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Sexual behaviour and reproductive health knowledge of unmarried adolescents in a peri-urban area of Yangon City

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The objectives of the study were to elicit among 15-24 year-old never married adolescents residing in Bo Tun Zan Ward in Dawbon Township involving 200 each of unmarried males and females regarding their sexual behavior and knowledge of adolescents on reproductive physiology, contraception and sexually transmitted infections, including HIV. Both quantitative and qualitative data collection methods were used. In this study, adolescents have substantial gaps in knowledge relating to reproductive anatomy and physiology. Contraceptive knowledge level could be considered not so low. Regarding prevention of HIV transmission, 68.9% and 12.5% of adolescents answered respectively to use condom and to be faithful to partner. Pre-marital sexual activity is common in the study area. In multivariate analysis, younger age group (15-19 years), males and those who have never attended school were more likely to have low knowledge score in sexual and reproductive health, including STI/HIV/AIDS (odds ratio 2.23, 2.87 and 5.25 respectively).

INTRODUCTION

Ministry of Health of Myanmar defines adolescents as those in the age group 15-24 years [1]. In Myanmar, adolescents constitute 19% of the total population. Adolescent is a transitional period from childhood to adulthood. It is a time of rapid and uneven development physically, socially, emotionally and intellectually. They encounter many challenges and one key challenge they face is reproductive health problems [2]. Many research and intervention programmes have been carried out on issues of reproductive health concerning family planning, contraception, prevention of HIV/STI but all these efforts were aimed at the older population [3]. Literatures identifying sexual and reproductive health issues of adolescents in depth are very few.

One qualitative study showed that knowledge on puberty and reproductive physiology among Myanmar youths was good [4]. However, the reverse situation was found in other Myanmar studies using qualitative methods [5,6]. It was observed in 2004 Family and Youth Health Survey of Myanmar that adolescents have sexual and reproductive health information and aware of the issues; however, correctness and accuracy of knowledge was said not to be warranted of a high standard [7]. Within the frame of strong cultural norms against premarital sex in Myanmar, there is evidence that it is being practiced among adolescents [4,5,8,9]. One qualitative study showed that age of first sex took place between 16-20 years [6]. There is a need to further conduct research studies on adolescents' sexual and reproductive issues in Myanmar. This study was conducted with objectives of eliciting sexual behaviour

among 15-24 year-old never married adolescents residing in a peri-urban area of Yangon City; and determining their knowledge on reproductive physiology and anatomy, contraception and sexually transmitted infections, including HIV.

MATERIALS AND METHODS

A community-based cross-sectional analytic study, using both quantitative and qualitative methods was conducted in Dawbon Township, a typical peri-urban area in Yangon City, during the period from 20th July 2008 till 10th August 2008. Study population was all never married 15-24 year-olds of both sexes residing in the township.

Sample size calculation for quantitative component was based on anticipated proportion of the study population with the knowledge level of three practices (abstinence, being faithful to one partner and using condom) as regards HIV prevention of never married 15-24 year-olds as 50%, i.e., $p = 0.5$. Thus, $q = (1-p) = 0.5$. The significant level $\alpha = 0.05$, so $Z\alpha = 1.96$. Precision of the proportion estimated $d = 0.05$. The calculated minimum required sample size, using the formula $N=Z\alpha^2pq/d^2$, was 384. Taking into the refusal rate to participate as 4-5%, the sample size was set at 400. Out of this, 200 female youths and 200 male youths of the targeted age group were included in the study.

Multi-stage cluster sampling was applied for quantitative survey. One of the 14 wards in the township (Bo Tun Zan ward) was chosen randomly. In the ward chosen, random selection of households with young people of the targeted age group was made till the required sample sizes were obtained. Quantitative data were collected using pre-tested face-to-face interview questionnaire.

Response to each knowledge question was rated as "0" score for incorrect answer and "1" score for correct answer. A total score was summed and categorized as low, moderate or high level using the cut-off point of 1st and 3rd quartile.

Univariate analyses and multiple logistic regression analyses were conducted to examine social and demographic factors associated with overall knowledge score. Statistical Package for Social Science (SPSS) software programme (version 12.0, Chicago, IL, USA) was used for analyzing quantitative data. Multivariate models included the respondent's age group, sex, education, employment, family composition and brought up. STATA software,version 7, was used for the multivariate analyses.

