





REVIEW ARTICLE

Factors associated with pregnancy uptake decisions among seropositive HIV people receiving antiretroviral therapy in sub-Saharan Africa: A systematic review

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Abstract

Aim: This study determined the factors associated with pregnancy uptake decision among seropositive HIV people receiving antiretroviral therapy in sub-Saharan Africa.

Design: Systematic review.

Methods: The population, intervention, comparison and outcomes framework was adopted to search for literature after a scoping review using the preferred reporting items for systematic reviews and meta-analyses guidelines adopted in searching, and screening articles from four databases (PubMed, Cumulative Index to Nursing and Allied Health Literature, Embase, and Google scholar) to find 12 articles suitable for this study.

Results: Motivators of pregnancy uptake among HIV-positive women include desire to have children, knowledge about PMTCT, cultural duty for married women to have children, and household income. Demotivating factors included the modern method of contraception and burden associated with pregnancy.

Conclusion: There is a need to improve on services that reduce conception-related risks especially for women who choose to conceive and to incorporate fertility-related counselling into HIV treatment services.

KEYWORDS

AIDS treatment, antiretroviral therapy, childbearing, childbearing age, Ghana, HIV and AIDS, HIV therapy, reproductive age, sub-Saharan Africa

1 | INTRODUCTION

The desire to have a biological child and conserving one's family lineage may be a typical aspiration of many but this position may be different for persons living with the human immunodeficiency virus (HIV). Fertility issues for persons living with HIV are becoming increasingly important especially with the increase in awareness and the use of prevention of mother to child transmission-PMTCT (Nyamhanga et al., 2017; Teshome & Modiba, 2020; Triulzi et al., 2020; Wanyenze et al., 2018). In Africa, childbearing remains a critical factor in adulthood and a significant motivator for marriages. The colloquial perception has always been that people marry in order to produce offsprings (largely a biological requirement) and when this is not met, it is usually heralded with anxiety, fear, accusations and despair (Berhan, 2008; Yeatman, 2009). This insatiable desire to have children is the concern of all married women, and persons living with HIV acquired immunodeficiency syndrome (AIDS) are not an exception. The case of HIV-positive women is even pejorative as they may be seen to look physically unhealthy or have repeated complaints of illnesses. As the increasing use of antiretroviral (ARV) drugs is documented in most parts of Africa, HIV-positive women will have an elated or a rekindled desire to have children and understanding the factors that influence this desire is imperative.

2 | BACKGROUND

Childbearing desire is a cultural norm for married women especially in Africa but the desire to have children among people living with HIV and AIDS was found to be significantly reduced (Berhan, 2008; Yeatman, 2009) probably due to ill health or inadequate information on the recommended safe method of childbirth. Females living with HIV (25.8%) expressed interest in having children with ethnicity, younger age, and having a regular partner was associated with an increased likelihood (Ogilvie et al., 2007). The hope to be a mother among women living with HIV showed that the main factors distinguishing women who wanted to have a child and those who did not were the levels of anxiety about the future and available family support (Kanniappan et al., 2008; Yeatman, 2009). In Africa, the want to have children among seropositive HIV women was 15% in Malawi (Hoffman et al., 2008), 18% in Uganda (Nakayiwa et al., 2006), 41% in Ethiopia (Berhan, 2008), and 63% in Nigeria (Oladapo et al., 2005) while a national survey in Cameroon showed that women's fertility desire was about 55% and the principal factor associated with this desire was having good physical health (Marcellin et al., 2010).

The desire of HIV-infected persons to have children has important implications for the transmission of HIV to sexual partners and newborns (DiCarlo et al., 2018; Mutabazi et al., 2017; Nyamhanga et al., 2017; Teshome & Modiba, 2020; Triulzi et al., 2020; Wanyenze et al., 2018). Although the probability of passing on HIV from mother to infant can be lessened with preventive therapy, mother-to-child transmission accounts for most of the newest HIV infections in children (DiCarlo et al., 2018; Mutabazi et al., 2017; Nyamhanga

et al., 2017; Teshome & Modiba, 2020). The risk of HIV transmission among couples is likely to rise as more infected individuals choose to have children with HIV-negative partners (DiCarlo et al., 2018; Teshome & Modiba, 2020; Triulzi et al., 2020; Wanyenze et al., 2018). Children of infected HIV parents are likely to need social services, including income supplementation, sheltering, child care, and those who lose one or both parents, bereavement support, foster care, or adoption. A precise description of the factor influencing fertility wants and intentions among seropositive HIV individuals is essential to assist them to have children without sacrificing (increasing the risk) the health and well-being of their newborns, their partners, and themselves.

