

Health-Seeking and Sexual Behaviors Among Primary Healthcare Patients in Nairobi, Kenya

KAROLINE FONCK, MD, MPH,*† CHARLES MWAI, BA, MA,* JACKONIAH NDINYA-ACHOLA, MD, MPH,* JOB BWAYO, MD, PhD,* AND MARLEEN TEMMERMAN, MD, PhD†

Background: Health-seeking and sexual behaviors are important elements in the control of sexually transmitted infections (STIs).

Goal: To examine patterns of health-seeking behavior and related sexual behavior relevant to improved prevention and care among patients attending primary healthcare (PHC) clinics.

Study Design: A questionnaire covering social, demographic, and healthcare-seeking and sexual behavior information was administered to 555 patients attending three primary healthcare clinics in low socioeconomic areas of Nairobi, Kenya.

Results: Women's knowledge about health in general and STIs in particular was poor. A major gender difference in delay of health seeking for STIs was observed (5 days for men versus 14 days for women). Significantly more men than women reported a history of STIs (68% versus 47%; $P = 0.04$). Men reported more extramarital affairs (17% versus 8%; $P < 0.001$). A high prevalence of gonorrhea (3%) and chlamydia (6%) was found in this population, with no difference between the genders. The urine dipstick was ineffective for the detection of these STIs.

Conclusions: There is a need for better understanding of behavioral factors, as well as gender and social aspects of health care. Health education and health promotion in these areas should be strengthened. Improved screening tests are needed for the detection of STI.

SEXUALLY TRANSMITTED INFECTIONS (STIs) have long been recognized as a major public health problem in Kenya because STIs and their sequelae contribute significantly to morbidity and mortality in the population.¹⁻⁴ In

*From the *Department of Medical Microbiology, University of Nairobi, Nairobi, Kenya; and the †International Center for Reproductive Health, Department of Obstetrics and Gynecology, Ghent University, Ghent, Belgium*

addition, it is known that most STIs facilitate HIV-1 transmission.⁵⁻¹⁰ In Nairobi, STIs represent between 5% and 10% of caseloads at many outpatient clinics.¹¹ The overall prevalence of STIs in the general population, however, is unknown, but studies among specific population groups have illustrated high STI prevalences in both high- and low-risk groups. Work performed in 1989 among pregnant women in Nairobi showed a prevalence of 6% for HIV, 3% for *Neisseria gonorrhoea*, and 2% for a positive syphilis serology.⁴ Among women attending a family planning clinic in Nairobi, the prevalence was 10% for HIV-1, 4% for *Chlamydia trachomatis*, 2% for *N gonorrhoea*, 2% for syphilis, and 1% for genital ulcer disease.¹²

An important determinant of STI transmission dynamics is the duration of the infection in a sexually active individual.¹³ A survey in Nairobi showed that patients were symptomatic for an average of 1 week before seeking treatment, but the range of delay was wider for women.¹⁴ In addition, 62% of women versus 34% of men had sex while symptomatic. These findings were similar to those from an earlier study in Kenya showing that 42% of symptomatic patients had waited 1 week before seeking treatment, and 23% had delayed 2 weeks.¹⁵

The development of effective STI treatment and prevention programs depends on adequate knowledge of health-seeking behavior and related sexual behavior in the population. It is important to understand the dynamics and interactions that make an individual with a health problem choose a certain healthcare facility. To provide adequate health care, it is imperative to know whether the choice of health facility in case of an STI is different from that for other common health problems. Issues such as accessibility and acceptability of services are key to providing successful STI services.

The authors thank the staff of the participating Nairobi City Council Clinics, whose collaboration made this work possible. They also are grateful to the laboratory staff at the Department of Medical Microbiology, University of Nairobi, who were always ready to help. Finally, they give special thanks to Nadia El Mahi for secretarial support.

Supported by a grant of the European Commission DG VIII, Sectorial Implementation, Health and Family Planning/AIDS (contract number 7RPR).

Correspondence: Marleen Temmerman, MD, PhD, ICRH, Ghent University, De Pintelaan 185, 9000 Ghent, Belgium. E-mail: marleen.temmerman@rug.ac.be

Received for publication April 3, 2001, revised July 10, 2001, and accepted July 12, 2001.

