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Research Article

Teenage Pregnancy in South Sudan: Associated Maternal and Neonatal Outcomes among Mothers Delivering at Juba Teaching Hospital

Zechariah James Malel [1,2*], Ezbon Wapary[1], Justin Julio Tartizion[1], Adam Badraldin Abdalrahman[1], Rita Ihima Francisco Hillary[1], Nyalaib Moses Gatkuoth[1], Ali Ibrahim Mohammed[1], Nyawal Peter Chan[1] and Maria Rubba Robert[1]

[1] *School of Medicine, University of Juba, South Sudan.*
[2] *Association of Gynecologists and Obstetricians of South Sudan (AGOSS), South Sudan.*
[*] *Corresponding author: Zmdechol1892@gmail.com*

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Abstract

South Sudan faces a maternal and newborn health crisis, with one of the world's highest maternal and neonatal mortality rates. Adolescent pregnancies exacerbate risks of complications, poor birth outcomes, and social disregarding. Low contraceptive use and early pregnancies hinder education and economic opportunities, highlighting the urgent need for evidence-based interventions and sexual health programming. The study investigated teenage pregnancy prevalence and outcomes at the Obstetrics and Gynaecology department of Juba Teaching Hospital. Using a descriptive cross-sectional design, data were collected via questionnaires, interviews, and medical records from 422 mothers aged 15–19. Analyses assessed maternal and neonatal outcomes, considering socio-demographic, cultural, and economic factors, using SPSS version 27, with ethical standards strictly observed. The study indicated that 73.9% of participants were older than 19, with a significant majority (96%) being married. Approximately one-third had primary education, and 79 teenage mothers were identified, a smaller proportion compared to teenagers in general (14.1%). Significant associations were found between maternal age and anaemia, as well as age and infection. Teenage mothers who had Caesarean sections faced 2.5 times higher maternal complications than those with vaginal deliveries. Additionally, there was an association between teenagers who attended 5 to 8 antenatal care (ANC) visits to develop complications (3.5 times more likely) compared to those who had 1-4 ANC visits. Teenage mothers account for 26.1% of deliveries at Juba Teaching Hospital. Maternal age, mode of delivery, contraceptive use, and antenatal visits predict maternal complications, which correlate with neonatal respiratory distress and adverse outcomes, highlighting the need for adolescent-targeted interventions to reduce age-related obstetric disparities.

1. Introduction

Adolescence, defined by the World Health Organization (WHO) as the period between 10 and 19 years of age, is a critical stage of physical, psychological, emotional, and social development. Despite global progress in reducing adolescent fertility, teenage pregnancy remains a major public health concern, particularly in low- and middle-income countries [1]. Globally, approximately 12 million girls aged 15–19

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years and 777,000 girls younger than 15 years give birth annually, with adolescent births declining from 64.5 per 1,000 girls in 2000 to 41.3 per 1,000 in 2023. However, adolescent pregnancy continues to contribute substantially to maternal and neonatal morbidity and mortality, especially in resource-limited settings [2–4].

Teenage pregnancy is associated with adverse social, economic, and health consequences. Pregnant adolescents are more likely to discontinue their education, experience poverty, and face social exclusion. Pregnancy-related complications remain a leading cause of death among girls aged 15–19 years worldwide. Adolescent mothers are at increased risk of anaemia, hypertensive disorders, postpartum haemorrhage, obstructed labour, infections, and maternal mortality, while their newborns face higher risks of preterm birth, low birth weight, stillbirth, neonatal complications, and death [5]. The burden of adolescent pregnancy is highest in Sub-Saharan Africa (SSA), which recorded an adolescent birth rate of 97.9 births per 1,000 girls aged 15–19 years in 2023. The prevalence of adolescent pregnancy in Eastern Africa ranges from 18% to 29%, with nearly half of pregnancies being unintended. Socioeconomic inequalities, limited access to reproductive health services, poverty, early marriage, and low educational attainment continue to drive high rates of teenage pregnancy across the region [6].

