PERSONAL AND BEHAVIOURAL CHARACTERISTICS AND RISK OF HIV TRANSMISSION AMONG MEN AND WOMEN IN AN URBAN FISHING SETTING IN GHANA

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Abstract

Background: HIV surveillance surveys are designed to track trends in HIV and AIDS related knowledge, attitudes and behaviours in sub-populations at particular risk of infection and link the behaviour to biological surveillance. This survey determined personal characteristics, high risk sexual behaviours and HIV perception and testing experience among men and women in an urban fishing community in Ghana.

Methods: A cross-sectional community survey was conducted in 2013 among men and women in two fishing communities (Chorkor and James Town) in Accra. In all, 554 subjects (≥18 years) were involved, 264 in Chorkor and 290 in James Town. Data on personal and behavioural characteristics, high risk sexual behaviours, HIV perception and testing experience among men and women were collected with a structured questionnaire. Descriptive statistics and Chi square test were used for the analysis at 95% significant level, using SPSS version 21.

Results: Of 554 subjects, 329 (59.4%) were females, and median age was 32 years. A higher proportion of women had no formal education, relatively more men were employed and earned statistically significant higher monthly income than women (72.2% vs. 65.9%, p< 0.001). More working men were involved in itinerant occupations compared to women (46.1% vs. 22%; p< 0.001). Half of all respondents have had sexual intercourse less than a month prior to survey, however, only less than a third 153 (28.5%) used condom during the last intercourse. High risk HIV sexual behaviour was more common in younger age groups (> 30 years), those living with partners, those with low education, those currently employed, and those without health insurance. It was also higher in those who did not perceive themselves as being at risk of HIV, have never tested for HIV and who were not members of any social groups or clubs.

Conclusion: The survey indicated important personnel and behavioural characteristics that are very important for programme planning and control. Targeted health promotion messages, behaviour change communication, and increased engagement with communities and groups are necessary to capture vulnerable men and women in high risk settings. Behavioural surveillance surveys should be considered essential component of national control efforts.

Key Words: Behavioural Surveillance Survey, Sexual Risk Behaviour, Urban Community, Ghana

Introduction

The 2013 HIV prevalence in Ghana was 1.30% in the adult population and 1.9% among pregnant women aged 15-49 years[1]. In Ghana, there is a higher HIV prevalence in urban sites compared to rural sites, as is true in other parts of Africa and also among at-risk groups (commercial sex workers and clients at STI clinics)[1,2]. The National AIDS/STI Control Programme (NACP) of Ghana Health Service (GHS) has been the lead agency in the health sector response to HIV and AIDS in Ghana[3]. The programme has been involved in behaviour change communication programmes, HIV testing and counselling, provision of antiretroviral therapy, prevention of mother-to-child transmission of HIV, early infant diagnosis of HIV, prevention and management of STIs including condom use, blood and blood products safety, advocacy and research3. Generation and estimation of HIV prevalence data for programme activities and planning in Ghana are done using United Nations Programme on AIDS (UNAIDS)/ World Health Organization (WHO) recommended methods[1,4,5]. The determination of HIV prevalence is primarily based on sentinel surveillance among pregnant women attending Antenatal Care (ANC) clinics which has been conducted annually since 1992 and a national population based survey that includes HIV testing within the Demographic and Health Surveys[1]. The method used to calibrate the HIV sentinel survey data is based on the Estimation and

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Projection Package (EPP) software of the UNAIDS[1, 4,5]. The HIV sentinel survey though very useful is limited to only biological methods of assessment6. The WHO and UNAIDS have promoted the adoption of second generation HIV surveillance as a strategy for addressing limitations of the first-generation procedure such as HIV sentinel surveys[1]. The second-generation HIV surveillance is designed to track trends in HIV and AIDS related knowledge, attitudes and behaviours in sub-populations at particular risk of infection and link the behaviour to biological surveillance so as to enhance the explanatory power of biological surveillance[6]. Results of these surveys provide evidence of national HIV programme performance and impacts, and highlight persistent problem areas. In addition, they identify specific behaviours in need of change and the appropriate interventions for priority populations[6]. The goal of this analysis was to determine personal characteristics, high risk sexual behaviours and HIV perception and testing experience among men and women in two densely populated youthful urban communities in the coastal part of Accra, Ghana. It was to identify specific behaviours in need of change in line with national efforts to combat HIV infection among this priority population.