In Africa, several studies conducted have attempted to describe the pattern and nature of transmission of the virus, partners' involvement in care and use of ARVs (Alemu et al., 2018; Nkwabong et al., 2018; Oyugi et al., 2017), breastfeeding practices (Nyoni et al., 2019), its impact on social life and means to control of mother to child transmission (DiCarlo et al., 2018; Mutabazi et al., 2017; Nyamhanga et al., 2017; Teshome & Modiba, 2020; Triulzi et al., 2020; Wanyenze et al., 2018). These studies are largely cross-sectional and mostly sporadic (country-specific studies) and uncoordinated (unrelated to other countries). The few systematic reviews conducted concentrated on medication adherence of HIV-positive clients (Omonaiye et al., 2018) and the influence of Vitamin A supplementation on control of mother-to-child transmission of HIV (Wiysonge et al., 2017). As these studies will contribute to the care rendered to persons that are HIV seropositive, few studies have actually dealt with the factors that are associated with pregnancy uptake decisions among seropositive HIV clients in sub-Saharan Africa. This study determined the factors associated with pregnancy uptake decision among seropositive HIV people receiving ARV therapy in sub-Saharan Africa.

3 | METHODOLOGY

3.1 | Literature search

The concept that entails the population, intervention, comparison and outcomes (PICO) framework was adopted to search for literature after a scoping review was done to understand the trend of pregnancy preferences in HIV seropositive individuals. Further, the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines for article search were adopted in searching and screening articles from four databases in line with that discussed by various authorities (Liberati et al., 2009; Moher et al., 2015; Shamseer et al., 2015). There was a deep and comprehensive search of PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Embase, and Google Scholar using the PICO framework in line with that stated under the PRISMA guidelines. In these databases, the advanced search option was used while the keywords derived from the title and the study's main goal served as a guide. The keywords and their derivatives that were used included (Antiretroviral therapy OR

HIV and AIDS OR AIDS Treat* OR HIV therapy) AND (Reproduc* age OR child bea* age OR childbea*) AND (Ghana OR sub-Saharan Africa).

The search results showed that 13,249 articles were identified using the keywords and filtered for January 2016 to January 2021 (5,287 articles) and further filtered for only primary research (in Google Scholar, EMBASE, and CINAHL) and "NOT systematic review" (in PubMed) to produce 3,724 titles as summarized in [Table 1](#).

All the 3,724 identified articles were transported to the endnote 8X software and duplicates identified and removed to produce 942 titles that were used in this systematic review. The 942 titles identified were swotted by reading the individual titles; 425 articles were selected based on their appropriateness in identifying the factors that are related to pregnancy uptake among persons who are HIV/AIDS positive or tested seropositive in the sub-Saharan African region. The individual abstracts (425) of the selected titles were read and screened for appropriateness to produce 56 articles.

Each of the 56 full-text articles was read in detail and through a zoom meeting among two of the researchers, and upon extensive discussion of each research, 12 (as shown in [Figure 1](#)) articles were found suitable for this study as they were primary studies that describe the factors that are associated with pregnancy uptake, and/or decision for childbearing among persons who are diagnosed to be HIV seropositive in sub-Saharan Africa.

3.2 | Inclusion and exclusion criteria

Studies that were primary research studies and conducted in any country located in Sub-Saharan Africa were included in the study. These studies reported primary findings regarding the factors that influence or are associated with the desire to be pregnant or plan related to pregnancy uptake or reported the factors that are related to pregnancy uptake among people who were HIV seropositive. Non-English-based articles were excluded. Studies that determined the influence of ARV on pregnancy and others related to mother-to-child transmission (PMTCT) of HIV were excluded as they did not directly determine the factors that influence pregnancy uptake. Also, studies that determined the capacity of HIV-positive mothers' ability to carry a pregnancy to term or tested the possibility of holding a successful pregnancy were also excluded.

