



**Sexual, Reproductive Health
and HIV prevalence among
Recently Pregnant Women aged
15 – 49 years in South Africa:
A Focus on Adolescent Girls and Young
women, and HIV-related risk behaviours**



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List of acronyms and abbreviations

AGYW	Adolescent Girls and Young Women
ANC	Antenatal Care
ART	Antiretroviral Treatment
DBS	Dried Blood Spot
DRMs	Drug resistant Mutations
EIA	Enzyme Immunoassays
HSRC	Human Sciences Research Council
IPV	Intimate Partner Violence
MTCT	Mother-to-Child Transmission
PMTCT	Prevention of Mother to Child Transmission
SALS	Small Area Layers
SAMRC	South African Medical Research Council
SRH	Sexual and Reproductive Health
Stats SA	SA Statistics South Africa
STIs	Sexually Transmitted Infections
UNFPA	United Nations Population Fund
VP	Visiting Points

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ABSTRACT

Introduction

Adolescent girls worldwide begin to navigate their sexual and reproductive health (SRH) at the onset of puberty. In South Africa, increasing pregnancies and births have recently been reported among girls aged 10 – 19 years. Thus, childbearing for these young girls begins at an early age. Evidence suggests a decline in HIV incidence among women of reproductive age (15 – 49 years) – however, the risk of acquiring HIV through sex with a male partner living with HIV increases during pregnancy.

Methods

This study aimed to investigate sexual and reproductive health-related factors, HIV prevalence, and risk behaviours among recently pregnant women aged 15 – 49 years in South Africa. We used data from the South African National HIV Prevalence, Incidence, Behaviour, and Communication Surveys, focusing on the 2017 survey wave. We then conducted secondary data analyses.

Results

The majority of recently pregnant women, that is, women who were pregnant within the 24 months preceding the survey or were pregnant at the time of the survey, did not have medical aid and used public health facilities. The HIV prevalence among recently pregnant women aged 15 – 49 was 27.0% (95% CI 24.0 – 30.2) in 2017, translating to 521 383 (95% CI 448 962 – 593 805) women. The HIV prevalence among recently pregnant adolescent girls and young women (AGYW) aged 15 – 24 years increased over time and was 19.2% (95% CI 15.3 – 23.9) in 2017, translating to 109 543 (95% CI 78 556 – 140 529). Most recently pregnant women had attained secondary school level of education, were unemployed, had no income, and relied on government pensions/grants. The HIV prevalence was higher among women with these demographics. Consistent with findings in the general population about key social determinants of HIV, HIV prevalence was higher among recently pregnant AGYW who reported having multiple sexual partners, age-disparate sexual relationships, inconsistent condom use, and lack of condom use. Regarding the 90-90-90 targets, there were estimated gaps in achieving the second 90 (diagnosed and on ART) among recently pregnant AGYW aged 15 – 24 years.

Conclusion

Given these findings, strategies to support the detection and prevention of HIV among pregnant women in South Africa – particularly among AGYW – should include a multi-pronged approach within the SRH space and beyond. We recommend sustained efforts to promote school completion and higher education attainment for AGYW, job creation initiatives, and social support for young mothers.



1 INTRODUCTION

High HIV prevalence and incidence remain one of South Africa's most significant health challenges (Karim et al., 2009), especially among youth (Simbayi et al., 2019) and females of reproductive age (UNAIDS, 2020). In 2021, the HIV prevalence in South Africa was estimated at 24.5% (20.8 – 27.7¹) among women aged 15 – 49 years and 9.1% (3.8 – 13.5¹) among young women (UNAIDS, 2022). It is estimated that approximately 7.5 million people (7 million – 8.2 million¹) were living with HIV in South Africa (UNAIDS, 2022), and among them, 180 000 people were aged between 15 – 19 years of age (UNICEF, 2022).

The risk of acquiring HIV through sex with a male partner living with HIV increases during pregnancy (Graybill et al., 2020), elevating the risk of forward transmission to the child (Drake et al., 2014). Estimates of HIV incidence among pregnant women and women of reproductive age in South Africa suggest they are disproportionately affected. The HIV incidence per 1 000 population among women aged 15 – 49 years was reported to be 13.59 (12.24 – 15.04¹) in 2017 and 9.83 (8.81 – 10.81¹) in 2021 (UNAIDS, 2023). A national study found the HIV incidence among pregnant women aged 15 – 49 years attending public facilities in 2017 to be 1.5 cases per 100 person-years or 1.5% (95% CI 1.2 – 1.7) (Woldensebat et al., 2021). Although these estimates suggest a decline in HIV incidence among pregnant women (Woldensebat et al., 2021), they did not meet the UNAIDS targets of an annual incidence reduction of 75% or less than half a million infections by 2020 (UNAIDS, 2020a). Furthermore, these estimates of newly acquired HIV cases are higher than the estimated national HIV incidence of 0.93% (95% CI 0.71 – 1.11) per year for females aged 15 – 19 years (Simbayi et al., 2019), as well as for adolescents aged 15 – 19 years at 0.82 (95% CI: 0.74 – 0.90) in 2017 (Zungu et al., 2021). Late presentation, entry into antenatal care (ANC), and late initiation of antiretroviral treatment (ART), contribute to a lack of viral suppression among pregnant women (Woldensebat et al., 2020).

South Africa has been committed to eliminating mother-to-child transmission (MTCT) of HIV since 2015, when the country introduced policies that give lifelong ART to all pregnant women living with HIV (UNAIDS, 2020b). Consequently, South Africa made significant progress in mitigating vertical transmission by preventing MTCT (PMTCT). In 2021, it was estimated that over one million pregnant women who presented at ANC had tested for HIV and knew their HIV status, and a total of 278 000 pregnant women living with HIV received ART for PMTCT in South Africa (UNICEF, 2022). However, the rate of MTCT in South Africa was estimated at 5.2% in 2015 and 3.9% in 2020, with about

1 Lower and upper bounds

half of the infants acquiring HIV within the first six weeks after birth (UNAIDS, 2020b). This suggests that there are still unmet needs for PMTCT. Other unmet sexual and reproductive health (SRH) needs, extend to lack of appropriate services for contraception and planned pregnancy together with health system challenges (Reynolds et al., 2008; Woldensebat et al., 2020).

Recent statistics show that the number of deliveries to teenage mothers across South Africa has increased (Barron et al., 2022). Many teenage mothers are at high risk of HIV acquisition and MTCT due to a combination of biological, structural, and behavioural factors (Mgwaba & Maharaj, 2018; Mabaso et al., 2021; Zungu et al., 2021; Naidoo et al., 2022). Efforts are being made to investigate appropriate interventions to mitigate the transmission of HIV infection, including prevention and timeous detection among pregnant adolescent girls and young women (AGYW). Such efforts include promoting the integration of SRH services in primary healthcare and policies aimed at enhancing the health and well-being of the general population, particularly for AGYW (Hope et al., 2014). Integrated SRH services entail HIV diagnosis and treatment coverage, safe abortions, and provision of family planning services to improve SRH outcomes (Cooper et al., 2016).

The COVID-19 pandemic exposed the fractures of the South African healthcare system, redirected health resources, and reduced access to SRH services for many people. This was evidenced by a reported increase in 'unplanned' and 'unwanted' pregnancies, especially among teenagers (Kumar et al., 2020). Moreover, there was a decline in access to contraceptives (Kumar et al., 2020) as well as screening and testing for sexually transmitted infections (STIs) (Simbayi et al., 2021).

South Africa committed to achieving the Joint United Nations Programme on HIV/AIDS (UNAIDS) care cascade or 90-90-90 targets by 2020 (90% of all people living with HIV know their HIV status, 90% of all people with diagnosed HIV receive ART, and 90% of all people receiving treatment have viral load suppression (VLS)) (UNAIDS, 2014). Estimates for adolescents aged 10 – 19 years found that 62.3% (95% CI 54.7 – 69.2) knew their HIV status (first 90), while 65.4% (95% CI 54.3 – 75.0) were on ART (second 90) and 78.1% (95% CI 69.0–85.1) on ART were virally suppressed (third 90) (Naidoo et al., 2022). These gaps suggest that unless South Africa ensures that AGYW at risk of HIV exposure can access effective HIV prevention interventions during their pregnancy, the country will have difficulty in achieving the UNAIDS 95-95-95 targets (UNAIDS, 2015, Frescura et al., 2022).

Elucidating the challenges pertaining to SRH and HIV-related risk behaviours among pregnant women and AGYW, in particular, is essential to inform policy for detecting and preventing HIV among AGYW in South Africa (Mathe & Maselesele, 2020). In 2021, the Human Sciences Research Council (HSRC) was commissioned by the United Nations Population Fund (UNFPA) to undertake secondary data analyses of HIV prevalence among pregnant women to support the detection and prevention of HIV among pregnant women in South Africa. Data from the South African National HIV Prevalence, Incidence,

Behaviour and Communication Surveys (SABSSM) conducted by the HSRC in 2017 were used to describe SRH-related challenges, HIV prevalence, progress in achieving the HIV care cascade targets, and HIV-related risky behaviours among recently pregnant women aged 15 – 24 years and 25 – 49 years.

Aims and objectives of the study

The study aimed to investigate SRH factors, HIV prevalence and risky behaviours among recently pregnant women aged 15 – 49 years in South Africa.

Specific objectives were as follows:

1. To describe the demographic characteristics of women who self-reported as recently pregnant during the 2017 survey.
2. To describe the ANC-seeking behaviour, HIV prevalence, HIV testing, HIV-related risky behaviours and general health of women who self-reported they were currently or recently pregnant during the 2017 survey.
3. To describe the HIV prevalence among women who self-reported they were pregnant over time from the 2005, 2008 and 2017 surveys².
4. To describe the UNAIDS cascade and quantify HIV drug resistance among recently pregnant women.

² In the 2012 SABSSM survey, the questions about pregnancy history of women were not representative of recent pregnancies. Hence, we excluded this year from the analyses.



2 METHODS

2.1 Survey design and sample

The data used were the 2017 population-based household survey, which were collected using a cross-sectional multi-stage stratified cluster design as outlined in the study report (Simbayi et al., 2019). Briefly, the survey used the 2015 national sampling frame provided by Statistics South Africa (Stats SA). The sampling frame consisted of 84 907 small area layers (SALs), from which 1 000 SALs were selected. After that, 15 visiting points (VP) were selected per SAL using systematic sampling. In each selected VP, household members of all ages were invited to participate. Blood samples were collected for laboratory-confirmed HIV testing. Field data collection occurred between December 2016 and February 2018.

The 2017 survey used four questionnaires: the household questionnaire; the questionnaire for parents and guardians of children aged 0 – 11 years; the questionnaire for children aged 12 – 14 years; and the questionnaire for people aged ≥ 15 years.

For the secondary analyses, we focused on questions relating to sexual health and HIV-related behaviours from the questionnaire for people aged ≥ 15 years. A detailed review of the skip patterns and filters in the questionnaire was conducted to characterise the female participants eligible to answer specific questions on pregnancy, ANC and HIV testing. The sub-sample used in these analyses consisted of recently pregnant females, defined as females who 1) reported that they were sexually active during the 12 months preceding the survey; 2) were aged 15 – 49 years; and 3) self-reported being pregnant during the preceding 24 months or were pregnant at the time of the survey. Questions on ANC seeking and HIV testing during ANC were only asked to participants who reported they were currently pregnant.

Data were stratified by five-year age groups (15 – 19, 20 – 24, 25 – 29, 30 – 34, 35 – 39, 40 – 44 and 45 – 49 years) and for comparison purposes, by two age groups among the recently pregnant women namely AGYW aged 15 – 24 years and women aged 25 – 49 years.

2.2 HIV measures and testing

The finger prick method was used to collect dried blood spot (DBS) samples. The following three accredited laboratories conducted the laboratory tests: the Global Clinical and Viral Laboratories, the National Institute for Communicable Diseases and the University of Cape Town Pharmacology Laboratory. The DBS samples were tested for HIV antibodies using two fourth-generation HIV-1 enzyme immunoassays (EIAs). All samples that tested positive on both assays were subjected to a nucleic

acid amplification test for final confirmation. Viral load was determined in all samples with confirmed HIV seropositivity using the Abbott platform (Abbott m2 000 HIV Real-Time System, Abbott Molecular Inc., Des Plaines, IL, USA). Samples with a viral load of <1 000 copies HIV RNA/mL were defined as virally suppressed. Testing for exposure to ART was conducted among the laboratory-confirmed HIV-positive samples using high-performance liquid chromatography coupled with tandem mass spectrometry-based on an in-house validated laboratory method. The samples were tested for nevirapine, efavirenz, atazanavir, darunavir, and lopinavir, which were the main antiretroviral drugs (ARVs) that were used in first-, second-, and third-line ART regimens in the public sector in South Africa at the time of the survey in 2017. Samples that tested positive for one or more drugs in the testing panel were considered ARV positive. HIV drug resistance testing was conducted by next-generation sequencing on HIV-positive samples that were virally unsuppressed (viral load of $\geq 1\ 000$ copies/mL)

2.3 Ethical considerations

All survey protocols were approved by the HSRC Research Ethics Committee as follows: approval for the 2005 survey (REC 5/24/06/04); approval for the 2008 survey (REC 2/23/10/07); approval for the 2012 survey (REC 5/17/11/10) and approval for the 2017 survey (REC 4/18/11/15). This report uses anonymised existing data from these datasets, curated by the HSRC's data research repository at the following link: <http://curation.hsrc.ac.za/Datasets-PFAJLA.phtml>. Permission to access and analyse these secondary data was granted by the HSRC.

