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Mental health and other clinical and social characteristics of young mothers living with HIV in Zimbabwe: a mixed-methods study

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ABSTRACT

Young women living with HIV (YWLHIV) experience numerous stressors including treatment management and poor parent modelling. We investigated YWLHIV's mental health and other clinical and social characteristics to inform tailored support. YWLHIV (15–24 years old) participating in a peer-support model tailored for young mothers (Young Mentor Mum intervention) completed a self-administered interview and had clinical and psychological assessments in March to April 2019. A subset participated in in-depth interviews and had their partners interviewed. We analysed quantitative and qualitative data using STATA 15 and thematic analysis, respectively. We enrolled 177 YWLHIV. We found high rates of maternal viral suppression (86.9% with viral load <1000 copies/ml). Over half were at risk of common mental disorder (CMD), scoring above the cut-off point (SSQ ≥8, 50.3%) and depression (EPDS ≥12, 55.9%). CMD risk was higher among women who reported intimate partner violence in the past year (64.1% vs 39.4%; adjusted OR 2.48 (1.12, 5.48) for violence 1–2 times and 2.41 (0.99–5.85) for higher frequency; $p = .03$). HIV status disclosure was limited; only 44.1% had disclosed to their partners. YWLHIV confront challenges which affect their health and that of their children. Youth-focused mental health interventions coupled with couples counselling and violence prevention need to be scaled up.

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Introduction

Global HIV (95-95-95) targets are that 95% of all people with HIV know their status, 95% of those living with HIV (LHIV) are on sustained treatment and 95% of those on treatment are virally suppressed (UNAIDS, 2015). In sub-Saharan Africa, the epicentre of the HIV epidemic (Cornell et al., 2021), several countries are on track to achieve these targets (UNAIDS, 2023), demonstrating that they can be attained. Attainment of targets is however uneven across population groups, with adolescents and young people less likely to be identified, on treatment and virally suppressed (UNAIDS, 2023). Adolescent girls and young women (AGYW, aged 15–24 years) are a particularly important group within this region; they accounted for nearly one-quarter of all new HIV infections in 2022 (UNAIDS, 2022). Further, AGYW pregnancy and birth rates within sub-Saharan Africa are the highest in the world (Kassa et al., 2018).

Young women living with HIV (YWLHIV) experience complex physical, clinical, psychological and social stressors including exposure to antiretroviral therapy (ART) regimens, poor viral suppression, poor parent modelling, stigma and discrimination and, risk of rejection by sexual partners (Ferris France et al., 2023; Mavhu et al., 2018; Rich et al., 2022; Slogrove et al., 2018). In addition to coping with the normal stresses of HIV treatment management, these women must manage an array of issues arising from their sexual and reproductive health needs (Bernays et al., 2014; Pretorius et al., 2015). They face issues related to disclosure of their HIV status, risk of reinfection, managing safer sex and issues related to pregnancy and childbirth (Hosek et al., 2000; Zamudio-Haas et al., 2012). Pregnancy is a major life event

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that is inevitably accompanied by social, psychological and hormonal changes (Bjelica et al., 2018). These changes can trigger depressive episodes with serious implications for both maternal and infant outcomes (Bjelica et al., 2018). YWLHIV are more likely than older women LHIV to transmit HIV to their infants (Callahan et al., 2017; Horwood et al., 2013; Toska et al., 2024).

Despite their distinct vulnerabilities, little has been documented about the challenges facing these young mothers; their support needs are unclear and so is how to address these around the time of their first pregnancy (Toska et al., 2020). Existing literature has largely centred on the ability of young people LHIV to conceive, or on their pregnancy and infant outcomes (Toska et al., 2020). Much less is known about their social and psychological needs, and how they have been accessing services together with their infants and partners (Callahan et al., 2017; Chibanda et al., 2016; UNICEF, 2020; World Health Organization, 2020).