3.3 | Data extraction and analysis

Using a matrix developed by the researchers, data extraction was done in teams of two each (three teams were formed for data

extraction). The template was uploaded into Google forms and at least two individual researchers (forming a team made of two people) extracted data from each article and then the extracted data compared, reviewed, and discussed between the three teams. The comparison of the extracted data allowed for the streamlining of any ambiguity that was identified and discrepancies in the data extracted. Discrepancies that were identified were resolved by consensus and when consensus could not be reached between and within the teams, a third party was invited, and eventually, all discrepancies were resolved from consensus.

The main parameters that were extracted from the data included study settings, purpose, population, sample and sampling, design, analysis, key findings, conclusions, and project financier as summarized in [Table 2](#). After the extraction of data, a convergent synthesis design was adopted to integrate results from studies and transformed them into qualitative findings (Pluye & Hong, 2014). A thematic approach was used to synthesize key findings emerging from the articles in relation to the factors that are associated with pregnancy decisions, desire to be pregnant and pregnant uptake among persons living with HIV/AIDS. The researchers used line-by-line coding of various studies independently to enhance the identification of free codes. Codes were collated to form themes. The final themes and subthemes were then developed by collating the codes into subthemes and subsequently into the themes. The major themes that emerged from the analysis included the factors that promote pregnancy uptake (motivating factors) and the factors that do not promote pregnancy uptake (demotivating factors) among HIV/AIDS women.

4 | RESULTS

4.1 | Search results

A systematic breakdown of the literature search is seen in [Figure 1](#) through the PRISMA guide that was adopted. The initial search results yielded 3,724 and then filtered to 942 articles from the four databases (PubMed, CINAHL, Embase, and Google Scholar) after duplicates were removed. After subjecting these titles to rigorous screening, 52 full-text articles were read and 40 articles were excluded after the application of the inclusion and exclusion criteria. In total 12 articles were identified to be suitable for this study.

4.2 | Characteristics of the studies

All the studies were conducted within healthcare institutions (hospitals or clinics that provide service to HIV seropositive people).

TABLE 1 Summary of search results of articles in databases

Search	Google scholar	PubMed	EMBASE	CINAHL	Total
Search using keywords	7,840	3,774	1,614	21	13,249
2016 to January 2021	2,430	1887	964	6	5,287
Only primary research	2,260	631	829	4	3,724

