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Determinants of option B+ treatment adherence among HIV-positive breastfeeding women in Zimbabwe

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Abstract

Zimbabwe is one of the countries in sub-Saharan Africa with the highest prevalence of HIV. Despite the launch of the Option B+ treatment approach in 2013 to eliminate mother-to-child transmission, the number of pregnant women and children living with HIV is still high due to non-adherence. This prompted this study with the aim to explore the determinants of adherence to Option B+ HIV treatment among HIV-positive breastfeeding women. This descriptive phenomenological study explored the lived experiences of 12 purposively recruited HIV-positive breastfeeding women in 2020 through in-depth interviews. The collected data were analysed using Colaizzi's phenomenological data analysis framework. The study findings revealed that client-related factors such as food insecurity, travel, early infant diagnosis, and treatment-related factors such as the unavailability of drugs, the side effects of medications, and health institution-related factors are barriers to adherence among HIV-positive breastfeeding women. The findings also indicated that support from the family, health care workers, awareness of the benefits of the treatment plan, and positive role models are promoters of adherence. To improve breastfeeding women's adherence to Option B+ HIV treatment, the identified barriers to adherence should be addressed while optimising the motivators of adherence. *(Afr J Reprod Health 2023; 27 [12]: 15-26).*

Keywords: Adherence, breastfeeding, phenomenology, HIV, Option B+ treatment, women

Résumé

Le Zimbabwe est l'un des pays d'Afrique subsaharienne où la prévalence du VIH est la plus élevée. Malgré le lancement de l'approche thérapeutique Option B+ en 2013 pour éliminer la transmission mère-enfant, le nombre de femmes enceintes et d'enfants vivant avec le VIH reste élevé en raison de la non-observance. Cela a incité cette étude dans le but d'explorer les déterminants de l'observance du traitement anti-VIH Option B+ chez les femmes séropositives qui allaitent. Cette étude phénoménologique descriptive a exploré les expériences vécues de 12 femmes allaitantes séropositives recrutées à dessein en 2020 au moyen d'entretiens approfondis. Les données collectées ont été analysées à l'aide du cadre d'analyse de données phénoménologiques de Colaizzi. Les résultats de l'étude ont révélé que des facteurs liés aux clients, tels que l'insécurité alimentaire, les voyages, le diagnostic précoce du nourrisson et des facteurs liés au traitement, tels que l'indisponibilité des médicaments, les effets secondaires des médicaments et les facteurs liés aux établissements de santé, constituent des obstacles à l'observance chez les personnes infectées par le VIH. -les femmes qui allaitent positivement. Les résultats ont également indiqué que le soutien de la famille, des agents de santé, la conscience des avantages du plan de traitement et des modèles positifs sont des facteurs favorisant l'observance. Pour améliorer l'observance des femmes qui allaitent au traitement du VIH Option B+, les obstacles identifiés à l'observance doivent être surmontés tout en optimisant les facteurs de motivation de l'observance. *(Afr J Reprod Health 2023; 27 [12]: 15-26).*

Mots-clés: Observance, allaitement, phénoménologie, VIH, traitement Option B+, femmes

Introduction

The Human Immunodeficiency Virus (HIV) can be transmitted from an HIV-positive woman to her child during pregnancy, labour and breastfeeding[1]. Option B+ treatment is a lifelong antiretroviral therapy (ART) used to prevent vertical HIV transmission from mother to child. The treatment is targeted at pregnant or breastfeeding women who are living with HIV. More than 90% of women on Option B+ live in sub-Saharan Africa (SSA)[2]. This treatment strategy aims to protect sexual partner(s) and unborn children, as well as the health of pregnant woman[3].

HIV remains one of the major causes of maternal and child morbidity and mortality in SSA[4].

Studies have shown that early ART initiation reduces HIV-related morbidity, promote access to care and strengthens the immune system of patients[5]. Mother-to-child transmission (MTCT) of HIV continues to be the main mode of infection, accounting for more than 90% of all new HIV paediatric infections in low-income countries where HIV-positive mothers have no other feeding option than breastfeeding[6,7]. Option B+ treatment is the prevention of mother-to-child transmission (PMTCT) programme meant to address MTCT among HIV-positive pregnant or breastfeeding women.

