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Understanding Pregnancy Intentions among Black Women Living with HIV in Two North American Cities and One African City

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Abstract: Despite increased access to and improvements in contraceptives, unintended pregnancy continues to be a problem globally and is associated with adverse outcomes for mothers and infants. This paper seeks to unravel the mediators of intended versus unintended pregnancies among Black women living with HIV. The paper draws on survey data from a broader multi-country mixed methods study that used a community-based participatory research approach to investigate the psychosocial experiences of Black mothers living with HIV. The study participants were Black mothers living with HIV drawn through venue-based sampling from Ottawa, Canada (n = 89), Port Harcourt, Nigeria (n = 400), and Miami, Florida, United States (n = 201). We used Hierarchical Binary Logistic Regression Modelling (HBLM) to estimate the independent associations of pregnancy intention (intended versus unintended) with blocks of predictor variables (sociodemographic, sociocultural, and psychosocial predictors) at alpha level of 0.5. Specifically, 44.2%, 67.3%, and 17.7% of the women had unintended pregnancies in Ottawa, Miami, and Port Harcourt, respectively. There were important results from the HBLM. The odds of intended relative to unintended pregnancies were (i) reduced in larger households (OR = 0.56, 95% CI = 0.36/0.87), but increased with employment (OR = 7.84, 95% CI = 1.52/40.54) and HIV knowledge (OR = 3.13, 95% CI = 1.42/6.90) in Ottawa; (ii) reduced with age (OR = 0.93, 95% CI = 0.88/0.98), but increased with marriage (OR = 2.90, 95% CI = 1.43/5.88) and social support (pregnancy (OR = 3.77, 95% CI = 1.98/7.19) in Port Harcourt; (iii) reduced with social support (OR = 0.95, 95% CI = 0.91/1.00) but increased with HIV status disclosure (OR = 1.73, 95% CI = 1.01/2.97) and the influence of specific referent (OR = 1.68, 95% CI = 1.13/2.52) in Miami-FL. The incidence of unintended pregnancy is more prevalent among Black women living with HIV in the North American cities relative to the African city. Also, unique combinations of sociodemographic, sociocultural, and psychosocial factors influence pregnancy intention in each city. This implies that policy and practices to address reproductive health needs of WLHIV must consider these contextual issues.

Keywords: Black women; pregnancy intention; HIV vulnerability; maternal and infant mortality

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1. Introduction

Pregnancy intentions may be classified into two main categories: unintended and intended. An unintended pregnancy is defined as either unwanted or mistimed [1]. By con-

trast, intended pregnancies are described as "those that happened at the right time or later than desired due to infertility or difficulties conceiving" [2]. Approximately 74 million women living in low and middle-income countries have unintended pregnancies annually [3]. Overall, women in low-income countries are almost three times more likely to experience unintended pregnancy than women in high-income countries. The rate of unintended pregnancy is 0.035% among women aged 15–49 years in Europe and North America, and 0.091% among women in sub-Saharan Africa [4]. In the United States in 2011, 45% of pregnancies were unintended and were far more likely to occur among Black and Hispanic people compared to White people [5].

Among Women Living with HIV (WLHIV) in Canada, the unintended pregnancy rate was 60.8% [6], relative to the national rate of 27% reported in 2009 [7]. Studies in Africa show that unintended pregnancy rates among WLHIV varied between a low of 15% in Nigeria (Bankole et al., 2014) to a high of 62% in South Africa [8]. In line with this, other studies have shown that unintended pregnancy is more common among WLHIV [9,10]. Furthermore, a United States study showed that African American women living with HIV were more likely to have unintended pregnancies than other women [11]. In Canada, 60% of WLHIV never discussed their pregnancy intentions with their healthcare provider due to fear of stigma. Moreover, low contraceptive use was found among WLHIV not intending to get pregnant compared to other women groups.

Unintended pregnancies constitute a global concern, as statistics show that they result in about 25 million unsafe abortions and 47,000 maternal deaths globally [3]. A United States study in 1994 found that about 50% of pregnancies were unintended, and 50% of unintended pregnancies culminate in abortion [12,13]. In jurisdictions where abortion is criminalised, unintended pregnancies may increase maternal morbidity and mortality [14,15]. Studies have also shown negative consequences of unintended pregnancies including non-detection of early pregnancy [16], poor prenatal care, lower breast-feeding intentions, low birthweight [17], greater risk of social, mental, and general health challenges of children born through unwanted pregnancies, and poor school performance [18]. Babies born via unintended pregnancy are more prone to mortality within the first six months of life from being abused, and to developmental problems. Unintended pregnancy predisposes women to psychosocial distress, depression, spousal violence, and loss of marital relationships [13].