2.4 Analyses

All analyses used Stata version 15.0 (StataCorp, 2017, Stata Statistical Software, StataCorp). Sample weights were applied in the analyses to adjust for the complex survey design. Weighted descriptive statistics using Chi-square tests were conducted to test for significant differences by socio-demographic and socioeconomic variables, ANC-seeking behaviour during pregnancy, HIV testing, HIV serostatus (positive/negative), and related self-reported sexual risk behaviours (age at sexual debut, condom use, age mixing/age-disparate sexual relationships and multiple sexual partnerships). Multivariate logistic regression models were developed using the recently pregnant women's HIV status as the outcome, and the results were presented as coefficient plots for the 15 – 24-year-old and 25 – 49-year-old recently pregnant women, respectively. Adjusted odds ratios (aORs) with 95% confidence intervals (CIs) and p-values of less than 0.05 are presented for statistically significant associations. Count limits were set to ensure validity and reliability for comparison. In the SABSSM 2012 National Population-based Household Survey on HIV, women were asked about the number of pregnancies since 2006, which was not representative of recent pregnancies. Hence, we did not include it in the analyses of HIV prevalence over time among the target group of recently pregnant women.



3 RESULTS

3.1 Sample description

Just over one-fifth (22.8%, 95% CI 21.4 – 24.2) of 9 250 females aged 15 – 49 years self-reported a recent pregnancy at the time of the survey. A similar proportion (20.5%, 95% CI 19.2 – 21.8) of women aged 15 – 49 years indicated they were pregnant in the past 24 months, whilst 4.2% (95% CI 3.6 – 4.9) were currently pregnant at the time of the 2017 survey.

Table 1 shows the socio-demographic characteristics of females aged 15 – 49 years who self-reported being recently pregnant. Nearly 30% of the participants were aged 25 to 29 years, while 6.4% were aged 15 – 19 years. Most participants were Black African (85.4%), and 8% were Coloured. Over 60% of women resided in urban areas, and 67% were unemployed. Most participants had either completed secondary school (41.4%), or had some secondary school education (39.8%). Most respondents (68.0%) were single or never married, and about half (50%) had no income. Most (85.8%) women reported not being covered by a medical aid or medical benefit scheme.

Table 1 *Socio-demographic characteristics of women aged 15 – 49 years who self-reported that they were recently pregnant, South Africa 2017*

Characteristics	15 – 49-year-old recently pregnant women		
	Column %	95% CI	<i>n</i>
Age group (years)			
15 – 19	6.4	[5.1 – 7.9]	192
20 – 24	22.3	[19.9 – 24.8]	550
25 – 29	29.4	[26.5 – 32.4]	573
30 – 34	22.8	[20.2 – 25.6]	417
35 – 49	19.2	[16.7 – 22.0]	388
Population group			
Black African	85.4	[82.6 – 87.8]	1 790
White	4.7	[3.2 – 6.9]	55
Coloured	8.0	[6.5 – 9.9]	224
Indian/Asian	1.9	[1.0 – 3.5]	51

Characteristics	15 – 49-year-old recently pregnant women		
	Column %	95% CI	<i>n</i>
Locality type			
Urban	64.5	[60.2 – 68.6]	1 115
Rural informal (tribal areas)	31.1	[27.2 – 35.3]	812
Rural (farms)	4.4	[3.2 – 6.0]	193
Employment status			
Unemployed	67.4	[63.9 – 70.7]	1 477
Employed	26.1	[23.3 – 29.1]	481
Student/learner	6.5	[5.1 – 8.3]	144
Highest education level			
No formal schooling	2.5	[1.8 – 3.6]	68
Primary school	5.8	[4.5 – 7.4]	156
Some secondary school	39.8	[36.7 – 43.0]	860
Completed secondary school	41.4	[38.2 – 44.7]	868
Tertiary education	10.4	[8.3 – 13.0]	162
Marital status			
Married	30.9	[27.9 – 34.1]	548
Never married	68.0	[64.7 – 71.1]	1 552
Divorced/widowed	1.1	[0.6 – 2.0]	20
Main income source in the past month			
No income	50.0	[46.8 – 53.3]	1 110
Salary/earnings	24.5	[21.6 – 27.6]	448
Contributions by family members/relatives	4.6	[3.2 – 6.6]	84
Government pensions/grants	9.2	[7.6 – 11.1]	241
Grants/donations by private welfare organisations	7.9	[6.2 – 10.0]	165
Other sources	3.8	[2.7 – 5.3]	71
Covered by Medical Aid or Medical Benefit Scheme			
Yes	14.2	[11.8 – 17.1]	233
No	85.8	[82.9 – 88.2]	1 882

Figure 1 illustrates the proportion of recently pregnant women aged 15 – 49 years by province. The majority were from Gauteng (27.0%), followed by KwaZulu-Natal (17.1%) and Limpopo provinces (13.0%). Northern Cape had the least recently pregnant women (1.6%).

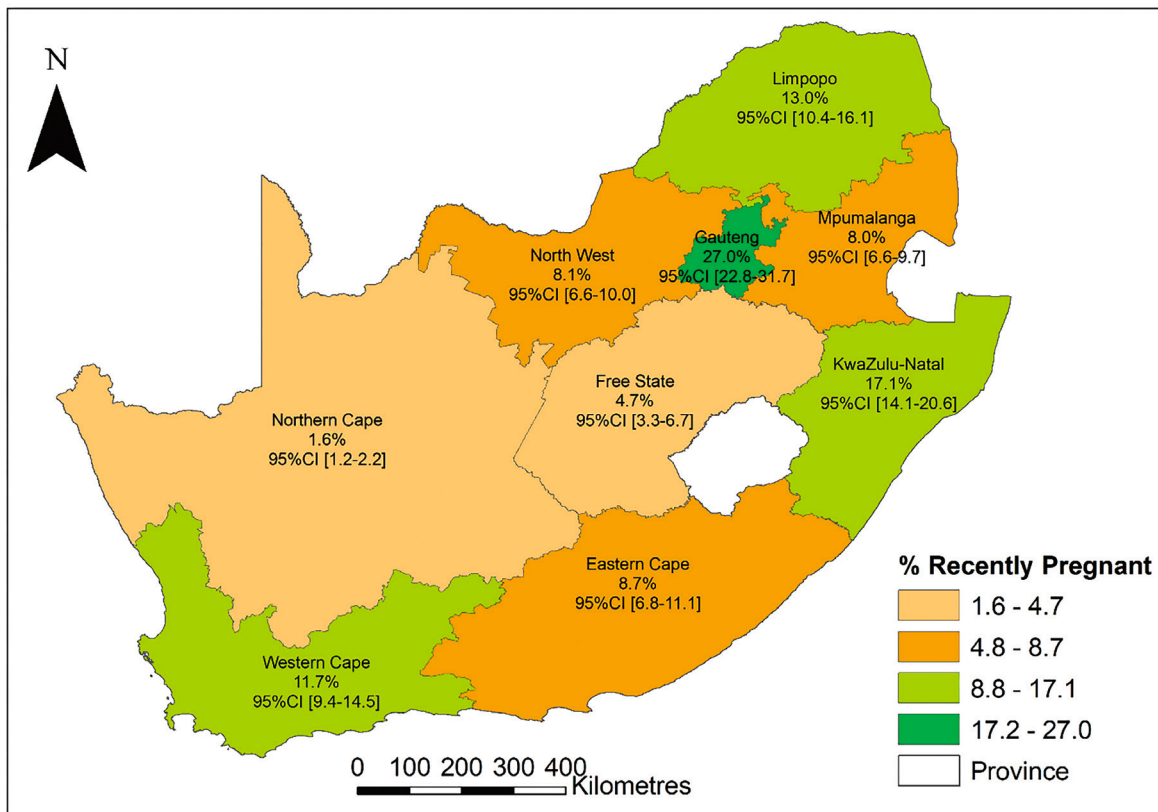


Figure 1 Map showing recently pregnant women aged 15 – 49 years by province, South Africa 2017

Figure 2 shows self-reported medical aid coverage among recently pregnant women by age group. Medical aid coverage significantly increased with increasing age from age ≥ 25 years onwards ($p < 0.001$). Recently pregnant young women aged 20 – 24 years had the lowest proportion of medical aid coverage (3.8%, 95% CI 2.2 – 6.6), followed by adolescents aged 15 – 19 years (7.2%, 95% CI 3.0 – 16.2).

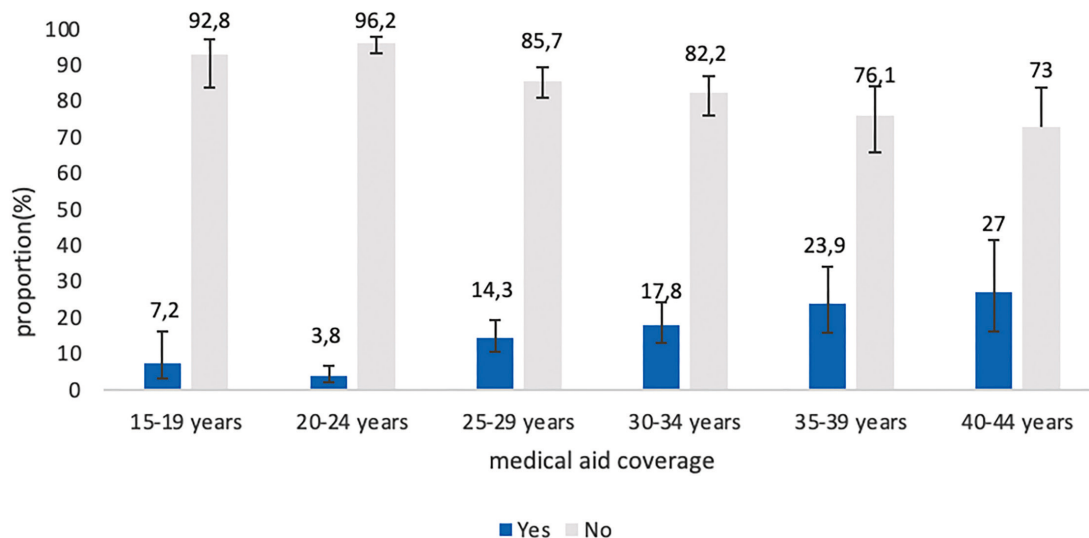


Figure 2 Medical aid coverage among recently pregnant women, South Africa 2017

The following section describes the demographics, sexual risk behaviours and HIV testing behaviours stratified by age among recently pregnant women.

3.2 Demographic characteristics of self-reported recently pregnant women, South Africa 2017

Recently pregnant women by age group and race

Figure 3 shows the population group among recently pregnant women by age group. The proportions of Black African women among recently pregnant women by age group varied from 82.7% among 25 – 29-year-olds to 89.9% among 20 – 24-year-olds. A tenth (10% 95% CI 7.1 – 13.8) of recently pregnant women aged 30 – 34 years were Coloured, and 8.8% (7.9%, 95% CI 5.6 – 10.9) of recently pregnant women aged 20 – 24 years were Coloured.

In the following analyses, the population group is reported for two categories: Black African and other race groups.

