

Appropriateness of prenatal infant feeding choices by HIV positive women: implications for infant outcomes.



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Background

- Postnatal transmission accounts for at least half of all mother to child transmission of HIV.
- Proportion of infections occurring postnatally is increasing as intrapartum regimens improve.
- Postnatal HIV transmission can be eliminated through exclusive replacement feeding; however, there are substantial risks to not breastfeeding under unsafe conditions – therefore making an appropriate choice is important.

Background

WHO/UNICEF recommendation *“avoidance of all breastfeeding if replacement feeding is acceptable, feasible, affordable, sustainable and safe. Otherwise exclusive breastfeeding for the first months of life is recommended followed by early breastfeeding cessation as soon as feasible, when conditions for safe replacement feeding can be met.”*

- These guidelines are difficult to apply in operational settings.
- Defining ‘safe’ and ‘feasible’ etc in practice is a challenge for health workers and counsellors.
- No assessment to date of the implementation of the WHO/UNICEF guidelines in operational settings and consequences for infant outcomes.

Background – South Africa

- PMTCT Programme consists of antenatal VCT, infant feeding counselling, single dose nevirapine for mother and infant, rapid testing of infants at 12 months.
- Infant feeding counselling usually occurs once or twice in antenatal care and is mostly given by lay counsellors.
- Free formula milk provided to women choosing not to breastfeed.
- Women choosing to breastfeed advised to stop between 3-4 months.

Good Start Study

Aims & Objectives

- To identify criteria that could be used to guide appropriate infant feeding choices.
- To assess the appropriateness of infant feeding intentions amongst HIV positive women in 3 sites in South Africa.
- To determine the effect of inappropriate choices on infant HIV-free survival.

