 (74.9%) delivered by normal delivery and out of those got inadequate ANC, 62 (61.4%) delivered by normal delivery. Receiving adequate ANC was significantly associated with normal delivery. One hundred ninety-six (98.5%) of those received adequate ANC gave up live birth and 89 (88.1%) of those received inadequate ANC gave up live birth. A significant association in live birth as outcome with ANC services.

	Birth outcome				
Age		Live		D	ead
_		No.	%	No.	%
14-16 years		47	87.0	7	13.0
17-19 years		45	95.7	2	4.3
20-29 years		147	98.0	3	2.0
30-39 years		46	93.9	3	6.1
Total		285	95	15	5
	x <sup>2</sup>	= 10.2 ,	d.f=3 ,	p = 0.02	
			Congenital	anomaly	
Age		Congenital a	nomaly	No ai	nomaly
		No.	%	No.	%
14-16 years		6	17.1	29	82.9
17-19 years		9	13.6	57	86.4
20-29 years	5		3.9	124	96.1
30-39 years		5	7.1	65	92.9
Total		25	8.3	275	91.7
	x <sup>2</sup>	= 9.5 ,	d. f = 3 ,	p = 0.02	
		Mode of delivery			
Antenatal care		Normal Delivery		Cesar	ean Section
		No.	%	No.	%
Adequate ( $\geq 4$ visits)		149	74.9	50	25.1
Inadequate ( < 4visits)		62	61.4	39	38.6
	x <sup>2</sup>	= 5.8 ,	d.f = 1 ,	p = 0.02	
			Vital sta	tus of neonate	
Antenatal care			Live		Dead
		No.	%	No.	%
Adequate ( $\geq 4$ visits)		196	98.5	3	1.5
Inadequate ( < 4 visits)		89	88.1	12	11.9
Total		285	95	15	5
$x^2$ yates = 9.1 , $d.f = 1$ , $p = 0.001$					

 Table 6: association between age and study variables.

#### DISCUSSION

This study found that 33.7% of mothers were teenagers, lower than the 39.8% reported in Iraq<sup>[20]</sup>, likely due to differences in sampling, study design, and social factors. Teenage mothers had significantly lower education levels (p=0.001), consistent with previous findings in Iraq (p=0.0001)<sup>[12]</sup> and other developing countries.<sup>[21]</sup> No significant association was found between husband's education and maternal age (p=0.2), differing from other international studies.<sup>[22]</sup> Additionally, all teenage mothers were housewives (p=0.001), reflecting limited job opportunities due to low education, similar to trends in developing countries.<sup>[21]</sup> Antenatal care (ANC) was inadequate among teenage mothers (p=0.009), aligning with studies in Baghdad and Samarra,<sup>[23]</sup> possibly due to

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restrictions on movement in extended families. The gestational diabetes mellitus (GDM) rate was 15%, higher than 4.2% in Baghdad<sup>[24]</sup>, but maternal age was not significantly associated with GDM (p=0.7), consistent with findings in Iraq and Yemen.<sup>[25]</sup> No significant relationship was observed between maternal age and gestational hypertension (p=0.5), in contrast to recent Iraqi studies.<sup>[25]</sup> The antepartum hemorrhage (APH) rate was 8.3%, higher than in some countries<sup>[27]</sup> but lower than in adjacent countries.<sup>[28]</sup> APH was not significantly affected by maternal age (p=0.2).<sup>[29]</sup> Anemia prevalence was 51.7%, slightly lower than the 55.5% reported in Iraq.<sup>[30]</sup> Anemia was more common in younger teenagers (p=0.001), consistent with previous studies<sup>[30]</sup>, likely due to increased nutritional needs and

