Determinants of infant feeding practices among HIV+ Black mothers

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Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Purpose

To present the findings of a study that examined infant feeding practices of HIV+ Black mothers living in Canada, Nigeria and the United States.

Findings will be appraised and tailored to inform culturally appropriate interventions for this sub-population

Research Questions

- How do cultural beliefs and practices of HIV positive Black mothers influence their infant feeding choices and practices within the first year of birth?

- How do existing global and national infant feeding recommendations for HIV positive women influence infant feeding practices among HIV positive Black mothers?

Global Context

• Addressing MTCT/vertical transmission of HIV to newborns has been a global health priority.

• Interventions have evolved through routine prenatal screening, mother and infant antiretroviral prophylaxis, caesarean section, and avoidance of all breastfeeding.

• With emerging research on modes of preventing MTCT, and advances in drug therapy, infant feeding guidelines for HIV positive women are constantly changing.

WHO 2016 Guidelines

Recommendations:

- **Mothers** living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or longer while being fully supported for ART adherence.

- National and local health authorities should actively coordinate and implement services in health facilities and activities in workplaces, communities and homes to protect, promote and support breastfeeding among women living with HIV.

Key messages:

- Breastfeeding for **any duration** offers more benefits to the child than not breastfeeding at all.
- Recommendations on breastfeeding are **similar for all women regardless of HIV status.**
- Health services should promote breastfeeding, however the choice and for how long to breastfeed rests with the woman taking into account her individual circumstances.

Infant Feeding Guidelines

- Infant feeding guidelines have been adapted in various settings, based on available resources and health system capacity.
- High-income countries (Canada, US, UK) mothers have access to *acceptable, feasible, affordable, sustainable* and *safe* (AFASS) feeding alternatives.
  - mothers are strongly advised to exclusively formula feed regardless of ARV use and plasma viral load (Health Canada, 2015; WHO, UNICEF, UNFPA, & UNAIDS, 2010).
- When replacement feeding is not AFASS, (low-middle income countries), exclusive breastfeeding is recommended for the first six months of life (WHO, 2010).
- Mixed feeding, where breastfeeding is combined with other liquid or solid foods and substitutes, increases risk of HIV transmission and is strongly discouraged (WHO, 2010).

Public Health Messaging

- Western countries like Canada and the US promote breastfeeding as
  - The normal and unequalled method of feeding infants
  - Breast milk's superior nutritional value/protection from childhood infections.
  - The potential of stimulating emotional connection between mother and child (Hazemba, Ncama, & Sithole, 2016)
  -
- These educational campaigns promoting exclusive breastfeeding inspire positive change among women who might not breastfeed their infants.

Sociocultural Context of Infant Feeding

- Black women represent the highest population of women living with HIV (54.2%-64%) and disproportionately high rates (48%-54%) of MTCT among HIV-exposed infants born in Canada and the US (Public Health Agency of Canada, 2014, CDC. 2013).
- Childbirth and related processes (infant feeding practices) are significantly influenced by culture (Etowa, 2012; Odeny et al., 2016).
- Culture socializes and educates, thereby eliciting the desire for particular preferences and ways of being including decisions about childbirth and infant feeding practices (Etowa, 2012).
- It is important to understand how guidelines that promote avoidance of breastfeeding are perceived and implemented among women from cultural backgrounds that promote breastfeeding.

Tensions associated with Infant feeding

- Educational messages fail to acknowledge the social, practical, and cultural challenges of breastfeeding among women living with HIV and may inadvertently marginalize them (Greene et al., 2015, Odeny et al., 2016).

- Tensions further complicated for African immigrant women living with HIV from countries and cultures where breastfeeding is an expectation of all new mothers, and where using formula is a sign of illness and disease (Kapiriri et al., 2014).

- The infant feeding guidelines and public health messaging , therefore, present a paradox for childbearing women living with HIV in western countries like Canada and the US.

Infant Feeding Tensions

- Inconsistency between the public health 'breast is best' mantra, national guidelines and cultural expectations -
  - Creates tension for indigenous African women and African immigrant women living in Canada/US (Greene et al., 2015; Kaprириri et al., 2014).
- Breastfeeding for women living with HIV in Canada is prohibited (Greene et al 2015),
- Formula feeding is equally frowned on among immigrant societies with mothers being perceived as cruel and unloving (Kaprириri et al., 2014).
- African, Black or Caribbean women who decide not to breastfeed perceived to be 'acquiring a new culture.'
- Recommended formula feeding: No consideration for cultural significance of breastfeeding practices and experiences among mothers, particularly from African countries where HIV is endemic (Green et al., 2015).
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Infant Feeding Tensions…

- Many Black women view breastfeeding as a symbol of "good motherhood" and 'the natural' way of feeding a baby.

