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Factors Affecting Utilization of Reproductive Health Services by Adolescent Females Using the Health Belief Model in Maraka District, Dawuro Zone, Southern Ethiopia

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Abstract
Background: According to the World Health Organization, adolescents were defined as persons between 10 -19 years of age and were characterized by significant physiological, psychological, and social changes; these were put them at high risk for Reproductive health problem. **The objective of the study:** It was assessed factor affecting utilization of reproductive health services among rural adolescent females using the health belief model in Mareka district, Dawuro Zone, Southern Ethiopia.**Methods**: A community based cross sectional design with both quantitative &qualitative was conducted in Dawuro zone, southern Ethiopia from February 20th to April 30th 2014. Sample size was 844 and calculated using single population proportion formula. Interviewer administered structured questionnaire was used to collect data. Four FGDs were conducted for qualitative study. Frequency table and cross tabulation was done. AOR and OR with 95% CI were considered for statistical significance. Bivariate analysis was used to determine presence of crude association. Multivariate logistic regression model was employed to control confounding. **Result:** Majority of the respondents had high score of perceived susceptibility for RHP, perceived severity for RHP, and perceived barrier for utilization. The minimum and maximum scores of the model constructs were (9, 45), (6, 30), (9, 45), and (7, 35) respectively. The likelihood of utilizing reproductive health services by adolescent female was significantly associated with perceived susceptibly of RHP, perceived severity of RHP, and perceived barrier with PV<0.05 and CI of 95%.**Conclusion:** Almost one third of adolescent females were not utilized RH services which were more stressing despite there were health post in each kebele and four health centers in the wereda to introduce reproductive health problems preventive massage to increase perceived susceptibility and perceived severity on adolescent females. The role of community leaders, parents, religion leader, teachers, media, and IEC materials had significant positive influence on the use of RH services by the adolescent females.**Recommendation:** Multi-sectoral integration was required to increase reproductive health services utilization by the adolescent female because she was the primer victim for many reproductive health problems due to various reasons but she was vital for gene preservation.
Keywords: Adolescent females, Health Belief Model, Utilization of RHS

Introduction

Globally, most people become sexually active during adolescence. Premarital sexual activity was common and was on the rose worldwide. Millions of adolescent females were bearing children, 40 percent of all new human immunodeficiency virus (HIV) infections were occurred among 15-24 year olds; recently estimated that 7,000 were infected each day. These health risks were influenced by many interrelated factors (1-4).

According to World Health Organization (WHO), adolescent is defined as a person between 10 up to 19 years of age and youth is a person between15 up to 24years of age. Adolescents were characterized by significant physiological, psychological and social changes that placed their life at high risk and making up about 20% of the world's population, of whom 85% lived in developing countries. This had at least partially been because adolescents were considered to be a relatively healthy age group, without a heavy burden of disease.

The concern about adolescent sexual and reproductive health (ASRH) had grown following reports that sexual activity, early pregnancies and sexually transmitted infections (STIs) including human immune deficiency virus (HIV) infection rates were increasing at unprecedented rates among adolescents. Since the 1994 international conference on population development (ICPD) in Cairo, Egypt, adolescent friendly reproductive health services (AFRHS) had been recognized as an appropriate and effective strategy to address sexual and reproductive health (SRH) needs of adolescents. Despite 35% of the world population being in the 15-24 age groups, the RH needs of adolescents had neither been researched nor addressed adequately (1- 4).

The rates were highest in sub Saharan Africa, where as more than half of girls aged 15-19 were sexually experienced and more than half of women gave birth before age of 20 year. Pregnancy was poorly tolerated in many societies. If it happens, the blame was usually put on the girl. Each year about 15 million adolescents aged of 15-19 year gave birth, as many as four million obtained an abortion and up to 100 million become infected with a curable sexually transmitted disease. Nevertheless, the needs of the young people remain poorly understood (5, 6, 7).

Early and unprotected sexual activity and misconceptions about HIV/AIDS were prevalent in rural

adolescents (8-10). There were a few studies on knowledge, attitude and practice of adolescents in relation to their reproductive health in Ethiopia showing a significant discrepancy between knowledge about and the level of services utilization in particular and poor access to RH services in general as study in North West Ethiopia (10-12).

Sexual activity put adolescents at risk of various reproductive health challenges. Ethiopia was one of the country in sub Saharan Africa regions with rapid population growth trend from these rapid growing population young people constitute one-third of the total population. Their number was expected to grow from 20.3 million in 2000 to 25 million in 2010.

The reproductive health problems of young people in Ethiopia were multifaceted and interrelated. Childbearing was begun at an early age; 45 percent of the total births in the country occurred among adolescent girls and young women. Sexual violence and commercial sex work had become common phenomena among young girls. As a result, they had become primary victims of the HIV/AIDS crisis that had spread throughout the country (13 - 15).

Statement of the problem

In the world majority of adolescent female in the age group 15-19 years had been at risk of many RH problems. Therefore many adolescent females were exposed to HIV/ADIS infection and other RHP due to their engagement in unsafe sex & unsafe abortion, less achievement of academic performance and absenteeism of school. So that adolescent females were tried suicidal attempt due to many factor which affect RHS utilization (1).

In Africa alone, an estimated 1.7 million young people were exposed to many RH problems. Most religious groups had stringent rules and norms that tend to view use of family planning among unmarried youth as sinful and believe that engaging in pre-marital sex was sin (2).

The religious norms to some extent had played a role in controlling the youth from involving themselves in indiscriminate sex in Kenya but these efforts had been eroded by increased urbanization which had led most youths living on their own without religious guidance and control (17).

Among both sex non-users of youth friendly services, 43% of them did not knew where to go for these services and 18.7% said that the location was inconvenient. A total of 7.1% were reported too shy, 4.9% were too busy, 11% of the youth participants did not visited RH services, and 11% were said clinic was too a great distance (12). There was no study on utilization of RHS by adolescent females to address them alone because she was the primer victim of RHP which was the gap to carry out this study.

