

Full Length Research Paper

Condom use for preventing HIV/AIDS among plantation workers in the Southwest Region of Cameroon

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A survey was carried out among plantation workers in the Southwest Region of Cameroon to assess condom use as well as its association with workers' personal characteristics. Questionnaire/structured interview schedule was used to collect data by random sampling technique. Focus group discussion was also employed. 354 respondents were used for the study. Majority of the respondents (63% in CDC, 63% in Pamol and 80% in the private plantations) indicated non-consistency in condom use during sexual intercourse in the last 12 months. The odds of married respondents not using condom each time they had sex was significantly higher than that of once married respondents (OR=11.24; $p \leq 0.05$). The odds of hourly rated respondents not using condom consistently was higher (OR=2.40, $p \leq 0.05$) than the odds of supervisory category. Policy and programmes are needed to address this situation in order to provide plantations workers access to information and services needed for healthy sexual lives.

Key words: Human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS), plantation workers, condom use, Cameroon.

INTRODUCTION

Throughout history, few crises have presented such a threat to human health and to social economic progress as does the HIV/AIDS epidemic. This is even more troubling given realization that much of the suffering and destitution caused by the disease could have been prevented (FAO, 2001). It is believed that the global HIV/AIDS epidemic will have widespread adverse effects on social and economic development for years to come. HIV/AIDS can no longer be considered solely as a health problem; sufficient efforts are needed to address its social, economic and institutional consequences. Increasingly, the HIV/AIDS epidemic is having a major impact on nutrition, food security, agricultural production and rural societies in many countries. All dimensions of food security-availability, stability, access and use of food- are affected where the prevalence of HIV/AIDS is high.

In most of the highly-affected countries, agriculture provides a living for the large majority of the population.

Agriculture, particularly food production, is affected by the HIV/AIDS scourge since it depletes agricultural labour force. In the ten most affected African countries (FAO, 2002), labour force decreases ranging from 10 to 26% are anticipated. This may have a serious cost for business, especially as skilled and experienced employees are lost, the fall in productivity and competitiveness, results in decreased employment opportunities and local economic spin-offs. Thus, HIV/AIDS can affect healthy people, and some economic activities may no longer be viable.

In the Cameroon agricultural sector, cocoa, oil palm, banana, and rubber constitute major contributors to gross domestic product (GDP) because they provide major export commodities (<http://www.nationsencyclopedia.com/Africa/Cameroon-AGRICULTURE.html>). Tree crops (palms, rubber, cocoa, coffee etc) are important sources of employment and revenue for smallholders in Cameroon and are also some of the most important traded commodities (AFTR2, 2002). Therefore anything that affects this sector will therefore affect the income generating base of the country. In Cameroon the HIV-prevalence rate rose about 20-fold during the last decade (FAO, 2002).

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According to UNAIDS statistics (2002), 600 Cameroonians get infected every day at a rate of 25 persons per hour. The pandemic has left a very serious impact on the nation's labour force, with significant attendant drop in productivity and profitability. Above all, it constitutes a serious threat to the socio-economic development of the country. In 2007, the number of people living with the HIV virus in Cameroon was estimated at 510,000 with 8,006 in the South West Region (NACC, 2007). Although no published data on the prevalence of HIV/AIDS in the plantation in Cameroon is available, documents from the plantations reveals that in CDC, the prevalence in 2001 was 16.9% (CDC, 2007) and in Pamol it was 10.7% (Pamol, 2007). This may therefore constitute a problem to the agriculture sector in Cameroon and especially in the plantations which constitute the second employer in Cameroon after the public sector.

