

KNOWLEDGE AND ATTITUDE TOWARDS LEGALIZATION OF ABORTION SERVICE AND ASSOCIATED FACTORS AMONG FEMALE YOUTH IN AXUM TOWN, ETHIOPIA

Tsegay kahsay, MPH¹, Fentie Ambaw, PhD², Tirhas Gebremedhin, MSC¹, Desalegn Tetemke, MPH¹, Merhawi G/medhin, MPH³

ABSTRACT

INTRODUCTION: Unsafe abortion greatly contributes to maternal mortality and morbidity in the world particularly in developing countries. Poor knowledge and unfavorable attitude towards abortion among female youths is still significantly high in Ethiopia where abortion service is not fully legalized. So far, no studies related to abortion legalization have been conducted in Ethiopia, Axum town to identify the gap. Therefore, this study was aimed at assessing female youth level of knowledge and attitude towards legalization of abortion services in the town.

METHODS: Community based cross-sectional study was conducted on 400 subjects in November 2015. Respondents were selected through systematic random sampling. Structured questionnaire was used to collect the data. Data was coded and entered using Epi-info version 7 and exported to SPSS Version 20 for analysis. Descriptive and logistic regression were computed. Statistical tests were considered significant at $p < 0.05$ and 95% confidence interval.

RESULT: A Only 202(49.5%) and 190(47.5%) of respondents had good knowledge and favorable attitude respectively. Age, not knowing unsafe abortion complication, and lacking information on criteria of legal abortion service were significantly associated with knowledge. Lack of formal education and no access to information were also associated with attitude.

CONCLUSION AND RECOMMENDATIONS: Almost half of the respondents have good knowledge and favorable attitude towards legalization of abortion service. Age, knowledge of unsafe abortion complication, and availability of clear source of information about abortion had strong association with knowledge and attitude. Great efforts are needed to ensure that all female youth know that they have a legal right to abortion in some circumstances in our country.

KEYWORDS: abortion legalization, attitude, Axum town, Ethiopia, female youth, knowledge

(Ethiopian Journal of Reproductive Health; 2019; 11;2:45-55)

1 Aksum University, college of health science, department of public health, Aksum, Ethiopia

2 Bahir Dar University, college of Medicine and health science, School of public health, Bahir Dar, Ethiopia

3 Haramaya University, college of health and medical science, school of public health, Harar, Ethiopia

INTRODUCTION

Globally, 22 million unsafe abortions from which 47,000 are accompanied with maternal deaths and 5 million complications happens annually². Nearly all unsafe abortions (98%) are occurred in low- and middle-income countries³. In Sub-Saharan Africa, over 60% of unsafe abortions are among young women less than 25 years⁴. In line with this about 47% of abortions occur outside of health facility in Ethiopia⁵.

Abortion laws have been liberalized since the beginning of 20th century, when the extent of unsafe abortion recognized as public health problems⁶. Almost all deaths and morbidity from unsafe abortion occur in countries where abortion is severely restricted by law⁷. In many countries, restricted abortion law has been reforming in to more liberal and legal form⁸⁻⁹. In Ethiopia, abortion law was restricted until 2004 whereas the new law allows abortion up to 28 weeks of pregnancy for predefined indications¹⁰.

Broadening abortion law is not the only solution to provide safe abortion service. Social, economic, policies and health-system barriers are still additional challenges to provide safe abortion care. Barrier includes stigma, negative attitudes, concerns over privacy and confidentiality that is why young women resort unsafe abortion even in environments where abortion is legal¹¹. In fact, abortion service is more legalized on broaden conditions of abortion law than restricted law. As a result, realizing of legal abortion service is one of the several aspects in female youth that increases access to safe abortion services¹². Making abortion legalized by law could not be fully protecting unsafe abortion practices unless knowledge of female youth on abortion legalization is improved significantly¹³⁻¹⁷.

In addition to improving knowledge of female youth on abortion legalization, changing unfavorable attitude is also very important to increase willingness of female youth to utilize safe abortion service than unsafe abortion^{18,19}. Finding out factors affecting attitude and knowledge on circumstances under which abortion is permitted by law is important for effective intervention^{20,21}. According to International Planned

Parenthood Federation (IPPF) report, knowledge and attitude towards legal abortion services is associated with several factors like gender, religious and social taboos. For example, in many countries, engaging in intercourse before marriage is viewed as unacceptable²².