- They may choose to breastfeed despite:
  - their knowledge of the high HIV transmission risk through breast milk to avoid the label of being a "bad mother" and the speculation about their HIV status
  - risk of criminal charges for breastfeeding

- Therefore, examining the context that influences infant feeding choices among African immigrant women living with HIV will is necessary for the development of effective interventions to promote adherence to exclusive feeding, whether breastfeeding or formula feeding, thereby reducing the risk of vertical transmission (MTCT) of HIV among highly exposed infants born to these mothers.

Research Hypotheses

The following null hypotheses were tested:

- Infant feeding practices of HIV positive black mothers in the Diaspora (Canada and USA) are not significantly different from those in their Origin country in Africa (Nigeria)
- Cultural beliefs among HIV positive mothers have no significant influence on their infant feeding practices
- Family members' opinions have no significant influence on infant feeding practices among HIV positive Black mothers
- The Health providers' opinion have no significant influence on Infant feeding Practices of HIV Positive Black mothers
- The Knowledge of national or global guideline has no significant influence on the infant feeding practices of HIV Positive Black Mothers

Theoretical Framework

- To facilitate **meaningful community engagement** and **empowerment**, this project guide by tenets of **postcolonialism** and **community-based participatory research** (CBPR)

  - **CBPR and a postcolonial lens** facilitate an intersectional understanding of ethnicity, gender, class and contemporary migrations and implications for motherhood among HIV positive women.

  - **Postcolonialism** allows "the entire research project to be viewed through a political lens, a lens that attends to the micro politics and macro dynamics of power."

Ethics and Data Collection

- Prior to survey ethics approval was obtained from research ethics boards at affiliated institutions

- The surveys included standardized tools related to the following topics:
  - HIV/AIDS, Perinatal Health and Infant Feeding, Motherhood, Social support and Heightened Vigilance, Perceived Stress and Socio-cultural aspects of Infant Feeding.

- This study used venue-based convenience sample of HIV positive Black mothers

- Sample sizes: the effective response rates which was determined by the actual number of participants were 89% (n=89), 100% (n=400) and 67% (n=201) giving a total (n=690) from the three sites.

Analytical techniques

- A multinomial logistic regression model was employed to establish the determinants of infant feeding practices using the SPSS software
- Within the model **infant feeding practices** was a categorical dependent variable with three outcomes:
  - ***Exclusive formula feeding=1,***
  - ***Mixed feeding =2 (reference outcome),***
  - ***Exclusive breastfeeding =3***
- The key **independent variables** included in the model for which hypotheses were tested were: cultural beliefs, family members' opinions, health providers opinion, knowledge about the guideline, and country of residence
- Socioeconomic variables were included as independent variables as they can as well have profound influence on infant feeding practices
- The Loglikelihood chi-square statistics was employed to test model accuracy
- Software such as SPSS and Excel were critical in providing in-depth descriptive analyses.

Demographic Characteristics of Participants

	Canada n (%)	USA n (%)	Nigeria n (%)	All Sites n (%)
Number of participants (n)	**89**	**201**	**400**	**690**
Mothers age (range)	19-49	18-49	18-49	18-49
Relationship status:				
Single/separated/divorced/widowed	57 (66.5)	61 (35.7)	57 (14.3)	185 (27.0)
Married	29 (33.3)	121 (60.8)	340(85.2)	490 (71.5)
Number of persons in household (range)	1 - 7	1 - 9	1 -11	1 -11
Number of children born after HIV+ (range)	1 -3	1 - 3	1 - 5	1-5
Number of years since HIV+	1 - 29	1 - 27	1 - 20	1-29
Education:				
Primary school	1 (1.1)	0 (0.0)	42 (10.7)	43 (6.3)
High school, technical or vocational school	34 (38.6)	131 (65.8)	250 (63.5)	415 (60.9)
College or university	50 (56.8)	66 (33.2)	102 (25.9)	268 (39.4)
Employment status:				
Employed (full time or part time)	51 (57.3)	65 (32.7)	320 (87.9)	436 (66.9)
Unemployed	38 (42.7)	134 (67.3)	44 (12.1)	216 (33.1)