For individuals that are sexually active, besides sex with an uninfected partner, the condom is the only method that offers protection against HIV and some other STIs (Davis and Weller, 1999; Wald et al., 2001). However, a review of literature on condom promotion and use for HIV prevention in developing countries showed that only consistent use of the condom offers effective protection against HIV (Hearst and Chen, 2004). Thus, acceptance and consistent use of condom by the general population is very important for the success of any effort aimed at reducing the spread of HIV/AIDS. Although there are several ways to transmit HIV/AIDS, unprotected sex remains the primary mode in sub-Saharan Africa (Ukwuani et al., 2003). No published information is available on condom for preventing HIV/AIDS among plantation workers in Cameroon. Hence this study was conducted to examine the association between individual-level characteristics and condom use among plantation workers in South West Region of Cameroon. The following hypothesis guided the research:

H_0 : There is no significant association between the plantations workers personal characteristics and consistency of condom use at last sexual intercourse.

METHODOLOGY

Study area

The study was carried out in plantations within the South west Region of Cameroon. The plantations included: industrial plantations like Cameroon Development Cooperation (CDC) and pamol and the private or individually owned plantations which are individually owned. The CDC is an agro-industrial complex that grows processes and markets tropical export crops. Its plantations cover a total area of 39,378 ha (in 24 estates) with workforce of 15,856 including seasonal workers and workers on short term contracts (CDC, 1006). Pamol operates in the same way as CDC. It covers about 1,629 ha of land with approximately 5000 workers in three estates. Its division of operation in Ndian (Sokoudjou, www.wrm.org.uy/ plantations/ material/oil palm). The private

plantations are managed by individuals and each covers between 100 to 200 ha of land and employs between 20 and 300 workers.

Population and sample size

The study population consisted of men and women (estimated at 22,000 workers) employed at plantations in the Southwest Region of Cameroon. CDC operates within three divisions in the Southwest Region (Fako, Meme and Ku[pe Mwaniguba divisions). Fako Division was randomly selected for the study. Three estates were also randomly selected from Fako Division. From the three estates 195 respondents were also selected by simple random sampling technique. Among the three estates in Pamol (Lobe, Mudemba and Bai), one (Lobe estate) was randomly selected for the study. Seventy three workers were randomly selected. The total sample size for CDC and Pamol was therefore 268.

For the privately owned plantation, two divisions in which CDC and Pamol operate were randomly selected. From each of these Divisions, 2 privately owned plantations were also randomly selected. This gave a total of 4 privately owned plantations. From a list of workers in each of the four plantations, samples were randomly drawn to give a total of 86 respondents in all. The total number of respondents for the study was therefore 354.

Data collection

Structured questionnaire and interview schedule was used to collect data. Focus group discussions (FGD) were also held in all the plantations for both men and women employees. The researcher with a trained assistant conducted the interviews and FGD. Focus group discussions were conducted, in order to obtain in-depth information and the questionnaire/interview schedule was used as reference materials for discussion. The questionnaire and interview schedule elicited information to cover the objectives of the study.

Measurement of variable

To assess the workers' practices relating to condom use, questions were asked on consistent condom use during sexual intercourse and condom use at last sexual intercourse. A "Yes" response was scored 1, a "No" response was scored 0 while "No response" was scored 2. The proportion of respondents who indicated "Yes", "No" or "Non response" to each of the variables was determined.

Data analysis

Frequencies and percentages were used to analyze the objectives while the hypothesis was analyzed using multivariate logistic regression. Logistic prediction equation used was in the for of:

$$z = b_0 + b_1X_1 + b_2X_2 + \dots + b_kX_k$$

Where z = logit for a dependent variable = $\text{logit}(p)$

b_0 = constant

$b_1, b_2 \dots b_k$ = the regression coefficients which interpret the effect of x on z

X = independent variables

k = number of independent variables

p = probability of presence of characteristic of interest

In the logistic regression analysis the independent variables were as follows:

X_1 = sex (entered in the equation as a dichotomy: male =1, female = 2)