South Sudan has one of the highest adolescent birth rates globally, estimated at approximately 158 births per 1,000 girls aged 15–19 years. The high prevalence of teenage pregnancy is closely linked to child marriage, poverty, school dropout, inadequate parental support, and limited access to sexual and reproductive health information and services [7]. By the age of 19 years, approximately one-third of South Sudanese girls are married or have already begun childbearing. These factors contribute to poor maternal and neonatal outcomes and place a substantial burden on the health system [8]. Although the adverse consequences of adolescent pregnancy are well documented globally, evidence on pregnancy outcomes among teenage mothers in South Sudan remains limited. Understanding the prevalence and outcomes of teenage pregnancy is essential for informing policies and interventions aimed at reducing maternal and neonatal morbidity and mortality. Therefore, this study aimed to assess the prevalence and outcomes of pregnancy among teenagers giving birth at Juba Teaching Hospital, South Sudan.

2. Methods

2.1. Study Design

This study employed a hospital-based descriptive cross-sectional design to assess the prevalence and outcomes of teenage pregnancy among mothers delivering at Juba Teaching Hospital, South Sudan. Data were collected from maternity ward registers, structured questionnaires, and interviews. The study focused on teenage mothers aged 15–19 years who delivered at the hospital between 1 November 2025 and 31 January 2026. The cross-sectional design enabled the assessment of pregnancy outcomes and associated characteristics at a specific period without intervention.

2.2. Study Setting

The study was conducted at Juba Teaching Hospital, the largest tertiary referral hospital in South Sudan, located in Juba. The hospital serves as a major referral center for obstetric and gynecological services, receiving patients from Juba and other parts of the country. The obstetrics and Gynecology department offer wide range of services like antenatal care, delivery, emergency obstetric care, postnatal services, and family planning and managed different gynaecological conditions. The department records a high number of deliveries annually, reflecting the hospital as a referral centre for complicated and high-risk pregnancies. The study population comprised teenage mothers aged 15–19 years from diverse socioeconomic, educational, ethnic, and religious backgrounds who delivered at the hospital during the study period (1 November 2025 –31 January 2026).

2.3. Sample Size

The sample size was determined using Kish-Lesile formula for sample size calculation of categorical data [9]:

$$\mathrm{n} = \frac{Z^2(P \times Q)}{e^2}$$

Where,
n = the sample size
Z = 1.96 (the confidence level, which is 95%)
P = estimated prevalence and outcome of pregnancy among teenagers giving birth at JTH (assumed at 50% due to lack of Precise data)
Q = (1-P)
e = acceptable margin of error at 5% (0.05)
Therefore, substituting;
The sample size was:

$$\mathrm{n} = \frac{1.96^2(0.5 \times 0.5)}{0.05^2} = 385 \text{ participants.}$$

10% of non-respondents were: 384+38=422 participants.

2.4. Sampling Procedures

When selecting the respondents, a purposive; non-probability sampling method was used since the individuals of interest were teenage pregnant mothers giving birth at Juba Teaching Hospital and residents of Juba. Crossman defines purposive sampling as a form of non-probability sampling where a sample is selected based on their characteristics and objective of the study.

Data was collected using structured paper-based questionnaires adapted from the literature and was revised to better align with the local context and study objectives. We clarified the questions posed to participants during data collection according to representation of sampling technique for prevalence and outcome of pregnancy among teenagers who came to labour and delivery in Juba teaching Hospital. Collection, focused on prevalence and outcome of pregnancy among teenagers, Participants were asked for their age and whether they experienced specific adverse outcomes ("yes" or "no"), which was further specified through interviews and a review of patients' medical records. These outcomes included age between 15 – 19 years and events that occurred during pregnancy, labour, and the postpartum period, such as pregancy induced hypertension (PIH), anaemia, premature rupture of membrane (PROM), preterm labor, malpresentation, cephalopelvic disproportion (CPD), obstructed labour, Cesarean section (C/S), antepartum hemorrahge (APH), polyhydramnios, oligohydramnios, major perineal tears, and postpartum hemorrhage(PPH), among others. Response options were typically binary ("yes" or "no") or categorical where applicable. We delegated some of midwives and Nurses to help us with Questionnaires. All mothers aged 15–19 years giving birth at the hospitals were assessed for eligibility. Eligible participants were interviewed and their clinical records were reviewed until the required sample sizes was met. Data from mothers with normal vaginal deliveries were collected 1–2hours postpartum, while those with caesarean sections or complicated deliveries were interviewed once fully awake.