Information about the Mothers Infant Feeding Practices

Response categories	Port Harcourt	Miami-Florida	Ottawa	All Sites
Knows the correct national policy on how you should feed your child in the first year of birth when you are HIV positive?	327 (88.6)	151 (75.9)	76 (86.4)	554 (84.5)
No one supports decisions making about feeding the baby	64 (16.4)	88 (44.2)	38 (42.7)	190 (28.0)
Spouse/partner/baby's father supports decisions making about feeding the baby	301 (77.0)	38 (19.1)	40 (45.0)	379 (55.8)
Mother/mother-in-law supports decisions making about feeding the baby	18 (4.6)	35 (17.6)	7 (7.9)	60 (8.8)
Other close relatives supports decisions making about feeding the baby	8 (2.1)	14 (7.0)	2 (2.3)	24 (3.5)
Practiced the recommended guideline feeding the baby	210 (66.7)	146 (75.7)	79 (90.8)	435 (73.1)
Spouse/partner/baby's father's opinion supports the infant feeding policy	213(66.8)	106 (53.0)	56 (65.1)	375 (62.0)
Spouse/partner/baby's father's opinion rated very important or important	310 (78.3)	108 (53.7)	62 (71.3)	480 (70.2)
Other family member's or close relatives opinion supports the infant feeding policy	114 (39.3)	114 (56.7)	13 (15.3)	241 (41.8)
Cared very much or cared about the other family members/close relatives' opinion	168 (45.4)	97 (48.3)	66 (74.2)	331 (50.1)
Health provider's opinion supports the infant feeding policy	269 (86.8)	162 (80.6)	78 (89.7)	509 (85.1)
Cared very much or cared about the health provider's opinion	393 (98.5)	170 (84.6)	89 (100)	652 (94.6)
Cultural beliefs and traditions exists in place of origin about Infant feeding practices	2 (0.5)	51 (25.4)	11(12.7)	64 (9.3)
Cultural belief or traditions prohibit the recommended infant feeding method	8 (12.7)	59 (30.6)	29 (36.3)	96 (28.6)
Influence of Cultural belief or traditions on infant feeding decisions rated as very				

Results of Multinomial logistic Regression Analysis detailing Determinants of Infant feeding practices

Model summary	
Observations included in the model n (%)	445 (64.5%)
Log likelihood estimate	-260.05
Log likelihood Chi^2 (df =22)	325.84**
Implications	
Results of the analysis is fairly a good representation of the study population as up to 64.5% of the data points were included in the model	
The likelihood ratio chi-square of 325.84.23 with a p-value < 0.01 tells us that our model as a whole fits significantly better than an empty model (i.e., a model with no predictors)	

Results of Multinomial logistic Regression Analysis detailing Determinants of Infant feeding practices (continued..i)

Variables included in the model	Exp(B)	Std. Error	Wald	Sig.	95% CI for Exp(B)
Where: Dependent variable = Exclusive formula feeding relative to mixed feeding					
Country of residence (Canada/USA=1, Nigeria=0)	20.27**	0.73	17.04	0.00	4.86 - 84.60
Employment (Salaried/waged =1, Otherwise=0)	0.72	0.47	0.48	0.48	0.29 -1.82
knowledge of the infant feeding guideline (Correct=1, Incorrect= 0)	2.83*	0.50	4.26	0.04	1.05 - 7.59
Rating of spouse/baby's father's opinion on infant feeding (Important=1, Unimportant=0)	0.69	0.50	0.57	0.45	0.26 - 1.82
Health Provider's opinion on infant feeding (Agrees with guideline=1, Opposed to guideline=0)	1.55	0.48	0.84	0.36	0.60 - 3.96
Importance of cultural beliefs in infant feeding choices (Important=1, Unimportant=0)	0.42	0.64	1.85	0.17	0.12 - 1.46
Infant feeding attitude Score	1.06*	0.03	3.88	0.04	1.00 - 1.11
Functional Social Support Score	0.99	0.03	0.15	0.70	0.92 - 1.05
Discrimination Score	0.98	0.02	1.54	0.21	0.93 - 1.01
Heightened Vigilance Score	1.03	0.04	0.57	0.45	0.94 - 1.12
Perceived Stress Score	0.95	0.04	2.24	0.13	0.87 - 1.01
Intercept	-1.93	1.88	1.05	0.31	

Results of Multinomial logistic Regression Analysis detailing Determinants of Infant feeding practices (continued..ii)