Dimensional sampling for FGD was made basing on the two dimensions: sex, female and male; and age group, 15-19 and 20-24 years making four different combinations (female, 15-19 group; female, 20-24 group; male, 15-19 group; and male, 20-24 group). Since two FGD sessions were required for each dimensional combination, there were 8 FGD sessions. There were 7 participants in each group. In each FGD session, two participatory techniques were incorporated: body mapping and participatory sex census [10].

For qualitative data, FGDs with adolescents were transcribed and organized on the basis of emerging themes and sub-themes. Investigator of the study read over the transcripts to identify themes before organizing data. Matrix analysis was performed according to main themes and sub-themes. Atlas-ti software was used for analysing qualitative data.

The proposal was approved by the Ethics Committee of Defence Services Medical Academy.

RESULTS

Background characteristics of survey samples

Table 1 shows that mean age of sample population is 18.09 years (SD: 2.73), about

Table 1. Background characteristics of adolescents interviewed

Characteristics of adolescents	(N = 400) No. (%)	Range (Mean, SD)
Age group (years)		15-24 (18.09,2.73)
15-19	278(69.5)	
20-24	122(30.5)	
Sex		
Male	200(50.0)	
Female	200(50.0)	
Education		
Schooling		
Never attended school	12(3.0)	
Ever schooling	229(57.2)	
Current schooling	159(39.8)	
Highest standard attained		
No formal schooling	12(3.0)	
Primary school	42(10.5)	
Middle school	86(21.5)	
High school and above	260(65.0)	
Employment		
Never employed in paid work	103(25.8)	
Ever employed in paid work and not currently working	94(23.5)	
Currently employed	203(50.8)	7-23
Age at first employment (in years)		(15.5, 2.93)
Religion		
Buddhist	357(89.2)	
Christian	5(1.2)	
Muslim	17(4.2)	
Hindu	21(5.2)	
Family composition		
Living status of parents		
Both parents alive	299(74.8)	
Father alive, mother not	22(5.5)	
Mother alive, father not	63(15.8)	
Both parents dead	16(4.0)	
Parents living together		
Parents living together	263(65.8)	
Parents not living together	36(9.0)	
Not relevant	101(25.2)	
Living with someone at home		
Living alone	25(6.2)	
Living with father	20(5.0)	
Living with mother	77(19.2)	
Living with both mother and father	195(48.8)	
Living with others	83(20.8)	
Upbringing during past 15 years		
By father	9(2.2)	
By mother	61(15.2)	
By both parents	231(57.8)	
By others	99(24.8)	

39.8% are currently school going, 65% have reached high school and above, 50.8% are currently employed, 89.2% are Buddhists, about 48.8% are living with both parents and 57.8% were brought up by both parents.

Knowledge on reproductive anatomy and physiology

It can be found in Table 2 that only 43.2% of the adolescents could answer in which female organ pregnancy takes place and that more females could give correct answer (statistically significant at $P<0.01$). Majority of both males and females could not answer correctly where ovum is present, where sperm is present and duration of periods. More females could answer correctly on three issues relating to occurrence of pregnancy (after having sex for the first time; after having sex for only once; and having sex midway between two periods). The knowledge differences between males and females are statistically significant. Qualitative findings supported the quantitative findings.

Knowledge on contraceptive methods

Both quantitative and qualitative data showed that majority (343/400, i.e., 85.82% in quantitative data) of adolescents interviewed were aware of contraceptives. Among those adolescents who were aware, 91.0%, 65.0% and 50.7% knew pills, injections and condom respectively. Other methods like withdrawal and safe period were mentioned in qualitative data.