Unintended pregnancy among women living with HIV yields additional, but unique, burdens. For example, unintended pregnancy has been associated with poor treatment outcomes among women living with HIV who initiate antiretroviral treatment during pregnancy [19]. Unintended pregnancy has been associated with vertical transmission of HIV [20]. Finally, evidence suggest that unintended pregnancy increases the psychosocial and economic difficulties experienced by women living with HIV [21].

While unintended pregnancies constitute a significant global concern among all groups of women, including WLHIV, several socioeconomic and psychosocial factors remain implicated in their proliferation. For example, a pregnancy intention is influenced by a woman's age, marital relationship, medical conditions, familial and social pressures, exposure to relationship abuse, emotional reactions, and prenatal diagnostic procedures [22–26]. Unintended pregnancy among WLHIV has been significantly associated with low socioeconomic status [27] and intimate partner violence [28]. In addition, changing pregnancy intention has been linked with gravidity [29] and parity [26,29–32] among WLHIV. Although younger-aged WLHIV have been found to have greater intention to become pregnant [33–35], they are also more prone to ultimately having mistimed (unintended) pregnancies [32,36] due to their demotivation to discuss their pregnancy intentions with healthcare professionals for fear of HIV-related stigma and discrimination [37–41]. Moreover, internalized HIV stigma and childbearing stigma among WLHIV are key barriers to communicating with healthcare providers about pregnancy intentions [39]. Yet pregnancy intentions can be positively influenced to a significant extent by social support, including health professionals' advice [42,43].

In this study we explored pregnancy intentions and their socioeconomic and psychosocial determinants among Black women living with HIV in Ottawa, Canada; Miami,

Florida, USA, and Port Harcourt, Nigeria. The study seeks to provide a sound understanding of pregnancy intentions among Black WLHIV and to compare experiences among non-migrants in the Global South to immigrant women in the Global North. Such an understanding aims to promote the right policy dialogues and programming that will guide future pregnancy intentions at individual, interpersonal, community, and population levels. This aim is premised on the fact that connecting with the right information through policy and the healthcare system has been recognized as an important step towards addressing reproductive decisions, preventing issues related to unintended pregnancies, and HIV transmission. Moreover, the separate city analysis provides useful transference of lessons learnt from one city to another, or from Black immigrant to non-migrant women or vice versa, in terms of policy transformation.

2. Methods

This paper draws cross-sectional survey data from a broader multi-country mixed methods study that used a community-based participatory research approach to investigate the health experiences of Black mothers living with HIV. The guiding principles and methods of the study have been explicated [44–47]. The paper describes pregnancy intentions (intended versus unintended) among Black women living with HIV in three countries. It also explored the sociodemographic, sociocultural, and psychosocial factors associated with intended relative to unintended pregnancy in each of the countries. Specific datasets used in the analyses were: Ottawa, Canada (n = 89); Port Harcourt, Nigeria (n = 400), and Miami, Florida, United States (n = 201).

The datasets used in the analyses were the predicted variable (pregnancy intention) and two categories of predictor variables (sociocultural and psychosocial factors) while controlling for the sociodemographic variables. To measure pregnancy intention, participants were asked, "At the time you became pregnant while living with HIV, had you planned to become pregnant?" Responses were dichotomized as follows: "yes" (intended pregnancy) = 1, "no" (unintended pregnancy) = 0. The list of sociodemographic variables controlled for in the final model after multiple iterations were age, marital status, household size, mean age of children born after being HIV positive, educational experience, and employment status. Distinct measures of these variables are provided in Table 2 of the results section.