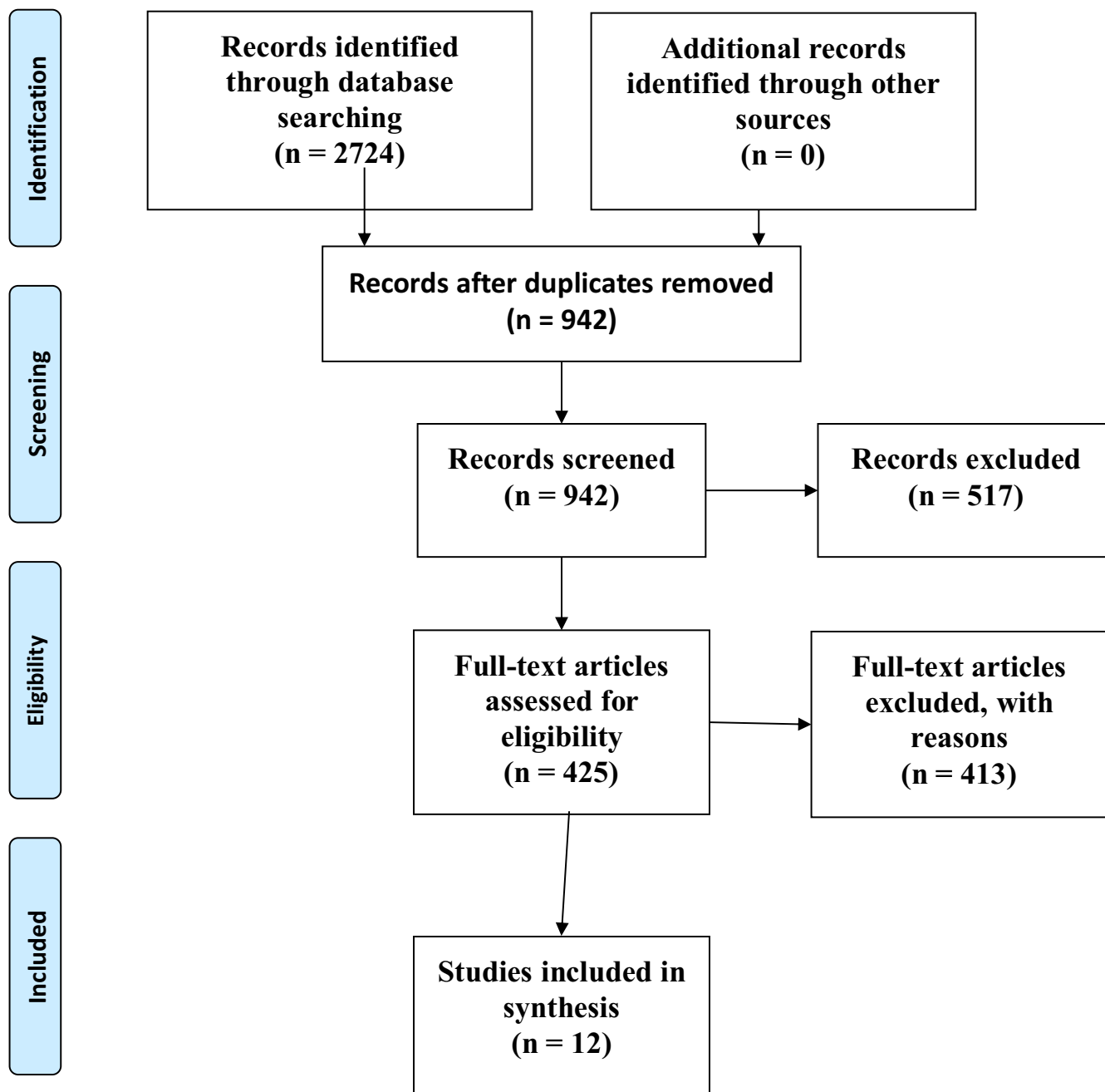


FIGURE 1 PRISMA flowchart for identification and selection of research

The studies recruited participants from various backgrounds including eligible HIV-infected women (Adeleye et al., 2019; Atukunda et al., 2019; Iliyasu et al., 2019; Remera et al., 2017), new mothers living with HIV (Cuinhan et al., 2018), HIV-positive women between the ages of 15 and 44 years (Mekonnen & Enquesselassie, 2017; Muthelo et al., 2020), adolescents aged 15–19 who were aware of their HIV status prior to the survey (Okawa et al., 2018; Toska et al., 2020), HIV clients in serodiscordant relationships (Nakiganda et al., 2018; Wagner et al., 2021), and also, women who were non-pregnant, non-menopausal, aged 18–49 and diagnosed as HIV seropositive (Arikawa et al., 2020). The sampling methods were

systematic sampling (Adeleye et al., 2019; Iliyasu et al., 2019), non-probability sampling technique of purposive sampling (Arikawa et al., 2020; Cuinhan et al., 2018; Mekonnen & Enquesselassie, 2017; Muthelo et al., 2020), convenience sampling (Okawa et al., 2018), stratified sampling (Toska et al., 2020; Wagner et al., 2021), and survey (Nakiganda et al., 2018) while in others, eligible participants were women living with HIV (more than 18 years), admitted in a postnatal ward within 5 days postpartum regardless of pregnancy outcome (Atukunda et al., 2019). All the studies used primary data except two that used data collected by other institutions (Mekonnen & Enquesselassie, 2017; Nakiganda et al., 2018).

