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Factors shaping first adolescent pregnancy experiences: A secondary analysis of Mashonaland Central Province, Zimbabwe

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Abstract

Adolescent pregnancy is a public health concern in Zimbabwe, with Mashonaland Central Province most affected. Little is known regarding adolescent first pregnancy experiences. A socio-ecological secondary analysis of factors influencing these experiences was conducted on 309 Mashonaland Central female adolescents (10-19 years), sampled from a 2023 assessment, to address this knowledge gap. The assessment established pregnancies only among 87% of the sexually active 15-19-year-olds. Risk factors included being out-of-school and being married (93% vs. 58% single, p<0.001). First pregnancy outcomes included 88% institutional delivery, live births (63%) and ongoing pregnancy (20%). Emotional stress and isolation were cited as key challenges. User fees affected access to maternal and newborn care. With first pregnancy experiences being driven by age, marital status, religion gender of primary caregiver and school attendance, there is need for targeted, multi-level interventions that provide life skills oriented and responsive care, whilst enforcing school re-entry and economic empowerment policies. *(Afr J Reprod Health 2026; 30 [21]: 62-74).*

Keywords: Adolescent girls; Adolescent pregnancy; School dropout; Marital Status; Adolescent pregnancy outcomes

Résumé

La grossesse à l'adolescence constitue un problème de santé publique au Zimbabwe, la province du Mashonaland central étant la plus touchée. On dispose de peu d'informations sur le vécu des adolescentes lors de leur première grossesse. Afin de combler cette lacune, une analyse secondaire socio-écologique des facteurs influençant ces expériences a été menée auprès de 309 adolescentes (âgées de 10 à 19 ans) du Mashonaland central, issues d'une évaluation réalisée en 2023. Cette évaluation a révélé que 87 % des adolescentes sexuellement actives, âgées de 15 à 19 ans, avaient connu une grossesse. Parmi les facteurs de risque identifiés figurent la déscolarisation et le fait d'être mariée (93 % contre 58 % pour les adolescentes non mariées ; p < 0,001). Concernant l'issue de cette première grossesse, 88 % des accouchements ont eu lieu en milieu hospitalier ; 63 % des cas ont abouti à une naissance vivante, tandis que 20 % des adolescentes étaient encore enceintes au moment de l'étude. Le stress émotionnel et l'isolement ont été identifiés comme des défis majeurs. Par ailleurs, les frais à la charge des usagères ont entravé l'accès aux soins de santé maternelle et néonatale. Étant donné que le vécu de la première grossesse est influencé par l'âge, le statut matrimonial, la religion, le genre de la personne responsable de l'adolescente et la scolarisation, il est nécessaire de mettre en œuvre des interventions ciblées à plusieurs niveaux. Celles-ci devraient proposer des soins adaptés et axés sur le développement de compétences de vie, tout en veillant à l'application de politiques favorisant la réintégration scolaire et l'autonomisation économique. *(Afr J Reprod Health 2026; 30 [21]: 62-74).*

Mots-clés: Adolescentes ; Grossesse à l'adolescence ; Déscolarisation ; Statut matrimonial ; Issue de la grossesse à l'adolescence

Introduction

Adolescent pregnancy remains a critical global public health and socio-economic challenge with profound implications for maternal and child health, educational attainment, economic opportunity, and the fundamental rights of young women. The magnitude of adolescent pregnancy is staggering on a global scale, with approximately 21 million girls aged 15–19 in developing regions becoming pregnant annually, and about 12 million giving birth.[1,2] The 2022 State of the World Report revealed that between 2015 – 2019, nearly half of all pregnancies, totalling 121 million each year globally, were unintended. Over 60 per cent of the pregnancies ended in abortion, with 45 percent unsafe and contributing 5 – 13 per cent of all maternal deaths.[3] Regionally, sub-Saharan Africa (SSA) bears the highest burden. The adolescent birth rate in SSA is 101 births per 1,000 women aged 15-19, which is the highest in the world and

nearly double the global average.[4] Zimbabwe is also one of the Sub-Saharan countries that is grappling with challenges of high early and unintended pregnancies, with the adolescent birth rate unacceptably high, fluctuating between 99 and 115 births per 1000 adolescent women (15-19 years) between 1988 and 2024. Adolescent birth rates have largely been higher in rural areas than in urban areas, with Mashonaland Central province recording the highest prevalence rate (370 per 1000 girls aged 15 – 19 years).[5] Similarly, the 2022 population and housing census preliminary results showed an adolescent birth rate of 87 births per 1000 women aged 15 – 19 years.[6] Additionally, results showed a 44/1000 rate for urban compared to a 109/1000 among the rural 15–19-year-old women.[6] Though the country has overally witnessed a downward trend in adolescent fertility rate since 2010, the World Bank acknowledged that the COVID-19 pandemic reversed the trend due to high reported cases of pregnancies, and marriages.[7] As such, the adolescent birth rate rose in 2023/4 to 111 births per 1000 adolescent women, showing a highest prevalence of adolescent pregnancy in Mashonaland Central province (37%) and lowest in Bulawayo province (13%).[5]

Pregnancy is a significant life event that drastically alters the trajectory of an adolescent's life.[8] A pregnancy during adolescence particularly when unintended, triggers a cascade of consequences that extend beyond physical health, affecting mental well-being, educational attainment, and economic prospects. Simultaneously, the systems designed to manage and mitigate these consequences, including healthcare, education, and social services, often fall short. The outcomes of adolescent pregnancy are therefore interlinked, creating a cycle of disadvantages that is difficult to escape. Adolescent mothers face significantly higher health risks compared to older women. Their bodies are often not physically ready for childbirth, leading to a higher risk of maternal mortality and morbidity, including obstetric complications such as obstructed labour, pre-eclampsia, and postpartum haemorrhage.[2,9] A particularly dire consequence is obstetric fistula, with the World Health Organisation (WHO) noting that up to 65% of fistula cases develop during adolescence, leading to severe long-term physical and social suffering.[10] For the infants, the risks are equally grave, with children born to adolescent mothers facing increased risks of poor health outcomes, including asphyxia, preterm delivery, low birth weight, and being small for gestational age.[9] Stillbirths and death in the first month of life are 50% higher among babies born to mothers younger than 20 years in low-and middle-income countries than among adults.[9] Furthermore, adolescent mothers are less likely to breastfeed, and their children are more likely to suffer from malnutrition and developmental problems.[11]