Although, the new 2005 Ethiopian Abortion Law is relatively legal, but limited knowledge and positive attitude on revised abortion law is one of the major obstacles that hinder women from obtaining Comprehensive Abortion Care (CAC)⁵. As a result, most women do not seek safe abortion services although they have the right to do so under the revised penal code²³. Therefore, the main aim of this study was to assess knowledge, attitude and associated factors among female youth in relation to the 2005 revised legalization of abortion service.

METHODS

Community based cross-sectional study was conducted in Axum town which is 1,024 K.M far from Addis Ababa, the capital, in November 2015. Axum is the most important spiritual center of orthodox biblical art covenant with a total population of 56,576, of which, female proportion is 30,293 (37). 88.03% inhabitants of the town are Orthodox Christian. The town is organized in to four kebeles. There are two youth centers, one referral hospital, one general hospital and two health centers.

The study participants were female youths aged 15-24 years that were systematically selected from households. Female youth who were not residing in Axum town for at least six months and those who were critically ill as perceived by trained data collector were excluded from the study. Sample size was calculated using single population proportion formula with 95% confidence interval, 5% of marginal error, 50% P value (since no previous study) was used to obtain maximum sample size hence our sample was calculated at 384. Adding 10% none response rate the final sample size for this study was 422. four kebele has been included in the study. The number of households to be included in each kebele were determined proportional with total number of households. Only one female respondent

from age group 15-24 was selected from each household. Respondents were identified by systematic random sampling method. In case of more than one eligible respondent in selected household, the interviewers used a lottery method to choose either of them. Revisit was conducted three times in closed households.

Knowledge and Attitude about legalization of abortion service were taken as dependent variable. Meanwhile, demographic factors, exposures associated with knowledge and attitude were independent variables. Variables were operationally defined thus; good knowledge was defined as knowledge score of respondents equal to or greater than knowledge mean score. Favorable attitude was defined as attitude score of respondents equal to or greater than attitude mean score.

Structured pretested questionnaire was used to collect data. The data was collected by trained four diploma holder female nurses and one bsc of public health professionals using face to face interview after informed consent has been obtained. Interview was made at respondents' consent and own house and each study participant was informed about the purpose of the study and importance of participation. Written consent was obtained from parents or guardian for under 18 years respondents.

data was entered to epi-info version 7 then transported to spss v-20 for cleaning and analysis. any logical and consistency error identified during data entry was corrected after revision of completed questionnaire. Descriptive statistics was employed to calculate frequencies. Associations between dependent and Independent variables were assessed using logistic regression model with crude and adjusted odds ratio at 95% confidence interval (ci). Statistical association at p-value <0.05 was considered significant. Binary logistic regression at p-value <0.2 was entered into multivariable model of analysis. Cranach's alpha coefficient was used to assess internal consistency of measuring instrument. Values >0.7 were used for further analysis. Multi co-linearity test was made in order to check interaction of independent variables in the multivariate analyses using vif (variation inflation factor). Vif was <3 which shows no multi co-linearity problem.

Ethical approval was obtained from ethics and research committee of Axum University. For those younger than 18 years of age, written assent was obtained from their guardian/parents. To ensure confidentiality, respondents were interviewed alone without the presence of their guardian or parents. The aim and purpose of the study was explained to each study participants. Interview was only undertaken when a participant gives informed consent. Unique identification number was used to ensure confidentiality.

RESULTS

Four hundred female youths were interviewed giving 94.78% of response rate. More than half (52.2%) of them were in the age group 20-24 years. Mean age was 19.73(SD + 2.83) years. Eighty six percent were Orthodox by religion. By education, 55.2% attended grade 9-12; occupationally, 51.5% respondents were students. About three fourth (71.8%) of the respondents were unmarried. For 66.2% of the respondents, both of their parents were alive (Table 1).

