

The Role of HIV-Related Knowledge and Ethnicity in Determining HIV Risk Perception and Willingness to Undergo HIV Testing Among Rural Women in Burkina Faso

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Received August 4, 2003; revised July 26, 2004; accepted September 7, 2004

We conducted a random community based survey of 300 young (15–29 years) rural women in Nouna, Burkina Faso. Only one-third of women were aware that a person could have HIV without having symptoms and these women were significantly more likely to classify themselves to be at high risk for getting HIV. Furthermore, multiple partners, Bwaba ethnicity and having mentioned a health worker as a source of HIV information were significantly associated with perceived high personal risk. Perceived willingness to participate in VCT was high (69%). The dissemination of information on the asymptomatic nature of HIV infection could potentially be very important in forming risk perception, awareness, and their willingness to participate in HIV interventions.

KEY WORDS: VCT; PMTCT; Burkina Faso; risk perception; ethnicity; HIV; AIDS.

INTRODUCTION

Voluntary Counseling and Testing (VCT) and Prevention of Mother-to-Child Transmission (MTCT) have recently become a major focus of HIV control programs in developing countries (Dabis *et al.*, 2000; De Cock *et al.*, 2000). Short course antiretroviral therapy is effective against MTCT and programs are operational in many developing countries. VCT positively affects the subsequent

risk behavior of participants (The Voluntary HIV-1 Counseling and Testing Efficacy Study Group, 2000; Sangiwa *et al.*, 2000; Wolitski *et al.*, 1998) and, in connection with a prevention of MTCT (PMTCT) program, provides an opportunity to pregnant women to discuss HIV related issues with a qualified health provider. However, a number of studies have shown that the public acceptance of VCT and PMTCT services varies substantially in different settings (Cartoux *et al.*, 1998a; Kowalczyk *et al.*, 2002; Marjan and Ruminjo, 1996). Influencing factors include fear of stigmatization, discrimination, domestic violence or divorce, suspicion of already being infected, and lack of possible benefits of VCT (Cartoux *et al.*, 1998a; Ladner *et al.*, 1996; Temmerman *et al.*, 1995). The better understanding of social and cultural factors that are locally relevant in a particular intervention context is critical to improving program design and successful implementation.

Burkina Faso, a West African country with a population of 13 million, is one of the poorest countries in the world. In 2002, HIV prevalence

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in the general adult population (15–49 years) and among urban antenatal care attendees was 6.5 and 6.3%, respectively. HIV prevalence among antenatal care attendees in Ouahigouya, Gaoua and Tenkogo (outside the major urban areas) ranged from 2.8% to 13.4% (UNAIDS, 2002). The introduction of PMTCT is a component of the Burkina Faso National Strategy for HIV control; services are currently available in Ouagadougou, Bobo-Dioulasso, and Ouahigouya. Since no data existed on risk perception and willingness to undergo HIV testing among northwestern rural populations in Burkina Faso, we conducted this study to assess HIV/AIDS knowledge, risk perception and public demand for VCT and PMTCT intervention among young women residing in Nouna district town.

METHODS

Study Population and Design

The national demographic surveillance system (DSS) for 2001 listed 21,430 residents living within the seven sectors of Nouna town, of whom 3026 were women between 15 and 29 years of age. We drew a 10% ($N = 300$), sector-weighted random sample of this population. For each participant, two additional same-sector replacements were randomly drawn, to be approached if the original woman was absent or refused to participate. Five local interviewers were recruited and trained in the use of the study questionnaire and the French questionnaire was translated into the local language Djula. The survey was conducted in March 2002. Participants were informed about the confidentiality of the data and a verbal consent was obtained. We had to approach 569 women to complete 300 interviews; 162 were not at home at the time of the interviewer's visit, 31 could not participate due to illness, 18 women had no identifiable address, 10 refused to participate and the remaining 48 were non-participants for other reasons. After data entry, we checked the validity of socio-demographic variables (age, parity, etc.) against the DSS data, and found it to be matching exactly.

HIV/AIDS-related questions, such as knowledge of HIV/AIDS, perception of personal and partner's risk, willingness to undergo HIV testing and interest in PMTCT were limited to women who responded that they had heard of HIV/AIDS ($n = 275$). Questions related to willingness to undergo HIV testing were social proxy questions, for exam-

ple, 'If a woman feels at risk of having AIDS, do you think she would like to do a test?' or 'If a woman is pregnant, do you think she would like to do a test?'. Demand for PMTCT was assessed after a brief description of the short course regimen of Nevirapine therapy, because of the possibility that many women might not have heard of a PMTCT program before.