The mental health impact of adolescent pregnancy is profound. Adolescent mothers experience higher levels of stress, depression, and anxiety than their non-parenting peers.[12] This is fuelled by the shock of an unintended pregnancy, the dilemma of deciding who to tell and what to do, and the fear of upcoming responsibilities.[13] Pregnant adolescents often face negative feedback, rejection, and violence from family, peers, and partners. In Zambia, some studies reported pregnant adolescents being beaten by brothers and thrown out of homes as a disciplinary measure.[13] This stigma leads to social isolation, loss of freedoms, and low self-esteem. The stress of unplanned pregnancy and early parenting can contribute to poorer parenting outcomes, including lower maternal sensitivity and responsiveness.[12] In some cases, the immense pressure can lead to risky behaviours such as unsafe abortion or substance abuse.[13]

The management of adolescent pregnancy involves a range of systemic responses, which often face significant implementation challenges. The management of adolescent pregnancies within the health system involves antenatal care, safe delivery services, and post-partum family planning to prevent rapid repeat pregnancies. However, the system is often ill-equipped to respond to adolescent needs. Pregnant adolescents often initiate antenatal care later than older women; they often do not seek adequate medical care due to fear of stigma and discrimination within the healthcare system.[14] Health services are frequently not adolescent-friendly. Provider bias based on age and marital status, lack of privacy, and judgmental attitudes deter adolescents from seeking care.[15] A critical component of adolescent pregnancy management is providing contraceptives post-delivery to prevent a subsequent adolescent pregnancy, through various channels such as community based, and peer led. However, access remains limited due to the same barriers that existed before the pregnancy, often leading to quick repeat pregnancies. However, evidence on the effectiveness of community based and peer-led models in increasing contraceptive use and managing pregnancy consequences is mixed and often shows limited sustainability.[16,17] These

programs often struggle with community resistance and fail to provide the comprehensive, ongoing support adolescent mothers need, which includes childcare, counselling, and economic empowerment.[18]

Despite the high prevalence of adolescent pregnancies in Zimbabwe, existing research frequently prioritizes quantitative trends over the lived experiences of first-time adolescent mothers. A significant evidentiary gap remains regarding how these young women navigate pregnancy discovery, disclosure, and healthcare-seeking within a complex socio-ecological framework. Using a socio-ecological approach is vital to understand how individual choices and experiences are shaped or influenced by interpersonal relationships, community norms, and systemic barriers in healthcare. Understanding the trajectory of the first pregnancy is critical, as this index event fundamentally shapes future reproductive behaviour, mental health, and long-term engagement with health services. Without evidence-based insights into these first-time experiences, interventions risk missing key decision points necessary to prevent unsafe practices and rapid repeat adolescent pregnancies. Addressing this information gap is essential for developing tailored support systems that effectively mitigate the socio-economic challenges faced by adolescents. Ultimately, focusing on first-pregnancy experiences provides the necessary foundation for designing interventions that safeguard the health, rights, and future opportunities of young women in high-burden regions such as Mashonaland Central.

Methods

This paper is based on a secondary analysis of a sample of 309 female adolescents aged 10-19 years residing in Mashonaland Central province's five districts (Bindura, Mbire, Mt Darwin, Rushinga and Shamva) in Zimbabwe, who participated in the 2023 national adolescent pregnancy assessment study. The assessment was conducted in the top four high burden provinces (Mashonaland Central, Mashonaland West, Masvingo, and Matabeleland North) and two low burden provinces (Bulawayo and Harare). The sampling strategy employed a multi-stage, clustered approach. Health facilities offering antenatal services were randomly selected as primary sampling units within each district. Twenty-six Enumeration areas (EAs) within facility catchment areas were then randomly selected proportionate to size, from a list provided by the Zimbabwe National Statistics Agency (ZIMSTAT). Community Casecare Workers (CCWs) assisted in identifying eligible adolescent girls (10–19 years) for inclusion, categorised as10-14 and 15-19 years, using the EA maps and short screening survey. Its sample size was calculated to ensure precision, assuming a 22% adolescent pregnancy prevalence with 95% confidence intervals, and a relative standard error of 5. The total calculated sample size was distributed using Probability Proportional to Size (PPS) sampling, informed by the number of adolescents aged 10-19 years per district. The assessment collected data from the adolescents through a structured face to face interviewer administered through Computer-Assisted Personal Interviewing (CAPI). The weighted anonymised quantitative data we received on the 309 adolescent girls went through further rigorous editing and cleaning procedures to ensure accuracy, address missing data, and verify validity and consistency. The cleaned data were exported to SPSS version 26 for statistical analysis to identify factors linked to first pregnancies experiences. The analysis applied a socio-ecological approach by examining factors across multiple levels: individual (age, marital status, school attendance, religion, employment status, orphanhood, caregiver gender, pregnancy intention, emotional responses, and knowledge of pregnancy recognition), interpersonal (partner support, disclosure patterns, and reactions from peers), family (religion, parenthood, family support and gender of primary caregiver), community (social norms, and stigma), and organizational (health facility access, user fees, distance to care, Antenatal care, safe delivery and postnatal care service uptake, and post-partum contraception).

