

Original Research Article

Sexual Behavior and its Association with Knowledge Regarding HIV/AIDS Among Migrant Road Construction Workers in a Rural Setting of Cameroon

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Keywords

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- HIV/AIDS knowledge
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- Migrant road construction workers

Abstract

Background: Despite several measures that have been put in place to curb the spread of HIV/AIDS in Cameroon, available statistics shows that the scourge has continued unabated. Road construction workers in Cameroon are at a high risk of contracting HIV/AIDS. However, the current HIV prevention programs in Cameroon have primarily not targeted road construction workers. This research is conducted to investigate the association between sexual behaviors and knowledge regarding HIV/AIDS among migrant road construction workers in rural Cameroon.

Methods: A cross-sectional survey of a stratified sample of 254 road construction workers was conducted at construction sites along the Kumba-Mamfe road in December 2015. Data were collected using a pretested structured questionnaire and analyzed using Chi-square using the Statistical package for Social Sciences version 20 at the level 0.05.

Results: The respondents practiced risky sexual behaviors and manifested inadequate knowledge regarding HIV/AIDS. The majority, 61.0% were sexually experienced. Multiple sequential sexual partnership in the past one year before the current study and multiple concurrent sexual partnership at the time of the current study were high, 63.2% and 38.1% respectively. Consistent condom use during sexual intercourse was low, 43.2%. Up to 36.8% disagreed that HIV can be transmitted through unprotected sexual intercourse; 32.7% disagreed that consistent condom use can prevent HIV; 29.1% disagreed that sexual abstinence can prevent HIV transmission; 39.4% disagreed that being faithful to one unprotected sexual partner can prevent HIV transmission, and the majority, 57.1% perceived that they were not at risk of contracting HIV. However, there were no statistically significant associations between sexual behaviors and knowledge regarding HIV/AIDS.

Conclusion: Migrant road construction workers practiced risky sexual behaviors and manifested inadequate knowledge regarding HIV/AIDS. However, intervention programs on promoting safe sexual practices targeted at migrant road construction workers, and programs to increase their knowledge levels regarding HIV/AIDS are strongly recommended.

INTRODUCTION

Despite several measures that have been put in place to curb the spread of HIV/AIDS in Cameroon, available statistics shows that the scourge has continued unabated. With an HIV/AIDS prevalence to 4.3% (2.9% for men and 5.6% for women), Cameroon remains on the list of countries with the highest overall HIV prevalence in West and Central Africa [1,2]. HIV/AIDS in Cameroon is still widely spreading despite the various control measures that have been put in place. The Southwest region of Cameroon is ranked third, with an HIV prevalence of

5.7% [2]. Road construction works may also add to the burden of HIV/AIDS in Cameroon [1]. The movement of people across borders and between urban and rural areas as usually found in road construction sites, can contribute to the rapid spread of HIV [3], so timely interventions should be carried out for road construction workers to prevent the spread of HIV/AIDS. Without curative drugs and vaccines, health education remains the main measure to prevent and control HIV/AIDS.

Economic and cultural factors, as well as reduced accessibility to health care facilities, increase road construction workers'

vulnerability to HIV [4,5]. Since the advent of HIV/AIDS in Cameroon, a vast number of research and programs have been implemented in various regions to curb the spread and to reduce sexual risk behaviors [6-9].

Empirical research in Cameroon has documented evidence of high level of knowledge regarding HIV/AIDS among youths in general [10,11]. Such Knowledge plays a key role as a predictor of HIV risk behavior, as accurate knowledge about HIV transmission and prevention is the gateway to behavioral change [10]. Studies have demonstrated that HIV/AIDS knowledge is associated with condom use [12]. Inadequate knowledge and misconceptions regarding HIV/AIDS among adolescents are predictors of nonuse or inconsistent use of condoms [12]. However, these studies were conducted among in-school and out-of-school youths [6,13].

The current HIV prevention programs in Cameroon have primarily not targeted road construction workers [14]. The majority of road construction workers are migrants, sexually active and separated from their families, loved ones and the communities. They engage in dangerous work which may make them more prone to peer pressure and urban lifestyle influences [15], and ultimately lead them to engage in riskier sexual behaviors. Moreover, the social, economic, and health implications of the migratory lifestyle in Cameroon have received little scholarly attention [14]. This research is conducted to investigate the association between sexual behaviors and knowledge regarding HIV/AIDS among road construction workers in the Southwest region of Cameroon.