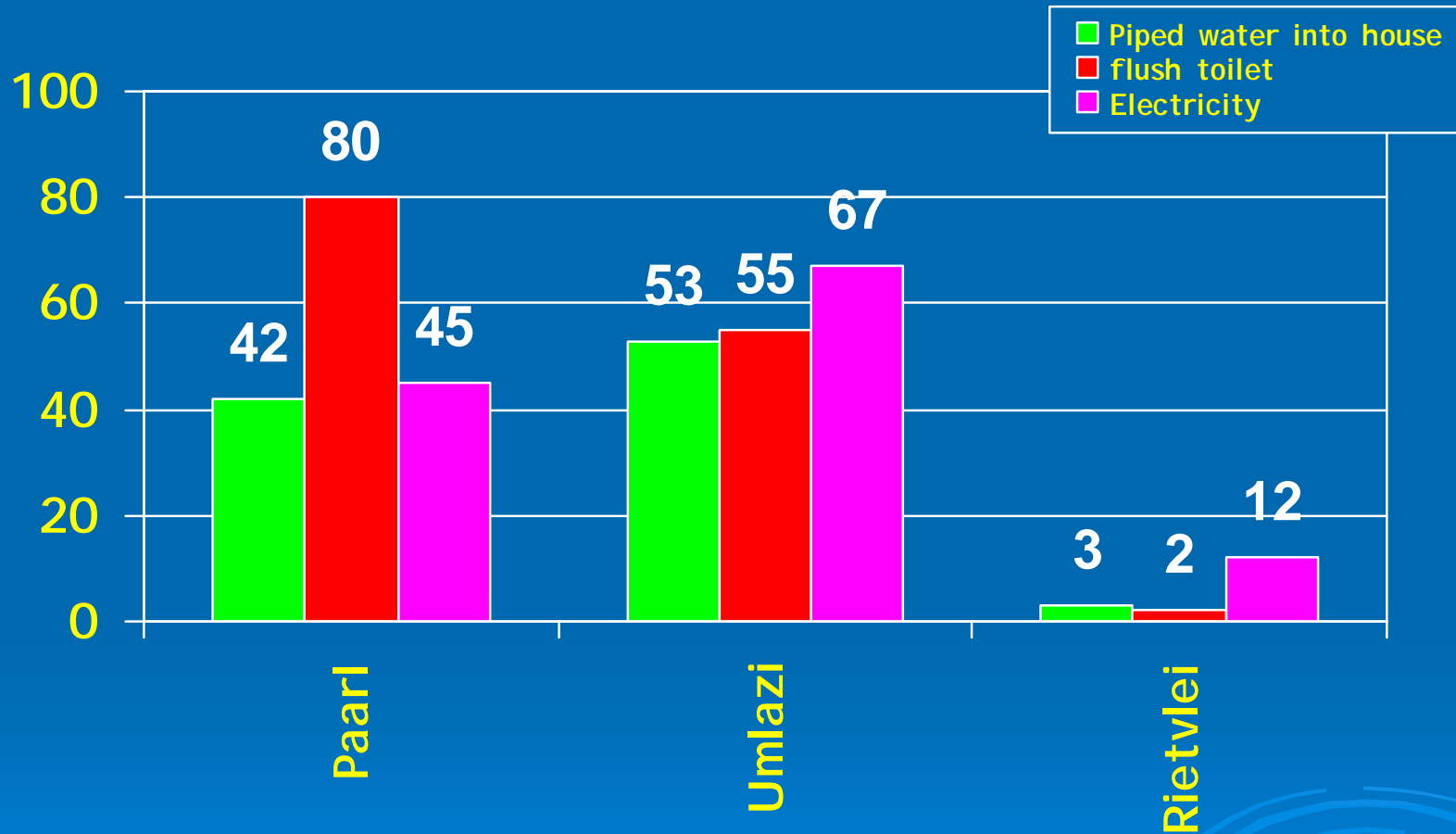
Study Sites

- **Umlazi:** peri-urban township consisting of formal and informal dwellings situated close to Durban. The IMR is approximately 60/1000 live births and HIV prevalence amongst antenatal clients is 44%.
- **Paarl:** peri-urban/rural commercial farming area. IMR is approximately 40/1000 live births and HIV prevalence amongst antenatal clients is 9%.
- **Rietvlei:** (Umzimkulu) in one of the poorest rural areas of South Africa, the former Transkei homeland in Eastern Cape. IMR of 99/1000 live births. HIV prevalence amongst antenatal clients is 28%.