Descriptive statistics were calculated to provide a comprehensive summary of the sample's key characteristics. Bivariate analyses, including cross-tabulations with Chi-square tests for categorical variables and independent samples T-tests for continuous variables, were employed to assess the initial, unadjusted associations between each independent variable and pregnancy experiences. Following the bivariate analyses, multivariable binary logistic regression models were fitted to identify independent predictors for each outcome, adjusting for marital status, school enrolment, religion, primary caregiver sex, orphan status, and age. However, all six regression models failed to converge after the maximum 20 iterations.

Ethical considerations

This study received ethical approval by the Medical Research Council of Zimbabwe (MRCZ/A/3415)

on the 19th of February 2026, to conduct the secondary analysis of data collected under the 2023 National Adolescent Pregnancy Assessment (MRCZ/A/2932) on the 18th of July 2022. The authors secured formal permission and accessed an anonymized dataset from the Assessment Principal Investigator.

Results

Demographic and socio-economic characteristics of adolescents

The study sampled 309 female adolescents aged 10-19 years in Zimbabwe's Mashonaland Central Province, with a median age of 16 years and a majority (62%) being older adolescents (15-19 years). Table 1 shows that slightly over half (54%) were currently enrolled in school. The cited primary reasons for being out of school were the caregiver's inability to afford school fees (41%), marriage (26%), and pregnancy (11%). While most (67%) had never been married, a significant proportion (27%) were in cohabiting marriages, with partners' mean age being 24 years. Over half of the adolescents (54%) belonged to Apostolic sects whilst majority (96%) were unemployed.

The proportion of adolescents who ever had sexual intercourse (vaginal penetration) was 39% (61% of the 15 – 19-year-olds and 3% of the 10 – 14-year-olds), highest (67%) among non-religious, followed by the Christian Apostolics (42%) and Christian Pentecostal (27%). The median age of sexual debut was 16 years whilst the median age of first sexual partners was 21 years (range: 13–42). Out of school adolescents had the highest proportion (82%) who reported having ever had sexual intercourse as compared to those in school (3%). Those with male primary caregivers had a higher proportion (87%) of those who reported having ever had sexual intercourse than those with female primary caregivers (19%). Double orphans had the highest proportion (58%) of adolescents who reported having ever had sexual intercourse.

Prevalence and predictors of first pregnancies

The study established that 33% of respondents aged 15 -19 years had experienced at least one pregnancy, a figure which rises dramatically to 85% (82 % experienced 1 pregnancy, 16% experienced 2 pregnancies and 2% experienced 3 pregnancies) when considering only sexually active adolescents. A clear age stratification exists, with no pregnancies reported among 10-14-year-olds, contrasting sharply with 87% of sexually active 15-19-year-olds who had been pregnant ($p<0.001$), establishing age as a strong predictor of pregnancy. Educational status emerged as another crucial determinant, with only 20% of sexually active in-school adolescents reporting having been pregnant compared to 86% of their out-of-school counterparts ($p<0.001$). Marital status further differentiated pregnancy rates, with 93% of married adolescents reporting pregnancies versus 58% of single never-married respondents ($p<0.001$). Employment status approached statistical significance ($p=0.072$), with 87% of unemployed adolescents reporting pregnancy. Regarding pregnancy frequency, the largest proportion of ever-pregnant adolescents, (82%) had experienced one pregnancy, (16%) and (2%) reported experiencing two or three pregnancies, respectively. Most of the first pregnancies happened at primary level (47%), followed by upper Ordinary level (29%) and lower ordinary level (21%). Of the sexually active adolescents who became pregnant, Table 1 shows that 72% intended to get pregnant, especially among those in marriages. Intention to get pregnant was higher among adolescents with male primary caregivers (77%) compared to those with female caregivers (57%).

Marital status emerged as the most consistently associated predictor, showing significant relationships with desire for first pregnancy ($p = 0.011$). Among marital statuses (Single Never Married, Married staying with husband, Married but does not stay with husband, Divorced/separated, Widowed), being married and staying with husband, significantly predicted desiring the first pregnancy ($p=0.011$), feeling happy upon discovering pregnancy ($p=0.001$), receiving partner support ($p<0.001$), and partner accompaniment to antenatal care ($p=0.009$), while married but not staying with husband and divorced/separated predicted non-use of postpartum family planning ($p<0.001$). Regarding gender of primary caregiver (Male vs. Female), having a female primary caregiver significantly predicted feeling happy upon discovering pregnancy ($p=0.002$), receiving partner support ($p<0.001$), partner accompaniment to ANC ($p=0.023$), and uptake of postpartum family planning ($p=0.020$), whereas a male caregiver predicted negative emotional responses and lack of partner engagement. For school enrolment (No vs. Yes), being not enrolled significantly predicted ever attempting to terminate a pregnancy ($p<0.001$). Across religious affiliations (African Traditional Religion, Muslim, Christian-Protestant, Christian-

Table 1: Percentage distribution of demographic and socio-economic characteristics of respondents

