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Assessment of Health Care Providers' Attitude and Associated Factors to Wards Safe Abortion at Public Hospitals, in Mekelle City, Tigray, Ethiopia; A Cross Sectional Study

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Result: A total of 230 health providers' had participated with a response rate of 94%. The odds of favorable attitude among the respondents who had good knowledge on abortion were 6.87 times the odds of the respondents who had poor knowledge on abortion [AOR=6.87, 95% CI (1.2, 39.90]. Similarly the odds of favorable attitude among the respondents who didn't agree on the current Ethiopian law on abortion due to religious reason were 92% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion [AOR= .08, 95% CI (.02, .37]. The odds of favorable attitude among the respondents who didn't agree due to more than two reasons on the current Ethiopian law on abortion was 89% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion [AOR=.11, 95% CI (.02 , .66].

Conclusion and recommendation: Even though majority of the respondents never performed safe abortion, they have favorable attitude towards safe abortion. Lack of training was one of the reasons that forced them not to practice safe abortion. Training of health providers regarding abortion procedure may be important for sustained and safe abortion services.

Keywords: abortion, health care providers, attitude, public hospital.

I. Introduction

Abortion is defined as the termination of pregnancy by the removal or expulsion from the uterus of a fetus or embryo prior to viability. WHO defines "unsafe abortion" as a procedure for terminating an unintended pregnancy either by individuals without the necessary skills or in an environment that does not conform to minimum medical standards, or both. As reported in WHO's reproductive Health Strategy, 13% of all pregnancy-related deaths are due to unsafe abortion. According to WHO, approximately 20 million unsafe abortions are performed worldwide every year and are considered as major public health problems since it alone causes about 13% of the global burden of maternal mortality in developing countries. The most significant current discussions about unsafe abortion and unwanted pregnancy are the denial of women´s health rights and the disproportional number of maternal deaths in developing countries. Annually, it is estimated about 80, 000 worldwide deaths from unsafe abortions, over 99% of these deaths occur in the developing countries of sub-Saharan Africa, Central and Southeast Asia, and Latin America and the Caribbean (1,2, 3).

Ethiopia has the fifth highest number of maternal deaths in the world: One in 27 women dies from complications of pregnancy or childbirth annually. In 2008, an estimated 382,000 induced abortions were performed in Ethiopia, and 52,600 women were treated for complications of such abortions. There were

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an estimated 103,000 legal procedure in health facilities nationwide 27% of all abortions. Nationally, the annual abortion rate was 23 per 1,000 women aged 15–44, and the abortion ratio was 13 abortions per 100 live births. The abortion rate in Addis Ababa (49 per 1,000 women) was twice the national level. Overall, about 42% of pregnancies were unintended, and the unintended pregnancy rate was 101 per 1,000 women. About half of all health facilities in Ethiopia provide induced abortion services. However, the proportion is much higher for public hospitals (76%) and private or nongovernmental organization facilities (63%) than for public health centers (41%). Starting in 2007, the Tigray Health Bureau and Ipas conducted a two- year project using the safe abortion care monitoring framework to assess progress on implementing the FMOH mandate for improved abortion and post abortion contraception and services. This conducted baseline assessment showed limited availability of SAC services in Tigray, largely because many facilities were not yet providing safe induced abortion services (4,5,6).

Studies identify a wide range of factors impacting the attitude and perception of health professionals towards abortion. Illegal abortion and laws in general have lead to a large degree of mortality, morbidity and socioeconomic loses. For instance most illegal abortion in sub-Saharan Africa is conducted on young girls not yet married which mostly is associated with the possible end of going to school and consequently leading to female illiteracy and poor awareness about reproductive rights. Unsafe abortion in Ethiopia is exercised in different risky ways that range from the traditional remedies such as toxic chemicals, insertion of contaminated, unsterilized instruments into the uterus and swallowing pills from traditional healers (7,8,9).

Health Providers' attitude is a major barrier to women's access to care. Many individual remain unaware that termination of pregnancy is permitted under certain condition where some services are available, limited resources, lack of adequate provider training and stigma surrounding abortion further limits women's access to quality care. In such environment providers may also have less training and experience with methods of termination of pregnancy, further contributing to misinformation and stigma, which can translate into poor quality information, and counseling. The infrastructure to provide legal and safe abortion lags behind in some developing countries. Abortion is now legal in Ethiopia in certain circumstances. However, legalization only, does not guarantee the required care. Factors like poverty; inaccessibility of health service, social, cultural, economic and religious pressures can also prevent a woman from getting SAC by a skilled practitioner even in countries with legal abortion. The service of abortion care is conducted by several providers with different backgrounds (10,11,12,13,14).