Despite the scaling up of the PMTCT of HIV programmes in SSA, vertical transmission of HIV continues to escalate[8]. Although Zimbabwe has one of the highest HIV burdens in SSA with 1.3 million people living with HIV, and 38 000 new HIV infections in 2018[9], the government's plan to eliminate new paediatric HIV infections by 2020[10] did not materialise[11]. Harare is the district with the highest number of new HIV infections in the country[11].

An effective PMTCT programme can significantly reduce the MTCT of HIV by 99% if breastfeeding mothers or pregnant women enrolled in the programmes adhere to the treatment plan[12]. However, the lack of adherence to treatment plans by women on PMTCT programmes undermined the effectiveness[13]. The authors noted that factors such as weak health systems and interpersonal and cultural factors could be reasons why women in the PMTCT programmes default on prescribed treatments. Another study concurs that the breaching of patient confidentiality, poor provider-patient relationships, stigma, and a lack of trust in the healthcare system could discourage women from accessing PMTCT services or detrimentally affect their retention in the programmes[14]. This was further supported by another study in sub-Saharan Africa which reported that some of the partners of these women prevented them from adhering to Option B+ HIV treatment[15].

Furthermore, in Malawi, inadequate counselling regarding the benefits of ART, the side effects of ART medications, conflicting religious messages, unsupportive spouses, stigma, and geographical and economic factors are challenges preventing women from adhering to Option B+ HIV treatment[16]. In addition, it was revealed that women who live in rural areas defaulted on Option B+ treatments owing to a lack of transport and comfortable access to health care facilities[17].

In the Chitungwiza Municipality of Zimbabwe, 39% of women who were enrolled in the Option B+ HIV treatment programme did not adhere to the treatment plan[18]. The high number of defaulters was a cause for concern, as such a trend will undermine both national and global goals of reducing the HIV epidemic to a moderate endemic disease by the year 2030. In addition, defaulting women may develop resistance to ART, which could affect the viral suppression potency of the subsequently administered ART. Consequently, defaulting women who develop resistance to ART could be placed on more expensive second or third lines of ART, thus increasing the treatment cost[5].

Despite the fact that a significant number of women in the Chitungwiza Municipality have been recorded as Option B+ HIV treatment programme defaulters, no research has been conducted on the experiences of defaulting breastfeeding women enrolled in the programme in the municipality. This prompted the researchers to conduct this study to gain in-depth insights into the experiences of defaulting women in the Option B+ HIV treatment programme to recommend appropriate and contextually relevant interventions in order to promote adherence among women who are receiving Option B+ HIV treatment.

Methods

Design

This descriptive phenomenological study explored and described the lived experiences of women who defaulted Option B+ treatment at Chitungwiza Municipality clinics. This research design allows researchers to gain an in-depth understanding of the experiences of the study participants from their point of view[19].

Study setting

The study was conducted at two municipal clinics in Chitungwiza town (the dormitory town of Harare, the capital city of Zimbabwe) with the highest default rate. Chitungwiza is the third largest city in Zimbabwe[20] with 8.4% of the population living with HIV, Chitungwiza is one of the suburbs in Harare with the highest HIV prevalence[21].

Sampling

The population of this study comprised HIV-positive breastfeeding mothers in Chitungwiza Municipal clinics defaulting Option B+ HIV treatment in the period 1 January to 31 December 2019. The researchers used purposive sampling to recruit the participants guided by the following inclusion criteria: HIV-positive breastfeeding woman enrolled in Option B+ from 1 January 2019 to 31 December 2019 who missed at least 30 days of treatment; diagnosed as HIV-positive at one of the Chitungwiza Municipal clinics and used Option B+ treatment for at least a month prior to defaulting. Other inclusion criteria were ongoing antenatal and post-natal registration with the Chitungwiza Municipal clinics; and the requirement to be physically strong and mentally fit to give informed consent. The data capturers and counsellors at the clinics were the gate keepers who guided the researchers to identify women who met the study inclusion criteria. The clinic counsellors followed up with potential participants and booked appointments with them. The researchers explained the purpose and nature of the study to them. The women who met the predetermined inclusion criteria and were willing to give informed consent participated in the study. A total of 12 women participated in this study. The number of participants was informed by data saturation which occurs when the information obtained from study participants yields no new insights or themes, but merely repeats information obtained from previously interviewed participants[22,23]. Data saturation for this study was reached after interviewing the 12th participant.