Table 1: Characteristic of the Respondents in terms of socio-demographic factors, Axum town, Ethiopia, 2016 (n=400)

Characteristics of respondents		Frequency (n)	Percentage (%)
Age (mean=19.7 years; Sd=2.8 years)	15-19	191	47.8
	20-24	209	52.2
Religion	Orthodox	344	86.0
	Muslim	56	14
Religious service attending habit	always or almost always	145	36.2
	Sundays or holydays	139	34.8
	only occasionally	113	28.2
	Never	3	0.8
level of education	No formal education	27	6.8
	Elementary (1–8)	73	18.2
	High school (9–12)	221	55.2
	Certificate and above	79	19.8
Occupation	Student	206	51.5
	Farmer	6	1.5
	Government	29	7.2
	Business	39	9.8
	Non-employed	120	30.0
Marital status	Married	67	16.8
	Single	287	71.8
	Cohabiting	28	7.0
	Divorced	14	3.5
	Widowed	4	1.0
Mother's maximum level of education	No formal education	226	56.5
	Elementary (1–8)	113	28.2
	High school (9–12)	30	7.5
	Certificate and above	31	7.8
Father's maximum level of education	No formal education	158	39.5
	Elementary (1–8)	156	39.0
	High school (9–12)	41	10.2
	Certificate and above	45	11.2
Birth order	First	99	24.8
	Middle	225	56.2
	Last	62	15.5
	The only child	14	3.5
Life status of your family	Both alive	265	66.2
	Only father alive	55	13.8
	Only mother alive	64	16.0
	Both died	16	4.0

More than three fourth (76.2%) did not know anyone with history of abortion. One fourth of respondents had been ever pregnant. Among those who had pregnancy, only 23(22%) ever had unintended pregnancy. Of those who had ever been pregnant 24(6%) had history of induced abortion. One hundred eighty (45.5%) had sexual intercourse experience. Of ever had sex, 136

(75.5%) were using contraceptive. 67% had information about criteria for induced abortion; 203(74.6%), 12(4.4%), 18(6.6%), and 39(14.3%) used mass media, friends, family, and health extension workers as main source of information for abortion criteria respectively (Table 2).

Table 2: Characteristic of the Respondents reproductive history and their source of information related factors, Axum town, Ethiopia, 2016(n=400)

Characteristics of respondents		Frequency (n)	Percentage (%)
Know someone who had an abortion	Yes	95	23.8
	No	305	76.2
Family planning use	Yes	136	34.0
	No	264	66.0
have boy friend	Yes	142	35.5
	No	258	64.5
Ever been pregnant	Yes	101	25.2
	No	299	74.8
Ever been unintended pregnancy	Yes	22	22
	No	78	
know any complication of un safe abortion	Yes	264	66.0
	No	136	34.0
Ever been carried out induced abortion	Yes	24	6.0
	No	376	94.0
Reasons for carrying out induced abortion	Rape	5	20.8
	Attending school	7	29.2
	Incest	5	20.8
	Lack of money	7	29.2
Do you have information source about criteria of legal abortion service	Yes	271	67.8
	No	129	32.2
Your main source of information	mass media	203	74.6
	Friends	12	4.4
	Family	18	6.6
	Health extension workers	39	14.3
	Mass media best (most) frequently used	New paper and magazine	20
Family member who is the best source of information	Radio	80	39.4
	Television	89	43.8
	Internet	14	6.9
	Mother	9	52.9
	Father	2	11.8
Ever had sexual intercourse	elder sister	4	23.5
	Both parents	1	5.9
	both elder brothers and sisters	1	5.9
Ever had sexual intercourse	Yes	180	45.0
	No	220	55.0

Two third (66%) mention at least one complication of unsafe abortion. Of these who knew at least one complication, 76.3%, 32.10%, 9.5%, and 5% mentioned death, bleeding, infection and infertility as complication respectively. 198 (49.5%) had good knowledge towards abortion legalization. 185(46.2%) of the respondents knew existence of abortion law in the country; however, 142(35.5%) and 73(18.2%) replied as they did not know existence and it does not exist in the country respectively. Of these who replied there is abortion law in the country, 112 (65.5%) perfectly say as induced abortion is legalized under certain circumstances - Sixty-two (55%) said induced abortion is permitted in case of rape, 57.8% in case of incest, and 46% if the pregnancy endangers health or life of the mother. Considering multiple response, only 42.5%, 38.25%, 18.5%,10%, and 6.75% mention at least one, two, three, four and six criteria respectively.