Stigma, service costs, and provider bias were posed formidable barriers to Ethiopian young people's ability to access sexual and reproductive health services. To address these barriers, in 2005 Pathfinder International and the Ethiopian Federal Ministry of Health were partnered to introduce and scale up youth-friendly services in the Ethiopian public health system. YFS an evidence-based approach to reduce barriers to service uptake among young people & which support the foundation of Ethiopia's health system to meet the SRH needs and rights of the largely underserved adolescent and youth population. But up take was low as study conducted in Addis Ababa, Ethiopia (32).

OBJECTIVE

General objective of the study

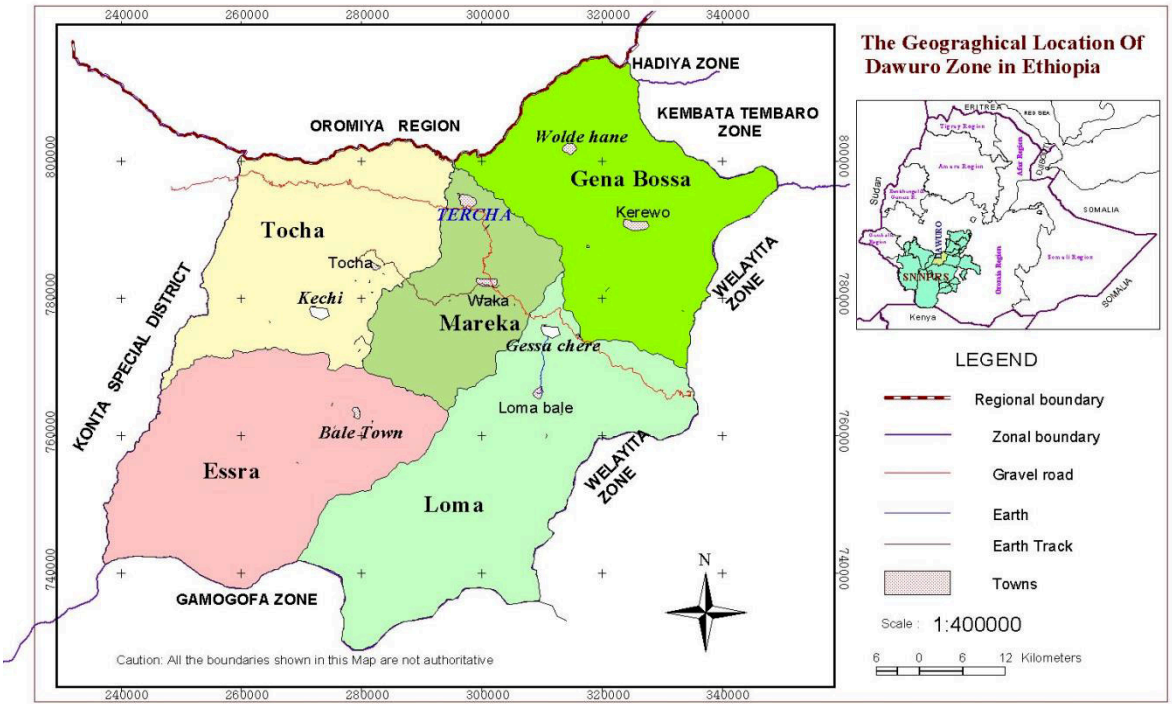
To assess factor affecting utilization of reproductive health services among rural adolescent females using the health belief model in Mareka district.

Specific objective of the study

1. To assess the community knowledge, belief, attitude, and practice about utilization of reproductive health service by adolescent females among community leaders in Mareka district.
2. To assess the perceived susceptibility and perceived severity of the reproductive health problems among adolescent females in Mareka district.
3. To assess perceived benefits of utilizing the reproductive health services and perceived barriers to utilize the RH services among adolescent females in Mareka district.
4. To assess factors affecting utilization of RHS; like modifying factors, and cue to actions among adolescent females in Mareka district.
5. To assess self efficacy on RHS utilization among adolescent females in Mareka district.

METHODS AND MATERIALS

Map of the study area



Sample size and sampling techniques

Sample size determination for quantitative study

The Sample size was calculated using single population proportion formula and EPI-INFO soft ware using the following the assumptions. Since there was no previous study conducted in Ethiopia and particular in study area in this specific study group which comprises single sex up to the knowledge of the investigator. Therefore the following assumption to estimate maximum sample size such as; a prevalence level was 50%, margin of error was 5%, non-respondents rate was 10%, confidence interval level was 95%, and the design effect of two was considered to obtain sufficiently large sample size because there was steps during recruitments. Based on these assumptions the total samples size was calculated using the formula indicated below gave 844 respondents.

$$n = \frac{\left(\frac{z\alpha}{2}\right)2\ p(1-p)*2}{d2} = 3.8416*0.25/0.0025*2 = 768.52$$

Where: n was minimum possible sample size, N was actual sample size.

Z α/2 was standard score value for 95% confidence interval level of two sides normal distribution which was 1.96, and d^2 was margin of error which was 5%.

P was proportion of adolescent females who were utilized RHS which was 50%.

Then minimum possible sample size was n = 768. Considering 10% non-response rate total sample size was equal to n+n*10%. Then N was equal to 768+76 =844. Hence 844 adolescent females were involved in the study.

Sampling technique for quantitative study

There were 37 Keble in the wereda and we were sampled 18 Keble for the study because many literature suggest that 25% up to 50% was sampled to get representativeness. In the first step these seventy kebele was selected on simple random sampling by using lottery method. The sample unity in selected kebele was house hold and sample unity was proportionally allocated to each selected Kebele.

Secondly the study unit was proportional allocated to sample unity which was one for each sample unity and interval from each study unity was approximately 10.

Thirdly by giving clear orientation for data collector's to make land mark on first house hold then adolescent female was selected through systematic sampling technique (every 10th study unit by using code which was given during 2002 elections of Ethiopia) from the sample unit and it was checked by supervisors.

Finally the study unity was identified by using key informants on the day of the survey and those who was

eligible for the study was identified and interviewed by the data collectors, if absent the next nearest study unity was used.