Health care Providers' attitude and readiness for quality of services potentially influences, to offer services, offer a choice of methods and provide clients with access to safe abortion services. In Ethiopia very few researches has been done regarding to the attitude of health providers and associated factors towards safe abortion. The same is true for our region. Consequently, little is known about the providers' attitudes and associated factors towards safe abortion. This stud y will try to fill the gap and help to focus on their solutions and facilitate of future abortion services. The purpose of this study is to assess health providers' attitude and associated variables towards safe abortion. Abortion is now legal in Ethiopia in cases of rape, incest or fetal impairment, if her life or her child's life is in danger, or if continuing the pregnancy or giving birth endangers her life, if she is unable to bring up the child, owing to her status as a minor or to a physical or mental infirmity. Even though abortion is legal in some circumstances unsafe abortion remains common In Ethiopia. This shows legalization does not give guarantee for availability of safe abortion service. Provider' background and attitude do have potential conseq-uences for women's with scarce access to safe abortion services. Availability of safe abortion services is influenced by the providers' willingness to offer service. Therefore, it is important to assess health providers' attitude and associated factors towards safe abortion. The author strictly believes that studying on this issue and identifying the main factors influencing providers' attitude towards safe abortion will help to focus on their solutions. The result of this study will facilitate to assess the attitude and experiences of health care workers and can offer important information for the planning and improvement of abortion care and by providing baseline information for implementation of the law regarding abortion services. By there, it might bring a significant change on reducing maternal morbidity and mortality caused by co mplications of unsafe abortion.

II. Methodolog

a) *Study Setting*

The study was conducted at Mekelle the capital city of the Tigray regional state lies 783 km north of Addis Ababa. The town is also divided into seven administrative parts: Hawelty, Hadnet, Ayder, Semen, Kedamay weyane, Adihaki, and Quiha. There are four governmental hospitals in Mekelle. Two of them are under Regional health Bauru (Quiha and Mekelle hospital), one under the ministry of defense (North command referral hospital), one referral hospital (Ayder referral hospital). There are also four other private hospitals in the town. In addition there are eight health centers and 38 private clinics in Mekelle (35). Study period was from May to December 2012, an institution based cross-sectional study was conducted, Source

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population was all health care providers' who are working under Public hospitals in Mekelle City. Study Population was all sampled eligible health care providers' with six months and above work experience in their respective public hospitals. Inclusion criteria was all Health care providers' who have six months and above work experience in their respective public hospitals and participants exclude from the study were Those who are unable to here and understand the national language Amharic.

b) Sample size and sampling procedures

The sample size was determined by using a formula for estimating a single population proportion. Prevalence was taken as 37% from a previous similar study conducted in Addis Ababa, Ethiopia (19). Since the study population was less than 10,000 finite population correction formulas was applied finally after adding 10% non response rate, the total sample size required for this study appears to be 243 health care providers'.

c) Sampling procedure

A probability proportional to size allocation was done, Systematic random sampling was employed to select the intended study subjects, from each public hospital which are found in the City. Those were: Ayder referral hospital, North command referral hospital, Mekelle hospital, and Queha hospital. A probability proportional to size allocation of the study subjects for each hospital was done:

d) Data collection techniques, Instrument

This study was used a structured, quantitative self administered questioner among governmental hospital workers in Mekelle City. A structured questionnaire was designed by reviewing previous similar studies in such a way that consists all the variables that can meet the objectives of the study. It includes all questions related to attitude and factors influencing health care providers' attitude towards safe abortion. The principal investigator together with the supervisor were strictly followed the overall activities on daily base to ensure the completeness of the questionnaire, to give further clarification and support. Pre-testing of the questionnaire was done to ensure the data quality, its clarity, understandability and completeness prior to data collection, at governmental hospital in Wukro town for individuals with the same inclusion criteria.

e) Study Variables

Dependent variables was Attitude of Health care provider and Independent variables were Socio demographic factor: Sex, Age, Marital status, Religion, Profession, Individual Factor: Knowledge ,previous experience, training, work experience, Environmental Factor : Law, Policy, Socio cultural issue, ethic.

