

## Original Article

# Birth Outcomes of Teenage Pregnancy at Maternity Hospitals at Khartoum State, Sudan 2022

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## Abstract

**Background:** Teenage pregnancy and childbirth to women less than 20 years old continues to be a major global public health concern, affecting more than 16 million girls and young women worldwide. Teenage pregnancy has been considered to have a higher risk than pregnancy in an adult woman, because of biological immaturity of the teenager. The rate of pregnancy among adolescents is increasing, especially in developing countries, with higher adverse health outcomes such as preterm labor, intrauterine growth retardation and low birth weight, neonatal death, obstructed labor and maternal mortality. **Aim:** The study aimed to study birth outcomes of teenage pregnancy. **Methods:** This was a hospital-based cross-sectional which was carried out in two maternity hospitals in Khartoum State. It included (240) participants and was selected through systematic sampling method. The data were collected using a standardized administered questionnaire and were analyzed by the Statistical Packages of Social Sciences (SPSS), version 25 and were presented in form of tables and figures. **Results:** The study revealed that, more than half of the participants delivered stillbirths. About

one-third of babies were born by cesarean section while two-thirds were delivered by normal vaginal delivery. A high percentage of participants were subjected to preterm labor. The number of low birth-weight babies and the low Apgar score were higher among adolescent mothers. There was strong statistically significant association between maternal outcomes, fetal outcomes and the participant's age (P-value = 0.00). **Conclusion:** Teenage pregnancy is a public health problem of great magnitude in both developed and developing countries. Preterm labor was the most common birth outcome associated with teenage pregnancies followed by low birth-weight and low Apgar score for newborns. The study recommended strengthening contraceptive service promotion and provision for teenagers by giving special attention to rural ones and showing the consequences of divorce in the community.

**Key word:** Teenage pregnancy, Maternal, Fetal, Birth, Outcomes.

الحزمة الاحصائية للعلوم الإجتماعية، الاصدار 25. تم عرض البيانات في شكل جداول ورسوم بيانية وجدول متقاطعة. **النتائج:** كشفت الدراسة أن أكثر من نصف المشاركات أنجبن جنين ميت . وُلد حوالي ثلث الأطفال بعملية قيصرية بينما وُلد ثلثاهم عن طريق الولادة الطبيعية. نسبة عالية من المشاركات تعرضن للولادة المبكرة. كان عدد الأطفال منخفضي الوزن عند الولادة ودرجة حرزأبغار المنخفضة أعلى بين الأمهات اليافعات. كانت هناك علاقة ذات دلالة إحصائية قوية بين نتائج الأم والنتائج الجنينية وعمر المشارك ( $p\text{-value} = 0.00$ ). **الخلاصة:** يعتبر حمل اليافعات مشكلة صحية عامة كبيرة الحجم في كل من البلدان المتقدمة والنامية. كان المخاض المبكر هو النتيجة الأكثر شيوعاً للولادة المرتبطة بحمل اليافعات ، يليه انخفاض الوزن عند الولادة وانخفاض درجة حرز أبغار لحديثي الولادة. وأوصت الدراسة بتعزيز استخدام خدمات منع الحمل وتوفيرها لليافعات من خلال إيلاء اهتمام خاص للرقيقين وإظهار عواقب الطلاق في المجتمع.

## Introduction

Teenage pregnancy, also known as adolescent pregnancy, is pregnancy in a female under the age of 20 years according to the WHO. A study indicated that there was no greater risk of adverse obstetric outcomes in adolescent women who received adequate prenatal care compared with adult women of similar socio demographic background. Another study stated that a teenage antenatal clinic would result in better outcomes among teenage pregnancies <sup>(1, 2)</sup>.

Teenage pregnancy and childbirth to women less than 20 years old continues to be a major global public health concern, affecting more than 16 million girls and young women worldwide. Teenage pregnancy has been considered to have a higher risk than pregnancy in an adult, because of biological immaturity of the teenager. Adolescent mothers face substantially higher maternal and perinatal morbidity and mortality rates than adult women <sup>(3, 4)</sup>.