It is hypothesized that adequate knowledge regarding HIV/AIDS is associated with safe sexual behaviors to prevent HIV/AIDS transmission among road construction workers in the Southwest region of Cameroon.

MATERIALS AND METHODS

Research design

A cross-sectional survey was conducted among 254 migrant road construction workers at construction sites along the Kumba-Mamfe road in the Southwest region of Cameroon in December 2015. Data were collected using a pretested structured questionnaire.

Study setting

The current study was carried out at the two construction sites along the Kumba-Mamfe road in the Southwest region of Cameroon. This road passes through five municipalities in the Southwest region of Cameroon: Kumba III, Konye, Nguti, Tinto and Mamfe Municipalities, covering a considerable expanse of land. The road ends at Mamfe Municipality, which is the headquarters of Manyu Division, which shares a national boarder with the federal Republic of Nigeria. Therefore, this stretch of road is always busy with commercial activities in the Small and Medium Enterprise (SME) sector. These commercial activities involve school drop-outs and female sex workers (FSWs). There is therefore a very high risk of HIV transmission among the

inhabitants along this transport corridor.

Study population

The population for this study comprised Cameroonian male construction workers at the two road construction sites along the Kumba-Mamfe road in the Southwest region of Cameroon made up of Drivers, Builders, Welders, Iron Benders and Unskilled Laborers.

Sampling method

A proportionate stratified sampling approach was used whereby for each construction site, a list of all employees was obtained along with their types of work. The research team then attempted to sample a proportionate number of employees from each site to make up the predetermined sample size for each construction site. Facilitators from the HIV/AIDS Prevention Research Network, Cameroon (HIVPREC), explained to the workers the reasons for the Survey. Those who were interested, consented in writing to participate.

Data collection

A pre-tested structured questionnaire was used to collect data for this study. The questionnaire was pretested on a convenience sample of 10 migrant road construction workers who did not take part in the actual study. The questionnaires were administered by trained facilitators of HIVPREC, due to the perceived low level of literacy of the respondents. The validity of the questionnaire was ensured by designing items to measure the different variables of the study by the first author who is a specialist in HIV research. The questionnaire was divided into three sections: socio-demographic characteristics (age, marital status, religion, educational level and profession), knowledge regarding HIV/AIDS and sexual behaviors. Previous studies guided the development of the questionnaires [9,13]. Completed questionnaires were checked by the HIVPREC facilitators, to ensure the completeness and consistency of the data.

Ethical considerations

Respondents were given verbal and written information about the study and signed an informed consent form before participation in the study. No personal or identifying information was retained in the questionnaire. Participation was voluntary and no financial incentives were provided. Since data were collected at the construction sites during break periods, there were no transport cost incurred by the respondents. However, they were appreciated verbally for their time spent in responding to the questionnaire. Permission to conduct this study was obtained from research and ethics committee of the HIV/AIDS Prevention Research Network, Cameroon (HIVPREC) and from the Management of the Kumba-Mamfe road project in the Southwest region of Cameroon. Ethical clearance for this study was obtained from the research and ethics committee of the faculty of philosophy, religious and social studies of the Cameroon Christian University (CCU).

Measures

Socio-demographic characteristics: The following socio-demographic characteristics were included in the study: Age, Marital status, Religion, Educational level and Occupation.

Knowledge regarding HIV/AIDS and perceived HIV infection risk: Knowledge of HIV/AIDS was assessed based on the agreement with the following statements: 'HIV/AIDS can be transmitted through unprotected sexual intercourse', 'HIV/AIDS can be prevented by consistent use of condoms during sexual intercourse', 'HIV/AIDS can be prevented by abstaining from sexual intercourse' and 'HIV/AIDS can be prevented by being faithful to one uninfected sexual partner'. The response options were coded as '2=agree' (index category), and '1=disagree'. The reliability coefficient for this 4-item HIV/AIDS knowledge scale was 0.70, which signifies a high internal consistency of the items used in measuring knowledge regarding HIV/AIDS. Perceived HIV infection risk was measured by the following question: 'How at risk of contracting HIV are you?'. The response options were '1=not at risk' (reference category) and '2=at risk'.

