International Invention of Scientific Journal
Available Online at http://www.iisj.in
• eISSN: 2457-0958
Volume 04 | Issue 07 | July, 2020 |

HIV/AIDS Knowledge, Attitude Towards Preventive Behavior and Risk Perceptions Among Men of Bertha Population Living in Polygamous and Monogamous Marriages in Assosa Woreda, Benishangul Gumuz Region

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Article Received 01-05-2020 , Accepted 01-07-2020 , Published 31-07-2020

Abstract: Over 40.3 million people were living with the virus and of those, more than 70% were in sub-Saharan Africa. Traditional sexual practices including polygamy and promiscuity were driving rampant HIV/AIDS. Polygamy was the main transmission means for HIV, but a defensive attitude had been maintained by the cultural gate-keeper (polygamy doesn't contribute to the spread of HIV). The objective of this study is to measure and compare HIV/AIDS knowledge, attitude towards preventive behavior and risk perception among men bertha population. A community based comparative cross-sectional study was used. The study was carried out from March 21/2012 to April 11/2012. Participant's knowledge of HIV/AIDS and attitude towards HIV/AIDs prevention behavior was ranged from 2-26 with a mean of 17.27 (SD=4.59) and 0-4 with a mean of 2.61(SD=1.42) respectively. Seventy (40.5%) polygamous and 159 (89.3%) monogamous men have had knowledge about HIV/AIDS. Regarding attitude [147 (83.1%) of monogamous men and 55(31.8%) of polygamous men] had a favorable attitude towards HIV prevention behavior. Similarly, large numbers of monogamous were able to identify the risk of contracting HIV [82 (48%) polygamous men and 127 (72.16%) monogamous men]. Monogamous types of marriage were 8.59, 5.12, and 2.50 times more knowledgeable, had a positive attitude towards HIV prevention behavior, and able to perceive a risk of contracting HIV/AIDS than polygamous counterparts respectively. As knowledge status increases both participants' attitudes towards HIV prevention behavior and the ability to perceive the risk of contracting HIV/AIDS also increase. Study populations with high knowledge of HIV/AIDS also have had2.18 and 2.50 times more positive attitudes towards HIV prevention behavior and perceived risk of contracting HIV/AIDS than those non-knowledgeable respondents, respectively. Therefore, the monogamous population was by far more knowledgeable, had a positive attitude towards HIV/AIDS prevention behavior, and perceived risk of contracting HIV/AIDs than the counterpart.

Keywords: HIV, Knowledge, Attitude, Risky Perception, Risk Behaviors, Assosa Woreda, Benishangul Gumuz

1. Introduction

Worldwide, HIV/AIDS poses an enormous challenge on the survival of mankind. Over 40.3 million people were living with the virus and of those more than 70% were in sub Saharan Africa [1]. Traditional sexual practices including polygamy and promiscuity were driving rampant HIV/AIDS where nearly 40% of adults were infected. Studies in Swaziland found that polygamy, widow inheritance, multiple female partners and extramarital relationships viewed as important to increased vulnerability to HIV/AIDS. If one sexual partner in such sexual networks is HIV-positive and sex is unprotected, the practice becomes an important driver of the pandemic. Several studies had identified polygamy as a negative influence on spread of HIV [2]. The first HIV case in Ethiopia was reported in 1984. Since then, HIV/AIDS has become a major public health concern in the country, the leading Government of Ethiopia to declare a public health emergency in 2002 and 2007 estimated adult HIV/AIDS prevalence in Ethiopia was 2.1 percent. Although the epidemic is currently stable, HIV/AIDS remains a major development challenge for Ethiopia.

Poverty, food shortages, limited capacity of the health system, difficulty of accessing most-at-risk populations (MARPs), limited data on other potentially high-risk and vulnerable populations, gaps in surveillance and research activities, low uptake of antenatal care, prevention of mother-to-child transmission and other socio-economic factors amplify the impact of the epidemic [3, 4].

Ethiopia has a large and very vulnerable population, with an estimated 15 percent of the population living below the poverty line. HIV/AIDS is one of the key challenges for the overall development of the country. Within the individual regions, this testing found the prevailing rate varied from 0.2 in the SNNPR to a high of 6.0 percent in the Gambela Region. The primary mode of HIV transmission in Ethiopia is heterosexual contact. Young women are more vulnerable to infection than young men; urban women are three times as likely to be infected as urban men, although in rural areas the difference between genders is negligible[5,6].