Background Variable	Percentage (N=309)	Percentage ever had sexual intercourse. (N=309)	Percentage ever been pregnant among those ever engaged in sexual intercourse. (N=120)	Percentage who intended to get pregnant among first pregnancies. (N=102)
Age group (completed years)				
10-14	37.5	2.6*	0.0*	N/A
15-19	62.5	60.6*	87.2*	71.6
Marital status				
Never Married	67.0	9.2*	57.9*	45.5*
Married staying with husband	26.9	98.8*	92.7*	80.3*
Married but does not stay with husband	0.6	100.0*	100.0*	50.0*
Divorced/separated	5.5	100.0*	76.5*	46.2*
Widowed	0.0	N/A	N/A	N/A
Religion				
African Tradition	10.0	41.9	84.6	63.6
Muslim	1.6	0.0	0.0	0.0
Christian Protestant	13.3	26.8	90.9	90.0
Christian Pentecostal	14.2	27.3	91.7	63.6
Christian Apostolic	53.7	42.2	82.9	75.9
Other	0.3	0.0	0.0	0.0
No religion	6.8	66.7	85.7	50.0
School attendance				
Out of school	45.6	81.6*	87.8*	72.3
In school	54.4	3.0*	20.0*	0.0
Gender of primary caregiver				
Male	25.2	84.6*	92.4*	77.0
Female	70.6	18.8*	70.7*	58.6
No Caregiver	4.2	100.0*	92.3*	50.0
Parenthood status				
Non orphan	78.6	35.0	85.9	72.6
Maternal orphan	4.9	53.3	87.5	57.1
Paternal orphan	12.6	51.3	75.0	80.0
Double orphan	3.9	58.3	100.0	57.1
Employment status				
Full time employed	1.9	50.0	33.3	100.0
Part time employed	1.0	33.3	100.0	0.0
Informally employed	1.3	100.0	75.0	100.0
Unemployed	95.8	37.8	86.6	71.1
Total	**100.0**	**38.8**	**85.0**	**71.6**

***P<0.05**

Pentecostal, Christian-Apostolic, Other, no religion), Christian-Apostolic affiliation significantly predicted lower intention to return to school after delivery (p=0.039), while Christian-Protestant and Christian-Pentecostal affiliations predicted higher intention to return. Orphan status and age demonstrated no significant bivariate associations with any outcome.

Antenatal Care, Safe delivery, and Postnatal care for first adolescent pregnancies

Antenatal care (ANC) among first pregnancies

Table 3 shows that ANC service uptake among respondents was generally high at 82%. It shows that access was universal (100%) for adolescents who were single, married but not cohabiting, Christian protestant, Christian pentecostal, and those in school. In contrast, it shows notably lower uptake among adolescents with a paternal orphanhood status (67%) and those who were informally employed (67%). Though based on a small sample size, lowest reported ANC uptake was among those who were full-time employed. Antenatal care (ANC) utilization among pregnant adolescents was also shaped by a complex interplay of factors, with timing of initiation being a critical issue. Only 54% initiated ANC within the first trimester, while 20% and 16% presented at four and five months of gestation, respectively, indicating

Table 2: Percentage distribution of ANC, safe delivery, and PNC service uptake among first pregnancies

Category	Percentage who accessed ANC services among first pregnancies (N=102)	Percentage of first pregnancies delivered in a health facility (N=64) **	Percentage of first pregnancies accessed PNC services (N=64) **
Age group (completed years)			
15-19 years	82.4	87.5	92.2
Marital status			
Single/Never Married	100.0	100.0	85.7
Married staying with husband	78.9	85.1	91.5
Married but does not stay with husband	100.0	100.0	100.0
Divorced/Separated	84.6	88.9	100.0
Religion			
African traditional	81.8	77.8	88.9
Christian protestant	100.0	100.0	87.5
Christian pentecostal	100.0	83.3	100.0
Christian apostolic	77.6	85.3	91.2
Non-religion	75.0	100.0	100.0
School attendance			
Out of School	82.2	87.3	92.1
In School	100.0	100.0	100.0
Gender of primary caregiver			
Male Caregiver	80.3	86.8	92.1
Female Caregiver	89.7	84.2	89.5
Parenthood status			
Non orphan	83.6	86.7	88.9
Maternal orphan	100.0	100.0	100.0
Paternal orphan	66.7	77.8	100.0
Double orphan	85.7	100.0	100.0
Employment status			
Full time employed	0.0	0.0	0.0
Part time employed	100.0	0.0	100.0
Informally employed	66.7	100.0	100.0
Unemployed	83.5	88.5*	91.8
Total	**82.4**	**87.5**	**92.2**

**** For live births only; *P<0.05**

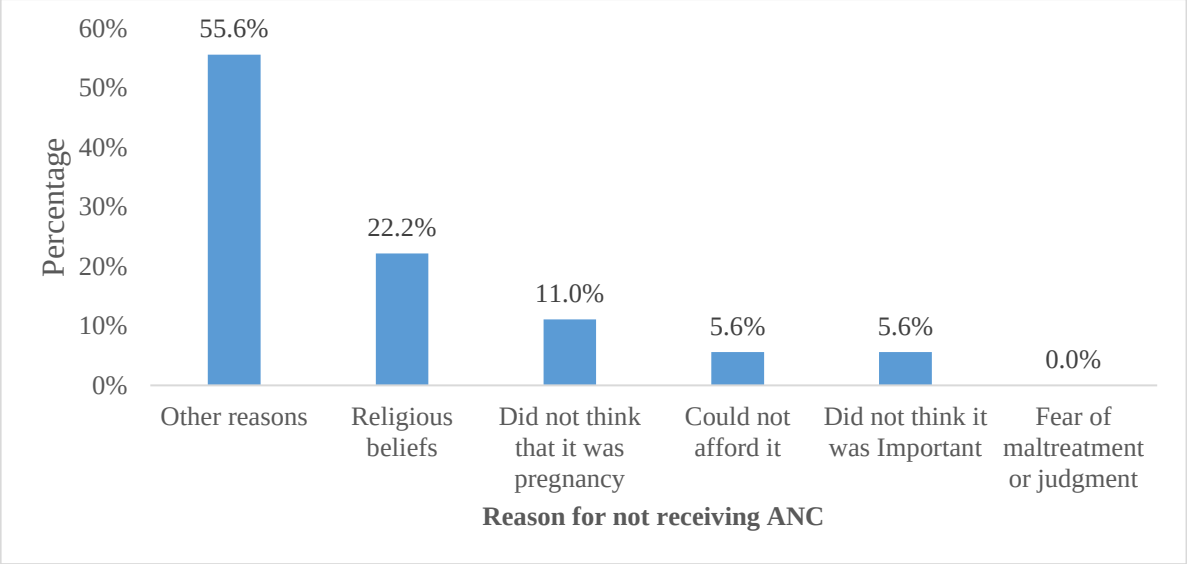


Figure 1: Percentage distribution of main reasons for not receiving antenatal care among adolescents (N=18)