TABLE 2 Summary of study characteristics and key findings

Author year	Study title	Design	Sample	Key findings
1 Arikawa et al. (2020)	Childbearing desire and reproductive behaviours among WLHIV: A cross-sectional study in Abidjan, Côte d'Ivoire	Cross-sectional survey	1,631 women living HIV	Women (80%) declared having childbearing desire. Younger age, being in a stable relationship and having no or only one child were significantly associated with increased childbearing desire
2 Nakiganda et al. (2018)	Prevalence and predictors of pregnancy among WLHIV discordant relationships in rural Rakai Cohort, Uganda	Cross-sectional study	488 women in sero-discordant relationships	Factors significantly associated with higher prevalence of pregnancy were; younger age 15–24 years (prevalence risk ratio—PRR = 4.04; 95% CI 1.72 to 9.50), middle age 25–34 years (PRR = 2.49; 95% CI 1.05 to 5.89), Christian religion (PRR = 2.26; 95% CI 1.41 to 3.63) and inconsistent condom use in the last 12 months (PRR = 4.38, 95% CI 1.09 to 17.53)
3 Mekonnen & Enquesselassie, (2017)	Effects of ART on changes in the fertility intentions of HIV positive women in Addis Ababa, Ethiopia: a prospective follow-up study	Prospective follow-up studies	360 HIV-positive women	Overall, 40.8% reported that they desired to have a child in the future at the baseline visit, while 48.3% did so at the 12-month follow-up. The proportion of women who reported that they desired to have a child 12 months after ART initiation was higher (55.8%) than ART-naïve women (40.0%)
4 Atukunda et al. (2019)	Factors associated with pregnancy intentions among postpartum women living with HIV in rural southwestern Uganda	Randomized controlled trial	320 women living HIV	Women (59%) reported either personal (55%) or partner (58%) desire for more children in the next 2 years. Intentions to have more children was strongly associated with partner's desire for more children (AOR = 31.36; $p < .000$), referent pregnancy planned (AOR = 2.69; $p = .050$) and higher household income >150,000 Shs per month (AOR = 1.37; $p = .010$). Previous use of modern contraception (AOR = 0.07; $p = .001$), increasing age (AOR = 0.34; $p = .012$), having >2 own children living in a household (AOR = 0.42; $p = .021$) and parity >2 (AOR = 0.59; $p = .015$) were associated with reduced odds of pregnancy intention
5 Remera et al. (2017)	Fertility and HIV following universal access to ART in Rwanda: a cross-sectional analysis of Demographic and Health Survey data	Cross-sectional Survey	3532 (2005) and 4527 (2010) women aged 20–49 from RDHS	HIV-seropositive women under age 40 were less likely to desire more children compared to HIV-seronegative women (20–29 years adjusted odds ratio [AOR] = 0.31, 95% CI: 0.17, 0.58) 30–39 years AOR = 0.24, 95% CI: 0.14, 0.43), but no difference was found among women aged 40 or older. No associations between HIV and fertility or fertility desire were found in 2005 data

(Continues)

TABLE 2 (Continued)

Author year	Study title	Design	Sample	Key findings
6 Muthelo et al. (2020)	How is becoming pregnant while HIV-positive? Voices of women at a selected rural clinic in Mpumalanga Province of South Africa	Descriptive, and phenomenological design	15 WLHIV	The desire to become pregnant among WLHIV is influenced by several factors such as knowledge about the PMTCT, cultural values and social norms, and belonging to support groups where they were able to share experiences. Becoming pregnant was viewed as an obligation to satisfy their husbands and security to maintain marriages
7 Cuinhane et al. (2018)	Perceptions and decision-making with regard to pregnancy among HIV positive women in rural Maputo Province, Mozambique – a qualitative study	Qualitative study	59 women living with HIV and had given birth	Women often perceived pregnancy as a test of fertility and identity. It was not only viewed as a rite of passage from childhood to womanhood, but also as a duty for married women to have children. Most women did not follow recommended medical advice prior to gestation
8 Iliyasu et al. (2019)	Predictors of safer conception practices among HIV-infected women in northern Nigeria	Cross-sectional study	328 women living HIV	Women (45.7%) wanted more children. The proportions of respondents aware of their transmission risk during pregnancy, delivery, and breastfeeding were 69.5%, 75.3%, and 78.9%, respectively. Further, 68.9% of respondents were aware of the prospects of bearing HIV-negative children without infecting their partners. About 64.8% of women were aware of at least one safer conception method
9 Toska et al. (2020)	Reproductive aspirations, contraception use and dual protection among adolescent girls and young women: the effect of motherhood and HIV status. South Africa	Quantitative interviews	1712 adolescent girls and young women (ages 10 to 24)	Nearly 95% of first pregnancies were unintended. Over two-thirds of all participants wanted two or more children. Hormonal contraception, condom use and dual protection were low across all groups. Adolescent living with HIV were less likely to report hormonal contraception use (AOR 0.55 95% CI 0.43 to 0.70 $p \leq .001$)
10 Wagner et al. (2021)	Reproductive intentions and corresponding use of safer conception methods and contraception among Ugandan HIV clients in sero-discordant relationships	Randomized controlled trial	389 women living with HIV	Women (80.5%) and partner wanted to have a child now, which was associated with being married, in a longer relationship, not having a child with a partner, greater SCM knowledge, lower internalized childbearing stigma, and higher perceived community stigma of childbearing
11 Adeleye et al. (2019)	Reproductive plans and utilization of contraceptives among women living with HIV. Nigeria	Descriptive cross-sectional design	400 Women living with HIV	Age of respondents was 37.42 ± 7.51 years, and about 59.0% were currently married. The prevalence of reproductive desire among WLHIV was comparatively high at 56.5%