Data collection

The researchers used an interview guide to conduct 12 individual audio-recorded, in-depth interviews from September 4 to October 12, 2020. The researchers developed the interview guide, which was refined in a pilot study. All the interviews took place in private rooms of the municipal clinics and were conducted in Shona, the main local language in Chitungwiza. Guided by Moser and Korstjens' interview guidelines[24], the researcher asked each participant a central question: "Kindly share with me your experience of Option B+ treatment at Chitungwiza municipality clinics." The researcher used probes and prompts when necessary to obtain comprehensive and detailed data from each participant. All interview sessions were recorded, using a high-quality audio recorder and field notes to capture the nonverbal cues of the observations and reflections of the participants and researchers during the interview. The analysis of the collected data was iteratively done until data saturation was reached.

Data analysis

All audio-recorded interviews were transcribed verbatim and translated into English within 48 hours of being conducted. Data were analysed, using Colaizzi's phenomenological data analysis framework[25 26].

The researchers intensively read each transcript several times while comparing them to the audio recordings and correcting any mistakes. Thereafter, the researchers highlighted significant statements on the participants' experiences from the transcripts. The researchers came up with relevant opinions on the experiences. Similar perspectives were grouped together into clusters of themes. The clusters of themes were further grouped into emergent themes; and the researchers came up with a table of themes and sub-themes. They went through the emergent themes to ensure that it concisely and accurately portrays the women's experiences in the Option B+ HIV treatment programme. To ensure that the emergent themes did not distort the participants' experiences and perspectives, the researchers did member checking to validate their views. In addition, an expert coder who transcribed and analysed the interview data independently came up with a table of themes, which was compared with the researchers' table of themes. The researcher-independent coder's engagement led to a final table of themes composed of themes, two superordinate themes, and subthemes with relevant excerpts from participant interviews.

Trustworthiness

The researchers ensured the trustworthiness of this study by following criteria prescribed by Lincoln and Guba's framework for ensuring trustworthiness[27]. The criteria are credibility, dependability, conformability, transferability, and authenticity. The researchers carried out member checking and validity checking on an ongoing basis to ensure credibility. The participants were given the

verbatim transcripts to verify that their experiences and views were accurately captured. The researchers ensured dependability and confirmability by capturing the nonverbal communication of the participants and other important information like the date, location and time of the interview with field notes. Furthermore, the researchers used an independent expert coder to transcribe and analyse the collected data to enhance confirmability. The researchers' emergent themes were compared with the independent coder's table of themes to arrive at the final table of themes. Apart from keeping an audit trail of the research process and activities, the researcher comprehensively described every aspect of the research process, research design, the biographic details of the research participants and the contexts where they operate to ensure transferability. The researchers ensured the authenticity of the research process by using direct participants' quotes to support the emergent themes.

Ethical considerations

Institutional approval and ethical clearance to conduct the study were sought and obtained from the University of South Africa's research ethics committee, the Chitungwiza Municipality Health Department ethics committee, and the Medical Research Council of Zimbabwe (MRCZ). The purpose, nature and how the study could potentially improve adherence to Option B+ treatment was concisely and clearly explained to the participants. The researchers assured the participants that their participation was voluntary and that they could withdraw from taking part in the study at any time should they wish to without any negative consequence. All the participants signed and returned their informed consent forms to ensure that their participation was voluntary. Besides conducting the interviews in a venue convenient and comfortable for participants; and data collection was done in the participants' home language (Shona). The researchers protected the identities of the participants by using pseudonyms in the transcripts and in reporting the findings of the study. In addition, the researchers kept the audio files of the interviews, transcripts, and field notes in password-protected electronic files to prevent unauthorised access.

Results

Biographical data

As shown in Table 1, the participants' ages ranged from 18 years to 40 years, with their average age being 30 years. About two-thirds (n = 7) of the participants were in the age bracket of 30 to 40 years. About 75% (n = 9) were married, 18% (n = 2) were divorcees, and one participant was never married. The majority (n = 11) of participants had secondary school education, while one participant had primary education. Half the participants were self-employed, while the other half were unemployed; and 25% (n = 3) reported their partners' HIV status as negative; 42% (n = 5) reported that their partners were HIV-positive but on ART and a third (n = 4) of the participants did not know the HIV status of their partners. All the participants were breastfeeding mothers at the time of data collection. Two superordinate themes emerged from the data analysis of the interview transcripts namely: (1) barriers to Option B+ HIV treatment adherence and (2) enhancers of Option B+ HIV treatment adherence.

