

# Vaginal Discharge in the Prostitutes of the Group Yèrèlon of Bobo-Dioulasso: Epidemiological, Clinical and Etiological Aspects

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## Abstract

The authors report a cross-sectional descriptive study over 6 years, from December 8<sup>th</sup>, 2003 to October 27<sup>th</sup>, 2009, involving 911 women involved in the sex trade within the Yèrèlon group in Bobo-Dioulasso. **Objectives:** To describe the epidemiological, clinical and etiological aspects of vaginal discharge in women in the Yèrèlon group of the city Bobo-Dioulasso. **Results:** Frequency of vaginal discharge was 48.89%. The mean age was 28.4 years with extremes of 16 and 54 years. Single, divorced and widowed women accounted for 78.8% of the study population. Women who never attended school and those with primary education accounted for 74.3% of the study population. HIV serology was positive in 38.4% of cases. The main symptoms were genital itching, dyspareunia and urinary signs. The main germs identified in the laboratory were *Candida albicans*, *Trichomonas vaginalis* and *Gardenerella vaginalis*. **Conclusion:** vaginal discharge was found in 48.89% of women in the Yèrèlon group of Bobo-Dioulasso. The clinical study of the discharge and the laboratory results allowed a diagnosis and a better management of the leucorrhoea in the group Yèrèlon.

## Keywords

Leucorrhoea, Sex Trade, *Candida albicans*, *Trichomonas vaginalis*, *Gardenerella vaginalis*

## 1. Introduction

Leucorrhoea is non-bloody female genital discharge. It can be pathological, in this case translating a genital infection. If the vaginal discharge is usually mild, it may

have an impact on the couple's sexual and emotional life, and also could have dramatic consequence, such as ectopic pregnancy or infertility [1].

Like other sexually transmitted infections (STIs), vaginal discharge promotes sexual transmission of the human immunodeficiency virus [2].

Sex workers have multiple partners, and this behavior promotes the spread of HIV and STIs. We undertook this study on the vaginal discharge in women of the Yèrèlon group in order to study the epidemiological, clinical and etiological aspects.

## 2. Materials and Methods

A cross-sectional, descriptive study over a 6 years period, from December 8, 2003 to October 27, 2009 was carried out, in Bobo-Dioulasso, as part of a research project called Yèrèlon on the prevention and management of sexually transmitted infections and the human immunodeficiency virus in professional sex workers and women infected with HIV from the Associations of People Living with HIV.

### 1) Inclusion and non-inclusion criteria

#### Inclusion criteria

- be a woman aged 18 years and over;
- be sexually active;
- agree to participate in HIV testing and testing.

#### Non-inclusion criteria

- to be pregnant;
- refusal of screening Of HIV.

### 2) Conduct of the study

The visits included conducting a behavioral questionnaire, an Information-Education-Communication (IEC) session, counseling for HIV testing, a medical examination with genital specimens (vaginal specimen culture and sensitivity) and blood tests (serology Syphilis and HIV serology). The visit ended with a distribution of condoms and possibly drugs.

For the collection of data, a behavioral questionnaire, a follow-up register and a laboratory record were used. The variables studied were: Socio-demographic and behavioral characteristics—Clinical characteristics of the discharges and specimen's laboratory results.

Data were entered and analyzed with the software Epi Info 2000.

## 3. Results

### 1) Frequency of vaginal discharge

A total of 911 women consulted, 445 had vaginal discharge, making a frequency of 48.8% [95% CI (45.6 - 52.1)].

### 2) Epidemiological characteristics

#### a) Socio-demographic characteristics

The mean age was 28.4 years with extremes of 16 and 54 years. The age group 20 - 29 years represented 47.1% of the (429/911). According to the marital status,

singles, divorced and widows accounted for 78.8% of the population (718/911), Married 17% (155) and concubines 6.4% (58). Sex workers accounted for 23.2% of the population, while occasional prostitution was of the order of 76.8% of the group. The women out of school and those with primary education accounted for 74.42% (678/911).

For the distribution according to religion, Catholics accounted for 53.2% of the population, Muslim 46.3% and animists 0.5%.

**Table 1** (below) gives the distribution of women from the Yèrèlon cohort according to socio-demographic characteristics.

