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Does social connectedness influence risky sexual behaviours? finding from Ethiopian youths

Simegnew Handebo[a], Yohannes Kebede[b] and Sudhakar N. Morankar[b]

[a]Department of Health Education and Behavioral Sciences, College of Medicine and Health Sciences, Institute of Public Health, Gondar University, Gondar, Ethiopia; [b]Department of Health Education and Behavioral Sciences, College of Health Sciences, Jimma University, Jimma, Ethiopia

ABSTRACT

Background: Various studies on risk sexual behaviours focus on personal factors. However, the influence of essential social factors needs a profound concern. *Methods*: An institutional based cross-sectional study triangulated with qualitative data was conducted at North Shewa Zone, from February to March 2016. Six hundred and thirty-five students were selected using a multi-stage sampling method. Self-administered questionnaire and focus group discussion guide were used for data collection. *Result*: Of 628 students, 115 (18.3%) of them reported risky sexual behaviour. Social connectedness was inversely correlated with having risky sexual behaviour. Substance user students had four times, risky sexual behaviours than non users (AOR = 4, 95%CI (1.54–10.3)). Risky sexual behaviour was associated with family connectedness (AOR = .39, 95%CI (.303–.51)), religion connectedness (AOR = .23, 95%CI (.169–.31)) and school connectedness (AOR = .39, 95%CI (00.297–.52)). *Conclusion*: Grade level, substance use, religious, family and school connectedness were major predictors of risky sexual behaviour.

Introduction

World Health Organization (WHO) define 'youth' as the age group between 15 and 24 years (WHO, 2009). Youth age is a developmental period with rapid physical, psychological, social and cultural changes that increase autonomy from their parents. This brings a new challenges and risks marked differences in patterns of morbidity and mortality compared with children (Eaton et al., 2008; Saritas & Erci, 2014).

Risky sexual behaviours are any behaviour that increases the likelihood of acquiring negative consequences related to sexual contact. It includes, having multiple partners, having risky casual or unknown sexual partners, early sexual initiation and failure to take protective actions, such as condom (Cooper, 2002; Centers for Disease Control & Prevention, 2009). These behaviours determine health and well-being of youth (Abebe & Fekadu, 2000). They have also negative consequences for physical, social and psychological health of youth. For instance, early sexual initiation among youth results in more lifetime sexual partners, increases the chance of acquiring sexually transmitted infections, including HIV/AIDS and a greater likelihood of having an unintended pregnancy (Grunbaum et al., 2004; Simons, Burt, & Peterson, 2009).

Youths' risky sexual behaviours remain a concern in many developing countries, including sub-Saharan Africa. Evidence from Demographic to Health Surveys shows high levels of multiple sexual partners

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CONTACT Simegnew Handebo ✉ simegnew.handebo@uog.edu.et

and high risk sex among female and male youths living in sub-Saharan Africa. A vast majority of whom report inconsistent condom use at their last high risk sex experience (Doyle, Mavedzenge, Plummer, & Ross, 2012).

A study done in Nigeria secondary school indicates that, 33.6% of students are sexually active; common among male than female students (42.7% vs. 23.2%). The mean age of sexual initiation is 14.8 (±2.8) years. The major predictors of risky sexual activities are male sex, lower parent–teen connectedness, having a dead parent, family polygamy, lower school connectedness and lower parental education (Slap et al., 2003).

At the same time, study conducted in Moshi, Tanzania secondary schools indicates 29% study participants are sexually active. Of them, 47.7% have more than one sexual partner, 21.6% start sexual intercourse before age of 15 and 52.2% of them did not use a condom in their last sexual intercourse (Lyimo, Todd, Richey, & Njau, 2013).

In Ethiopia, studies conducted in Nazareth, Addis Ababa, Shedi and Enemay towns showed that 24, 20.4, 19 and 67.6% of students are sexually active, respectively. Of sexual active student 33% in Nazareth, 45.6% in Addis Ababa, 24.8% in Shedi and 57% in Enemay have sex with more than one sexual partner. Regarding the condom use, 44% in Nazareth and 55.6% Addis Ababa never uses a condom. Only 28.7% sexually active youths used condom during their first sexual intercourse in Shedi town (Astatke, Black, & Serpell, 2000; Bogale & Seme, 2014; Cherie & Berhane, 2012; Dekeke & Sandy, 2014).

Even if, a numerous studies identified factors associated with youth risk sexual behaviours most of them have been focused on individual level factors. However, it is acknowledged that risky sexual behaviours are driven by social and structural factors, which are beyond an individual's control (Jessor, Turbin, & Costa, 1998; Parkhurst, 2012; Saritas & Erci,2014; Seeley et al., 2012). This conveys new ways of looking at risky sexual behaviours among youths from social to cultural perspectives. Recognizing what initiate youth's to risky sexual behaviours at an early age helps in designing appropriate and meaningful intervention strategies to tackle its adverse consequences. However, especially in Ethiopia little has been done to understand social connectedness of youths and its role in their sexual behaviour. Moreover, their tools did not include all domains of social connectedness and lack detail in sight.