Barriers to Option B+ HIV treatment adherence

The study findings revealed factors that prevent HIV-positive breastfeeding mothers from adhering to Option B+ HIV treatment. These factors include client-related barriers, treatment-related barriers, and health facility-related barriers.

Client-related barriers

It emerged from the study that location, food insecurity, travelling, early infant diagnosis (EID) and economic status were client-related barriers to adherence to Option B+ HIV treatment among breastfeeding women.

Location

The results showed that patients located far away from health facilities were discouraged from accessing Option B+ HIV treatment. The participants stated that there was no clinic nearby where they could receive treatment; and the lack of

Table 1: Participants' biographical details

Pseudonym	Age years	Marital status and children	Employment	Education level	Partner status	Default duration	Status disclosure
Anna	30	Married 3 children	Vendor	Secondary school	Negative	9 months	Yes
Betty	30	Married 4 children	Housekeeper	Secondary school	Negative	1 month	Yes
Clara	27	Married 3 children	Housekeeper	Primary school	Positive on ART	1 month	Yes
Delia	34	Married 2 children	Housekeeper	Secondary school	Positive on ART	2 months	Yes
Edina	36	Married 3 children	Taylor	Secondary school	Unknown	11 months	Yes
Flora	19	Divorced 1 child	Vendor	Secondary school	Positive on ART	1 year	Yes
Getty	40	Married 3 children	Housekeeper	Primary school	Unknown	2 months	Yes
Helen	27	Divorce 2 children	Housekeeper	Secondary school	Unknown	2 months	Yes
Idah	27	Married 1 child	Vendor	Secondary school	Unknown	2 months	Yes
Jane	38	Married 3 children	Vendor	Secondary school	Positive on ART	3 months	Yes
Kate	18	Eloped Separated 1 child	Hairdresser	Secondary school	Negative	1month	Yes
Leah	36	Married 4 children	Housekeeper	Secondary school	Positive on ART	3 months	Yes
Age distribution: n = 12		21 - 30 3					
11 -20 2		31 - 40 7					

transportation and transportation fares prevented them from receiving and adhering to the prescribed treatment.

I am troubled because where I come from is far. I walk to the clinic for one hour. First, it was money for transport, then there was no transport, and the commuter buses were out of the road. You could walk from Seke to Zengeza without seeing any buses because commuter buses were out of the road. So, we were walking. The commuter omnibuses were not on the road. I was footing all the time. (Delia, married, 34 years old).

The reason why I stopped going to collect the treatment was because where I come from is far, the commuter buses are not available, it seems as if you could be murdered walking in the forest all the way from Nyatsime. (Getty, married, 40 years old).

Food insecurity

According to the study findings, participants' adherence to Option B+ HIV treatment was hampered by a lack of food security.

So, finding money to buy food was a problem. I went to the clinic, and they said I was not eating enough food. That is why you are feeling weak, you should eat in the morning, afternoon, and evening while eating a balanced diet; eat porridge in the morning and take your tablets. We used to eat once in the morning and sadza in the evening. (Jane, married, 38 years old).

Travelling

Some participants mentioned that their adherence to the treatment plan was interrupted when they had to travel to the clinics from their locations. These women had no alternative access to the prescribed medications when they travelled.

I had travelled. I had gone to my mother's funeral in Chiweshe. I spent many days at the rural home and delayed in coming back. I came back yesterday, and today I have come to collect the tablets. (Clara, married, 27 years old)

Early infant diagnosis (EID)

The study results further showed that some participants discontinued their treatment after their babies tested negative for HIV.

So, what I found is that I was able to look after my baby because when brought for blood taking which they call Dried blood spot he is negative. I feel very happy. So, I see that my baby is alright. So, I saw that if I had managed to take the pills to the extent of having my baby born free from HIV, let me then stop. So, I stopped. (Getty, married, 40 years old).

Economic status

The findings revealed that the poor economic status of the participants was a major contributing factor to their non-adherence to Option B+ HIV treatment. The participants were of the opinion that the lack of money undermined their abilities to feed well, travel to clinics and access uninterrupted treatment.