Statistical Methods

For the description of different aspects of *HIV/AIDS knowledge*, all 300 women, regardless of whether or not they had heard of HIV/AIDS, were included in the denominator to provide a more complete view of the proportion of the population actually knowledgeable about HIV/AIDS. For assessments of risk perception and willingness to undergo testing, we excluded those who had not heard about HIV/AIDS ($n = 25$). We used multiple logistic regressions to identify the potential covariates of risk perception and perceived willingness to undergo HIV testing.

RESULTS

The majority of women (91%) had heard of HIV/AIDS and two thirds (69%) of the participants were aware that HIV/AIDS is a deadly disease. However, only 44% said that an infected person would become sick and only 31% of women were aware that a person can have HIV without having symptoms. Seventy seven percent indicated that the virus can be transmitted via sexual intercourse and 53% mentioned at least one non-sexual mode of transmission (contaminated blood, razor, hair pin). Very few women had incorrect knowledge: only 6 women (2%) stated that HIV can be transmitted through food or insect bites. However, only 46% mentioned condoms as a means of preventing HIV transmission. Regarding mother-to-child transmission, 77% knew that an infant can become infected from an HIV positive mother, but only 62% knew any means to avoid infecting the infant. Of these, 54% mentioned avoiding breast feeding, 18% mentioned taking medicine during pregnancy or delivery, and 23% mentioned parents' negative HIV status as being protective.

Perception of Personal and Partner's Risk of HIV

Among 275 women who had heard of HIV/AIDS, 11% ($n = 30$) considered themselves to be at

high risk for getting HIV/AIDS and 9% regarded themselves to be at medium risk. An additional 50% of the participants considered themselves to be at low risk, 19% regarded themselves to be at no risk and 11% could not rank their risk. Some variation existed by ethnicity and self-reported risk for HIV: the Dafings, Samos, and Mossis perceived themselves mostly at no or low risk. Among the Bwaba, 22.5% classified themselves as at high risk. Among the Peulhs, none regarded themselves to be at high risk, whereas 21% said they were at medium risk.

Among women who had a partner (n = 215), nearly half (44%) could not estimate their partner's risk of getting HIV. Among the remaining 114 women who did respond, there was a high overall correlation between women's perceptions of their own risk and that of their partners' risk (Spearman R = 0.79, p ≤ .01). Among 21 women who perceived themselves to be at high risk, only one woman reported that her partner was at no risk while 18 ranked their partners' risk as high.

Among the 30 women who regarded themselves to be at high risk for HIV, 18 women said it was because they had no trust in their partners and 2 reported they themselves had multiple partners. All those who identified their partners to be at high risk (n = 21) stated either that 'he has multiple partners'

(n = 14) or that 'I do not trust him' (n = 7). Among women reporting that their partner was at no (n = 19) or low (n = 61) risk, 100 and 90%, respectively, reported that 'he is faithful to me.'

Correlates of Risk Perception

Knowledge about sexual transmission of HIV, and prevention through condoms were not related to women's perception of personal risk (see Table I). In multivariate logistic regression analysis, factors associated with perceived personal high risk of getting HIV/AIDS were: reporting multiple partners (OR = 40.86, p ≤ 0.0001), belonging to the Bwaba ethnic group (OR = 14.52, p ≤ 0.01), knowing that HIV infection can be asymptomatic (OR = 16.9, p ≤ 0.001) and mentioning a health worker as a source for HIV/AIDS information (OR = 4.17, p ≤ 0.03).

Willingness to Test and Disclosure of HIV+ Status

Sixty-nine percent of women reported that if a woman felt at risk of getting HIV/AIDS, she would go for testing (Table II).

Table I. Multiple Logistic Regression of Social Factors Associated With Perceiving One's Self to be At High Risk Versus No, Low or Medium Risk for HIV/AIDS (n = 275)

Variables	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Age		
15-19 years	1.00	1.00
20-29 years	2.52 (1.04, 6.03)*	2.27 (0.5, 9.7)
Religion		
Muslim	1.00	1.00
Christian	1.26 (0.57, 2.80)	0.42 (0.1, 2.8)
Ethnic Group		
Peulh, Samo, Mossi, Dafing, Others	1.00	1.00
Bwaba	4.29 (1.51, 12.17)**	14.52 (1.7, 126.7)***
Formal education/schooling		
None	1.00	1.00
Primary	0.70 (0.28, 1.71)	1.04 (0.2, 5.3)
Secondary	0.64 (0.24, 1.70)	1.04 (0.2, 6.5)
Perception that HIV is asymptomatic		
No	1.00	1.00
Yes	21.00 (4.78, 92.31)***	16.9 (2.9, 99.3)***
HIV/AIDS Information received from health worker		
No	1.00	1.00
Yes	3.52 (1.60, 7.69)***	4.16 (1.1, 16.0)*
Reporting multiple partners ^a		
No	1.00	1.00
Yes	51.5 (18.3, 145.2)***	40.87 (8.6, 193.8)*

^aWomen who reported that they have multiple partners or reported that they do not trust their partner.