In this study, we examined the reasons for and patterns of health-seeking and related sexual behavior among patients attending primary healthcare clinics in Nairobi. The objective was to identify health-seeking behavioral factors and health service-related issues that can be used to improve STI care, and to develop education campaigns for the general public about seeking timely and correct STI treatment.

Methods

The study was carried out at three primary healthcare (PHC) clinics in different areas of greater Nairobi. All three are operated by the Nairobi City Council (NCC). Two of the three clinics provide STI services and are located near large slum areas. The third clinic was chosen because it is one of the few NCC clinics open on a 24-hour basis. The majority of the patients attending these clinics are low-income earners. Treatment in public health facilities is not free of charge, but costs considerably less than in the private sector.

Between September and November 1998, a convenience sample of 244 men and 311 women was interviewed by trained research assistants, who approached the patients while they were leaving the clinic. Whoever happened to be seen leaving the clinician's room or the pharmacy was asked to participate in the study. After the individuals gave verbal informed consent, exit interviews were conducted using a detailed pretested questionnaire covering social and demographic information, patterns of health-seeking behavior, and sexual behavior. The questionnaires were available in both English and Kiswahili, with interviews conducted in the language most comfortable to the patient. Urine samples collected from the patients were transported to the Department of Medical Microbiology, University of Nairobi, where a polymerase chain reaction (PCR) test for detection of *N gonorrhoeae* and *C trachomatis* was performed using the Amplicor PCR Diagnostics (Roche Diagnostic System, Ontario, Canada). Clinical patient card data were correlated with study variables.

Data Analysis

All the survey responses were entered into a computerized database using the Statistical Package for Social Sciences (SPSS) for windows, Version 7.0 (SPSS, Chicago, IL). Cross-tabulation and descriptive statistics were calculated using chi-square tests for categorical variables.

Results

Of the 555 patients interviewed, 311 (56%) were women. Table 1 shows the demographic characteristics of the patients. The mean age of the women (27 years) was lower than that of men (30 years) ($P < 0.001$; 95% CI, 1.7–5). The men earned significantly more than the women. However,

TABLE 1. Demographic Characteristics of 555 Patients Attending Primary Healthcare Clinics in Nairobi, Kenya

	Male (n = 244) n (% or Range)	Female (n = 311) n (% or Range)	P
Age	30 (16–70)	27 (14–75)	<0.001
Marital status			
Married	151 (62)	183 (59)	
Single	89 (37)	113 (36)	
Separated/divorced	4 (1)	15 (5)	
Education level			
None	6 (3)	18 (6)	
Primary	122 (50)	163 (52)	
Secondary	87 (36)	94 (30)	
Postsecondary	29 (12)	36 (12)	
Monthly income			
None	42 (17)	144 (46)	<0.001
<1000 Ksh	6 (3)	23 (7)	0.02
1000–5000 Ksh	132 (54)	116 (37)	<0.001
>5000 Ksh	64 (27)	28 (9)	<0.001
Years lived in Nairobi			
Visiting only	26 (11)	44 (14)	
<6 months	15 (6)	22 (7)	
6–12 months	13 (5)	30 (10)	
>1 year	140 (57)	154 (50)	
Radio in house	184 (76)	259 (83)	0.03
TV in house	54 (22)	127 (41)	<0.001

Ksh = Kenya shilling.

the women reported ownership of a radio or television more often than the men.

The participants were asked about their healthcare-seeking behavior in relation to general medical problems and those related to STIs (Table 2). Respiratory infections were identified as the most common health problem. The women identified STI, HIV, and AIDS significantly more often as a health problem than the men. More than half of the patients said they attended NCC clinics for most of their health problems, whereas approximately 20% said they attended private facilities. The reason for this choice was convenience of clinic location (32%), followed by quality of services (26%) and cost of services (12%). Confidentiality or friendliness of the staff was rarely mentioned as a reason for the choice. Significantly more men than women had ever been treated for an STI. For both genders, the healthcare-seeking behavior related to STI was different from that related to general health problems. Public health facilities and mission hospitals were rarely visited for an STI episode. Men attended private clinics significantly more often with a STI than with general health problems.