3. Data Collection Procedures

Data were collected from both primary and secondary sources among pregnant teenagers and teenage mothers delivering at Juba Teaching Hospital. Structured questionnaires were administered by trained research assistants to obtain information on socio-demographic characteristics, access to reproductive health services, obstetric and reproductive history, and social and psychological factors. Clinical information on maternal and neonatal outcomes was extracted from patients' files and maternity ward registers. All data collection tools were pre-tested before the study to ensure clarity, consistency, and reliability.

3.1. Data Collection Tools

A structured questionnaire containing both closed- and open-ended questions was used to collect primary data. The questionnaire captured information on demographic characteristics, antenatal care attendance, reproductive health knowledge, and obstetric history. Secondary data were obtained through a review of patients's files and maternity ward registers to document maternal and neonatal outcomes, including birth weight, gestational age, Apgar scores, delivery complications, postpartum recovery, and neonatal morbidity or mortality. Quality control measures included pre-testing of the questionnaire and double data entry to minimize errors and enhance data accuracy.

3.2. Data Analysis

Collected data were coded, cleaned, and entered into the Statistical Package for the Social Sciences (SPSS) version 27 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize participant characteristics and study outcomes. The prevalence of teenage pregnancy was calculated as the proportion of teenage deliveries among all hospital deliveries during the study period. Inferential statistical analyses, including chi-square tests and logistic regression, were performed to assess associations between independent variables and maternal and neonatal outcomes. Statistical significance was determined at a p-value of less than 0.05.

4. Ethical Considerations

This study was adhered to establish ethical standards to ensure the protection and dignity of all participants. Ethical approval was obtained from the Ethical Baord Committee, Ministry of Health, University of Juba, and from the administration of Juba Teaching Hospital prior to data collection.

Participation was entirely voluntary, and informed consent was secured from each participant or, in the case of minors, from their legal guardians.

Confidentiality was strictly maintained by anonymizing all personal identifiers and securely storing collected data. Participants were informed of their right to withdraw from the study at any point without any consequences. The research was conducted with sensitivity to the vulnerable nature of the study population, ensuring that no harm physical, psychological, or social came to any participant as a result of their involvement.

5. Results

5.1. Sociodemographic Characteristics of study participants giving birth at Juba Teaching Hospital, South Sudan

Table 1 outlines the sociodemographic characteristics of 422 women who gave birth at Juba Teaching Hospital, highlighting crucial factors influencing maternal health in South Sudan. Most participants (73.9%) were over 19 years, with 26.1% being teenagers, indicating a significant adolescent childbearing issue. A vast majority (96%) were married, emphasizing strong sociocultural norms surrounding marriage before childbirth. Educational attainment varied, with 43.4% having secondary education, but 10.9% possessed tertiary education, suggesting moderate overall education levels impacting maternal health knowledge. Economically, 79.1% were not formally employed, reflecting limited economic opportunities for women, particularly during pregnancy. Religiously, 89.8% identified as Christian, indicating a need for inclusive maternal health interventions. Geographically, most women resided in Gudele (34.4%), and 86.3% lived with their husbands, suggesting strong family support systems. This profile indicates that the women are primarily married, Christian, educated, and urban dwellers, which has implications for maternal health behaviors and outcomes.

Table 1: Sociodemographic Characteristics of study participants giving birth at Juba Teaching Hospital, South Sudan