Sampling procedure for quantitative study:

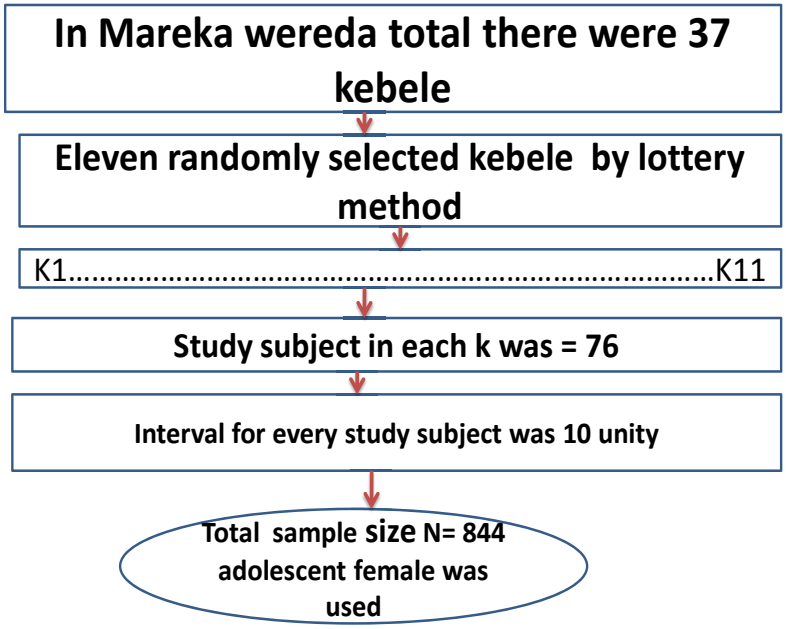


Figure 1 Schematic presentation of sampling of female adolescents

Data collection technique for quantitative study
The data for the quantitative section of the study was collected by face to face interview with 5 trained data collectors for 7 days who were diploma nurse/HO /BSC nurse with some experience in data collection. Interviewer administered structured questionnaire was used to collect data. The instrument was adapted from web site, IFH guide line for youth and modified (18, 26, and 45).

Instrument & measurements
There were 10 parts in instrument with different response formats and different items to assess the dependent variables. Such as, socio-demography assessing instrument with 16 item, perceived susceptibility assessing instrument with 10 item, perceived severity assessing instrument with 6 item, perceived barrier assessing instrument with 10 item, perceived benefit assessing instrument with 10 item, cue to action assessing instrument with 4 item, self efficacy assessing instrument with 11 item, RHS utilization assessing instrument with 5 item, knowledge assessing instrument with 4 item, attitude assessing instrument with 2 item and total there were 78 items. Coding of tools was carried out. The Cronbach`s alpha for attitude assessing 36 items were equal to 0.74.

Sample size determination and sampling technique for qualitative study
For qualitative study participants were recruited by judgmental sampling technique. Homogeneity for participants was on the basis of sex categories. The participants for the four FGDs were selected from community leaders using judgmental sampling technique.

Data collection technique for qualitative study
Four FGDs (two FGDs with men, two FGDs with women were conducted in four kebele. Each FGD comprised of ten to twelve participants. For the FGDs with community leaders, religious leaders, community based insurance scheme ("Idir") chairpersons; other key community resource people like shaman, witchcraft, traditional service providers; participants were purposely selected from four kebeles those kebeles that was not included in quantitative parts. A total of 50 community leaders found in Mareka district (26 males and 24 females) were included. The age of the participants ranged from 25 to 41 years. The average time taken for each FGD was 45 minute. All participants engaged well with the topic and responded excitedly to the questions.

Procedure for FGD

FGD was conducted in four kebeles that was not included in quantitative parts such as; Waka 01 kebele, Waka 02 kebele, Eyessuse kebele, and Gozo Bamush kebele. For the focus group discussion, appropriate rapport was established before starting the focus group discussion. The respondents were assured that their responses were kept confidential. The principal investigator moderated all focus group discussion session, and the two trained supervisors were assisted in note taking of all the discussions. After the focus group discussion is over, the facilitator thanks the participants for taking the time to participate. After each group discussion the principal investigator gave appropriate feedback. The principal investigator and supervisors transcribed the minutes. Preliminary coding of transcript was done and a consistent theme that was directly related to the objectives of the study was identified.

Variables

Dependent variable

Utilization of reproductive health services (FP, abortion care and its management, and SIT management).

Independent variables

1. Modifying factors/back ground factor that affects utilization of reproductive health services like:
    - Educational status
    - Age
    - Religion
    - Ethnicity
    - Knowledge and attitude toward reproductive health services.
2. Self-Efficacy of girls to utilize reproductive health services.
3. Perceived Benefit of reproductive health services utilization.
4. Perceived Barriers to utilize reproductive health services.
5. Perceived Susceptibility to reproductive health problems.
6. Perceived Severity of reproductive health problems.
7. Cues to utilize or reminders to utilize reproductive health services like:
    - Media information
    - Appointment card from health facility
    - Teachers
    - Neighbor
    - Family

Operational definitions

Utilization of reproductive health services: Adolescent females who received at least one component of reproductive health services (FP, abortion care, and STI managements) in the past 12 month which was appropriate for her ages.

Reproductive health services: A reproductive health service was a service which was gave by health workers to adolescent female at health center, health post and hospital of Government or private institution such as; abortion care and its management, short acting family planning to prevent unwanted pregnancy, and ***sexual transmitted infection*** information and its management to prevent reproductive health problems.

High perceived susceptibility: Adolescent females who had score of susceptibility greater than or equal to twenty-five had high perceptions toward reproductive health problems while adolescent females who had score of susceptibility less than or equal to twenty-four had low perception toward reproductive health problems.

High perceived severity of reproductive health problems: Adolescent females who had score of perceived severity greater than or equal to twenty-five had high perceptions toward severity of reproductive health problems while adolescent females who had score of perceived severity less than or equal to twenty-four had low perception toward severity of reproductive health problems.

High perceived benefits of reproductive health services use: Adolescent females who had score of perceived benefit greater than or equal to twenty-five had high perceptions toward benefit of reproductive health services utilization while adolescent females who had score of perceived benefit less than or equal to twenty-four had low perception toward benefit of reproductive health services use.

High perceived barriers to take reproductive health services: Adolescent females who had score of perceived barriers greater than or equal to forty had high perceptions toward barriers to use reproductive health services while adolescent females who had perceived barriers score less than or equal to forty had low perception toward barriers to use reproductive health services.