Methods

Survey design

This was a cross-sectional community survey conducted over a four-week period in September-October 2013 in an urban fishing setting in Accra, Ghana.

Survey site

The survey was conducted in Chorkor in the Ablekuma South Sub-metropolitan area and James Town in the Ashiedu Keteke Sub-metropolitan area of Accra, Ghana. These urban fishing settings are in the southern part of Accra, the capital city of Ghana and are characterized by high population densities, large transitory and large youthful populations[7].

Survey Population and sample size

The survey population were males and females 18 years and above in the communities. Subjects were selected from households within the communities who consented to be part of the survey. The appropriate sample size for the survey was determined by the estimated proportion of community members ever tested for HIV (level of willingness to test), desired level of confidence of 95% and acceptable margin of error of 5%. The Ghana Demographic and Health Survey of 2008, found that 21% of females and 14% of males (aged 15-49 years) have ever been tested for HIV[7,8] A 20% willingness to test for HIV among community members was used to estimate the minimum sample size. Accounting for contingencies - non-response, refusals and incomplete information, the minimum sample size was 520 (260 in each community). In all, 554 subjects were involved, 264 in Chorkor and 290 in James Town.

Sampling Methods

The survey employed the modified World Health Organization (WHO) cluster sampling method to select eligible subjects.

Each neighbourhood was segmented into four clusters by natural/geographical boundaries. A cluster was chosen by a simple random sampling technique and all eligible subjects within households who consented were included. Houses in the two communities have standard house numbering systems, and households within a house were numbered serially. If more than one household existed within a house, then the first household interviewed was designated as (house number/ 001), the second household interviewed was designated as (house number/ 002), and serially if there were more eligible households within the same house. All households within a selected cluster were eligible for inclusion. One adult member of each household within a house was interviewed, and this continued until the sample size was obtained. The field workers were educated thoroughly on how to assign the codes to households in the two communities.

Data collection instruments

Data collection tool for the study was a structured questionnaire. Data collected included; demographic and socioeconomic characteristics and personal sexual behavioural characteristics. The questionnaire was pre-tested at Bukom, a neighbourhood in the Ashiedu-Keteke Sub-metropolitan area of Accra with similar characteristics to the two communities surveyed.

Data Handling

All data was treated with a high level of confidentiality. Unique identifiers and codes were employed to de-personify the participants and were used for computer-based data entry. In all cases, study forms, completed questionnaire and other survey documentations were kept securely locked. Computerized records of the survey were kept in locked files. These documents were accessible to the principal investigator only.

Data analysis

Outcome measures of interest among the demographic and socioeconomic factors, personal sexual behavioural characteristics, perceived risk for HIV and testing experience were analyzed using descriptive statistics (e.g. proportions, frequencies, ratios). Significant differences in categorical outcome measures were analyzed using Chi square test, at the 95% significant level and p-value< 0.05. SPSS version 21 was used for the analysis. Engagement in casual sex was used as the dependent variable for high risk HIV behaviour and was assessed per demographic, socioeconomic and personal characteristics of community members. In this survey a regular partner was someone the respondent was in a relationship with or felt committed to above anyone else while a casual partner was someone the respondent did not feel committed to or did not know very well.

Ethical issues

Ethical clearance was obtained from the University of Ghana Medical School Ethical and Protocol Review Committee (MS-Et/M.11-P.5.8/2011-2012) and Brown University Institutional Review Board (#1301000744). Trained interviewers administered the questionnaire in the local language of members of the community. Participants in the survey were made to sign a written informed consent form and a waiver of written consent for those participants who were illiterate was obtained.

Results

Overall, 554 subjects were involved in the survey, 225 males and 329 females, with a male to female ratio of 1:1.5. The overall median age was 32 years (34years among males and 30 years among females) as shown in Table1.