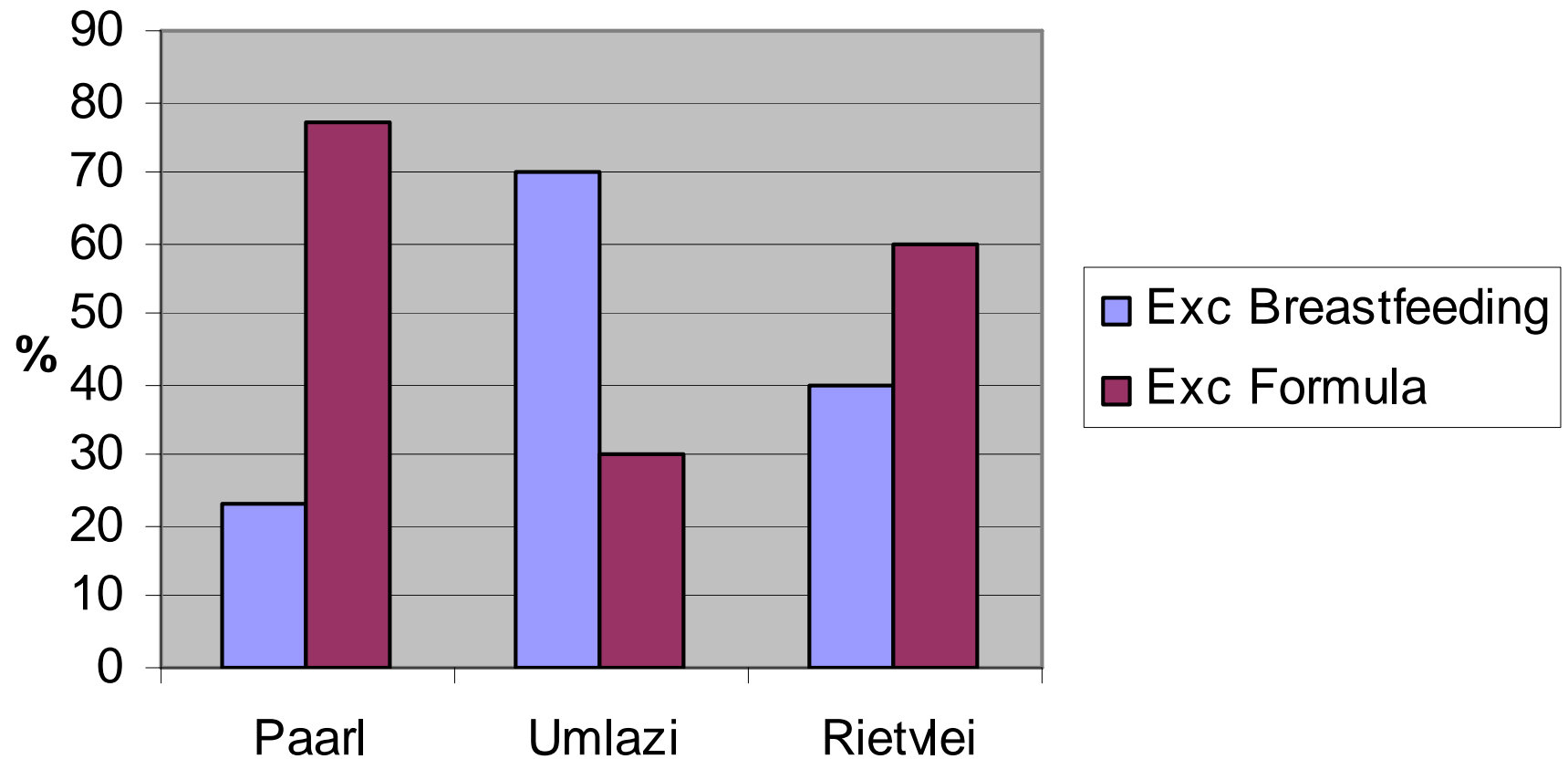
Research Design

- Prospective cohort study
- Follow up from birth to 36 weeks postpartum.
- Final Sample 665 HIV positive women.
- Data collected by trained field researchers at (3, 24 and 36 weeks).
- Visits from community health workers every 2 weeks until 9 weeks, then monthly until 36 weeks.
- **Infant feeding** assessed at each visit: previous 4-day (yesterday + previous 3-days) recall - Yes/no questions also asked about ever breastfeeding in the past.
- **Dried blood spots** collected by heel prick (baby) at 3, 24 and 36 weeks to determine HIV infection and finger prick (mother) at 3 and 36 weeks to measure viral load.

