

Voluntary counseling and HIV testing for pregnant women in the Kassena-Nankana district of northern Ghana: Is couple counseling the way forward?

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Abstract

This study reports the results of a cross-sectional questionnaire survey undertaken in the Kassena-Nankana district of Ghana to assess the perception and attitude of 270 antenatal clinic attendants towards voluntary counseling and HIV testing. It was found that although 92.6% (95% CI 88.8–95.4) of respondents indicated a willingness to get tested, only 51% (95% CI 45.0–57.2) considered HIV testing for pregnant women to be useful. Most (93.6%) indicated they would like their husbands (partners) to know the result of the test and 52.2% indicated that their husbands would be willing to accompany them to antenatal clinic (ANC) at least once during the pregnancy. The perception of the usefulness of HIV testing (OR = 8.5, 95% CI 1.8–40.0), the willingness to disclose test result to the husband (OR = 13.3, 95% CI 4.0–44.5) and perceived willingness of husband to accompany wife to antenatal clinic (OR = 5.2, 95% CI 1.4–19.8) were found to be independent predictors of a woman's willingness to get tested. The willingness to disclose test result to husband (OR 3.2, 95% CI 1.1–10.5) and knowledge of at least one mode of MTCT HIV transmission (OR = 2.1, 95% CI 1.2–3.6) were found to be independent predictors of a woman's perception that getting tested was useful. The results suggest that for pregnant women in this district, the willingness to get tested for HIV does not equate with the perception of the test's usefulness, and that spouses are likely to exert strong influence on the attitude of pregnant women towards VCT. Couple counseling facilitated through couple-friendly ANC services should be explored as strategy for the intended VCT program in this district.

Introduction

Voluntary counseling and testing (VCT) for HIV is the process by which an individual undergoes counseling enabling him or her to make an informed choice about being tested for HIV. Integrating VCT into antenatal care services is a starting point for programs designed to prevent mother to child HIV transmission. Low uptake of VCT and HIV test results after VCT has been reported as one of the major obstacles in implementing an effective program of prevention of HIV transmission from mother to child (UNAIDS, 2001).

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Evaluation of antenatal-linked VCT services in sub-Saharan African countries has identified issues such as the confidentiality of test results (Fylkesnes et al., 1999), early spousal involvement (Painter, 2001) and stigma (Kilewo et al., 2001) as some of the factors that influence the acceptability of VCT in the region. A lot has been learnt from past and ongoing VCT programs. Some of these lessons have been learnt at considerable social and economic cost. These include failure to return for test results, especially among HIV-positives (UNAIDS, 2001), violence against tested pregnant women (Maman et al., 2000), suicide and unprotected sex among serodiscordant couples (Allen et al., 2003; Temmerman et al., 1995). These experiences have further emphasized the need to conduct studies into the perception and attitudes of local target populations when designing VCT and MTCT prevention programs. The goal should be to design programs that are likely to be well adapted and socio-culturally acceptable.

We present here the report on a preparatory study conducted among antenatal clinic attendants in the Kassena-Nankana district of rural northern Ghana. The study was undertaken to assess the perception and attitude of pregnant women towards voluntary counseling and HIV testing. We were in particular interested in women's willingness to be tested for HIV infection and possible determinants of this willingness.

Study area and population

The Kassena-Nankana district (KND) lies in the Guinea savanna portions of northern Ghana and borders Burkina Faso to the north. The district covers a land area of 1675 km² and has a population of 141,927 inhabitants (Navrongo Demographic Surveillance System, 2002). The district is essentially rural and traditional. The transnational highway passing through the district, the crocodile ponds and the slave caves have made the district an attractive tourist destination in northern Ghana. Only few women in the Kassena-Nankana district have had any form of formal education. The position of women in this district has been described as particularly bleak. The prevailing traditional form of social organization, which gives compound heads (a male preserve in this district) 'gatekeeping' roles, allows women little autonomy (Bawah et al., 1999).