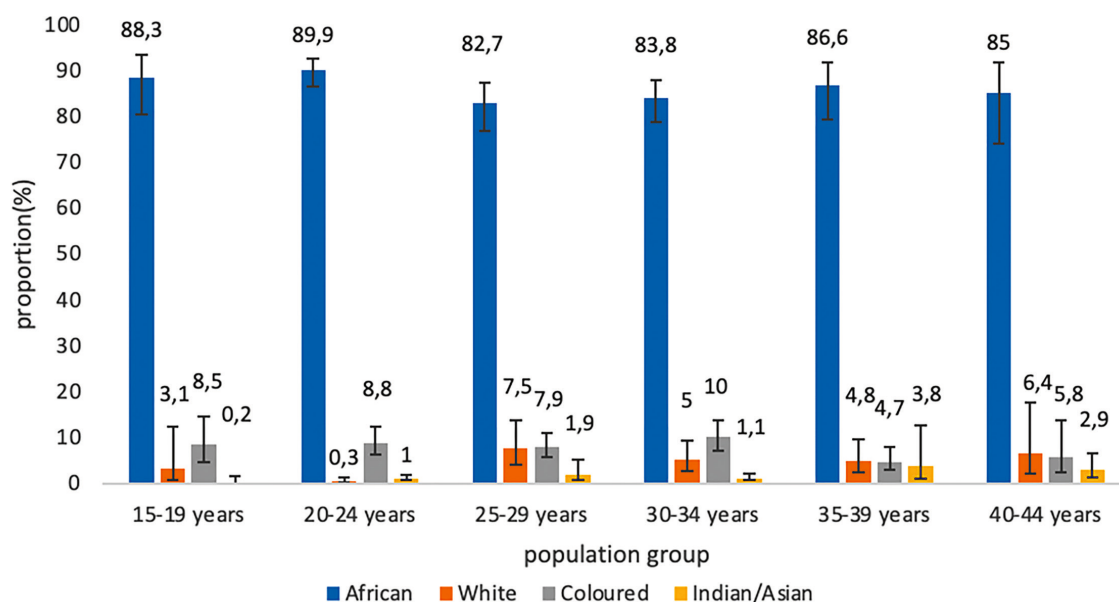


Figure 3 Population group among recently pregnant women by age group, South Africa 2017

*NB data for 45 – 49-year-old women were n<30

Recently pregnant women by age group and province

There was a significant difference in self-reported recent pregnancies by age group and province ($p=0.002$). Nearly one-quarter of self-reported recent pregnancies among adolescent girls aged 15 – 19 years were from KwaZulu-Natal (25.4%, 95% CI 17.2 – 35.8) and Gauteng (23.5%, 95% CI 12.6 – 39.5), respectively. Similarly, nearly one-fifth of self-reported recent pregnancies among young women aged 20 – 24 years were from KwaZulu-Natal (22.6%, 95% CI 17.5 – 28.7) and Gauteng (19.1%, 95% CI 13.3 – 26.6) respectively.

Recently pregnant women by employment status

There was a significant difference in self-reported recent pregnancies by age and employment status ($p<0.001$). Most adolescent girls aged 15 – 19 years who self-reported being recently pregnant were either unemployed (52.7%, 95% CI 40.9 – 64.3) or a student/learner (41.5%, 95% CI 30.1 – 53.9). Similarly, most young women aged 20 – 24 years were unemployed (78.1%, 95% CI 72.7 – 82.6), and a further 11.6% (95% CI 8.2 – 16.2) were students/learners.

Recently pregnant women by highest level of education

There was a significant difference in self-reported recent pregnancies by age and highest educational level attained ($p < 0.001$). Figure 4 shows that most adolescent girls aged 15 – 19 years had completed some secondary school (71.6%, 95% CI 61.5 – 79.9) while just over one-fifth had completed secondary school (20.9%, 95% CI 13.4 – 31.1), and 4.9% (95% CI 2.5 – 9.3) completed only primary school level of education (Figure 4). Most pregnant women aged 20 – 24 years had either some secondary school education (44.5%, 95% CI 38.4 – 50.8) or had completed secondary school (45.4%, 95% CI 39.0 – 52.0).

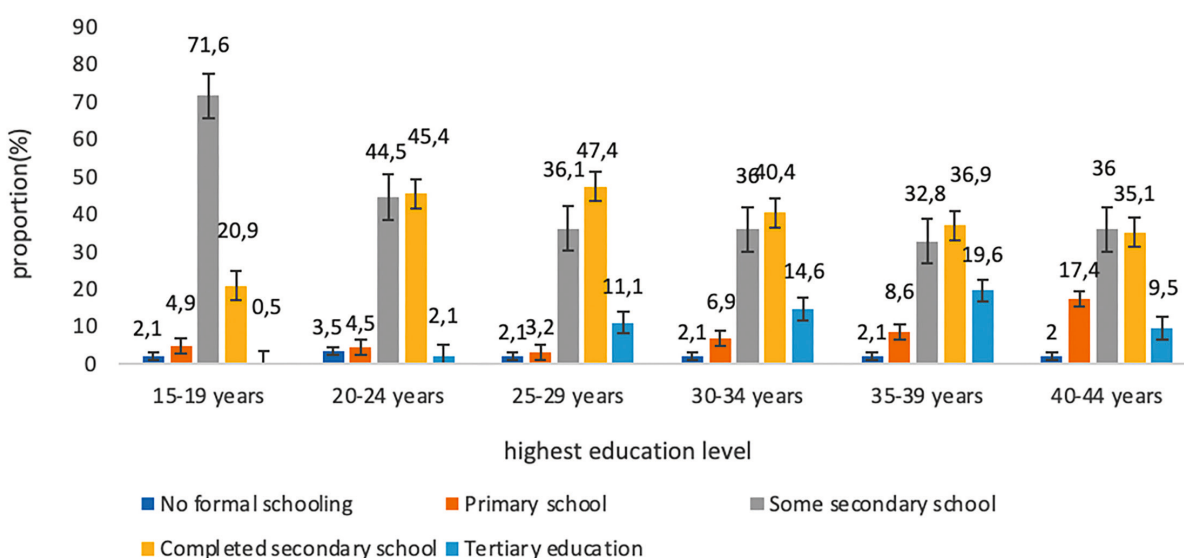


Figure 4 Recently pregnant women by age and highest educational level, South Africa 2017

Main source of income among recently pregnant women

Figure 5 shows the main sources of income by age among women who reported being recently pregnant, with most youth ≤ 35 years indicating they had no income ($p < 0.001$). The majority of self-reported recently pregnant adolescent girls aged 15 – 19 years indicated they had no income (76.3%, 95% CI 65.7 – 84.4), and 9.5% (95% CI 4.6 – 18.5) reported that they relied on government pensions/grants. A further 7% (95% CI 3.0 – 15.3) depended on grants or donations by welfare organisations. Similarly, the majority of self-reported recently pregnant young women aged 20 – 24 years reported that they had no income (63.3%, 95% CI 57.0 – 69.2), 12.4% (95% CI 8.6 – 17.6) reported reliance on government pensions/grants, and a further 6.8% (95% CI 4.4 – 10.3) relied on grants or welfare donations. About half of those aged 25 – 29 years indicated that they had no income (50.5%, 95% CI 44.2 – 56.7), 8.4% depended on grants or welfare donations, and 7.3% (95% CI 4.3 – 12.1) depended on contributions from family members or relatives.

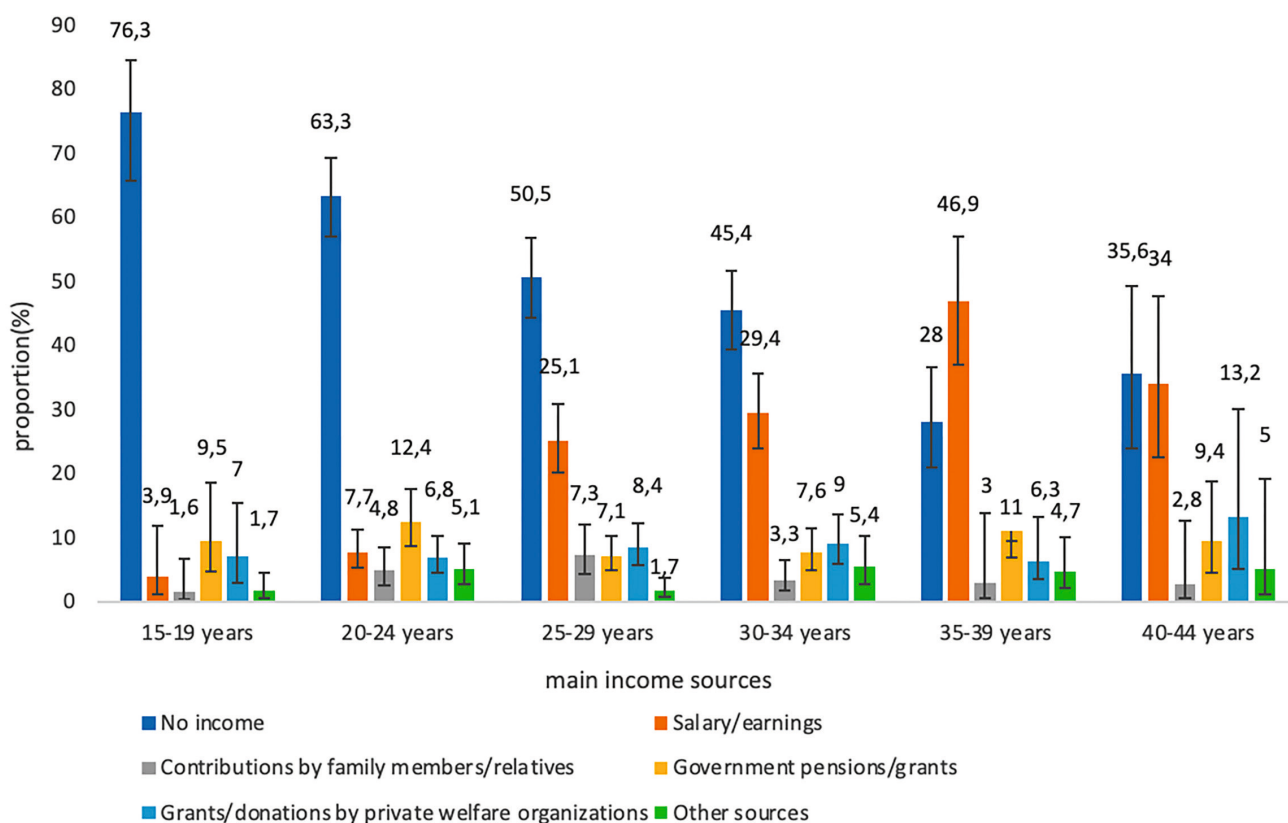


Figure 5 Recently pregnant women by age and main income sources, South Africa 2017

Marital status

Most recently pregnant women aged 40 – 44 years reported that they were married (58.9%, 95% CI 44.8 – 71.7). Nearly all adolescent girls aged 15 – 19 years reported that they were never married (96.7%, 95% CI 91.3 – 98.8), and the same was found for their counterparts aged 20 – 24 years (89.2%, 95% CI 85.3 – 92.2).

The following section describes antenatal care-seeking behaviour, HIV testing among recently pregnant women and self-reported general health.

3.3 ANC-seeking behaviour, HIV testing and general health of recently pregnant women, South Africa 2017

Antenatal care-seeking behaviour

Among currently pregnant women aged 15 – 49 years, most said they had sought ANC for their pregnancy (87.2%, 95% CI 82.2 – 90.9, $n=373$). Of those currently pregnant women who attended an ANC clinic for their current pregnancy, 70.5% (95% CI 62.3 – 77.6) indicated that they visited the ANC clinic when they were ≤ 13 weeks pregnant, while a further 21.2% (95% CI 15.1 – 28.9) had done so between 13 and 25 weeks of their pregnancy.

HIV testing

A significant majority ($>75\%$) of pregnant women across all age groups indicated that they had tested for HIV within one year ($p=0.001$). Among recently pregnant adolescents aged 15 – 19 years, 6.9% (95% CI 3.2 – 14.3) had tested between 1 – 2 years ago, while 6.1% (95% CI 3.1 – 11.8) had never tested before. Among recently pregnant young women aged 20 – 24 years, 8.4% (95% CI 5.8 – 12.0) had tested between 1 – 2 years ago, while 3.3% (95% CI 1.5 – 6.8) had never tested before. Among recently pregnant women aged 25 – 29 years, 9.8% had tested between 1 – 2 years ago, while 7.1% tested \geq two years ago. Most women who attended an ANC clinic for their current pregnancy (95.3%, 95% CI 89.6 – 98.0) reported being offered an HIV test during any clinic visits. Similarly, the majority (96.0%, 95% CI 90.1 – 98.4) also reported testing for HIV during any of their ANC clinic visits.

Facility where women usually obtain healthcare and the most recent HIV test

Overall, more than 80% of recently pregnant women used public healthcare facilities, and $>77\%$ had tested for HIV in a public healthcare facility ($p<0.001$). Among recently pregnant adolescent girls aged 15 – 19 years, 7% (95% CI 2.9 – 15.8) reported using private healthcare facilities, and 5.3% (95% CI 1.7 – 15.3) used a private healthcare facility to test for HIV. Similarly, among recently pregnant young women aged 20 – 24 years, 7.9% (95% CI 4.9 – 12.3) used a private healthcare facility, and 3.7% (95% CI 2.2 – 6.3) had tested for HIV in a private facility.

A further 2.3% (95% CI 0.7 – 7.7) of recently pregnant adolescent girls aged 15 – 19 years used traditional healers or a health jamboree event to have an HIV test. Among recently pregnant young women aged 20 – 24 years, 2.7% (95% CI 1.3 – 5.4) used traditional healers or a health jamboree event, while 0.5% (95% CI 0.1 – 3.5) used a youth centre or love life event to have an HIV test.

