



# Prevalence and Factors Associated with Teenage Pregnancy at Paynesville, Monrovia, Liberia: Facility Based Cross Section Study

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## Authors' contributions

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## ABSTRACT

**Introduction:** In Liberia, teenage pregnancy is a serious public health issue that causes social and economic hardship. Adolescent birth rates are among the highest in sub-Saharan Africa, according to statistics. There are significant differences in the prevalence of teenage pregnancy between and within nations. Most teenage pregnancies occur in places with poorer incomes and lower levels of education. The purpose of this research is to determine the prevalence of teenage pregnancy in Liberia and to investigate the risk factors related to it, particularly in the Paynesville city community of Duport Road cow field block "B."

**Methods:** The research that was done using the Duport Road Clinic as a resource center provided the data for this study. Fifty girls between the ages of 15 and 19 who visited the hospital and lived in the community throughout the study period were recruited as participants. Total population

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sampling was used to interview all 50 of the females. A population-based cross-sectional survey is used in this quantitative study to gather data, and IBM 20.0 SPSS was used for analysis.

**Results:** According to the report, 50.2% of adolescent girls between the ages of 15 and 19 had started having children at the time of the survey. Teenage pregnancy in the community was significantly correlated with age (OR = 6.9; 95% CI: 4.647, 10.366, p – value 0.001), teenagers living with their parents (OR = 1.057; p > 0.001), non-use of contraception (OR = 2.53; 95% CI: 1.739, 3.683), and teenage girls who were aware of contraceptive methods (OR = 2.86, 95% CI = 0.443, 18.463).

**Conclusion:** In conclusion, a number of factors, including early sexual initiation, cohabitation, lack of education, and contraceptive non-use, contribute to the high rate of teenage pregnancy in Liberia. Interventions including encouraging the use of contraception, discouraging early sexual beginning, and setting up family planning clinics are advised in order to lessen its prevalence

*Keywords: Teenage pregnancy; low-income country; girl-child education; contraception; sex-education awareness; cross-sectional survey.*

## 1. INTRODUCTION

Pregnancy at teenage is classified pregnancy that occurs when a woman is between the ages of 13 and 19 years [1]. WHO [2] estimates that every year in developing nations, about 21 million girls between the ages of 15 and 19 become pregnant, and about 12 million of them give birth. Adolescent pregnancy is a global public health concern that impacts nations at all economic levels. Significant aftereffects of teenage pregnancy include poor health, a strain on society and the economy, and poor educational attainment. Adolescent pregnancies are common in underprivileged communities across the globe as a result of unemployment, low levels of education, and poverty. High rates of illness and mortality in mothers and children are linked to teenage pregnancies [2]. According to Nove et al. [3], “adolescent pregnancy has long-term social repercussions for the youth, their families, their children, and the communities in which they reside”. Children raised by teenagers are more likely to experience scholastic difficulties and drop out of high school. In addition, they are more likely to have health issues, have spent time in jail as young people, and give birth when still in their teens [4]. “The global teenage birth rate is approximately 42.5 births per 1,000 girls, according to WHO estimates from 2015. The rate varies by region, with the lowest rate occurring in the western Pacific (14.4 births per 1,000 girls), the highest rate occurring in Africa (46.5 deliveries per 1,000 girls), the Eastern Mediterranean region (46.5 deliveries per 1,000 girls), the region of Southeast Asia (26.1 births per 1,000 girls), the continent of America (49.9 births per 1,000 girls), and Europe (17.1 births per 1,000 girls)” [5].

According to a UNFPA research, half of all pregnancies in Sub-Saharan Africa occur in women between the ages of 15 and 19. The region is home to roughly 14 million pregnancies annually. Women under the age of twenty give birth to around one-tenth of all babies. Over 90% of these pregnancies occur in developing nations [2]. More than 90% of adolescent pregnancies in poor nations are carried out by married women, and most of these young births are planned [2]. This is because they had a lot of sex and had to start having children right once after being married. It's well known that many African traditional societies pressure teenage females into being married young. Early pregnancies are frequently encouraged by social pressure and cultural effects after matrimony [6]. Subsequent studies revealed that teenage fertility is high in nations like Nigeria, Cameroon in the Chad Republic, Niger, Liberia, and the remainder of North Africa where the majority of people practice Islam (Dahl, 2010). Because of early marriages, one in five young females in these nations engages in sexual activity by the age of fifteen, and one in five of these girls becomes pregnant by the age of eighteen [7].