poverty. Postpartum hemorrhage (PPH) was 24%, higher than rates in other countries<sup>[31]</sup>, attributed to healthcare system delays. PPH was significantly higher in teenage mothers, as also reported in Sulaimania,<sup>[32]</sup> due to uterine overstretching. The C-section rate was 29.7%, lower than in neighboring countries<sup>[33]</sup> but significantly higher in teenage mothers (p=0.03), differing from previous Iraqi reports.<sup>[17]</sup> Home delivery was 30.3%, lower than the 53% in other countries<sup>[34]</sup>, but significantly higher in teenage mothers (p=0.001)<sup>[35]</sup>, reflecting traditional practices and limited healthcare access. Preterm labor was 14.7%, lower than 18% reported in Iraq<sup>[36]</sup>, but significantly associated with teenage pregnancy  $(p=0.002)^{[37]}$ , due to maternal malnutrition and low socioeconomic status, consistent with findings in other countries.<sup>[38]</sup> \*\*Low birth weight (LBW) was significantly linked to teenage mothers (p=0.001), similar to reports in Baghdad.<sup>[26]</sup> The neonatal mortality rate was 5%, much lower than 33.8% in 1990 Baghdad<sup>[39]</sup>, but still significantly associated with teenage mothers  $(p=0.02)^{[23]}$ , aligning with global studies.<sup>[40]</sup> The congenital anomaly rate was 8.3%, similar to 8.4% in Fallujah<sup>[41]</sup> but higher than 4.8% in Baghdad.<sup>[42]</sup> Teenage pregnancy was significantly associated with congenital anomalies (p=0.02), unlike studies in Erbil<sup>[43]</sup> and Egypt.<sup>[44]</sup> Adequate ANC was significantly associated with normal delivery (p=0.02) and live births (p=0.001), supporting studies in Duhok<sup>[45]</sup>, Erbil<sup>[46]</sup>, and third-world countries.<sup>[47]</sup> ANC plays a crucial role in identifying high-risk pregnancies and reducing stillbirths.

## CONCLUSION

The prevalence of teenage pregnancy is 33.7%. Low educational level and unemployment are associated with early teenage marriage. Adverse maternal, fetal and neonatal complications are prominent in early teenage pregnancy. Postpartum hemorrhage, cesarean section and anemia are prevalent adverse pregnancy outcomes among early teenage mothers. Preterm labor, LBW, neonatal death and congenital anomaly are prominent fetal outcomes in early teenage women. Inadequate ANC visits is associated with early teenage pregnancy.

#### REFERENCES

- 1. Zaki EA. Adolescence; a crucial transitional stage in human life. Journal of Child and Adolescent Behavior, 2017; 4: 115-117.
- Larson CP. Poverty during pregnancy: Its effects on child health outcomes. Pediatric Child Health, 2007; 12: 673-677.
- 3. Mukhopadhyay P, Chaudhuri RN, Paul B. Hospital based perinatal outcomes and complications in teenage pregnancy in India. Journal of Health Population and Nutrition, 2010; 28: 494-500.
- 4. Agarwal N, Reddaiah VP. Factors affecting birth weight in a suburban community. Health and Population Perspective and Issues, 2005; 28: 189-196.