Two hundred ten (52.5%) of respondents have unfavorable attitude towards abortion legalization service. Respondents who opposed legalization of abortion service also forwarded different reasons. Their reasons are absence of awareness [30.8%], being immoral to kill life [20.5%], causes disease [17.1%], not acceptable by religion [12.8%], encourages premarital sex [7.7%] and causes maternal death [6.8%].

DISCUSSION

Half (49.5%) of respondents have good knowledge towards legalization of abortion service; 47.5% have favorable attitude towards abortion legalization. Age, marital statuses, life status of family, knowledge on unsafe abortion complication and source of information have significant association with knowledge. Meanwhile, age, level of education, occupation, knowledge on unsafe abortion complication and source of information have significant association with attitude.

In this study 49.5% of female youths aged 15-24 have good knowledge towards legalization of safe abortion service. This is similar with studies conducted in Ethiopia (Yirga cheffe town 48.9%²⁷, Mekele University 44.1%¹⁸ and 50% in Nigeria University³⁰. However, it is higher than finding in educational institution of Harari Regional State in Ethiopia 35%,²⁶ and Arba Minch in southern

Ethiopia 32.1%¹⁷. This high level of knowledge may indicate that findings from previous studies could serve health policy makers to design evidence-based delivery of information against this lack of knowledge towards legalization of abortion service at community level and facility level especially in colleges and universities.

Good knowledge towards legalization of abortion service on this study was lower than findings in South Africa 68%¹⁹, Colombo Srilanka 65.8%²⁸, and in Nepal 66.5%²⁹. This may attribute to participant back ground, personal beliefs, other sociocultural and religious factors. Concerning attitude 47.5% of all respondents had favorable attitude towards legalization of abortion and this was similar with studies in Bishoftu town 48.4%³⁵. However, it was lower as compare to study in Yirga Chefe town 61.7%²⁷. It was also higher than that of study done in colleges and university of Arba Minch 30.3%¹⁷. This could be due to chronological difference. Female youth who were in the age group of 20-24 had 2.102 times higher odds to have good knowledge compare to aged 15-19 years. This was consistent with findings in Bishoftu town³⁵ and Harari Regional State²⁶. This is because as age of female youth becoming older, their reproductive knowledge including on the issue of abortion is being increased³². Married female youths were 44.5% lower odds to have good knowledge about legalization of safe abortion service than single female youth which was dissimilar to study being conducted in Harari Region of higher educational institution²⁶. Fear of premarital pregnancy and childbearing due to sociocultural and religious factors obligates single female youth to know more about their reproductive health including abortion law than married women¹.

Those who had lost their mother were 86.9% lower odds to have good knowledge than whose both families were alive; this was not similar with study conducted in Harari Ethiopia²⁶. This is because most unmarried female youths involved their mother in pregnancy resolution decision making³³; however, when female youths who had lost their mother after they joined the university, they can improve their knowledge of reproductive health including the issues of abortion from their interactions with their peers.

Female youth having knowledge about complication of unsafe abortion had more than 3 times higher odds of good knowledge than those not having knowledge about complication of unsafe abortion which was similar to study conducted in Yirga Cheffe town²⁷.

This study showed that attitude towards legalization of abortion service was higher in age 20-24 years than in age 15-19 years. Studies conducted in Bishoftu town³⁵ and in the university of Debremarkos³⁶ strengthened this finding. Supported from the female youth with no formal education had more than three times higher odds of unfavorable attitude compared to certificate and above educational level. This is supported by other studies conducted in Bishoftu³⁵, Yirga Cheffe town²⁷, and Zambia²¹. This is because women with higher level of education have higher knowledge of abortion law and then higher favorable attitude towards legalization of abortion service³⁴.

The result also revealed that those female youth who had involved in business work were 72.3% lower odds to have unfavorable attitude about legalization of safe abortion service compared with those female youths who were students. The possible explanation is perhaps these female youth involved in business have better social interaction with many people that had prior experience related with abortion and other issues may think as self dependent and have the right to decide what they want to do by themselves and also may have adequate finance to purchase reproductive health services including abortion services.