The rate of pregnancy among adolescents is increasing, especially in developing countries, with higher adverse health outcomes such as preterm labor, intrauterine growth restriction and low birth

## مستخلص الدراسة

**الخلفية:** لا يزال حمل وولادة اليافعات للنساء دون العشرين من العمر مصدر قلق عالمي رئيسي للصحة العامة ، حيث يؤثر على أكثر من 16 مليون فتاة وشابة في جميع أنحاء العالم. يُعتبر حمل اليافعات أكثر خطورة من الحمل لدى المرأة البالغة ، بسبب عدم النضج البيولوجي لليافعة. معدل الحمل بين اليافعات أخذ في الازدياد ، لا سيما في البلدان النامية ، مع نتائج صحية ضارة أعلى مثل الولادة المبكرة وتأخر النمو داخل الرحم وانخفاض وزن المواليد ووفيات الأطفال حديثي الولادة والمخاض المتعسر ووفيات الأمهات. **الاهداف :** دراسة نتائج الولادة لحمل اليافعات. **منهجية البحث :** هذه الدراسة عبارة عن دراسة وصفية مقطعية في مستشفيات الولادة في ولاية الخرطوم. وتضم (240) مشاركة. تم استخدام الطريقة المنهجية لاختيار المشاركات من المستشفيات. استخدم الاستبيان لجمع المعلومات المتعلقة بالمشاركات في الدراسة وقد تم تحليل البيانات التي تم جمعها بواسطة الحاسوب واستخدم في ذلك برنامج weight, neonatal death, obstructed labor, increased rate of lower segment cesarean section, postpartum hemorrhage (PPH), puerperal sepsis, psychological illness and failed lactation, stillbirths, birth asphyxia, respiratory distress syndrome, delivery trauma and maternal mortality <sup>(5)</sup>.

The recent WHO estimate showed that the rate of adolescent pregnancy will grow by the end of 2030, and a major increase in adolescent pregnancy is projected to be in Africa. Adolescent pregnancy is a major public health problem, particularly in Sub-Saharan African countries. Problems associated with adolescent pregnancy were considered as the leading causes of death among adolescents aged 11–19 <sup>(6, 7)</sup>. It is one of the leading causes of maternal and child morbidity and mortality, and the main reason for poor health and poverty in low and middle-income countries. Moreover, it is associated with increased risks of adverse pregnancy and childbirth outcomes compared to non-adolescent women. For example, mothers aged 10 to 14 years were five times at higher risk of death than mothers aged 20 to 24 due to pregnancy and childbirth complications, attributing to more than 70,000 adolescent girls death every year. Stillbirths and

newborn deaths are 50% higher among infants born to adolescent mothers than among those born to mothers aged 20–29 years. Infants of adolescent mothers are also more likely to have low birth weight, which can have a long-term impact on their health and development <sup>(8, 9)</sup>. The main objective of this research paper is to study the birth outcomes of teenage pregnancy.

### Methods

A hospital-based cross-sectional study was carried out in two maternity hospitals (Omdurman Maternity Hospital and Omdurman New Saudi Hospital), which provide maternity healthcare services to women from different states of the country. The targeted population was composed of pregnant teenagers attending delivery room from all Sudanese tribes, ethnic groups and all

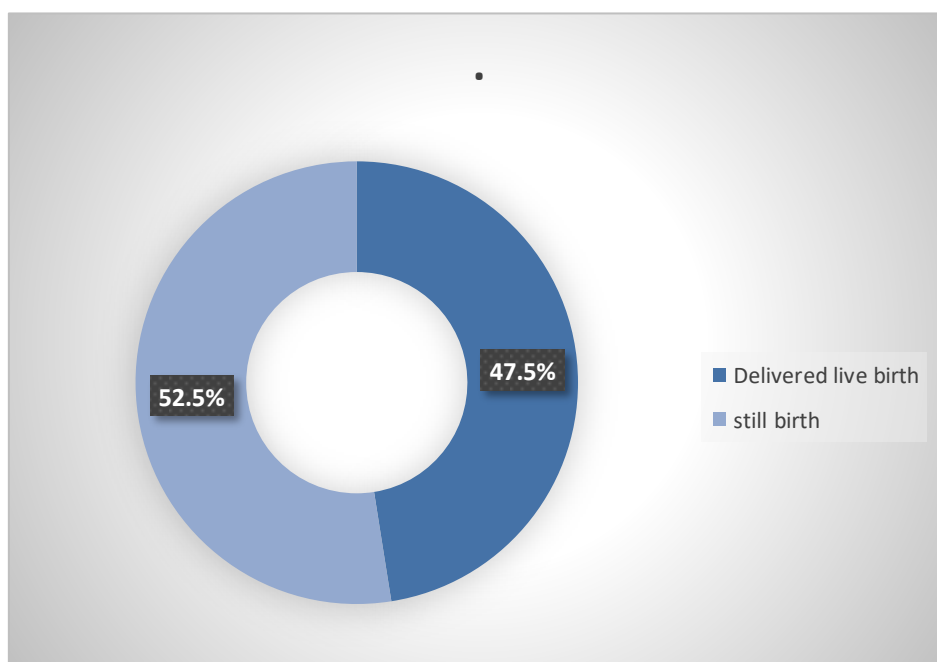
socioeconomic groups. The sample included 240 pregnant teenagers who were enrolled in the study, and they were selected from each hospital by the systematic random sampling technique. The data were collected by four trained research teams using a standardized administered questionnaire to assess the birth outcomes of teenage pregnancy. The data were analyzed using the Statistical Packages of Social Sciences (SPSS), version 25 and a significance test was checked by chi-square test and the results were accepted when the p-value was 0.05% or less. An ethical approval was obtained from the Institutional review Board at Al Neelain University and Khartoum State Ministry of Health, permissions were obtained from the hospital authorities. An informed consent was obtained from each participant before the interview.