Therefore, this study tries to describe the patterns of youth's social connectedness with religious groups, parent, peers, school environment and social media and its correlation with risky sexual behaviour. It also identifies independent predictors of risky sexual behaviours of youths.

Methods and materials

Study area and period

The study was conducted in North Shewa zone which comprises 14 districts. Fiche town is the administrative centre of the zone, which is 112 km North of Addis Ababa. In the zone, there are 54 high schools. These high schools provide educational opportunity for 32, 443 students. Out of these, 54.3% of students are male and the rest 45.7% are females. The study data were collected from February to March 2016.

Study design and participant

An institution-based cross-sectional study design triangulated with qualitative data was employed. All sampled students enrolled in calendar year 2015/2016 G.C in the selected high schools was included in the study. Ever married students were excluded from the study. Moreover, students who were already involved in the qualitative survey were excluded from FGDs.

Sampling

Multistage sampling technique was employed to select the study participants. First six districts were selected by the lottery method. Then, from each selected district, one grade 9–10 and one preparatory

school were selected by the lottery method. The sample size was proportionally allocated to each school and 9th to 12th grades and then, students were selected randomly by using computer-generated random numbers method. The sample size was calculated by using single population proportion formula by taking the value of p = the mean score of social connectedness average for all dimension converted to 100 = 50% as there is no previous study done in the study area and nearby. With assumptions of 1.5 design effect, 5% margin of error, 95% confidence interval and 10% possible non-response rate, the sample size was 635 participants. In qualitative part, one school is selected purposefully. Then, 38 participants were selected using homogenous purposive sampling techniques. Four FGDs were conducted.

Measurement and variables

The study used a structured, pretested and translated self-administered questionnaire adapted from different literatures (Fisher, Davis, Yarber, & Davis, 2013; Goodenow, 1993; Lee & Robbins, 1998; Merakou, Costopoulos, Marcopoulou, & Kourea-Kremastinou, 2002; Resnick et al., 1997; Rosenberg, 1965; Sieving et al., 2001; Smylie et al., 2013). The instrument includes socio-demographic characteristics, social connectedness, safe sex self-efficacy belief towards safe sexual activities, sexual behaviour and substance use items. Items used for measuring social connectedness, safe sex self-efficacy and belief towards safe sexual activities elicited response on a five-point Likert scale. Scale items internal consistency was checked by Cronbach alpha greater than .7. Risky sexual behaviour information was sought on whether the participants had engaged in sexual intercourse, number of sex partners, sex before age of 18 and consistent condom use. For focus group discussion, guide which has five open-ended questions was developed by the principal investigator.

Data collection procedures

The data were collected using self-administered questionnaire assisted by five trained, diploma holders' data collection facilitators. Trained supervisors at each study district controlled data collection procedures. Two-day training was given to data collection facilitators and supervisors by the principal investigator. The data were collected using self-administered questionnaire assisted by five trained data collection facilitators. Trained supervisors controlled the data collection process. Principal investigator leads the FGDs sessions. The tape recording was done with informed consent of the participant.

Operational definitions

Risky sexual behaviour
A person was said to have risky sexual behaviour if he/she is being sexually active or improper condom use or having multiple sexual partners or early sexual initiation.

Family connectedness
Measured by summing scores of nine Likert scale items approaching to the maximum sum scores considering as had high family connections and to minimum sum scores as had low family connectedness.

Religious connectedness
Measured by summing scores of nine Likert scale items approaching to the maximum sum scores considering as had high religious connectedness and to minimum sum scores as having low religious connectedness.

School connectedness
Measured by summing scores of seven Likert scale items approaching to the maximum sum scores considering as had high school connectedness and to minimum sum scores as having low school connectedness.

Peer connectedness

Measured by summing scores of seven Likert scale items approaching to the maximum sum scores considering as having high peer connectedness and to minimum sum scores as having low peer connectedness.

Social media connectedness

Measured by summing scores of seven Likert scale items approaching to the maximum sum scores considering as having high social media connectedness and to minimum sum scores as having low social media connectedness.

Social connectedness

Measured by summing scores of family, religion, school, peer and social media connectedness domains approaching to the maximum sum scores considering as having high social connectedness and to minimum sum scores as having low social connectedness.

High school

Schools from grade, 9th–12th.

Substance use

Was consuming alcohol or chat or smoking cigarettes in the past six months preceding the study period.

Data processing and analysis

The quantitative data were checked for completeness and consistency. Then, it was entered into the Epi-Data version 3.1 and exported to statistical package for social science (SPSS) version 16 for analysis. For Likert scale items, exploratory factor analysis with a factor loading score of >40% and Varimax rotation was performed to validate the underlying dimensions. Uni-variate analyses were carried out to describe socio-demographic characteristics, sexual behaviour and social connectedness of the respondents. The total score was converted to 100% for possible comparisons of the domains. Independent t-test and one-way analysis of variance was performed to observe variation in scores of the social connectedness domains by gender, grade levels and residence of the student. In order to examine the relationship of each dimension of social connectedness with various risky behaviour indexes [number of sex partners, early sexual initiation and improper use of condom], the Spearman rank order correlation coefficient (rho) was executed. Backward likelihood logistic regression was carried out to identify independent predictors of risky sexual behaviour. Model fitness was checked using a Hosmer–Lemeshow test which was P value = .14. Odds ratios (OR) with 95% confidence intervals were calculated. Statistical significance is accepted at the 5% level ($p < .05$).