HIV/AIDS prevention programs protect people by helping them reduce the behaviors that put them at risk; having multiple sexual partner and polygamy. Polygamy contributes to spread of HIV in Africa, where the spread is mainly caused by lack of understanding and poverty, concurrent sexual partnerships and HIV sero-discordant relationships are among the highest risk for HIV transmission in sub-Saharan Africa, with women continuing to experience the burden of new HIV infections [4, 5, 7]. Traditional western thinking like respect for elders, strong extended family ties proposes that married couples should not be concerned about acquiring HIV/AIDS, but fidelity is not reality, especially in sub-Saharan Africa. Polygamy is accepted and recognized as a rich cultural tradition in some areas. This promotes the spread of HIV/AIDS and must be dealt with as a risk factor for HIV/AIDS. The factors that determine large epidemics of HIV/AIDS are high frequency of sexual partners, absence of condom use, absence of circumcision of males, and infection with other STDs [2,8].Polygamy, widow inheritance, multiple female partners, and extramarital relationships are increasing vulnerability to HIV [9]. The report also indicates that if one sexual partner in such sexual networks is HIV-positive and sex is unprotected, the practice becomes an important driver of the pandemic. Polygamy is a main a transmission means for HIV, but a defensive attitude has been maintained by the cultural gate-keeper, polygamy doesn't contribute to spread of HIV. But to the contrary study in Kenya show that wife inheritance and polygamy were considered a banner issues for the former generation, the youth today in the rural areas are still caught up in the old tradition that they get married of more than two wives which intern leads to acquiring of HIV and increase the number of orphans. Poverty and culture are hard combatants in the fight against the viral spread[2, 9, 10]. HIV/AIDS is real and is claiming a lot of lives particularly the energetic and working population in our society so a lot more should be done about the campaign to create more awareness and wake up the youth to believe it, particularly those who know of its existence but ignore. Despite sharing used blades and unsterilized equipment's and multiple uses of syringes and needles at the hospitals contributes for the transmission of HIV, 100% of the study participants mentioned the causes and mode of transmission as through unprotected sexual intercourse and blood transfusion. Only a negligible number of them mentioned another cause called Mother-to-Child transmission (MTCT), some affected mothers transfer the disease to their unborn babies and other babies acquire HIV through mothers' breastfeeding. The informants also believed that HIV/AIDS is not curable but treatable. There are drugs such as anti-retroviral that are used for its treatment but because of low awareness not all patients have access to them [11].

Most HIV prevention efforts focus on premarital and extramarital sexual behavior, but in areas with high HIV prevalence the protective needs of married and cohabiting couples are just as great and often go unmet. Condom use by these couples is generally low, with resistance from men and cultural norms commonly cited as barriers to increased use [12]. HIV/AIDS is a major public health concern and cause of death in Africa. Although Africa is home to about 14.5% of the world's population, it is estimated to be home to 67% of all people living with HIV and 72% of all AIDS deaths in 2009. Undisputable fact is that 14 000 people in Sub-Saharan Africa are being infected daily with HIV and 11 000 are dying every day due to HIV/AIDS related illnesses [3].HIV infection remains of major public health importance, with evidence of continuing transmission. Overall, there is no clear indication of a decline in the number of cases being diagnosed each year in Ethiopia. Since 2004, the rate of newly diagnosed cases of HIV reported per 100, 000 population has increased by almost 30%, from 6.6 per 100 000 population in 2004 to 8.5 per 100, 000 in 2009. The cumulative number of people living with HIV/AIDS was 1.475 million. The prevalence of HIV was higher in women than in men (3.8% male and 5% female). The distribution of HIV prevalence between urban and rural population was 12% and 2.6 % respectively, out of which about 96,000 were children under 5 years of age [8]. Despite there was high polygamy practice among these ethnic group the knowledge, Attitude and risk perception of those population about HIV/AIDS was not studied yet in the Benishangul Gumuz Regional State. Therefore, this study is to measure and compare HIV/AIDS knowledge, attitude towards prevention behavior and risk perception among men Bertha population living in polygamous and monogamous marriage in Assosa woreda, Benishangul Gumuz Regional state.