The district is one of the sentinel sites in Ghana's National HIV/AIDS surveillance network. The prevalence among antenatal clinic (ANC) attendants estimated through unlinked anonymous testing in 2002 was 5.1%.

Methods

A two-page questionnaire was developed to enquire into various aspects of voluntary counseling and HIV testing. An initial questionnaire that was pre-tested was appropriately modified to produce the final questionnaire. The questionnaire was translated into the two local dialects and then back-translated. Three trained female research assistants who were non-health staff conducted the interviews at seven antenatal sessions between 26 March and 18 April 2002.

Data was double-entered using Epi-Info (Version 6). As had been decided at the stage of questionnaire design, responses of 'maybe' and 'not sure' were classified as 'no' responses during analysis. These responses were considered to be polite forms of decline, especially since the interviews were conducted in hospital premises. These possible responses were available for questions that related to attitudes towards HIV testing.

Epi-Info (Version 6) and Stata 6.0 (Stata Corp) were used in data analysis. Odds ratios and corresponding 95% confidence intervals (CI) were computed. Willingness to get tested

for HIV and the perception of the test's usefulness were the primary outcomes of interest in multivariate analysis. Variables that were significantly associated with the outcomes of interest in univariate analysis were considered for entry into a multivariate model. The correlation among all univariately significant factors was checked to avoid multicollinearity. Checks were also made for confounders and presence of interaction between significant determinants. The models were constructed using backward reduction techniques in logistic regression.

Ethical and institutional approval for the conduct of the study was obtained from the district health directorate and the senior medical officer in charge of the hospital. Verbal consent was taken and respondents who, for any reason, wished to discontinue an interview session were free to do so. No incentive for participation was given to respondents.

Results

All 277 women who were approached consented to participation. Four could not be interviewed because of lack of time. Interviews lasted 20 minutes on average. All interviews were conducted to completion and 270 records of interviews were analyzed after three records had been deleted on account of irreconcilable discrepancies. The mean age of respondents was 25.9 years ($SD = 6.1$ years). Almost all (267; 98.9%) of the respondents were married (traditional or otherwise). Christianity was the dominant (68.5%) religion among the respondents. While 112 (41.5%) respondents had no formal education, 98 (36.3%) had schooled only up to primary school level (Table I).

Knowledge of HIV/AIDS

All 270 respondents indicated they had heard about HIV/AIDS and most of them (201; 74.4%) spontaneously mentioned sex as a mode of HIV/AIDS transmission. Sixty-four (23.7%) and ten (3.7%), respectively, spontaneously mentioned blood transfusion and mother-to-child transmission. On specific enquiry, however, a little over half (51.5%) mentioned that HIV/AIDS transmission from mother to child could occur during pregnancy and delivery. Eighty-five (31.5%) respondents also mentioned breastfeeding. Overall, 196 (72.6%) respondents mentioned at least one possible mode of HIV transmission from mother to child. Respondents with higher than primary level of education were more likely to mention at least one mode of MTCT (OR = 2.4, 95% CI: 1.3–4.3).

Attitude towards VCT

The majority (92.6%; 95% CI 88.8–95.4%) of respondents indicated they would be willing to undergo HIV testing if it were freely available at the hospital. Only eighteen (6.7%) indicated otherwise, while the remaining two respondents were unsure whether they would want to get tested or not. A significantly fewer number of respondents (51.1%; 95% CI 45.0–57.2), however, considered it useful for a pregnant woman to know her HIV status. The main reasons given for considering HIV testing to be useful were the need to protect oneself from infection in case the test was negative and the need to seek care if the test turned out positive. Forty-nine (out of 138, i.e. 36.0%) respondents held that view. The urge to allay anxiety ('to be sure of oneself') was also given as a reason by 44 (32%) respondents. The need to protect others from getting infected and the fear that the unborn child may be infected in case the test turned out positive were two other reasons that were

Table I. Basic characteristic of respondents ($n=270$).