It was the problem of money. At times we spent two months without paying rent, and the landlord will be on us. (Idah, married, 27 years old).

Treatment-related barriers

Besides client-related barriers, the unavailability of drugs and side effects of prescribed medications were identified by the study as treatment-related barriers to breastfeeding women's adherence to Option B+ HIV treatment.

Unavailability of drugs

The study revealed that sometimes there were shortages of prescribed medications in the clinics, leading to participants' non-adherence to the treatment plan.

The problem now is we cannot get calyptra. The baby's treatment- calyptra, is out of stock. I am now stressed. Some of the treatment of the baby is out of stock in the clinics. I do not have the money to buy from the pharmacies. (Helen, divorcee, 27 years old)

Medication side effects

In addition to the shortage of treatment drugs at the clinic, the side effects of the prescribed medications are barriers to adherence among HIV-positive breastfeeding women.

These pills were making my body so weak that after taking them, I would not be able to do anything, just feeling weak. Especially at night, I had nightmares such that my husband would end up waking me up. So, I saw that the pills were not good for me so, let me leave them. But when I stopped the pills, I would no longer feel these things. I stopped because I do not want to continue taking these treatments, which made me scratch with rashes and failing to do my jobs on time and feeling weak. (Getty, married, 40 years old).

Health facility-related barriers

In addition to treatment-related barriers, the study indicated that healthcare workers' attitudes and health institution system-related factors could discourage breastfeeding mothers from adhering to Option B+ HIV treatment.

Healthcare workers' attitude

The negative attitudes of some healthcare workers are another barrier to adherence to Option B+ HIV treatment among the participants.

At the clinic, they used to delay in serving us. They used to tell us that the staff was not enough. They used to do other tasks first then come to us. (Jane, married, 38 years old).

Aaah, I would say, when you come back to care after you had stopped treatment, it is possible to meet with someone who scold you. Those were some of the things that made me dread to go and collect treatment. Some nurses scold people. (Edina, married, 36 years old).

Health institution system-related factors

Some participants felt that unfriendly and inefficient services at the clinics discouraged them from continuing adherence to the prescribed treatment.

You get to the clinic when queues are long, you will have to join the queue to be attended to. (Idah, married, 27 years old).

In collecting treatment, you could wait from 08:00 to 13:00 hours. You will not have eaten, and you spent time in the queue. (Helen, divorcee, 27 years old).

In addition to the identified barriers, the study revealed the enhancers of adherence to Option B+ HIV treatment among breastfeeding women.

Enhancers of Option B+ HIV treatment adherence

It emerged from data analysis that some factors, such as access to support, awareness of treatment benefits, and role models could enhance adherence to Option B+ HIV treatment among HIV-plus women who are breastfeeding.

Access to support

The study findings showed that participants' access to support from family members and the healthcare facility could encourage adherence to Option B+ HIV treatment.

Support from family

The participants acknowledged that support from a family member promotes their adherence to Option B+ HIV treatment. This support comes in various ways, such as reminding them to take their treatment; helping with the collection of treatment drugs from the clinic; providing accommodation, money for food and rent; taking care of the other children when participants have to visit the clinics; and providing food that helped them to take the medication with little discomfort. Support from the family came from parents, siblings, partners, and children.

The younger one always asks me, saying, mama, your time is up, have you drunk your tablets? if I have not taken my tablets, then I would say, ah, I had forgotten, let me take. She phones (the sister) have you taken your medication? I say yes. She would say again, have you given the baby? I would reply, saying, yes. (Delia, married, 34 years old).

We help each other with my husband by reminding each other when it is time to take tablets. He said, that is what it is. Let us just take tablets. I left the other child with my mother-in-law. (Clara, married, 27 years old).

Support from the health care facility

Besides the support from the family, the results indicated that support from health care facilities could be a motivator for adherence to Option B+ HIV treatment. The findings revealed that support could come in the form of physical, social, and psychological support for women in Option B+ HIV treatment.

The health workers supported me when my husband was angry and shouted at me on the day we were tested. Even when I went to collect my tablets one health worker always used to ask about my welfare. I did not experience problems at the clinic. (Anna, married, 30 years old).

They said we should not default from treatment and that we should collect our tablets on days scheduled for that as well as using protector condoms during sex. (Clara, married, 27 years old).