More recently, pregnant women aged ≥ 35 years used private healthcare to have their most recent HIV test compared to their younger counterparts. Just over one-fifth of recently pregnant women aged 25 – 29 years (15.9%, 95% CI 11.6 – 21.4) and their counterparts aged 35 – 39 years (16.8%, 95% CI 11.0 – 24.8) indicated that they usually used private healthcare facilities for their healthcare needs. Approximately 12.8% (95% CI 9.1 – 17.8) of recently pregnant women aged 30 – 34 years, 16.8% (95% CI 11.0 – 24.8) aged 35 – 39 years, and a further 23.4% (95% CI 13.5 – 37.5) of their counterparts aged 40 – 44 years used a private healthcare facility to have an HIV test.

For general health, we analysed reported disability, tuberculosis (TB), hypertension, self-rated health, sexual health described as self-reported STIs (abnormal vaginal discharge, ulcer or sore in the past 12 months) and intimate partner violence (IPV).

General health status among recently pregnant women

Disability

A small proportion of recently pregnant adolescent girls aged 15 – 19 years indicated they had a disability (0.2%, 95% CI 0.0 – 1.5). A further 0.9% (95% CI 0.3 – 3.1) of recently pregnant women aged 20 – 24 years and 1.1% (95% CI 0.4 – 3.2) of women aged 25 – 29 years reported having a disability. A relatively higher proportion of recently pregnant women aged 45 – 49 years reported a disability (4.6%, 95% CI 1.3 – 13.0).

Tuberculosis

Self-reported history of TB was significantly higher ($p=0.001$) among recently pregnant women aged 40 – 44 years (11.7%, 95% CI 5.3 – 23.6). Self-reported TB was lowest among recently pregnant adolescent girls aged 15 – 19 years at 1.2% (95% CI 0.3 – 4.0), but increased in young women aged 20 – 24 years at 2.8% (95% CI 1.4 – 5.5), and among those aged 35 – 39 years at 6.4% (95% CI 3.3 – 11.9).

Hypertension

Self-reported hypertension was significantly higher among recently pregnant women aged 40 – 44 years (17.1%, 95% CI 8.8 – 30.6). In comparison, self-reported hypertension was lower among adolescent girls aged 15 – 19 years at 2.8% (95% CI 1.0 – 7.4), followed by young women aged 20 – 24 years at 4.3% (95% CI 2.4 – 7.4), and those aged 25 – 34 years at 6% (95% CI 4.2 – 8.4).

Self-rated health

There was a significant difference in self-rated health among recently pregnant women across the different age groups. Higher proportions of recently pregnant women aged ≥ 35 years reported fair or poor health compared to AGYW. Overall, 12.8% (95% CI 10.7 – 15.2) of all recently pregnant women reported fair health ($p=0.001$). Fair health was reported by 9.3% (95% CI 4.8 – 17.3) of recently pregnant adolescent girls aged 15 – 19 years and similarly by 9.6% (95% CI 6.6 – 13.8) of recently pregnant young women aged 20 – 24 years. About one-fifth of recently pregnant women aged 35 – 39 years (19.6%, 95% CI 12.1 – 30.1) and 40 – 44 years (19.7%, 95% CI 10.4 – 34.3), respectively, reported fair health. Only 1.9% (95% CI 1.0 – 3.6) of all recently pregnant women reported poor health, and this was higher among pregnant women aged 40 – 44 years at 2.6% (95% CI 0.4 – 13.3), followed by women aged 35 – 39 years at 3.3% (95% CI 1.2 – 9.0).

Other sexually transmitted infections (STIs)

Among recently pregnant women aged 15 – 49 years, 16.5% (95% CI 14.0 – 19.4, $n=337$) self-reported having had an STI. About one-fifth of those aged 15 – 19 years (19.5%, 95% CI 10.3 – 34.0) and 17.6% (95% CI 13.0 – 23.3) of those aged 20 – 24 years reported having had an STI.

Experiences of intimate partner violence (IPV)

Nearly one-quarter of the recently pregnant women aged 15 – 49 years reported having ever experienced IPV (25%, 95% CI 19.7 – 30.5, $n=588$, $p=0.088$). Reported IPV was higher among recently pregnant adolescent girls aged 15 – 19 years at 37.1% (95% CI 19.4 – 59.1), followed by older women aged 30 – 34 years at 33.4% (95% CI 23.2 – 45.3), and young women aged 20 – 24 years at 21.4%, (95% CI 11.9 – 35.5).

In the next section, we present findings for risky sexual behaviours among recently pregnant women, namely condom use, age-disparate sex, age at sexual debut and multiple sexual partners.

3.4 Risky sexual behaviours among recently pregnant women, South Africa 2017

Consistent condom use

More than one-third of recently pregnant adolescent girls aged 15 – 19 years indicated they sometimes used a condom (37.5%, 95% CI 26.5 – 49.9) while 28% (95% CI 19.9 – 37.8) reported that they never used a condom with their sexual partner. A third of recently pregnant young women aged 20 – 24 years indicated that they sometimes used a condom (33.2%, 95% CI 27.6 – 39.3), and a further 41.7% (95% CI 36.0 – 47.6) reported that they never used a condom with their sexual partner. More than half of recently pregnant women aged 35 – 39 years (57.6%, 95% CI 47.4 – 67.3) and nearly half of those aged 25 – 29 years reported they never used a condom with their sexual partner (49.2%, 95% CI 42.9 – 55.6).

Age-disparate sexual relationships

Overall, 1.6% (95% CI 1.0 – 2.5) of recently pregnant women reported having a sexual partner with an age gap of ≥ 5 years older than themselves. Age mixing differed significantly by age ($p=0.043$), with about two-fifths of AGYW indicating that they had a sexual partner aged ≥ 5 years older than themselves. More than one-third (37.1%, 95% CI 27.9 – 47.2) of recently pregnant adolescent girls aged 15 – 19 years had a sexual partner aged ≥ 5 years older than themselves. Just over two-fifths (44.5%, 95% CI 38.5 – 50.7) of recently pregnant young women aged 20 – 24 years had a sexual partner aged ≥ 5 years older than themselves. Similarly, 42% (95% CI 36.0 – 47.5) of recently pregnant women aged 25 – 29 years had a partner aged ≥ 5 years older than themselves.

Age at sexual debut

Age at sexual debut differed significantly within each age group ($p=0.002$), and most of the women reported they were ≥ 15 years at sexual debut (95.9%, 95% CI 94.7 – 96.8). However, approximately 12% (95% CI 7.1 – 19.4) of recently pregnant adolescent girls aged 15 – 19 years indicated they were younger than 15 years at sexual debut.

Multiple sexual partners

Overall, 7.4% (95% CI 3.4 – 15.4) of recently pregnant AGYW aged 15 – 19 years and 5.7% (95% CI 3.5 – 9.3) recently pregnant AGYW aged 20 – 24 years reported they had two or more sexual partners. Fewer proportions of older women had two or more partners.

In the next section, we describe the HIV prevalence, socio-demographics and socio-behavioural characteristics of HIV-positive recently pregnant AGYW aged 15 – 24 years and women aged 25 – 49 years.

3.5 HIV prevalence among recently pregnant women aged 15 – 24 years and 25 – 49 years

First, we report on estimates of the HIV prevalence among women who self-reported that they were recently pregnant using data from three SABSSM national population-based household HIV surveys (2005, 2008 and 2017), which had comparable variables for recent pregnancies. As mentioned previously, we could not include the SABSSM 2012 national population-based household HIV survey data, as women were asked about the number of pregnancies over a more extended time period.

The HIV prevalence among recently pregnant women aged 15 – 49 years was 27.0% (95% CI 24.0 – 30.2). This translates to 521 383 (95% CI 448 962 – 593 805) HIV-positive recently pregnant women in that age group. In Figure 6, we describe the HIV prevalence among women who self-reported they were pregnant over time using data from the three SABSSM national population-based household HIV surveys (2005, 2008 and 2017).

Among recently pregnant AGYW aged 15 – 24 years, the HIV prevalence was 24.0% (95% CI 18.1 – 31.2) in 2005, 17.3% (95% CI 12.2 – 23.8) in 2008, and by 2017 had increased to 19.2% (95% CI 15.3 – 23.9). The 2017 estimates of HIV-positive recently pregnant AGYW aged 15 – 24 years translates to 109 543 (95% CI 78 556 – 140 529) young women (Table 2). Among older recently pregnant women aged 25 – 49 years, the HIV prevalence increased over time to 25.2% (95% CI 20.1 – 31.1) in 2005, 25.5% (95% CI 20.4 – 31.5) in 2008 and by 2017 had increased to 30% (95% CI 26.4 – 34.4). This translates to 411 841 (95% CI 346 159 – 477 523) HIV positive recently pregnant older women.

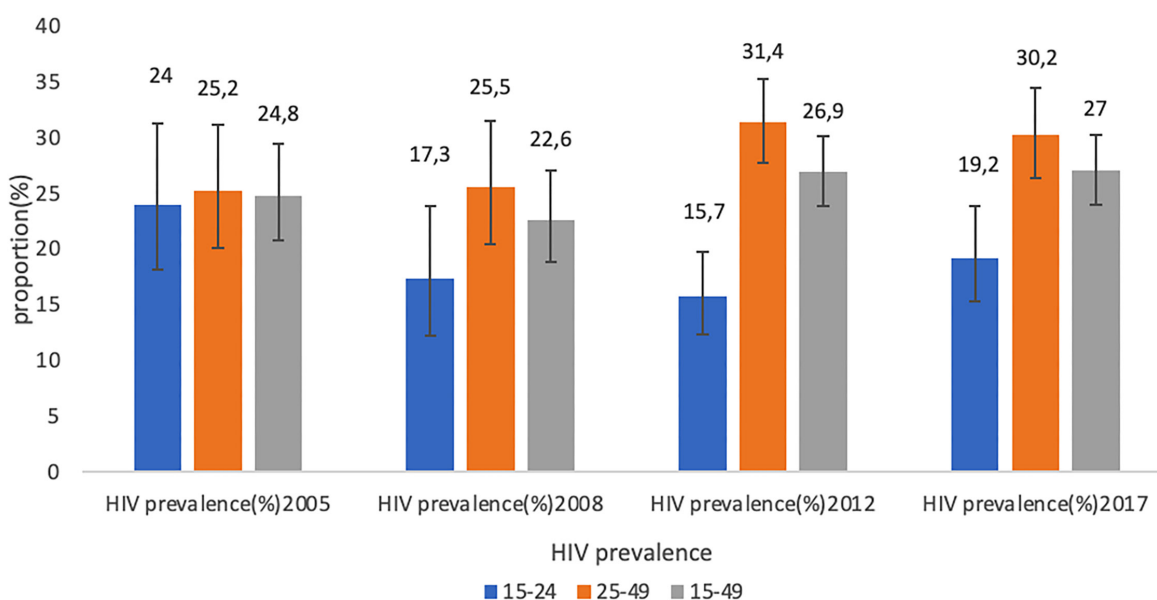


Figure 6 HIV prevalence by age of self-reported recently pregnant women over time (2005, 2008 and 2017)

Table 2 HIV prevalence and population estimates of recently pregnant females aged 15 – 49 years, South Africa 2017

Age (years)	n (Total)	HIV positive (row %) (95% CI)	Translated number HIV positive (95% CI)
15 – 24	610	19.2 [15.3 – 23.9]	109 543 [95% CI 78 556 – 140 529]
25 – 49	1 061	30.2 [26.4 – 34.4]	411 841 [95% CI 346 159 – 477 523]
15 – 49	1 671	27.0 [24.0 – 30.2]	521 383 [95% CI 448 962 – 593 805]

Next, we report on HIV prevalence by selected socio-demographic characteristics among recently pregnant women aged 15 – 24 years and 25 – 49 years for 2017.

Table 3 shows that HIV prevalence was significantly higher among recently pregnant Black African women compared to other population groups ($p < 0.001$). HIV prevalence was 21.2% (95% CI 16.9 – 26.2) among recently pregnant Black African AGYW aged 15 – 24 years and 34.7% (95% CI 30.4 – 39.3) among recently pregnant Black African women aged 25 – 49 years.

Figure 7 and Table 3 show that HIV prevalence among recently pregnant AGYW aged 15 – 24 years was significantly higher ($p = 0.032$) in the provinces of Gauteng (30%, 95% CI 19.9 – 42.5), followed by the Eastern Cape (24%, 95% CI 11.2 – 44.3), and KwaZulu-Natal (23.1, 95% CI 15.2 – 33.5). The HIV prevalence among recently pregnant older women aged 25 – 49 years was significantly higher ($p = 0.032$) in the provinces of KwaZulu-Natal (47.3%, 95% CI 38.5 – 56.3) followed by Eastern Cape (41.7%, 95% CI 28.9 – 55.8) and Mpumalanga (39.5%, 95% CI 30.5 – 49.3).