Self-efficacy: Adolescent females who had score of self-efficacy greater than or equal to eight had high self-efficacy to use reproductive health services while adolescent females who had self-efficacy score less than seven

had low self-efficacy to use reproductive health services.
Cue to use reproductive health services: The respondents who had factors that would start to utilize reproductive health services by remembering. Like follow up cared, media, and persons.
Attitude towards reproductive health services: Adolescent females who were said yes for the attitude items and prefers credible professions had positive attitude and those who were said no for the attitude items had negative attitude toward reproductive health services
Knowledge of reproductive health services: Adolescent females with knowledge score greater than or equal to ten were considered as knowledgeable and knowledge score less than or equal to nine were considered as less knowledgeable.

Key terms definition
Adolescent Female: Girl whose age was between 10-19 years.
Youth female: Girl whose age was between 15-24 years.
Reproductive health services: Services which includes educating about safe sex, educating about unwanted pregnancy prevention, provision of family planning, antenatal care, delivery care, postnatal care, abortion management, sexual transmitted infection management, and counseling about sexual transmitted infection.
Community perception about reproductive health services utilization: Feeling and belief of the community on reproductive health services utilization (learned predisposition to respond consistently to certain objectives).
Adolescent female likelihood on utilization of reproductive health services: Probability of utilization of reproductive health services by adolescent females.
Utilization: The ability to consume a service.
Perceived susceptibility: An individual's assessment of his or her chances of getting the disease.
Perceived severity or seriousness: An individual's judgment that the disease was sever.
Perceived benefits: An individual's conclusion as to whether the new behavior was better than what he or she is already doing.
Perceived barrier: An individual's opinion that would stop him or her from adopting the new behavior.
Self-efficacy: Beliefs about one's ability to perform the recommended response.
Cue to action: Those factors that would start a person on the way to change behavior or strategies to activate one's readiness to utilize any services

Data analysis
For quantitative study, data was entered to computer using Epi data version 3.1, and exported to SPSS 16.0 soft ware. The following descriptive variable analysis methods were considered such as; Frequency table, cross tabulation, OR and AOR with 95% CI and P value less than 0.05 were considered for statistical significance in pear-sons' chi square test. Bivariate analysis was done to determine presence of crude statistical association between independent variables and the dependent. Variable with p-value less than 0.2 or 0.25 in bivariate analysis was considered as a candidate to be entered in multivariate logistic regression. Multivariate logistic regression model was employed to control confounding variable.

Multivariate regression was usefully to examine three or more variable at a time. The goal of multivariate regression was to arrive at the set of 'B' value called regression coefficient for the explanatory variables or independent variable.

For qualitative study, the data was analyzed by thematic approach and merged in to quantitative findings.

Data quality assurance
Data collectors & supervisors had diploma /bachelor degree and who were trained for five day on the objective of the study, and method of data collection, interview technique & content of questionnaire. Two supervisors were assigned to maintain data quality by coordinating the Kebele and facilitating the logistics.

Data was checked for completeness, accuracy, and consistency by supervisors & principal investigator after the data collection on daily base. Double entry was performed to assure quality of data. The questionnaire was prepared first in English and translated into Amharic retranslated in English. Pretesting of the questionnaires in the same wereda on those who was not included as the study subject was done. The Cronbach's alpha for attitude assessing 36 items were equal to 0.74.

Ethical consideration
Ethical approval and clearance was obtained from the Wolaita Sodo university Ethical Clearance Committee of Public Health & Medical Science College.

Letter of cooperation to Mareka woreda was obtained from Dawuro Zone chief administrative office and Zone health department office to respective woreda health office, Waka YFS center, Waka health centers,

and selected Keble administration. Informed consent was obtained from study participant and parents when adolescent female was below 18 year of age by informing the purpose of the study.

Dissemination plan

The findings of this study was presented to JU, regional health bureau, Dawuro zone health department, Dawuro zone administration, Mareka Woreda administration and other organizations who were working on RHS services. The findings would be presented in different seminars, meetings and workshops and published in a scientific journal.

RESULT

Socio-demographic characteristics

Eight hundred forty-four adolescent females were responded the interviewer administered structured questionnaires of which eight hundred forty-four were returned completely making a response and the response rate was 100%.

The mean age of the adolescent female was 17.35 with SD of 1.63 and from total users 360 (61.20%) respondents had age equal to the mean and above the mean.

Seven hundred seventy-four (92.7%) were attended the school, of which 335(43.33%) respondents were attended grade 7-8, and 320(41.33%) respondents were attended grade 9-12. Four hundred fifty five (53.9%) of respondent had pocket money from their family to do some of their need. Majority of the female adolescent 727(86.1%) were live with both father and mother.

Seven hundred thirty-nine (87.6%) respondents were orthodox Christians, 101 (11.9%) respondents were protestant Christians, and, 4 (0.5%) respondents were catholic by religion.

The adolescent females were dominantly Dawuro in their ethnicity that consisted of 826(97.9%). Current occupation of the respondent was student, merchant, private employed and, Government employed.

Ninety seven percents of the family marital statuses of the respondents were lived together. Six hundred fifty two (77.3%) of the respondent's fathers were farmer. 703(83.3%) of respondent's fathers could read and write.

Seven hundred eighty three (92.8%) of the respondent's mother was house wife. 586 (69.4%) of respondent's mother could read and write. (Table 2)

Table1: Socio demographic characteristics adolescent females in Mareka Wereda south west Ethiopia, March, 2014 (N=844)

Variable	Frequency	Percent
Attendance rate of the school		
Yes	774	91.70
No	70	8.30
Level of education		
Only read and write	6	0.80
Grade 1-6	81	10.50
Grade 7-8	335	43.30
Grade 9-12	320	41.30
Diploma	29	3.70
Degree	3	0.40
Current occupation		
Student	485	57.50
Unemployed	169	20.00
Merchant	74	8.80
Private employed	67	7.90
Government employed	43	5.10
Other	6	0.70
Religion		
Orthodox	739	87.60
Protestant	101	12.00
Catholic	4	0.50
Ethnicity		
Dawuro	826	97.90
Wolayita	18	2.10
Mother's educational status.		