Variable	Number (%)
Age	
≤ 25 yrs	148 (54.8)
> 25 yrs	122 (45.2)
Marital status	
Married	267 (98.9)
Single (have partner)	3 (1.1)
Highest educational level	
Nil	112 (41.5)
Primary	98 (36.3)
Secondary	55 (20.4)
Tertiary	5 (1.9)
Religion	
Christian	185 (68.5)
Moslem	28 (10.4)
Traditionalist	48 (17.8)
Others	9 (3.3)
Area of residence	
Two main towns (Navrongo and Paga)	77 (28.5)
Other (suburbs and villages)	193 (71.5)

given. Concern about the child being possibly infected was mentioned by only 11% of these respondents. The rest of the respondents (132; 48.9%) either did not consider HIV testing to be useful or were unsure of their response. Typical reasons given were: 'it will disturb her [pregnant woman] if the test is positive', 'she will get very sick and grow lean', 'she may get so worried and [spontaneously] abort the pregnancy'. Twenty respondents (out of 132, i.e. 15.2%) gave reasons that related to their perception of the disease. They perceived HIV/AIDS to be such a 'bad' disease that the period of pregnancy was not an appropriate time for a woman to be told about it. Two typical phraseologies were, 'HIV is a killer disease and a pregnant woman shouldn't even hear about it' and 'HIV is not even a good disease for a human being to be told about'. Nine respondents (6.8%) also mentioned possible suicidal tendency after a positive HIV test. One of them put it as, 'she will be very worried and might try to kill herself'. Another said, 'she [pregnant woman] will kill herself if she has AIDS because it is not a good disease'.

About half (51.9%) of the respondents trusted that if they got tested for HIV at the hospital, the results would be kept confidential. The rest were either unsure (33.0%) or did not think that their results would be kept confidential (15.2%). On being tested for HIV (a hypothetical question to all respondents), 251 (93.6%) respondents indicated they would like their husbands or sexual partners to know the test result. The rest (19; 7.0%) indicated otherwise, and among these, five declined to give any reason while three thought their husbands would not be happy to hear they had been tested for HIV. The remaining 11 (4.1%) respondents were unsure of how their husbands would react and either feared divorce or physical abuse.

A little over half (141; 52.2%) of the respondents thought that their husbands would be willing to accompany them to antenatal clinic at least once during their pregnancy. Eighty-three (30.7%) indicated otherwise, while 46 (17.0%) were unsure. Only 27 (10.0%) respondents knew of the existence of drugs that reduced the chances of mother-to-child HIV transmission.

Determinants of respondents' willingness to get tested for HIV

Respondents who considered it useful for a pregnant woman to know her HIV status were significantly more likely to want to get tested (OR = 10.7, 95% CI 2.3–69.4). Those who were confident that they could disclose the result of their test to their husbands (OR = 19.6, 95% CI 5.8–67.7) and those who thought their husbands would be willing to accompany them to antenatal clinic (OR = 7.0, 95% CI 1.9–31.1) were also significantly more likely to want to get tested. There was no significant association between the level of education of respondent and the willingness to get tested (OR = 2.5, 95% CI 0.9–7.2). Similarly, no significant association was found between the perception that the result of the test would be kept confidential and the willingness to get tested (OR = 0.6, 95% CI 0.2–1.6).