	n=422	**% (95%CI)**
Age group		
<19 years	110	26.1 (21.8 - 30.3)
>19 years	312	73.9 (69.7 - 78.2)
Marital status	**0**	**(-)**
Single	15	3.6 (1.9 - 5.5)
Married	405	96 (93.8 - 97.9)
Widowed	2	0.5 (0 - 1.2)
Level of education	**0**	**(-)**
No formal education	52	12.3 (9.2 - 15.9)
Primary	141	33.4 (28.7 - 38.1)
Secondary	183	43.4 (38.6 - 48.3)
Tertiary	46	10.9 (8.1 - 13.7)
Occupation	**0**	**(-)**
Working	88	20.9 (16.8 - 25.1)
Not working	334	79.1 (74.9 - 83.2)
Religion	**0**	**(-)**
Christian	379	89.8 (87 - 92.7)
Muslim	43	10.2 (7.3 - 13)
Place of residence	**0**	**(-)**
Gudele	145	34.4 (30.1 - 39.1)
Amarat	58	13.7 (10.4 - 17.3)
Sherikat	84	19.9 (16.1 - 23.7)
Atlabara	67	15.9 (12.6 - 19.4)
Moniki	68	16.1 (12.8 - 19.7)
Who do you live with?	**0**	**(-)**
Parent	30	7.1 (4.7 - 10)
Husband	364	86.3 (82.9 - 89.6)
Relatives	24	5.7 (3.6 - 7.8)
Alone	4	0.9 (0.2 - 1.9)

5.2. Determining the prevalence of teenage mothers among all deliveries at Juba Teaching Hospital

Table 2: Determining the prevalence of teenage mothers among all deliveries at Juba Teaching Hospital

	Age group		**Total**	**Chi-square**	**df**	**p-value**	**Phi-value**
	<19 years n (%)	**>19 years n (%)**	**n (%)**				
Delivery							
Normal vaginal	79 (29)	193 (71)	272 (64.5)	8.795	2	0.012	0.144
C-section	13 (14.1)	79 (85.9)	92 (21.8)				
Assisted	18 (31)	40 (69)	58 (13.7)				
Total	**110 (26.1)**	**312 (73.9)**	**422 (100)**				

Table 2 reveals that out of 422 deliveries at Juba Teaching Hospital, 110 (26.1%) were to teenage mothers (<19 years). Normal vaginal delivery was the most common mode (64.5%), with 29% of these births to teenagers. Caesarean sections made up 21.8% of deliveries, with only 14.1% involving teenage mothers compared to 85.9% of older women. The chi-square test indicated a significant association between maternal age and mode of delivery ($\chi^2 = 8.795$, $p = 0.012$), leading to the rejection of the null hypothesis. Although there is a statistically significant relationship, the Phi coefficient ($\phi = 0.144$) suggests a modest practical effect. Teenage mothers are notably less likely to have caesarean sections, which may reflect various socio-economic and clinical factors. The findings highlight the need for targeted maternal health interventions for adolescents to improve obstetric outcomes.

5.3. Assessing maternal complications associated with teenage pregnancy at Juba Teaching Hospital

Table 3: Determining the prevalence of teenage mothers among all deliveries at Juba Teaching Hospital