Illiterate	175	20.70
Read and write	586	69.40
Primary school	70	8.30
Secondary school	2	0.20
Diploma	3	0.40
Degree	8	0.90
Occupation of the mother		
House wife	783	92.80
Mother not alive	27	3.20
Merchant	16	1.90
Government employed	12	1.40
Farmer	5	0.60
Private employed	1	0.10
Father's educational status		
Illiterate	72	8.50
Write and read	703	83.30
Primary	43	5.10
Secondary	17	2.00
Diploma	1	0.10
Degree	8	0.90
Father's occupation		
Farmer	652	77.30
Merchant	149	17.70
Government employed	24	2.80
Father not alive	19	2.30
Live with		
Both father and mother	727	86.10
Father	52	6.20
Alone	26	3.10
Mother	13	1.50
Relative	13	1.50
Friends	13	1.50
Marital status of the family		
Live together	722	85.50
Widowed	94	11.10
Separated	14	1.70
Divorced	14	1.70

5.2 Knowledge and attitude towards RHS utilization

5.2.1 Knowledge of RHS and information sources

Mean score of knowledge was taken after coding from total score of 17 and the mean score for knowledge was 9. Six hundred seventy-nine (86.7%) of respondents were less knowledge for RHS. However majority of the respondents 359 (42.5%) were heard from radio and radio was the main source of information.

This was supported by the first focus group result with adult Men. In this focus group the discussants were agreed that they know RHS, which was given nearby in our kebele from health post and health centers such as, FP, RH information, and STI managements RHS is known in the local languages and Amharic as "yelota patsatthsa goaatatta" and "senetewalido-tsena ageliglot", respectively. Discussants were also agreed that they heard RHS from health extension workers, neighbor, radio and TV. "It is a service which is given by health professionals such as PF, STI treatment and RH information". (34 year, religious leader, male)

Table2: Source of information to remember utilization of reproductive health services and type of the services in Mareka wereda south west Ethiopia, March, 2014 (N=844)

Variable	Source	Utilization of RHS		
		Yes (Percent)	No (Percent)	Total (Percent)
Source of information	Radio	237 (28.10)	105 (12.40)	342 (40.50)
	TV	14 (1.70)	5 (0.60)	19 (2.30)
	Family	29 (3.40)	12 (1.50)	41 (4.90)
	Teacher	141 (16.70)	63 (7.50)	204 (24.20)
	Health worker	83 (9.80)	38 (4.50)	121 (14.30)
	Teacher and HW	56 (6.60)	23 (2.80)	79 (9.40)
Type of services heard	**Type of services**			
	STI management	30 (3.50)	7 (0.80)	37 (4.30)
	FP	448 (53.08)	215(25.40)	663 (78.50)
	RHS information	44 (5.20)	17 (2.00)	61 (7.20)
	All	38 (4.50)	7 (0.80)	45 (5.30)

Attitude towards RHS utilization

The result indicated that 676 (80.1%) respondent were willing to fee for the services and preferred medical doctor/health officer, Nurse, and health extension workers. Majority of adolescent females had positive attitude toward RHS utilization, which comprised 603 (72.5%).

Perception about RHS utilization

The adolescent females with high score for perceived susceptibility, perceived severity, perceived barrier, perceived benefit, and their correlation coefficient with outcome variable by chi-square test was shown in next table (Table 3).

Table3: The scores of theoretical construct and their correlation b/n utilizations of reproductive health services in Mareka wereda south west Ethiopia, March, 2014 (N=844)

Theoretical variable	***Utilization of RHS*** *in percent*		***Beta***
	Non user n (%)	*User n (%)*	
Perceived susceptibility RHP			
Low	22[20.80]	84[79.20]	1.00
High	**234[31.70]**	**504[68.30]****	**0.57**
Perceived severity for RHP			
Low	41[19.50]	169[80.5]	1.00
High	**215[33.90]**	**419[66.10]****	**0.75**
Perceived barrier for RHS			
Low	78[35.5]	142[64.50]	1.00
High	177[28.50]	444[71.50]	-0.32
Perceived benefit			
Low	47[29.90]	110[70.10]	1.00
High	209[30.40]	478[69.60]	1.02

P means PV< 0.05.**

5.3.1 Perceived susceptibility

The mean score of perceived susceptibility was 36.19 with SD of 5.60. Adolescent female perceived susceptibility toward RHP was assessed and the result indicated that 106 (12.6%) of adolescent females had low score of perceived susceptibility for RHP.

This was supported by FGD result with adult men. In this FGD the discussants were agreed that when adolescent female utilized RHS before marriage they believed that she was very high in sex. “When adolescent female is utilize RHS before marriage the community claim that she was very high in sex and this show that her mother’s was hyperactive on sexuality”.(30 year, male community leaders) “UH!!! (Strong felling) see girl’s mothers to marry girl because she reflects her mother’s behavior as proverb of Dawuro”. (37year, male)

Perceived Severity

The mean score for perceived severity was 23.72 with SD of 1.01 for adolescent female. Six hundred thirty-four (75.1%) of the respondents had high score of perception towards severity of RHP.

This was supported by the FGD result with adult women. In this focus group the discussants were agreed that when female adolescent was pregnant before marriage she was go to traditional healer and drinks traditional medicine to abort the fetus because it was not acceptable in the community. When the girl was

pregnant before marriage she would go to traditional healer and drank traditional medicine to abort the fetus then she was became very sick and hidden the problem for the family by saying I had abdominal cramping and finally she was end up with death and the family lost her. "One female adolescent in our village was drank detergent (berekina in local language) to make abortion then she was admitted to hospital and the hospital said that she had throat damage due to what was she taken to made abortion then, her mother in our village soled her one ox to cover medical cost of her girl and she was out of Ethiopian school leaving certificate examination took in that year so her families were suffered". (32 year, female)

Perceived Benefit

The mean score for the perceived benefit of RHS was 44.10 with SD of 3.09 for adolescent female. Six hundred eighty-seven (81.4%) of the respondents had high score of perception toward benefits of RHS. Seven hundred eighteen (92.4%) of respondents were strongly agreed that utilization of RHS is an effective way for preventing STI, and abortion. Majority of the respondents 812 (96.2%) were believed that utilization of RHS could improve productivity of the community. Seven hundred eighty-nine (93.5%) of the respondents were believed that RHS utilization could improve school performance by decreasing absenteeism due to RH related problems such as abortion, unwanted pregnancy by female adolescent.