The participants were further interviewed about their actual health problem (Table 3). Significantly more women were referred to the clinic. About one third of the patients were attending the clinic for the first time, and significantly more women than men had visited the actual clinic in the past. The majority had walked to the clinic, and this in most cases had taken less than 1 hour. Men were served significantly faster in the clinic than women, with 70% spending

TABLE 2. Healthcare-Seeking Behavior Related to General Health Problems and Sexually Transmitted Diseases (STDs) Among Nairobi City Council Clinic Attendees

	Male (n = 244) n (%)	Female (n = 311) n (%)	P
What is the most common health problem where you live?			
Diarrhea, cholera, amoebiasis	24 (10)	23 (8)	
Cold, cough, pneumonia	48 (20)	64 (21)	
Malaria	99 (41)	91 (30)	
STD/HIV/AIDS	11 (5)	11 (4)	
Do not know	32 (13)	81 (27)	<0.001
Where do you go for most of your health problems?			
Nairobi City Council Clinic	134 (55)	174 (56)	
Government	42 (17)	56 (18)	
Private healthcare provider	48 (20)	79 (25)	
Mission hospital	24 (10)	46 (15)	
Shop/kiosk	21 (9)	21 (7)	
Chemist	24 (10)	18 (6)	
Traditional healers	3 (1)	2 (1)	
What is the reason for choice?			
Convenience/nearby	72 (30)	107 (34)	
Privacy/confidentiality	0	0	
Cheap	35 (14)	34 (11)	
High-quality service	61 (25)	85 (27)	
Friendly staff	5 (2)	11 (4)	
Drugs available	19 (8)	24 (8)	
Other	32 (13)	23 (7)	0.04
How do you judge good treatment?			
Drugs available	75 (31)	98 (32)	
Get better	102 (42)	146 (47)	
Friendly staff	40 (16)	42 (14)	
Quick service	6 (3)	8 (3)	
Other	20 (8)	14 (5)	
Were you ever treated for STD?	87 (36)	81 (26)	0.02
Where did you seek treatment for the STD episode?			
Nairobi City Council STD clinic	14 (16)	5 (6)	0.02
Nairobi City Council other clinics	8 (9)	27 (33)	0.02
Government	19 (22)	14 (17)	
Private healthcare provider	35 (40)	26 (32)	0.04
Mission hospital	2 (2)	5 (6)	
Shop/kiosk/chemist	6 (7)	1 (1)	0.05
Other (friends, traditional healers)	3 (3)	4 (5)	

less than 1 hour in the clinic. It must be noted that the clinic cards did not indicate any health problem or any diagnosis for 26% of the men and 52% of the women. The delay between appearance of symptoms and seeking medical care varied widely, from 3 days for an episode of diarrhea among men to 28 days for stomach pain among women (Table 4). Although women in general waited longer before seeking care, there was no significant difference in the delay for most disease episodes, except for diarrhea and reports of STI. Of the 29 patients with recorded reports of STI, men had waited an average of 5 days before coming to the clinic, as compared with 14 days for women ($P = 0.05$).

The sexual behavior of the clients is shown in Table 5. The majority of the clients reported having a regular partner, but significantly more women also lived together with their partner. Significantly more women said their partner also had other sex partners, whereas significantly more men said their partner was faithful. Only 17% of the men admitted extramarital affairs, which was significantly higher than among the women. Of the men who had affairs, 75% had

TABLE 3. Health-Seeking Behavior in Relation to Actual Episode of Illness

	Male n (%)	Female n (%)	P
Referred	54 (22)	90 (29)	0.04
Times at this clinic, including today			
1	74 (31)	90 (29)	
2	55 (23)	49 (16)	0.05
3-10	79 (33)	108 (35)	
>10	30 (13)	73 (24)	0.001
Last time at this clinic			
<1 week	19 (18)	22 (13)	
1-4 weeks	10 (10)	27 (16)	
>4 weeks	76 (72)	119 (71)	
Walked to clinic	198 (83)	244 (79)	
Time to each clinic			
<1 hour	226 (95)	298 (96)	
2-3 hours	8 (3)	6 (2)	
>3 hours	4 (2)	5 (2)	
Time spent at clinic			
<1 hour	170 (70)	189 (61)	0.04
1-2 hours	62 (25)	103 (33)	
>2 hours	12 (5)	19 (6)	