Using logistic regression techniques, three variables (usefulness of getting tested, willingness to let husband know the result of the test and the perceived willingness of the husband to accompany her to antenatal clinic) were found to be significant independent predictors of a woman's willingness to get tested. Neither level of education nor cost were found to be significant predictors of this decision. Elimination of any of the three independent variables (usefulness of test, husband knowing the result of the test and husband's willingness to come to antenatal clinic) from the model led to significant loss of precision. No significant levels of interaction were found between the three independent predictor variables. The simpler model (with three predictor variables) which was highly significant ($p < 0.0005$) was therefore retained and it gave adjusted odds ratios of association with a woman's willingness to get tested as perceived usefulness of test (OR = 8.5, 95% CI 1.8–40.0), willingness to have husband know test result (OR = 13.3, 95% CI 4.0–44.5) and husband's perceived willingness to accompany wife to antenatal clinic (OR = 5.2, 95% CI 1.4–19.7) (Table II). In this study population, therefore, a pregnant woman's willingness to get tested for HIV is likely to be influenced by her perception of the usefulness of the test, her consideration of whether or not she will be able to disclose the result of the test to her husband, and whether or not she considers that her husband to be willing to accompany her to the antenatal clinic.

Determinants of the perception of the usefulness of HIV testing

The willingness of a woman to let the husband know her HIV test result was associated with the perception of the test's usefulness (OR = 3.2, 95% CI 1.0–10.5). A likewise significant association was found with respondents' knowledge of at least one mode of MTCT (OR = 2.1, 95% CI 1.2–3.8). Respondents who considered \$0.25 or more to be an affordable cost of an HIV test were also more likely to consider the test to be useful. The association was borderline significant (OR = 1.6, 95% CI 1.0–2.7). Women who knew that drugs that reduced the chances of HIV vertical transmission existed were more likely to consider HIV testing to be useful (OR = 1.7, 95% CI 0.7–4.3). This is shown in Table III.

In multivariate analysis, willingness to let husband know the result of the test and the knowledge of at least one mode of HIV transmission were found to be the two significant independent predictors of a woman's perception of the test's usefulness. The adjusted odds ratios of association with usefulness of test were: willingness to let husband know test's result (OR = 3.1, 95% CI 1.1–9.1) and knowledge of at least one mode of transmission (OR = 2.1, 95% CI 1.2–3.6). This is shown in Table III. In this study population, therefore, a pregnant woman is more likely to perceive HIV testing to be useful when she knows at least one mode of MTCT HIV transmission and considers that she can disclose the result of the test to her husband.

Table II. Univariate and multivariate analysis to assess association between various variables and respondents' willingness to get tested for HIV.

Variable	<i>n</i> (<i>N</i>)	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Age			
≤25 yrs	137 (148)	1.0 (0.4–2.7)	–
>25 yrs	113 (122)	1.0	
Highest educational level			
>Primary	52 (60)	0.4 (0.1–1.1)	–
≤Primary	198 (210)	1.0	
Area of residence			
Two main towns	70 (77)	0.7 (0.3–2.1)	–
Suburbs/villages	180 (193)	1.0	
Religion			
Christian	170 (185)	0.7 (0.2–2.2)	–
Moslem/Traditionalist/Others	80 (85)	1.0	
Know at least one mode of vertical HIV transmission			
Yes	185 (196)	2.3 (0.8–6.5)	–
No	65 (74)	1.0	
Useful for pregnant woman to know her HIV status			
Yes	136 (138)	10.7 (2.3–69.4 ^{◆◆})	8.5 (1.8–40.0)
No	114 (132)	1.0	
Willingness to let husband/partner know result of test			
Yes	240 (251)	19.6 (5.8–67.7)	13.3 (4.0–44.5)
No	10 (19)	1.0	
Willingness of husband/partner to come to ANC			
Yes	138 (141)	7.0 (1.9–31.1 ^{◆◆})	5.2 (1.4–19.7)
No	112 (129)	1.0	
Trust that test results will be kept confidential			
Yes	123 (140)	0.6 (0.2–1.6)	–
No	127 (130)	1.0	
Cost of test considered affordable			
≥\$0.25	124 (131)	1.8 (0.7–5.3)	–
<\$0.25	126 (139)	1.0	
Know that drugs exist that reduce MTCT			
Yes	25 (27)	1.0 (0.2–6.7)	–
No	225 (243)	1.0	

n number willing to get tested; ◆Cornfield 95% confidence limits for OR; may be inaccurate due to presence of small values in some cells in 2 × 2 table; ◆exact 95% confidence limits for maximum likelihood estimates of OR is 2.5–96.7; ◆exact 95% confidence limits for maximum likelihood estimates of OR is 1.9–37.9.