This was supported by FGD result with adult men. In this FGD the discussants were agreed that it was very good for community but it was not good for adolescent females. "It is very good for married women and bar lady but it is not good for adolescent female when she is not married, b/c if she practice it before marriage it decrease social value of the girls and her family". (36 year, male)

Perceived Barrier

The mean scores of perceived barriers were 26.95 with SD of 2.73 for females adolescent. The result indicated that six hundred twenty-one (73.5%) of the respondent had high score of perceived barrier for utilization of RHS.

This was supported by FGD result with adult women. In this group the discussants were agreed that there is stigma when adolescent female utilizes FP before marriage and there was high cost to get abortion services utilization. "FP is free but there is stigma when the girl use FP before marriage therefore I do not allow for her until marriage". (34 year, female)

Self-efficacy

The mean scores of self-efficacy were 14.97 with SD of 2.20 for adolescent female. The result indicated that eight hundred thirty-seven (99.2%) the respondents had high score of self efficacy to uptake reproductive health services.

Cues to action

The study was indicated that from total study subjects 806 (95.5%) of the respondents were used different cues to utilize reproductive health services in different way. Three hundred forty-two (40.5%) of respondents were used radio as cues to utilize reproductive health services followed by 24% of respondent was used teachers as cues. Three hundred thirty (56.1%) adolescent females were not get appointment cards from health institutions after starting utilization of the services from total users of reproductive health.

RHS utilization

The result showed that there were 588 (69.70%) reproductive health services user adolescent female and 256 (30.30%) reproductive health services non user adolescent female by asking past twelve month's use of reproductive health services from the date of interview. Among users of reproductive health services 455(77.3%) were used FP while 53 (9%) were used reproductive health services information, 45(7.6%) were used STI management, 19(3.2%) were used abortion care, and 16(2.7%) were used VCT. It revealed that from total 588 (69.7%) users of reproductive health services 330(56.1%) adolescent females were not get appointment cards from health institutions after starting utilization of the services so that 223 (37.9%) respondents were not utilized reproductive health services more than one time for their age.

This was supported by FGD conducted with adult women in Waka 02 kebele. In this focus group the discussants were agreed that utilization of RHS by female adolescent before marriage was not good b/c when her uptake was knew in the community then the community under minded her family and her family feel shame; therefore she was discontinued when her utilization was knew by others. "I do not want to hear and see when she utilizes the RHS before marriage b/c that shows she was started sexual contact before marriage, and if it happened I will not allow to live with me in my home because the claim from the community is to me and it is not acceptable in the community". (39year, male community leader)

Bivariate logistic regression of Socio-demographic and theoretical variable of the study subject with dependent variables

Socio-demographic variables and theoretical variables had association with utilization of reproductive health services in bivariate logistic regression and two variables had significant association with utilization of reproductive health services (Table 5).

Table 5: Bivariate logistic regression of socio-demographic and theoretical variable of the study subject with dependent variables in Mareka wereda south west Ethiopia, March, 2014 (N=844)

Variable	*Utilization of RHS in percent*		OR of 95% CI
	Non user n [%]	*User n [%]*	
Perceived susceptibility			
Low	22[20.80]	84[79.20]	**1.00**
High	**234[31.70]**	**504[68.30]**	**1.77(1.08,2.91)****
Perceived severity for RHP			
Low	41[19.50]	169[80.5]	**1.00**
High	**215[33.90]**	**419[66.10]**	**2.12(01.45, 3.09)***
Perceived benefit of RHS			
Low	47[29.90]	110[70.10]	**1.00**
High	209[30.40]	478[69.60]	1.02(0.70, 1.45)
Perceived barrier to RHS			
Low	78[35.5]	142[64.50]	**1.00**
High	**177[28.50]**	**444[71.50]**	**0.73 [0.52, 1.01]*****
Self efficacy for use of RHS			
Low	3[42.9]	4[57.1]	**1.00**
High	253[30.20]	584[69.80]	0.58 [0.13,2.60]
Cues to utilization of RHS			
Low	131[29.6]	311[70.4]	**1.00**
High	224[30.90]	277[69.10]	1.06 [0.89,1.0]
Knowledge of RHS			
Less knowledgeable	219[31.4]	478[68.6]	**1.00**
knowledgeable	**26[24.30]**	**81[75.70]**	**1.43 [0.89,2.28]*****
Attitude toward RHS			
Low	73[31.90	156[68.10]	**1.00**
High	252[29.86]	424[70.3]	1.12 [0.80,1.54]
Age			
11-15	39[33.30%]	78[66.7%]	1.00
15-19	217[29.80%]	510[70.20%]	0.85[0.56,1.29]
Family members in the house			
Less than five	174[29.1]	424[70.9%]	1.00
Greater than five	82[333]	164[66.70]	1.22[0.89,1.68]
Occupation			
Government employed	15[5.90]	28[4.80]	**1.00**
Private employed	19[7.40]	48[8.20]	0.88[0.40,1.92]
Merchant	28[10.90]	46[7.80]	1.62[0.79,3.32]
Unemployed	42[16.40]	127[21.60]	1.19[0.62,2.28]
Student	151[59.00]	334[56.80]	2.68(0.29,25.07
Level of education			
Only Read and write	1[0.40]	5[0.90]	**1.00**
Grade 1-6	21[9.20]	60[11.00]	10.00[0.40,250.4]
Grade 7-8	91[39.70]	244[44.80]	5.71 [0.49,66.31]
Grade 9-12	105[45.90]	215[39.40]	5.36 [0.48, 59.86]
Diploma	9[3.90]	20[3.70]	4.10 [0.37, 45.68]
Degree	2[0.90]	1[0.20]	4.44 [0.36, 55.58]
Religion			
Orthodox	223[87.10]	516[87.80]	**1.00**
Protestant	31[12.10]	70[11.90]	0.43[0.32, 16.53]
Catholic	2[0.80]	2[0.30]	0.44 [0.30, 16.77]
Ethnicity			
Dawuro	252[98.40]	574[97.60]	**1.00**
Wolayita	4[1.60]	14[2.40]	0.65 [0.21, 2.00]