"When sperms are about to come out, pull out one's male organ and ejaculate them outside" (20-year-old male interviewee)

"If you make sex during one week after menstruation, you will not get pregnant" (20-year-old female interviewee)

Knowledge on HIV

Both quantitative and qualitative data show high awareness (392/400, i.e., 98.0% in quantitative data) of HIV/AIDS among the adolescents interviewed. Table 3 shows that among those who were aware, majority of adolescents (over 50%) could identify the three modes of transmission (sexual intercourse, blood transfusion and sharing contaminated instruments) but few (8.7%) only could identify mother to child

Table 2. Adolescents' knowledge on specific issues of reproductive anatomy and physiology

Knowledge on specific issues of reproductive anatomy and physiology	Male n = 200 (%)	Female n = 200 (%)	Total n = 400 (%)
In which female organ does pregnancy take place?			
Correctly answered	65 (32)	108 (54.0)*	173 (43.2)
Incorrectly answered	33 (16.5)	42 (21.0)	75 (18.8)
Answered did not know	102 (51)	50 (25.0)	152 (38.0)
Where is the ovum present?			
Correctly answered	24 (12.0)	24 (12.0)	48 (12.0)
Incorrectly answered	39 (19.5)	44 (22.0)	83 (20.8)
Answered did not know	137 (68.5)	132 (66.0)	269 (67.2)
Where is the sperm present?			
Correctly answered	31 (15.5)	29 (14.5)	60 (15.0)
Incorrectly answered	52 (26.0)	36 (18.0)	88 (22.0)
Answered did not know	117 (58.5)	135 (67.5)	252 (63.0)
How long do periods last?			
Answered days correctly	11 (5.5)	39 (19.5)*	50 (12.5)
Incorrectly answered	124 (62.0)	161 (80.5)	285 (71.2)
Don't know	65 (32.5)	0 (0.0)	65 (16.2)
A woman can pregnant on the very first time that she has sexual intercourse			
True	94 (47.0)	118 (59.0)*	212 (53.0)
False	64 (32.0)	64 (32.0)	128 (32.0)
Don't know	42 (21.0)	18 (9.0)	60 (15.0)
A woman can get pregnant if she has sex only once			
True	86 (43.0)	119 (59.5)*	205 (51.2)
False	73 (36.5)	55 (27.5)	128 (32.0)
Don't know	41 (20.5)	26 (13.0)	67 (16.8)
A woman is most likely to get pregnant if she has sexual intercourse halfway between her periods			
True	86 (43.0)	119 (59.5)*	205 (51.2)
False	61 (30.5)	44 (22.0)	105 (26.2)
Don't know	53 (26.5)	37 (18.5)	90 (22.5)

*P<0.01

transmission. Regarding main methods of prevention, 50.8% and 68.9% of adolescents could answer abstinence and using condom respectively. Only 12.5%, 29.8% and 41.3% respectively could answer being faithful to partner, safe blood transfusion and using disposable or sterile instruments.

Table 3. Adolescents' knowledge on specific issues of HIV

Knowledge on specific issues of HIV	Male n = 196 (%)	Female n = 196 (%)	Total n = 392 (%)
Modes of HIV transmission answered[a]:			
Sexual intercourse	180 (91.8)	170 (86.7)	350 (89.3)
Blood transfusion	107 (54.6)	126 (64.3)**	233 (59.4)
Sharing contaminated instruments	107 (54.6)	108 (55.1)	215 (54.8)
From infected mother to child	12 (6.1)	22 (11.2)**	34 (8.7)
Main methods of preventing HIV transmission answered[a]:			
Abstinence	100 (51.0)	99 (50.5)	199 (50.8)
Being faithful to each other's partner	20 (10.2)	29 (14.8)	49 (12.5)
Using condom	151 (77.0)	119 (60.7)*	270 (68.9)
Blood transfusion after screening	38 (19.4)	79 (40.3)*	117 (29.8)
Using disposable or sterile instruments	70 (35.7)	92 (46.9)**	162 (41.3)
Answering YES to the question:"Can a healthy-lookin person have HIV?"	120 (61.2)	150 (76.5)**	270 (68.9)
Answering YES to the question:"Can a person get HIV from being bitten by a mosquito which had bitten an HIV infected person?"	113 (57.7)	107 (54.6)	220 (56.1)
Answering YES to the question:"can a person get HIV by sharing a meal with someone who is infected?"	31 (15.8)	25 (12.8)	56 (14.3)
Correct answers given for the following statements:			
It is possible to cure AIDS	31 (15.8)	38 (19.4)	69 (17.6)
A person with HIV always looks very thin or unhealthy	105 (53.6)	109 (55.6)	214 (54.6)
People can take a simple test to find out whether they have HIV	104 (53.1)	84 (42.9)**	188 (48.0)