f) Operational definitions

Abortion is defined as the termination of pregnancy before 28 weeks of gestational age by the removal or expulsion from the uterus of a fetus or embryo prior to viability. Unsafe abortion is a procedure for terminating un-wanted pregnancy before 28 weeks of gestational age either by persons lacking the necessary skills or in an environment lacking the minimal medical safety standards or both (36). Safe abortion is the termination of pregnancy before 28 weeks of gestational age by qualified and skilled persons using correct techniques in sanitary conditions. Attitude refers to the participants' response as "favorable" or "unfavorable" towards negative and positive attitudinal statements. The health care provider (also known as health provider) those professionals are Oby and Gyn specialists, GPs, nurses (diploma and degree), midwives (diploma and degree) and HO.

g) Data quality and management

Pre-test was done on 5% of the questionnaire of professionals with the Sa me inclusion criteria at Wukro town. Depending on the result of the pre-test, correction and modification were made on the questionnaire before applying on the study population. One professional supervisor and the principal investigator had supervised data collection processes, check for completeness of the data, correctness of the data collection procedure and as necessary correction were done.

h) Data processing and analysis

Data analysis was started by sorting and performing quality control checkup at the field. The data was checked in the field to ensure that all the information if properly collected and recorded. Before and during data processing the information was checked for completeness. SPSS version 16 statistical software was employed for data entry and analysis. All data were coded in terms of numbers. The analysis included checking errors and describing the collected data by numerical summary measure tables, charts and measures of association, all of which are instruments for interpretation of the collected data. Bivariate analysis was done at a confidence limit of 95% to calculate the crude odds ratio with the outcome variable. The significance was checked using p-value 0.05 and 95% confidence interval. Multivariate logistic regression analysis was used to identify factors associated with outcome variables attitude. Hosmer and Leme show model was used to check the goodness of fit.

i) Scoring Methods

To assess attitude of health care providers towards safe abortion was developed by presenting respondents with a series of negative and positive statements that reflect different aspects of the underlying attitude in a variety of ways. Attitude

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statements have five possible responses. The responses was labeled as "favorable" or "unfavorable" as follows; "favorable" responses were responses including strongly agreeing and agree for positive statements and strongly disagree, disagree for negative statements. "Unfavorable" responses' are responses including "strongly agree", "Agree" and uncertain for negative statements, and disagree, strongly disagree and uncertain for positive statements. Marking the total attitude score out of hundred, those with scores of greater than 50% was rated to have favorable attitude and those with a score below 50% as unfavorable attitude. Knowledge of the respondents towards safe abortion was measured by marking the correct answers of subjects out of a hundred. Knowledge scores 50% or less was labeled as "poor knowledge", knowledge scores between 50% and 70% was labeled as moderate knowledge" and knowledge score above 70% was labeled as "good knowledge" (37).

j) Ethical Considerations

The study proposal was approved by the ethical clearance committee of Mekelle University and Regional health Bauru. Written permission of these hospitals was secured for their employees to participate in the study and; each health care provider within these hospitals was given a written consent to participate in the study after a thorough explanation of the objectives and the procedures of the study. Specifically, respondents were informed about the objectives of the study and that their participation was purely voluntary and they can be free to decline or withdraw at any time during the course of the study. So only those willing to participate were included in the study. Confidentiality and beneficences were insured by making the questionnaires anonymous. Personal identification of the respondents was not asked. They were also be assured that the information provided in writing would be used only for research purpose and would therefore be strictly anonymous and data was entered as confidential, aggregate analysis and reporting system was put secured and in place.

III. Result

a) Socio-demographic characteristics

About 243 self administered questionnaire were prepared to be distributed into respondents of all public hospitals in Mekelle town. About 13(6%) of health care providers were either could not available at the time of data collection or refused to participate in this study. Therefore, only about 230 of health care providers were participated with a total response rate of 94%.

Table-1 shows an overview of the socio demographic characteristics of sampled health care providers. Of these 230 health practitioners who had participated, 107 (46.5%) were BSC nurses. More than half, 142 (61.7%) of the respondents were females. The median age of the respondents were 28 + 6.65 and overall, 64% were younger than 30 years of old, 27.8% were between 31 and 40 years, and 7.3% were between 41-50 years old. Nearly half, 111(48.3%) of the respondents were married and the majority of the respondents, 219(95.2%) were orthodox followers. The majority, 181 (78.7%) of the respondents primary work place were government hospitals and 63 (27.4%) of the respondents had more than ten years of work experience.