2. Method and Materials

The study was conducted in Benishangul Gumuz Regional State, Assosa woreda which is 676km away from Addis Ababa in the west of Ethiopia. The region had about 909,271 total populations which were divided in to five resident and other settlers. The residents are Bertha (199,303), Gumuz (163,781), Shinasha (60,587), Mao and Komo (23,157) and others settlerslike Amhara (170,132), Oromo (106,275), Tigre

(5562) and Kambata (2161) wereliving in the region. The region had bounders with Oromia in west-south, Amhara in north, Gambela in south and Sudan in west. It had three zones namely Metekel, Assosa and Kamash with a total of 20 woredas, most of which were"*kola and bereha"* except Wombera woreda which was the coldest followed by Mao Komo woreda. This study was conducted in Assosa woreda which has a total population of about 92,724(male 47289 and female 45435) with a land area of 2918sq.km. The temperature ranges from 23^{o}_{c}-31^{o}_{c} and it has 850—1000mm rain fails. The woreda had 74 kebeles (38non-bertha and 36 Bertha kebeles). The study was conducted from March 21/2012 to Apr 11/2012. Community based cross sectional comparative study design was used. The source population of this study was all polygamous and monogamous men Bertha population residing in the study area. The study population was all polygamous and monogamous men Bertha populations who fulfill the inclusion criteria were included in the study. Those who had hearing problem; refuse to participate; unable to communicate and mentally retarded was excluded from the study because those individuals were considered as they were dependent or they were unable to provide accurate information that represents the all population. To determine the sample sizes required to detect a difference in proportion between polygamous and monogamous marriages, two population proportion formula for comparative study was used. At a level of significance (α=5%), power (β=80%) of the test to detect 15% difference in proportion of variable of interest (risk perceptions) among men living in polygamous and monogamous marriages, polygamous to monogamous marriages ratio of 1:1 and proportion of risk perception about HIV/AIDS among monogamous marriage (P_1 =50%) and proportion of risk perception about HIV/AIDS among polygamous marriage (P_2=30%). The final sample size required for the study was 332 and with 10% non-response it was become 366.

$$n_1 = n_2 = \frac{\left[Z_{\frac{\alpha}{2}} \sqrt{2\bar{p}\bar{q}} + Z_{\beta} \sqrt{p_1 q_1 + p_2 q_2} \right]^2}{\Delta^2} = \frac{\left[1.96\sqrt{2 \times 0.4 \times 0.6} + 0.84\sqrt{0.5 \times 0.5 + 0.3 \times 0.7}\right]^2}{0.15^2} \cong 166$$

The study variables of the study had dependent variables: knowledge about HIV/AIDS; attitude towards preventive measure and risk perception/perceived risk of contracting the disease HIV/AIDS. Whereas independent variables were age, educational status, occupational status, Income, religion, peer influence, family pressure, alcohol consumption and type of marriage (Monogamous/Polygamous). Sampling procedure applied for this study was stratified sampling procedure and simple random sampling technique/a lottery method was used to select the study participants from 36 Assosa woreda kebeles in which bertha populations were living. Data collection tools and process: the semi-structured questionnaire was used to collect the data. The semi-structured questionnaire prepared in English then it was translated to Amharic to make it simple to understand for data collector. Ten health extension workers and five kebele managers who complete grade ten were appropriately selected and trained by the investigator both before and after per-test study was carried out. Two Supervisors who were able to drive motor cycle was assigned to monitor the progress.After the completion of field survey, data was checked and coded before entry into the computer then it was cleaned for analysis. Frequency table, charts and regressionstatistical analysis were used. During bi-variate logistic regression analysis variables with p-value of less than 0.25 were selected for multi-variate logistic regression analysis. Statistical package like SPSS and excel was also used. A pretest was conducted in eighteen (5% of the sample size) men polygamy and monogamy practitioner (9 from both groups) was selected which were not included in the final study, so that the data collecting instruments was tested and based on the finding: appropriate correction was taken (including estimation of the time needed for data collection, respondents reaction to questions, respondents ability to understand etc).