TABLE 4. Days of Delay Between Appearance of Actual Symptoms and Medical Care-Seeking by Gender

Reported Problems	Male	Female	<i>P</i>
Headache	8.7	8.6	
Fever	6.0	5.7	
Cough	6.0	9.5	
Diarrhea	3.0	8.3	0.04
Injuries	6.0	3.4	
Stomach pain	16.8	28.3	
Throat pain	7.5	3.0	
STI	5.0	14.3	0.05
Other	9.5	11.8	
Not indicated	10.4	13.7	

STI = sexually transmitted infection.

engaged in sex with two or more partners in the past 6 months. Thirteen women had engaged in sex with more than one new partner in the past 6 months. Condom use with irregular partners was rather low, with no difference between men and women (38% and 29%, respectively; $P = 0.7$). Significantly more men than women had a history of genital discharge and genital ulcer. Most of the men with a history of STI thought they had contracted it from a casual partner. The women, however, claimed their spouses as the

source of the infection, and 40% of the women said it was because of bad hygiene.

Of the patients interviewed, 68 (12%) refused to give a urine sample, with no statistical difference between the men and women (10% and 14%, respectively; $P = 0.08$). The dipstick results were positive in 109 (29%) of the patients, and no association with STI-related signs and symptoms was observed. Overall, 12 (3%) samples yielded positive PCR results for gonorrhea, 28 (6%) for chlamydia, and 2 for both. No difference in prevalence between the genders was observed. A positive PCR test result for gonorrhea, chlamydia, or both was not associated with current reports of STI or with a history of STI or any other risk factor. Of the persons with positive PCR results for chlamydia, 9 (32%) had no reports of health problems on their medical cards. This was the case for 7 (58%) patients with positive PCR results for gonorrhea. None of the clinic cards of patients with positive PCR results mentioned any STI report, symptom, or diagnosis. The sensitivity, specificity, and positive predictive value of the dipstick for the detection of gonorrhea were 50%, 78%, and 6%, respectively. For chlamydia, these values were 26%, 88%, and 14%, respectively.

TABLE 5. Sexual Beliefs, Behavior, and History Associated With Treatment of Sexually Transmitted Diseases (STDs) in 555 Patients Attending Primary Healthcare Clinics

	Male n (%) or Mean (Range)	Female n (%) or Mean (Range)	<i>P</i>
Boys become sexually active	14 (7–28)	14 (7–25)	
Girls become sexually active	12 (6–25)	13 (7–20)	
Ever had sex	231 (95)	277 (89)	0.02
Age at first sex	17 (10–30)	18 (10–28)	
Have regular partner	198 (86)	230 (83)	
Live with regular partner	85 (43)	171 (74)	<0.001
Ever used condoms with regular partner	41 (21)	46 (20)	
Partner has other sex partners			
Yes	13 (7)	48 (21)	<0.001
No	118 (60)	80 (35)	<0.001
Do not know	66 (34)	102 (45)	
Had other sex partners	40 (17)	21 (8)	<0.001
Number of sex partners in last 6 months			
1	10 (25)	7 (33)	
2 or more	30 (75)	12 (57)	
Number new sex partners in past 6 months			
0	17 (43)	8 (38)	
1 or more	23 (57)	13 (72)	
Condoms used with nonregular partner	15 (38)	6 (29)	
Ever had			
Genital discharge	78 (32)	63 (21)	0.004
Genital ulcer disease	41 (18)	23 (8)	0.002
Other	48 (21)	59 (21)	
Treatment sought for STD episode	87 (89)	81 (90)	
From whom or what do you think you contracted STD			
Casual partner	68 (77)	20 (24)	<0.001
Spouse	5 (6)	29 (35)	<0.001
Person receiving money/gift for sex	6 (7)	0	
Other (e.g., abortions, hygiene)	9 (10)	33 (40)	<0.001
Was your partner treated?			
Yes	21 (26)	24 (42)	
No	3 (4)	11 (19)	0.04
Do not know	57 (70)	22 (39)	<0.001