Table 1 : Socio-demographic characteristics of health providers on attitude and associated factors towards safe abortion at public hospitals in Mekelle town from May to December 2012 (n=230)

Variable	Frequency	Percent
Sex of the respondent		
Female	142	61.7
Male	88	38.3
Age category		
20-25	49	21.3
26-30	98	42.6
31-35	35	15.2
36-40	29	12.6
41-45	10	4.4
46-50	7	3
>50	2	.9
Marital status of the respondent		
Married	111	48.2
Divorced	5	2.2
Cohabiting	13	5.7
Widowed	1	.4
Never married	100	43.5

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Religion of the respondent		
Orthodox	219	95.2
Muslim	6	2.6
Protestant	2	.9
Catholic	3	1.3
Profession of the respondents		
Oby and Gyni specialist	1	.4
Physician(GP)	6	2.6
Midwifery diploma	13	5.7
Midwifery degree	17	7.4
HO	14	6.1
Nurse diploma	72	31.3
Nurse degree	107	46.5
Work experience of the respondent (in years)		
<1	29	12.6
1-3	51	22.2
3-5	37	16.1
5-10	50	21.7
>10	63	27.4
Primary work place of the respondents		
1. Governmental Hospital	181	78.7
2. Private hospital	2	.9
3. Governmental health center	44	19.1
4. Private higher clinic	3	1.3
Current work place		
1. Ayder referral hospital	141	61.3
2. Mekelle hospital	29	12.6
3. Queha hospital	28	12.2
4. North command referral hospital	32	13.9

b) Attitude of health providers' towards safe abortion

As shown below, out of the 230 health care providers, 218 (94.8%) of them had a favorable attitude for safe abortion [Fig. 3].

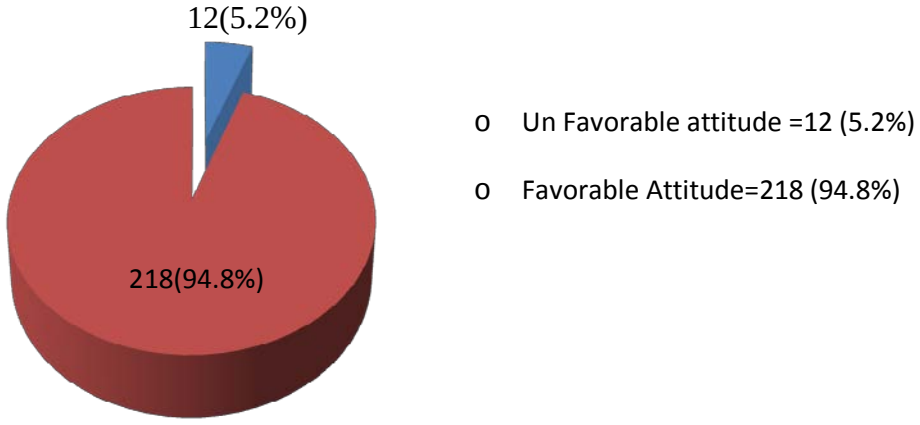

Figure 3 : Pie chart showing attitude of health providers towards safe abortion at public hospitals in Mekelle town from May to December 2012 (n=230

c) Socio-demographic characteristics of the respondents cross tabulated with attitude category

As shown below in table 2, of the total 142 female and 88 male respondents, 133 (93.7%) of the females and 85(96.6%) of males had a favorable attitude to safe abortion. And of the total 219 of orthodox respondents 208 (95.0%) of them had a favorable attitude to safe abortion. All Muslim respondents had favorable attitude [Table-2].