significant delays in care-seeking. At the individual level, delayed recognition of pregnancy was a key barrier, as 11% of adolescents did not initially realize that they were pregnant, directly contributing to late booking, as shown in Figure 1. Partner involvement played a dual role; while 61% were accompanied to ANC at least once, the absence of such support for the remaining 39% likely exacerbated delays and reduced motivation to seek timely care. Family influences were particularly pronounced, with religious beliefs, often enforced within the household, cited by 22% as a primary reason for avoiding ANC altogether. Organizational and systemic factors further hindered access; financial barriers (6% could not afford user fees) and geographic inaccessibility limited early and consistent attendance.

Safe delivery among first pregnancies

The place of delivery and methods used for adolescent childbirth were strongly shaped by a combination of individual, cultural, and systemic factors. The study (Table 2) shows that the majority of adolescents (88%) delivered in clinics or hospitals, reflecting a successful institutional uptake, while 6% delivered at home, 3% en route to a facility and 3% with a faith healer. Table 3 shows universal health facility delivery (100%) for several groups, including single mothers, Christian protestants, adolescents in school, and double orphans. Conversely, it shows that delivery in a health facility was less common among adolescents of African traditional religion (78%) and paternal orphans (78%). Notably, no adolescents used traditional birth attendants. This high rate of health facility utilization was influenced by individual factors such as marital status. For example, all single, never-married adolescents delivered in clinics, likely due to heightened perceived vulnerability and lack of social support for alternative options. Community and family factors, including religious affiliation, also played a role: all Christian Protestants and non-religious adolescents delivered in health facilities, whereas deliveries with faith healers were tied to religious practices. The near-universal use of natural delivery methods (95%) versus caesarean sections (3%) suggests either low obstetric complications or limited access to surgical interventions. Organizational strengths such as the absence of reported fear of mistreatment by providers, likely encouraged facility-based deliveries.

Postnatal care (PNC) services among first pregnancies

Table 2 shows that PNC service uptake was the highest of the three main indicators (ANC, institutional/safe delivery and PNC) at 92%. It shows universal PNC (100%) for many groups, including divorced/separated mothers, Christian Pentecostals, the non-religious, adolescents in school, maternal orphans, paternal orphans, and double orphans. The study however established lowest PNC uptake was among Christian protestants (88%) and non-orphans (89%). Breastfeeding and postnatal care (PNC) practices among adolescent mothers were characterized by near-universal adoption but were influenced by community and organizational barriers that limited optimal engagement. At an individual level, breastfeeding initiation was universal (100%).

Reasons for not attending PNC were primarily rooted in family, community, and organizational factors. Religious beliefs were cited by 40% of those who skipped PNC checkups, while geographic inaccessibility was reported by 40% of the respondents. Additionally, a knowledge gap at the individual level persisted, as 20% were unaware of the importance of postnatal visits. For infant immunization, almost all (97%) of the adolescents who had a live birth attended immunization visits for their babies, whilst community-level religious beliefs again emerged as the sole barrier (100%) for the adolescent mothers who didn't take up immunizations.

The majority (89%) of adolescents who did not want another child in future or wanted to delay having another child were using a modern contraceptive method. However, future fertility intentions were sharply divided, with 57% of married adolescents planning to have more children compared to only 14% of single mothers ($p<0.001$), reflecting how marital expectations and social pressure influence reproductive goals. Despite this divergence in intentions, married adolescents demonstrated significantly higher contraceptive use (98%) compared to their single counterparts ($p<0.001$). No statistically significant differences in postpartum family planning were observed by age ($p > 0.05$), employment ($p>0.05$), or parenthood status ($p>0.05$). Repeat pregnancies were more common among out-of-school adolescents and non-religious adolescents.

Table 3: Percentage distribution of first pregnancy outcomes among respondents

Background variable	Percentage who had a live birth	Percentage who had a miscarriage	Percentage who had a still birth	Percentage still pregnant	Total
Age group (completed years)					
15-19 years	63.4	13.9	2.9	19.6	100.0
Marital status					
Single/Never Married	63.6	9.1	0.0	27.3	100.0
Married staying with husband	61.8	13.3	2.7	21.2	100.0
Married but does not stay with husband	50.0	0.0	0.0	50.0	100.0
Divorced/Separated	69.2	23.1	7.7	0.0	100.0
Religion					
African traditional	81.8	18.2	0.0	0.0	100.0
Christian protestant	80.0	10.0	0.0	10.0	100.0
Christian pentecostal	54.5	0.0	0.0	45.5	100.0
Christian apostolic	58.6	13.7	3.3	22.4	100.0
Non-religion	58.4	25.0	8.3	8.3	100.0
School attendance					
Out of School	62.4	13.8	3.0	19.8	100.0
In School	100.0	0.0	0.0	0.0	100.0
Gender of primary caregiver					
Male Caregiver	62.3	11.5	3.3	23.0	100.0
Female Caregiver	65.5	10.3	3.4	20.7	100.0
Parenthood status					
Non orphan	62.5	11.1	2.8	23.6	100.0
Maternal orphan	71.4	0.0	14.3	14.3	100.0
Paternal orphan	60.0	26.7	0.0	13.3	100.0
Double orphan	71.4	28.6	0.0	0.0	100.0
Employment status					
Full time employed	0.0	100.0	0.0	0.0	100.0
Part time employed	100.0	0.0	0.0	0.0	100.0
Informally employed	66.7	33.3	0.0	0.0	100.0
Unemployed	63.5	12.5	3.2	20.8	100.0
Total	**63.4**	**13.9**	**2.9**	**19.6**	100.0

N= 101 (1 didn't wish to answer); *P<0.05

First pregnancy outcomes

First pregnancy outcomes among adolescents were broadly categorized by live births (63%), miscarriages (14%), stillbirths (3%), and ongoing pregnancies (20%). The study established that among those who were no longer pregnant, 79% had live births, 17% had miscarriages, whilst 4% had still births from their first pregnancies. Twenty percent of the adolescents who were pregnant or had delivered a baby for the first time reported having had the following complications: post-partum haemorrhage (3%), vaginal fistula (1%), preterm birth (1%) and low birth weight (1%). Sadly, of those adolescents who reported having delivered a live baby at least once, 6% had already lost one child by the time of the study.