*Significant at p ≤ 0.05; **p ≤ 0.01; ***p ≤ 0.001.

Table II. Attitudes Toward HIV Testing, PMTCT Services and HIV Positive Status Disclosure^a

	Yes (%)
<i>Perceptions about women's willingness to undergo HIV testing</i>	
If a woman feels at risk of having AIDS, do you think she would like to do a test?	190 (69%)
If a woman is HIV+, could she convince her partner to have an HIV test?	237 (86%)
Would a woman take her baby for HIV testing?	228 (83%)
<i>Perceptions about women's willingness to participate in PMTCT services</i>	
If a woman is pregnant, do you think that she would like to have an HIV test?	253 (92%)
If a woman is pregnant and learns that she has HIV, what do you think she would prefer to do thereafter?:	
• Take medication (to reduce the chances that the baby has HIV)	207 (75%)
• Undergo an abortion	5 (2%)
• Trust in God:	56 (20%)
• Does not know	7 (3%)
<i>Perceptions about women's ability to disclose HIV positive status^b...</i>	
If a woman knows that she is HIV positive, could she share that with her partner?	171 (62%)
If a woman knows that she is HIV positive, could she share that with her family?	148 (55%)
If a woman knows that she is HIV positive, could she share that with her friends?	75 (27%)

^aResponses were limited to those who had heard of HIV/AIDS ($n = 275$).

^bMultiple answers possible.

In multivariate analysis (data are not shown here), perceived willingness of women to undergo HIV testing was significantly associated with being younger (15–19 vs. 20–29 years) ($OR = 0.55$, 95% CI : 0.30–0.99, $p \leq 0.05$) and having received HIV/AIDS information from a health worker ($OR = 2.4$, 95% CI : 1.2–4.9, $p \leq .01$) (data not shown). Following a brief description of the planned PMTCT services (provision of short course antiretroviral therapy, the perceived willingness to participate in a PMTCT program was almost universal (92%). In addition, when asked, ‘if a woman is pregnant and learns that she has HIV, what do you think she would prefer to do?’ 75% mentioned taking medication, 20% said trust in God and only 2% mentioned abortion.

Sixty-two percent of women reported that ‘If a woman knows that she is HIV positive, she could share that with her partner,’ whereas 55 and 27% mentioned family and friends, respectively. Women who attended secondary school were significantly more likely to say that women could disclose their HIV positive status.

DISCUSSION

The majority of women in our study (89%) perceived themselves as to be at some risk of HIV infection. A ‘lack of trust’ in a male partner, and a ‘partner’s promiscuity’ were the most common reasons given for perceived high personal risk, in accordance with other studies, which have found that the greatest HIV risk for a married woman is her part-

ner (De Zoysa *et al.*, 1996; Heise and Elias, 1995; Kengeya-Kayondo *et al.*, 1999; Ventura-Filipe *et al.*, 2000). The high correlation between women’s personal perceived risk and their partner’s risk shows that women correctly understand that a couple’s risk is bound together.

The strong association between perceiving oneself to be at high risk and knowing that HIV can be asymptomatic is plausible. Women who are aware that a person can carry the HIV virus without symptoms may feel more at risk because they know that they might get infected by any apparently healthy partner. Those unaware of this on the other hand may believe that only sick looking, in practice terminally ill persons may pose a risk for transmission—a false and potentially dangerous perception.

We found that women who had received HIV/AIDS information from a health worker were significantly more likely to perceive themselves to be at *high risk* compared to those who obtained their information elsewhere. Mass media messages are often the principal means of communicating scientific health information to the general population. Although the quality and correctness of the information are often high, this means of communication rarely allows for further clarification (Taverne, 1999; Painter, 2001), a factor that may explain the above finding.