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Table 2 : Socio-demographic characteristics of HCP cross tabulated with attitude category towards safe abortion at public hospitals in Mekelle town from May to December 2012 (n=230)

Variable	Attitude		Total	P-value
	Favorable n(%)	Unfavorable n(%)		
Sex of the respondents				
Female	133(93.7)	9(6.3)	142	.381
Male	85(96.6)	3(3.4)	88	
Total	**218(94.8)**	**12(5.2)**	**230**	
Religion of the respondents				
Orthodox	208(95)	11(5)	219	.035
Muslim	6(2.8)	0(.0)	6	
Protestant	1(50%)	1(50%)	2	
Catholic	3(100%)	0(.0%)	3	
Total	**218(94.8)**	**12(5.2)**	**230**	

d) Environmental factor of the respondent HCP cross tabulated with attitude category

Of the total respondents majority of them, 164(71%) were agreed on the current Ethiopian law. Of these 161(98.2%) had a favorable attitude for safe abortion. Reasons were asked for those who were against the law 22(33.3%) religious reason, 11(16.6%) personal and cultural reason [Table-3].

Table 3 : Respondent health providers attitude on the current Ethiopian low for safe abortion at public hospitals in Mekelle City from May to December, 2012 (n=230)

Variable	Attitude		Total	P-value
	Favorable n(%)	Unfavorable n(%)		
Agree on the Ethiopian current law				
Yes	161(98.2)	3(1.8)	164	.000
No due to religious reason	17(77.3)	5(22.7)	22	
No due to personal and cultural reason	10(90.9)	1(9.1)	11	
No due to religious, personal & cultural reason	18(85.7)	3(14.3)	21	
No due to another reason	12(100)	0(.0)	12	
Total	**218(94.8)**	**12(5.2)**	**230**	

e) Individual factor of the respondents cross tabulated with attitude category

Of the total 107 BSc. nurses majority of them 100 (93.5%) had a favorable attitude for safe abortion. The majority, 191(83%) of the respondents had no training for safe abortion and 180 (94.2%) of them had favorable attitude. The majority of the respondents 186 (81%) had never performed safe abortion. And of these 176 (94.6%) of them had a favorable attitude to safe abortion. One of the reasons that they were not ever performed safe abortion was due to lack of training (43.5%). Of the total respondents 207(90%) of them have good knowledge and of these, 96.6% of them had a favorable attitude to safe abortion [Table-4].

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Table 4 : Individual factor of the Respondents cross tabulated with attitude category at public hospitals in Mekelle City from May to December 2012 (n=230)

Variable	Attitude		Total	P-value
	Favorable n(%)	Unfavorable n(%)		
Profession Nurse degree Nurse diploma Physician Midwifery degree Midwifery diploma	100(93.5)	7(6.5)	107	.728
Health officer	67(93.1)	5(6.9)	72	
Oby& Gyn specialist	6(100)	0(.0)	6	
Total	17(100)	0(.0)	17	
	13(100)	0(.0)	13	
	14(100)	0(.0)	14	
	1(100)	0(.0)	1	
	218(94.8)	**12(5.2)**	**230**	
Formal training				
No	180(94.2)	11(5.8)	191	.696
Yes	38(97.4)	1(2.6)	39	
Total	**218(94.8)**	**12(5.2)**	**230**	
Ever perform safe abortion				
Yes	42(95.5)	2(4.5)	44	.000
No due to religious factor	11(68.8)	5(31.2)	16	
No due to lack of training	100(99)	1(1)	101	
No due to personal & educational level	14(100)	0(.0)	14	
No due to facility factor & work overload	6(100)	0(.0)	6	
No due to more than 2 reasons of the above	27(90)	3(10)	30	
No due to other reasons	18(94.7)	1(5.3)	19	
Total	**218(94.8)**	**12(5.2)**	**230**	
Knowledge				
Poor knowledge	5(71.4)	2(28.6)	7	.001
Moderate knowledge	13(81.2)	3(18.8)	16	
Good knowledge	200(96.6)	7(3.4)	207	
Total	**218(94.8)**	**12(5.2)**	**230**	

f) Factors influencing providers' attitude towards safe abortion

To specify associated factors that affect favorable attitude regarding to safe abortion at the institutions, bivariate and multivariate analysis had done at an alpha level of 0.05. Accordingly, the independent variables that were significant and non significant are shown below. Based on the analysis using binary logistic regression all the variable of socio demographic characteristics, profession and experience of the respondents were statistically insignificant.

The odds of favorable attitude among the respondents who had good knowledge on abortion were 6.87 times the odds of the respondents who had poor knowledge on abortion other things being equal [AOR=6.87, 95% CI (1.2, 39.90)].

The odds of favorable attitude among the respondents who didn't agree on the current Ethiopian law on abortion due to religious reasons was 92% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion other things being equal [AOR = .08, 95% CI (.02, .37)].