The sociocultural factors include disclosure of HIV status (disclosed to spouse only = 1, disclosed to spouse and other family members = 2, did not disclose to anyone = 0). Motherhood experience was measured with the Being a Mother Psychometric Scale [46,48]. The Being a Mother scale consist of 13 items that highlights the mother's experience of herself as an adult with offspring, her experience of her child, and her emotional closeness with her child. Social support was measured using seven items adapted from the Duke-UNC Functional Social Support Questionnaire [44,49]. The contents of the seven-item scale elicit information about receiving care, being listened to, being socially connected, receiving useful advice, and being helped when sick. Other sociocultural factors included support on infant feeding decisions i.e., if the women received complimentary guidance on how to feed their infants when living with HIV (yes = 1, no = 0). We also measured the influence of specific referents (ISR) using an adapted scale [47,50]. The adapted scale assessed the women's rating of the wishes of their social network regarding their infant feeding choice, and the women's motivation to comply with those wishes. The social network in this case included: spouse, family/relatives, cultural setting/community network, and health service providers. The psychosocial factors included HIV knowledge (rating of levels of knowledge about the vertical transmission of HIV (pregnancy, delivery, and breastfeeding). Scores of 0, 1, 2, or 3 were assigned if the participants had knowledge of none, one, two, or all three modes (pregnancy, delivery, and breastfeeding) of vertical transmission of HIV, respectively. Self-rated maternal stress scores were measured on a 10-item Perceived Stress Scale [45,51]. Hypervigilance and HIV-related discrimination were also measured on validated psychometric scales [52–54].

The Hierarchical Binary Logistic Regression Modelling (HBLM) was used to estimate the correlation between pregnancy intention and the independent variables (sociodemographic, sociocultural, and psychosocial factors) at an alpha criterion of 0.05. The HLM controlled the effects of sociodemographic variables in Block 1 of the analysis prior to inclusion of Block 2 variables (sociocultural and psychosocial factors). Because of the potential clustering effect of pulling data from different cities in three different countries, we conducted a separate HBLM for each city. Different combinations of the variables were analysed per city, depending on the combination of variables with the best fit and least error estimate using a forward stepwise variables selection approach. In the HBLM for Ottawa, there was significant improvement of the model with inclusion of Block 2 variables as the error estimate (-2LL) dropped to 13.94 from 61.88, and the model became statistically significant (X^2 = 28.47, $p < 0.001$). Port Harcourt HBLM showed a significant improvement of the model with inclusion of Block 2 variables when the error estimate dropped by 27.47 and was statistically significant (X^2 = 41.38, $p < 0.001$). Similarly, HLM for Miami showed significant improvement with addition of Block 2 variables into the model, with its error estimate dropping significantly by 14.68 and becoming statistically significant (X^2 = 20.55, $p < 0.05$).

3. Results

3.1. Sociodemographic Characteristics

Table 1 provides a summary of participants' sociodemographic characteristics. The average ages of participants were: Ottawa (36.63 years), Port Harcourt (34.67 years), and Miami (34.30 years). Percents of the women married were: Ottawa (33.33%), Port Harcourt (85.21%), and Miami (60.80%). Average years of formal education were: Ottawa (14.34 years), Port Harcourt (12.36 years), and Miami (14.52 years). Percents of the women in employment were: Ottawa (52.90%), Port Harcourt (68.4%) and Miami (23.1%).

Table 1. Descriptive statistics of sociodemographic, sociocultural, and psychosocial variables.

Descriptive Variables	Ottawa, Canada (N = 89)	Port Harcourt, Nigeria (N = 400)	Miami, Florida, United States (N = 201)
Sociodemographic variables:			
Age (years), (m ± SD)	36.63 ± 6.41	34.67 ± 5.65	32.40 ± 5.93
Marital status (married), *n* (%)	29 (33.33)	340 (85.21)	121 (60.80)
Household size (headcount), m (range)	3.70 (6)	4.48 (10)	3.68 (8)
Children born after HIV diagnosis (average age), (m ± SD)	8.15 ± 5.55	4.12 ± 3.41	5.31 ± 3.29
Years of formal education, (m ± SD)	14.34 ± 2.02	12.36 ± 2.67	14.52 ± 1.27
Employment status (employed), *n* (%)	46 (52.90)	273 (68.40)	42 (23.10)
Psychosocial variables:			
Disclosure of HIV status, ranked score m (Range)	1.30(2)	1.67 (2)	1.39 (2)
Motherhood (scale score), benchmark = 52, α = (m ± SD)	42.99 ± 7.02	28.58 ± 6.73	36.66 ± 10.69
Social support (scale score), benchmark = 35, α = (m ± SD)	24.77 ± 6.55	20.72 ± 6.18	21.90 ± 8.10
Gets support in infant feeding decisions, *n* (%)	49 (56.3)	330 (83.3)	89 (48.90)
Influence of specific referents (ranked score), m (Range)	18.53 (45)	21.72 (45)	12.70 (45)
HIV knowledge (ranked score), m (Range)	2.40 (3)	2.65 (3)	2.40 (3)
Hypervigilance (scale score); benchmark = 20, α = 0.71; (m ± SD)	12.70 ± 4.98	10.21 ± 5.18	7.57 ± 5.28
Perceived stress (scale score); benchmark = 40, α = 0.76; (m ± SD)	16.20 ± 6.51	22.10 ± 4.17	21.09 ± 6.91
Discrimination (scale score); benchmark = 50, α = 0.96; (m ± SD)	24.84 ± 15.95	7.28 ± 9.45	15.55 ± 14.36