X_2 = age (continuous)
 X_3 = marital status (categorical: married = 1, never married = 2, once married = base category)
 X_4 = educational level (categorical: NFE = 1, FSLC = 2, O'Level = 3, A' Level = 4, Diploma = 5, Degree = base category)
 X_5 = migration status (dichotomous: migrant = 1, non migrant = 2)
 X_6 = job experience (continuous)
 X_7 = rank (dichotomous: supervisor = 1, hourly rated = 2)
 X_8 = religious group (categorical: Catholic = 1, other orthodox churches = 2, New generation churches = base category)

The binary response or outcome variables were: number of sexual partners (single = 0, multiple = 1), consistency of condom use (yes = 0, no = 1) and condom use at last sexual intercourse (yes = 0, no = 1). The relationship between the response variables and the independent variables was explained using:

$$\text{Odds} = \frac{\text{Probability of presence of characteristic of interest}}{\text{Probability of absence of the characteristic}} = \frac{p}{1-p}$$

or

Odds ratio (OR) for an independent variable (X_1) = e^{b_1} [i.e. natural log base e to the exponent b_1 or $\exp(b_1)$]

All analyses were done using the statistical package for social sciences (SPSS) version 12.1 and at probability level of 5%.

RESULTS AND DISCUSSION

Majority (76.74%) of the respondents was male (Table 1). Also majority (52.3%) of the respondents were within the 35 to 44 year age group. The mean age of the respondents was 36.6 years. While majorities (62.8%) of the respondents were married, 34.9% were never married (single). About 8.0% of the respondents never had any form of formal education. About 51% had worked for 5 years or less while 33.7% had worked for 6 to 10 years. The mean job experience was 4.03 years. Results in Table 1 reveal that 52.3% of respondents were migrants (that is coming from regions other than Southwest Region). Data indicated that majority (96.5%) of the workers were Christians belonging to three major religious groups namely: Catholic (48.8%), Pentecostal (15.1%) and other orthodox churches (32.6%).

Condom use

Majority of the respondents (63% each in CDC and Pamol and 80% in the private plantations) indicated they never used condoms consistently during sexual intercourse in the last 12 months. About 58, 41 and 64% in CDC, Pamol and private plantations respectively stated that they did not use condom the last time they had sex (Table 2). Although condom use during sexual relationship appeared to be low, during FGD respondents indicated that they had a better knowledge about HIV/AIDS at the time of data collection than some years back and the knowledge had increased the use of

condoms in the plantations. In the present study, 54.4, 54.8 and 77.9% of respondents in CDC, Pamol and the private plantations, respectively indicated that they perceived themselves to be at risk of HIV/AIDS.

Despite the fact that about a third of the respondents in the three plantations combined reported consistent condom use, some of the respondents continued to hold negative perceptions with regards to condoms and their use. One of the most important negative perceptions regarding the use of condoms, as revealed during FGD (in CDC and Pamol) was that their use implied lack of trust in one's partner. Other participants indicated that they did not trust the quality of condoms. One of the participants said:

A lot of people die of AIDS and they have been using condoms. I suspect that these condoms carry the AIDS.

One participant suggested that:

If you have to use condom especially if you are not sure of your partner, then you have to triple it.

Yet another participant retorted:

When you sucked bonbon (a type of confectionary) with the paper on it, will you enjoy it? Have you ever taken a bath with a raincoat? Of course you can never enjoy such a bath. That is the same with sex and condom.

Base on the data from FGD, four factors militating against use of condoms in the plantations were: Use of condoms implied lack of trust; condoms were sources of HIV/AIDS; the quality of the condoms should not be trusted and condom use reduces sexual pleasure. Similar negative perceptions regarding condom use were also reported in Malawi (Kazembe et al., 2000)

The key issue relevant to HIV/AIDS prevention in the plantations is therefore to make condom use a social norm and the negative perceptions of workers regarding condoms improved through seminars and other educational programmes. According to the behaviour change model (Ajzen, and Fishbein, 1980), adoption of condoms to prevent HIV infection is influenced by an individual's awareness that the method is effective and a tendency for the individual to feel personally at risk of contracting the virus and to perceive the infection to have severe outcomes. Expectedly, awareness through seminars will facilitate the belief in the efficacy of condoms and that the method is socially valued. When this takes place one can anticipate significant increases in condom utilization in the plantations.