	Age group		Total	Chi-square	df	p-value	Phi-value
	<19 years n (%)	**>19 years n (%)**	**n (%)**				
Anemia				26.109	1	<.001	0.249
Yes	0 (0)	63 (100)	63 (14.9)				
No	110 (30.6)	249 (69.4)	359 (85.1)				
Infection				7.792	1	0.005	0.136
Yes	0 (0)	21 (100)	21 (5)				
No	110 (27.4)	291 (72.6)	401 (95)				
Antepartum				7.402	1	0.007	0.132
Yes	0 (0)	20 (100)	20 (4.7)				
No	110 (27.4)	292 (72.6)	402 (95.3)				
Preeclampsia				1.784	1	0.182	0.065
Yes	0 (0)	5 (100)	5 (1.2)				
No	110 (26.4)	307 (73.6)	417 (98.8)				
Mode of delivery				8.795	2	0.012	0.144
Normal vaginal	79 (29)	193 (71)	272 (64.5)				
C-section	13 (14.1)	79 (85.9)	92 (21.8)				
Assisted	18 (31)	40 (69)	58 (13.7)				
Marital status				1.037	2	0.595	0.05
Single	5 (33.3)	10 (66.7)	15 (3.6)				
Married	104 (25.7)	301 (74.3)	405 (96)				
Widowed	1 (50)	1 (50)	2 (0.5)				
Level of education				14.751	3	0.002	0.187
No formal education	21 (40.4)	31 (59.6)	52 (12.3)				
Primary	45 (31.9)	96 (68.1)	141 (33.4)				
Secondary	38 (20.8)	145 (79.2)	183 (43.4)				
Tertiary	6 (13)	40 (87)	46 (10.9)				
Occupation				10.839	1	0.001	0.16
Working	35 (39.8)	53 (60.2)	88 (20.9)				
Not working	75 (22.5)	259 (77.5)	334 (79.1)				
Religion				5.179	1	0.023	0.111
Christian	105 (27.7)	274 (72.3)	379 (89.8)				
Muslim	5 (11.6)	38 (88.4)	43 (10.2)				
Place of residence				21.066	4	<.001	0.223
Gudele	55 (37.9)	90 (62.1)	145 (34.4)				
Amarat	12 (20.7)	46 (79.3)	58 (13.7)				
Sherikat	23 (27.4)	61 (72.6)	84 (19.9)				
Atlabara	12 (17.9)	55 (82.1)	67 (15.9)				
Moniki	8 (11.8)	60 (88.2)	68 (16.1)				
Who do you live with?				4.260a	3	0.235	0.1
Parent	11 (36.7)	19 (63.3)	30 (7.1)				
Husband	95 (26.1)	269 (73.9)	364 (86.3)				
Relatives	4 (16.7)	20 (83.3)	24 (5.7)				
Alone	0 (0)	4 (100)	4 (0.9)				
Use of contraception before pregnancy				40.963a	1	<.001	0.312
Yes	1 (1)	96 (99)	97 (23)				
No	109 (33.5)	216 (66.5)	325 (77)				
Number of pregnancies you have had (including current)				11.823a	2	0.003	0.167
1 - 4 visits	96 (30.3)	221 (69.7)	317 (75.1)				
5 - 8 visits	13 (13.7)	82 (86.3)	95 (22.5)				
>8 visits	1 (10)	9 (90)	10 (2.4)				
Where did you receive ANC services?				.366a	1	0.545	0.029
Juba Teaching Hospital	73 (27)	197 (73)	270 (64)				
Others	37 (24.3)	115 (75.7)	152 (36)				
Total	110 (26.1)	312 (73.9)	422 (100)				

In table 3: A statistically significant association was observed between maternal age and several maternal and socio-demographic factors. Anaemia was significantly associated with age, with all cases occurring among women older than 19 years ($p < .001$). Similarly, infection ($p = .005$) and antepartum complications ($p = .007$) were significantly associated with age, with all recorded cases occurring among mothers above 19 years. No significant association was found between maternal age and preeclampsia ($p = .182$).

Delivery methods differed significantly by age group (p = .012), with teenage mothers more likely to have assisted vaginal deliveries, while older mothers had higher caesarean section rates. Educational attainment was significantly associated with age (p = .002), indicating lower education levels among teenage mothers, who were also more likely to be unemployed (p = .001). Geographic location showed a strong association with age (p <.001), suggesting higher teenage pregnancy rates in specific areas. Prior contraceptive use was significantly lower among teenagers, with only 1% reporting contraceptive use before pregnancy (p <.001). Teenage mothers also had fewer antenatal care visits (p = .003). No significant association was observed between age and marital status (p = .595) or place of ANC services (p = .545). These findings suggest that teenage pregnancy is closely linked to lower educational attainment, limited contraceptive use, unemployment, and reduced utilization of maternal healthcare services.

Table 4: Logistic Regression Model: Assessing maternal complications associated with teenage pregnancy at Juba Teaching Hospital