Sociocultural factors. On a two-point scale, HIV Status Disclosure scores were: Ottawa (1.30), Port Harcourt (1.67), and Miami (1.39). On average, participants in all three sites had disclosed their HIV status to at least their partner or a family member. Percents of the women who reported receipt of support on their infant feeding decisions were: Ottawa (56.3%), Port Harcourt (83.3%), and Miami (48.90%). On a 45-point scale, the average scores on the Influence of Specific Referents scale were: Ottawa (18.53), Port Harcourt (21.72), and Miami (12.70).

Psychosocial factors. On a 52-point scale, the average motherhood experience scores were: Ottawa (42.99), Port Harcourt (28.58), and Miami (36.66). On a scale of 35 points, average social support scores were: Ottawa (24.77), Port Harcourt (20.72), and Miami (21.9). On a scale of three points, average HIV knowledge scores were: Ottawa (2.4), Port Harcourt (2.65), and Miami (2.4). Heightened Vigilance scores were: Ottawa (12.7), Port Harcourt (10.21), and Miami (7.57), while on a 40-point scale, average maternal stress scores were: Ottawa (16.91), Port Harcourt (22.1), and Miami (21.09). On a 50-point scale, HIV related discrimination scores were: Ottawa (24.84), Port Harcourt (7.28), and Miami (15.55).

3.2. Percent of Mothers with Intended and Unintended Pregnancies

Figure 1 shows percentages of mothers living with HIV who reported intended versus unintended pregnancy following a diagnosis of HIV. Percents of women who reported an unintended pregnancy were: Ottawa (44.2%), Port Harcourt (17.7%), and Miami (67.3%).

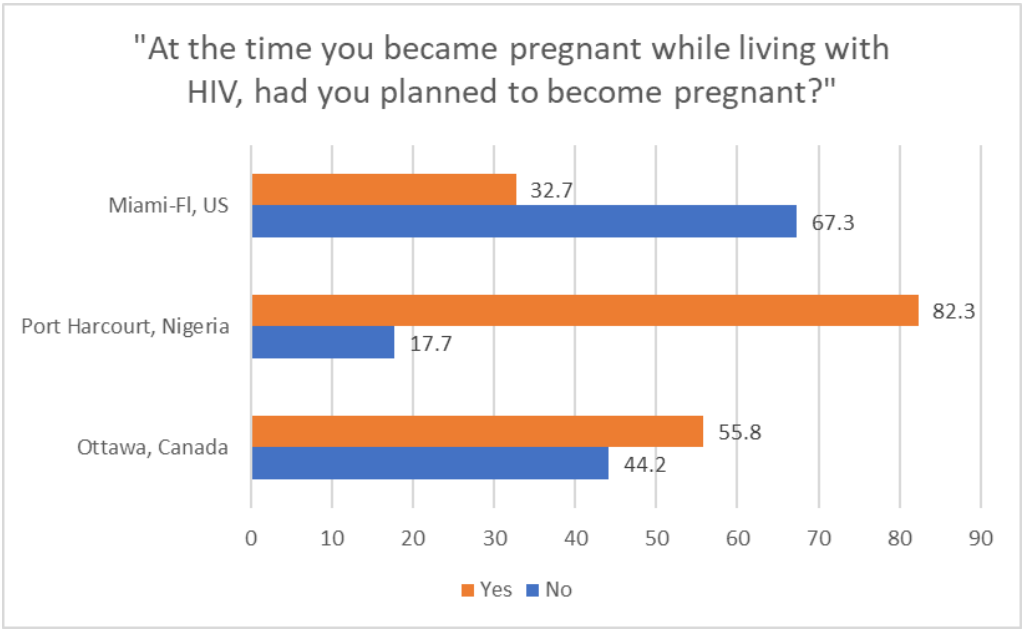

Figure 1. Percent of mothers who had intended versus unintended pregnancy.