TABLE 2 (Continued)

Author year	Study title	Design	Sample	Key findings
12 Okawa et al. (2018)	Sexual and reproductive health behaviour and unmet needs among a sample of adolescents living with HIV in Zambia: cross-sectional study	Cross-sectional study	175 adolescents living with HIV	Adolescents (48%) had concerns about marriage, and 87.4% desired to have children. Marriage-related concerns were high among those who desired to have children (ARR = 2.51, 95% CI = 1.02 to 6.14). Adolescents who had completed secondary school were more likely to desire to have children (ARR = 1.35, 95% CI = 1.07 to 1.71). Adolescents who had lost both parents were less likely to want children (ARR = 0.80, 95% CI = 0.68 to 0.95)

Different types of designs including population cross-sectional study design (Adeleye et al., 2019; Arikawa et al., 2020; Cuinhane et al., 2018; Iliyasu et al., 2019; Nakiganda et al., 2018; Okawa et al., 2018; Toska et al., 2020; Wagner et al., 2021), randomized controlled trial (Atukunda et al., 2019) and a prospective follow up study (Mekonnen & Enquesselassie, 2017). One of the studies was qualitative research applying phenomenological and descriptive designs (Muthelo et al., 2020). The data analysis techniques employed open coding data analysis method including an inductive, descriptive coding technique (Muthelo et al., 2020), descriptive statistics (Adeleye et al., 2019; Atukunda et al., 2019; Wagner et al., 2021), chi-square test of association (Adeleye et al., 2019; Okawa et al., 2018) and logistic regression models (binary and multiple) (Toska et al., 2020; Wagner et al., 2021) while another used qualitative approaches of thematic analysis (Cuinhane et al., 2018; Okawa et al., 2018).

4.3 | Key findings

The two main key findings were categorized into the motivation and the demotivation factors that are associated with pregnancy uptake. These factors were classified based on those factors that are likely to increase the propensity for a woman to choose to get pregnant (motivating factors) or those factors that are likely to decrease a woman's choice of pregnancy uptake. (demotivating factors).

4.4 | Motivators of pregnancy

Under this theme some sub-themes identified can be classified as the factors that promote or increase the likelihood of pregnancy uptake among HIV-positive women. The sub-themes that were identified as motivators for pregnancy uptake and decision among HIV-positive women were the desire to have children, knowledge about PMTCT, as a duty for married women to have children, and household income level, and other related factors.

4.5 | Desire to have children

Women's desire for children was evident in 83% of the included studies (Adeleye et al., 2019; Arikawa et al., 2020; Atukunda et al., 2019; Iliyasu et al., 2019; Mekonnen & Enquesselassie, 2017; Muthelo et al., 2020; Okawa et al., 2018; Remera et al., 2017; Toska et al., 2020; Wagner et al., 2021). The desire for children influenced WLHIV to get pregnant. Studies conducted by Okawa et al. revealed that 87.4% of study participants who were adolescents living with HIV desired to have children and most of these adolescents who expressed the desire to have children opined that they felt that having children has an important meaning in their adulthood (Okawa et al., 2018). This was corroborated by the findings of Adeleye et al. (2019), Wagner et al. (2021), Toska et al. (2020), Arikawa et al. (2020), and Mekonnen and Enquesselassie (2017); all showing that WLHIV had a good desire to have children and that will influence their decision to get pregnant.