	B	**S.E.**	**Wald**	**df**	**p-value**	**OR**	**95%CI: LL-UL**	
Anemia								
Yes*								
No	17.165	5920.886	0.000	1	0.998	2.849	2.574	2.979
Infection								
Yes*								
No	-0.175	10312.11	0.000	1	1	0.840	0.000	0.973
Mode of delivery								
Normal vaginal*								
C-section	0.925	0.374	6.118	1	0.013	2.521	1.212	5.246
Assisted	-0.199	0.372	0.288	1	0.592	0.819	0.395	1.698
Level of education								
No formal education*								
Primary	0.05	0.568	0.008	1	0.93	1.051	0.346	3.199
Secondary	1.376	1.269	1.177	1	0.278	3.959	0.329	47.58
Tertiary	-2.237	2.351	0.905	1	0.341	0.107	0.001	10.705
Occupation								
Working*								
Not working	0.4	0.554	0.522	1	0.47	1.492	0.504	4.416
Religion								
Christian*								
Muslim	3.633	1.878	3.740	1	0.053	37.811	0.952	1501.303
Place of residence								
Gudele*								
Amarat	0.638	0.502	1.612	1	0.204	1.892	0.707	5.063
Sherikat	-0.71	1.211	0.344	1	0.558	0.492	0.046	5.276
Atlabara	-0.317	1.231	0.066	1	0.797	0.729	0.065	8.138
Moniki	0.006	1.429	0.000	1	0.997	1.006	0.061	16.542
Use of contraception before pregnancy								
Yes*								
No	-3.844	1.106	12.082	1	0.001	0.021	0.002	0.187
Number of pregnancies you have had (including current)								
1 - 4 visits*								
5 - 8 visits	1.251	0.353	12.519	1	<.001	3.492	1.747	6.982
>8 visits	1.961	1.094	3.212	1	0.073	7.11	0.832	60.727

***Reference category**

In table 4, the logistic regression model examined maternal complications in teenage pregnancies at Juba Teaching Hospital based on socio-demographic and obstetric factors. Key findings highlight that anemia and infection status were not statistically significant predictors (p-values of 0.998 and 1.000, respectively). Conversely, mode of delivery showed significant associations; Caesarean sections increased maternal complications (OR = 2.521, p = 0.013), while assisted vaginal delivery did not. Educational attainment, employment status, religion, and place of residence also lacked statistical significance. However, contraception use before pregnancy (OR = 0.021, p = 0.001) and the number of antenatal care visits demonstrated significant relationships with maternal complications, suggesting potential reverse causality. Overall, the analysis identified Caesarean delivery, contraception use, and ANC visits as significant predictors, while caution is advised due to model instability and potential data limitations.

5.4. Identifying neonatal complications at Juba Teaching Hospital

Table 5 presents findings on maternal experiences, neonatal health issues, and birth outcomes from 422 respondents at Juba Teaching Hospital. About 45% reported post-delivery complications, indicating significant maternal morbidity, while 25.6% of newborns faced respiratory difficulties, raising concerns about neonatal health. Birth outcomes revealed a live birth rate of 76.1%, with stillbirths at 13.5% and neonatal deaths at 10.4%. The combined adverse outcomes highlight challenges in maternal and neonatal care, necessitating enhanced monitoring and resuscitation training, improved antenatal risk detection, and quality improvement initiatives in healthcare services.

Table 5: Identifying neonatal complications at Juba Teaching Hospital

	n=422	% (95%CI)
Have you experienced any of the following after delivery?		
Yes	190	45 (40.3 - 49.8)
No	232	55 (50.2 - 59.7)
Any health problems in the baby?		
No	314	74.4 (70.1 - 78.7)
Difficulty breathing	108	25.6 (21.3 - 29.9)
Birth outcome		
Live birth	321	76.1 (71.6 - 79.9)
Stillbirth	57	13.5 (10.4 - 17.1)
Neonatal death	44	10.4 (7.6 - 13.5)

Table 6: Descriptive Statistics: Identifying neonatal complications at Juba Teaching Hospital n = (422)

	Statistic	Value	95% Confidence Interval	
			Lower	Upper
Gestational age at delivery	Mean	36.82	36.23	37.37
	Std. D	6.054	5.282	6.824
Birth weight of the baby	Mean	3.127	3.036	3.21
	Std. D	0.8724	0.814	0.9246

Table 6 presents descriptive statistics for neonatal indicators from 422 deliveries at Juba Teaching Hospital, emphasizing gestational age and birth weight. The mean gestational age was 36.82 weeks, indicating a trend towards preterm births. The standard deviation of 6.054 weeks shows significant variability, which may elevate risks for complications like respiratory distress and feeding difficulties. The mean birth weight was 3.127 kg, within the normal range, but the standard deviation of 0.8724 kg reflects moderate variability, encompassing both low birth weight and macrosomic infants. Overall, while average birth weight is satisfactory, the reduced mean gestational age and variability signal potential prematurity-related complications, underscoring the need for enhanced antenatal care and neonatal monitoring to address these health outcomes.