Mother's education			
Illiterate	45[17.60]	130[22.10]	1.00
Read and write	117[13.86]	409[69.60]	0.96[0.19,4.94]
Primary school	28[10.90]	42[7.10]	0.77 [0.15,3.85]
Secondary school	1[0.40]	1[0.20]	0.50 [0.09,2.66]
Diploma	3[1.20]	0[0]	0.33 [0.01,8.18]
Degree	2[0.80]	6[1.00]	0.0
Mother's occupation			
House wife	232[90.60]	551[93.70]	**1.00**
Government employed	5[2.00]	7[1.20]	1.40[0.63,3.10]
Private employed	0[0]	1[0.20]	0.82[0.21,3.30]
Merchant	7[2.70]	9[1.50]	9.50[0.00,0.00]
Farmer	2[0.80]	3[0.50]	0.76[0.22,2.66]
Mother's not alive	10[3.90]	17[2.90]	0.88[0.13,6.22]

P*means PV <0.01, P means PV <0.05, and P*** means PV<0.2 P means PV > O.2**

Independent predictors of RHS utilization by adolescent females.

The variables with PV<0.2 in bivariate logistic regression were entered in to multivariate logistic regression to get independent predictors of RHS utilizations and the following independent predictors had significant association with utilization of RHS such as perceived susceptibility to RHP, perceived severity for RHP, perceived barrier to utilize RHS. The association in multivariate logistic regression revealed that an adolescent females with high score of perceived susceptibility for RHP were more likely utilize RH services than those with low score of perceived susceptibility [AOR 2.01, 95% CI (1.20,3.37)] with PV<0.05, an adolescent females with high score of perceived severity for RHP were more likely utilized RH services than those with low score of perceived severity [AOR 2, 95% CI (1.35,2.95)] with PV<0.01, and an adolescent females with high score of perceived barrier to use RHS were less likely utilized RH services than those with low score of perceived barrier to use RHS [AOR 0.69, 95% CI (0.49,0.97)] with PV <0.05.

Table6: Multivariate logistic regression of socio-demographic and theoretical variable of the study subject with dependent variables in Mareka wereda, March, 2014 (N=844)

Variable	Utilization of RHS		AOR of 95% C
	Nonusers n[%]	User n[%]	
Perceived susceptibility for RHP			
Low	22[20.80]	84[79.20]	**1.00**
High	234[31.70]	504[68.30]	**2.01[1.20,3.37]****
Perceived severity for RHP			
Low	41[19.50]	169[80.5]	**1.00**
High	215[33.90]	419[66.10]	**2[1.35,2.95]***
Perceived barrier to RHS			
Low	78[35.5]	142[64.50]	**1.00**
High	177[28.50]	444[71.50]	**0.69[0.49,0.97]****
Knowledge of RHS			
Less knowledgeable	219[31.4]	478[68.6]	1.00
knowledgeable	26[24.30]	81[75.70]	0.92[0.85,0.98]

P means PV<0.05 and P* means PV<0.01.**

DISCUSSION

This study was assessed a range of possible predictors including demographic, socioeconomic, knowledge, attitude, perceived susceptibly, perceived severity, perceived benefit, perceived barrier, self efficacy, and cues toward reproductive health services utilization by adolescent females.

The mean age of the adolescent female was 17.35 with SD of 1.63 and from total non-users of reproductive health services (75%) of non-users of reproductive health services had age mean and above the mean but youth with age range between 15-24 was very vulnerable for many reproductive health problems as national reproductive health strategies (9).

Six hundred seventy-nine (86.7%) of respondents were less knowledge for RHS. Main source of information was the radio (42.8%) and followed teachers (25.3%). But a study conducted in Jimma, the main source of information about sexual and reproductive health services for both sex adolescent was also the school (22).

It showed that from 774 (91.7%) respondents who were attended the school, 672 (86.8%) of the

respondents had high susceptibility score for reproductive health problems, and 582(75.2%) of the respondents had high perceived severity score for reproductive health problems hence increasing educational status of adolescent female was mandatory for increment of reproductive health services utilization by adolescent female. It revealed that an adolescent female with high score of perceived susceptibility for RHP were more likely utilize RH services than those with low score of perceived susceptibility [AOR 2.01, 95% CI (1.20, 3.37)] with PV<0.05 and an adolescent female with high score of perceived severity for RHP were more likely utilized RH services than those with low score of perceived severity [AOR 2, 95% CI (1.35, 2.95)] with PV<0.01.

This was supported by FGD result with adult men. In this FGD discussants were agreed that when the adolescent female was pregnant before marriage and she was not attended the school, she was went to traditional healer and drank traditional medicine to abort the fetus then she was became very sick and hidden the problems for the family by saying I had abdominal cramping and finally she will end up with death and the family lost her.

The study showed that majority of the respondents had high score of perceived susceptibility for reproductive health problems, perceived severity for reproductive health problems, self efficacy to use RHS, perceived benefit of RHS, and perceived barrier for reproductive health services utilization.

In this study majority of respondents (80%) were verified that reproductive health services were relevant services for them. It showed that 96.2% of respondents were believed that utilization of reproductive health services were improved productivity of the community, and 93.5% of the respondents were believed that RHS utilization could improve school performance of adolescent female by decreasing absenteeism due to reproductive health related problems by adolescent females which was similar with study conducted in University of Limpopo South Africa in both sex youth (16).

The study showed that 73.8% of the respondent had high score of perceived barrier on reproductive health services utilization and the cited reasons were 64% were strongly agreed on “providers fail to keep confidentiality of the client” and “usual working time was inconvenient to up take the services because their privacy was not kept and they were seen by others” this was similar with study conducted in Addis Ababa (18). Adolescent females with high score of perceived barrier to use RHS were less likely utilized RH services than those with low score of perceived barrier to use RHS [AOR 0.69, 95% CI (0.49,0.97)] with PV <0.05.

The finding from the study was pointed out that, usual working time was inconvenient time for adolescent female to utilized RH services in Government health institution and the most frequently cited reason for inconveniences were health workers gave more time for symptomatic individual rather than health adolescent females in health institution, there was lack of confidentiality, there was fear or stigma, and there was too much waiting time in health institution to get reproductive health services.