In qualitative part, the transcription was done by principal investigator immediately after repeatedly listening to recorded voice. The transcribed data read repeatedly for emergent themes and then openly coded. The analysis was done using the thematic approach. Finally, it was triangulated with quantitative finding.

Data quality management

The instrument was originally adapted in English language and then translated into local languages Afan Oromo and Amharic language. Then, it was translated back to English by another person to check consistency. For clarity and consistency, the questionnaire was pre-tested with 32 (5%) school children of the same age of actual respondents at other similar high school (eager high school) before the actual data collection. Two-day intensive training was given for all supervisors and data collection facilitators. The principal investigator controlled overall activity. The completed questionnaires were checked and made correction on a daily basis among data collection facilitators and supervisors. One trained data

clerk had cleaned and entered the data into Epi data 3.1 and exported to SPSS 20. For qualitative part of the study, the tape recording was done with informed consent of the participant. Transcription was done immediately after each FGD.

Ethical considerations

Ethical Clearance Committee of Jimma University, College of Health Sciences, approved the study protocol. Permission to conduct the study was obtained from North Shewa Education Bureau. An official letter of cooperation was written to the respective schools. In order to protect confidentiality, names were not included in the written questionnaires. Informed consent was obtained also from each participant. For <18-years-old students, they were told to ask their parents' permission to participate in the study and only those who got permission from the parents were participated.

Result

Socio-demographic characteristics

Out of 635 sampled students, 628 respondents were participating in the study, which makes the response rate of 98.9%. Accordingly, the mean age of the respondent was 17.57 ± 1.46 years with a minimum of 14 years and maximum of 24 years. From total, 628 students 332 (52.9%) of the respondents were males. The majority of the respondents, 558 (88.9%) were from the Oromo ethnic group and 567 (90.3%) were Orthodox Christian followers.

Regarding residence 350 (55.7%) of them permanently lives in the respective towns and 333 (53.0%) lives with both their biological families. Concerning the educational status of respondents' parents, 179 (27.5%) of fathers and 288 (45.9%) of mothers were illiterate. The mean student's monthly pocket money was 201.18 with SD ± 142. 4ETB (Table 1).

Respondents' sexual behaviour

Regarding sexual activity, one hundred fifteen 115 (18.3%) of the respondents ever had sexual intercourse out of which 78 (67.8%) were males, 52 (45.2%) had sex with two or more partners. With regard to the age of sexual initiation, 45 (39.1%) were below the age of 18 years at first sex. The mean age at first sexual intercourse was 16.63 ± 1.5 years. About 72 (62.6%) of respondents had sexual intercourse in the 6 months prior to the study period. The mean time for last sexual activity was 5.94 ± 4.4 months prior to study period. During the last sexual intercourse, 36 (31.3%) did not use condoms, 29 (25.2%) took alcohol and eight (7%) have chewed chat. Out of all respondents, 115 (18.3%) have developed risky sexual behaviour. In relation to this, only 27 (23.5%) of youth consistently used condom during each intercourse (Table 2).

Respondents' social connectedness

Exploratory factor analysis was done in five dimensions of social connectedness domains; KMO = .921, Bartlett's Test of Sphericity p = .000. Accordingly, the nominated items explained 50.0% of the variance of social connectedness. Of them, family connectedness accounted for the largest percentage (25.9%), followed by religious connectedness (9.6%), school connectedness (5.2%), peer connectedness (4.8%) and social media connectedness (4.5%) (Table 3).

The overall social connectedness score of the respondent was 77.8, SD ± 10. Of all social connectedness domains, high score was obtained on family connectedness (84.5, SD ± 17.1), whereas a lower score was on social media connectedness domain (65.3, SD ± 9.7). FGD participant explained connectedness with family, religion, school and friend is higher than social media. From family members, most of them have a connection with their mothers.

Table 1. Distribution of socio-demographic characteristics of youths in North Shewa Zone Oromia Regional, Ethiopia, 2016.

Characteristics ($n = 628$)		Frequency ($n = 628$)	Per cent (%)
Age	<15	1	.2
	15–19	577	91.8
	20–24	50	8.0
Sex	Male	332	52.9
	Female	296	47.1
Grade	9th	252	40.1
	10th	180	28.7
	11th	108	17.2
	12th	88	14.0
Ethnicity	Oromo	558	88.9
	Amhara	66	10.5
	Tigre	3	.5
	Other*	1	.2
Religion	Orthodox	567	90.3
	Protestant	38	6.1
	Muslim	10	1.6
	Catholic	6	1.0
	Other**	7	1.1
Are you permanent resident in the town?	Yes	350	55.7
	No	278	44.3
Living arrangement	Both biological family	333	53.0
	Friends	86	13.7
	Alone	79	12.6
	Mother only	42	6.7
	Relatives	39	6.2
	Grandparents	19	3.0
	One biological and stepfather/mother	10	1.6
	Father only	6	1.0
	Other***	14	2.2
Father educational status	Illiterate	173	27.5
	Read and write	124	19.7
	Elementary (1–8)	189	30.1
	Secondary (9–12)	76	12.1
	College diploma and above	66	10.5
Mother educational status	Illiterate	288	45.9
	Read and write	90	14.3
	Elementary (1–8)	144	22.9
	Secondary (9–12)	67	10.7
	College diploma and above	39	6.2

*Gurage; **Wakefetta; ***With sister, with brother.