Sexual behaviors: Sexual behavior included sexual experience categorized into '1=yes' and '0=no', number of sexual partners in the last one year, divided into three categories (none, one and more than one), number of concurrent sexual partners at the period of the current study, divided into three categories (none, one and more than one) and regularity of condom use during sexual intercourse divided into two categories (1=always, 2=others). The questions on the number of sexual partners and the regularity of condom use were asked only to respondents who were sexually active. The reliability coefficient for the 2-item scale for the number of sexual partners was 0.88, which indicates a high internal consistency of the items used in measuring sexual behaviors.

Data management and analysis: Entered and cleaned data were analyzed using SPSS version 20 software program. The data were summarized using the frequency table. Two-sided Chi-square tests for association were calculated to detect any associations between HIV knowledge and sexual behaviors at a level of significance of probability (P) < 0.05.

RESULTS

Socio-demographic characteristics

Of the 254 respondents, the majority, 219 (86.2%) were aged 20-49 years; most, 212 (83.5%) were Christians; most, 186 (73.2%) were single and the majority, 170 (66.9%) had up to high school level of education (Table 1).

Knowledge regarding HIV/AIDS and perceived risk of HIV infection

Table 2 explicates the knowledge regarding HIV/AIDS and the perceived risk of HIV infection among the migrant road construction workers. A slight majority, 156 (61.4%) knew that HIV/AIDS can be transmitted through unprotected

sexual intercourse; a slight majority, 171 (67.3%) knew that consistent condom use during sexual intercourse can prevent HIV transmission; the majority, 180 (70.9%) knew that sexual abstinence can prevent HIV transmission and a slight majority, 154 (60.6%) knew that being faithful to one uninfected sexual partner can prevent HIV transmission. However, only 109 (42.9%) perceived that they are at risk of contracting HIV.

Table1: Socio-demographic characteristics of the respondents

Characteristics	Number	Percentage
Age Group		
10-19	19	7.5
20-29	106	41.7
30-39	74	29.1
40-49	39	15.4
50 and above	16	6.3
Religious Affiliation		
Christian	212	83.5
Muslim	27	10.6
Others	15	5.9
Marital Status		
Single	186	73.2
Married	47	18.5
Others	21	8.3
Educational Attainment		
No education	81	31.9
Primary	92	36.2
Secondary/High school	78	30.7
Tertiary	3	1.2
Occupation		
Driving	16	6.3
Building	70	27.6
Iron bending	55	21.6
Welding	43	16.9
Unskilled labor	70	27.6

Sexual behaviors

Regarding sexual behaviors, the majority, 155 (61.0%) reported being sexually active, the majority, 98 (63.2%) of whom reported multiple sequential partnership in the last one year prior to the current study. Multiple concurrent sexual partnerships at the time of the current study was also high, 59 (38.1%), and consistent condom used during sexual intercourse was also low, 67 (43.2%) (Table 3).

Associations between sexual behaviors and knowledge regarding HIV/AIDS

There were no significant associations between sexual

behaviors and perceived risk of HIV infection (Table 4). The associations between sexual behaviors and the knowledge that

Table 2: Knowledge regarding HIV/AIDS and perceived HIV infection risk

Knowledge and risk perception	Frequency	Percentage
HIV can be transmitted through unprotected sex		
Agree	156	61.4
Disagree	98	38.6
HIV can be prevented by consistent condom use		
Agree	171	67.3
Disagree	83	32.7
HIV can be prevented by sexual abstinence		
Agree	180	70.9
Disagree	74	29.1
HIV can be prevented by being faithful to one partner		
Agree	154	60.6
Disagree	100	39.4
Perceived risk of HIV infection		
At risk	109	42.9
Not at risk	145	57.1

Table 3: Sexual behaviors

Sexual behaviors	Frequency	Percentage
Ever had sexual intercourse		
Yes	155	61
No	99	39
Number of sexual partners in the past one year		
None	0	0
One	57	36.8
More than one	98	63.2
Number of concurrent sexual partners at present		
None	16	10.3
One	80	51.6
More than one	59	38.1
Regularity of condom use during sexual intercourse		
Always	67	43.2
Others	88	56.8

Table 4: Associations between sexual risk behaviours and perceived HIV infection risk

Sexual behaviors	HIV risk		X ²	P-values
	Not at risk	At risk		
Sexual experience	85 (58.6%)	70 (64.2%)	0.82	0.436
Multiple sequential sexual partners	58 (40.0%)	40 (36.7%)	1.611	0.447
Multiple Concurrent sexual partners	34 (23.4%)	25 (22.9%)	0.034	0.983
Consistent condom use	36 (42.9%)	31 (44.3%)	0.032	0.872

HIV can be transmitted through unprotected sexual intercourse were also not significant (Table 5). There was also no significant association between consistent condom use and the knowledge that HIV can be prevented by consistent condom use (Table 6). No significant association was also found between sexual experience and the knowledge that HIV can be prevented by abstaining from sex (Table 7). There were also no significant associations between having multiple sexual partners and knowledge that HIV can be prevented by being faithful to one sexual partner (Table 8).