Zvandiri meaning "As I am" in Shona (www.zvandiri.org), which was recommended by WHO (WHO, 2013, 2023), UNAIDS (UNAIDS, 2022) and PEPFAR (Gage et al., 2017) as a best practice programme, is a theoretically-grounded, multi-component differentiated service-delivery model for children, adolescents, and young people LHIV (Willis et al., 2018). Zvandiri has been scaled-up in Zimbabwe and adopted/adapted in 13 other African countries. Since 2018, Zvandiri has been supporting Zimbabwe's national elimination of mother-to-child transmission (eMTCT) response through offering a comprehensive package of community– and clinic-based differentiated HIV care for young mothers through the Young Mentor Mum (YMM) programme (UNICEF, 2020).

The YMM initiative comprises peer-led counselling, home visits, weekly SMS contact, referrals and integration of young mothers into adolescent friendly mother-baby support groups (UNICEF, 2021). The YMM intervention empowers pregnant and lactating young women with crucial HIV and prevention of mother-to-child transmission (PMTCT) literacy, counselling and support (UNICEF, 2020). At the core of the YMM programme are trained, mentored and supported young mothers LHIV aged 18–24 years who offer support to their peers in health facilities. In Zimbabwe and elsewhere, the YMM programme has been fully integrated with the national eMTCT programme to facilitate linkage to HIV care and treatment services, and realise the goal of reaching an HIV-free generation.

We conducted a mixed-methods study at the start of YMM programme implementation to describe the mental health and other clinical and social characteristics of young mothers LHIV and the support they were getting, to inform tailored support.

Materials and methods

Study setting

We conducted the study in two high HIV burden districts in Zimbabwe: Hopley and Buhera. Hopley is a semi-formal settlement in Harare South with high levels of migration, poor infrastructure, weak social services, low education, early marriages, high teenage pregnancies, high unemployment and informality. Buhera on the other hand, is a poor rural district in Manicaland, one of Zimbabwe's 10 provinces which experiences perennial droughts, resulting in high levels of food shortages.

Sample and recruitment

Young women aged 15–24 years who had joined the YMM intervention were recruited from the Zvandiri Mobile Database Application (ZVAMODA) from 18 March to 29 May 2019. After receiving study information, interested participants who met the inclusion criteria and were able and willing to provide written informed consent were recruited. In Hopley, young mothers were randomly selected from one high-volume clinic. In Buhera, participants were randomly selected from six clinics. A subset of participants was purposively selected for a qualitative enquiry based on their experiences. Male partners who agreed to participate in the study were interviewed regardless of their HIV status and age.

Data collection procedures

All participating mothers self-completed a questionnaire using Audio Computer-Assisted Self-Interviewing (ACASI). They also had a full clinical examination, including WHO staging and a psychological assessment using three questionnaires. These were: the Shona Symptom Questionnaire (SSQ-14, cutoff point 8/14), a locally validated, 14-item indigenous screening tool for common mental disorder (Chibanda et al., 2016); the Edinburgh Postnatal Depression Scale (EPDS, cutoff point 12) (Ing et al., 2017); and the Patient Health Questionnaire (PHQ-9, a diagnostic rather than screening tool which asks

about symptoms of depression in the last two weeks) (Chibanda et al., 2016).

Clinical records, including clinic registers, child health and ART cards, were reviewed to assess retention in care of both mothers and their infants. At the end of the interviews and assessments, blood samples were collected from the mothers for viral load testing. Parenting sense of competence (self-report measure of parenting efficacy and satisfaction) was assessed using the Parenting Sense of Competence (PSOC) scale (Gilmore & Cuskelly, 2024). In addition, 16 mothers and seven male partners took part in in-depth interviews. The qualitative interviews explored young women's capacity to manage treatment adherence, HIV status disclosure and, support needs and experiences. Interviews were informed by a topic guide, conducted in Shona (the participants' language), audio-recorded and later transcribed verbatim and translated into English.

Data analysis

Quantitative data were analysed using STATA 15. Descriptive summaries and frequencies of socio-demographic characteristics were carried out. A logistic regression model was used to investigate the association between experience of violence and common mental disorder (CMD), adjusting for potential confounders which were identified using a Directed Acyclic Graph. Qualitative data were coded and summarised using a qualitative software package (NVivo 9.0, QSR International). A phased process to systematically process the data was then conducted, starting with data familiarisation, including reading through the transcripts. Secondly, initial codes and categories were created to capture common topics in the data and categories relevant to the research questions. CM and ZM discussed the initial codes and agreed on their suitability. Thirdly, themes and sub-themes were generated from the initial codes. Fourthly, ZM reviewed the themes/sub-themes in consultation with an advisor (WM) who gave his input on their validity. The themes/sub-themes were subsequently defined, named and used to provide context to quantitative data.