A 15 years female participant said; 'Most of the time I discuss issues with my family members, especially my mother and this give a high feeling of belongs to my family. I have good girlfriends. We study and walk to school together. We support each other in any difficulties. Really, we are very happy to be with each other's'.

A 17 years male student said, 'I am sociable person I interact with every person in my surrounding as well as at school. I also participate in religious activities at church. In such places, activities are done in-group and most of the time every other day we meet together. I use social media sometimes only when I have internet access'.

The relationship between social connectedness domains was examined using Pearson correlation coefficient. A higher correlation exists between family and spiritual connectedness ($r = .616$, $p = .000$). Social media connectedness has low correlation with other domains. Of which higher was with peer ($r = .245$, $p = .000$).

Independent sample t-test result showed that, of domains only peer connectedness had statistically significant difference between sex (F_{627}, $p = .017$). The peer connectedness score of females (79.4, SD ± 15.6) is significantly lower than that of males (81, SD ± 13.4). Similarly with regard to a permanent place of residence, students who permanently live in their respective town have a significantly lower family connectedness (F_{626}, $p = .020$), peer connectedness (F_{626}, $p = .027$) and spiritual connectedness

Table 2. Sexual behaviour of youths in north Shewa zone Oromia region, Ethiopia, 2016.

Variable ($n = 628$)		Frequency	Per cent (%)
Ever had sex	Yes	115	18.3
	No	513	81.7
Sex ($n = 115$)	Male	78	67.8
	Female	37	32.2
Age of first intercourse ($n = 115$)	<18 years	45	39.1
	>18 years	70	60.9
No of sexual partner ($n = 115$)	One	63	54.8
	Two and more	52	45.2
Having sex in the last six months ($n = 115$)	Yes	72	62.6
	No	43	37.4
Condom use in last sex ($n = 115$)	Yes	79	68.7
	No	36	31.3
Consistent condom use ($n = 115$)	Yes	27	23.5
	No	88	76.5
Alcohol consumption during last sex ($n = 115$)	Yes	29	25.2
	No	86	74.8
Chat chewing during last sex ($n = 115$)	Yes	8	7.0
	No	107	93.0
Risky sexual behaviour ($n = 115$)	Yes	115	18.3
	No	513	81.7

(F_{626}, $p = .026$) score than those who were not. Most FGD participants identify this difference in social connectedness was a result of duties and restrictions that youths encountered when they live with their family.

> One 17 years male student said; '… student like me who currently live with their family are under control of their family and have different duties at home. Most of the time I am not allowed to stay more time out of home, at church, or with my friends as I want.'

A one-way analysis of variance result showed that social media connectedness (F_{627}, $p = .002$) and school connectedness (F_{627}, $p = .007$) are significantly different between grade levels. The post hoc test was used to identify the source of the significant omnibus F for these two domains, and revealed the score of social media connectedness of grade 11 students (62.6, SD ± 10.7) was significantly lower than that of grade 9 (66.1, SD ± 9.5) $p = .009$ and 10 (66.4, SD ± 9.3) $p = .007$, respectively. Regarding school connectedness, the score of grade 9 students (81.5, SD ± 12.9) was significantly higher than that of grade 11 (76.5, SD ± 16.7) at $p = .020$.

Respondents' substance use behaviour

The study showed that 43 (6.8%) of the respondents reported ever used any kind of substance. Among substance users, 36 (83.7%) drunk alcohol, 11 (25.6%) chewed chat and seven (16.3%) smoked cigarette in the past six months.

Self-efficacy and belief towards safe sexual activities

The score of belief towards safe sexual activities of the students was 40 ± 6 and that of self-efficacy was 32.8 ± 5.8. There was no significant difference in these scores between gender and permanent residence. However, self-efficacy ($F_{627} = 3.717$, $p = .011$) and belief towards safe sexual activity ($F_{627} = 3.868$, $p = .009$) significantly different across grade levels. The post hoc test was used to identify the source of the significant omnibus F for these variables, and revealed the score of self-efficacy of grade 9 students (33.6, SD ± 5.6) was significantly higher than that of grade 11 (31.8, SD ± 5.8) $p = .045$. Similarly, the score of belief towards sexual activity of grade 9 students (39.1, SD ± 5.9) was significantly lower than that of grade 12 (41.2, SD ± 5.9) $p = .032$.

Table 3. Factor structure of social connectedness sub-scales of youths in North Shewa zone, Oromia region, Ethiopia, February, 2016.