CONCLUSION & RECOMMENDATION

Generally, 50.5% of the respondents have poor knowledge; and 52.5% of female youths have unfavorable attitude towards legalization of abortion service. This indicates that the proportion of poor knowledge and unfavorable attitude is still significantly high. So, it needs further effort to reduce this problem. age, knowledge to complication of unsafe abortion, and source of information about criteria of legal abortion service, marital status, and life status of their families had significant association with knowledge. On the other hand, age, religion, educational level, and occupation, knowledge to complication of unsafe abortion, and

source of information about criteria of legal abortion service were factors that had significant association with attitude towards legalization of abortion service.

Greater efforts need to be made to ensure that all female youth know that they have a legal right to abortion in some circumstances in our country. Mobilization of the community to minimize knowledge and attitude gap of female youth towards legalization of abortion is urgent. Improving dissemination of accurate information about criteria of legal abortion service and knowledge on complications of unsafe abortion so that female youth can access it easily through mass media such as radio, television, newspaper and internet is an important task. It would be important for other researchers to continue with this topic to find out detailed influence of culture, social, norm, religion and personal beliefs using qualitative study design.

COMPETING INTERESTS

All authors do not have competing interest in this manuscript.

AUTHORS' CONTRIBUTIONS

TK wrote the proposal, questionnaire, monitor data collection, and performed statistical analysis. FA, TG, DT & MG has critically revised the study design, data collection techniques and helped the statistical analysis. MG thoroughly done the manuscript and contribute to publish the article.

ACKNOWLEDGEMENT

We thank Aksum University, College of Health Science, Department of Public Health, for providing us a chance to develop this thesis paper in general and for all staff members in particular for their contribution in one or another way. We also thank the municipality of Axum, Axum woreda health office, kebele leaders for their cooperation. Last but not least to respondents who devoted their precious time to complete questionnaire.

CORRESPONDING AUTHOR:

Tsegay Kahsay, MPH

Department of Public Health, College of Health Science, Aksum University, Aksum, Ethiopia

Email: tsegaykahsay09@gmail.com

Table 3: Logistic regression analysis of factors affecting knowledge to legalization of safe abortion service, Axum town Tigray Region, north Ethiopia, March 2016 (n=400)

Characteristics of respondents		Frequency (n)	Percentage (%)	
Explanatory variable	Knowledge towards legalization of abortion service		COR (95% CI)	AOR (95%CI)
	Good knowledge	Poor knowledge		
Age				
15-19	119	72	1	1
20-24	79	130	2.72(1.814- 4.077) ***	2.102(1.124-3.930) *
Church/ Mosque /attending habit				
always or almost always	51	94		1 1
Sundays or holydays	85	54	0.345(0.218-0.558) ***	0.243(0.128- 0.459) ***
only occasionally	61	52	0.463(0.250- 0 .765) **	0.475(0.244-0.925) *
Never	1	2	1.085(.096-12.258)	0.445(0.017-11.665)
marital status				
Never married	133	154	1	1
Ever married	65	48	0.638(0.411-0.990) *	0.555(0.312-0.985) *
Life status of your family				
Both alive	125	140	1	1
Father only alive	41	14	0.355(.159-.586) ***	0.131(0.055-0.315) ***
Mother only alive	27	37	1.224(.705-2.124)	0.469(0.209-1.051)
Both died	5	11	1.964(0.664-5.809)	1.047(0.244-4.409)
know any complication of un safe abortion				
Yes	103	161	3.62(2.32-5.63)***	3.43(1.92-6.13)***
No	95	41	1	1
Do you have source of information about criteria of legal abortion service				
Yes	106	165	3.87(2.46-6.08)***	2.94(1.61-5.32)***
No	92	37	1	1

N.B *P< .05, ** P< .01 and *** P < .001

Table 4: Logistic regression analysis of factors affecting attitude to legalization of safe abortion service, Tigray Region, north Ethiopia, 2016(n=400)