Awareness of treatment benefits

Another enhancer of adherence to Option B+ HIV treatment is the participants' knowledge of the benefits of the treatment. The findings showed that when participants understand how beneficial the treatment is, they are likely to adhere to the treatment. While all the participants defaulted, some understood the need to continue giving their babies the treatment and taking them for growth monitoring and vaccinations because of the need to protect their babies from HIV infection. These benefits are prevention of death and protection of children.

Prevention of death

The awareness that Option B+ HIV treatment can prevent death and prolong life could encourage adherence among breastfeeding women.

See, at that place, the father tested positive, and the mother passed away. We will leave these children as orphans because of failing to collect treatment. So, we started taking our treatment together. (Jane, married, 38 years old).

I had some fear that, if I die today, what about this baby at the same time I am carrying another baby, and I will leave these other children in poverty. So, I said, I should work for, it is better for me to take the treatment (Edina, married, 36 years old).

Protection of children

In addition to prevention of death, the knowledge that Option B+ HIV treatment can protect children is another motivator of adherence.

I said, aah, "I will die and leave my children. So, I said, let me just take my medication to protect the baby in the womb. (Leah, married, 36 years old).

To protect the baby's life, I did not stop the treatment and vaccinations for the baby. But it is only me who

stopped taking my treatment. (Edina, married, 36 years old).

Role model

The study's findings also suggested that having positive role models could motivate breastfeeding women to adhere to Option B+ HIV treatment.

Yes, there is a friend of mine, she is so healthy so strong, she is the one who was saying, girls let us drink these pills. I found other people who were saying some people now have grandchildren. For instance, there is someone on ART whom I call an aunt. She and her husband are both very old in their rural home. They have seen all their grandchildren. This has also strengthened me. (Delia, married, 34 years old).

Discussion

This study found that a client-related barrier to Option B+ treatment adherence experienced by HIV-positive breastfeeding women was a lack of convenient access to health facilities. The difficulties experienced by the women in accessing treatments due to long distances were exacerbated by the COVID-19 pandemic. This corresponds with the findings of a Malawian study that states that women in the ART program struggled to adhere to the treatment plan due to the far-flung locations of health facilities and the high transport costs they had to pay[28]. The findings further indicated that food insecurity and poor economic status discouraged the participants from adhering to Option B+ treatment. The participants mentioned that taking medications on an empty stomach aggravated the side effects, which made them stop taking them. These findings were supported by several studies which reported that poverty and food insecurity resulted in the women discontinuing ART, because they did not have enough food to follow the advice of healthcare workers to eat before taking medication[13,29-31]. In the same vein, a cross-sectional study conducted in Zimbabwe indicates that women who lack food security are less likely to adhere to Option B+ HIV treatment[32]. The poor financial status of the participants meant that they lacked money for transport, food, accommodation in the form of rent and treatment of opportunistic infections for breastfeeding mothers. In addition, the study revealed that drug shortages at the clinics are a treatment-related barrier that could result in inconsistent ART uptake and discourage adherence. This is consistent with another study's findings, which reported that the unavailability of medication at clinics is a driver of non-adherence to Option B+ treatment[2]. Furthermore, it emerged that women on Option B+ treatment is likely to default taking their medications when travelling long distances from home. This could be due to their medication running out, or a lack of an accessible clinic in their destination. This was supported by another study, which revealed that absence from home when having to travel long distances for employment kept the women from adhering to ART treatments[28]. An earlier study conducted in India agrees with these findings[33]. This study revealed that participants stopped treatment after seeing that their babies had tested HIV-negative. This is in line with the findings of several studies which reported that women on Option B+ treatment abandoned their treatment once they found that their babies tested HIV-negative[34,35]. This may imply a lack of knowledge and understanding of how the treatment works.

The side effects of the prescribed medications were another treatment-related barrier to adherence identified by the study. Participants in this study reported that they experienced skin rashes, dizziness, headaches, sleep disturbances, weakness of the body, a burning feeling in the stomach, vomiting, swollen legs and drowsiness that made them stop treatment. These findings aligned with another study, which reported that participants in their study stopped taking medication because of the side effects of the medication[36]. Similarly, adverse drug reactions could promote a lack of adherence to ART[37]. In addition, another study explained that some women lost their jobs and means of income because of the side effects that negatively affected their performance[13].