Discussion

We found important gender differences in knowledge about health in general, and in health-seeking behavior among primary healthcare patients in a lower socioeconomic population in Nairobi. This finding is similar to that described in other studies from both developing and developed countries, indicating that various sociocultural and gender factors contribute to the delay in health seeking.^{16–18} A study from Bangladesh reported that women with illness seek care significantly less often than men.¹⁹ Patients may also neglect symptoms until the disease reaches a serious stage before seeking medical care.¹⁶ Furthermore, the kind of symptoms may influence the likelihood that patients will seek help.²⁰

In western Kenya, important differences in self-treatment practices and choice of medicines between boys and girls were found,²¹ which may reflect the higher income potential of boys. In Nairobi, the lack of economic means was found to be the most important factor influencing women with STI symptoms not to seek care.¹⁴ This may have serious consequences because it has been shown that the duration of sexual activity is one of the parameters determining the transmission dynamics of STIs in a given population.²²

Men reported more extramarital affairs and more histories of STI than women. Both genders reported low condom use. Rather high prevalences of STIs were found in this population, but with no difference between the genders. This may indicate that men are more likely to transmit STIs to their partners than women. This is consistent with the belief that African women are at increased risk of STI and HIV infections through their spouses.^{23–25} It is therefore urgent to educate men about taking their responsibilities and to either change their behavior or use safe sex methods. Hence, health education at various levels in Kenya must be improved, and messages should be directed more specifically to men.

Both men and women were found to use the public health services less often than private sector health care when they have an STI. Another study in eastern Africa found that dissatisfaction with state medical provision is not manifested as rejection of the allopathic medicine with which it is associated, but as increased reliance on an emerging informal sector of private medical provision.²⁶ In Kenya, there has been a recent marked increase in the number of private clinics, with little control as to the quality of services they offer. There are no data on the numbers of patients treated or the proportion of patients successfully treated. The consequences of patients receiving either inappropriate or insufficient drugs are dangerous. The public health authorities in Kenya need to investigate the quality of treatment offered in these facilities, and if necessary, to provide appropriate training in the management of STIs for this cadre of health workers. Although STI management is pro-

vided in the public health sector, there exists a need to reexamine why there is a high proportion of treatment failures in these institutions.

An important finding of our study was that the clinicians rarely recorded reports of health problems, signs, or symptoms of STI on clinic cards, although two of the three clinics offer integrated STI services. A possible explanation is that few patients, even if symptomatic, reported the STI directly. Even if they mentioned it, the clinicians were reluctant to indicate it on the cards. The training of health staff should put more emphasis on the importance of a good anamnesis and the correct recording of findings, treating an STI as any other health problem.

We cannot conclude from this study whether individuals with positive laboratory testing showed signs or symptoms of STI because the cards did not indicate STI symptoms. Hence, we can assume that a mixture of both symptomatic and nonsymptomatic patients presented at the clinic. The performance of the dipstick procedure as a screening test for the detection of gonorrhea or chlamydia was unsatisfactory in this population.

In conclusion, there is a need for a better understanding of behavioral factors, and for the development of strategies that take these into account. Health workers need a better understanding of the gender and social aspects of health care in general and STI control in particular, especially the aspects that influence the likelihood of achieving equity in diagnosis and cure. Furthermore, there is a clear need for health education and health promotion on the urgency for seeking timely and correct medical care, taking into account the different attitudes and behaviors of men, women, and healthcare workers.