Table 1: Age and sex characteristics of subjects in the urban fishing setting, Accra, Ghana

Age groups (years)	Sex		Total (%)
	Male (%)	Female (%)	
<20	43 (19.1)	56 (17)	99 (17.9)
21-30	72 (32)	134(40.7)	206(37.2)
31-40	56 (24.9)	63 (19.1)	119 21.4)
41-50	30 (13.3)	39 (11.9)	69 (12.5)
51-60	15 (6.7)	24 (7.3)	39 (7)
> 60	9 (4)	13 (4)	22 (4)
Total	225 (100)	329 (100)	554 (100)

Most respondents (men and women) had primary to secondary level education, however relatively higher proportion of women had no formal education as shown in Table 2. Nineteen (3.4%) of the 554 respondents had University/ tertiary level education. Seventy-eight (34.7%) of men and 147 (44.7%) of women were married. However, close to a third of men 73 (32.4%) and a quarter of women 83 (25.2%) were single. Majority of men and women in the communities were Christians, and were mostly Ga / Ga Dangme by ethnicity. Relatively more men were employed than women (72.2% vs. 65.9%, although the difference was not statistically significant). Among the working group, men earned significantly higher monthly income than women as indicated in Table 2. More working men were involved in activities which took them outside the community more often compared to women (46.1% vs. 22%; $p< 0.001$). Less than half of both men and women in the community had health insurance. More men belonged to social clubs in the communities compared to women (36.9% vs. 24.6%).

Table 2: Basic demographic and socioeconomic characteristics of members of the urban fishing setting in Ghana.

Characteristic	Male (%)	Female (%)	Total (%)	Chi Square (P- value)
Educational Level				
No Formal Education	16(7.1)	39(11.8)	55(10)	
Primary	55(24.4)	92(62.6)	147(26.5)	
Middle/JHS	62(27.6)	107(32.5)	169(30.5)	
Secondary/High School	63 (28)	63(19.1)	126(22.7)	
University/ College	10 (4.4)	9 (2.7)	19 (3.4)	
Vocational/ Commercial/ Technical	19 (8.4)	19 (5.8)	38 (6.9)	
Total	225(100)	329(100)	554 (100)	
Marital status				
Married	78(34.7)	147(44.7)	225(40.6)	
Divorced	11 (4.9)	5 (1.5)	16 (2.9)	
Widowed	3 (1.3)	10 (3)	13 (2.3)	
Separated	19 (8.4)	33 (10)	52 (9.4)	
Cohabitating	33(14.7)	42 (12.8)	75 (13.5)	
Single	73(32.4)	83 (25.2)	156(28.2)	
Others	8 (3.6)	9 (2.7)	17 (3.1)	
Total	225(100)	329 (100)	554(100)	

Continuation of Table 2: Basic demographic and socioeconomic characteristics of members of the urban fishing setting in Ghana.

Characteristic	Male (%)	Female (%)	Total (%)	Chi Square (P- value)
Religion				
Christian	191 (85.3)	297 (90.3)	488 (88.2)	
Muslim	13 (5.8)	16 (4.9)	29 (5.2)	
Traditional	3 (0.9)	1 (0.3)	3 (0.5)	
No Religion	18 (8)	15 (4.6)	33 (6)	
Total	225 (100)	329 (100)	554 (100)	
Ethnicity				
Ga/ Dangme	167 (74.2)	244 (74.2)	411 (74.2)	
Akan	40 (17.8)	60 (18.2)	100 (18.1)	
Ewe	10 (4.4)	11 (3.3)	21 (3.8)	
Guan	2 (0.9)	3 (0.9)	5 (0.9)	
Mole/Dagbani	5 (2.2)	10 (3.0)	15 (2.7)	
Others	1 (0.4)	1 (0.3)	2 (0.4)	
Total	225 (100)	329 (100)	554 (100)	
Employment Status				
Employed	162 (72.2)	217 (65.9)	379 (68.4)	
Unemployed	63 (27.8)	112 (34.1)	175 (31.6)	2.20 (0.136)
Total	225 (100)	329 (100)	554 (100)	
Total Monthly income (Ghana cedis)*				
<100 (<$51.3)	40 (28)	76 (37.9)	116 (33.8)	
Between 100 and 200 ($51.3-$102.6)	51 (35.7)	72 (35.5)	123 (35.5)	**13.91 (0.008)**
Between 200 and 500 ($102.6 $256.6)	34 (23.8)	48 (23.6)	82 (23.7)	
Between 500 and 1000 ($256.6 $512.8)	14 (9.8)	4 (2)	18 (5.2)	
> 1000 (>$512.8)	4 (2.8)	2 (1)	6 (1.7)	
Total	143 (100)	202 (100)	345 (100)	
Occupation or daily activities involve travelling outside Accra				
Yes	75 (46.1)	48 (22)	122 (31.8)	**24.54 (0.001)**
No	87 (53.9)	169 (78)	257 (68.2)	
Total	162 (100)	217 (100)	379 (100)	
Have Health Insurance				
Yes	100 (44.4)	152 (46.2)	252 (45.5)	0.17 (0.684)
No	125 (55.6)	177 (53.8)	302 (54.5)	
Total	225 (100)	329 (100)	554 (100)	
Member of a social club in community				
Yes	83 (36.9)	81 (24.6)	164 (29.6)	
No	142 (63.1)	248 (75.4)	390 (70.4)	**9.65 (0.002)**
Total	225 (100)	329 (100)	554 (100)	

