

# Factors Associated with Screening of Spouses of HIV-Positive Pregnant Women in Three Prenatal Consultation Centers in Bangui

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## To cite this article:

Diemer Saint Calvaire Henri, Longo Jean de Dieu, Woromogo Sylvain Honore, Doyama-Woza Rodrigue Herman, Fandema Emmanuel et al. (2023). Factors Associated with Screening of Spouses of HIV-Positive Pregnant Women in Three Prenatal Consultation Centers in Bangui. *Science Journal of Public Health*, 11(6), 206-210. <https://doi.org/10.11648/j.sjph.20231106.13>

**Received:** November 9, 2023; **Accepted:** November 24, 2023; **Published:** December 11, 2023

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**Abstract:** *Introduction:* Approximately 1.5 million children aged 0-14 are infected with HIV worldwide. Most of these children acquired HIV through mother-to-child transmission. One of the barriers to eliminating mother-to-child transmission of HIV is fear of reactions from partners of pregnant women to HIV testing and sharing of results. To optimize partner testing of pregnant women who test positive for HIV, WHO has recommended HIV partner notification services. In this context, our study aims to determine the proportion of spouses of HIV-positive pregnant women who tested themselves after notification of their partner's HIV status and to identify the factors associated with this screening. *Patients and methods:* This was a cross-sectional study with descriptive and analytical aims. The study population consisted of pregnant women living with HIV followed in the three ANC centers. All the HIV-positive pregnant women meeting the inclusion criteria and seen in consultation during the study period were retained. Women were recruited during their visit to the CPN center. Data were entered and analyzed using Epi info version software. *Results:* We recorded a total of 182 HIV-positive women during the study period. Their age varied between 17 and 43 years with an average of 28 years ( $\pm 6$ ). The majority of women (53.8%) and spouses (58.2%) have reached secondary school level. Around 65.9% of spouses were informed of their partner's HIV status. Among the 120 spouses who were informed of their partner's HIV status, 70% agreed to be tested and 30% refused the test. Around 65.9% of spouses were informed of their partner's HIV status. Notification was made in 51.7% of cases by the women themselves (passive notification), in 10% of cases by women through a written notification letter by a health provider and in 38.3% of cases by health personnel after the woman's consent (assisted notification). Factors associated with spousal screening in multivariate analysis were spousal age and type of notification. *Conclusion:* Many challenges remain to be overcome, in particular the poor access of pregnant women to prenatal consultations and the fight against stigmatization which constitute a barrier to the screening service. A combination of approaches such as partner notification and self-testing could be tried to improve the participation of spouses in the prevention of mother-to-child transmission of HIV.

**Keywords:** Joint, Screening, HIV, Infected Pregnant Women, Bangui

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## 1. Introduction

HIV infection still remains a global public health problem.

There were an estimated 39 million people living with HIV (PLHIV) at the end of 2022, including 1.5 million children aged 0-14. Most infected children acquired HIV through mother-to-child transmission (MTCT) [1]. Sub-Saharan

Africa accounted for 89% of new cases of pediatric HIV infections in 2020. Additionally, the region accounts for almost 88% of AIDS-related child deaths [1]. Progress has been made in the commitment to eradicate vertical transmission of HIV. But such advances are not found everywhere. In West and Central Africa, coverage of services to prevent vertical transmission is among the lowest in the world [1]. One barrier is fear of reactions from pregnant women's partners to HIV testing and sharing results [2]. To optimize partner testing of pregnant women who test positive for HIV, WHO has recommended HIV partner notification services. In this setting, a trained health provider encourages the HIV-positive pregnant woman to disclose the test result to her partner. Three notification strategies have been proposed by the WHO: (i) passive notification where a trained health care provider encourages the HIV-positive pregnant/breastfeeding woman to self-disclose her status to her partner and suggests that the latter get tested, (ii) enhanced passive notification, the trained provider uses various support tools (written information, leaflets or partner notification sheet/card) to make it easier for the HIV-positive pregnant woman to disclose her status and offer screening of one's sexual partner; finally (iii) the provider informs the sexual partner of the HIV-positive pregnant/breastfeeding woman of her status with his consent, then offers him voluntary HIV testing [3].

In the Central African Republic (CAR), the prevalence of HIV infection among pregnant women is estimated at 3.2% in 2022. Since 2021, the AIDS program has organized series of training courses for providers health department in charge of prenatal consultation on the screening of pregnant women and notification of results. However, the number of sexual partners of pregnant women tested for HIV still remains low. It is in this context that our study aims to determine the proportion of spouses of HIV-positive pregnant women who tested themselves after notification of their partner's HIV status and to identify the factors associated with this screening.

## 2. Patients and Methods

### 2.1. Setting and Type of Study

The study was carried out in three prenatal consultation centers (ANC) in Bangui. This was a cross-sectional study with descriptive and analytical purposes, running from August 1 to 31, 2023.