Ethical considerations

This study was approved by the national ethics committee, Medical Research Council of Zimbabwe (#2374). All participants provided written informed consent prior to their participation, including mothers aged 15–17 years, as they are considered emancipated minors. Transcripts were de-identified before analysis, and codes were generated to identify different participants. Data were stored on a secure encrypted cloud-storage and only accessed by authorised team members.

Results

YWLHIV's socio-demographic characteristics

A total of 177 mothers were enrolled. Just over half were married and staying with their partner. About three-quarters were unemployed. Overall, just under half were financially dependent on their partner (Table 1). Thirty-five YWLHIV agreed that their partner could be interviewed. Of the 35 contacted partners, only seven agreed to take part, and were aged 22–36 years.

YWLHIV's HIV-related characteristics

About 63% ($n = 112$) acquired HIV later in life while 35% ($n = 62$) had acquired HIV perinatally, according to clinic records. All the mothers were on ART

Table 1. YWLHIV's socio-demographic characteristics.

Characteristic	Category	*N* (%)
Age, years	15–19	37 (20.9)
	20–24	140 (79.1)
Education level	Never been to school	2 (1.1)
	Primary	32 (18.1)
	Secondary	142 (80.2)
	Certificate/Diploma/ Degree	1 (0.6)
Marital status	Never married	2 (1.1)
	Married staying with partner	99 (55.9)
	Married not staying with partner	22 (12.4)
	Divorced	48 (27.1)
	Widowed	6 (3.4)
Number of children ($N = 176$)	1	112 (63.6)
	2	54 (30.7)
	3	10 (5.7)
Employment status	Employed full time	8 (4.5)
	Employed part time	6 (3.4)
	Self employed	28 (15.8)
	Unemployed	135 (76.3)
Financial dependence	Dependent on husband/partner	80 (45.2)
	Dependent on other relative	20 (11.3)
	Independent	77 (43.5)
Has anyone in the household you live in made you feel like they wished you did not live there?	Yes	47 (26.6)
Primary carer tries to give me the things I need ($N = 50$)	Tries very hard	28 (56.0)
	Tries only sometimes	16 (32.0)
	Denies me the things I need	6 (12.0)

at the time of the study, but only 45% had been on ART prior to pregnancy. Eighty-four per cent (n = 148) were on first line regimens, with 89% taking TDF + 3TC + EFV; 16% (n = 29) were on second line taking TDF + 3TC + ATV/r, ABC + 3TC + ATV/r, or AZT + 3TC + ATV/r and one was taking TDF + 3TC + LPV/r. Twenty-four mothers (14%) had a viral load ≥1000 copies/ml, with the highest viral load being 1,354,136 copies/ml. Of the 29 mothers on second line therapy, 26 (90%) were virally suppressed (i.e., had <1000 copies/ml) while three were failing treatment (i.e., had ≥1000 copies/ml). The mean duration on HIV treatment for women with perinatally acquired HIV was eight years (range 0.3–19 years) and two years (range 0–9 years) for mothers who acquired HIV later in life. 74% reported that their partner had tested for HIV, 15% had not tested and 12% did not know whether or not their partner had tested. Of the 130 women whose partners had reportedly tested, 61% male partners were HIV positive (Table 2).

Table 2. YWLHIV's HIV-related characteristics.