Variables included in the model	Exp(B)	Std. Error	Wald	Sig.	95% CI for Exp(B)
Where: Dependent variable = Exclusive breastfeeding relative to mixed feeding					
Country of residence (Canada/USA=1, Nigeria=0)	0.04**	0.90	12.72	0.00	0.01 - 0.24
Employment (Salary/wages =1, Otherwise=0)	1.46	0.48	0.61	0.43	0.57 -3.74
knowledge of the infant feeding guideline (Correct=1, Incorrect= 0)	3.57**	0.50	6.54	0.01	1.35 - 9.45
Rating of spouse/baby's father's opinion on infant feeding (Important=1, Unimportant=0)	0.57	0.50	1.27	0.26	0.22 -1.51
Health Provider's opinion on infant feeding (Agrees with guideline=1, Opposed to guideline=0)	5.28**	0.50	11.17	0.00	1.99 - 14.01
Importance of cultural beliefs in infant feeding choices (Important=1, Unimportant=0)	1.38	0.78	0.17	0.68	0.30 - 6.39
Infant feeding attitude Score	1.11**	0.03	11.99	0.00	1.04 - 1.17
Functional Social Support Score	1.08*	0.04	4.57	0.03	1.01 - 1.16
Discrimination Score	1.02	0.02	0.50	0.48	0.97 - 1.06
Heightened Vigilance Score	0.98	0.05	0.28	0.59	0.89 - 1.07
Perceived Stress Score	0.98	0.04	0.23	0.63	0.91 - 1.06
Intercept	-6.67	1.97	11.48	0.00	

Interpretations: *When dependent variable = exclusive formula feeding relative to mixed feeding*

Holding all other variables constant we found that two of the key variables were significant at either 99% or 95% confidence level. That is*:*

- *A* mother **residing in Canada/USA** is 20.27 times more likely to practice exclusive formula feeding relative to mixed feeding than her counterpart in Nigeria.
- A mother with correct **knowledge of the national or global guidelines** is 2.83 times more likely to practice exclusive formula feeding relative to mixed feeding than mother with incorrect knowledge
- A mother with a unit increase in **infant feeding attitude score** is 1.06 times more likely to practice exclusive formula feeding instead of mixed feeding.
- **Sociocultural variables** such as cultural beliefs, family opinions and health provider's opinion about infant feeding **were not significant predictors** of exclusive formula feeding relative to mixed feeding. Thus we accept the **null hypotheses** that:
  - ***Sociocultural variables are not significant predictors of exclusive formula feeding in this study population***

Interpretations: *When dependent variable = exclusive breastfeeding relative to mixed feeding*

Holding all other variables constant we found that three of the key variables were significant at either 99% or 95% confidence level. That is*:*

- A mother **residing in Canada/USA** is less likely to practicing exclusive breastfeeding relative to mixed feeding than her counterpart in Nigeria by a factor of 0.04units.
- A mother with **correct knowledge of the national or global guideline** is 3.57times more likely to practice exclusive breastfeeding relative to mixed feeding than mother with incorrect knowledge of the recommendations
- A mother whose **health provider's opinion is in line with the guideline** is 5.28 times more likely to practice exclusive breastfeeding relative to mixed feeding than a mother whose health provider opposes the guideline.
- A mother with a unit increase in **infant feeding attitude score** is 1.11 times more likely to practice exclusive breastfeeding instead of mixed feeding
- A mother with a unit increase in **functional social support score** is 1.08 times more likely to practice exclusive breastfeeding instead of mixed feeding
- Other sociocultural variables such as **cultural beliefs** and Spouse opinions were not significant predictors of exclusive breastfeeding relative to mixed feeding.

Implications

- Having correct **knowledge of the national/global guideline** is a very important factor for HIV Positive Black mothers when deciding on how to feed their baby in the first year of birth.
- The **health providers opinion** were in line with the guideline and it is a very important factor for HIV positive Black mothers who decide to exclusively breastfeed. This further affirm the importance of the national/global guideline.
- Although **cultural beliefs and family members' opinions** are important in the life of these women, they are not a very important factor in their choice of infant feeing practice
- The mothers' **infant feeding attitude** is a very important factor for both for those who exclusively formula feed and those who exclusively breastfeed.
- **Functional social support** was a very vital factor for mothers who exclusively breastfeed

Recommendations

1. Targeted education of mothers to improve adherence to the national infant feeding guidelines for HIV positive women

2. Wider public education and other interventions are necessary to target providers, family members, friends, and significant others who may influence mothers' decisions.

3. Interventions and support for postpartum mothers should target building positive infant feeding attitudes

4. Policies and programs to boost social support for these women is a vital step to ensuring the appropriate choice of infant feeding

Looking Forward

- **Concluding remarks:**
  - The national guidelines rather than sociocultural factors are the key factors influencing HIV Positive Black mothers infant feeding practices.

- **Next steps:**
  - Develop tailored interventions to improve HIV care, and infant feeding practices among Black mothers.
  - Create educational tools to build capacity for mothers to be meaningfully engage in HIV programming

Thank you!

Questions