### 2.2. Study Population

The study population East constituted pregnant women living with HIV followed in the three ANC centers. Were included, any pregnant woman living with HIV who agreed to participate in the study.

### 2.3. Sampling

We carried out an exhaustive recruitment. Any HIV-positive pregnant woman meeting the inclusion criteria and

seen in consultation during the study period was included.

### 2.4. Variables Studied

The main variables studied were:

- 1) Variable to explain: spouse screening
- 2) Explanatory variables: age, marital status, profession, level of education, duration of the relationship with the partner (number of years elapsed between the date the couple knew each other and the day of screening), notification to the partner, type notification.

### 2.5. Collection of Data

Women are recruited during their visit to the CPN center. The data was collected using an individual questionnaire designed and previously tested for clarity and length. Data were collected every working day by two medical students.

### 2.6. Data Analysis

THE data has been entered and analyzed using Epi info version 7 software. The chi-square test was used to compare proportions. A  $p < 0.05$  is considered statistically significant. Measures of association were estimated by the odds ratio (OR) and their 95% confidence interval (CI). The variables which have a significant link with the variable to be explained were introduced into a logistic regression model.

### 2.7. Ethical Consideration

The study was carried out in strict compliance with the free and informed consent of patients and anonymity (the names of the participants are not mentioned on the questionnaires). Ethical approval was requested from the Ethics Committee of the Faculty of Health Sciences of the University of Bangui.

## 3. Results

We recorded a total of 182 HIV-positive women during the study period. Their age varied between 17 and 43 years with an average of 28 years ( $\pm 6$ ) and that of the spouses between 22 and 65 years with an average of 39 years ( $\pm 9$ ). The majority of women (53.8%) and spouses (58.2%) have reached secondary school level. Fifty-nine percent of women were housewives and 44% of spouses worked in the informal sector. Most couples (79.1%) lived under the same roof and 37.4% had known each other for more than 5 years (Table 1).

**Table 1.** Distribution of women according to their sociodemographic characteristics.

Variables	Numbers (n=182)	%
Age of partner in years		
<30	34	18.7
≥30	148	81.3
Age of woman in years		
<30	116	63.7
≥30	66	36.3

Variables	Numbers (n=182)	%
Partner's education level		
Superior	44	24.2
Secondary	106	58.2
Primary	24	13.2
Unschooler	8	4.4
Women's educational level		
Superior	8	4.4
Secondary	98	53.8
Primary	60	33.0
Unschooler	16	8.8
Partner's profession		
Employee	54	29.7
Informal sector	80	44.0
Student/pupil	30	16.5
Unemployed	18	9.8
Woman's profession		
Employee	18	9.9
Informal sector	34	18.7
Student/pupil	22	12.1
Unemployed	108	59.3
Marital status		
Wedded life	144	79.1

Variables	Numbers (n=182)	%
Free life	38	20.9
Length of married life in years		
< 3	64	35.1
3 to 5	50	27.5
> 5	68	37.4

Around 65.9% of spouses were informed of their partner's HIV status. Notification was made in 51.7% of cases by the women themselves (passive notification), in 10% of cases by women through a written notification letter by a health provider and in 38.3% of cases by health personnel after the woman's consent (assisted notification). Among the 120 spouses who were informed of their partner's HIV status, 70% agreed to be tested and 30% refused the test. The reasons given were lack of time or denial of the result. For the 62 women who refused to disclose the test result to their spouse, the main reasons were lack of courage (41.9%), fear of rejection by the spouse (35.5%), and fear of being stigmatized (Table 2).

Table 2. Distribution of women according to notification to spouse.

Variables	Numbers (n=182)	%
Notification to spouse of partner's test results		
Yes	120	65.9
No	62	34.1
Notification type	Numbers (n=120)	
Passive notification	62	51.7
Improved passive notification	12	10.0
Provider-assisted notification	46	38.3
Acceptance of the screening test by the spouse	Numbers (n=120)	
Yes	84	70.0
No	36	30.0
Reason for non-disclosure of test result by woman	Numbers (n=62)	
Fear of rejection by spouse	22	35.5
Lack of courage	26	41.9
Fear of being stigmatized	14	22.6
Reason for spouse's refusal to test	Numbers (n=36)	
I don't have time	28	77.8
I'm not sure about this result	8	22.2

Factors associated with spousal screening in multivariate analysis were spousal age and type of notification. Spouses aged 30 and over were more inclined to get tested than spouses under 30 (p = 0.000; OR = 0.37 [0.19-0.81]); and spouses who were informed by their female sexual partner

(passive notification) were more willing to do so than spouses who were informed of their female sexual partner's HIV status by healthcare providers (p = 0.000; OR = 2.05 [1.12-4.57]) (Table 3).