#### **b) Past obstetrical history**

The mean gravity was 2 with extremes of 0 and 15. The mean parity was 2 with extremes of 0 and 10. Pauciparous accounted for 52.1% of the population.

#### **c) Contraceptive methods used by women.**

There is a diversity of contraceptive methods used by women in the Yèrèlon group.

A contraceptive method was used by 60% of women (547/911). The proportion of women using condoms alone as a contraceptive method was 43.3% (395/911). Combined oral contraception was used by 8, 7% of women (79/911) as shown in **Table 2**.

#### **d) Sexual hygiene**

The vaginal douching was practiced by 85.8% of women (779/911). They were 93.6% practicing it more than once a day (729/779). Products such as diluted

**Table 1.** Socio-demographic characteristics of women in the Yèrèlon group.

Characteristics	Numbers	Frequency (%)
<b>Age (Years)</b>		
Less than 20	116	12.7
20 - 29	429	47.1
30 - 39	265	29.1
40 - 49	97	10.7
More than 49	4	0.4
<b>Occupation</b>		
Professional sex workers	211	23.2
Occasional sex workers	700	76.8
<b>Education level</b>		
None	388	42.5
Primary	290	31.8
Secondary	228	25.1
Tertiary	5	0.5
<b>Number of women</b>	<b>911</b>	<b>100.0</b>

bleach (5 women), potassium permanganate (2 women) and lemon juice (5 women) were also used for the vaginal douche.

**Table 3** below lists the products and Tablets used by women for vaginal douche.

#### e) HIV serological status

HIV screening was positive in 350 women, making a frequency of 38.4%. There were 5 cases of HIV2 and 6 cases of co-infection HIV1 and HIV2.

### 3) Clinical Features

#### a) Clinical features of vaginal discharge

The signs associated with vaginal discharge are given in **Table 4** below.

Urinary manifestations were made up of pollakiuria or dysuria.

#### b) Etiologic macroscopic aspects

Speculum examination revealed macroscopic features suggestive of vaginitis in 83.9% (374/445), cervicitis in 9.8% (43/445), and associated vaginitis to cer-

**Table 2.** Distribution of women by contraceptive method used.

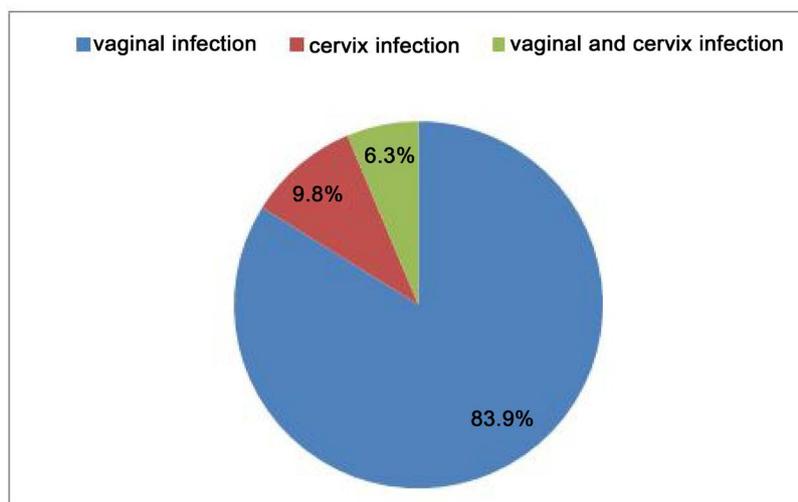
Contraceptive method	Numbers	Frequency (%)
None	364	40.0
COC	79	8.7
Implant	35	3.8
IUD	8	0.9
Male condom	395	43.3
Injectable progestin	27	3.0
Natural methods	1	0.1
Traditional methods	2	0.2
<b>Total</b>	<b>911</b>	<b>100.0</b>

**Table 3.** Products and solutions used by women in the Yèrèlon group for the vaginal douching.

Products and/or solutions used	Numbers	Frequency (%)
Simple water	465	59.7
Perfumed bath soap	488	62.6
Marseille soap	136	17.5
Antiseptics	48	6.2
Others	28	3.6

**Table 4.** Genital functional signs (366/911).

Signs	Numbers	Frequency (%)
Genital itching	185	20.3
Dyspareunia	139	15.3
Urinary symptoms	42	4.6



**Figure 1.** Distribution of vaginal discharge by origin.

vicitis in 6.3% of cases (28/445) (**Figure 1**).