Bwaba women were significantly more likely to classify themselves at *high risk*. There are several possible explanations for this finding. Historically, the status of women among the Bwaba has been different from other ethnic groups. Bwaba culture

was seen to be comparatively less conservative and less patriarchal than the predominant Mossi ethnic group (Nazi, 1962). Bwaba women are responsible for brewing beer, an essential social and economic activity of women, crucial for maintaining social status and connection within the village. Bwaba girls tend to marry later and there is greater tolerance for out-of-wedlock births than among other ethnic groups (Kevane and Wydick, 2001). Retel-Laurentin in 1973 found that half of the Bwaba women in her study had a stable marriage, but the other half ended in de facto divorce, with woman typically leaving the husband for another man. In contrast, 90% of Mossi marriages were stable, ending only with death of the partner (Capron and Kohler, 1978). Bwaba women are able to exercise considerable freedom and control over their activities (Capron, 1981), which might result in greater openness about HIV risk, or greater actual risk.

The majority (69%) of women believed that a woman would go for HIV testing if she felt to be at risk. Seventy-seven percent of our study participants mentioned that a baby can get HIV from their mother, and, prior to the information provided on PMTCT services within the context of the survey questionnaire, 62% of women already knew at least one way to prevent mother-to-child-transmission, a strong increase over the 8% of women who reported MTCT awareness in Bobo-Dioulasso 6 years ago (Cartoux *et al.*, 1998b). This rise was most likely due to education campaigns about vertical transmission by non government organizations (NGOs), such as GRAAP, (ORSTOM, 1995) and mass media messages.

After a short presentation on the PMTCT program, the perceived willingness to test during pregnancy was almost universal (92%), comparable to the PMTCT program in Bobo-Dioulasso, where 92.4% of pregnant women consented to HIV testing (Cartoux *et al.*, 1998b). The difference between perceived willingness to participate in VCT and PMTCT underscores that a perceived benefit from participation is a crucial factor for acceptance of HIV testing (Fylkesnes *et al.*, 1999; Meadows *et al.*, 1993).

Burkina Faso needs a strong HIV prevention program. First of all, migration plays a significant role in the economic and cultural life of Burkina Faso, a factor that was shown to play a critical role in the spread of HIV from the very beginning of the epidemic (Dawson, 1988; UNAIDS, 2001). Temporary migration from Nouna District to the Ivory Coast, the country with the highest HIV prevalence

in the region, is not uncommon (Wladarsch, 2003). Secondly, polygamy is legally possible and practiced in Burkina Faso, with around 33% of married women between 15 and 29 years having at least one co-wife. Proportions are higher in rural areas (EDSBF-II, 1998–1999). Thereby an infected partner is a potential source of infection for not only one, but more spouses.

Current use of condom in women is 2.5% in Burkina Faso (EDSBF-II, 1998–1999). The HIV prevention program in Burkina Faso needs to be improved by a widespread condom promotion campaign and ensuring the regular supply of free condoms to rural areas. In the programs, along with providing information on the modes of transmission and prevention, additional focus on the asymptomatic nature of HIV is needed. It has been documented that a major factor motivating women to participate in HIV testing programs is the perception of personal risk for HIV (Maman *et al.*, 2001; Meadows and Catalan, 1994). VCT may be very effective in providing HIV knowledge and the opportunity for clarification through counseling might enable participants to correctly judge their own risk for getting HIV/AIDS.

Study participants correctly understood that their own and their partner's risk is bound together. In addition, 38% of the women believed that a woman could not disclose her seropositive status to her partner. Women often fear that disclosure of their HIV seropositive status to a partner may lead to domestic violence, discrimination, stigmatization, and disruption of personal relations (Issiaka *et al.*, 2001; Gaillard *et al.*, 2002; Garcia-Moreno and Watts, 2000; Heyward *et al.*, 1993; Kilewo *et al.*, 2001). Both of these factors underline the importance of male involvement in a PMTCT program. As a recent evaluation of PMTCT programs in several developing countries has demonstrated, involving male partners can make a real difference in improving women's uptake of PMTCT services (Horizon Report, 2003). The introduction of VCT for males in a PMTCT program should therefore be pursued generally.

ACKNOWLEDGMENTS

We gratefully acknowledge the cooperation of the Centre de Recherche en Sante de Nouna (CRSN) in Burkina Faso, and the interviewers and the participation of women in Nouna, for making this study possible. Special thanks are owed to H. Becher, G. Kynast-Wolf, A. Gbangou and S.A. Ouedraogo for

assistance with sampling within the CRSN demographic surveillance system (DSS), and to A Pale and A Gbangou for assistance with training of interviewers. We also grateful to Rainer Sauerborn, who provided financial support for the study from the collaborative research grant 'Control of Tropical Infectious Diseases', Sonderforschungsbereich (SFB 544), Heidelberg University (Germany), and we gratefully acknowledge the ongoing intellectual support of our partners in the SFB 544 (A6) project: H.G. Kräusslich, T. Böhler and D. Manga Tebit.

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