*** The currency exchange rate at time of data collection was $1= GHc 1.95**

In all, half of all respondents have had sexual intercourse less than a month prior to the survey relatively higher among the females (176; 53.5% vs. 103; 45.8%) i.e. most respondents were sexually active. However, only less than a third of respondents 153 (28.5%) used condom during the last intercourse, slightly higher among males (80; 35.6% vs. 73 21.5%) as shown in Table 3. Overall, close to a third of all respondents had two or more sexual partners within the last 12 months as shown in Table 3. Men had a relatively higher proportion than the women (34.7% vs. 24.3%). More women have had only one sexual partner in the last 12 months compared to men (157; 47.7% vs. 96; 42.7%). More men had two or more regular sexual partners over the past 12 months compared to women, this difference in number of sexual partners between

the sexes was statistically significant (P = 0.003) as demonstrated in Table 3. A slightly higher proportion of men had engaged in casual sexual behaviour over the last 12 months compared to women (35.1% vs. 31.2%), this gender difference was statistically not significant. In addition, close to a third of both men and women have had sex in exchange for money or favour in last 12 months, 161 (29.2%), slightly higher among the women (97; 29.5% vs. 64; 28.3%). In addition, a relatively higher proportion of women have had sex more than once in exchange for money or favour in last 12 months (28.2% vs. 25.9%). Regarding HIV risk and testing, relatively higher proportion of men perceived themselves as being at risk of HIV (40.4% vs. 35.9%) and yet a significantly higher proportion of women had ever tested for HIV compared to men (42.2% vs. 28.6%, P= 0.001).

Table 3: Sexual risk behaviours and HIV risk perception among men and women of the urban fishing setting in Ghana

Characteristic	Male (%)	Female (%)	Total (%)	Chi square *(p-value)
Last time of sexual intercourse				
< 1 month	103 (45.8)	176 (53.5)	279 (50.4)	
Between 1 and 3 months	32 (14.2)	52 (15.8)	84 (15.2)	
Between 3 and 6 months	26 (11.6)	20 (6.1)	46 (8.3)	**20.91 (0.004)**
Between 6 and 12 months	12 (5.3)	9 (2.7)	21 (3.8)	
> 12 months	12 (4.9)	27 (8.2)	39 (6.9)	
Others (not applicable)	40 (17.7)	45 (13.7)	85 (15.4)	
Total	225 (100)	329 (100)	554 (100)	
Used condom during last intercourse				
Yes	80 (35.6)	73 (21.5)	153 (28.5)	**16.22 (0.001)**
Total	225 (100)	329 (100)	554 (100)	
Number of sexual partners in last 12 months				
None	51 (22.7)	92 (28)	143 (25.8)	
1	96 (42.7)	157 (47.7)	253 (45.7)	
2	42 (18.7)	45 (13.7)	87 (15.7)	12.25 (0.060)
3	13 (5.8)	19 (5.8)	32 (5.8)	
4 or more	23 (10.2)	16 (4.8)	39 (7)	
Total	225 (100)	329 (100)	554 (100)	
Number of regular partners in last 12 months				
None	50 (22.2)	90 (27.4)	140 (25.3)	
1	131 (58.2)	211 (64.1)	342 (61.7)	
2	35 (15.6)	21 (6.4)	56 (10.1)	**18.16 (0.003)**
3	4 (1.8)	6 (1.8)	10 (1.8)	
4 or more	5 (2.2)	1 (0.3)	4 (1.1)	
Total	225 (100)	329 (100)	554 (100)	
Number of casual sex partners in last 12 months				
None	146 (64.9)	226 (68.7)	372 (67.1)	
1	29 (12.9)	61 (18.5)	90 (16.2)	
2	22 (9.8)	20 (6.1)	42 (7.6)	10.57 (0.067)
3	14 (6.2)	12 (3.6)	26 (4.7)	
4 or more	14 (6.2)	10 (3)	24 (4.3)	
Total	225 (100)	329 (100)	554 (100)	