#### 4) Biological characteristics

##### a) Bacterial vaginosis

*Gardenerella vaginalis* was found in 41.8% of cases (381/911).

##### b) Genital candidiasis

*Candida albicans* was diagnosed in 7.7% of cases (70/911).

##### c) Infection with *Trichomonas vaginalis*

*Trichomonas vaginalis* alone was found in 0.8% of women (7/911).

##### d) Mixed vaginal infections.

Mixed infections were diagnosed in 7.2% of women (66/911).

The associations were as follows:

*Gardenerella vaginalis* and *Trichomonas vaginalis* in 44 cases;

*Gardenerella vaginalis* and *Candida albicans* in 15 cases;

A combination of *Candida albicans* and *Trichomonas vaginalis* in 1 case;

And *Gardenerella vaginalis*, *Trichomonas vaginalis* and *Candida albicans* in 6 cases.

The **Figure 2** below shows the distribution of vaginitis according to the etiology.

##### e) Gonorrhoea

The 724 endocervical swabs were examined directly and a culture in search of *Neisseria gonorrhoeae* was found to be negative.

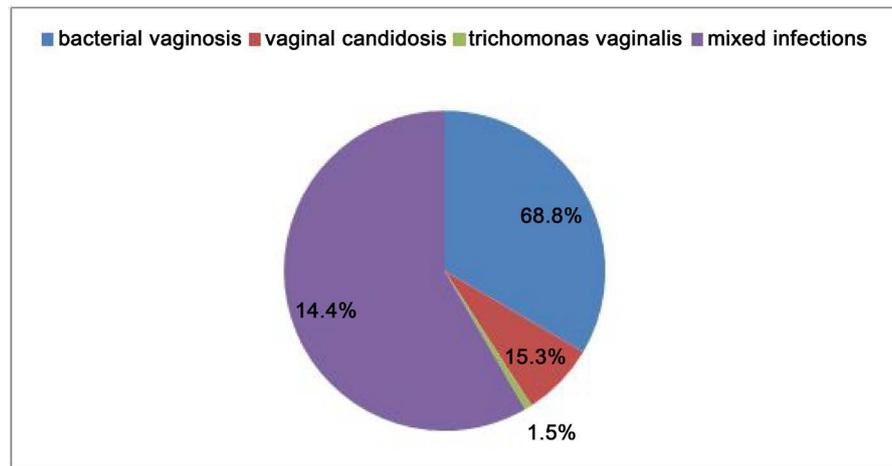
##### f) Factors associated with vaginal discharge

**Table 5** below gives the prevalence of vaginal discharge syndrome (VDS) according to socio-demographic characteristics and women's past medical history.

## 4. Discussion

### Epidemiological characteristics of women

Most studies of sexually transmitted infections show that the majority of patients are between the ages of 20 and 35 [3]-[9].



**Figure 2.** Distribution of vaginitis according to etiology.

**Table 5.** Prevalence of vaginal discharge syndrome according to socio-demographic characteristics and women's past medical history.

Factors	VDS present	VDS absent	Prevalence of VDS	p
<b>Occupation</b>				0.0078
Professional sex workers	120	91	56.9	
Occasional sex workers & others	325	375	46.4	
<b>Vaginal douching</b>				0.64
Present	383	396	49.2	
Absent	62	70	53	
<b>Male condom</b>				0.0621
Used	179	216	45.3	
Non used	266	250	51.6	
<b>COC</b>				0.922
Used	39	40	49.4	
Non used	406	426	48.8	
<b>VIH screening</b>				0.00013
Positive	199	151	56.9	
Negative	246	315	43.9	
<b>Number of women</b>	<b>445</b>	<b>466</b>	<b>48.8</b>	

VDS: vaginal discharge syndrome.