Factors associated with pregnancy intention among Black mothers living with HIV in three cities in three countries.

Table 2 presents the results of HBLM to determine sociocultural and psychosocial factors associated with intended pregnancy relative to unintended pregnancy among the women in the three cities, while also showing the effects of the control variables (sociodemographic factors). We report only variables that were significant at 95% a confidence level or higher.

Table 2. Correlates of intended pregnancies among Black mothers living with HIV: Hierarchical Binary Logistic Regression Analysis.

Dependent Variable: Intended (1) versus Unintended (0) Pregnancy	**Ottawa, Canada**	**Port Harcourt, Nigeria**	**Miami, FL, US**
Independent variables	OR (95% CI)	OR (95% CI)	OR (95% CI)
Block 1 (sociodemographic variables):			
Age (years)	-	0.93 *** (0.88/0.98)	0.94 (0.88/1.00)
Marital status (married = 1, otherwise = 0)	1.20 (0.28/5.34)	2.90 *** (1.43/5.88)	0.8 (0.38/1.70)
Household size (number of persons)	0.56 ** (0.36/0.87)	-	-
Mean age of children born since HIV diagnosis	-	-	1.08 (0.95/1.23)
Years of formal education	0.83 (0.57/1.23)	0.97 (0.87/1.01)	1.27 (0.94/1.70)
Employed (yes = 1, No = 0)	7.84 ** (1.52/40.54)	0.8 (0.43/1.51)	-
Block 2 (Socio-cultural and psychosocial variables):			
Disclosure of HIV status (ranked score)	-	1.38 (0.77/2.45)	1.73 * (1.01/2.97)
Motherhood experience (scale score)	0.98 (0.85/1.11)	0.96 * (0.92/0.99)	-
Social support (scale score)	1.02 (0.91/1.135)	0.97 (0.92/1.02)	0.95 * (0.91/1.00)
Gets support in infant feeding decisions (Yes = 1, No = 0)	-	3.77 *** (1.98/7.19)	-
Influence of specific referents (ranked score)	1.04 (0.42/2.60)	-	1.68 ** (1.13/2.52)
HIV knowledge (ranked score)	3.13 *** (1.42/6.90)	1.12 (0.72/1.73)	-
Hypervigilance (scale score)	-	0.97 (0.91/1.04)	1.01 (0.95/1.10)
Perceived stress (scale score)	0.92 (0.8/1.06)	-	1.01 (0.96/1.06)
HIV Discrimination (scale score)	1.07 * (1.01/1.13)	-	1.01 (0.98/1.04)
Model summary:			
Chi-square statistics (X^2)	28.47 ***	41.38 ***	20.54 *
Error estimate (-2LL)	61.88	321.08	189.55
Reduction of -2LL after inclusion of Block 2	13.94	27.47	14.68
Observations used in analysis (%)	75.3	96.5	85.07
Model accuracy (%)	77.6	82.4	72.5

*** $p < 0.001$, ** $p < 0.01$, and * $p < 0.05$.

In Ottawa, the odds of intended relative to unintended pregnancy increased with employment (OR = 7.84, $p < 0.01$, 95% CI = 1.52/40.54) and HIV knowledge (OR = 3.13, 95% CI = 1.42/6.90), but decreased with household size (OR = 0.56, 95% CI = 0.36/0.87). Also, the odds of intended pregnancy (OR = 1.07, $p < 0.05$, 95% CI = 1.01/1.13) increased with HIV-related discrimination, thereby contradicting the study's a priori expectation.

In Port Harcourt, the odds of intended relative to unintended pregnancy increased with marriage (OR = 2.9, 95% CI = 1.43/5.88) and social support (OR = 3.77, 95% CI = 1.98/7.19). However, the odds of intended pregnancy decreased with age (OR = 0.93, 95% CI = 0.88/0.98) and motherhood experience (OR = 0.96, $p < 0.05$, 95% CI = 0.92/0.99), thereby contradicting the study's a priori expectation.