p-value is for engagement in casual sex or otherwise and not by sex

Continuation of Table 3: Sexual risk behaviours and HIV risk perception among men and women of the urban fishing setting in Ghana

Characteristic	Male (%)	Female (%)	Total (%)	Chi square *(p-value)
Number of partners you had sex with in exchange for money or favour in last 12 months				
None	161 (71.6)	232 (70.5)	393 (70.9)	
1	31 (13.8)	58 (17.6)	89 (16.1)	
2	12 (5.3)	14 (4.3)	26 (4.7)	3.34 (0.765)
3	10 (4.4)	13 (4)	23 (4.2)	
4 or more	11 (4.8)	12 (3.6)	23 (4.2)	
Total	225 (100)	329 (100)	554 (100)	
Number of times you had sex in exchange for money or favour in last 12 months				
None	167 (74.2)	236 (71.7)	403 (72.7)	
1	24 (10.7)	44 (13.3)	68 (12.3)	
2	13 (5.8)	19 (5.8)	32 (5.8)	
3	5 (2.2)	8 (2.4)	13 (2.3)	4.06 (0.669)
4 or more	16 (7.2)	22 (6.7)	38 (6.9)	
Total	225 (100)	329 (100)	554 (100)	
Do you perceive yourself as being at risk of acquiring HIV?				
Yes	91 (40.4)	118 (35.9)	209 (37.7)	
No	134 (59.6)	211 (64.1)	345 (62.3)	3.38 (0.275)
Total	225 (100)	329 (100)	554 (100)	
Ever Tested for HIV				
Yes	64 (28.6)	139 (42.2)	203 (36.7)	
No	161 (71.4)	190 (57.8)	351 (63.3)	**10.73 (0.001)**
Total	225 (100)	329 (100)	554 (100)	

p-value is for engagement in casual sex or otherwise and not by sex

Table 4: High Risk sexual behaviour and personal characteristics of members of the urban fishing community

Characteristic	High Risk sexual behaviour - casual sex in past 12 months		Total (%)	Chi Square (P- value)
	No	Yes		
Age				
<20 years	60 (15.9)	40 (22.7)	100 (18.1)	
21-30 years	112 (29.8)	90 (51.1)	202 (36.7)	
31-40 years	95 (25.3)	25 (14.2)	120 (21.7)	**39.6 (0.001)**
41-50 years	57 (15.1)	12 (6.8)	69 (12.4)	
51-60 years	34 (8.9)	6 (3.4)	40 (7.1)	
> 60 years	20 (5.1)	3 (1.7)	23 (4.0)	
Total	378 (100)	176 (100)	554 (100)	
Educational level				
No formal education	31 (8.1)	24 (13.1)	55 (9.5)	
Low education (Primary/JSS/Middle school)	222 (59.3)	92 (51.7)	314 (57.0)	5.00 (0.08)
High education (Secondary/Vocational /Technical)	122 (32.6)	63 (35.2)	185 (33.5)	
Total	375 (100)	179 (100)	554 (100)	
Employment status				
Employed	234 (61.6)	105 (60.3)	339 (61.2)	
Unemployed	146 (38.4)	69 (39.7)	215 (38.8)	1.31 (0.25)
Total	380 (100)	174 (100)	554 (100)	

Continuation of Table 4: High Risk sexual behaviour and personal characteristics of members of the urban fishing community