	Factor components: social connectedness				
Items	Factor 1 (Family)	Factor 2 (Religion)	Factor 3 (School)	Factor 4 (Peer)	Factor 5 (Social media)
My family cares a lot about me	.829				
My family is warm and loving toward me	.818				
My family pays a lot of attention to me	.809				
My family and I agree a lot	.796				
My family encourages me	.789				
I enjoy spending time with my family	.759				
I am satisfied with relationship I have with my family	.739				
I talk to my family when I have problems	.681				
I have a lot of fun with my family	.589				
I ask people to pray for me		.835			
I get strength and support from people in my religion		.776			
I regularly participate in religious activities		.745			
I give spiritual advice		.724			
I voluntarily help others in my religion		.700			
I listen religious song		.667			
I regularly read my faith script		.603			
My religious belief makes me happy		.596			
I regularly pray		.496			
I feel close to people at school			.852		
I feel like I am part of my school			.735		
I feel safe in my school			.705		
My teachers care about me			.687		
I feel happy to be in my school			.668		
I am included in a lot of activities at school			.576		
I talk to my teachers when I have a problem			.516		
I find myself actively involved in my friends' lives				.725	
My friends feel like family				.690	

(*Continued*)

Table 3. (*Continued*).

	Factor components: social connectedness				
Items	Factor 1 (Family)	Factor 2 (Religion)	Factor 3 (School)	Factor 4 (Peer)	Factor 5 (Social media)
My friends like me in the way I am				.680	
My friends take my opinions seriously				.673	
I feel understood by my friends				.661	
My friend would take time to talk about my problem				.535	
I have at least one friend I could tell anything				.487	
I see social media friends, as friendly and approachable					.792
I don't feel related to peoples on social media					−.640
I feel distant from social media friends' life					−.631
I have little sense of togetherness with my social media friends					−.552
I am able to connect with people on social media					.497
I feel understood by people on social media					.449
I find myself actively involved in social media friends' lives					.435

Notes: Extraction method: principal component analysis.
Rotation method: varimax.

With regard to risky sexual indexes, safe sex self-efficacy score of youth who have only one sexual partner and use condom consistently was significantly higher than those who have multiple sexual partner and use condom inconsistently ($t_{113} = 2.287$, $p = .024$) and ($t_{113} = 2.689$, $p = .008$), respectively. Similarly, youth who develop risky sexual behaviour have lower belief score than those who were not (at $t_{(626)} = 3.509$, $p = .000$).

Relationship between social connectedness and risky sexual activity

Youths who had a single sexual partner have significantly higher family ($t_{113} = 12.557$, $p = .000$), religion ($t_{113} = 3.423$, $p = .000$) and school ($t_{113} = 6.463$, $p = .000$) connectedness than those who had multiple sexual partner. Youths who have used condoms consistently have significantly higher family ($t_{93} = 3.860$, $p = .000$), religion ($t_{93} = 2.422$, $p = .017$) and school ($t_{93} = 2.728$, $p = .008$) connectedness than those who were not. With regard to overall risky sexual behaviour, youths who have developed risky sexual activity have significantly lower family ($t_{626} = 19.126$, $p = .000$), religion ($t_{626} = 15.215$, $p = .000$) and school ($t_{626} = 13.641$, $p = .000$) connectedness than those who were not.

Social connectedness with family ($\rho = -.761$, $p = .000$), religion ($\rho = -.793$, $p = .000$) and school ($\rho = -.538$, $p = .000$) domains were significantly and inversely correlated with having multiple sexual partners. Whereas, connectedness with a friend and social media was significantly and directly correlated

Table 4. The Correlations between social connectedness and risky activity of youths in North Shewa zone Oromia region, Ethiopia, 2016.

	Social connectedness dimensions					
Variables	Family	Religion	School	Peer	Social media	Over all social connectedness
Multiple sexual partner	−.761**	−.793**	−.538**	.213*	.208*	−.722**
Condom use	−.376**	−.213*	−.327**	−.046	−.073	−.333**
Sex before age of 18 years old	−.104	.014	.050	−.004	.026	−.071
Risky sexual behavior	−.338**	−.422**	−.434**	−.043	.144	−.464**

*Correlation is significant at the .05 level (2-tailed); **Correlation is significant at the .01 level (2-tailed).

with having multiple sexual partner ($\rho = .213$, $p = .000$) and ($\rho = .208$, $p = .001$). At the same time, family ($\rho = −.376$, $p = .000$), spiritual ($\rho = −.213$, $p = .022$) and school ($\rho = −.327$, $p = .000$) connectedness domains were significantly and inversely correlated with using condoms. Conversely, early sexual initiation was not correlated with neither of social connectedness domains. Developing overall risky sexual behaviour were significantly and inversely correlated with family ($\rho = −.338$, $p = .019$), religion ($\rho = −.422$, $p = .000$) and school ($\rho = −.434$, $p = .000$) connectedness domains.

Additionally, overall social connectedness was significantly and inversely correlated with having multiple sexual partners ($\rho = −.722$, $p = .000$), use of condoms ($\rho = −.333$, $p = .000$) and overall risky sexual behaviour ($\rho = −.464$, $p = .000$). So, this means, higher scores family, religion, school and overall social connectedness as well as lower score of peer and social media connectedness were correlated with reduced risky sexual behaviours (Table 4).

FGD participants explained advice from family, conventional belief from religious people and academic performance enables youths to save themselves from risky sexual activities.