### Results

**Table (1): Demographic characteristics of the study participants**

Variable	Frequency	Percentage %
<b>Age</b>		
11-13	36	15.0
14-16	58	24.2
17-19	146	60.8
<b>Total</b>	240	100.0
<b>Level of education</b>		
Illiterate	36	15.0
Others	11	4.6
Primary	70	29.2
Secondary	90	37.5
University	33	13.8
<b>Total</b>	240	100.0
<b>Place of Residence</b>		
Rural	90	37.5
Urban	150	62.5
<b>Total</b>	240	100.0
<b>Occupation</b>		
Employed	27	11.3
Housewife	103	42.9

Others	2	0.8
Unemployed	108	45.0
<b>Total</b>	<b>240</b>	<b>100.0</b>
<b>Age at marriage</b>		
11-13	32	13.3
14-16	105	43.8
17-19	103	42.9
<b>Total</b>	<b>240</b>	<b>100.0</b>



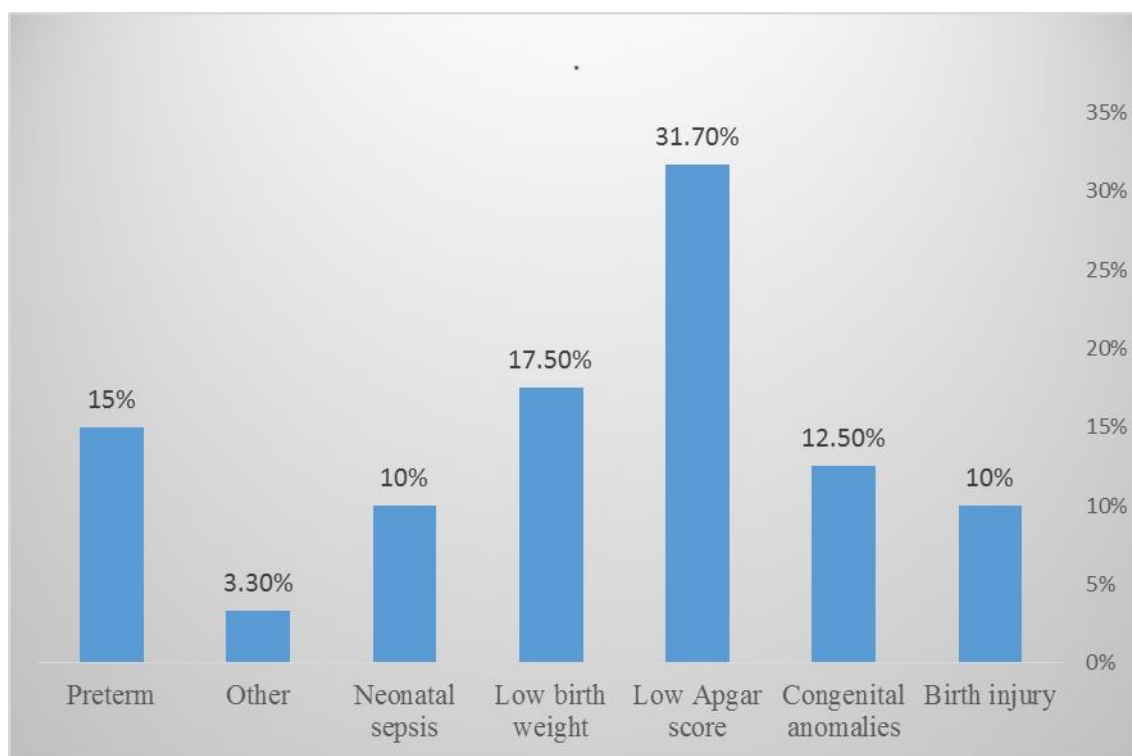
**Figure (I): Outcomes of current pregnancy**