4.6 | Knowledge about PMTCT

Knowledge about PMTCT of HIV was reported to have an influence on women's decision to have children (Iliyasu et al., 2019; Mekonnen & Enquesselassie, 2017; Muthelo et al., 2020; Remera et al., 2017). The knowledge and understanding of how PMTCT works and the remarkable improvements among persons living with HIV and AIDS after the initiation of ARVs appeared to influence and motivate WLHIV to get pregnant. Although most of the participants were aware of the transmission risk during pregnancy, delivery, and breastfeeding in the absence of interventions, they were however confident with the possibility of bearing HIV-free children without infecting their partners (Iliyasu et al., 2019) and/or the child.

4.7 | A cultural duty for married women to have children

Pregnancy was perceived as a test of fertility and a rite of passage from childhood to womanhood. Respondents indicated that

becoming pregnant certified that one can bear children and identified an individual as a full-grown adult. For others, pregnancy was viewed as part of women's identity, as the duty of marriage, and as a way of achieving social status (Cuinhane et al., 2018). These were some of the reasons given by participants as observed in the following studies (Cuinhane et al., 2018; Mekonnen & Enquesselassie, 2017; Muthelo et al., 2020). Muthelo et al. observed that the desire to become pregnant among HIV-positive women is influenced by several aspects such as cultural values, social norms, and as an obligation to satisfy their partners/husbands and security to maintain marriages (Muthelo et al., 2020).

4.8 | Household income and other related factors

Atukunda et al. (2019) indicated that the intent of WLHIV to get pregnant was strongly associated with high household income (Atukunda et al., 2019). Remera et al. (2017) revealed that WLHIV's intent of getting pregnant was associated with factors such as age group, residence, education, employment, wealth group, number of lifetime sex partners, and polygamous marriage (Remera et al., 2017). Additionally, Mekonnen & Enquesselassie, (2017) also showed that family influence, disclosure of HIV status to the husband, and being a housewife were predictors of change in fertility intentions and this gave room for WLHIV to get pregnant (Mekonnen & Enquesselassie, 2017).

4.9 | Demotivators of pregnancy

Those factors that bear women's choice of pregnancy uptake were classified as demotivators. The two sub-themes that are classified under this theme include the modern method of contraception and pregnancy as a burden.

4.10 | Modern method of contraception

The availability of different types of contraceptives to prevent pregnancy was suggested as the reason HIV-seropositive women were not becoming pregnant as often as they might wish. In a study conducted by Muthelo et al. a participant is quoted as saying "I don't see any reason why HIV-positive women should become pregnant when there are different types of injections available at the clinic. There is now a 3-year injection that prevents pregnancy. I will not become pregnant as long as there are those injections and condoms" (Muthelo et al., 2020). This is corroborated in a study by Adeleye et al. where the study findings revealed a significant association between knowledge level of contraceptive options and utilization of contraceptives and level of education and utilization of contraceptives among WLHIV (Adeleye et al., 2019).

4.11 | Pregnancy as a burden

Cuinhane et al. (2018) revealed that some women who were aware of their HIV-positive status had more than one child, viewed pregnancy as both a burden to their health and their family finances. One participant is quoted as saying "Pregnancy means to have children. But becoming pregnant nowadays does not help me a lot because we [my husband and I] are sick [HIV positive]. Apart from that, we also have to raise the children we already have. Although I felt good during pregnancy because I could not feel pain in my body, I did not want more children. But that is it. My husband wanted it and I became pregnant" (Cuinhane et al., 2018). In Muthelo et al. (2020) participants expressed fears of becoming pregnant associated with the low CD4 count and adherence to the ART treatment (Muthelo et al., 2020). Noteworthy, Muthelo et al. further revealed that the negative attitude of nurses was reported by study participants as a reason for not getting pregnant. The said nurses in the selected clinic advised participants not to become pregnant because of their HIV status (Muthelo et al., 2020). They further explained that those who did not take their advice were scolded when they reported for antenatal visits as quoted by a participant of the study "The nurse shouted at me when I reported for antenatal care, she asked why did I become pregnant when I knew I am HIV positive. She further said I will be lucky if I do not die during delivery. I was so scared to return to the clinic, I even changed the clinics, here I am today being still alive and the baby is HIV negative" (Muthelo et al., 2020).