A 17 years old male student said that; 'I participate in religious activities ... I engage in social support activities, which tie to the broad community. As a result, I did not engage in sexual behaviors until now.'

A 15 years old female students said that; 'let us take outstanding students. They spend most of their time on studying their lessons, another student respect them and most of their teachers love them. Such students even will not want to be seen with opposite sex.'

Independent predictors of risky sexual behaviour

In bi-variate analysis, age, sex, grade level, living arrangement, household income, substance use, beliefs toward safe sexual activities, family connectedness, religious connectedness, school connectedness, peer connectedness and social media connectedness have showed significant association with risky sexual behaviour at $p < .25$ and were candidate for multi-variable regression analysis. Multivariate logistic regression analysis was done to identify independent predictors of risky sexual behaviour. Education level, substance use, religious connectedness, family connectedness and school connectedness were significant predictors of risky sexual behaviour. Grade 10 students were 2.3 times more likely to be at risk than grade nine students were (AOR = 2.30, 95%CI (1.20–4.41)). With regard to substance use, substance user students have four times, risky sexual behaviours than non-users (AOR = 4, 95%CI (1.54–10.3)). For a unit increase in the total score of family connectedness of the student, the odds of becoming at risk were reduced by .39 (AOR = .39, 95%CI (.303–.51)). For a unit increase in the total score of religion connectedness of the student, the odds of becoming at risk were reduced by .23 (AOR = .23, 95%CI (.169–.31)). For a unit increase in the total score of school connectedness of the student, the odds of becoming at risk were reduced by .39 (AOR = .39, 95%CI (.297–.52)) (Table 5).

Table 5. Multivariable analysis of risky sexual behaviours among youths in North Shewa zone, Oromia region, Ethiopia, 2016.

Explanatory variables		Risky sexual activity		Crude OR (95%CI)	Adjusted OR (95%CI)
		No risk	At risk		
Age***		17.47	18.00	.78(.68–.90)**	1.07(.86–1.34)
Sex	Male	254(49.5%)	78(67.8%)	2.15(1.40–3.30)**	.76(.42–1.36)
	Female	259(5.5%)	37(32.2%)	1	1
House hold income***		2808.82	2392.52	1.00(1.00–1.00)	1.00(1.00–1.00)
Grade level	9th	219(42.7%)	33(28.7%)	1	1
	10th	140(27.3%)	40(34.8%)	.70(.46–1.08)	2.30(1.20–4.41)**
	11th	83(16.2%)	25(21.7%)	.69(.42–1.15)	1.91(.88–4.12)
Living arrangement	Both biological family	274(53.4%)	59(51.3%)	1	1
	Mother only	29(5.7%)	13(11.3%)	.47(.24–.94)*	1.55(.543–4.41)
	Friends	75(14.6%)	11(9.6%)	1.62(.83–3.16)	.79(.31–2.00)
Substance use	Yes	18(3.5%)	25(21.7%)	7.64(4.00–14.58)**	4(1.54–10.3)**
	No	495(96.5%)	90(78.3%)	1	1
Beliefs toward safe sexual activities***		40.42	38.25	1.06(1.03–1.10)**	.98(.93–1.03)
Family connectedness***		84.28	57.10	2.20(1.81–2.68)**	.39(.303–.51)**
Spiritual connectedness***		88.68	65.72	3.47(2.73–4.42)**	.23(.169–.31)**
School connectedness***		83.01	64.57	2.09(1.71–2.57)**	.39(.297–.52)**
Peer connectedness***		80.15	80.15	.79(.64–.989)*	1.09(.81–1.46)
Social media connectedness***		65.21	66.04	.76(.61–.94)*	1.25(.92–1.70)

*p-value < .05; **p-value < .01; ***Continuous variable; Bold:Significant variables.

Discussion

This study provides an insight into the operation of different dimensions of social connectedness, substance use, beliefs and self-efficacy towards safe sexual activities as factors to predict risky sexual behaviour among youths in North Shewa Zone Oromia region. As a result, 18.3 and 11.5% of youths had sex ever and in the past six months preceding the study with more males than females (67.8% vs. 32.2%). This study result is similar to studies done in Addis Ababa and Shedi town in Ethiopia (Bogale & Seme, 2014; Cherie & Berhane, 2012). However, it is very low compared to studies done in Nigeria and Tanzania (Lyimo et al., 2013; Slap et al., 2003). This difference might be the result of cultural differences, the availability of risk factors and community norms.

Of youths who have already started sex 52 (45.2%) of them had sex with two or more partners. This study finding is nearly similar to studies done in Addis Ababa and Tanzania (Cherie & Berhane, 2012; Lyimo et al., 2013). However, it is higher than study done in Jimma, Nazareth and Shedi and lower than that of the Enemay district (Astatke et al., 2000; Bogale & Seme, 2014; Dekeke & Sandy, 2014; Abebe, Tsion, & Netsanet, 2013). The possible reason might be differences in sociocultural and demographic characteristics of the study participants.