The hostile attitudes of some healthcare workers towards women on Option B+ treatment is a health facility-related barrier to adherence identified by the study. Participants felt disregarded or ignored when they visited clinics for treatment. A study conducted in the United Kingdom concurs that healthcare workers' negative attitudes towards their patients could affect their retention in treatment programmes[38]. In the same vein, it was observed that poor relationships between healthcare workers and

ART patients also contributed to participants defaulting on ART treatment[28]. The findings also revealed that the healthcare system-related factors contribute to women's non-adherence to the Option B+ HIV treatment programme. In agreement with previous studies that highlighted inefficient service delivery at health care facilities as a potential barrier to ART care service[39,40], women had to wait long hours before they were attended to. This could be due to a shortage of staff[26].

Besides barriers to Option B+ HIV treatment's adherence, the study showed that support from family and health care facility are likely to enhance adherence to Option B+ HIV treatment. A study noted that psychological support from healthcare workers and family members played a positive role in promoting adherence among those in ART care[28]. Likewise, family support acts as a buffer to reduce distress and strengthen resilience for individuals who experience stressful events[41]. On the other hand, a lack of family support has been reported to hamper adherence to ART[31,35]. Furthermore, a lack of family support could cause emotional stress, which results in the women stopping their treatment[34].

An enhancer of adherence that emerged from study findings is the awareness of the benefits of Option B+ treatment. Participants in this study reported that they made efforts to adhere to prescribed ART because they did not want to die but wanted a healthy and prolonged life. In addition, they wanted to protect their babies from getting infected with HIV. This finding agrees with another study, which indicated that the benefit of protecting an unborn child is a motivator for a pregnant mother to accept and adhere to antiretroviral therapy (ART)[36]. This is consistent with the findings of several studies which highlight that knowledge of the benefits of ART is a strong motivator of its adherence[31,15,42]. Participants mentioned that positive role models in their communities inspired them to adhere to treatment. This finding aligned with earlier findings, which affirmed that a dearth of positive role models could promote non-adherence to ART[43].

Limitations

This study was limited to two Chitungwiza Municipality clinics. Participants in these two clinics could be different from those in other municipal clinics in the context of their experiences. The study was conducted in an urban area. Hence, rural women may have different experiences. While the study findings provided an in-depth understanding of the issue under investigation, the interpretations of the study findings should take these limitations into account.

Recommendations

To promote Option B+ HIV treatment's adherence among breastfeeding women, the proposed intervention should deal with the barriers to its adherence and optimise the enhancers of treatment's adherence. Community sensitisation and education involving community leaders on HIV infection and the benefits of Option B+ HIV treatment in an interactive discussion where people can ask questions and express their opinions may promote community and social support for the women enrolled in the treatment programme. This may also discourage women from discontinuing treatment after their children test HIV-negative. We recommend sustainable governmental interventions that will address the issue of women's economic empowerment in the study setting. Likewise, food insecurity should be addressed by issuing food vouchers and targeting food assistance for women to improve adherence in resource-limited settings. In addition, referral and engagement between the health facilities and social welfare department could address the challenge of low economic status on adherence in the short term. The healthcare workers should be trained in good nurse-patient relations while the government addresses the staff shortage at these facilities. Throughout all the interviews, there was no mention of community support groups or non-governmental organisations (NGOs) in relation to support for the Option B+ HIV treatment programme in the research setting. The government and other stakeholders should engage both local and international NGOs for support in promoting adherence to Option B+ HIV treatment at Chitungwiza Municipality clinics.

Significance for public health

HIV treatment is crucial to global public health efforts to manage and eradicate HIV/AIDS. This study sheds light on how to improve adherence to the Option B+ HIV treatment program among HIV-

positive women, making significant contributions to public health.

Conclusion

This study explored and described the lived experiences of breastfeeding women who are HIV-positive and enrolled in the Option B+ HIV treatment programme in an urban township in Zimbabwe. The findings of the study revealed the barriers and enhancers of treatment adherence. Based on the findings of the study, we recommend that those identified barriers to adherence be addressed and the identified enhancers should be optimised to promote adherence to Option B+ HIV treatment among HIV-positive breastfeeding women.

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Authors' contributions

The first author chooses the study area, conception of design, data collection, data analysis and interpretation.
The second author did a technical review, analysed, and interpreted the data, and drafted the manuscript.
The third author did critical revision for intellectual content, data analysis and supervised the study.

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