Characteristic	Category	*N* (%)
Route of HIV transmission	Perinatally	62 (35.0)
	Sexual transmission	112 (63.3)
	Other	3 (2.0)
Time since ART initiation, years (*N* = 172)	Mean (SD), range	4.7 (4.1), 0.1-19
Stopped taking ARVs	Yes	25 (14.1)
Reasons why stopped taking ARVs (*N* = 25)	Didn't want them anymore	4 (16%)
	Side effects	4 (16%)
	Not needed – in good health	2 (8%)
	Husband did not permit	6 (24%)
	Other	9 (36%)
Viral load, copies/ml (*N* = 176)	≥1000 (unsuppressed)	23 (13.1)
ART regimen	First line	148 (83.6)
	Second line	29 (16.4)
Husband/partner has tested for HIV	Yes	130 (73.5%)
	No	26 (14.7%)
	Don't know	21 (11.9%)
HIV status of husband/ partner (*N* = 130)	HIV positive	79 (60.8)
	HIV negative	47 (36.2)
	Didn't collect the result	1 (0.8)
	He didn't tell me	3 (2.3)
Disclosed status to anyone	Yes	156 (88.1)
Disclosed status to …	Spouse/partner	78 (44.1)
	Mother	64 (36.2)
	Sister(s)	32 (18.1)
	Father	27 (15.3)
	Brother(s)	21 (11.9)
	Grandparents	19 (10.7)
	Caregiver	4 (2.3)
	Other	43 (24.3)
Does current partner know your status	Yes	159 (89.8)

Table 3. YWLHIV's mental health and violence scores.

Maternal mental health scores	Category	*N* (%)
EPDS score	≥12	99 (55.9)
PHQ9 score	≥11	23 (13.0)
PHQ9 score	Diagnostic of MDD	9 (5.1)
SSQ score	≥8	89 (50.3)
Warwick-Edinburgh Mental Wellbeing score	Mean (SD), range	47.3 (13.6), 14–70
Experience of violence		
Ever been hit, slapped, kicked or otherwise physically hurt (*N* = 176)	No	94 (53.4)
	Yes, but not in past year	6 (3.4)
	Once in past year	33 (18.8)
	Twice in past year	12 (6.8)
	3–4 times in past year	21 (11.9)
	5 or more times in past year	10 (5.7)
Anyone ever tried to make you have sex against your will, but the sex did not happen (*N* = 175)	No	142 (81.1)
	Yes, but not in past year	7 (4.0)
	Once in past year	17 (9.7)
	Twice in past year	3 (1.7)
	3–4 times in past year	6 (3.4)
At the time of your first pregnancy did you want to become pregnant?	I wanted to become pregnant then	107 (60.5)
	I wanted to become pregnant later	35 (19.8)
	I did not want to become pregnant at all	35 (19.8)

YWLHIVs' mental health

Just over half (56%) of the mothers had symptoms indicative of postnatal depression (scoring ≥12 on EPDS), with 14% reporting symptoms indicative of severe postnatal depression (Table 3). 50% (n = 89) scored ≥8 on the SSQ 14 suggesting risk of CMD. However, the PHQ-9 found that only 10% (n = 17) had symptoms diagnostic of depression. We compared adherence between mothers with high and low scores on the three mental health scales. Mothers who scored above the threshold on the SSQ and EPDS were more likely to report missing ART pills within the last 7 days than those who did not report CMD symptoms (Table 3). CMD symptoms were associated with a lower parenting sense of competence (PSOC) score; in univariate linear regression, women with a score ≥8 on the SSQ had a PSOC score 1.63 (95% CI 2.67, 0.59) points lower than those with fewer symptoms of CMD (p = .002).

During qualitative interviews, some mothers talked about feeling overwhelmed and socially isolated.

> "When I gave birth, it was difficult. I felt like dying, it was too much for me. My boyfriend denied responsibility and my uncles could not accept me at home and I was on my own, with no one to turn to and being a first-time mother, it was difficult. I cried, I regretted

Table 4. Chi-square tests of CMD prevalence by experience of violence.

		Been hit, slapped, kicked, pushed, shoved or otherwise physically hurt in the past year			Someone tried to make you have sex against your will, but the sex did not happen, in the past year		
		Yes	No	Chi^2, p	Yes	No	Chi^2, p
N		*78*	*99*		*28*	*147*	
SSQ	≥8	50 (64.1%)	39 (39.4%)	10.7, $p = .001$	18 (64.3%)	70 (47.6%)	2.6, $p = .11$
EPDS	≥12	49 (62.8%)	50 (50.5%)	2.7, $p = .10$	19 (67.9%)	79 (53.7%)	1.9, $p = .17$
PHQ-9	≥11	15 (19.2%)	8 (8.1%)	4.8, $p = .029$	3 (10.7%)	20 (13.6%)	0.17, $p = .68$

falling pregnant and I hated the baby. It was stressful to be honest … " (19-year-old woman, Hopley).