Similarly, the odds of favorable attitude among the respondents who didn't agree due to more than two reasons on the current Ethiopian law on abortion was 89% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion other things being equal [AOR= .11, 95% CI (.02, .66)] [Table-5].

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Table 5 : Factors influencing providers' attitude towards safe abortion, at public hospitals in Mekelle City, from May to December 2012

variable	Attitude		COR[95%CI]	AOR[95 CI]
	Favorable	Unfavorable		
Sex of the respondents				
Female	133	9	1	1
Male	85	3	1.92[0.5, 7.3]	4.45 [0.32, 62.39]
Age			1.05[0.91,1.21]	0.87 [0.71, 1.07]
Marital status				
Married	107	4	1	1
Never married	93	7	.50[.14,1.75]	0.17 [0.02,1.39]
others	18	1	.67[.07,6.40]	3.44 [0.08, 144.78]
Religion				
Orthodox	208	11	1	1
Others	11	1	.52[.06, 4.53]	1.88 [0.17,20.55]
Profession				
Nurse diploma	67	5	1	1
others	151	7	1.61[.49,5.26]	6.26 [0.25, 155.08]
Professional work experience			1.40[.89,2.2]	2.61 [.14, 5.00]
Current work place				
Mekelle & Ayder referral hospital	162	8	1	1
Queha hospital & North command referral hospital	56	4	.69[.20, 2.39]	0.37 [0.02, 5.49]
Knowledge				
Poor knowledge	5	2	1	1
Moderate knowledge	13	3	1.73[.22, 17.3]	3.05 [0.05, 179.86]
Good knowledge	200	7	11.4[1.9,69.7]*	6.87 [1.2, 39.90] *
Formal training				
No	180	11	1	1
Yes	38	1	2.32[.29, 18.6]	21.31 [.27, 166.23]
Comfort at site of abortion				
Yes	66	3	1	1
No due to religious reason	26	4	.29[.06, 1.41]	3.23 [0.21, 48.62]
No due to more than 2 reasons	65	3	.98[.19, 5.08]	4.34 [0.41, 46.04]
No due to other reasons	61	2	1.38[.22, 8.6]	5.17[0.31, 86.28]
Ever perform safe abortion				
Yes	42	2	1	1
No due to religious factor	11	5	.10[.02, .62]*	0.17 [0.03, 9.4]
No due to lack of training	100	1	4.76[.42, 54.2]	109.16 [0.66, 179.59]
No due to More than 2 reasons	27	3	.43[.06, 2.74]	5.93 [0.25, 140.12]
No due to other reasons	38	1	1.8[.16,20.9]	35.25 [.27, 454.02]
Agree on the Ethiopian current low				
Yes	161	3	1	1
No due to religious reason	17	5	.06[.01, .29]*	.08 [.02, .37] ***
No due to more than 2reasons	18	3	.11[.02, .60]*	.11 [.02, .66] **
No due to other reasons	20	1	.37[.04, 3.8]	.02 [.001, 1.41]

IV. Discussion

The main purpose of this study was to assess health care providers' attitude and associated factors towards safe abortion at public hospitals, in Mekelle town. Providers' perception would have potential consequences for women's already with scarce access to safe abortion services. Deferent research result suggests that sensitizing health providers to the essential nature of safe abortion services may be essential for improving the quality of such services (7).

In this study about 230 of health care providers were participated. This tried to address results that access providers' attitude and associated factors towards safe abortion. According to the results that were trying to assess the attitude of health providers for safe abortion, majority of the respondents (94.8%) had a favorable attitude. The result was consistent with a study done at same region in 2011; 87% of respondent health practitioners had a positive attitude for TOP with an incest case though it was specific. Nearly similar, a qualitative study done on health providers at South

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Africa also showed that, in all providers had a positive view on abortion perceived if unplanned pregnancy due to rape or incest (20, 21).

In this study, when the respondents tried to answer for the question that if they had any formal training for safe abortion, of the total 230 respondents, majority of them (83%) had no training for safe abortion. This study result had a similar result of trained providers to the study done at same region in 2011. That was only 20% of the respondents from that study had taken SAC training while the majority (80%) did not get training. On the contrary on a study done at Latin America, majority of health providers (79%) had taken training either for surgical or medical methods. This big gap may be because of economical, social difference as well as lack of financial and fund for training of health providers for safe abortion in our country. In countries where legislation permits termination of pregnancy access to safe induced abortion may be restricted due to limited numbers of trained health care providers (7,20, 23).