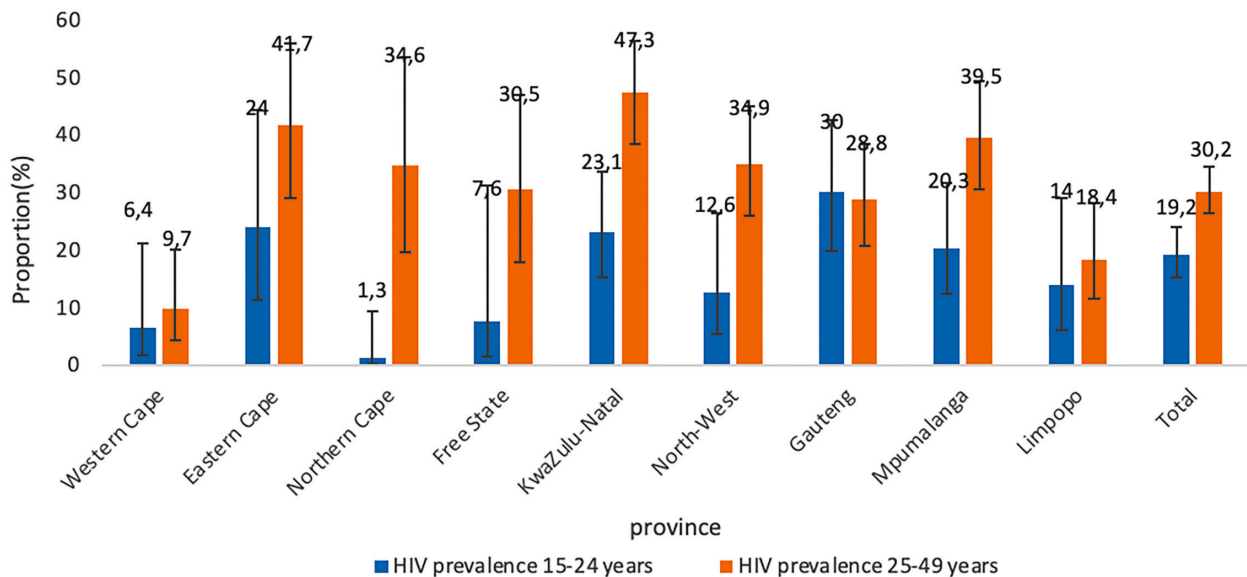


Figure 7 HIV prevalence by province among recently pregnant women, South Africa 2017

The HIV prevalence among recently pregnant women aged 25 – 49 years was significantly higher ($p < 0.001$) among those who were not married (36.1%, 95% CI 30.9 – 41.6), those who had no formal schooling (39.5%, 95% CI 17.7 – 66.6), and among their counterparts who indicated they had completed a maximum of primary school level education (39.7%, 95% CI 26.0 – 55.2). The HIV prevalence was lowest for those with tertiary levels of education (8.2%, 95% CI 4.1 – 15.7).

HIV prevalence among recently pregnant AGYW aged 15 – 25 years was significantly higher ($p = 0.025$) among those who reported receiving grants or donations from private welfare organisations (33.2%, 95% CI 15.8 – 56.9). Approximately one-fifth of recently pregnant AGYW were HIV positive and had no income (20.7%, 95% CI 15.8 – 26.8).

The HIV prevalence among recently pregnant females aged 25 – 49 years was significantly higher ($p=0.031$) among those who reported not having a medical aid or medical benefit scheme (32.8%, 95% 28.6 – 37.4).

Table 3 HIV prevalence by socio-demographic characteristics among recently pregnant women aged 15 – 24 years and 25 – 49 years, South Africa 2017

Variable	15 – 24 years recently pregnant			≥25 years recently pregnant		
	Row % (95% CI)	n	p-value	Row % (95% CI)	n	p-value
Population group			<0.001			<0.001
Black African	21.2 [16.9 – 26.2]	534		34.7 [30.4 – 39.3]	909	
Other	0.3 [0.0 – 2.4]	76		3.0 [1.3 – 6.6]	152	
Province			0.032			<0.001
Western Cape	6.4 [1.7 – 21.1]	46		9.7 [4.4 – 20.0]	81	
Eastern Cape	24 [11.2 – 44.3]	32		41.7 [28.9 – 55.8]	64	
Northern Cape	1.3 [0.2 – 9.3]	28		34.6 [19.6 – 53.4]	38	
Free State	7.6 [1.5 – 31.2]	20*		30.5 [17.9 – 46.9]	50	
KwaZulu-Natal	23.1 [15.2 – 33.5]	223		47.3 [38.5 – 56.3]	290	
North-West	12.6 [5.5 – 26.3]	46		34.9 [26.0 – 45.0]	86	
Gauteng	30 [19.9 – 42.5]	82		28.8 [20.6 – 38.5]	221	
Mpumalanga	20.3 [12.3 – 31.6]	86		39.5 [30.5 – 49.3]	130	
Limpopo	14 [6.1 – 29.0]	47		18.4 [11.6 – 28.1]	101	
Locality type			0.940			0.230
Urban	19.1 [13.9 – 25.6]	286		28.4 [23.4 – 34.0]	560	
Rural informal (tribal areas)	19.8 [13.7 – 27.6]	263		33.5 [28.2 – 39.3]	405	
Rural (farms)	17.4 [8.6 – 31.9]	61		37.6 [25.0 – 52.1]	96	
Employment status			0.326			0.107
Unemployed	21.3 [16.6 – 27.0]	444		33.6 [29.0 – 38.6]	750	
employed	9.4 [2.3 – 31.6]	50		23.0 [16.8 – 30.5]	290	
Student/learner	16.2 [8.4 – 28.7]	107		37.2 [11.7 – 72.5]	15*	

Variable	15 – 24 years recently pregnant			≥25 years recently pregnant		
	Row % (95% CI)	n	p-value	Row % (95% CI)	n	p-value
Highest education level			0.068			<0.001
No formal schooling	43.8 [16.3 – 75.7]	21*		39.5 [17.7 – 66.6]	36	
Primary school	34.1 [14.7 – 61.0]	37		39.7 [26.0 – 55.2]	97	
Some secondary school	18.4 [13.3 – 25.0]	303		36.1 [30.0 – 42.6]	413	
Completed secondary school	16.9 [11.5 – 24.0]	237		30.3 [24.0 – 37.4]	429	
Tertiary education	1.6 [0.2 – 12.0]	10*		8.2 [4.1 – 15.7]	84	
Marital status						
Unmarried	18.6 [14.4 – 23.6]	557	0.378	36.1 [30.9 – 41.6]	721	<0.001
Married	25.8 [12.7 – 45.4]	53		20.9 [15.3 – 27.9]	340	
Main income source in the past month						
No income	20.7 [15.8 – 26.8]	401	0.025	31.4 [25.8 – 37.5]	490	0.275
Salary/earnings	3.6 [1.1 – 10.6]	41		23.3 [17.0 – 31.1]	271	
Contributions by family members/relatives	29.1 [8.8 – 63.4]	23*		30.6 [13.8 – 55.0]	43	
Government pensions/grants	6.2 [3.1 – 12.1]	79		41.5 [29.7 – 54.3]	134	
Grants/donations by private welfare organisations	33.2 [15.8 – 56.9]	45		33.5 [23.0 – 45.9]	91	
Other sources	26 [9.7 – 53.3]	20*		35.2 [14.8 – 63.0]	32	
Covered by a Medical Aid/Medical Benefit Scheme			0.836			0.031
Yes	17.2 [5.1 – 44.3]	24*		18.0 [9.8 – 30.5]	119	
No	19.3 [15.3 – 24.2]	585		32.8 [28.6 – 37.4]	940	

*n<30

HIV positive and aware of HIV status among recently pregnant women aged 15 – 49 years

The majority of recently pregnant women aged 15 – 49 years who were HIV positive in the survey had been diagnosed with HIV (96.9%, 95% CI 93.2 – 98.6, $n=488$) ($p=0.003$) (Figure 8). Among recently pregnant AGYW aged 15 – 24 years, 89.5% (95% CI 76.1 – 95.8, $n=114$) knew their HIV status (Figure 8).

Antiretroviral treatment and viral load suppression among recently pregnant women aged 15 – 49 years

Viral load suppression is defined as having a viral load of <1000 copies of HIV RNA/mL. Among recently pregnant women aged 15 – 49 years who indicated they were diagnosed with HIV, two-thirds (69.9%, 95% CI 62.3 – 76.5, $n=448$) were on ART, and 90.7% (95% CI 85.8 – 94.0, $n=333$) were virally suppressed. However, results for recently pregnant AGYW aged 15 – 24 years who reported they had been diagnosed with HIV found that 45.3% (95% CI 32.5 – 58.8, $p<0.001$, $n=103$) were on ART and 84.7% (95% CI 64.9 – 94.3, $n=60$) were virally suppressed (Figure 8).

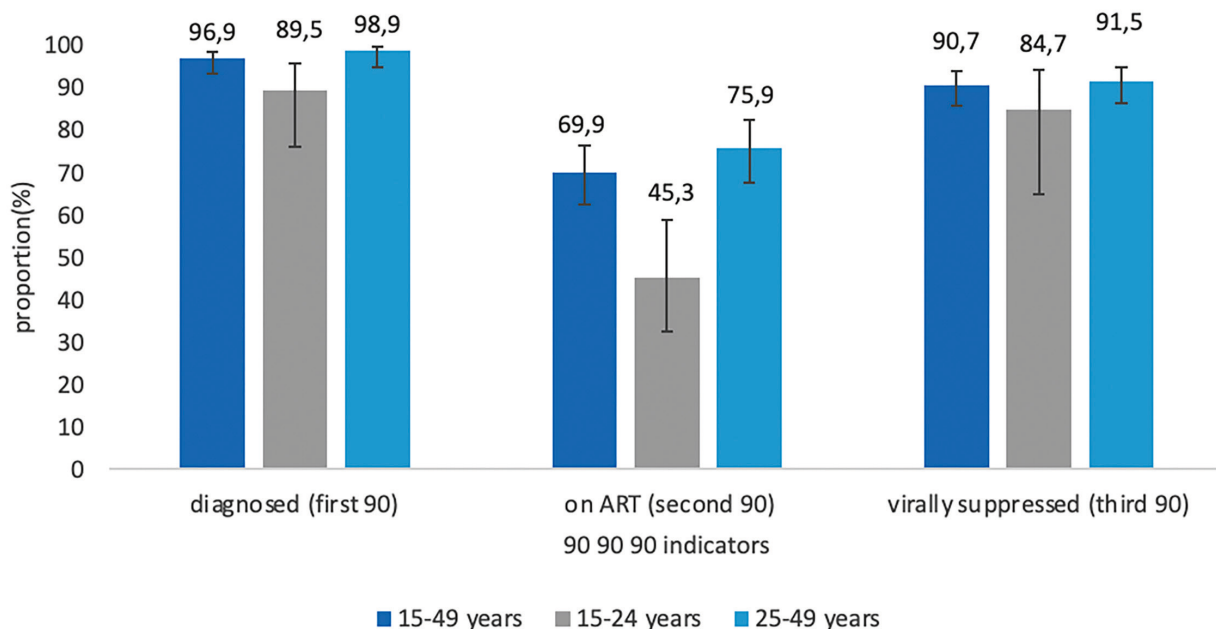


Figure 8 Diagnosed, on ART, and VLS among recently pregnant women, South Africa 2017

We calculated the indicators comprising the UNAIDS 90-90-90 (UNAIDS, 2014) targets among recently pregnant women as follows: first 90 (90% of recently pregnant women who tested HIV positive and were aware of their status); second 90 (90% of recently pregnant women who knew their HIV positive status and were on ART); and third 90 (90% of recently pregnant women who knew their HIV positive status, were on ART, and were virally suppressed).

The 90%-81%-73% cascade (Marinda et al., 2020) was used to measure progress towards the above indicators. The cascade among recently pregnant women aged 15 – 49 years was estimated to be 97%-68%-61% (Figure 9). Therefore, the target was achieved for the first 90. An estimated 13% of recently pregnant women aged 15 – 49 years did not meet the target for the second 90 (diagnosed and on ART), and 12% did not meet the target for the third 90 (VLS).

The cascade among recently pregnant AGYW aged 15 – 24 years was estimated to be 90%-41%-34% (Figure 9), revealing the widest gaps in achieving the targets within this age group. There was an estimated 40% of recently pregnant AGYW aged 15 – 24 years with an unmet target for the second 90 (diagnosed and on ART), and 39% who did not achieve the third 90 (VLS).

Similarly, we calculated the progress towards achieving the 95-95-95 targets using the 95%-90%-86% cascade. The gaps in achieving these targets among recently pregnant women aged 15 – 49 years were 22% for the second 95 (on ART) and 25% for the third 95 (VLS). The gap in achieving these targets among recently pregnant AGYW aged 15 – 24 years was 5% for the first 95 (diagnosed), 49% for the second 95 (on ART) and 52% for the third 95 (VLS).