Due to Liberia's low socioeconomic status, adolescent pregnancies are more common among the impoverished and in rural areas. Due to a higher likelihood of early cohabitation, particularly in rural regions, and a lack of sex education, knowledge, and usage of contraceptive methods, the rate of teenage pregnancy in Liberia is concerning. According to the findings of Liberia's Demography and Health Survey, 31% of women between the ages of 15 and 19 have commenced having children, and the percentage of young women who are doing so is rising quickly as they get older. The

literature on the causes of teenage pregnancies and their variations in Liberia is thin. The purpose of this study is to look into the sexual and reproductive factors that are connected to teen pregnancies in the Duport Road Cow field Block 'B' neighborhood in Paynesville, Liberia, as well as the incidence and danger caused by regional factors of teenage pregnancy.

## 2. METHODOLOGY

This study was carried out in the Duport Road Clinic, which is located in Duport Road Paynesville, Liberia and it focused on the teenage pregnant girls living in the Duport Road Cow field Block 'B' Community. The data used for this study came from patients during interviews at the Duport Road Clinic between October and December 2022. A population-based cross-sectional survey was conducted. The participants were all patients admitted to the Duport Road Clinic's antenatal and postnatal sections between October 2022 and December 2022 who were either pregnant or already teenage mothers between the ages of 15 and 19.

There were 50 participants in the study. Utilizing the open EPI, Version 3 open source calculator's technique for calculating sample size for frequency in a population, the researcher made the assumption that the outcome factor's percentage frequency—the percentage of adolescent pregnancies in Duport Road block 'B' Community (P)—was 100%. Considering that we were unable to locate any comparable studies carried out in hospital settings. In addition, we assumed a 95% confidence level, a power of one (1), and a design effect of one. Following a 10% correction for non-response, a sample size of 50 was determined.

All eligible teenage participants who gave their agreement to participate in this study between October 2022 and December 2022 progressively enrolled until the target sample size was reached. Before enrolling any responders, the researcher distributed and received written informed consent from each of them. The data analysis techniques used by the researchers included univariate, bivariate, and multivariate analysis. In bivariate studies, a chi-square test was employed to evaluate the relationship between each independent and the dependent variables. Bivariate logistic regression was used in multivariate analysis to identify the factors associated with teen pregnancy. The odds ratios for the multivariate data were presented along

with a 95% confidence interval. IBM 20.0 SPSS (Statistical Package for the Social Sciences) was the program we used to analyze this data. A logistic regression was also used for determinants of teenage pregnancy.

## 3. RESULTS

According to this Table 1, 22% of teens are between the ages of 18 and 19, whereas 78% of young women are between the ages of 15 and 17. Just 4% of the respondents lacked literacy, while nearly 76% had finished elementary school. Only 8% of respondents were married, and 74% said that their first sexual experience occurred while they were between the ages of 15 and 17. About 66% were aware of contraceptive methods. Despite the fact that 80% of the young women in the study were aware of contraceptives, they were not using them. Ten percent of the participants experienced a pregnancy loss.

The prevalence of teenage pregnancies by socio-economic demographic and reproduction characteristic is displayed in Table 2. The combination of young women who had born alive and those who were expecting for the first time was 25.2% of the total; 5.2% of the women were expectant for the first time, and 30.3% of the women had already started having children while still in their teen years. Teens between the ages of 15 and 17, those with little to no schooling, and married teenagers were the age groups most likely to exhibit all signs of teenage pregnancy. For instance, compared to those who have completed secondary or higher education (30.5%), 46.5% of teenage women with elementary school education have started having children, while just 16.4% of teenage women in the 18–19 age group and half of those in the 15–17 age group have started having children.

According to sexual and reproductive variables, among young women who had sex before the age of fifteen, 55.4% did so, 46.1% of those who started having children gave birth live births, and 9.2% of those who were aware of contraceptive methods became pregnant with their first child. 31.7% of women had started having children, 5.4% were expecting their first child, and 26.3% had given birth. Teenage pregnancies were more common among individuals who did not use any form of contraception at the time.

For example, among the teenage women, 34.6%, 5.8%, and 40.3% gave birth to a living

**Table 1. Sample of participants in Duport Road Cow Field Block 'B' Community October – December 2022**

<b>Background Characteristics</b>	<b>Percentage</b>	<b>Total</b>
<b>Age</b>		
15 – 17	78	39
18 -19	22	11
<b>Educational level</b>		
No Formal Education	4	2
Primary Education	76	38
Secondary/ Higher Education	20	10
<b>Marital Status</b>		
Not Yet Married	92	46
Married	8	4
<b>Age at first Sex</b>		
15 – 17	74	37
18 – 19	26	13
<b>Knowledge of Contraceptive Method</b>		
No	34	17
Yes	66	33
<b>Contraceptive Use</b>		
User	20	10
Non – User	80	40
<b>Has terminated a pregnancy before</b>		
No	90	45
Yes	10	5
Total	100	50

child, became pregnant for the first time, and started a family. Comparably, among young women who do not use contraception, 30.5% have begun having children, while 29.4% use it.