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- 5. Nili F, Rahmati M, Sharifi S. Maternal and neonatal outcome in teenage pregnancy in Tehran Valiasr Hospital. Acta Media Irania, 2002; 40: 55-59.
- World Health Organization Geneva, Department of Reproductive Health and Research, Adolescent Pregnancy (Issues in Adolescent Health and Development 2004). (https://apps.who.int/iris/bitstream/10665/42903/1/9 241591455\_eng.pdf). (Accessed on 12 Aug, 2019).
- 7. Mourtada R, Schlechet J, Dejong J. A qualitative study exploring child marriage practices among Syrian conflict-affected populations in Lebanon. Conflict and Health BMC., 2017; 11: 53-65.
- Ending Child Marriage in the Arab Region. Population Reference Bureau 2013. (http://www.prb.org/pdf13/child-marriage-arabregion.pdf). (Accessed on 13 Aug, 2019).
- 9. Abdul-Karim ET, Al-Hadi A. Mother Age at marriage as a determinant of reproductive health. Iraqi Journal of Medical Sciences, 2005; 4: 57-62.
- 10. The World Bank. Adolescent fertility rate (births per 1,000 women ages15-19) 2015. (https://data.worldbank.org/indicator/SP.ADO.TFR). (Accessed on 13 Aug, 2019).
- 11. Alsaidi A. What drives child marriage in the Arab World and how the world is combating the problem. Law School Student Scholars ship, 2015. (http://scholarship.shu.edu/cgi/viewcontent.cgi?artic le=1779&context=student\_scholarship). (Accessed on 13 Aug, 2019).
- 12. Al-Bassam A. Maternal risk in teenage pregnancies. Al Qadisiah Medical Journal, 2014; 10: 214-223.
- UNICEF. The situation of children and women in Iraq: Highlights from the multiple indicator cluster survey4 (MICS4) 2011. (https://www.unicef.org/iraq/MICS\_highlights\_ENG LISH\_FINAL.pdf). (Accessed on 13 Aug, 2019).
- 14. United Nations Population Fund. Child marriage in Kurdistan Region-Iraq 2016. (http://iraq.unfpa.org/publications/child-marriagekurdistan-region-iraq). (Accessed on 14 Aug, 2019).
- Inter-Agency Child Protection Assessment Erbil, Sulaymaniah and Duhok Governorates Kurdistan Region of Iraq. ALNAP 2014. (http://www.alnap.org/resource/19584). (Accessed on 14 Aug, 2019).
- Chandra-Mouli V, Camacho A, Michaud PA. WHO Guidelines on Preventing Early Pregnancy and Poor Reproductive Outcomes Among Adolescent in Developing Countries. Journal of Adolescent Health, 2013; 52: 517-522.
- Ali HN. Effect of maternal age on pregnancy outcome. Diploma Dissertation. Baghdad University, 2016.
- Resan RR. Outcome of teenage pregnancy in Al-Azyzia/ Wasit Province, Iraq. Diploma Dissertation. Baghdad University, 2017.
- 19. Cetorelli V. The effect on fertility of the 2003-2011 war in Iraq. Population Council, 2014; 40: 1-24.

- 20. Hussain S, Khalaf MK, Rasheed FA. Association between early marriage and other sociomedical characteristics with the cervical pap smear results in Iraqi women. Advances in Sexual medicine, 2015; 5: 73-82.
- 21. Gyan Ch. The Effect of Teenage Pregnancy on Educational Attainment of Girls at Chorkor, a Suburb of Accra. Journal of Educational and Social Research, 2013; 3: 1-8.
- 22. Simple O, Obita KO, Mananura T, Omara AH, Nabbale F, Rama M, et al. Teenage marriage in post conflict Northern Uganda: A Case of Amru District. Science Journal of Public Health, 2018; 6: 61-65.
- 23. Alsamarai AM, Alsamarai BT, Aljubori YS. Teenage Pregnancy Complications in Samara City, Iraq. World Journal of Pharmacy and Pharmaceutical Sciences, 2016; 5: 142-163.
- 24. Ibrahim WI. Weight gain pattern during pregnancy in sector AL-Aadamia / Baghdad Iraq, MSC thesis, Baghdad University, 2015.
- 25. Mahmood NA, Bahir BH. Impact of teenage pregnancy on maternal and neonatat outcomes in Baghdad City. World Journal of Pharmaceutical research, 2017; 6: 197-208.
- Qasim AS. Effect of maternal age on the mother and neonatal health in Baghdad Maternity Hospitals. Iraqi National Journal of Nursing Specialities, 2014; 27: 23-30.
- 27. Takai IU, Sayyadi BM, Galadauci HSh. Antepartum hemorrhage: A retrospective analysis from a Northen Nigerian Teaching Hospital. International Journal of Applied and Basic Medical Research, 2017; 7: 112-116.
- Bener A, Saleh NM, Yousafzai MT. Prevalence and associated risk factors of ante-partum hemorrhage among arab women in an economically fast growing society. Nigerian Journal of Clinical Practice, 2012; 15: 185-189.
- 29. Althabe F, Moore JL, Gibbons L, Berrueta M, Goudar ShS, Chomba E, et al. Adverse maternal and perinatal outcomes in adolescent pregnancies: The Global Networks Maternal Newborn Health Registry Study. Reproductive health, 2015; 12: 8.
- Ahmed AF, Mohammed-Ali KhB. Maternal anemia status among pregnant women in Erbil City, Iraq. World Family Medicine Journal, 2013; 11: 23-29.
- Fukami T, Koga H, Goto M, Ando M, Matsuoka S, Tohyama A, et al. Incidence and risk factors for postpartum hemorrhage among transvaginal deliveries at a tertiary perinatal medical facility in Japan. Public Library of Sciences 2019;14:e0208873.
- 32. Sulaiman S, Othman S, Razali N, Hassan J. Obstetric and perinatal outcome in teenage pregnancies. South Africa Journal of Obestetrics and Gynecology, 2013; 19: 77-80.
- 33. Batieha A, Al-Daradkah SA, Khader YS, Basha A, Sabet F, Athamneh TZ, et al. Cesarean Section: Incidence, Causes, Associated Factors and Outcomes: A National prospective study from