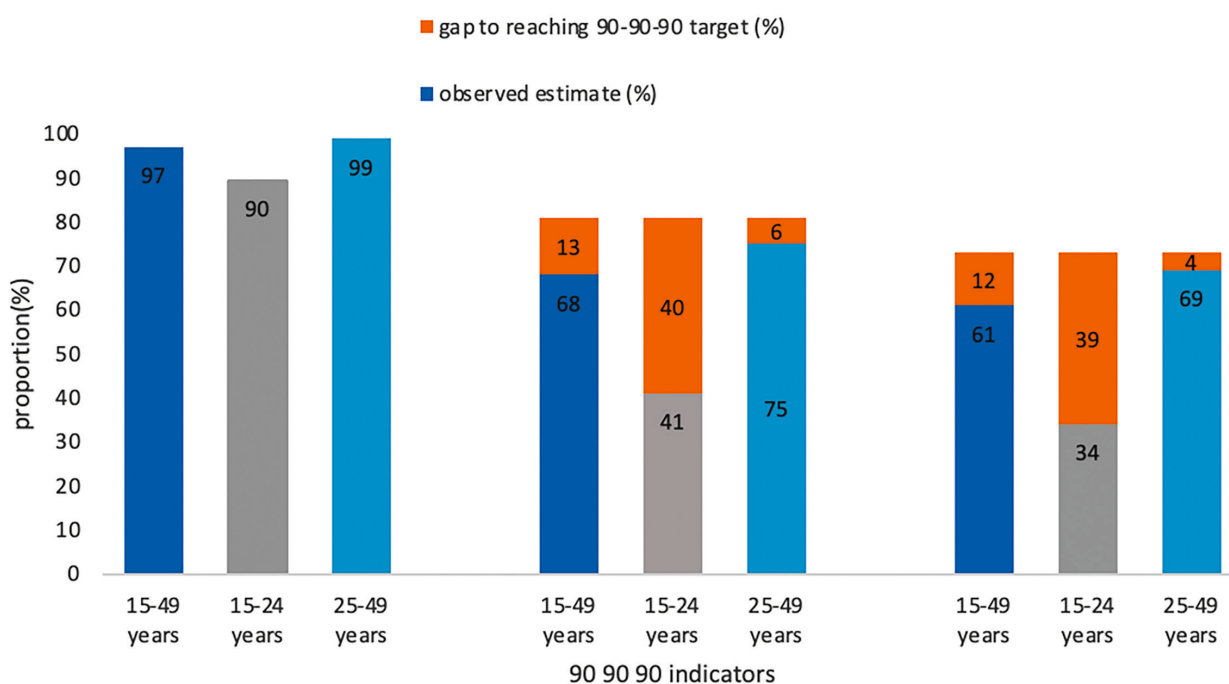


Figure 9 90-90-90 HIV care cascade among recently pregnant women, South Africa 2017

In the next section, we describe the prevalence of HIV drug resistance by drug class, age and ARV status among recently pregnant women.

HIV drug resistance

We analysed samples for HIV drug resistance to determine the efficacy of the ART regimens used for pregnant women in the country during the 2017 survey. Testing for HIV drug resistance was performed on a subset of samples of those who were virally unsuppressed (viral load ≥ 1000 copies/mL) (Simbayi et al., 2019; Moyo et al., 2020). After excluding samples classified as insufficient for analyses, a total of $n=69$ samples of recently pregnant women aged 15 – 49 years were successfully amplified and sequenced for HIV drug resistance.

Drug resistant mutations (DRMs) were detected in a total of $n=27$ (37.3%, 95% CI 21.9 – 55.8) of the $n=69$ samples, and in $n=11$ (30.8%, 95% CI 12.9 – 57.3) samples of 15 – 24-year-old AGYW (Table 4). Analyses of the DRMs by drug class found a total of $n=23/27$ recently pregnant women aged 15 – 49 years had non-nucleoside reverse transcriptase inhibitor (NNRTI) monoresistance, and $n=3/27$ had dual NNRTI and nucleoside reverse transcriptase inhibitor (NRTI) resistance. One sample had resistance to all three drug classes: NNRTI, NRTI and protease inhibitor (PI).

We analysed the ART status among recently pregnant women aged 15 – 49 years whose samples had DRMs. Of the $n=27$ samples with DRMs, $n=25$ had ART data available. Among the 25 women, $n=6$ (22.9%) were exposed to ART. In total, $n=7$ recently pregnant women self-reported taking ART but tested negative for ART, and among them, $n=6$ (97.2%) had DRMs.

Table 4 Age, ARV drug class, and ART status among recently pregnant women with drug resistant mutations, South Africa, 2017

Variable	Any drug resistance mutation	
	<i>n</i>	(%, 95% CI)
Age (years)		
15 – 24	11*	30.8 [12.9 – 57.3]
25 – 49	16*	41.9 [20.3 – 67.2]
15 – 49	27*	37.3 [21.2 – 56.9]
ARV Drug Class (15 – 49 years)		
NNRTI	23*	88.1 [62.7 – 97.0]
NNRTI+NRTI	3*	9.7 [1.9 – 37.0]
PI+NNRTI+NRTI	1*	2.2 [0.3 – 14.6]

* $n < 30$

HIV prevalence by sexual risk behaviours, HIV testing and HIV-related knowledge among recently pregnant women aged 15 – 24 years and 25 – 49 years

Table 5 shows the HIV prevalence by sexual risk behaviours, HIV testing and HIV-related knowledge among recently pregnant AGYW aged 15 – 24 years and their older counterparts aged 25 – 49 years. The HIV prevalence was significantly higher among recently pregnant AGYW aged 15 – 24 years who reported that they had ≥ 2 sexual partners in the past 12 months. This amounted to 38.0% (95% CI 19.6 – 60.7, $p=0.029$) compared to the HIV prevalence among AGYW who had one partner (17.8%, 95% CI 13.8 – 22.5). The HIV prevalence was significantly higher ($p=0.036$) among AGYW who had the correct knowledge of drugs/medicine/ART being available as PMTCT methods (21.6%, 95% CI 16.9 – 27.2, $p=0.032$) compared to those who lacked this knowledge (9.3%, 95% CI 4.1 – 19.6). Nearly half of AGYW who experienced IPV were HIV positive (49%, 95% CI 29.3 – 69.1).

Furthermore, just over one-quarter of recently pregnant women aged 25 – 49 years who were aware of their HIV status were HIV positive (25.9%, 9% CI 22.0 – 30.4), while 44.3% (95 % CI 35.2 – 53.7) were not aware of their HIV status and were HIV positive. Nearly half of the recently pregnant women aged 25 – 49 years who had used a condom almost every time were HIV positive (49.6%, 95% CI 30.9 – 68.4, $p<0.001$). Two-fifths of recently pregnant women aged 25 – 49 years who sometimes used a condom were HIV positive (40.3%, 95% CI 32.3 – 48.8). While nearly one-fifth of recently pregnant females aged 25 – 49 years who never used a condom were HIV positive (17.7%, 95% CI 13.3 – 23.0).

Among recently pregnant women aged 25 – 49 years who sometimes used a condom and were aware of their HIV status, the HIV prevalence was 35.8% (95% CI 27.3 – 45.3). Among recently pregnant women aged 25 – 49 years who reported never using a condom and were aware of their HIV status, the HIV prevalence was 14.3% (95% CI 10.3 – 19.5). The HIV prevalence was 23.6% (95% CI 19.4 – 28.4) among recently pregnant women aged 25 – 49 years who did not use a condom at the last sex act. The HIV prevalence was 19.6% (95% CI 15.6 – 24.3) among recently pregnant women aged 25 – 49 years who were aware of their HIV status and did not use a condom at the last sex act.

Just over one-quarter of recently pregnant women aged 25 – 49 years who had a high-risk perception of acquiring HIV were HIV positive (25.1%, 95% CI 18.5 – 33.1) compared to an HIV prevalence of 11.2 % (95% CI 8.2 – 15.1) among those who had a low-risk perception. The HIV prevalence was 60% (95% CI 43.3 – 74.6) among recently pregnant women aged 25 – 49 years whose most recent HIV test was ≥ 2 years ago. Over one-third (33.3%, 95% CI 29.0 – 37.9) of recently pregnant women aged 25 – 49 years who were HIV positive had tested at a public health facility. The HIV prevalence among recently pregnant women aged 25 – 49 years who self-reported an STI was 42.4% (95% CI 31.5 – 54.2).

Table 5 HIV prevalence by sexual risk behaviours, HIV testing and HIV-related knowledge among recently pregnant AGYW aged 15 – 24 years and older women aged 25 – 49 years, South Africa 2017

Variable	15 – 24 years old recently pregnant			25 – 49 years old recently pregnant		
	Row % (95% CI)	n	p-value	Row % (95% CI)	n	p-value
Awareness of HIV status			0.162			<0.001
Yes	17.8 [13.4 – 23.1]	510		25.9 [22.0 – 30.4]	806	
No	26.9 [16.4 – 40.9]	96		44.3 [35.2 – 53.7]	248	
How often do you use a condom with your partner?			0.61			<0.001
Every time	22.2 [12.2 – 37.0]	124		40.6 [31.7 – 50.2]	197	
Almost every time	13.5 [5.2 – 30.7]	51		49.6 [30.9 – 68.4]	81	
Sometimes	15.9 [10.2 – 23.8]	186		40.3 [32.3 – 48.8]	287	
Never	21.3 [14.6 – 29.9]	238		17.7 [13.3 – 23.0]	482	
Frequency of condom use and aware of HIV status			0.909			<0.001
Every time and aware of HIV status	20.0 [9.4 – 37.8]	99		33.4 [23.4 – 45.2]	143	
Almost every time and aware of HIV status	14.4 [5.5 – 32.7]	44		52.1 [30.1 – 73.3]	60	
Sometimes aware of HIV status	16.3 [10.4 – 24.7]	154		35.8 [27.3 – 45.3]	214	
Never and aware of HIV status	18.5 [11.6 – 28.3]	204		14.3 [10.3 – 19.5]	380	
Condom use at last sex act			0.425			<0.001
No	21.1 [15.6 – 27.8]	369		23.6 [19.4 – 28.4]	701	
Yes	16.8 [10.7 – 25.5]	236		44.5 [36.8 – 52.4]	352	
Condom use at last sex act and aware of HIV status			0.584			<0.001
No, and aware of HIV status	19.1 [13.4 – 26.5]	319		19.6 [15.6 – 24.3]	544	
Yes, and aware of HIV status	16.0 [9.3 – 26.1]	187		40.2 [31.7 – 49.4]	257	

Variable	15 – 24 years old recently pregnant			25 – 49 years old recently pregnant		
	HIV prevalence			HIV prevalence		
	Row % (95% CI)	n	p-value	Row % (95% CI)	n	p-value
Consistency of condom use			0.495			
No	19.3 [15.2 – 24.0]	599		30.2 [26.3 – 34.3]	1 045	0.479
Yes	0	2*		0	2*	
Consistency of condom use and aware of HIV status			0.514			0.526
No, and aware of HIV status	17.9 [13.5 – 23.3]	501		25.8 [21.8 – 30.3]	795	
Yes, and aware of HIV status	0	2*		0	2*	
Age mixing			0.105			0.182
5+ older	23.5 [16.8 – 31.7]	268		34.0 [27.8 – 40.7]	455	
Within 5 years older or younger	15.3 [10.4 – 22.0]	330		28.3 [23.5 – 33.8]	556	
How many sexual partners did you have in the last 12 months?			0.029			0.169
One partner	17.8 [13.8 – 22.5]	573		29.8 [25.9 – 34.0]	1 016	
Two or more partners	38.0 [19.6 – 60.7]	31		44.4 [24.6 – 66.2]	34	
Age at sexual debut			0.688			0.594
<15 years	22.9 [9.4 – 45.8]	41		35.5 [17.7 – 58.5]	39	
>=15 years	19.1 [15.0 – 24.1]	564		29.9 [26.0 – 34.1]	1 011	
Self – perceived risk of HIV			0.71			<0.001
Low	12.7 [8.6 – 18.4]	413		11.2 [8.2 – 15.1]	585	
High	14.5 [8.3 – 24.1]	143		25.1 [18.5 – 33.1]	244	
Is your current or main sex partner circumcised?			0.131			0.503
Yes	22.1 [16.7 – 28.7]	393		29.1 [24.5 – 34.3]	653	
No	13.8 [7.7 – 23.4]	154		30.0 [22.6 – 38.6]	301	
Don't have a main sex partner	2.8 [0.6 – 11.9]	17*		38.4 [12.9 – 72.5]	14*	
Don't know	14.0 [3.8 – 40.4]	34		43.1 [27.9 – 59.7]	54	