Table 5: Associations between sexual risk behaviours and knowledge that HIV can be transmitted through unprotected sexual intercourse

Sexual behaviors	HIV can be transmitted through unprotected sex		X ²	P-values
	Disagree	Agree		
Sexual experience	59 (60.2%)	96 (61.5%)	0.045	0.895
Multiple sequential sexual partners	36 (36.7%)	62 (39.7%)	0.382	0.826
Multiple concurrent sexual partners	22 (22.4%)	37 (23.7%)	0.959	0.619
Consistent condom use	28 (49.1%)	39 (40.2%)	1.161	0.315

Table 6: Associations between sexual risk behaviours and knowledge that HIV can be prevented by consistent condom use

Sexual behavior	HIV can be prevented by consistent condom use		X ²	P-values
	Disagree	Agree		
Consistent condom use	18 (37.5%)	49 (46.2%)	1.024	0.381

Table 7: Associations between sexual risk behaviours and knowledge that HIV can be prevented by abstaining from sex

Sexual behavior	HIV can be prevented by sexual abstinence		X ²	P-values
	Disagree	Agree		
Sexual experience	38 (51.4%)	116 (46.2%)	4.625	0.099

Table 8: Associations between sexual risk behaviours and knowledge that HIV can be prevented by being faithful to one negative sexual partner

Sexual behavior	HIV can be prevented by being faithful to one sexual partner		X ²	P-values
	Primary or less	Secondary or more		
Multiple sequential sexual partnerships	42 (42.0%)	56 (36.4%)	4.009	0.135
Multiple concurrent sexual partnerships	29 (29.0%)	30 (19.5%)	5.416	0.067

DISCUSSION

The current study investigated the sexual behavior and its association with knowledge regarding HIV/AIDS among road construction workers in the Southwest region of Cameroon. In this study, knowledge of the mode of transmission of HIV/AIDS, knowledge of prevention of HIV/AIDS and the perception of risk of contracting HIV were articulated through the practice of safer sex.

The current study revealed that the respondents engaged in risky sexual behaviors (Table 3) [16,17]. About 61% of them had experienced sexual encounter, which is higher than that obtained among senior secondary school female students in rural Cameroon in 2015, 54.0% [9]. This disparity might be attributed to the fact that the current study was among male workers while the 2015 study was among female students. Students may also not freely engage in sexual activities as compared to adult and independent road construction workers.

Another probable explanation could be that the respondents in the 2015 study were all high school students and as such were exposed to formalized and internalized HIV/AIDS-knowledge in school than the respondents in the current study, majority, 68.1% of whom had attained up to primary level education, and as such did not have access to HIV/AIDS-related information.

The majority of the respondents in the current study, 63.2% practiced multiple sequential partnerships in the past one year prior to the study, which is higher than that obtained among senior secondary school female students in Mbonge Cameroon, 32.0% [9] and that obtained among high school students in Tiko, Cameroon, 42.8% [6]. Up to 38.1% practiced multiple concurrent sexual partnerships at the time of the current study, which is higher than results obtained among young people in Bamenda, Cameroon, 27.0% [18] and senior secondary school students in Mbonge, Cameroon, 9.3% [9]. These disparities point to the fact that behavior change interventions regarding sexual risk behaviors in Cameroon are not being targeted at migrant road construction workers. These sexual risk behaviors may expose road construction workers to the risk of contracting HIV. However, 43.2% of the respondents in the current study used condoms consistently during sexual intercourse, which is higher than that obtained among senior secondary school students in Mbonge, Cameroon, 29.6% [9]. This improvement though not significant, might be attributed to the health promotional interventions that have taken place at different levels in Cameroon over time. Although there is an increase in condom use compared to previous studies, there is the need for more behavior change interventions targeting road construction workers, with focus on 100% condom use to bring about sexual behavior change and to prevent HIV transmission.