Discussion

The findings of the study suggest that perceived partner attitudes are likely to exert strong influence on the decision of pregnant women in this district whether or not to get tested for HIV. Indeed, it seems that not only will the final decision whether or not to get tested be so significantly influenced, but so will the perception of the usefulness of the test. It is likely that a relationship exists between the decisions, whether or not to want to get tested, the perception of the usefulness of the test, and whether or not to disclose the result of the test to the partner. Women who consider that they will be able to disclose the results of their test

Table III. Univariate and multivariate analysis to assess association between various variables and the perception of HIV test's usefulness.

Variable	<i>n</i> (<i>N</i>)	Crude odds ratio (95% CI)	Adjusted odds ratio (95% CI)
Age			
≤25 yrs	80 (148)	1.3 (0.8–2.2)	–
>25 yrs	58 (122)	1.0	
Highest educational level			
>Primary	32 (60)	1.1(0.6–2.1)	–
≤Primary	106 (210)	1.0	
Area of residence			
Two main towns	41 (77)	1.1 (0.6–2.0)	–
Suburbs/villages	97 (193)	1.0	
Religion			
Christian	94 (185)	1.0 (0.6–1.7)	–
Moslem/Traditionalist/Others	44 (85)	1.0	
Know at least one mode of vertical HIV transmission			
Yes	110 (196)	2.1 (1.2–3.8)	2.1 (1.2–3.6)
No	28 (74)	1.0	
Willingness to let husband/partner know result of test			
Yes	133 (251)	3.2 (1.0–10.5 [♣])	3.1 (1.1–9.1)
No	5 (19)	1.0	
Willingness of husband/partner to come to ANC			
Yes	78 (141)	1.4 (0.9–2.4)	–
No	60 (129)	1.0	
Trust that test results will be kept confidential			
Yes	70 (140)	0.9 (0.6–1.5)	–
No	68 (130)	1.0	
Cost of test considered affordable			
≥\$0.25	75 (131)	1.6 (1.0–2.7)	–
<\$0.25	63 (139)	1.0	
Know that drugs exist that reduce MTCT			
Yes	17 (27)	1.7 (0.7–4.3)	–
No	121 (243)	1.0	

n-number who perceive HIV testing to be useful; [♣]cornfield 95% confidence limits for OR; may be inaccurate due to presence of small values in some cells in 2 × 2 table; exact 95% confidence limits for maximum likelihood estimates of OR is 1.0–11.5.

to their partners are more likely to perceive HIV testing to be useful, and therefore more likely to want to get tested.

This interpretation could explain some of the observations made in VCT programs in sub-Saharan African countries. It has been observed in these programs that some women either refused to get tested, failed to return to collect their test results or failed to disclose the result of the test to their partners (Fylkesnes et al., 1999; Maman et al., 2002). It is likely that such women did not have a good understanding of the usefulness of the test vis-à-vis the role that their partners would play whatever its outcome. This is understandable because in the event of the test being positive, a woman would require her partner's support to seek care and treatment (if it is available) for herself, and to prevent the unborn child from getting infected. It is unlikely that an HIV-infected pregnant woman in this district

would be able to access care (including preventive care in the case of the child) without her partner becoming aware sooner or later. On the other hand, if the test came out negative, the woman would still require the cooperation of her partner to keep herself protected from getting infected. This is especially the case when one considers the fact that it is the male partner who is more likely to introduce the infection into an otherwise concordant-negative relationship (Carpenter et al., 1999; Hugonnet et al., 2002).