YWLHIVs' experiences of violence

We asked mothers about their experience of violence and sexual abuse. Close to half (47%) of the mothers reported having been hit, slapped, kicked or physically hurt in the past year and about a fifth reported that someone had tried to force them to have sex (Table 3). Mothers who reported experiencing violence were at a higher risk of depression; 64% of mothers who reported experiencing violence in the past year had ≥8 CMD symptoms using the SSQ-14 compared to 39% who never experienced violence (Table 4). Using the EPDS, 63% of mothers who reported experiencing violence in the past year were at risk of depression compared to 51% who did not. 19% of mothers who reported experiencing violence were at risk of depression using the PHQ-9 compared to 8% not reporting the experience.

The association between experience of violence and CMD was investigated further in a model which adjusted for the following potential confounders: age category, whether ever disclosing HIV status, whether partner had tested for HIV, whether pregnancy was intended, whether anyone in the household made the woman feel they did not belong. After adjustment, experience of violence remained an independent risk factor for CMD (Table 5).

Qualitative data highlighted that intimate partner violence was something that mothers commonly struggled with.

> "My husband is very violent, and he beats me almost every day … . I have told his family including his elder brother, but it seems as if they also can't restrain him. I have been to my aunt [primary caregiver] a number of times and she has engaged the family a number of times, but nothing has changed … " (22-year-old woman, Buhera).

Young mentor mums stated that they supported young women who reported domestic violence to access services.

> "We receive cases of domestic violence, and we provide support to the mothers and encourage them to report to the police. We encourage them to keep taking their medication and also seek support from family members" (24-year-old Mentor Mum, Buhera).

The mentor also noted that some mothers who reported intimate partner violence during YMM sessions were reluctant to report the cases to the police or to take up some of the services they would have been referred to for fear of getting their husbands arrested.

Table 5. Logistic regression models of the association of violence with CMD.

Been hit, slapped, kicked, pushed, shoved or otherwise physically hurt in the past year	Univariate ($N = 176$)		Multivariate ($N = 176$)	
	OR (95% CI)	p	aOR (95%CI)	p
1–2 times	2.53 (1.23, 5.23)	.007	2.48 (1.12, 5.48)	.030
3 or more times	2.94 (1.28, 6.76)		2.41 (0.99, 5.85)	

HIV status disclosure to partners

Of the 177 mothers, 88% had disclosed their HIV status to someone and 12% had not disclosed to anyone. Only 44% had disclosed to their partner (Table 2). Fear of accusation, abuse and stigma were the main reasons for non-disclosure.

> "When I was tested at 3 months [antenatal visit], I did not tell my husband because I was scared and I was also not convinced that I was HIV positive and when I went back at 5 months and was retested and given medication, I also didn't tell him because I was scared … " (20-year-old woman, Hopley).

Mothers who had not disclosed to their partners could not envisage a time they would disclose.

YWLHIV's ART adherence

Overall, 86% ($n = 152$) mothers reported that they had never interrupted their treatment. Qualitative participants reported a sense of responsibility to their family especially their children, described as "wanting to be there for my child" and "not wanting to pass on HIV to my child".

> "I am motivated to take my medication every day because I do not want to pass HIV to my child since I am still breastfeeding … I had a difficult time growing up as I was in and out of hospital and I do not want my son to walk that same road" (19-year-old woman, Hopley).

Twenty-five (14%) mothers reported that they had stopped taking HIV medication at some point. Reasons for treatment interruption included husband denying tablets intake, non-disclosure of HIV status, drug fatigue and side effects, which were exacerbated by household food insecurity.

> "I was always feeling sleepy. I was always very tired and weak, and I would spend the whole day sleeping. In fact, the first two weeks when I started taking them, I spent close to a month in bed. I couldn't do anything, so I decided they were not good for me … " (24-year-old woman, Buhera).

Some male partners also reported adherence challenges. Two stopped treatment after experiencing side effects, one stopped after being teased by his colleagues, one got tired of taking and stopped while the other one interrupted treatment for six months during the time he was an undocumented migrant in South Africa.