References

1. Piot P, Tezzo R. The epidemiology of HIV and other sexually transmitted infections in the developing world. *Scand J Infect Dis* 1990; 69:89–97.
2. Ryder R, Temmerman M. The effect of HIV-1 infection during pregnancy and the perinatal period on maternal and child health in Africa. *AIDS* 1991; 5(suppl):S75–S85.
3. Berkowitz G, Papiernik E. Epidemiology of preterm birth. *Epidemiol Rev* 1993; 15:414–443.
4. Temmerman M, Lopita M, Sanghvi H, et al. The role of maternal syphilis, gonorrhoea and HIV-1 infections in spontaneous abortion. *Int J STI AIDS* 1992; 3:418–422.
5. Wasserheit J. Epidemiologic synergy: interrelationships between human immunodeficiency virus infection and other sexually transmitted diseases. *Sex Transm Dis* 1992; 19:61–77.
6. Sewankambo N, Gray R, Wawer M, et al. HIV-1 infection associated with abnormal vaginal flora morphology and bacterial vaginosis. *Lancet* 1997; 350:546–550.
7. Scacker T, Ryncarz A, Goddard D, et al. Frequent recovery of HIV-1 from genital herpes simplex virus lesions in HIV-1 infected men. *JAMA* 1998; 280:61–66.
8. Kreiss J, Willeford D, Hensel M, et al. Association between cervical inflammation and cervical shedding of human immunodeficiency virus DNA. *J Infect Dis* 1994; 170:1597–1601.
9. Cameron D, Simonsen J, D'Costa L, et al. Female-to-male transmission of human immunodeficiency virus type 1: risk factors for seroconversion in men. *Lancet* 1989; ii:403–407.

10. Laga M, Manoka A, Kivuvu M, et al. Nonulcerative sexually transmitted diseases in women: results from a cohort study. *AIDS* 1993; 7:95–102.
11. Resources for Child Health Project (REACH). Nairobi Area Study. Nairobi: USAID, 1988.
12. Temmerman M, Kidula N, Tyndall M, Rukuria R, Muchiri L, Ndinya-Achola J. The supermarket for women's reproductive health: the burden of genital infections in a family planning clinic in Nairobi, Kenya. *Sex Transm Infect* 1998; 74:202–204.
13. Brunham R, Plummer F. A general model of sexually transmitted disease epidemiology and its implications for control. *Med Clin North Am* 1990; 74:1339–1352.
14. Fonck K, Mwai C, Rakwar J, et al. Healthcare-seeking behavior and sexual behavior among STI patients in Nairobi, Kenya. *Sex Transm Dis* 2001; 28:367–371.
15. Moses S, Ngugi EN, Bradley JE, et al. Healthcare-seeking behavior related to the transmission of sexually transmitted diseases in Kenya. *Am J Public Health* 1994; 84:1947–1951.
16. Johansson E, Long NH, Diwan VK, Winkvist A. Gender and tuberculosis control: perspectives on health-seeking behavior among men and women in Vietnam. *Health Policy* 2000; 52:33–51.
17. Oberlander L, Elverdam B. Malaria in the United Republic of Tanzania: cultural considerations and health-seeking behavior. *Bull World Health Organ* 2000; 78:1352–1357.
18. Meyer-Weitz A, Reddy P, Van den Borne HW, Kok G, Pietersen J. Healthcare-seeking behavior of patients with sexually transmitted diseases: determinants of delay behavior. *Patient Educ Couns* 2000; 41:263–274.
19. Ahmed SM, Adams AM, Chowdhury M, Bhuiya A. Gender, socio-economic development and health-seeking behavior in Bangladesh. *Soc Sci Med* 2000; 51:361–371.
20. Goldman N, Heuveline P. Health-seeking behavior for child illness in Guatemala. *Trop Med Int Health* 2000; 5:145–155.
21. Geissler PW, Nokes K, Prince RJ, Odhiambo RA, Aagaard-Hansen J, Ouma JH. Children and medicine: self-treatment of common illnesses among Luo schoolchildren in western Kenya. *Soc Sci Med* 2000; 50:1771–1783.
22. Anderson R, May R. Transmission dynamics of HIV infection. *Nature* 1987; 26:137–142.
23. Hunter D, Maggwa N, Mati G, Tukei M, Mbugua S. Sexual behavior, sexually transmitted diseases, male circumcision and risk of HIV infection among women in Nairobi, Kenya. *AIDS* 1994; 8:93–99.
24. Quigley M, Munguti K, Grosskurth H, et al. Sexual behavior patterns and other risk factors for HIV infection in rural Tanzania: a case-control study. *AIDS* 1997; 11:237–248.
25. Ulin P. African women and AIDS: negotiating behavioral change. *Soc Sci Med* 1992; 34:63–73.
26. Green M. Public reform and the privatisation of poverty: some institutional determinants of health-seeking behavior in southern Tanzania. *Cult Med Psychiatry* 2000; 24:403–430.