Ethically it was cleared by Jimma University, then by explaining objectives of the study and its significance, relevant permission was obtained at regional level and woreda level from the responsible bodies of the health office, woreda and kebele administrative. At individual level after explaining the purpose of the study verbal consent obtained from all participants prior to their participation in the study. Furthermore, respondents informed that their participation in the study was voluntary and that they were not obliged to answer to any questions with which they were discomfort. They were also free to withdraw their participation at any time they want. Participants assured that confidentiality would be maintained and the respondent's name or identifier was not included in the questionnaire.

Operational definitions

Knowledge: Knowledge for this study is to mean that the respondent's capability to be aware of the possible means of transmission, methods of prevention of HIV/AIDS including use of preventive measures for HIV/AIDS and awareness to care for one self and others. Those individual who score greater than 50%of knowledge question (≥16 out of 31) was considered as knowledgeable otherwise not [13].

Attitude: Participants ways of feeling or thinking about HIV/AIDS preventive behaviors like one-to-one marital status, use of condom etc. Those individual who score 75% and more of attitude question (≥3 out of 4) were considered as had favorable (positive) attitude towards HIV preventive behavior otherwise not [13].

Perception: - perception and interpretation of sensory input related to HIV preventive method.

Risk: - A situation in which an action will result in an outcome that is not known with certainty, but the set of possible outcomes and their associated probabilities are known or can be estimated.

Risk perception: - participants perceiving themselves as

susceptible to/contracting HIV infection due to certain exposure/experience or having a particular way of understanding or thinking about HIV/AIDS risk.

Literate: - Study population who were ever enrolled to school.

3. Results

3.1. Socio-Demographic Characteristics

A total of 350 participants were involved in the study had a response rate of 95.6%. The mean age of study participants were 37.35years (SD=21.67). Around forty nine percent of monogamous men's age were between twenty six to thirty five whereas for polygamous men it range from thirty six to forty five **(**43.4%). Educational status of study participant was literate [61.4% monogamous men and 48.6% polygamous men]. Majority of study participants were farmer 328(93.71%), followed by gov't employee 16(4.6%).One hundred sixty five (95.4%) polygamous and 76(42.9%) monogamous had a family size more than five with mean 8.8 (SD=4.8). Compared to monogamous types of marriage high number of polygamous men have had family size greater than five (Table 1).

Table – 1: Socio-Demographic characteristics by current type of marriage in Assosa woreda, West Ethiopia, 2012

Variables		Current type of marriage			
		Monogamous		Polygamous	
		No	%	No	%
Age	16-25	32	18.1	6	3.5
	26-35	87	49.2	62	35.8
	36-45	36	20.3	75	43.4
	46-55	15	8.5	21	12.1
	56-65	4	2.3	7	4.0
	65^{+}	3	60	2	40.0
Educational status	Illiterate	46	26	89	51.4
	Literate	131	61.4	84	48.4
Occupational status	Farmer	158	89.3	170	98.3
	Gov't employee	15	8.5	1	0.6
	Merchant	-	-	2	1.2
	Student	4	2.3	-	-
Income	≤500	158	89.3	142	82.0
	>500	19	10.7	31	18.0
Family size	<5	101	57.1	8	4.6
	≥5	76	42.9	165	95.4
	Total	177	100	173	100

3.2. Knowledge Level on HIV/AIDS, Attitude towards HIV Prevention Behavior and Risk Perception of Study Participant

Knowledge on HIV/AIDS and attitude towards HIV/AIDs prevention behavior was computed it ranged from 2-26 with mean of 17.27 (SD=4.59) and 0-4 with mean of 2.61(SD=1.42) respectively. Seventy (40.5%) polygamous and 159 (89.3%) monogamous men have had knowledge about HIV/AIDS. Regarding to attitude [147 (83.1%) of monogamous men and 55(31.8%) of polygamous men] had favorable attitude towards HIV prevention behavior. Similarly large numbers of monogamous were able to identify risk of contracting HIV [82 (48%) polygamous men and 127 (72.16%) monogamous men](Table 2).