The study (Table 3) showed that live births were most prevalent among in-school adolescents (100%), part-time employed (100%), and followers of African Traditional Religion (82%). Lower live birth rates were observed among those married but not staying with their husbands (50%) and Christian Pentecostal (55%). Miscarriages accounted for 14% of outcomes overall. Higher miscarriage rates were notable among divorced/separated adolescents (23%), non-religious respondents (25%), paternal orphans (27%), double orphans (29%), and the informally employed (33%). The only subgroup with a 100% miscarriage rate was the full-time employed, though this is based on a very small cell size and should be interpreted cautiously. Stillbirths were relatively rare (3% overall) but showed concentration in vulnerable subgroups. The highest rates occurred among maternal orphans (14%) and divorced/separated adolescents (78%).

Psychosocial concerns around first pregnancies

Individual-level concerns were primarily defined by the adolescents' own intentions and emotional state. Table 4 show that their emotional response to the pregnancy was largely negative, with only 40% expressing happiness. This is despite that 72% intended to get pregnant thus showing that intentions to get pregnant were also driven by other external forces. The foremost personal worries were around not wanting to have a baby (49%) and the ensuing financial burden (14%), while concerns about their own or the child's health were notably minimal (9% and 5%, respectively). A significant knowledge gap was also evident, as 11% did not initially recognize they were pregnant, which led to delays in seeking care. At the interpersonal level, dynamics with partners and family were central. Notably, only 7% were worried about their partner's reaction, suggesting that partners were either supportive or peripheral to their immediate concerns. Peers also appeared to be a minor factor, with only 7% reporting being worried about their friends' reactions. Patterns of disclosure revealed that the baby's father (33%) and sexual partner (18%) were the most common first points of contact, followed by parents or guardians (17%), indicating that intimate partners were the primary, though not always consistent source of interpersonal engagement.

The study (Table 4) established that family-level factors played a critical and often stressful role. Worry about parents' or relatives' reactions was the second highest concern (40%). The gender of the primary caregiver influenced this dynamic. Adolescents with male caregivers were substantially more worried about these reactions (53%) than those with female caregivers (38%). While no one feared excommunication from their church, religious beliefs were a direct barrier to health access, cited by 22% as a reason for not receiving antenatal care. The fear of school suspension was a significant community-institutional concern for 23% of adolescents. After delivery, community stigma manifested, with 20% of young mothers reporting feelings of loneliness and isolation, underscoring the social consequences within their communities. Organizational and systemic-level factors presented barriers to care. Financial constraints prevented 6% from accessing antenatal care, while 40% cited the distance to a health facility as a barrier to postnatal checkups. A critical systemic failure was identified in service delivery, as 21% of adolescents were not even offered HIV/syphilis testing during pregnancy.

Table 4: Percentage distribution of reasons for worrying and sources of support for first pregnancies

Category	Percentage who cited
Reasons for worry (N=102)	
Didn't want to have a baby	48.8
Worried about my parents/ relative's reaction	39.5
Worried about being suspended at school	23.3
Worried about the financial burden	14.0
Worried about my health	9.3
Worried about my friends/classmates' reaction	7.0
Worried about my partner/boyfriend's reaction	7.0
Worried about the child's health	4.7
Worried about being excommunicated	0.0
Source of support (N=79)	
Husband/partner *(married)*	62.0
Father of baby *(not married)*	31.6
Parents/Guardians	30.4
Mother or father-in-law	26.6
Another non-relative	5.1
Aunt or uncle	5.1
Brother or sister-in-law	8.9
Grandparents	3.8
Brother or sister	2.5
Friend	2.5

Interestingly, the quality of service was not a deterrent, as fear of maltreatment or judgment by healthcare providers was cited by 0% of respondents, indicating that the main organizational barriers were related to access and equity, not the attitude of public health facility staff.

Support networks for first adolescent pregnancies

The disclosure of pregnancy and considerations of termination among adolescents were shaped by a complex interplay of individual, familial, interpersonal, community, and organizational factors. Table 2 shows that at the individual level, age and marital status were critical determinants. All (100%) adolescents who attempted termination were married, yet unemployed. Personal agency was limited, as only 27% of adolescents felt they had final say in major decisions like marriage, which extended to reproductive choices. Interpersonally, partners were both a source of support and stress; 33% of termination attempts were triggered by the partner's refusal to accept the pregnancy, yet partners were also the most common first confidants (33%). Family dynamics profoundly influenced disclosure patterns. Adolescents with male primary caregivers were more likely to disclose pregnancies largely for

fear of consequences of late disclosure, whereas double orphans and maternal orphans had the lowest disclosure rates (71%), highlighting their vulnerability and lack of a supportive family network. Though post-delivery of first pregnancies, 52% of the respondents had intentions to return to school, none was able to return due to varied reasons such as lack of finances, fear of being laughed at by other students, and challenges of balancing demands of marriage and taking care of the child. Organizational failures intensified these pressures: fear of school expulsion, a systemic policy issue drove 33% of termination attempts despite laws guaranteeing re-entry.