To determine the sociodemographic characteristics and the hazards to sexual and reproductive health that were associated with teenage pregnancy, a bivariate regression model was used. Three distinct models were employed. Model one, which included the sexual and reproductive health characteristics of adolescent women, showed that variance in pregnancies among teens was related to the distribution of primary sample units in the absence of explanatory variables. Model two expanded on this finding. The probability of the two variables makes up the final model (Model 3). (Factors influencing female reproductive, sexual, and socioeconomic health). Factors that had P-values less than 0.02 in the bivariate analysis were age at first sex, age at marriage, education level, and awareness of contraceptives. These variables were shown to be statistically significant in the logistic regression model.

The risks of adolescent pregnancy in the Duport Road cow field block "B" Community rose with

age in relation to the individual predictor, with those between the ages of 15 and 17 having around three times greater odds of becoming pregnant (OR = 6.9;95%CI; 4.647,10.366, p – value 0.001). Unmarried teenagers had a five-fold higher chance of getting pregnant than married teenagers (OR=5.8; 95%CI; 1.415, 24.035, p - value 0.001). Furthermore, the risks of falling pregnant were twice as high for teenage women who were aware of contraceptive techniques (OR=2.86, 95%CI =0.443, 18.463). In addition, there were the teenage women who did not utilize contraception (OR=2.53; 95%CI: 1.739, 3.683). The research also found that the proportion of young women who had their first sexual experience before turning 18 had decreased by 24% (OR=0.63, 95% CI=:0.165, 0360), while the proportion of women who had only completed basic school had decreased by 63% (OR=0.63, 95% CI=0.342, 1.172).

The odds of young women who began having children before the age of 19 are 1.1% higher in model one than in model three. This difference in likelihood could be attributed to model three's additional factors. A 2.5% drop in married status is also shown in model three.

**Table 2. Features of Adolescent Females' Socio-Demographic and Sexual/Reproductive Health in the Duport Road Cow field Block 'B' Community, October – December 2022**

<b>Background features</b>	<b>% of teenage females who had live deliveries</b>	<b>% of teenage females who are now pregnant</b>	<b>% of teenage females already have a child/children</b>	<b>Total</b>
<b>Age</b>				
15 – 17	12.5	7.0	50.2	39
18 – 19	43.2	3.9	16.4	11
<b>Educational level</b>				
No Formal Education	21.4	4.1	26.8	2
Primary Education	38.4	8.1	46.5	38
Secondary/ Higher Education	26.4	5.4	30.5	10
<b>Marital Status</b>				
Not Yet Married	87.6	3.8	88.4	46
Married	18.7	0.8	22.5	4
<b>Age at first sex</b>				
15 – 17	46.1	9.2	55.4	37
18 – 19	32.9	6.8	39.8	13
<b>Knowledge of Contraceptive Method</b>				
No	3.4	5.4	31.7	17
Yes	32.9	1.7	5.1	33
<b>Use of Contraceptive</b>				
User	24.2	0.2	29.4	10
Non – user	29.4	6.3	30.5	40
<b>Ever had a pregnancy terminated</b>				
Yes	17.6	14.4	30.3	5
No	25.5	4.8	32.0	45
Total	25.2	5.2	30.3	50

#### 4. DISCUSSION

Adolescent pregnancy rates vary greatly throughout the world. This was affected by a number of variables, including cultural, sociodemographic, and sexual and reproductive health. The frequency of teenage pregnancy in Liberia is 30.3%, according to the current study, which also looked at risk factors for the condition. The results of this study are consistent with findings from other studies carried out in various African countries, including Ethiopia [8], Western Nigeria [9], and Uganda [10]. Teenage pregnancy was linked to age, contraceptive knowledge, marital status, education level, etc. Similar socio-demographic, cultural, and individual teenage features were found in the current and previous investigations; these findings may explain the parallels. Teenage pregnancy was more prevalent in rural regions

than urban and among non-educated teenagers than educated teenagers, similar to studies in Ethiopia [8,11]. Statistically, teenage girls in Liberia who have ever engaged in sexual activity or been in a relationship are more likely to become pregnant than other teenagers. One of the causes is that teenage girls who have early sex and cohabit are more likely to want children, which increases the likelihood that they will become pregnant. The issue is made worse by the widespread encouragement of young women to get married and start families in Sub-Saharan African countries. The majority of young girls who marry early, have no education, hail from low-income households, and reside in rural regions are more likely to participate in behaviors that put them at risk of becoming pregnant [12]. Research from other sources [13,14] has shown a connection between child marriage and adolescent pregnancies. Mehra et al. [15]