Table – 2: Participant's knowledge level, Attitude towards prevention behavior and Risk perception about HIV/AIDS by current types of marriage in Assosa woreda, West Ethiopia, 2012

Variables		Current types of marriage			
		Polygamous		Monogamous	
		No.	%	No.	%
knowledge status	Not knowledgeable	103	59.5	19	10.7
	Knowledgeable	70	40.5	158	89.3
	Total	173	100	177	100
Attitude towards HIV prevention behaviour	Unfavorable	118	68.2	30	16.9
	Favourable	55	31.8	147	83.1
	Total	173	100	177	100
Risk of contracting HIV/Risk perception	Not perceived	89	52.0	49	27.8
	Perceived	82	48.0	127	72.2
	Total	171	100	176	100

One hundred ninety three (55%) study participant [146 (82.50%) monogamous and 47 (27.18%) polygamous men] were reported that a health looking person can have HIV, whereas [135(76.27%) monogamous and 54(31.21%) polygamous] were knew the existence of medication to prevent transmission of HIV from mother to child during pregnancy, child birth, delivery and breast feeding (Fig 1). Concerning source of information, almost equal proportion of monogamous and polygamous men had got information about HIV/AIDS from health extension worker followed by radio, TV and relatives (Fig 2). Majority of population perceived possibility of contracting the disease HIV/AIDS 33(26%) and 103(81%) of response among monogamous men reported because sex without condom and use of sharp material in common respectively and 57(69.5%) and 50(63.29%) among polygamous men had experienced sex without condom and used sharp material in common, respectively (Fig 3).

3.3. Determinants of HIV/AIDS Knowledge, Attitude towards HIV Prevention Behavior and Risk Perception of HIV/AIDS

In relation to polygamous types of marriage, monogamous were found to report the higher odds of knowledge, attitude towards HIV prevention behavior and risk perception both in crude and after adjusting for other factors (COR=8.32, 95% CI=5.17-13.38,5.0, 95% CI=3.31-7.26,2.59, 95% CI=1.86-3.60**)** and (AOR=8.59, 95% CI=4.70-15.68,5.12, 95% CI=2.77-9.60,2.5, 95% CI=1.33-4.81, respectively. Concerning educational status illiterate were considered as referent group, hence literate were more knowledgeable both in crude (COR=3.34, 95% CI=2.46-4.70 and after adjusted (AOR=2.15, 95% CI=1.25-3.72), respectively. Religiosity were also assessed, as a result it shown statistical significant association with knowledge and attitude towards HIV

prevention behavior both in crude (COR=1.96, 95% CI=1.56-2.47 and 1.36, 95% CI=1.10-1.69) and after adjusted (AOR=0.39, 95% CI=0.22-0.68 and 0.45, 95% CI=0.21-0.97), respectively. Knowledge status were one of the determinant factor to affect both attitude and risk perception of study participants, hence it shown significant statistical difference in crude (COR=2.6, 95% CI=2.0-3.5 and 2.30, 95% CI=1.74-3.06) and after adjusted (AOR=2.18, 95% CI=1.19-3.95 and 2.50, 95% CI=1.41-4.45) for other factors, respectively. Participant's risk perception were affected by their attitude both in crude (COR=173, 95% CI=1.30-2.19) and after adjusted (AOR=1.20, 95%CI=1.21-2.44) (Table-3).