The majority of the respondents (81%) had never performed safe abortion. And of these, 94.6% of them had a favorable attitude for safe abortion. This result showed that although the majority of the respondents had never performed safe abortion, they had favorable attitude towards it. Lack of training was one of the reasons that forced them not to perform safe abortion. Similarly, a qualitative study done at South Africa reported that lack of SAC training practitioners, halted the SAC practice. Many centers only sporadically provide service for safe abortion either because shortage of trained physicians or functioning equipment (21, 33). Religious reason was another factor of the respondents that hinder them to perform safe abortion. This was statistically significant with attitude [COR=.10, 95% CI (.02, .62)]. But the same variable turned insignificant after adjustment [AOR= 0.17, 95% CI (0.03, 9.4)]. The most important personal factor influencing physician's decision not to perform abortions includes lack of training and religious beliefs (34).

Another finding based on the analysis using binary logistic regression all of the variable of socio demographic characteristics were statistically insignificant with the outcome variable attitude. Similar result was found on a study done on health care provides at Addis Ababa, accordingly the variables were statistically insignificant in explaining changes in mean attitude score (19). Multivariate logistic regression analysis was done to assess associated factors to attitude with regard to safe abortion. Accordingly, the significant variables were good knowledge (with a reference of poor knowledge), did not agree on the current Ethiopian law for safe abortion due to religious reason as well as due to more than two reasons (religious, personal, cultural and due to other reasons) with a reference of these respondents who were agreed on the Ethiopian current law for safe abortion were the significant variables.

The odds of favorable attitude among the respondents who didn't agree on the current Ethiopian law on abortion due to religious reasons was 92% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion other things being equal [AOR= .08, 95% CI (.02, .37)]. Similarly, the odds of favorable attitude among the respondents who didn't agree on the current Ethiopian law on abortion due to more than two reasons (religious, personal, cultural and due to other reasons) was 89% lower than the odds of the respondents who had agreed on the current Ethiopian law on abortion other things being equal [AOR=.11, 95% CI (.02, .66)].

Reasons were asked for those who were against the low. Religious reason 33.3%, personal and cultural reason 16.6%, religious, cultural and personal reason 32% and due to other reasons 18.1% .The religious reason was statistically significant for the outcome variable attitude. The result was nearly similar with a study done at Addis Ababa in which those who were aware of the prevailing law were 1.77 times more likely to have this favorable attitude than those who were not aware of the law (19). Majority of the respondents who had good knowledge about safe abortion were significantly associated with the out come variable attitude. The odds of favorable attitude among the respondents who had good knowledge on abortion was 6.87 times the odds of the respondents who had poor knowledge on abortion other things being equal; it was found that [AOR =6.87, 95% CI (1.2, 39.90)]. This result showed that those who had good knowledge on abortion had more favorable attitude towards safe abortion compare to those who had poor knowledge. One well recognized barrier to the provision of optimal care of survivors was that health workers themselves lack knowledge and skills (22).

V. Conclusion

The study was tried to assess health providers' attitude and associated factors towards safe abortion at public hospitals, in Mekelle town, Tigray, Ethiopia. From the study findings the following conclusion are drown: Majority of the respondents had a favorable attitude for safe abortion. Even though majority of the respondents never performed safe abortion in their past experience, they had a favorable attitude towards safe abortion. Lack of training and religious reasons were some of the reasons that forced them not to practice safe abortion. In general the significant variables were good knowledge (with a reference of poor knowledge), did not agree on the current Ethiopian law for safe abortion due to religious as well as due to more than two reasons (religious, personal, cultural and due to other reasons) with a reference of these respondents who were agreed

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on the Ethiopian current law for safe abortion were the significant variables and are the factors that affect attitude of health providers to wards safe abortion

VI. Recommendations

Based on the above conclusions, the following points are recommended: Efforts may be required from Regional health Bauru, Ministry of defiance, and Federal health office for improving knowledge health providers' regarding safe abortion. Regional health Bauru, None governmental organizations and other fund raising agents need to prepare enough budgets for training of health providers' regarding to a safe abortion and related costs. Further researches including qualitative methods related to this topic at all health institutions are recommended.

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