The risky sexual behaviors exhibited by the migrant road construction workers in the current study is in agreement with what was reported among male migrant factory workers in Northern India and among construction enterprise workers in Northwest Ethiopia [19].

These risky sexual behaviors exhibited by the road construction workers in the current study might be attributed to inadequate knowledge of the modes of transmission and prevention of HIV/AIDS and the low perceived HIV infection risk [20-22].

Adequate knowledge regarding HIV/AIDS is defined as "having the ability to recall facts concerning causes, transmission and prevention of the disease" [23]. In agreement to other studies among youths in Cameroon [7,9,24], this study reported

inadequate knowledge regarding HIV/AIDS among road construction workers in the Southwest region of Cameroon. Only a few respondents manifested accurate knowledge of some aspects of HIV/AIDS transmission (unprotected sexual intercourse) and prevention (consistent condom use, sexual abstinence and being faithful to one uninfected sexual partner) (Table 2). This inadequate knowledge as reported in the current study is also in contrast with the adequate knowledge regarding HIV/AIDS reported among construction workers in the Kathmandu Valley in Nepal [3]. The adequate knowledge among construction workers in Nepal could be due to health promotional interventions carried out in the construction industry in that country. However, the results of the current study are in agreement with those reported among migrant workers in China [25,26]. Such inadequate knowledge regarding HIV/AIDS among the migrant road construction workers in the current study could deter them from practicing safer sexual behaviors. This inadequate knowledge regarding HIV/AIDS from the current study shows the need for extensive and efficient behavioral change communication programs with emphasis on education on HIV/AIDS and safe sexual behaviors targeting road construction workers in Cameroon.

Knowledge of HIV/AIDS plays a key role as a predictor of HIV risk behavior [12]. Studies have demonstrated that HIV/AIDS knowledge is associated with consistent condom use. Low level of knowledge about transmission and prevention of HIV/AIDS among adolescents is a predictor of nonuse or inconsistent use of condoms [10].

In contradiction to other reports among youths in Kumba, Cameroon [13] in Benin, Nigeria [27], in Lusaka, Zambia [28] and among construction workers in Nepal [3], which found a significant association between adequate knowledge regarding HIV/AIDS and safer sexual behaviors, the current study did not find any significant associations between sexual behaviors and knowledge regarding HIV/AIDS. This implies that adequate knowledge regarding HIV/AIDS is a necessary, but by no means a sufficient condition for the consistent adoption of safe sexual practices among migrant road construction workers in Cameroon.

The findings of this study reveal inadequate knowledge regarding HIV/AIDS among migrant road construction workers in the Southwest region of Cameroon. However, they practiced risky sexual behaviors, which are not based on insufficient knowledge regarding HIV/AIDS as revealed in the current study. Therefore, providing adequate knowledge regarding HIV/AIDS to road construction workers in the current study might not be a necessary condition for sexual behavior change. Health promotion programs on sexual abstinence and safer sexual practices are crucial in the fight against HIV/AIDS among migrant road construction workers in Cameroon.

LIMITATION

The study has some limitations. Firstly, the sample size is small and since the study was conducted in only one region, it may not be generalized to other regions of Cameroon. Secondly, the study being cross-sectional in nature, cause-effect relationships could

not be ascertained. Also, since HIV/AIDS and sexual behaviors are very sensitive issues, the respondents might give answers they think the researcher would like, or answers that would downplay their sexual behaviors. However, assurance of confidentiality of the responses and the presence of research facilitators during data collection to answer possible questions raised by the respondents, minimized these limitations.

CONCLUSION

The current study revealed that migrant road construction workers in rural Cameroon manifested inadequate knowledge regarding HIV/AIDS, and practiced sexual risk behaviors and therefore are at risk of HIV/AIDS transmission. Although there were no significant associations between sexual behaviors and knowledge regarding HIV/AIDS, intervention programs on promoting safe sexual practices targeted at migrant road construction workers, and programs to increase their knowledge levels regarding HIV/AIDS are strongly recommended. Therefore, the hypothesis that adequate knowledge regarding HIV/AIDS is associated with safe sexual practices to prevent HIV/AIDS transmission among road construction workers is rejected at the 0.05 level of significance.

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DISCLOSURE

The authors declare that they have no competing interests.

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