The mean age in our series was 28.4 years. It is identical to that of Desai [6] in India, which was 28.5 years and superior to those of Wang [10] in China, Cornier [5] in Bulgaria and Reed [11] in Indonesia which were respectively 23.5 years, 23.9 years and 25.8 years.

In terms of educational level, most studies show that the majority of women engaged in sex work (occasional prostitution, or professional sex workers ) are out of school or just have the level of primary education [6] [10] [11]. The data

from our study confirm this trend, where school dropped out and primary school level accounted for 74.3% the population. They engage in risky behaviors that are rooted in poverty, ignorance and easy gain.

In terms of marital status, the percentages are disparate. Wang [10] in China reported 14% of singles and 52% of married or concubines. Reed [11] in Indonesia reported 12% of singles and 70% of divorced and Desai [6] in India found 41.7% of singles and 59.3% of married.

#### **Frequency of vaginal discharge**

The prevalence of vaginal discharge in our study was 48.8%. Most data from the literature show high frequencies for vaginal discharge in this target population. It was found frequencies of 51.7%, 90% and 94% respectively in the studies of Desai in India [6], Gaye-Diallo in Senegal [9] and Fonck in Kenya [1].

#### **Prevalence of genital infections**

Many studies on sex workers show a high prevalence of genital infections [1]. Lack of hygiene, promiscuity, non-use of condoms, the existence of genital tract lesions and high-risk practices during sexual intercourse are factors that promote the transmission of STIs and HIV [1] [6] [12] [13].

Our rate of 50.4% is higher than those of Reed [11] in Indonesia and Wang [10] in China, which were 39% and 41% respectively. Higher rates were reported by Nguyen [9] in Vietnam and Fonck [1] in Kenya, which were 75.9% and 94%, respectively. Ulcerations in the genital tract increased the risk of HIV infection, and seropositive women developed precancerous cervical lesions more rapidly (CIN2, CIN3) [1].

#### **Etiologies of vaginal discharge**

A variety of germs has been reported by most authors in vaginal discharge [2] [3] [4] [5] [6] [14]. The most frequently encountered germs are *Gardenerella vaginalis*, *Candida albicans* and *Trichomonas vaginalis* [1] [3] [7] [15]. *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections have also been reported [1] [7] [10].

#### **Factors associated with vaginal discharge**

The prevalence of vaginal discharge syndrome was significantly higher in HIV-infected women [ $p < 0.00013$ , 95% CI (1.28 - 2.21)].

Indeed, the decline in immunity is recognized as a factor favoring opportunistic infections such as genital candidiasis [16] [17].

Authors like Baisley [12] in Tanzani, Fonck [1] in Kenya, Gaye-Diallo [7] in Senegal and Nwadioha [18] in Nigeria reported significantly higher prevalence of bacterial vaginosis in HIV-infected women.

True sex workers had a higher prevalence of vaginal discharge syndrome than occasional sex workers and other women in the population. This difference was statistically significant [ $p < 0.0078$ , 95% CI (1.11 - 2.07)].

With relation to age, couple life, condom use or pill use, and the practice of vaginal douching, there was no statistically significant difference. Wang and al noted no association between the practice of vaginal douching and vaginal discharge in sex workers in China. Similarly, Demba [14] and al found no signifi-

cant difference between the practice of vaginal douching and the occurrence of bacterial vaginosis.

The use of vaginal douching is a relatively widespread practice among sex workers [1] [10] [13]. Different products were used for the genital cleaning (lemon juice, diluted bleach, diluted permanganate, soap, antiseptics). These various products used can disrupt the ecosystem of the vagina with consequences of vaginal irritations and infections. The frequent and regular practice of the vaginal douching represents for these women a means of prevention of the genital infections [19].

Condoms are effective means of fighting STIs and HIV when its use is optimal. Condom users accounted for 43.3% of the population.

## 5. Conclusions

At the end of this study in the Yèrèlon group of the city Bobo-Dioulasso, the prevalence of vaginal discharge syndrome was 48.8%. The main germs found in vaginal discharge were *Gardenerella vaginalis*, *Candida albicans* and *Trichomonas vaginalis*. Infections were mixed in 14.4% of cases.

Improving the situation requires preventive measures, diagnosis and management of vaginal discharge in women infected with HIV and sex workers.

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