[a]Multiple responses *P<0.01 **P<0.05 level

Knowledge on STI

Both quantitative and qualitative data show low awareness of sexually transmitted diseases other than HIV among the adolescents interviewed (160/400, i.e., 40% in quantitative data). Among those who were aware, discharge from penis, pain

during urination and ulcers/sores in genital area as symptoms of STI in men could only be answered correctly by 14.4%, 33.1% and 45.6% of interviewees respectively. As for vaginal discharge, pain during urination and ulcers/sores in genital area as symptoms of STI in women could only be answered correctly by 10.6%, 28.1% and 30.0% of interviewees respectively. Similar situation of low knowledge in STI was found in qualitative data.

"As the name indicates … kar-la-thar yaw-gar … *it is a disease of males"* (18-year-old female interviewee)

"If a man ejaculates sperm outside after making sex, there will be no transmission of kar-la-thar yaw-gar*"* (20-year-old female interviewee)

Sexual behavior

In this study, sexual relationship was referred to penetrative sex only. Twenty per cent of males admitted that they ever had had sex and only 2% of females made the admission. Mean age of first sex for both sex groups was 18 (SD: 2.67; range: 12-24), for males was 18.1 (SD: 2.68; range: 12-24) and that for females was 17.5 (SD: 2.89; range: 15-20). Majority of first sexual partners were boy/girl friends for both sexes, and commercial sex workers constituted about 43% for males. About 48% of males said they used condom at first sex and none of the females used condom.

Among those sexually active adolescents, only 47.5% of males and 50% of females said that they had had sex during last 12 months. Male adolescents had had their last sex with either a girl friend or a commercial sex worker, and female adolescents had had their last sex with a boy friend. Majority of them said they used a condom during their last sex. When asked for the reasons for using condom, majority of male interviewees (80%) said it was for prevention of infection, and female interviewees (100%) said it was for prevention of pregnancy.

In qualitative data both the males and females admitted the existence of sexual practices among young females of their own age groups. Males said the first sex among young people in their environment began at ages ranging from 13-20 and females said to range from 14-16.

Multivariate analysis

In analyses controlling for social and demographic characteristics, younger age group (15-19 years), male and those who have never attended school were more likely to have low knowledge score in sexual and reproductive health, including STI/HIV/

Table 4. Association between selected characteristics of adolescents and having low overall knowledge score in sexual and reproductive health knowledge

Characteristics	OR (95% CI)	Adjusted OR (95% CI)
Age group (years)		
15-19	2.07(1.31-3.26)**	2.23 (1.35-3.58)**
20-24	1.00	1.00
Sex		
Male	2.82(1.86-.26)***	2.87(1.84-4.46) ***
Female	1.00	1.00
Education		
Never attended school	4.57(1.19-17.54)*	5.25(1.12-24.57)*
Ever schooling	1.04(0.69-1.57)	1.30(0.81- 2.07)
Current schooling	1.00	1.00
No formal schooling	5.04(1.33-19.07)*	
Primary school	1.53 (0.79-2.94)	
Middle school	1.39 (0.85-2.28)	
High school and above	1.00	
Employment		
Never worked	0.99 (0.62-1.61)	
Ever worked but currently not	0.77 (0.46-1.27)	
Currently working	1	
Family composition		
Living with father	2.10 (0.61-7.27)	
Living with mother	1. 31 (0.49-3.54)	
Living with both parents	2.20 (0.88-5.52)	
Living with others	1.70 (0.64-4.51)	
Living alone	1	
Brought up		
By father	1.64 (0.43-6.26)	
By mother	0.85 (0.48-1.51)	
By others	0.75 (0.46-1.22)	
By both parents	1	

*p<0.05; **p<0.01; ***p<0.001

AIDS (adjusted odds ratio 2.23, 2.87 and 5.25 respectively - Table 4). Regarding family composition, those living with mother only were less likely to have low knowledge score (odds ratio 0.45 - Table 4).