> "I stopped taking them [pills] in 2014 and resumed taking in 2016. The pills would make me feel dizzy. I can say the first time I took them; I spent a month in bed. I was always tired, and I could not do anything, then I decided not to take them as it was affecting my school attendance at the time" (22-year-old man, Buhera).

Young mothers expressed frustration over the lack of sympathy from healthcare workers.

> "When they hear that you have missed your pills, they call you "stupid" and they don't take you seriously. They will tell you how you are going to infect your child, it's as if we don't care about our babies but taking pills every day is just difficult, sometimes it's beyond our control" (23-year-old woman, Hopley).

YWLHIV's pregnancy, family planning and peer support

At the time of their first pregnancy, 61% of YWLHIV said they wanted to become pregnant at that time, 20% said they would have preferred to become pregnant later and another 20% did not want to become pregnant at all (Table 3). Use of contraception is shown in Table 6. Of 172 non-pregnant mothers, 148 (86%) were using a birth control.

Qualitative interviews pointed to limited access to contraception for adolescents who were unmarried prior to pregnancy. They stated that fear of being judged or labelled by peers, family and healthcare workers prevented them from accessing contraception.

Table 6. YWLHIV's Family planning uptake.

Characteristic	Category	*N* (%)
Used a condom the first time you had sex (*N* = 176)	Yes	125 (70.6)
Use a condom in current relationship	All the time	71 (40.1)
	Occasionally	41 (23.2)
	Never	65 (36.7)
Current family planning method (*N* = 176)	Oral contraceptive	60 (34.1)
	Condoms	16 (9.1)
	Implant	25 (14.2)
	Depo (injection)	44 (25.0)
	IUD	3 (1.7)
	None	24 (13.6)
	Pregnant	4 (2.3)

When asked about their motherhood, 68% ($n = 120$) stated that the transition to motherhood was difficult. Nearly all mothers, however, appreciated the emotional and social support from the newly established YMM programme. They found participating in the programme very helpful as they received tailored care and support, together with their children. They described the YMM support group as a trusted social space to discuss concerns and ask questions they had regarding their own health and that of their babies. YMMs shared their experiences of living with HIV, particularly how to prevent transmission of HIV to babies. Participants stated that this instilled the realisation that it was possible for babies to be HIV negative despite mothers LHIV, and they felt encouraged and motivated to adhere to treatment for their babies' positive health outcomes.

Discussion

We conducted a mixed-methods study at the start of YMM programme implementation to describe the mental health and other clinical and social characteristics of young mothers LHIV and the support they were getting from their partners. Within the context of high mental health challenges, intimate partner violence and non-disclosure of HIV status, maternal viral suppression was reasonable. This is encouraging considering that young people LHIV have been shown to have poorer HIV outcomes, including poor adherence compared to adults (Aderemi-Williams et al., 2021; Foster et al., 2020). Of note, the YWLHIV had just enrolled into the YMM programme, and were starting to receive tailored peer-support. One would hope that as with similar peer-led models (Mavhu et al., 2020; Odiachi et al., 2021; Wanga et al., 2019), the promising

indications found in this study would continue to be sustained.

More than half of the YWLHIV were at risk of CMD, with around 10% at risk of severe depression. Poor mental health has a negative effect on ART adherence and engagement in care, in addition to the well-described consequences for infant development (Mebrahtu et al., 2018; Parsons et al., 2012; Roberts et al., 2022; Slomian et al., 2019). A number of studies have highlighted CMD among people LHIV in this setting, and novel interventions have proven effectiveness in reducing CMD risk (Ouansafi et al., 2021). The Zvandiri-Friendship Bench Trial found a reduction in prevalence of CMD symptoms from 72% to 10% over 12 months of follow-up among adolescents LHIV receiving peer support and counselling from Community Adolescent Treatment Supporters (CATS) (Simms et al., 2022). The same trial also showed a reduction of 68% to 2% among those receiving CATS-led enhanced, problem-based counselling (Simms et al., 2022). The YMM intervention adopts the same peer-led approach to problem-based counselling, screening for CMD and referral. Community-based lay health worker problem solving therapy, such as that delivered using the Friendship Bench is being widely scaled up in urban Zimbabwe and provides a potentially scalable method of closing the mental health treatment gap (Chibanda, 2017; Ouansafi et al., 2021).