6. Discussion

This study found that teenage mothers (<19 years) accounted for 26.1% of all deliveries at Juba Teaching Hospital, indicating that adolescent pregnancy remains a major public health concern in South Sudan. The prevalence observed is consistent with reports from sub-Saharan Africa, where adolescent fertility rates remain among the highest globally [10]. The findings reflect persistent challenges related to early marriage, limited educational opportunities, poverty, and inadequate access to reproductive health services.

A significant association was observed between maternal age and mode of delivery. Teenage mothers were more likely to undergo normal vaginal and assisted vaginal deliveries, while caesarean sections were more common among older mothers. Although statistically significant, the association was weak, suggesting that factors beyond maternal age, including parity, obstetric history, and clinical indications, contribute substantially to delivery outcomes. The lower caesarean section rate among adolescents may reflect health system factors, clinical decision-making practices, or differences in obstetric risk profiles between age groups.

Maternal age was also significantly associated with anemia, infection, and antepartum complications. However, contrary to evidence from previous studies, these complications were predominantly reported among women older than 19 years [11]. This discrepancy may be attributable to contextual factors such as under-diagnosis among adolescents, differences in healthcare-seeking behaviour, or limitations in documentation and reporting. No significant association was found between maternal age and preeclampsia, possibly due to the low number of cases observed.

Several socio-demographic factors were strongly associated with teenage pregnancy. Adolescents were more likely to have lower educational attainment, be unemployed, use contraception less frequently, and attend fewer antenatal care (ANC) visits. These findings support existing evidence demonstrating that limited education and economic dependency increase vulnerability to early pregnancy [12, 13]. Reduced contraceptive use among teenagers highlights ongoing barriers to accessing youth-friendly reproductive health services and reproductive health information.

Multivariable logistic regression identified mode of delivery, prior contraceptive use, and ANC attendance as significant predictors of maternal complications among teenage mothers. Caesarean section was associated with increased odds of maternal complications, consistent with evidence indicating higher risks of infection, haemorrhage, and perioperative complications following surgical delivery, particularly in resource-limited settings [14]. The positive association between higher ANC attendance and maternal complications likely reflects increased healthcare utilization among women with high-risk pregnancies rather than a direct effect of ANC itself.

The study also demonstrated considerable maternal and neonatal morbidity following delivery. Nearly half of respondents reported post-delivery health concerns, emphasizing the continuing burden of postpartum complications [15]. Neonatal outcomes revealed substantial challenges, with approximately one-quarter of newborns experiencing respiratory difficulties. Furthermore, stillbirths and neonatal deaths constituted a significant proportion of delivery outcomes, highlighting persistent gaps in intrapartum and neonatal care.

The mean gestational age of 36.8 weeks suggests a considerable burden of preterm birth, while the variability in birth weight indicates the coexistence of both low birth weight and macrosomia infants. These findings are important because gestational age and birth weight remain key determinants of neonatal survival and long-term health outcomes. The observed neonatal complications may therefore be partially explained by prematurity and associated obstetric risks [16].

Overall, the findings underscore the multifaceted nature of teenage pregnancy and its associated maternal and neonatal outcomes in South Sudan. While maternal age was significantly associated with several obstetric and socio-demographic factors, the observed relationships were generally weak, indicating that adolescent pregnancy outcomes are influenced by a complex interplay of biological, social, and health-system determinants. Strengthening adolescent-friendly reproductive health services, expanding contraceptive access, improving female education, and enhancing the quality of antenatal, intrapartum, and neonatal care are essential interventions to reduce the burden of teenage pregnancy and improve maternal and neonatal outcomes in South Sudan [17, 18].

7. Conclusion

Teenage mothers accounted for 26.1% of deliveries at Juba Teaching Hospital, highlighting adolescent pregnancy as an important public health concern in South Sudan. Maternal age, mode of delivery, contraceptive use, and antenatal care attendance were associated with maternal complications, while adverse neonatal outcomes, including respiratory distress, stillbirth, and neonatal death, remained common. Strengthening adolescent-friendly reproductive health services, contraceptive access, education, and quality maternal and newborn care is essential to improve outcomes among teenage mothers and their infants.

Article Information

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