Consistency of condom use

The results of logistic regression analyses showing the association between respondents' personal characteristics

Table 1. Percentage distribution of respondents according to personal characteristics.

Characteristic	Plantation			
	CDC (N=195)	Pamol (N=73)	Private N=86)	CP (n=354)
Sex				
Male	71.3	72.6	76.7	72.9
Female	28.7	27.4	23.3	27.1
Age (years)				
15 to 24	4.1	4.1	9.3	5.4
25 to 34	39.5	36.0	22.1	34.8
35 to 44	33.8	35.6	52.3	38.7
45 to 54	14.9	16.2	9.3	13.3
≥55	7.7	8.1	7.0	7.8
Mean	37.5	38.3	36.6	37.4
Marital status				
Married	68.2	67.1	62.8	62.8
Never married (single)	26.7	27.4	34.9	34.9
Once married (widowed, divorced, separated)	5.1	5.5	2.3	2.3
Educational level				
NFE	8.7	0.00	8.1	6.8
FSLC	32.8	28.8	55.8	37.6
O'L	19.0	19.1	18.6	18.9
A'L	19.0	20.6	12.8	17.8
Diploma	12.3	13.7	2.3	10.1
Degree	8.2	17.8	22.3	8.8
Migration status				
Migrant	33.9	24.7	52.3	36.4
Non-migrant	63.5	67.1	43.0	59.3
Not indicated	2.6	8.2	4.7	4.3
Job experience (years)				
≤5	21.5	36.9	51.3	31.9
6 to 10	33.3	17.8	33.7	30.0
11 to 15	13.3	15.0	0.00	10.5
>15	23.0	27.2	0.00	18.6
Not indicated	8.7	3.7	15.1	9.0
Mean	12.0	12.3	4.0	10.2
Rank (n=268)				
Hourly rated	59.5	67.1		61.6
Supervisory	25.1	31.5		26.9
Not indicated	15.4	1.4		11.6
Religious group				
Catholic	35.4	20.5	48.8	35.5
Other orthodox churches (Presbyterian, Baptist)	39.5	28.7	32.6	35.5
New generation churches (Apostolic, Redeemed, etc)	9.7	19.7	15.1	12.8
Others (Jehovah witness, Bahai, Islam)	3.5	8.1	0.00	3.6
Not indicated	12.8	23.0	3.5	12.6

Table 2. Percentage distribution of respondents according to condom use and risk of HIV/AIDS.

Variable	Plantations			
	CDC	Pamol	Private	CP
Consistent condom use in the last 12 months				
Yes	32.3	30.1	16.3	28.0
No	63.1	63.0	80.2	67.2
No response	4.6	6.9	3.5	4.8
Condom use at last sexual intercourse				
Yes	32.3	49.3	30.2	35.3
No	58.0	41.1	64.0	55.9
No response	9.7	9.6	5.8	8.8
Perceived yourself to at risk of HIV/AIDS				
Yes	54.4	54.8	77.9	66.4
No	45.6	45.2	22.1	33.6

and consistency of condom use are presented in Table 3. None of the personal characteristics was significantly associated with consistency of condom use in the three individual plantations separately.