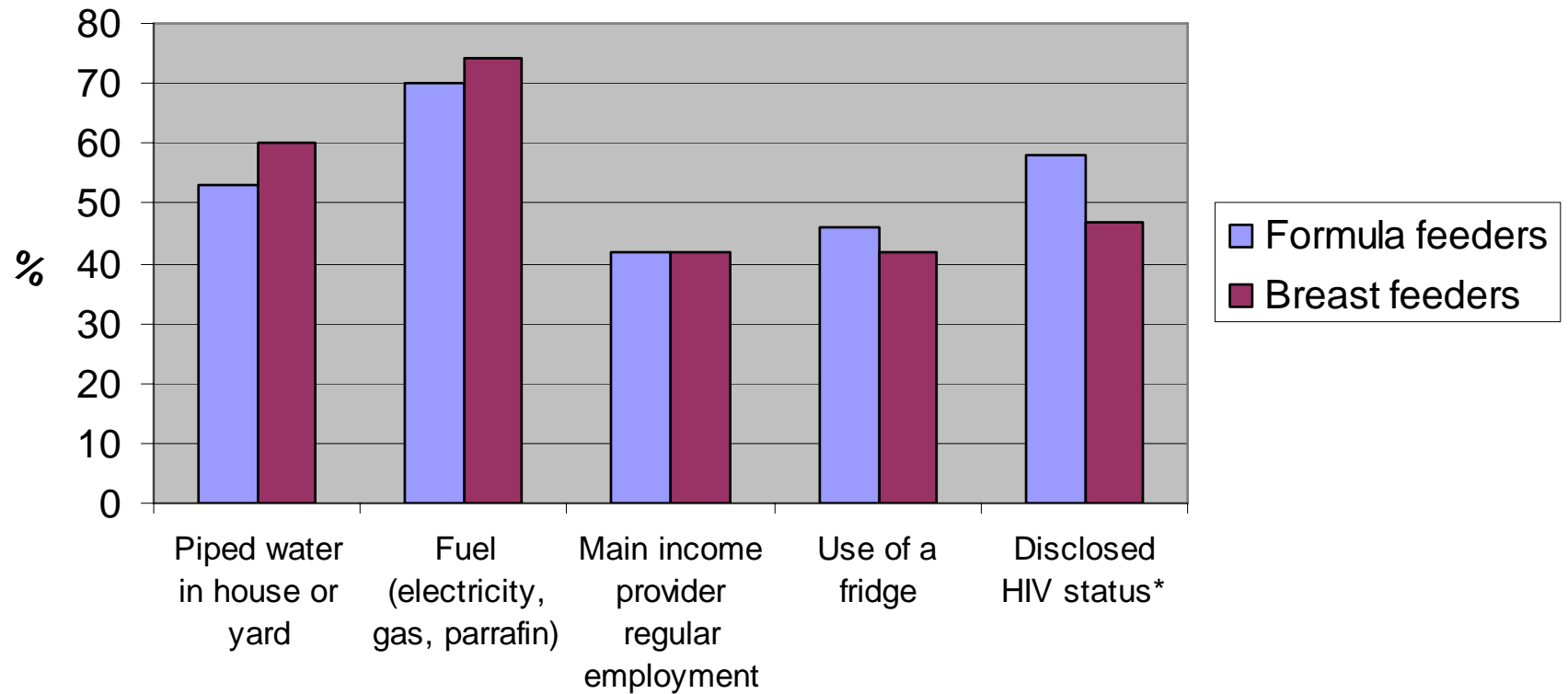
Socio-demographics



Infant feeding Intentions of HIV positive women



Infant feeding intentions according to 5 key criteria



* P-value = 0.01

Do the WHO/UNICEF guidelines improve infant HIV-free survival?

5 criteria assessed as measures of appropriateness of feeding choice:

- Piped water in house or yard
- Electricity, gas or paraffin as a source of fuel
- Disclosed HIV status
- Access to a fridge to store prepared formula
- Someone in the household in fulltime employment

Defining appropriate choice

Score of appropriateness	n(%) women choosing to formula feed who had these criteria	Adjusted Hazard ratio 36 week HIV transmission/ death (95% CI)
(A) Piped water in house or yard	152 (52.6)	0.51 (0.31-0.84)
(B) Piped water in house or yard plus fuel (electricity, gas or paraffin)	146 (50.5)	0.53 (0.32-0.88)
(C) Piped water in house or yard, fuel and disclosure of HIV status	94 (32.5)	0.32 (0.16-0.62)

Consequences of inappropriate choices

Appropriateness of feeding choice according to presence or absence of piped water, fuel and HIV disclosure (n=600)	Adjusted Hazard Ratio for 36 week HIV transmission/ death	95% CI
Appropriate choice to formula feed (referent group) (n=94)	1	
Appropriate choice to breastfeed (n=216)	2.74	(1.48-5.05)
Inappropriate choice to formula feed (n=195)	3.45	(1.89-6.32)
Inappropriate choice to breastfeed (n=95)	2.72	(1.38-5.35)

Discussion

- WHO/UNICEF guidelines are not being used effectively in operational settings to guide feeding choices.
- The home circumstances of mothers do not appear to influence choices.
- Inappropriate choices are being made in both directions:
- 95 (31%) of women who chose to breastfeed had access to piped water, fuel and had disclosed their HIV status. The risk of HIV transmission or death is 2.7 times higher in this group compared to women with the same conditions who chose to formula feed.
- A considerable number of infant infections could have been prevented if these women had chosen to formula feed.

Discussion

- Only 3/93 women in rural Rietvlei site who chose to formula feed met the three criteria.
- Inappropriate choice in a rural area may carry more risk (water from rivers, wood for fuel).
- Rietvlei most similar to other parts of Africa. More research needed to assess risks in rural areas.

Conclusions

- WHO/UNICEF guidelines need to be applied in a practical manner in operational settings.
- Advocacy needed to increase women's access to conditions that will enable safe formula feeding.
- Infant HIV free survival could be improved if women choosing to formula feed have at least 3 criteria (piped water, fuel, HIV disclosure).
- Without these, a choice to breastfeed would result in a better outcome.

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