The sources of support for pregnant adolescents were overwhelmingly concentrated within the immediate interpersonal network, with partners and family forming the primary safety net, while institutional and community support remained minimal, as shown in Table 2. The most cited source of support was the husband or partner (62%), followed by the father of the baby (32%), underscoring the critical role of the male partner in providing emotional, financial, and social backing. Parents and guardians were the next significant source (30%), with in-laws (27%) also playing a notable role, highlighting the importance of the extended family in crisis management. However, support was starkly stratified by marital status. Married adolescents received substantial support from their partners and marital families, whereas single, never-married adolescents faced a severe support deficit, with 91% receiving no support from the baby's father. Beyond the family, support was scarce; friends were cited by only 3%, and other non-relatives by 5% as sources of support, indicating limited peer or community-based networks.

Perspectives around adolescent motherhood

The experiences and feelings of adolescent mothers were characterized by a profound duality of emotional connection and overwhelming strain, shaped by inadequate support systems and personal uncertainty. A significant majority of young mothers (77%) reported feeling very close to their babies, and 56% consistently perceived their infants as *"the most beautiful*", reflecting strong bonds and maternal affection. However, these positive feelings were often overshadowed by intense challenges: 70% felt trapped by parental responsibilities, 36% felt unable to pursue new opportunities, and 28% found it very difficult to cope in the first two weeks postpartum. Mental and social well-being was further eroded by loneliness (20% felt without friends) and relational strain, as 27% believed childbirth caused more problems in their relationships than expected. Self-perception as parents varied, with only 30% viewing themselves as "*good parents,"* while 37% saw themselves as average, and 17% acknowledged significant struggles in their parenting role. Critically, these experiences were exacerbated by fragmented support; only 38% always received post-delivery advice from family, and 3% never received any support. Despite these hardships, a resilient majority (80%) maintained long-term personal goals, highlighting a persistent sense of hope amid adversity.

Discussion

This study provides critical insights into the complex dynamics of first pregnancies among adolescents in Mashonaland Central, Zimbabwe, with findings both reinforcing and expanding upon existing literature. The high prevalence of adolescent pregnancy (33% overall, 85% among sexually active adolescents) aligns with regional and national data emphasizing sub-Saharan Africa's disproportionate burden.[1,19] The strong association between school attendance and reduced pregnancy risk ($p<0.001$) corroborates global evidence that education is a protective factor against adolescent pregnancy,[20] while the elevated prevalence among married adolescents (93%) underscores the role of early marriage as a driver of adolescent fertility in Zimbabwe.[5] On the other hand, early pregnancy often leads to early marriage in Zimbabwe.

The management of first pregnancies revealed significant gaps in antenatal care (ANC) engagement, with only 54% of adolescents initiating care in the first trimester (3 months), as recommended by the World Health Organisation. This delay, often due to delayed pregnancy recognition and financial constraints, echoes Kaufman et al. (2001)[14] and Solo and Festin (2019)[21] who noted that adolescents frequently seek care later than older women. Religious barriers to ANC (22%), coupled with geographic inaccessibility, further limited care-seeking, resonating with studies highlighting how cultural and structural factors hinder health service utilization.[18] Nevertheless, the high rate of facility-based deliveries (88%) and universal breastfeeding (100%) demonstrate the potential for positive health engagement when services are accessible and culturally accepted. The study, however, didn't establish any reported fear of mistreatment by healthcare providers, demonstrating that a lot of

investments have been put towards addressing negative attitudes of healthcare providers.

Pregnancy outcomes, including live births (63%), miscarriages (14%), and stillbirths (3%), reflect the elevated biological risks associated with adolescent pregnancy, as noted by WHO (2023)[2] and UNFPA (2023).[9] Adverse outcomes were linked to delayed ANC and limited support systems, reinforcing the literature on the cascading consequences of adolescent pregnancies on maternal and child health (Chandra et al., 2005).[11] The psychosocial experiences of adolescent mothers, characterized by strong emotional bonds, but also overwhelming stress and isolation, align with global findings on the mental health challenges faced by young mothers (Corcoran, 2016[22], Bodeeb J, 2018[13]). The lack of institutional support, with reliance primarily on partners and family, echoes Campbell et al. (2014)'s[18] observation that community-based interventions often fail to provide comprehensive support.

Postpartum family planning was influenced significantly by marital status, with married adolescents exhibiting higher contraceptive use (98%) but also greater desire for future pregnancies. This reflects the broader socio-cultural norms that shape reproductive decision-making in Zimbabwe. The limited role of formal institutions in providing support underscores the need for multi-sectoral approaches, as called for by Chandra-Mouli *et al*.[16] and Denno *et al*.[17]

This study underscores how specific socio-demographic categories distinctly shape the first adolescent pregnancy experiences, moving beyond aggregate analyses of risk. The divergent outcomes by marital status are particularly instructive. While married, cohabiting adolescents exhibited higher rates of intended pregnancy and partner support (80% intended pregnancy among married staying with husband), they also demonstrated lower postpartum family planning uptake, suggesting that marital stability, rather than merely marital status, drives reproductive autonomy. This aligns with various studies which have identified early marriage as a primary driver of adolescent fertility. Regarding the primary caregiver's gender, the significantly better outcomes among adolescents with female caregivers, including feeling happy about discovering pregnancy ($p=0.002$), receiving partner support ($p<0.001$), and adopting postpartum contraception ($p=0.020$), highlight the critical protective role of maternal figures. Conversely, male caregiver status predicted negative emotional responses and lack of partner engagement, indicating that adolescent girls may lack the intermediary support needed to negotiate reproductive health decisions, a finding consistent with Bodeeb (2018),[13] who reported that pregnant adolescents often face rejection and violence from family members. The complete absence of school re-entry, despite existing policies guaranteeing return, coupled with the finding that Christian-Apostolic affiliation predicted lower intention to return to school ($p=0.039$), reveals how religious doctrine and systemic implementation failures intersect to perpetuate educational exclusion. Campbell et al. (2014)[18] similarly documented how community and religious resistance undermines support interventions for adolescent mothers. Furthermore, the finding that being out-of-school significantly predicted attempted pregnancy termination ($p<0.001$) suggests that adolescents who have already disengaged from education may perceive termination as their only viable option to avoid compounding social and economic marginalization. This resonates with global evidence from UNFPA (2022, 2023)[1,9] that educational disruption perpetuates cycles of early and unintended pregnancy. These nuanced, category-specific patterns demonstrate that effective interventions cannot be generic; they must be tailored to address the distinct barriers faced by married adolescents, those with male caregivers, specific religious groups, and out-of-school youth.