Of those who ever had sex only 27 (23.5%) of them consistently used condom during each intercourse. This study finding is higher than study done in Jimma (Abebe et al., 2013). Moreover, 31.3% of them did not use condoms during last intercourse. This finding is lower than studies done in the USA and Tanzania (Guy, Addy, & Christine, 2003; Lyimo et al., 2013). The possible reason may the difference in socio-demographic characteristics and culture. Thirty-nine per cent of them were under the age of 18 years at first sex. This finding is lower than study done in Enemay (Dekeke & Sandy, 2014). The mean age at first sexual intercourse was 16.63 ± 1.5 years. This finding is similar to studies done in Shedi and higher than study done in study Nigeria. The possible justification was socio-economic status difference between these countries (Bogale & Seme, 2014; Slap et al., 2003).

Nearly, 18 per cent of the students had developed risk in their sexual contact. This study result is much lower than study done in the Jimma zone (Abebe et al., 2013). This difference may be the result of differing in availability of risk factor and socio-demographic status.

Regarding social connectedness, the study revealed that youths' social connectedness were higher on most of the domains except for social media connectedness. Lack of Internet and mobile phone access to use social media was the main factor that reduces social media connectedness. This finding

is different from the study done in Addis Ababa (Cherie & Berhane, 2012). The difference is the result of differences in access to Internet service. However, youths achieved higher social connectedness with their family members. This may be because almost all youths at this level live with and get both perceived and actual support from their family members.

Family connectedness, religion connectedness, school connectedness and overall social connectedness were inversely correlated with having multiple sexual partners, condom use and overall risky sexual behaviour. While, social media connectedness and peer connectedness directly correlated with having multiple sexual partners. Meaning higher score to the family, religion, school and overall connectedness correlated with lower of the number of sexual partners, use of condom and reducing risky sexual behaviour among youths. Likewise, lower score of social media and peer connectedness was correlated with lower of the number of sexual partners. This is may be due to strong advice and support youths get from family, religious and school connectedness (O'Brien et al., 2013; Smith, 2003).

Grade 10 students were more likely to be at risk than grade nine students were. This study finding is similar to a study done with Dessie high school (Abdulhakim, 2008) in which increase in the grade level associated with increased risk sexual behaviour. This is may be during the youth period as the age increases there is an increased interest in sexual activities.

Taking any substances of alcohol, chat and a cigarette was a significant predictor of risky sexual behaviour among youths. Youths who take substance have higher probability to be engaged in risky sexual activities. This study result is similar to studies done in Nazareth (Astatke et al., 2000). This may be due to the effect of the drugs. After taking substances they may be unaware of their behaviours and more likely engaged in risky sexual practices even with unknown partners.

Family connectedness was another factor significantly associated with risky sexual behaviour of youths. Youths with strong family connectedness are less likely practice risky sexual activity. This study finding is similar to studies done in USA, Nigeria and Jimma, Ethiopia (Abebe et al., 2013; Guy et al., 2003; Slap et al., 2003). Similarly, higher religion connectedness of youths was protective against risky sexual activities. This study finding is similar to studies done in Enemay district in Ethiopia and several other studies in developing countries (Bogale & Seme, 2014; Rostosky, Wilcox, Wright, & Randall, 2004). This is may be due to conventional advices and support youths get from family to religious connectedness.

School connectedness was another significant factor associated with risky sexual behaviour among youths. Youths who have a high school connectedness were less likely engaged in risky sexual activity; while low school connectedness associated with higher risky sexual behaviours. This study finding is similar to studies done in Nigeria and Addis Ababa in which risky sexual behaviours are associated with less youths connectedness with the school environment (Cherie & Berhane, 2012; Slap et al., 2003). From this study, we learn that promoting youth's social connectedness with family, religious institution and the school environment is an imperative prevention method of sexual risk behaviours.

Conclusion

Considerable amounts of youths were engaged in risky sexual activity at an early age. Of sexually active youths, most of them were subjected to multiple sexual partner and unprotected sex.

Youth have high scores on family connectedness and low score on social media connectedness. The score of social connectedness domains varies across sex of the participant, residence and grade levels.

Youth high scores of family connectedness, religion connectedness, school connectedness and overall social connectedness were correlated with increased condom use, decreased number of sexual partners and reduced risky sexual behaviours. However, high score of peer and social media connectedness was correlated with increased number of sexual partners.

Grade level, substance use, religious connectedness, family connectedness and school connectedness were major predictors of risky sexual behaviour.

Author contributions

SH YK SNM conceived and designed the experiments. SH YK SNM performed the experiments. SH analysed the data. SH YK SNM contributed reagents/materials/analysis tools. SH YK SNM wrote the paper.

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Disclosure statement

References

Abdulhakim, H. (2008). *Factors promoting risky sexual behavior of high school adolescents* (Ph.D. thesis). Institute of Population Studies College of Development Studies School of Graduate Studies Addis Ababa University.

Abebe, G., & Fekadu, A. (2000). A health concerns and challenges among high school adolescents. *The Ethiopian Journal of Health Development, 10*, 37–40.

Abebe, M., Tsion, A., & Netsanet, F. (2013). Living with parents and risky sexual behaviors among preparatory school students in Jimma zone, South west Ethiopia. *African health sciences, 13*, 498–506.