Explanatory variable	Attitude towards legalization of abortion service		COR (95% CI)	AOR (95%CI)
	Un Favorable attitude	favorable attitude		
Age				
15-19	82	109	1	1
20-24	128	81	0.476(0.319-0.710) ***	0.585(0.348-0.979) *
Religion				
Orthodox	189	155	1	1
Muslim	21	35	2.032(1.136-3.634)*	2.364(1.224-4.565) *
Level of education				
No formal education	8	19	3.311(1.294-8.469)*	3.475(1.174-10.287) *
Elementary (1–8)	35	38	1.151(0.797-2.877)	
High school (9–12)	121	100	1.152(0.685-1.937)	
Certificate and above		46	33	1 1
Occupations				
Student	89	117	1	1
Farmer	3	3	0.761(0.150-3.859)	0.403(.058-2.819)
Government	19	10	0.400(0.177- 0.903)	0.435(0.164-1.155)
Business	30	9	0.228(0.103-0.505)***	0.277(0.114- 0.674)**
Non-employed	69	51	0.562(0.357- 0.886)*	0.654(0.368-1.16)
know any complication of un safe abortion				
Yes	164	100	1	1
No	46	90	3.209(2.080-4.951)***	2.467(1.532-3.973)***
Source of information about criteria of legal abortion service				
Yes	166	105	1	1
No	44	85	3.054(1.970-4.735) ***	2.435(1.491-3.976)***

N.B *P< .05, ** P< .01 and *** P < .001

REFERENCES

1. Alemu FF. Minors' awareness about the new abortion law and access to safe abortion services in Ethiopia: the Case of Marie Stopes International Ethiopia Centers in Addis Ababa: MA thesis. University of Amsterdam; 2010.
2. WHO. Unsafe abortion: global and regional estimates of incidence of unsafe abortion and associated mortality in 2008. 2011.
3. WHO. Facts on induced abortion worldwide. Geneva, Switzerland: Department of Reproductive Health and Research WHO Document Production Services. 2011.
4. Leke RJ, Nana PN. Abortions in low resource countries: INTECH Open Access Publisher; 2012.
5. Moore AM, Gebrehiwot Y, Fetters T, Wado YD, Bankole A, Singh S, et al. of Services Since 2008 The Estimated Incidence of Induced Abortion in Ethiopia , 2014 : Changes in the Provision of Services Since 2008;42(3).
6. Cohen SA. Access to safe abortion in the developing world: saving lives while advancing rights. *Guttmacher Policy Review*. 2012;15(3).
6. Singh S, Fetters T, Gebreselassie H, Abdella A, Gebrehiwot Y, Kumbi S, et al. The estimated incidence of induced abortion in Ethiopia, 2008. *International Perspectives on Sexual and Reproductive Health*. 2010:16-25.
7. Cook RJ, Dickens BM. Human rights dynamics of abortion law reform. *Human Rights Quarterly*. 2003;25(1):1-59.
8. Shah I, Ahman E. Unsafe abortion: global and regional incidence, trends, consequences, and challenges. *J Obstet Gynaecol Can*. 2009;31(12):1149-58.
9. Finer L, Fine JB. Abortion law around the world: progress and pushback. *American journal of public health*. 2013;103(4):585-9.
10. Pizarro P, Baker T, Chagas J, Miranda ME. *Freedom of Choice*. 2007.
11. *World abortion policies 2013*. New York (NY): Population Division, United Nations Department for Economic and Social Affairs; 2013. 2013.
12. Singh S, Sedgh G, Bankole A, Hussain R, London S. Making abortion services accessible in the wake of legal reforms: A framework and six case studies. *Guttmacher Institute*, 2012.
13. Hyman AG, Castleman L. *Woman-Centered Abortion Care*. Reference Manual Chapel Hill, NC: Ipas. 2005.
14. Faúndes A, Shah IH. Evidence supporting broader access to safe legal abortion. *International Journal of Gynecology & Obstetrics*. 2015;131:S56-S9.
15. Brodahl A. *Medical Student Thesis: Knowledge and attitudes towards abortion among the first year medical students at the University of Buenos Aires, Argentina*. 2012. First year students Last year students Question 2: Do you know in which cases it is not penalized? First year students Last year students First year students.
16. Gelaye AA, Taye KN, Mekonen T. Magnitude and risk factors of abortion among regular female students in Wolaita Sodo University, Ethiopia. *BMC women's health*. 2014;14(1):50.
17. Animaw W, Bogale B. Awareness and attitude to liberalized safe abortion services among female students in University and Colleges of Arba Minch Town, Ethiopia. *Science*. 2014;2(5):440-6.
18. Selam Desalegn AD, Azeb G/selassie Amanuel Tesfay , Robel Abaya Knowledge, Attitude and Determinants of Safe Abortion among first year students in Mekelle University. *International Journal of Pharma Sciences and Research (IJPSR)* Jan 2015; 6 No 01 Jan 2015.
19. Morroni C, Myer L, Tibazarwa K. Knowledge of the abortion legislation among South African women: a cross-sectional study. *Reproductive Health*. 2006;3(7):29.
20. O'Grady K, Doran K, O'Tuathaigh CM. Attitudes towards abortion in graduate and non-graduate entrants to medical school in Ireland. *Journal of Family Planning and Reproductive Health Care*. 2015;jfprhc-2015-101244.
21. Geary CW, Gebreselassie H, Awah P, Pearson E. Attitudes toward abortion in Zambia. *International Journal of Gynecology & Obstetrics*. 2012;118:S148-S51.
22. Pacheco J, Kreitzer R. Adolescent Determinants of Abortion Attitudes Evidence from the Children of the National Longitudinal Survey of Youth. *Public Opinion Quarterly*. 2015:nfv050.
23. Olaitan OL. Attitudes of university students towards abortion in Nigeria. *International Journal of Tropical Medicine*. 2011;6(3):52-7.
24. IPPF. *Qualitative research on legal barriers to young people's access to sexual and reproductive health services*. International Planned Parenthood Federation 4 New hams Row, London SE1 3UZ, UK2014. 2014.
25. Neesha G, Anna S, Rachel V. *Bridging the gaps: implementation of comprehensive abortion care in Ethiopia*. Addis