**Table (2): the mode of delivery**

Mode of delivery	Frequency	Percentage%
Caesarean section	78	32.5
Instrumental delivery	50	20.8
Normal vaginal delivery	112	46.7
<b>Total</b>	<b>240</b>	<b>100.0</b>

**Table (3): distribution of participants according to maternal outcomes**

Maternal outcomes	Frequency	Percentage%
Anemia with pregnancy	19	7.9
Antepartum hemorrhage	40	16.7
Birth injury	55	22.9
Others	5	2.1
Post-partum hemorrhage	35	14.6
Pregnancy induced hypertension	30	12.5
Preterm	56	23.3
Total	240	100.0

**Figure (11): fetal outcomes**

**Table (4): Age versus maternal outcomes**

			Age			Total
			11-13	14-16	17-19	
<b>Maternal outcomes</b>	<b>Pregnancy induced hypertension</b>	Count	18	2	10	30
		The % of maternal outcomes within the age group	60.0%	6.7%	33.3%	100.0%
	<b>Post-partum hemorrhage</b>	Count	9	14	12	35
		The % of maternal outcomes within the age group	25.7%	40.0%	34.3%	100.0%
	<b>Antepartum hemorrhage</b>	Count	6	18	16	40
		The % of maternal outcomes within the age group	15.0%	45.0%	40.0%	100.0%
	<b>Preterm</b>	Count	0	18	38	56
		The % of maternal outcomes within the age group	0.0%	32.1%	67.9%	100.0%
	<b>Birth injury</b>	Count	2	2	51	55
		The % of maternal outcomes within the age group	3.6%	3.6%	92.7%	100.0%
	<b>Anemia with pregnancy</b>	Count	0	2	17	19
		The % of maternal outcomes within the age group	0.0%	10.5%	89.5%	100.0%
	<b>Others</b>	Count	1	2	2	5
		The % of maternal outcomes within the age group	20.0%	40.0%	40.0%	100.0%
	<b>Total</b>	Count	36	58	146	240
		The % of maternal outcomes within the age group	15.0%	24.2%	60.8%	100.0%

## Discussion

The baseline demographic data found that most of the participants' ages ranged between 17-19 years; a lower percentage of the participants completed higher education levels and only one third of the study participants completed secondary education. This finding is congruent with a study conducted by Vincent Gwido and Fekadu Mazengia Alemu in Juba (2016), which revealed that the majority of the participants' ages were between 17 and 19 years, while only 8% of the participants had completed their secondary education <sup>(6)</sup>. Regarding the outcomes of the current pregnancy, more than half were stillbirths (Figure I); this might be due to immature growth in the reproductive system <sup>(10)</sup>. This particular finding is disagreement with a study conducted by YAyanaw Habitu in northeastern Ethiopia in 2018, which found that only 3.0% were stillbirths <sup>(11)</sup>. As for the mode of delivery, about two-thirds of the babies were born by normal vaginal delivery (Table 2). This may be due to an increased proportion of smaller babies in this age group <sup>(4)</sup>. This finding agrees with a study conducted by Misganaw Gebrie Worku in Hebei, China which indicated that two-thirds were delivered by normal vaginal delivery <sup>(4)</sup>. A higher percentage of participants were subjected to preterm labor (Table 3). Such a high incidence of preterm labor leads to higher risks for neonates. This differs from the result reported by Misganaw Gebrie Worku in Hebei, China, which found that 7.5% were premature births <sup>(4)</sup>. There is a strong statistically significant association between maternal outcomes, fetal outcomes and the participants' age ( $p$ -value = 0.00). In terms of fetal outcomes, this study found that the number of low birth-weight babies and the low Apgar score were higher among adolescent mothers (Figure I I). Because of the high proportion of premature births within this age group, low birth-weight is a key predictor of malnutrition and an important

determinant of child mortality <sup>(7)</sup>. One of the most detrimental outcomes of low birth-weight is growth retardation, and if the newborn happens to be a girl, it perpetuates a vicious cycle of female malnutrition throughout adolescence and adulthood <sup>(7)</sup>.

## Conclusion

Teenage pregnancy is a public health problem of great magnitude in both developed and developing countries. According to our study, preterm labor was the most common birth outcome associated with teenage pregnancies, followed by low birth weight and low Apgar score for newborns. Age is a risk factor for adverse outcomes and has a noticeable role to play in determining the mode of delivery to be adopted.

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## Conflict of interest

We have no conflicts of interest to disclose. All authors declare that they have no conflicts of interest.

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