Table 3. Factors associated with screening of spouses of HIV-positive pregnant women.

Postman	Spouse screened (n=84)	Spouse not screened (n=36)	GOLD (95% CI)	p	ORa (95% CI)	p
Age of partner in years						
<30	14	20	1		1	
≥30	70	26	0.26 [0.12-0.59]	0.000	0.37 [0.19-0.81]	0.000
Age of woman in years						
<30	52	20	1			
≥30	32	16	1.30 [0.59-2.87]	0.515		
Partner education level						
Never and primary	12	10	1		-	-
Secondary and higher	72	26	0.43 [0.17-1.12]	0.080		
Joint education level						
Never and primary	34	14	1		-	-
Secondary and higher	50	22	1.07 [0.48-2.38]	0.870		

Postman	Spouse screened (n=84)	Spouse not screened (n=36)	GOLD (95% CI)	p	ORa (95% CI)	p
Marital status						
Wedded life	72	30	1	0.738	-	-
Free life	12	6	1.20 [0.41-3.49]			
Length of married life						
≤ 5	50	16	1	0.128	-	-
> 5	34	20	1.83 [0.84-4.05]			
Notification type						
Passive	60	14	1	0.000	1	0.000
Assisted	24	22	3.93 [1.73-8.92]		2.05 [1.12-4.57]	-

## 4. Discussion

The present study was carried out to determine the proportion of spouses of HIV-positive pregnant women who tested themselves after notification of the status of their female sexual partner. In this study, 65.9% of spouses were informed of the HIV test results of their female sexual partners. This proportion is higher than that reported in a clinical trial in Zambia [4] and Ethiopia [5]. However, it is lower than that reported in Ethiopia [6]. Reporting has been mostly passive. This corroborates the results of the clinical trial carried out in Zambia where women opted more for passive notification than for assisted notification [4]. Passive reporting was significantly associated with spousal screening compared to assisted reporting. The choice of the type of notification depends on the woman and the quality of her relationship with her partner. In the qualitative analysis in Malawi and Zambia, most women and male partners believed that assisted partner notification was acceptable because spouses would take the healthcare provider's recommendation to be tested seriously. HIV. Others, on the contrary, think that some men might feel that their female sexual partner violates their privacy or does not trust them [7].

Among the spouses of women who were informed of their sexual partner's HIV status, 70% agreed to be tested. This result falls far short of achieving HIV generation zero goals and significantly reducing the risk of mother-to-child transmission of HIV. In the randomized trial carried out in Zambia, 28% were screened.

Among the spouses who refused the test, one of the reasons given was lack of time. One of the innovative approaches to screening recommended by WHO is self-testing and community screening. The WHO recommends self-testing for partners of HIV-positive pregnant women, especially for those who do not want to come to health facilities [8]. In a qualitative analysis in Malawi, the majority of women and male partners found secondary distribution of HIV self-test kits acceptable. This approach was found to be practical, guaranteed confidentiality and allowed men to avoid the clinic [7].

In this study, 34.1% of women did not agree to have their test result notified to their partner. Partner notification is an approach that can certainly increase access to HIV testing among male partners and can further optimize HIV prevention, care and care within the family.

However, it carries some risks, including intimate partner violence [9-11]. In the Central African Republic, women's refusal to disclose test results could be explained by the extent of stigma in the country. According to the report of the survey on the stigma index in the Central African Republic, 45.6% of people living with HIV have been victims of stigma. The forms of stigmatization most frequently encountered by respondents are, in order of importance, gossip, verbal insults or threats, physical harassment and, to a lesser extent, physical aggression [12]. Our study found a significant link between the advanced age of the spouse and acceptance of the screening test. Age is an important factor in decision making. The older we get, the more responsible we become. In a community-based study on the determinants of uptake of HIV testing among partners of pregnant women in Ethiopia, age was not associated with spousal testing [13]. The level of education or a stable married life are health determinants that influence the behavior of individuals. However, our study did not highlight a significant link between spouses' acceptance of being screened and these variables.

Our study has a limitation. We have not verified the veracity of the various answers to the questions, as they are statements. Some data are probably overestimated, for example, the rate of notification to partners or the rate of acceptance of screening by spouses.

## 5. Conclusion

The proportion of spouses of HIV-positive pregnant women who agreed to be tested after notification of the HIV status of their female sexual partner was encouraging. However, many challenges remain to be overcome, in particular the poor access of pregnant women to prenatal consultations and the fight against stigmatization which constitute a barrier to the screening service. To this end, the choice of different notification approaches must be weighed against the potential consequences for women. A combination of approaches such as partner notification and self-testing could be tried to improve the participation of spouses in the prevention of mother-to-child transmission of HIV.

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## Conflicts of Interest

The authors declare that they have no competing interests.

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