Variable	15 – 24 years old recently pregnant			25 – 49 years old recently pregnant		
	HIV prevalence			HIV prevalence		
	Row % (95% CI)	n	p-value	Row % (95% CI)	n	p-value
Have you ever had an HIV test?			0.025			0.64
Yes	18.0 [14.0 – 22.9]	589		30.6 [26.7 – 34.7]	1 035	
No	48.8 [21.1 – 77.2]	20*		21.7 [5.2 – 58.2]	17*	
No response	0	1*		28.5 [7.0 – 68.0]	6*	
How long ago did you have your most recent HIV test?			0.111			<0.001
< one year ago	17.8 [13.5 – 23.1]	519		26.1 [22.2 – 30.5]	816	
Between one to two years ago	17.4 [7.4 – 35.7]	56		37.9 [27.0 – 50.1]	119	
Two or more years ago	27.5 [6.3 – 68.0]	14*		60.0 [43.3 – 74.6]	100	
Never had an HIV test	48.5 [21.0 – 76.9]	21*		22.2 [6.2 – 55.4]	23*	
Place of most recent HIV test			0.085			0.031
Public facility	17.7 [13.5 – 22.9]	550		33.3 [29.0 – 37.9]	910	
Private facility	3.8 [1.1 – 12.8]	23*		14.5 [7.2 – 27.1]	105	
Other/traditional healer/health jamboree event	48.2 [20.7 – 76.7]	14*		22.5 [7.2 – 51.9]	20*	
Youth centre/love life centre	0	1*		0	3*	
Correct knowledge and myth rejection			0.082			0.247
No	16.4 [11.8 – 22.4]	391		32.2 [26.9 – 37.9]	656	
Yes	24.8 [17.7 – 33.6]	219		26.9 [21.0 – 33.7]	405	
Correct knowledge of drugs, medicine, pills, or ARVs as PMTCT methods			0.032			0.956
No	9.3 [4.1 – 19.6]	116		29.7 [21.3 – 39.6]	218	
Yes	21.6 [16.9 – 27.2]	491		30.0 [25.6 – 34.8]	834	
Ever experienced intimate partner violence			0.036			0.943
No	23.6 [13.4 – 38.0]	101		32.6 [25.1 – 41.0]	263	
Yes	49.0 [29.3 – 69.1]	36		33.2 [20.8 – 48.5]	74	

Variable	15 – 24 years old recently pregnant			25 – 49 years old recently pregnant		
	HIV prevalence			HIV prevalence		
	Row % (95% CI)	<i>n</i>	<i>p</i> -value	Row % (95% CI)	<i>n</i>	<i>p</i> -value
Kessler Psychological Distress Scale			0.494			0.301
Low distress	18.3 [13.6 – 24.3]	459		28.7 [24.3 – 33.4]	811	
Mild to severe distress	22.1 [14.3 – 32.7]	149		34.0 [25.5 – 43.8]	241	
Had an STI during the past 12 months			0.486			0.015
Yes	22.8 [13.0 – 36.9]	101		42.4 [31.5 – 54.2]	178	
No	18.2 [13.8 – 23.7]	505		28.0 [24.1 – 32.3]	879	
Do you have a disability?			0.287			0.622
Yes	6.7 [0.7 – 42.0]	4*		40.5 [10.0 – 80.6]	10*	
No	19.3 [15.3 – 24.0]	606		30.2 [26.3 – 34.3]	1 051	
Had a female sexual partner during the past 24 months			0.669			0.825
No	19.3 [15.3 – 24.1]	593		30.2 [26.4 – 34.3]	1 037	
Yes	15.3 [4.9 – 38.9]	17*		33.0 [13.4 – 60.9]	24*	
Alcohol audit score			0.980			0.408
Abstainers	18.4 [14.0 – 23.9]	475		32.6 [28.0 – 37.6]	776	
Low risk (1 – 7)	18.9 [9.7 – 33.7]	64		23.5 [14.6 – 35.6]	133	
Risky/hazardous level (8 – 15)	20.8 [6.0 – 51.9]	21*		30.3 [14.6 – 52.5]	36	
High risk/harmful (16+)	12.8 [1.4 – 59.8]	6*		41.2 [16.5 – 71.2]	14*	

**n*<30

HIV prevalence and associated factors among recently pregnant women aged 15 – 24 years, South Africa 2017

The multivariate logistic regression model (Figure 10) shows that the likelihood of being HIV positive was significantly lower among recently pregnant AGYW of other race groups (aOR 0.6, 95% CI 0.01 – 0.45) compared to their Black African counterparts. The likelihood of being HIV positive among AGYW was significantly higher among those residing in the province of KwaZulu-Natal (aOR 1.8, 95% CI 1.07 – 3.35) compared to the Western Cape. The likelihood of being HIV positive was also significantly higher among AGYW with maximum primary school level education (aOR 4.70, 95% CI 1.88 – 11.80) compared to those with tertiary level education and those with sexual partners five years and older than their age (aOR 2.32, 95% CI 1.41 – 3.82) compared to those with partners of similar age.

HIV prevalence and associated factors among recently pregnant women aged 25 – 49 years, South Africa 2017

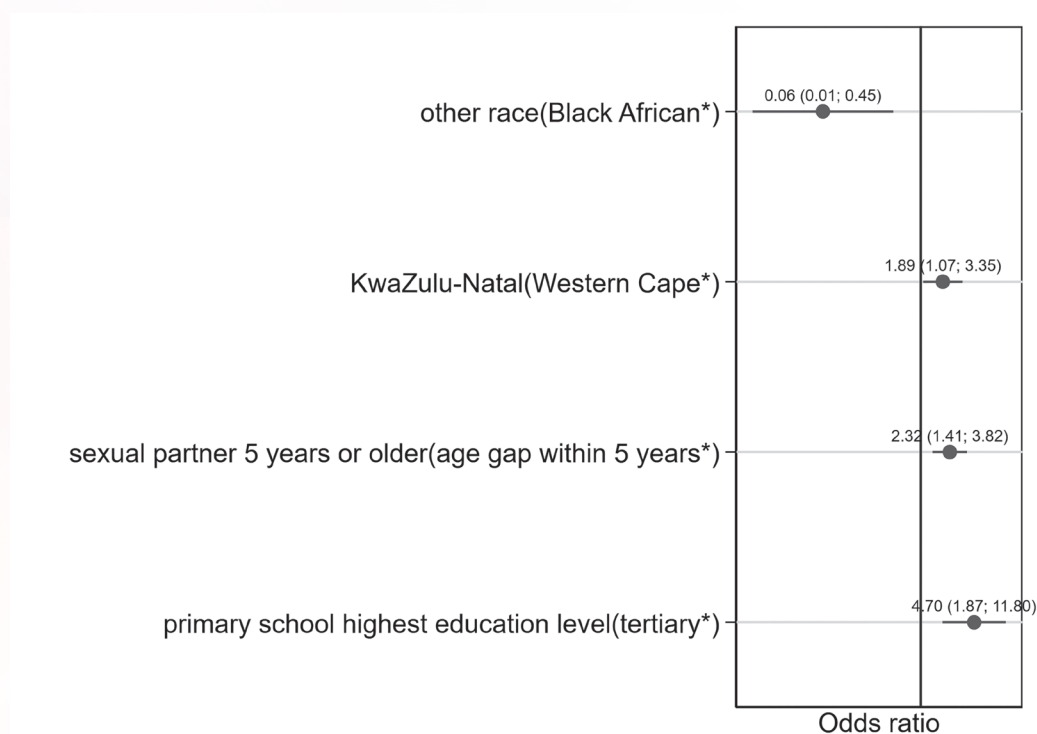


Figure 10 Multivariate model of factors associated with HIV prevalence among recently pregnant women aged 15 – 24 years³

³ Variables considered in the model: Race, Province, Geotype, Highest education level, Main income source in the past month, Frequency of condom use and awareness of HIV status, Condom use at last sex and aware of HIV status, Consistency of condom use and aware of HIV status, age mixing, number of sexual partners in the last 12 months, Age at sexual debut, Kessler Psychological distress score. * denotes reference category.

The multivariate logistic regression model (Figure 11) shows that the likelihood of being HIV positive among recently pregnant women aged 25 – 49 years was significantly lower among women of other population race groups (aOR 0.26, 95% CI 0.09 – 0.75) compared to their Black African counterparts. The likelihood of being HIV positive among recently pregnant women aged 25 – 49 years was significantly higher among those residing in the provinces of KwaZulu-Natal (aOR 2.29, 95% CI 1.33 – 3.93) and Mpumalanga (aOR 2.76, 95% CI 1.49 – 5.14) compared to the Western Cape. The odds of being HIV positive were also significantly higher among recently pregnant women who reported using a condom almost every time (aOR 3.44, 95% CI 1.39 – 8.53), every time (aOR 3.04, 95% CI 1.26 – 7.30), or sometimes (aOR 2.36, 95% CI 1.31 – 4.25). Furthermore, the likelihood of being HIV positive was significantly higher among recently pregnant women with a high-risk perception of acquiring HIV (aOR 1.85, 95% CI 1.15 – 2.95) than those with a low-risk perception.

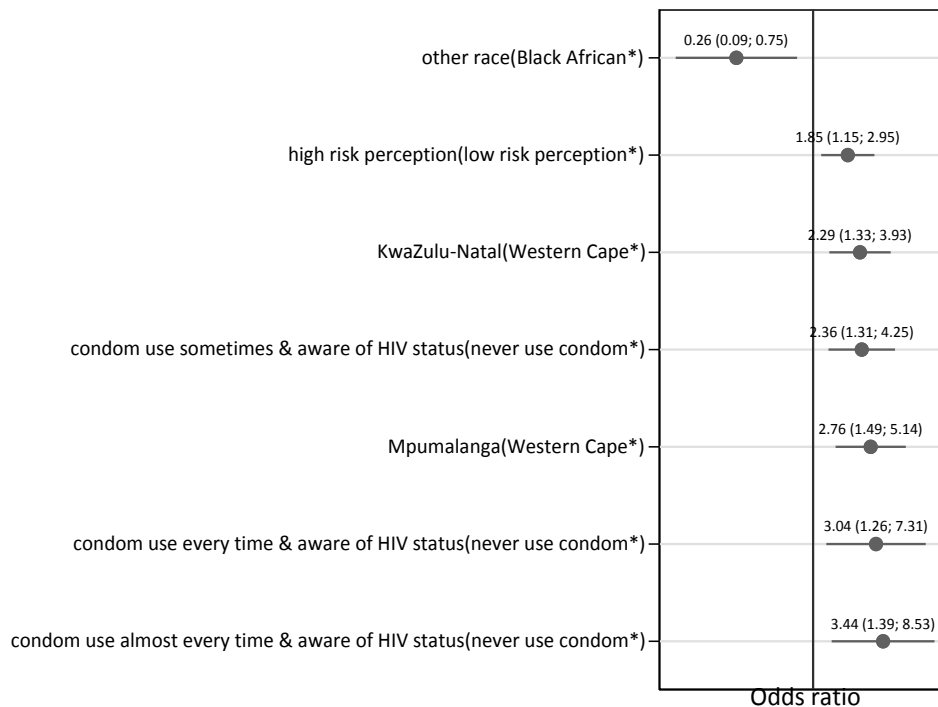


Figure 11 Multivariate model of factors associated with HIV prevalence among recently pregnant women aged 25 – 49 years⁴

⁴ Variables considered in the model: Race, Province, Geotype, Highest education level, Main income source in the past month, Self-perceived risk of HIV, Frequency of condom use and awareness of HIV status, Condom use at last sex and awareness of HIV status, Consistency of condom use and aware of HIV status, age mixing, number of sexual partners in the last 12 months, Age at sexual debut, Kessler Psychological distress score
* denotes reference category



4 Discussion

The detection and prevention of HIV among pregnant women in South Africa requires a concerted and maintained effort from public health professionals, AGYW and older women. This report presents findings for recently pregnant AGYW and their older counterparts that can inform further research and policy development within the country. The profile of recently pregnant women showed that most had a maximum of secondary school level education, were unemployed, had no income, and relied on government pensions or grants. Most recently pregnant women did not have medical aid/medical benefits and used public health facilities. These demographic characteristics of the recently pregnant women suggest that the women were from impoverished circumstances and relied on social support.