**Table 3. Result for Regression Analysis Using Logistic for Determinants of Female Teens Pregnancy in Duport Road Cow field block 'B' Community, October – December 2022**

Background Characteristics	Model 1		Model 2		Model 3	
	OR	95%CI	OR	95%CI	OR	95%CI
<b>Age</b>						
15 – 17						
18 – 19	4.008***	(3.347,6.082)			4.92***	(3.325,10233)
<b>Educational level</b>						
<b>No Formal Education</b>						
Primary Education	0.671	(0.324,1230)			0.411	(3.435,10122)
Secondary/ Higher Education	0.650	(0.215,1214)			0.226	(0.124,0431)
<b>Marital Status</b>						
Not Yet Married						
Married	12.445***	(2.014,41213)			3611***	(1.213,12012)
<b>Age at first sex</b>						
15 – 17						
18 – 19			0.33	(0.210,0401)	0.122***	(0.133,0140)
<b>Knowledge of Contraceptive Method</b>						
No						
Yes			1.103	(0.120,2142)	1.431***	(0.221,14231)
<b>Contraceptive use</b>						
User						
Non – user			1.240***	(1.422,122)	1.320	(1.525,1432)
<b>Ever had a pregnancy terminated</b>						
Yes			0.234	(0.111,0521)	0.323	(0.121,1231)
No						

discovered in another study that certain young girls are coerced into marriage or living together.

According to this study, there was a greater likelihood of pregnancy among teenagers who were aware of contraception. Contrary to popular assumption, knowledge about contraception may have become available after a pregnancy has occurred. This finding is consistent with another study [16], which suggested that incomplete information and a lack of understanding regarding the range and application of contraceptive methods could be contributing factors. Additional research indicates that willingness or social pressure to become pregnant could have led to conception even

though the individual was aware of contraceptives [17].

Thus, stigmatizing teenage pregnancy, early sexual activity, and contraceptive use may operate as major roadblocks to the use of contraception [18]. Our research also revealed a connection between teenage pregnancy and not needing contraception. The seemingly contradictory data can be explained by the possibility that young females have changed their goals for fertility after being pregnant, having an abortion, or becoming mothers [19]. Adolescent girls using traditional or folkloric contraception as an alternative to modern contraceptives is another possibility. Unintentional pregnancy is caused by failure of contraception, inaccurate

and inconsistent condom use, and non-use of contraceptives [20].

The constraints of using composite data and missing factors to examine the effects on pregnancies among adolescents in Liberia are due to the heterogeneity of the data. Furthermore, it is likely to skew the results of the teenage pregnancy measure to include teenagers who previously had a pregnancy aborted. Pregnancy termination data in the DHS is often underreported and of low quality. Furthermore, while some of the survey participants' queries focused on their current pregnancy, others addressed worries from previous pregnancies. It's possible that the actions and knowledge of the latter group contributed to their pregnancy. The data on the explanatory variables included in this study, with the exception of age at first sex, correspond to the time of the surveys and may differ from the experience during pregnancy, which may lead to reverse causalities in terms of when education ends, when marriage happens, or what knowledge about contraception is acquired after becoming pregnant [21].

## 5. CONCLUSION

There is cause for concern regarding the high rate of teenage pregnancy in the Duport Road Cow field block "B" Community. The majority of these pregnancies have been linked to societal pressures, parental carelessness, a lack of sex education, and improper understanding and education regarding the use of contraception. based on earlier studies on the factors leading to adolescent pregnancy and the negative consequences of doing so. Our findings indicate that teenage pregnancy in the Duport Road cow field block "B" neighborhood is influenced by a number of factors, including age, marital status, education level, early sexual beginning, and non-use of contraception. To satisfy the pressing requirement of encouraging teens to participate in family planning activities, significant investment in national policies, assessment, and adolescent sexual and reproductive health involvement is necessary. Innovative solutions are also badly needed. Rural health care professionals should strengthen community mobilization and information-education-communication (IEC) campaigns, as well as make clinics and family planning centers more youth-friendly, in order to encourage family planning among young people. By working with non-governmental groups, the private sector, and

schools, develop a sexual and reproductive health program that raises awareness of the dangers and complications of teenage pregnancy. Considerable effort should be put into sex education at different institutions, and it should be a required course, making it available to young people.

## CONSENT

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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