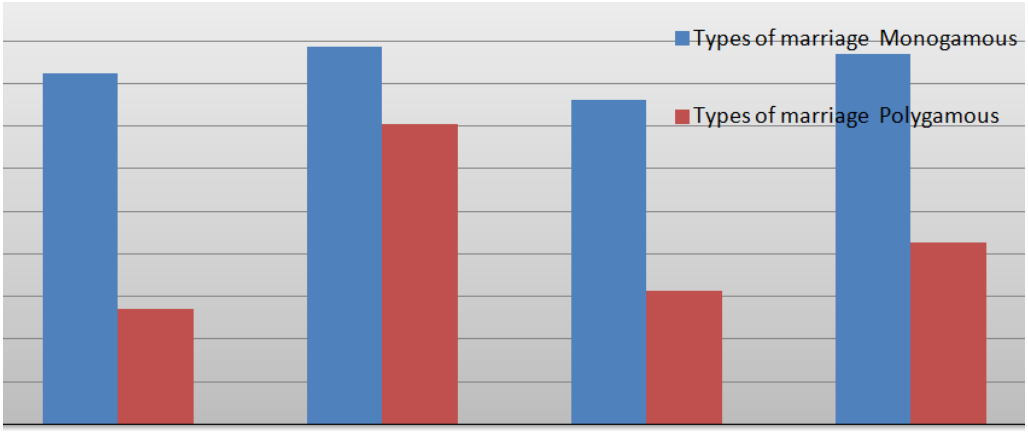

Figure – 1: *Knowledge status of study participants and Current types of marriage in Assosa woreda, West Ethiopia, 2012*

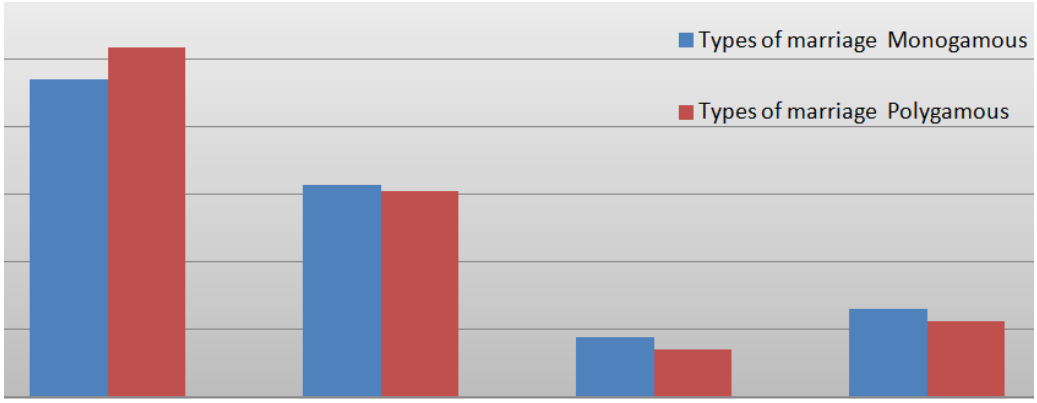

Figure – 2: Source of information about HIV/AIDS and types of marriage in Assosa woreda, West Ethiopia, 2012

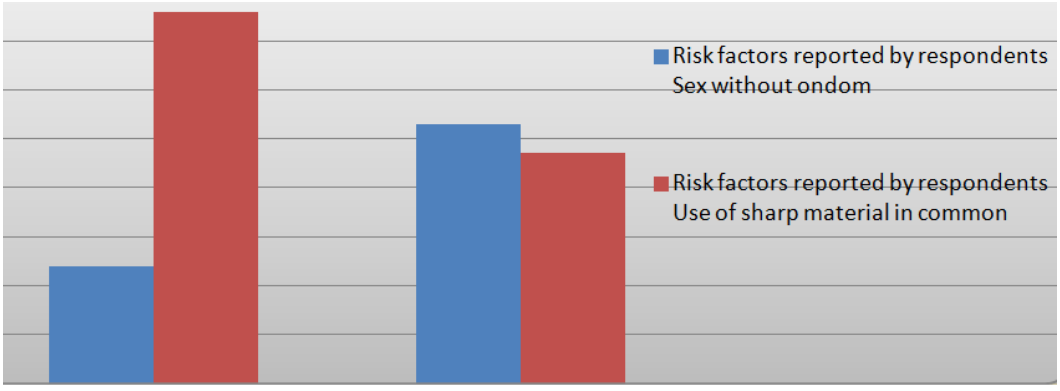

Figure – 3: Risk factor of HIV/AIDS reported by participants and types of marriage in Assosa woreda, West Ethiopia, 2012

Table – 3: Logistic regression analysis of the effect of predictor variables on participants' knowledge of HIV/AIDS, Attitude towards HIV prevention behavior and risk perception on HIV in Assosa woreda, West Ethiopia, 2012