In Miami, the odds of intended relative to unintended pregnancy increased with Disclosure of HIV Status (OR = 1.73, 95% CI = 1.01/2.97) and the influence of a specific referent score (OR = 1.68, 95% CI = 1.13/2.52). However, the odds of intended relative to unintended pregnancy decreased with functional social support (OR = 0.95, $p < 0.05$, 95% CI = 0.91/1.00), thereby contradicting the study's a priori expectation.

4. Discussion

Prevalence of unintended pregnancies. The incidence of unintended pregnancies was much greater among WLHIV in the North American cities, with values ranging from 44.2 to 67.3% in Ottawa and Miami, than those in the African city. This compares to previous statistics showing prevalence rates of 61% among WLHIV in Canada, and a range of

51 to 90% among WHLHIV globally [6,38,55]. A study of 36 countries in Africa showed that prevalence of unintended pregnancy was 30.10%, with values of 41% and 37% in Kenya and Uganda, respectively [56–58]. The large disparity in unintended pregnancies between the North American cities and the African city reflects the disproportionate access and utilisation of reproductive health services among immigrant WLHIV as compared to women in Africa. Access and utilisation of healthcare, particularly to reproductive health services, provides avenues for counselling by healthcare professionals that can guide the pregnancy intentions of women including WLHIV. However, the experiences of stigma and discrimination in healthcare facilities lead Black WLHIV to desist from seeking counsel from healthcare providers about their pregnancy intention. The study showed that pregnancy intention was predicted by varied demographic, sociocultural, and psychosocial factors across the three cities, thereby indicating that differing city dynamics influence pregnancy intention. We, therefore, discuss results by city.

4.1. Ottawa, Canada

The findings in Ottawa are supported by other comparative studies, i.e., intended pregnancy correlated with smaller household sizes in other studies [59] and conversely, multiparity correlated with unintended pregnancy among WLHIV [26,60,61]. One valid explanation is that women with large household sizes may spend more time on parenting and domestic tasks, thereby limiting their ability to access family planning information and maternal health services such as contraceptive methods [62]. They may also be inconsistent in the use of contraceptives, under-utilising contraceptives, using emergency contraceptives, having unfavourable side effects of contraceptives, or suffering from partner refusal of contraceptive use. Related to our results in Ottawa that intended pregnancy was predicted by employment status, some other studies in the US, Britain, and Africa found decreased odds of unintended pregnancy with higher socioeconomic status, including education and wealth [5,63,64]. This result is perhaps because employed women may be more conscious about family planning due to work demands, unfavourable maternity leave benefits, and other disincentives. Next, knowledge of modes of HIV transmission among WLHIV in Ottawa increased their odds of pregnancy intention. The result is logical, as knowledge of the fact that HIV is transmissible from mother to child, not only during pregnancy but also during delivery and breastfeeding, leads WLHIV to be intentional about their reproductive decisions. This result underscores the importance of mainstreaming family planning services into HIV care [32]. Finally, we found a contradicting result that experiences of discrimination increase the odds of intended pregnancy, yet we feel that this could be because discrimination breeds negative self-image and personalised stigma, which have been associated with increased intention to get pregnant [65]. WLHIV facing discrimination, who may feel isolated and lack self-worth, may perceive pregnancy and its resulting motherhood experience as a source of personal joy, satisfaction, and motivation to live longer and healthier lives. This may be especially true among women in Black cultures that traditionally value motherhood. Amongst WLHIV in Ontario, Canada, African ethnicity and recent immigration to Canada were significantly correlated with attributing high importance to motherhood, and amongst those reporting that motherhood was important, it was seen as a source of fulfilment and increased self-esteem [66].