5 | DISCUSSION

This systematic synthesis examined women in Sub-Saharan Africa living with HIV on the factors that motivated or demotivated decisions to get pregnant. The findings of the study revealed that the motivating factors associated with women intending to get pregnant were, women wanting more children, having adequate knowledge on PMTCT, satisfying husband and marital obligations, a duty for married women to have children, and high household income. Furthermore, factors that demotivated WLHIV to get pregnant were: Negative attitude of Nurses, low CD4 count, using modern contraceptive, pregnancy as both a burden to health and family finances, pregnancy as an illness and recognized it could lead to death during gestation and/or childbirth and fear of transmitting HIV to the babies. The reproductive desire of HIV-infected women to conceive has been made possible with improved access to PMTCT services and ART. The findings of this study revealed that 83% of included studies indicated that HIV-infected women's desire for children motivated them to get pregnant or plan to get pregnant. This high prevalence of childbearing desire is corroborated in a study by other studies that showed that HIV-infected women had childbearing desires and pursued reproductive goals to have their own biological children (Myer et al., 2007; Nattabi et al., 2009). In this study, it

was also evident that women's desire to get pregnant was premised on satisfying husband and marital obligations. In Africa having children is regarded as an important milestone in the life of an individual and even more important if the person is married and gets pejorative when they are in a polygamous relationship. This is supported by the findings dating more than two decades that revealed that many women, whether HIV positive or negative, view reproduction as a social and psychological obligation to their partners (Ingram & Hutchinson, 2000). It is therefore not surprising that women on ART hastily get pregnant even before their CD4 count improves, just because they want to fulfil their social role as women (Ujiji et al., 2010). Therefore, the impact of HIV on pregnancy intentions is affected by underlying fertility norms and beliefs about the importance of childbearing in society.

The study also found that negative attitude of nurses, low CD4 count, using modern contraceptive, perception of pregnancy as both a burden to health and family finances, pregnancy as an illness, and also recognition that pregnancy could lead to death during gestation and/or childbirth and fear of transmitting HIV to babies were some of the factors that discouraged WLHIV to decide on getting pregnant. This is corroborated by the findings of Haffejee et al. (2016) indicating that 13% of respondents were treated harshly by health workers because of their HIV status (Haffejee et al., 2016). The study further revealed elements of insensitivity among doctors and nurses towards HIV-infected people, which contributed to patients losing hope in public hospitals (Haffejee et al., 2016). In a related study conducted by Bankole et al. (2011) HIV-positive women who probably know their status were less likely to want more children and were more likely to be using male condoms to prevent pregnancy (Bankole, Bankole et al., 2011).

6 | CONCLUSION

This study showed that pregnancy desires among WLHIV in Sub-Saharan Africa are very high. There is therefore the need for safe conception considerations, planning pregnancies to coincide with viral suppression, as socio-emotional readiness is integrated into HIV sexual reproductive health service provision for WLHIV. However, there are some bottlenecks that put off some WLHIV from conceiving such as the negative attitude of some health workers, the fear of infecting the partner and the unborn child, and of dying from pregnancy and its related complications. There is the need to organize in-service training on attitudinal change and customer care for health workers who are deficient in human relationships and care of persons diagnosed as HIV seropositive. It also highlights the need to design, test, and adopt strategies for making conception safer in discordant relationships. There is a need to improve on services that reduce conception-related risks especially for women that choose to conceive by incorporating fertility-related counselling into HIV treatment services at all service points.

AUTHOR CONTRIBUTIONS

All authors contributed in conception of review question, searching the literatures and conducting all steps of study, and approved the final manuscript.

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CONFLICT OF INTEREST

The authors declare no conflict of interests.

DATA AVAILABILITY STATEMENT

Data will be made available upon a formal request to the authors.

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