Variables		Knowledge level		Attitude on HIV prevention behavior		Risk perception	
		COR	AOR	COR	AOR	COR	AOR
Types of	Polygamous	1	1	1	1	1	1

marriage	Monogamous	8.32(5.17-13.38)*	8.59(4.70-15.68)*	5.0(3.31-7.26)*	5.12(2.77-9.60)*	2.59(1.86-3.60)*	2.50(1.33-4.81)*
Educational status	Illiterate	1	1	1	1	1	1
	Literate	3.34(2.46-4.70)*	2.15(1.25-3.72)*	1.88(1.41-2.47)*	0.88(0.50-1.54)	1.84(1.39-2.44)*	1.11(0.67-1.83)
Income	<500	1	1	1	1	1	1
	≥500	1.50(0.85-2.64)	0.95(0.45-2.01)	1.2(0.67-2.05)	1.10(0.52-2.23)	1.58(0.89-2.80)	1.24(0.64-2.43)
Religiosity	no	1	1	1	1	1	1
	yes	1.96(1.56-2.47)*	0.39(0.22-0.68)*	1.36(1.10-1.69)*	0.45(0.21-0.97)*	1.47(1.17-1.83)*	0.59(0.30-1.16)
Care for relatives with HIV.	No	1	1	1	1	1	1
	Yes	2.77(2.13-3.61)*	1.54(0.81-2.91)	1.90(1.46-2.37)*	1.58(0.82-3.05)	1.70(1.33-2.16)*	1.02(0.56-1.87)
Family size	<5	-	-	1	1	1	1
	≥5	-	-	0.87(0.67-1.12)	0.55(0.3-1.0)	1.28(0.98-1.64)	1.12(0.65-1.89)
Level of knowledge	Not-knowledgeable	-	-	1	1	1	1
	knowledgeable	-	-	2.6(2.0-3.5)*	2.18(1.19-3.95)*	2.30(1.74-3.06)*	2.50(1.41-4.45)*
Attitude on HIV prevention behavior	Unfavorable	-	-	-	-	1	1
	Favorable	-	-	-	-	1.73(1.30-2.19)*	1.20(1.21-2.44)*

NB**=significant at p<0.05

4. Discussion

Almost all participants who included in the study were heard about HIV/AIDS. This might be due to the intensive effort made by the mass media and health worker in the area in particular and in the country in general. This finding is also consistent with a study conducted in south wello zone, Amhara regional state where all participants mention that they had heard about HIV/AIDS. Similarly majority of the respondents were well known as HIV /AIDS is a transmittable disease. These indicate that participants were already understood basic facts about HIV/AIDS. Concerning knowledge status this study revealed that a large proportion of monogamous 158(89.3%) in the study area had sufficient knowledge compared to polygamous 70(40.5%). This finding was high compared to the report of Benishangul Gumuz region where 31.5% of study participant were knowledgeable about HIV. It may be due to the fact that assosa woreda is the capital city of the region so that the population was well access to information but EDHS were comprehensive and represents the entire regional state [14].The variation can also be explained by the difference in educational status between this two population group in which monogamous type of marriage attend higher education than polygamous counterpart. One hundred ninety three (55%) of study participant or 146 (82.50%) monogamous and 47 (27.18%) polygamous men reported that a health looking person can have HIV, 135(76.27%) monogamous and 54(31.21%) polygamous knew the existence of medication to prevent transmission of HIV from mother to child during pregnancy, child birth, delivery and breast feeding. This finding were very high compared to the study carried out in Amhara regional state Debrebrihan town where it indicates only 9.4%, but lower than other study in other parts of Ethiopia in which it indicates that greater than 70% of participants were reported as a health looking person can have HIV [15,16].The Ethiopian central statistical agency report of Benishangul also indicates that 70.9% men reported as a health looking person can had HIV [14, 17].One hundred forty nine (47%) and 148 (51.57%), 99(31.20) and 87(30.3), 28(8.8) and 20(7) and 41(13) and 32(11.15) monogamous and polygamous men responded that they had information about HIV/AIDS from health extension workers, radio, TV and relatives respectively. This finding was low compared to the sub-Saharan Africa AIDS repot of WHO where it indicates the main source of information for HIV/AIDS was TV/Radio (82.2%) followed by health institutions (76%). A total of 217(62%) respondents, 151(85%) monogamous and 66(38%) polygamous agreed as polygamy increase HIV/AIDS transmission [18, 19, 20]. This finding were high compared to study conducted in Swaziland where it indicates that highly distributed polygamy contributes for high HIV infection rate (42%) [21, 22]. The difference may be due to time variation where currently the issue of HIV/AIDS got high media coverage. One hundred forty seven (83.1%) monogamous compared to 55(31.8%) polygamous had favorable (positive) attitude towards HIV prevention behavior. This variation may be due to the difference in educational back ground that monogamous were more of literate. One hundred twenty seven (72.16%) of monogamous men and 82 (48%) of polygamous men were perceived possibility of contracting the disease HIV/AIDS. This was higher than the study done in Debrebirhan which revealed 41 (6.8%) and 37(4.5%) of respondents were aware of being engaged in high-risk sexual practice like sex without condom 12(40%), multiple sexual partner12 (40%) and 13(43.3%) reported use of contaminated sharp objects [15]. Similarly it was higher than the study done in Nigeria by UN where only 30% of polygamous men had perceived risk of HIV/AIDS [10]. The difference may be due to the recruitment of health extension workers in rural Benishangul where it can be assumed they create awareness in this population.