However, when data for the respondents in the three plantations were combined, marital status and rank of the respondents were found to be significant predictors of condom use each time respondents had sex. The odds of married respondents not using condom each time they had sex with their spouse, was significantly higher than that of once married respondents (OR= 11.24; $p \leq 0.05$). This finding indicates that married workers were less likely than once married ones to use condom consistently. This observation is similar to that of Ukwuani et al. (2003) who found that in Tanzania, condom use was significantly higher among men who were formerly married than married and unmarried men. The finding suggests that married respondents usually have trust in their partners and therefore see no need to use condoms. Since it is the males who control the sexual relationships and decision-making in many cultures especially in Africa, it may be very difficult for married women to practice safe sex. The man decides whether or not to use condom during sex. Elias and Heise (1993) suggested that underlying power inequalities may severely limit the ability of many females to change their partner's sexual behaviour or enforce the use of condoms. In Botswana, young females were reported to feel more at risk of HIV and because of culture expectations to provide sexual satisfaction, are powerless to demand or indeed negotiate safe sex UNESCO/UNAIDS (1999), lack of education makes (UNAIDS, 1992 cited by MacDonald, 1996). According to women wholly dependent on men, hence the fear to say no even to behaviours that place them at risk of infection such as unprotected sex and infidelity on the part of their husbands. However, Iliyasu et al. (2006) suggested that

condom use would probably be most prevalent outside stable sexual relationships such as, with casual partners or commercial sex workers. They also suggested that, sexually active respondents who had never used condoms were the least knowledgeable on HIV transmission. According to McDonald (1996) and Varga (1999), high-risk behaviours such as multiple sexual partners, the use of commercial sex workers and low condom use are important determinants of HIV transmission. In the present study, unmarried and once married workers appear to be more likely to change their sexual behaviours in terms of condom use. This practice could reduce the spread of HIV/AIDS in the plantations.

With regards to rank of respondents, the odds of hourly rated respondents not using condom consistently was higher (OR = 2.40, $p \leq 0.05$) than the odds of supervisory category. This suggests that the hourly rated respondents were less likely to have changed their sexual behaviour with regards to condom use. The hourly rated respondents are less educated; some of them do not have any form of education. This might have affected their being able to read posters and pamphlets on HIV/AIDS distributed in the plantations. Also many of them do not have access to print and electronic media. This may equally explain why they were less likely to have changed their sexual behaviour with regards to condom use.

Condom use at last sexual intercourse

The results of logistic regression analyses showing the are shown in Table 4.

In CDC, none sexual intercourse was significantly of the personal characteristics and condom use at last sexual intercourse characteristics was significantly associated with condom use at last sexual intercourse (X^2

Table 3. Logistic regression analysis showing association of personal characteristics of plantation workers with consistency of condom use.

Variable	CDC		PAMOL		PRIVATE		CP	
	Logistic Coefficient (B)	Odds ratio [Exp(B)]	Logistic Coefficient (B)	Odds ratio [Exp(B)]	Logistic Coefficient (B)	Odds ratio [Exp(B)]	Logistic Coefficient (B)	Odds ratio [Exp(B)]
Sex								
(Male=1, female=2)	0.14	1.15	-172	0.18	1.96	7.09	-0.15	0.87
Age (years)	-0.04	0.96	-0.08	0.93	0.14	1.15	-0.06	0.95
Marital status								
Married	1.46	4.31	-	-	0.41	1.51	2.42*	11.24
Never married	0.13	1.34	-	-	BC	BC	0.81	2.24
Once married (Base category)	-	-	-	-	-	-	-	-
Educational level								
NFE	-1.43	0.24	-	-	-3.82	0.02	-0.42	0.66
FSLC	-1.41	0.24	0.11	1.12	0.10	1.11	-0.67	0.51
O'Level	-1.68	0.19	-0.85	0.43	1.32	3.73	-1.19	0.31
A'Level	-1.32	0.27	-0.13	0.88	BC	BC	-0.88	0.41
Diploma	-0.72	0.49	0.59	1.80	-	-	-0.34	0.71
Degree (Base category)	-	-	-	-	-	-	-	-
Migration status								
(migrant=1, non-migrant=2)	-0.28	0.75	0.27	1.31	-0.43	0.65	-0.14	0.87
Job experience (years)	0.04	1.04	0.09	1.09	-0.004	1.00	0.04	1.04
Rank (Supervisor=1, hourly rated=2)	0.50	1.64	1.31	3.71	-	-	0.87*	2.40
Religious group								
Catholic	0.51	1.72	1.41	4.11	-	-	0.54	1.72
Other orthodox churches (Presbyterian, Baptist)	1.16	3.18	1.25	3.50	-	-	1.08	2.93
New generation churches (Base category)	-	-	-	-	-	-	-	-
χ^2	19.77		11.54		15.09		38.88*	