The current findings showed that the HIV prevalence among recently pregnant women aged 15 – 49 years was higher compared to the general population. The national HIV prevalence was 14.0% (95% CI: 13.1–15.0), whilst in these analyses, over two-fifths of recently pregnant women aged 15 – 49 years were HIV positive (27%, 95% CI 24.0 – 30.2). The national 2017 HIV prevalence among females aged 15 – 24 years was 10.9% (95% CI: 9.2–12.9) (Simbayi et al., 2019), and our analyses found 19.2% (95% CI 15.3 – 23.9) of recently pregnant AGYW aged 15 – 24 years were HIV positive. We found the HIV prevalence among recently pregnant AGYW aged 15 – 24 years to be highest in the provinces of Gauteng (30%, 95% CI 19.9 – 42.5), Eastern Cape (24%, 95% CI 11.2 – 44.3), and KwaZulu-Natal (23.1, 95% CI 15.2 – 33.5). KwaZulu-Natal was found to have the highest HIV prevalence among 15 – 24-year-old young people (12.0%, 95% CI 9.8 – 14.7) (Simbayi et al., 2019). The HIV prevalence among recently pregnant older women aged 25 – 49 years was highest in the provinces of KwaZulu-Natal (47.3%, 95% CI 38.5 – 56.3), Eastern Cape (41.7%, 95% CI 28.9 – 55.8) and Mpumalanga (39.5%, 95% CI 30.5 – 49.3). KwaZulu-Natal (18.1%) and Mpumalanga (17.3%) had the highest HIV prevalence among people of all ages compared to other provinces (Simbayi et al., 2019). HIV prevalence was higher among recently pregnant women who had low educational attainment, were unemployed, relied on receiving grants/donations from private welfare organisations, and did not have a medical aid or medical benefit scheme. Quantifying these socio-demographic characteristics among recently pregnant women by age group will assist efforts that prioritise and target SRH programming (Global Fund, 2020).

Our analyses highlighted key social determinants of SRH among recently pregnant women, including IPV, multiple sexual partners, age-disparate relationships, and condom use. Although the sample was small ($n=36$), about half of AGYW who reported experiences of IPV were HIV positive. Matseke et al. (2021) highlighted a paucity of research conducted during 2014 – 2016 on the prevalence of IPV among HIV-positive pregnant women over time in a rural area in South Africa (Matseke et al., 2021). These authors found high levels of physical IPV among HIV-positive women during pregnancy (20%) and the first year after childbirth (21.2%).

In addition, engaging in risky sexual partnerships has been associated with age-disparate, unequal relationships and gender power dynamics, which places women's health and well-being at risk (Heis et al., 2019; Duby et al., 2021). Our analyses showed that HIV prevalence was higher among recently pregnant AGYW who reported having multiple sexual partnerships. Analyses of the 2012 National HIV Communication Survey found a higher likelihood of having multiple sexual partnerships among students and those who engaged in intergenerational sex (Manjenwa et al., 2019).

Age-disparate sex among adolescents aged 15 – 19 years was estimated at 39.2% in 2005 and increased to 47.5% in 2017 (Zungu et al., 2021). We found that age-disparate sexual relationships were associated with higher HIV prevalence among recently pregnant AGYW aged 15 – 24 years. This is consistent with other research, which found that AGYW aged 15-24 years with age-disparate partners were 3.2 times more likely to be recently infected than AGYW with partners of a similar age (Woldensebat et al., 2021). Other analyses showed that factors associated with age-disparate relationships among females were education, socioeconomic status, age at sexual debut, and condom use at last sex (Mabaso et al., 2021). HIV prevalence was also higher among recently pregnant women who reported inconsistent condom use and lack of condom use. Inconsistent condom use is a long-standing issue in South Africa (Beksinksa, Smit & Mantell, 2012). Condoms do not only reduce the spread of HIV but also STIs if used correctly. We estimated that among recently pregnant women aged 25 – 49 years who self-reported having an STI, over two-fifths (42.4%) were HIV positive.

The dual burden of co-infection with HIV and other STIs poses a significant threat to reproductive health in sub-Saharan Africa. It is associated with adverse pregnancy and birth outcomes (Ngobese & Abbai, 2021). In South Africa, national maternal syphilis screening reached 96.4% in 2019 in selected public health facilities (Woldesenbet et al., 2021). However, reaching women through community-based and health facility interventions is imperative (Lippman et al., 2022). Furthermore, strengthening the integration of HIV testing and management with other SRH services will assist in linkage to care and for women to access risk reduction counselling, access to condoms, and referral for pre-exposure prophylaxis for HIV (where eligible) (Kufa et al., 2018).

Women in unequal gender power relationships are unlikely to use condoms consistently (Leddy et al., 2016). With regards to risk perception for acquiring HIV, Manjenwa et al. (2019) highlighted that there are limited studies on cognitive behaviours that influence risky sexual behaviours, which include a perceived lack of susceptibility to acquiring HIV and condom self-efficacy, together with social norms and personal beliefs regarding risk behaviours. Meta-analyses of risk perception and HIV prevention interventions found that condom use was more acceptable in casual relationships rather than committed relationships, and that condoms were not used as trust between sexual partners developed (Warren et al., 2018).

Perception of risk is an essential aspect of women's SRH, as perceived susceptibility and the accuracy and context of these perceptions impact their behaviour (Ferrer & Klein, 2015; Warren et al., 2018). Our multivariate analyses found a higher HIV prevalence among recently pregnant women who perceived themselves as being at high risk of HIV infection. Other research has shown that HIV risk perception is essential in the HIV treatment and prevention cascade because high-risk perception can increase the uptake of treatment and prevention services (Warren et al., 2018). Risk perception is intertwined with trust in relationships, partner behaviours such as resistance to HIV prevention interventions, and women's economic needs as motivators to engage in potentially high-risk relationships (Warren et al., 2018).

Research has shown that although young pregnant women living in rural areas were aware of their risk for acquiring HIV and knew about prevention methods such as condom use, this knowledge did not translate into the uptake of these methods (Vasquez et al., 2019). In another study, AGYW aged 15 – 24 years from the high HIV prevalence provinces of KwaZulu-Natal and Mpumalanga prioritised the preservation and management of sexual relationships, showing trust in their sexual relationships and ceding control over their sexual choices, over using HIV prevention methods (Gomez et al., 2019).

Therefore, interventions on counselling around HIV prevention should consider drivers for risk perception determination of accurate HIV risk perceptions among both pregnant AGYW attending ANC services and other AGYW. HIV risk perception also impacts seeking HIV testing (Maughan Brown & Venkataramani, 2018). Lessons learnt from the DREAMS initiative include scale-up of existing interventions such as school-based interventions, condom distribution and uptake of condoms, and HIV testing (Chimbindi et al., 2020). However, barriers to transforming gender norms persist (Chimbindi et al., 2020).

Although awareness of their HIV status was high, about one-third of HIV-positive pregnant women who indicated they were aware of their status were not on ART and were not virally suppressed. In terms of the 90-90-90 targets, recently pregnant AGYW aged 15-24 years had a deficit in achieving the second 90 (diagnosed and on ART).

Similar findings for the second 90 were reported from a cross-sectional, representative household survey conducted from 2017 to 2018 in the Eastern Cape, Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape provinces where 60.8% (95% CI 57.1 – 64.5) of AGYW aged 15 – 24 years knew their HIV status, 50.3% of (95% CI 46.6 – 54.0, $n=568$) were on ART, and 62.1% (95% CI 58.4 – 65.9) were virally suppressed (Mathews et al., 2021).


Another study conducted in primary healthcare clinics in rural KwaZulu-Natal from December 2016 to March 2017 reported that for pregnant AGYW aged 14 – 19 years, 69.2% (95% CI, 50.0 – 83.5, $n=26$) knew their HIV status, while 88.9% (95% CI 67.2 – 96.9, $n=18$) were HIV positive (Ntombela et al., 2022). Furthermore, overall VLS (defined as viral load < 400 copies per mL) was lowest among pregnant AGYW aged 14 – 19 years (82.8%, 95% CI 65.5 – 92.4, $n=29$) and 20 – 24 years (89.1%, 95% CI 78.2 – 94.9, $n=55$) respectively compared to pregnant women aged ≥ 25 years (Ntombela et al., 2022). These findings highlight the need to address the remaining coverage gaps in the HIV care cascade for pregnant AGYW, particularly with regard to ART retention and adherence.

In South Africa, PMTCT programmes and expanding access to ART for HIV contributed to increased numbers of women being diagnosed with HIV and a reduction in vertical transmission (Burton, Giddy and Stinson, 2015). This is the time when pregnant AGYW, are likely learn of their HIV status (Drake et al., 2014). Drivers for the gaps in ART initiation within PMTCT interventions in sub-Saharan Africa include health system and community level challenges such as staffing and poor integration of services, stigma, fear of disclosure of their HIV status, and lack of partner support (Gourley et al., 2013). Previous findings assessing the 90-90-90 HIV care cascade among adolescents aged 10 – 19 years found that females lagged behind their male counterparts in achieving the second 90. ART uptake was lower among females at 62.1% (95% CI 50.1 – 72.8) than their male counterparts at 70.5% (95% CI 50.7 – 84.7) (Naidoo et al., 2022).

Some progress has been made in gaining insight into the experiences of women who are newly diagnosed with HIV during pregnancy in urban and rural settings (Madiba, 2021; Fords et al., 2017). The research found that newly diagnosed HIV-positive pregnant women experienced traumatic emotions and felt that it was a fatal illness despite having access to ART at the time of diagnosis and being asymptomatic (Madiba, 2021), whilst others expressed concern about their child's well-being, which motivated them to adhere to ART (Fords et al., 2017).

South Africa has the most extensive ART programme globally, and significant progress has been made in ART uptake in the general population. However, data on drug resistance among the target sample of recently pregnant women are limited. Therefore, it remains essential to monitor the prevalence of HIV drug resistance mutations in the general population and among pregnant women. Other analyses found that HIV drug resistance was detected in 25.8% (95% CI 19.8 – 32.8) of females of all ages in 2017 (Moyo et al., 2020). The small sample in our analyses of DRMs among recently pregnant women of reproductive age precludes comparison with other groups. However, high rates of drug resistance among HIV-positive pregnant women were reported from a large multi-site study in Canada and the United States of America conducted from 2000 to 2014, and the recommendations called for HIV genotyping in early pregnancy (Lazenby et al., 2016). It was recently reported that 81.1% ($n=30/37$) pre-treatment HIV DRMs were detected among AGYW aged 18 – 24 years compared to 18.9% ($n=7/37$) in older women aged 25 – 35 years – all of whom were newly HIV positive as part of the Evidence for Contraceptive Options and HIV Outcomes from 2015 to 2018 (ECHO Trial) in South Africa (Beesham et al., 2022). These authors suggest that the higher prevalence of DRMs among AGYW, compared to their older counterparts, might be related to risk behaviours such as having multiple partners and condomless sex (Beesham et al., 2022). Monitoring adherence and identifying treatment failures and drug resistant mutations through genotyping samples from currently pregnant women are essential to guide treatment strategies for effective VLS and to prevent HIV transmission to the baby *in utero*.

Our analyses had some limitations. Pregnancy variables, behavioural risk factors and information on disease status (TB, hypertension) were self-reported and prone to recall and social desirability biases. The small sub-sample for some of the variables reduced the statistical power of the analyses. Other unmeasured potential risk factors may need to be accounted for in the analysis. The cross-sectional study design implies we cannot infer causality between the factors assessed in the analyses and HIV infection. Nevertheless, the level of statistical significance between HIV prevalence and key reported socio-behavioural risk factors suggests that the study identified essential drivers of HIV infection in the sub-group of recently pregnant women of reproductive age.



5 Conclusion

This study highlights the persistent socio-demographic and behavioural risk factors that characterise recently pregnant HIV-positive women in South Africa. The findings also quantified HIV and associated structural and behavioural risk factors among AGYW and their older counterparts. Our findings suggest that HIV prevalence among recently pregnant women aged 15 – 49 years was higher compared to the general population.

Furthermore, HIV positive recently pregnant women in South Africa live in high levels of poverty, generally have low education levels, engage frequently in condomless sex and age-disparate sexual relationships, and have high prevalence rates of having multiple sexual partners and experiencing IPV. There were also gaps in the HIV care cascade for the second 90 (diagnosed and on ART), which are likely to impact pregnant women's health and well-being.



6 Recommendations

Considering these findings, interventions that include opportunities for school completion and higher education attainment for AGYW, and employment and social support for young mothers remain essential. Sexual and reproductive health promotion strategies and interventions should include the following:

- Tailored messages highlighting the high risk of HIV acquisition associated with lack of or inconsistent condom use, having age-disparate sexual relationships, early sexual debut, and multiple sexual partners.
- Exploring pathways to improve accurate risk perception among recently pregnant AGYW and improving risk counselling.
- Engaging and involving the sexual partners of AGYW and older women.
- Promoting discussions about STIs among pregnant women, their partners and service providers to gauge their understanding regarding barriers to consistent condom use (examples include not having condoms, negotiating condom use, understanding the need for condom use while pregnant, or on contraception, and trusting their partner).
- Strengthening integration of STI and HIV services to support linkage to care and access to risk reduction counselling and condoms and referral for pre-exposure prophylaxis for HIV (where eligible).
- Supporting efforts to address the gaps in the HIV care cascade, particularly for ART initiation, retention and adherence.
- Integrating gender-based violence education into SRH programmes, involving communities and offering linkages to support victims of IPV to youth of both sexes.
- Reaching out to recently pregnant AGYW to encourage them to test for HIV – some AGYW reported they had never tested for HIV.
- Monitoring HIV drug resistance mutations among pregnant women, especially among AGYW.



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