Implications for policy and practice

Encouragingly, facility delivery (88%) and PNC uptake (92%) were high, yet the fertility cycle persists. Notably, majority (72%) of first pregnancies were intended, but driven by marriage and social pressure, not genuine desire (49% did not want a baby). Religion blocked ANC access for 22% and shaped community stigma. Family and partner support was critical yet uneven, with married adolescents receiving strong backing, but single mothers faced severe support deficits, limiting their postpartum family planning access. Therefore, improving clinical service uptake alone is insufficient without addressing these social and relational drivers. As such, this study has demonstrated an urgent need to translate existing laws into action. While educational re-entry policies exist, their zero-percent implementation demands immediate enforcement through school monitoring committees and removal of stigma-based barriers. Furthermore, the reliance on partner support and absence of institutional safety nets necessitates establishing adolescent-friendly, confidential support hubs within health facilities and communities. Crucially, policymakers must subsidise user fees for antenatal and postnatal care

and collaborate with Apostolic church leaders to negotiate health-permissive doctrines, directly addressing the financial and religious barriers driving delayed care and adverse outcomes.

Strengths and limitations

This study has several strengths. The rigorous multi-stage, clustered probability sampling enhances provincial representativeness. The socio-ecological approach offers a novel, multi-level analysis of first adolescent pregnancies, capturing individual, interpersonal, family, community, and organisational factors rarely examined together. By focusing specifically on first pregnancies, the study provides critical evidence for targeted interventions at the point of initial health system contact, addressing a significant evidence gap in high-burden settings. The cross-sectional design precludes causal inference and recall bias may affect retrospective reports on sensitive topics. Findings are limited to Mashonaland Central Province, limiting generalisability to lower-burden or urban settings. Various (6) multivariable binary logistic regression models failed to converge, likely due to sparse data, small sample sizes, or perfect prediction, thereby preventing reliable identification of independent predictors for the outcomes. Similarly, sample size for adolescents without a primary caregiver was too small to detect statistically significant associations, even if they existed clinically. Individual and family income data were unavailable, constraining economic analysis.

Conclusion

This study reveals a 33% adolescent pregnancy prevalence in Mashonaland Central, Zimbabwe, shaped by individual, interpersonal, familial, community, and organizational factors. Antenatal care initiation was suboptimal, hindered by delayed first pregnancy recognition, financial constraints, and religious doctrines. Facility-based deliveries and universal breastfeeding were positive, yet postnatal care faced geographic and religious barriers. Pregnancy outcomes included live births, miscarriages, and stillbirths. Married and cohabiting adolescents experienced intended pregnancies and partner support, whilst female caregivers predicted positive outcomes and out-of-school status predicted termination intentions. Critically, most first pregnancies occurred at primary education level with zero school re-entry post-delivery, underscoring how education disruption perpetuates adolescent pregnancy cycles. Christian-Apostolic affiliation predicted lower school re-entry intention, post-delivery. No formal institutional support was reported, leaving those without strong family ties isolated. User fees remained a barrier, though provider attitudes were not, indicating policy and infrastructural reforms are needed.

Recommendations

Based on the findings, a multi-level, integrated intervention strategy/model is essential to mitigate the high prevalence and adverse outcomes of first pregnancies in Mashonaland Central Province. Healthcare systems require significant strengthening to become more adolescent-responsive. This includes implementing community-based outreach and mobile clinics to overcome financial barriers to antenatal care, ensuring timely ANC bookings. Health facilities need to provide comprehensive, adolescent/youth-friendly services that include psychosocial support, dedicated counselling for pregnancy decision-making, and guaranteed access to postpartum family planning. Policies and institutional arrangements that remove user fees need to be enforced, for effective adolescent pregnancy prevention and management. Educational policies need to be reformed to attract and explicitly support pregnant learners and young mothers, guaranteeing their right to remain in school through flexible attendance, childcare support post-delivery, and protection from stigma. Targeted economic empowerment and social support programmes are also needed, particularly for single and out-of-school adolescents, to alleviate the financial burdens and profound isolation that exacerbate poor mental health and limit future opportunities. Furthermore, strategic behaviour change communication and peer support models are critical. Finally, sustained community engagement (including religious institutions/leaders) is also essential to transform harmful norms. This involves collaborating with religious and traditional leaders to address doctrinal barriers to healthcare and reduce the stigma that silences adolescents and isolates young mothers, fostering a more supportive environment.

Data availability

The data analysed in this study were obtained from the Primary Study Principal Investigator in an anonymized format. Restrictions apply to the availability of these data, which were used under the ethical approval for the current study, and so are

not publicly available. Data are, however, available from the authors upon reasonable request and with permission of the Primary Study Principal Investigator.

Disclosure statement

The authors declare there is no conflicts of interest.

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Authors' contributions

AM and MM conceptualized and designed the study. AM obtained formal permission for dataset access, conducted data cleaning, data analysis and wrote the initial manuscript. SM, JM, and MM critically read and revised the manuscript. All authors have read and approved the final manuscript for submission and AM is the corresponding author.

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