The fact that, even in this district where no VCT services had been introduced, over 90% of pregnant women were willing to get tested, question suggestions that good counseling necessarily accounts for the high number of pregnant women who get tested in VCT programs in such communities. Most of the women in this study indicated a willingness to get tested even when they did not consider HIV testing to be useful for them. It is probable that in spite of measures to reduce it, conducting the interviews at the health facility may have influenced some of them to indicate a willingness to get tested when they actually did not want to. The fact that their perception of the test's usefulness was significantly influenced by the anticipated reaction of their husbands suggests that counseling only pregnant women at the health facility is unlikely to lead to the expression of their true and considered opinions. Without the early and active partner participation, most women will either refuse to get tested or get tested (as some of the over 90% in this study indicated they would) and either fail to return to collect the results or fail to disclose it to their partners. All of these possibilities have been reported in VCT programs in sub-Saharan African countries (Kilewo et al., 2001; Msellati et al., 2001; Nebie et al., 2001; Temmerman et al., 1995) and are likely to lead to the failure of VCT to make the desired impact.

The willingness of a husband to accompany his wife to antenatal clinic at least once during the pregnancy was found in this study to be associated with the willingness of the woman to get tested for HIV. Although this finding cannot be completely dissociated from the aforementioned discussion on the role of partners in the decision-making process, it no doubt introduces a theme in reproductive health that is not new—increased male participation in reproductive health care. It has been advocated that male partners should be encouraged to accompany spouses to antenatal clinics (Muia et al., 2000). Although much has been said about male involvement in maternal health activities, very few programs have been undertaken on couple-friendly antenatal services in sub-Saharan Africa. Research is urgently needed in this area.

It is important to point out that the two partner-related determinants of the perception of the test's usefulness and the decision whether or not to want to get tested could be discussed within the wider framework of relational issues (Maman et al., 2000). In that context, issues such as the social status of women, the balance of power within the relationship and the issue of violence against women could come up as factors very much related to the decision of the pregnant woman whether or not to want to get tested and hence the spread of the epidemic in sub-Saharan Africa (Buve et al., 2003).

The study also found that a significant determinant of a woman's perception of the usefulness of getting tested for HIV is her knowledge of at least one mode of MTCT. This suggests that educating women in this district about the mode of MTCT of HIV would enhance the chances of having women who will get tested with a greater appreciation of the usefulness of being tested. We therefore suggest that education on the modes of MTCT be incorporated into antenatal and community health education campaigns.

It was our expectation that women who knew that drugs that reduced the chances of MTCT existed would be more willing to want to get tested. This was however not the finding in this study. This could be due to the fact that very few women (10.0%) in this

study knew about the existence of these drugs, thereby reducing the statistical power to detect an association. One other plausible explanation for the lack of association as found in this study is that those pregnant women in this district who knew that these drugs existed, also knew that the drugs were not available in the district and indeed in most of the country. The implication is that prospect for treatment is unlikely to be a successful promotional message for VCT services in this district, at least for now. This perception may change once people living with HIV in this district, including infected mothers, begin to have access to antiretrovirals and a MTCT prevention program is instituted in the district.

Our sample population was not chosen randomly. There are therefore limitations in our applying statistical techniques that assume random sampling of the study population. We also acknowledge the limitations in our using of a largely quantitative design in this survey. Perceptions on how a positive HIV test result could lead to an adverse outcome of the pregnancy could have been explored further using focus group discussions and in-depth interviews. Similarly, strategies to actualize partner participation in test counseling would have been better elucidated using qualitative methods. However, it must be said that although this study was conducted in a community where no VCT program has as yet been introduced, a number of its findings were largely consistent with those made in the evaluation of ongoing and completed VCT programs in sub-Saharan Africa. We conclude that cross-sectional surveys of this kind can be a useful tool to gain insight into how VCT programs could be designed to be well adapted to particular cultures and settings.

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