Jordan. Gynecology and Obstetrics Case Report, 2017; 3: 55.

- 34. Sialbanje C, Massar K, Hamer DH, Ruiter RAC. Reasons for home delivery and use of traditional birth attendants in rural Zambia: a qalitative study. BMC Pregnancy and Childbirth, 2015; 15: 216.
- 35. Sarker BK, Rahman M, Rahman T, Hossain J, Reichenbach L, Mitra DK. Reasons for preference of home delivery with traditional birth attendants (TBAs) in rural Bangladesh: a qualitative exploration. Public Library Of Science, 2016; 11: 146-161.
- 36. Al-Joborae SF, Alwan FW. Sociodemographic and medical factors of preterm delivery according to the clinical subtypes of prematurity. Medical Journal of Babylon, 2018; 15: 341-348.
- Al-Hiali SJ, Al-Ani ZR, Al-Kaseer E, Al-Ani IR. Low birth weight in Western Iraq. The Iraqi Postgraduate Medical Journal, 2010; 9: 312-315.
- Marvin-Dowle K, Kilner K, Burley VJ, Soltani H. Impact of adolescent age on maternal and neonatal outcomes in the Born Bradford cohort. BMJ Open, 2018; 8: 016258.
- 39. Samier WA. Maternal age and its effect on the progress of reproduction in Baghdad, hospital basedstudy, doiploma thesis, Baghdad University, 1990.
- 40. Nael S, Channon A, Chintsany J. The impact of young maternal age on neonatal mortality: evidence from 45 low and middle income countries. Public Library of Science, 2018; 13: e0195731.
- 41. Gaiva MA, Fujimori E, Sato AP. Neonatal mortality in infants with low birth weight. Revista de Escola de Enfermagem da USP., 2014; 48: 778-786.
- 42. Naoom MB, Alsaadi YI, Yassin BA, Matloob HY. Congenital anomalies among newborns admitted in tertiary hospital; Iraqi experience. Journal of the Faculty of Medicine Baghdad, 2013; 55: 106-110.
- 43. Ameen SK, Alalaf Sh, Shabila NP. Pattern of congenital anomalies at birth and their correlations with maternal characteristics in the maternity teaching hospital, Erbil City, Iraq. BMC Pregnancy and Childbirth, 2018; 18: 501.
- 44. Mohammed AR, Mohammed SA, Abdul-Fatah AM. Congenital anomalies among children: Knowledge and Attitude of Egyptian and Saudi mothers. Journal of Biology, Agriculture and Healthcare, 2013; 3: 18-31.
- 45. Abdulmalek IY, Yusif HA. Maternal risk factors of perinatal mortality in Duhok. Medical Journal of Babylon 2018; 15: 363-368.
- Akrawi VS, Al-Hadithi TS, Al-Tawil NG. Major determinants of Maternal Near-Miss and Mortality at The Maternity Teaching Hospital, Erbil City, Iraq. Oman Medical Journal, 2017; 32: 386-395.
- 47. Gumede S, Black V, Chersich MF. Attendance at antenatal clinics in inner-city Johannesburg, South Africa and its association with birth outcomes: analysis of data from birth registers at three facilities. BMC public health, 2017; 17: 443.