Characteristic	High Risk sexual behaviour - casual sex in past 12 months		Total (%)	Chi Square (P- value)
	No	Yes		
Marital Status				
Living with partner	205 (54.6)	93 (52.3)	295 (53.8)	0.25 (0.614)
Living without partner	170 (45.4)	86 (47.7)	253 (46.2)	
Total	375 (100)	179 (100)	554 (100)	
Religion				
Christian	321 (85.1)	161 (91.0)	482 (87.0)	
Muslim	22 (5.8)	7 (4.0)	29 (5.2)	4.32 (0.365)
No Religion	26 (6.9))	6 (3.4)	32 (5.8)	
Traditional/ Other	8 (2.1)	3 (1.7)	11 (2.0)	
Total	377 (100)	177 (100)	554 (100)	
Health Insurance status				
Yes	185 (48.9)	69 (39.2)	254 (45.8)	**4.55 (0.033)**
No	193 (51.1)	107 (60.8)	300 (54.2)	
Total	378 (100)	176 (100)	554 (100)	
Member of a social club in community				
Yes	119 (31.2)	47 (26.7)	166 (29.7)	
No	259 (68.8)	129 (73.3)	388 (70.3)	1.15 (0.284)
Total	378 (100)	176 (100)	554 (100)	
Ever tested for HIV				
Yes	165 (43.7)	40 (22.7)	205 (36.9)	
No	213 (56.3)	136 (77.3)	349 (63.1)	**22.47 (0.001)**
Total	378 (100)	176 (100)	554 (100)	
Ever tested for HIV with past 12 months				
Yes	79 (48.2)	17 (42.5)	96 (47.1)	
No	85 (51.8)	24 (57.5)	109 (52.9)	0.42 (0.519)
Total	164 (100)	41 (100)	205 (100)	
Perceives oneself as being at risk of acquiring HIV				
Yes	130 (34.1)	80 (45.5)	210 (37.8)	
No	248 (65.9)	96 (54.5)	344 (62.2)	**6.52 (0.011)**
Total	378 (100)	176 (100)	554 (100)	

High risk sexual behaviour (engagement in casual sex in the past 12 months) was more common in the more younger age groups (30 years or less) and this was statistically significant, P = 0.001. Casual sexual encounters were more common (although not statistically significant) in those who were living with partners, those with low education (Primary/JSS/Middle school completed or less), and those currently employed as indicated in Table 4.

Interestingly, high risk sexual behaviour was significantly more common in those without health insurance (P = 0.033), significantly higher among community members who did not perceive themselves as being at risk of HIV (P = 0.011), as well as among those who have never tested for HIV (P = 0.001) nor tested for HIV in the past 12 months. In addition, men and women who were not members of a social club in their community had higher proportion of those who engaged in casual sexual behaviours.

Discussion

The WHO and UNAIDS have promoted the adoption of second generation HIV surveillance designed to track trends in HIV and AIDS related knowledge, attitudes and behaviours in sub-populations at particular risk of infection and link the behaviour to biological surveillance, which is currently the method used for assessing HIV prevalence and trend of the epidemic in Ghana[5,6].The population involved in this survey were young, overall median age was 32 years (34 years among males; 30 years among females) which reflects the population most at risk of HIV in Ghana1. Not surprisingly, the survey identified a higher proportion of women to have no formal education, relatively more men were employed than women and that among the working group men earned statistically significant higher monthly income than women. These socio-demographic characteristics of the urban fishing setting is directly in sync with that of the national population as indicated by the Ghana

Demographic and Health Survey and the Ghana Living Standards Survey[8,9]. Interestingly more working men were involved in activities which took them outside the community more often compared to women, and this has significance for HIV risk behaviours, testing experience and service provision. Studies have indicated that itinerant nature and frequent male mobility may require special HIV testing and service provision avenues[10, 11, 12]. In addition, previous research in Ghana have indicated that community based testing programmes (i.e. Know Your Status KYS) seem to be more attractive for men[7, 11]. Its disassociation from the health facility makes it easier for men to access services without being seen as weak or sick which is consistent with traditional masculinity ideology that usually cast men as being invulnerable to disease and not needing health care[13]. The national control programme needs to consider the iterant nature of male professions in such high risk communities and structure and situate male focused HIV testing programmes in male-dominated occupations. In addition, developing routine HIV testing in the casualty and emergency units, inpatient wards and general outpatient departments of health facilities may improve the capture of men[7,14]. In all, half of all respondents have had sexual intercourse less than a month prior to the survey, however, only less than a third of these used condom during the last intercourse. It is always difficult to assess condom use (both male and female) vis a vis the number of condoms distributed in the population. Actual usage is demonstrated through behavioural surveillance surveys[6] and it is essential that such surveillance surveys be conducted in high risk population groups and communities so as to identify specific behaviours in need of change in line with national efforts to combat HIV infection among these priority population groups. Though men exhibited high sexual risk behaviours, and relatively higher proportion of men perceived themselves as being at risk of HIV , yet a significantly lesser proportion of men had ever put this risk perception to test by tested for HIV compared to women (28.6% vs. 42.2%, P= 0.001). These differences in perception and testing experience provide a tool for developing gender focused health promotion messages in high risk population groups and communities in the country. Community engagement and increased health and behaviour change communication by the Ghana Health Service through the NACP and other agencies involved in HIV and AIDS activities in Ghana, is imperative[7]. Community engagement and working through organized groups (men and women support groups and clubs) in these settings may be helpful. This survey showed higher proportion of community members who engaged in casual sexual behaviours were men and women who were not members of any social group or club in their community. It is instructive to note that a relatively higher proportion of women have had sex in exchange for money or favour more than once in the previous 12 months.