Astatke, H., Black, M. M., & Serpell, R. (2000). Use of Jessor's theoretical framework of adolescent risk behavior in Ethiopia: Implications for HIV/AIDS prevention. *Northeast African Studies, 7*, 63–83.

Bogale, A., & Seme, A. (2014). Premarital sexual practices and its predictors among in-school youths of Shendi town, west Gojjam zone, North Western Ethiopia. *Reproductive Health, 11*, 49. doi:10.1186/1742-4755-11-49

Centers for Disease Control and Prevention (2009). Youth risk behavior surveillance – United Sates. *MMWR, 59*, 1–142. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/ss5905a1.htm

Cherie, A., & Berhane, Y. (2012). Peer pressure is the prime driver of risky sexual behaviors among school adolescents in Addis Ababa. *Ethiopia. World Journal of AIDS, 2*, 159.

Cooper, M. L. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. *Journal of Studies on Alcohol, 14*, 101–117.

Dekeke, G. D., & Sandy, P. T. (2014). Factors influencing sexual risk behaviors among senior secondary school students (youths). *International Journal of Scientific and Research Publications., 4*, 1–32.

Doyle, A. M., Mavedzenge, S. N., Plummer, M. L., & Ross, D. A. (2012). The sexual behavior of adolescents in sub-Saharan Africa: Patterns and trends from national surveys. *Tropical Medicine & International Health., 17*, 796–807.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Ross, J., Hawkins, J., …, Lim, C. (2008). Youth risk behavior surveillance – United States, 2007. Morbidity and mortality weekly report. *Surveillance Summaries, 57*, 1–31.

Fisher, T. D., Davis, C. M., Yarber, W. L., & Davis, S. L. (2013). *Handbook of sexuality-related measures*. New York, NY: Routledge.

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools, 30*, 79–90.

Grunbaum, J. A., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Lowry, R., et al. (2004). Youth risk behavior surveillance – United States, 2003. *MMWR: Surveillance Summaries, 53*, 1–96.

Guy, S., Addy, R. C., & Christine, M. (2003). Family connectedness and sexual risk-taking among urban youth attending alternative high schools. *Journal of Perspectives on Sexual and Reproductive Health, 35*, 174–179.

Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Protective factors in adolescent health. *The Journal of Personality and Social Psychology, 75*, 788–800.

Lee, R. U., & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem, and social identity. *Journal of Counseling Psychology., 45*, 338.

Lyimo, E. J., Todd, J., Richey, L. A., & Njau, B. (2013). The association between social networks and self-rated risk of HIV infection among secondary school students in Moshi Municipality, Tanzania. *SAHARA-J., 10*, 131–139.

Merakou, K., Costopoulos, C., Marcopoulou, J., & Kourea-Kremastinou, J. (2002). Knowledge, attitudes and behavior after 15 years of HIV/AIDS prevention in schools. *The European Journal of Public Health, 12*(2), 90–93.

O'Brien, L., Denny, S., Clark, T., Fleming, T., Teevale, T., & Robinson, E. (2013). The impact of religion and spirituality on the risk behaviors of young people in Aotearoa. *New Zealand. Youth Studies Australia, 32*, 25–37.

Parkhurst, J. O. (2012). HIV prevention, structural change and social values: The need for an explicit normative approach. *Journal of the International AIDS Society, 15*, 1–10.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., et al. (1997). Protecting adolescents from harm: Findings from the national longitudinal study on adolescent health. *JAMA, 278*, 823–832.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rostosky, S. S., Wilcox, B. L., Wright, M. L. C., & Randall, B. A. (2004). The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research, 19*, 677–697.

Saritas, S. C., & Erci, B. (2014). Predictors of adolescent health risk behaviors. *Holistic Nursing Practice, 28*, 208–216.

Seeley, J., Watts, C. H., Kippax, S., Russell, S., Heise, L., & Whiteside, A. (2012). Addressing the structural drivers of HIV: A luxury or necessity for programmes? *Journal of the International AIDS Society, 15*(Suppl 1).

Sieving, R. E., Beuhring, T., Resnick, M. D., Bearinger, L. H., Shew, M., Ireland, M., et al. (2001). Development of adolescent self-report measures from the national longitudinal study of adolescent health. *Journal of Adolescent Health, 28*, 73–81.

Simons, L. G., Burt, C. H., & Peterson, F. R. (2009). The effect of religion on risky sexual behavior among college students. *Deviant Behavior., 30*, 467–485.

Slap, G. B., Lot, L., Huang, B., Daniyam, C. A., Zink, T. M., & Succop, P. A. (2003). Sexual behavior of adolescents in Nigeria: Cross sectional survey of secondary school students. *BMJ, 326*, 15.

Smith, C. (2003). Theorizing religious effects among American adolescents. *Journal for the Scientific Study of Religion, 42*, 17–30.

Smylie, L., Clarke, B., Doherty, M., Gahagan, J., Numer, M., Otis, J., et al. (2013). The development and validation of sexual health indicators of canadians aged 16–24 years. *Public Health Reports, 128*, 53–61.

World Health Organization. (2009). *Global status report on road safety: Time for action*. Geneva: Author.