Although viral suppression of the YWLHIV was good (87%) and higher than the viral suppression rate among adolescents in general (58%) (MoHCC, 2021), it still fell short of the last 95% of the global (95-95-95) HIV targets, justifying the need to scale-up up peer-supported community-based interventions which have shown to improve HIV virological suppression in adolescents with HIV, such as the Zvandiri model (Bernays et al., 2020; Mavhu et al., 2020). A few mothers had high viral loads, implying suboptimal adherence or the need to switch regimens. Most of the reasons cited for treatment interruption resonate with findings from other studies in sub-Saharan Africa that have shown the link between adherence problems and social and relational challenges (Ammon et al., 2018; Bernays et al., 2020).

Pregnancy and motherhood experiences suggested that some of the pregnancies were unintended, which points to an unmet need for family planning among young women in the study. Studies have shown that provision of family planning to young women within HIV programs is limited (Mavodza et al., 2022). Young women in resource-stretched settings have been shown to have limited access to modern contraceptive methods (Nkhoma et al., 2022). In Zimbabwe, restrictive laws prohibit those below 18 years to access contraceptives and young women are only offered contraceptives after their first pregnancy (Mavodza et al., 2022). Limited access to modern contraception has been shown to increase unwanted pregnancies, unsafe abortions and pregnancy-related mortality (Chandra-Mouli et al., 2014). Closing the gap of unmet family planning needs for young women is crucial for improving maternal and child health among reproductive-age women, including those LHIV (Kefale et al., 2021).

Disclosure of HIV status continues to be a challenge for YWLHIV and, to some extent, their partners. This is consistent with previous findings within the same population (Brittain et al., 2018; Grainger, 2017; Mavhu et al., 2018; Patel et al., 2012; Ramlagan et al., 2018). Given the potential individual and public health benefits associated with HIV disclosure including improved engagement in care (Calabrese et al., 2012; King et al., 2008; Spangler et al., 2014) and reduced levels of unprotected sexual activity (Hightow-Weidman et al., 2013; King et al., 2008; Pinkerton & Galletly, 2007), interventions need to encourage and empower YWLHIV to disclose to their sexual partners (Evangeli & Wroe, 2017). How to ensure the disclosure process does not result in undesirable consequences remains a key consideration for interventions promoting disclosure of HIV positive status to the male partner (Bernays et al., 2020; Mavhu et al., 2018). Of note, almost half of the mothers reported experiencing violence, including intimate partner violence. Experience of violence has been shown to negatively impact women's HIV treatment (Biomndo et al., 2021; Cluver et al., 2018; Lopez et al., 2010). Information and services to end violence against women need to be integrated as standard practice in HIV treatment and care to enhance women's quality of life.

This study's participants highlighted the critical role of support groups, corroborating previous research with young people LHIV (Mavhu et al., 2013; Mupambireyi et al., 2014). In this study, YWLHIV described support groups as puncturing a tenacious sense of isolation and reducing their fear of the present and future implications of their HIV status. Our findings and those from other settings highlight the crucial role of community-based peer-support programming as a mechanism for improving clinical outcomes and wellbeing (Bernays et al., 2020; Mavhu et al., 2013); it needs to be sustained.

A strength of this study is that we used a mixed-methods approach to triangulate data. Whilst quantitative data highlighted the magnitude of issues,

qualitative data explored the context within which these trends occurred, highlighting the recognised value of combining quantitative and qualitative approaches within evaluations (Moore et al., 2015). A potential limitation of our study is that the role of the YMM programme may have been overstated by YWLHIV. Also, we were only able to interview a small sample of male partners. Despite these limitations, our data represent the experience of a select group of YWLHIV from Zimbabwe and provide a detailed insight into their lives and experiences, information critical for informing tailored interventions. Encouragingly, the YMM programme has been cited as one of the promising interventions for adolescent and young mothers LHIV (Toska et al., 2020).

Conclusions

YWLHIV, regardless of mode of transmission, confront a number of challenges which affect their health. Given the high risk of CMD observed in our study, youth-focused mental health interventions coupled with violence prevention and support with disclosure, need to be scaled up as a critical component of national PMTCT programs.

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