This demonstrates increased vulnerabilities and gender differences in risk of HIV due to socioeconomic disparities in these urban fishing settings in Ghana. Anarfi and colleagues have demonstrated similar findings in some communities in Ghana over a decade ago[15]. They demonstrated that itinerant trading is a major economic activity for women in West Africa. Itinerant women traders appear highly vulnerable, as women and as highly mobile people and are usually exploited for the sexual gratification of the men with whom they come into contact[15]. In fishing settings such as that for the current study, 'transactional sex' has been documented[16]. It occurs when women who a regular customers of particular fishermen need to provide sexual gratification to these men to ensure continued supply of fish for their trading activities[16]. The attempt to reduce the spread of HIV and AIDS through education has to target not only itinerant men but to include itinerant women traders as well, at the points of transaction and within high risk communities. The survey has also provided important personal and behavioural characteristics that should inform and offer targets points for national control strategies in high risk communities. High risk sexual behaviour (engagement in casual sex in the previous 12 months) was more common in the more younger age groups (30 years or less), in those who were living with partners, those with low education (Primary/JSS/Middle school completed or less) , and those currently employed. A potential explanation for these observations may be that those with less education may be less aware of the risk of HIV and that those currently employed may have the wherewithal to pay for casual sex. Counter intuitively, we found in these communities that those living with their partners had engaged in casual sexual encounters more often in previous 12 months compared to those living without partners. Could it be that those in relationships and living with partners use it as a cover to engage in casual sexual activities or that they have more financial responsibilities and are compelled to solicit for money through any means? This observation warrants in depth qualitative assessment in such high risk communities. Another intriguing observation was that, high risk sexual behaviour was significantly more common in those without health insurance (P = 0.033), among community members who did not perceive themselves as being at risk of HIV (P = 0.011), and among those who have never tested for HIV (P = 0.001) nor tested for HIV in the previous 12 months. These findings are critical and demonstrate that community members who are less health conscious and perceive themselves as invulnerable may need to be targeted specifically in the fight against HIV transmission. Behaviour change communication strategies and targeted health promotion activities in priority populations are imperative.

Limitation

Assessment of willingness to test and testing experience and casual sexual activities were based on subjective recall and responses from the subjects. Some respondents' way have over stated or understated their sexual behaviour due to sociocultural and religious belief systems. The survey had no objective way of validating the veracity of information provided by respondents. This was beyond the scope of the survey, however the authors believe the information provide useful pointers in the strategic planning for national control efforts.

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Conclusion

This community based surveillance indicated important personnel and behavioural characteristics that is very important for programme planning and control. High risk HIV sexual behaviour was common among men and women in the urban fishing communities. It was more common in younger age groups (30 years or less), those living with partners, those with low education, those currently employed, and those without health insurance. In addition, it was higher in community members who did not perceive themselves as being at risk of HIV, those who have never tested for HIV nor tested for HIV in previous 12 months and those who were not members of any social groups or clubs. Targeted health promotion messages and behaviour change communication, increased engagement with communities and with men and women community groups as well as deployment of community and health facility based HIV testing and service avenues are necessary to capture vulnerable men and women in such high risk population groups. Behavioural surveillance surveys in high risk population groups should be considered essential component of national control efforts to identify specific behaviours in need of change to combat HIV infection in Ghana

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