- Ababa, Ethiopia. 2008.
26. Geleto A, Markos J. Awareness of female students attending higher educational institutions toward legalization of safe abortion and associated factors, Harari Region, Eastern Ethiopia: a cross sectional study. *Reproductive health*. 2015;12(1):19.
 27. Bitew S, Ketema S, Worku M, Hamu M, Loha E. Knowledge and attitude of women of childbearing age towards the legalization of abortion, Ethiopia. *Journal of Scientific and Innovative Research*. 2013;2(2):192-203.
 28. Abeyasinghe N, Weerasundera B, Jayawardene P, Somarathna S. Awareness and views of the law on termination of pregnancy and reasons for resorting to an abortion among a group of women attending a clinic in Colombo, Sri Lanka. *Journal of forensic and legal medicine*. 2009;16(3):134-7.
 29. Tuladhar H, Risal A. Level of awareness about legalization of abortion in Nepal: A study at Nepal Medical College Teaching Hospital. *Nepal Medical College Journal*. 2010;12(2):76.
 30. Aimakhu C, Adepoju O, Nwinee H, Oghide O, Shittu A, Oladunjoye O. Attitudes towards abortion law reforms in Nigeria and factors influencing its social acceptance among female undergraduates in a Nigerian university. *African journal of medicine and medical sciences*. 2014;43(4):327-32.
 31. Assifi AR, Berger B, Tunçalp Ö, Khosla R, Ganatra B. Women's Awareness and Knowledge of Abortion Laws: A Systematic Review. *PloS one*. 2016;11(3):e0152224.
 32. Desta B, Regassa N. On emergency contraception among female students of Haramaya University, Ethiopia: surveying the level of knowledge and attitude. *Educational research*. 2011;2(4):1106-17.
 33. Rosen RH. Adolescent pregnancy decision-making: Are parents important? *Adolescence*. 1980;15(57):43.
 34. Cresswell JA, Schroeder R, Dennis M, Owolabi O, Vwalika B, Musheke M, et al. Women's knowledge and attitudes surrounding abortion in Zambia: a cross-sectional survey across three provinces. *BMJ open*. 2016;6(3):e010076.
 35. Tsegaye M. Female Youth Knowledge AND Attitude Towards Induced Abortion In Bishoftu Town, Oromia Region: AAU; 2009.
 36. Tarekegn A. Assessment of knowledge, attitude and intension of health science students toward safe abortion care provision in Debre markose University, Ethiopia, May 2011: aau; 2001.
 37. "National Statistics-population-2011 by town and sex". Archived from the original on 26 January 2013. Retrieved 23 January 2015.