This was supported by focus group discussion results with adult women. In this FGD the discussants were not agreed on utilization of reproductive health services by adolescent females before marriage because when their uptake were knew in the community then the community under minded their family and their family felt shame. “…..I do not want to hear and see when she utilizes the reproductive health services before marriage because that shows she was started sexual contact before marriage, and if it happened I will not allow to live with me in my home because the claim from the community is to me and it is not acceptable in the community”. (39 years, old man) Which was similar a study conducted in Jimma and Butajera on both sex youth (22).

It indicated that two hundred twenty seven (26.9%) the respondents had low self efficacy to uptake reproductive health services. Mostly cited reasons for low self efficacy for uptake of the services were nearly half of adolescent females (48.30%) were not discussed reproductive health problems with their parents, and among two hundred fifty-six non- users of reproductive health services 87.90% of adolescent females were not discussed reproductive health problems or reproductive health services with their parents, which was a bit high as compared with similar study conducted in Harar and Addis Ababa on both sex adolescent (14 and 18).

In this study reproductive health services utilization was 69.70% by asking past twelve month’s use of reproductive health services from the date of interview. Among users of reproductive health services 77.30% were used FP while 9% were used reproductive health services information, 7.60% were used STI management, 3.20% were used abortion care, and 2.70% were used VCT.

Utilization of reproductive health services were low as compared to a report from Tanzania where as 75% of adolescent were utilized health services for reproductive health in Tanzania, to a study conducted on both sex in Jimma city where as 75.80% of adolescent were utilized health services for reproductive health in Jimma city, and northern Ethiopia 74% of adolescents were utilized RHS. In addition to this continuation of utilizations were low because the study showed that from total utilizers 37.9% were not utilized reproductive health services more than one time for their age.

On the other hand, two hundred fifty-six (30.3%) adolescent females were non utilizers of reproductive health services by asking past twelve month’s use of reproductive health services from the date of interview which was high compared to a study conducted on both sex in Jimma city where 24.2%, and northern Ethiopia were 26% (22, and 24). In other words, this much proportions of adolescent females not utilized reproductive health services was more stressing than the high proportion of adolescent female’s utilizations because several

studies had reported that non utilization of reproductive health services at adolescent age was strongly associated with late age reproductive health problems (25).

In this study the likelihood of utilizing reproductive health services by adolescent female was significantly associated with perceived susceptibly of reproductive health problems, perceived severity of reproductive health problems, and perceived barrier to use reproductive health services with PV<0.05. In addition to this perceived susceptibly of reproductive health problems, perceived severity of reproductive health problems were positively associated with reproductive health services utilization while perceived barrier was negatively associated with reproductive health services utilizations with PV<0.05.

The study showed that an adolescent female with high score of perception on susceptibility of reproductive health problem were more likely utilized reproductive health services than those with low score of perception on susceptibility of reproductive health problems [AOR 2.01, 95% CI (1.20,3.37)], an adolescent female with high score of perceived severity were more likely utilized RHS than those had low score of perceived severity score [AOR 2, 95% CI (1.35,2.95)], and an adolescent female with high score of perceived barrier were less likely utilized reproductive health services than those with low score of perceived barrier [AOR 0.69,95% CI (0.49,0.97)] with PV <0.05. These were in line with study conducted in BSS on HIV in Addis Ababa Ethiopia, Deber Markos University and Zambia in adults (26, 28).

Strengths and limitations of the study

Strengths

- The questionnaire was adopted from validated instruments and pretested in the local context.
- The response rate was 100%.
- It used both qualitative and quantitative methods

Limitation of the study

- Since some questions included sensitive issues, responses were sorted and could create desirability bias or response bias.
- There were others social cognitive variables which were highly predictive of behaviors in other models were not incorporated
- The results were interpreted for the catchment population.

CONCLUSION AND RECOMMENDATION

Conclusion

This study had found out that almost one third (30.30%) of adolescent females were not utilizing reproductive health services: A reproductive health service was a service which was gave by health workers to adolescent female at health center, health post and hospital of Government or private institution such as; abortion care and its management, short acting family planning to prevent unwanted pregnancy, and ***sexual transmitted infection*** information and its management to prevent reproductive health problems despite there were health post in each kebele and four health centers in the woreda to introduces reproductive health problems preventive message to increase perceived susceptibility and severity on adolescent females. *Community's leaders were not agreed on utilization of reproductive health services by adolescent female before marriage……* contrary to there were health extension workers and health development armies in each kebele to create awareness about reproductive health services utilizations in the community at large.

It showed that respondent's who were attended the schools had high susceptibility score for reproductive health problems and had high perceived severity score for reproductive health problems. Hence increasing educational level of adolescent female was mandatory for increments reproductive health services utilization by making adolescent females to understand the reproductive health problems nature. Because when the girl was pregnant before marriage, and she was not attended the school she would go to traditional healer and drank traditional medicine to abort the fetus then she was became very sick and hidden the problem for the family by saying I had abdominal cramping and finally she would end up with death and the family lost her. But when she was attended the school, she was searched money from the different angle and migrate to town to make abortion by getting modern methods, this was better than drinking traditional medicine.

It clearly showed that discussion about reproductive health problems or reproductive health services between adolescent female and parents, maintains of confidentiality by services providers for increasing self efficacy of adolescent females, increasing perceived susceptibility message on adolescent females about reproductive health problems, increasing perceived severity message on adolescent females about reproductive health problems, and decreasing perceived barriers to utilize reproductive health services like fear of adolescent female for parents and communities were very crucial to increase reproductive health services utilization by adolescent females.

This study showed that there was statistically significant association between perceived susceptibility of

reproductive health problems, perceived severity of reproductive health problems, and perceived barrier of adolescent females with utilization of reproductive health services with PV<0.05.

The role of community leaders, and religion leaders, parents, teachers, media, and Information, education and communication materials had significant positive influence on utilization of reproductive health services by the adolescent females in addition to health worker because the study revealed that majority of adolescent females fear community leaders and religion leaders to utilize RHS before marriage, adolescent females who heard RHP had high perceived susceptibility to utilize the RHS. Therefore multi-sartorial integration was required to increase reproductive health services utilization by the adolescent female because she was the vital components in intergeneration life cycle however, she was the primer victims for many reproductive health problems due to various

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