DISCUSSION

The situation found in this study is that adolescents have substantial gaps in knowledge relating to reproductive anatomy and physiology. Majority of adolescents could not answer in which female organ pregnancy takes place, where ovum is present, where sperm is present and duration of periods. About 50% of them could not correctly answer whether a woman can pregnant on the very first time of sexual intercourse, if she has sex only once and whether she will get pregnant if sexual intercourse takes place half way between her periods.

A similar finding was found in a Ghanian study [11] where only 17% of male and female adolescents could correctly indicate when during the menstrual cycle pregnancy is most likely to occur and one-third of them did not know that it is possible for a woman to get pregnant the first time she has sex. The findings also matched with the findings of another Myanmar study in which was shown that more than two-thirds of young people do not have correct knowledge about reproductive physiology [7].

It can be considered a natural process to observe older adolescents and adolescents with higher educational level having higher knowledge in sexual and reproductive health. However, it is quite interesting to observe females having higher knowledge level in these issues.

Contraceptive knowledge level could be considered not so low among adolescents in the study area. In a study in Ghana, nearly all respondents (95%) claimed awareness of at least one way to avoid pregnancy and virtually all respondents (99%) stated they knew about condoms [11].

In this Dawbon study, like in the case of that for contraceptive, awareness of HIV is very high among 98% of adolescents interviewed and it is a good news. Similar finding has also been reported in an African study [12]. It is to be noted that awareness is a rough measure of knowledge as it provides no identification of depth of knowledge. The level of awareness may be high and at the same time actual knowledge may be superficial [13, 14].

Evidence from a study [12] shows that although awareness of HIV is very high among young adolescents (12-14 years), indepth knowledge about HIV transmission and prevention is very low. In case of Dawbon study, majority of the adolescents interviewed could mention sexual intercourse (89.3% of interviewees), blood transfusion (59.4%), and sharing contaminated instruments (54.8%) as modes of HIV transmission. Only few (8.7%) had knowledge of HIV spread through mother to child.

Regarding prevention of HIV transmission, 68.9% of adolescents answered to use condom. Very few (12.5%) answered to be faithful to partner. The findings also indicate that there are misconceptions among adolescents as regard HIV.

It is found in Dawbon study that only 40% of adolescents interviewed were aware of STIs other than HIV. The study findings indicate that widespread ignorance about STI needs to be addressed in the adolescent health programme of Myanmar, especially for those adolescents in peri-urban areas.

As an overall, adolescents in older age group and those in higher education group have statistically significantly higher levels of knowledge in sexual and reproductive health including STI and HIV. This points to focus more on younger adolescents and adolescents with lower education in

providing education on sexual and reproductive health, including STI and HIV. Both the qualitative and quantitative data depict a picture of a population in which pre-marital sexual activity is common in the study area. Although information on sexual practices is reportedly often difficult to obtain, some of the participants in this study appeared relatively open in their responses to sensitive questions.

In a study in Ghana, 52% of adolescents studied had ever had sexual intercourse and young women were more likely to than young men to be sexually experienced (56% vs. 48%) [11]. The same study indicated that nearly one-third of all respondents reported having had at least one sexual partner in the past 30 days and among them, about 60% said they used condom.

Sexual intercourse is commonly initiated during adolescence [15]. Early initiation of sexual intercourse has been linked to increased risk of STIs and pregnancy during adolescence [16]. Early initiation of sexual intercourse is often used as an indicator of risky sexual behavior, and many interventions are designed to delay sexual activity, such as programmes encouraging virginity pledges and delivering abstinence education [17, 18].

CONCLUSION

The integration of participatory research methods with conventional form of quantitative data collection in Dawbon study produced an interesting combination of complementary information regarding sexual and reproductive health knowledge and sexual practice among peri-urban adolescents. The data presented in the findings of this study highlight several general sexual and reproductive health issues facing adolescents in a peri-urban area of Yangon City. The key findings of this study point out that efforts are still needed to educate adolescents about reproductive anatomy and physiology, and STIs and the modes of transmission and their signs and symptoms. Pre-marital sex is common among the peri-urban adolescents and initiation takes place early. High awareness of contraceptive and high levels of HIV knowledge are encouraging findings. However, safe sex practice could not be elucidated convincingly because of low reporting.

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