In relation to polygamous types of marriage, monogamous men were 8.59, 5.12 and 2.50 times more knowledgeable, have had positive attitude towards HIV prevention behavior and perceive risk of contracting HIV than polygamous men. The variation in this study was higher compared to other study done in Nigeria where the odds ratio for monogamous men was 1.25 times more able to perceive risk of HIV than polygamous men [10]. Similarly participants who attended

school were 2.15 times more knowledgeable than those who don't attend. This finding were high compared to study done in Arsi zone of Oromia region where it indicates those attended school were 1.2 times more knowledgeable than those who not attend school [13]. This may be due to high media access in Arsi as compared to Benishangul population that the difference between literate and illiterate were small. Religiosity was one of the determinant factors to have had better knowledge and positive attitude and hence the study result indicates that participants who frequently attend religious service were 0.39 and 0.45 times had less knowledge and negative attitude as compared to those who don't attend. Attitude towards HIV/AIDS prevention behavior and risk perception about HIV/AIDS of the respondents increases as their HIV/AIDS knowledge increases i.e. knowledgeable individuals were 2.18 and 2.50 times have had positive attitude and risk perception than those who were not knowledgeable [23]. The same study also declared that attitude towards HIV/AIDS prevention behavior of the respondent's increases as their HIV/AIDS knowledge increases ($r=0.42$, $p<.000$). The findings of this study also indicates that those individuals who had favorable (positive) attitude towards HIV prevention behavior also perceive risk of contracting HIV 1.20 times more than those who had negative attitude [13].

5. Conclusion and Recommendation

Monogamous populations were by far more knowledgeable, had positive attitude towards HIV/AIDS prevention behavior and perceive risk of contracting HIV/AIDs than Polygamous population group. Low educational status of polygamous population compared to monogamous were one of the pre-disposing factor to be polygamous. As knowledge status of study participants increase the attitude towards HIV/AIDS prevention behavior and participant's ability to perceive risk of contracting HIV/AIDS also increase.

The low knowledge level, high negative attitude towards HIV prevention behavior and low level of risk perception/less identification of HIV risk factor/ in polygamous population group indicates the need for special attention to them for the prevention of HIV/AIDS. Social-mobilization and main-streaming of HIV/HIDS at different sectors and NGOs should be strengthen to increase the awareness level of the community in the area in particular to limit the magnitude of polygamy which is one of the risk factor for HIV/AIDS. Therefore the concerned body of the region as well as external to the region should take part in solving of such problem.

5.1. Strength

The study was new in its kind that no other similar community based study had been done in the country yet regarding this topic. Thus, it can be a valuable base line data for planning and implementation of intervention program. The reliability of the data was maintained by prior training of the interviewers and the supervisors, regular supervision by principal investigator and using pretested questionnaire. Appropriate tests were employed and findings were compared with other related observations locally and internationally.

5.2. Limitation of the Study

The main limitation of this study was difficult to discuss sexual behavior in face-to face interview and hence, some sort of social desirability bias may not be eliminated. Finally, this study was based on cross-sectional data, which implies that the direction of causal relationships cannot always be determined.

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