4.2. Port Harcourt, Nigeria

First, the odds of intended pregnancy decreased with age among WLHIV. This finding was supported by those of other studies in Africa [29,67,68]. This association could be explained by a greater motivation and perhaps a yet-unfulfilled desire to bear children among younger women. By contrast, in a study of Canadian women, the odds of unintended pregnancy increased among younger WLHIV [6], raising questions about how sociocultural contexts shape norms around adolescent or young motherhood. Secondly, we found comparative results that the odds of intended pregnancy were higher among married WLHIV [6,69]. The results may be linked to higher likelihood of unplanned sexual

activity and inconsistent or no contraceptive use among unmarried women. In contrast, a few studies in sub-Saharan Africa showed the reverse, wherein married women were more likely to experience unintended pregnancy [64,70]. This is perhaps due to the non-use or failure of contraceptives, which may be linked to partner refusal or beliefs about the safety or religious morality of using contraceptives. Regardless of marital status, the notion that unintended pregnancy may be linked to constraining beliefs reveals the importance of counselling and family planning, both in informal and healthcare settings. Thirdly, we found a contrary result that the odds of intended pregnancy decreased with motherhood experience. This is surprising, given that a logical association could be drawn that women with intended pregnancy are happier with motherhood than those with unintended pregnancy, a finding supported in a variety of contexts including Canada [25] and sub-Saharan Africa [71,72]. It could be theorized that mothers living with HIV who desired to bear children also suffered more emotional distress, as they were forced to contend with their strong desire for motherhood as well as the implications and potential risks of having a baby while living with HIV. WLHIV often worry about transmitting HIV to their baby, the safety of ART, and the effects of the pregnancy on their health [38]. Finally, being married and receiving support in infant feeding decisions increased the odds of intended pregnancy. This reflects the fact that the support of a partner is critical in reproductive as well as infant feeding decisions. Such support offers incentives to minimize risk of unintended pregnancy and vertical transmission of HIV.

4.3. Miami, Florida, United States

WLHIV in Miami who disclosed their HIV status had greater odds of intended pregnancy. This finding is consistent with other studies [32]. Disclosing one's status to a partner may facilitate adherence to guidelines to mitigate vertical transmission of HIV, use of family planning methods to prevent an unwanted or untimed pregnancy, and access to social support. However, disclosure of HIV status may not always result in such straightforward outcomes for women. Therefore, care must be taken to provide WLHIV the needed support and counselling when they choose to disclose their HIV status, as it can lead to unexpected experiences of blame, abandonment, violence, stigma, or indifference [73,74]. We found contrariwise that receiving social support decreased the odds of intended pregnancy in Miami. This is unexpected, as other studies show the reverse association [75–77]. Finally, in Miami, the Influence of Specific Referents increased the odds of intended pregnancy. Specific referents including the healthcare provider of close family members who may be familiar with the guidelines for prevention of vertical transmission of HIV may provide tangible and informational support to WLHIV wishing to conceive.

5. Conclusions

The incidence of unintended pregnancy is more prevalent among Black women living with HIV in the North American cities (Ottawa, Canada and Miami, US) compared to Black non-immigrant women living with HIV the African city (Port Harcourt, Nigeria). Unique combinations of sociodemographic, sociocultural, and psychosocial factors influence pregnancy intention in each city, implying that policy to address reproductive health needs of WLHIV should be specific to the geographic context. However, a cross-cutting recommendation is that policy, programming, and practices that address the reproductive health needs of Black women should integrate educational, social, and economic empowerment resource components including Critical Health Literacy. These interventions should also include increasing access to sexual health services and counselling, strengthening social capital, and increasing employment for WLHIV. We also recommend the application of the health belief model in future studies, policies, programs, and practices that addresses unintended pregnancies among Black women living with HIV. This should go beyond promoting critical HIV literacy, to mitigating stigma and increasing uptake of antiretroviral treatment.

6. Study Limitations

Some authors argue that a dichotomous measure of pregnancy intention, such as intended versus unintended, can yield a mixed result, as unintended pregnancies combine wanted but mistimed pregnancies with unwanted pregnancies. We clarified to readers at the outset that we conceptualized unintended pregnancy as unwanted and mistimed pregnancies, and we had phrased the survey question to elicit data to reflect this combination. The study is cross-sectional and therefore limits our ability to infer a cause-and-effect relationship, but instead we established associations between variables. In addition, data collection was venue-based because of the hard-to-reach population of study, but we attempted to increase generalizability of our data by randomly selecting our sample of venues from a broad range of venues where WLHIV often meet.

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Informed Consent Statement: Participants provided written informed consent prior to engaging in the study. Before providing consent, they were informed of the potential risks associated with completing the questionnaire and that they would have limited direct benefit from their participation. They were informed that they could withdraw from the study at any time without any adverse effects. In addition to providing the written consent, participants were informed that completion of the questionnaire signified their informed consent to participate in the study.

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