* = Significant association ($p \leq 0.05$).

= 20.00, $p > 0.05$). Similar observations were obtained for Pamol ($X^2 = 20.75$, $p > 0.05$) and the private plantations ($X^2 = 7.67$, $p > 0.05$).

However, when data for the respondents in the three

plantations were combined, only marital status of the respondents was found to be significantly associated with condom use at last sexual intercourse. The odds of married respondents who did not use condom at last

Table 4. Logistic regression analysis showing association of personal characteristics of plantation workers with condom use at last sexual intercourse.

Variable	CDC		PAMOL		PRIVATE		CP	
	Logistic coefficient (B)	Odds ratio [Exp(B)]	Logistic coefficient (B)	Odds ratio [Exp(B)]	Logistic coefficient (B)	Odds ratio [Exp(B)]	Logistic coefficient (B)	Odds ratio [Exp(B)]
Sex (male=1, female=2)	0.36	1.43	0.90	2.47	1.25	3.50	0.56	1.74
Age (Years)	-0.00	1.00	0.06	1.07	0.02	1.02	0.01	1.01
Marital status								
Married	2.45	11.62	2.61	13.59	0.60	1.82	2.28*	9.75
Never Married	1.44	4.20	-0.75	0.47	BC	BC	0.82	2.27
Once married (Base Category)	-	-	-	-	-	-	-	-
Educational level								
NFE	-0.30	0.74	-	-	-	-	0.81	2.25
FSLC	-1.42	0.24	0.78	2.17	0.98	2.67	-0.37	0.69
O'Level	-1.52	0.22	1.10	2.99	1.25	3.48	-0.44	0.65
A'Level	-1.11	0.33	0.08	1.08	BC	BC	-0.32	0.72
Diploma	-0.64	0.53	-0.52	0.59	-	-	-0.40	0.67
Degree (Base category)	-	-	-	-	-	-	-	-
Migration status								
(migrant=1, non-migrant=2)	0.05	1.05	0.71	2.04	-1.21	0.30	0.26	1.30
Job experience (years)	0.04	1.04	-0.04	0.96	-0.003	1.00	0.01	1.01
Rank (Supervisor=1, hourly rated=2)	0.48	1.62	0.75	2.11	-	-	0.51	1.66
Religious group								
Catholic	-0.00	1.00	-0.71	0.49	-	-	-0.12	0.88
Other orthodox churches (Presbyterian, Baptist)	-0.02	0.98	-1.68	0.19	-	-	-0.42	0.66
New generation churches (Base category)	-	-	-	-	-	-	-	-
χ^2	20.00		20.75		7.67		27.96*	

* = Significant association ($p < 0.05$).

higher (OR = 9.75, $p < 0.05$) than the odds of once married respondents.

In order to minimize the acquisition and spread of HIV/AIDS in the plantations it is recommended that extensive health education, including condom use,

should be vigorously pursued. Target groups should include young, less educated, hourly rated and never married/once married workers.

In conclusion, although use of condoms appeared to be low, sexually active workers were making efforts to

protect themselves against HIV/AIDS. However, workers held negative perceptions about condom use, which may be the reason of for the low rate of condom use to prevent HIV/AIDS in the plantations. It is imperative therefore, to make condom use a social norm and the negative perceptions of workers regarding condoms improved.

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