

Attitudes toward safe abortion care and its associated factors among health care providers working in public health facilities in eastern Ethiopia

SAGE Open Medicine

Volume 10: 1–10

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DOI: 10.1177/20503121221107792

journals.sagepub.com/home/smo



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Abstract

Objectives: The main aim of this study was to assess health care providers' attitudes toward safe abortion services and its associated factors in public health facilities of Harar city, Eastern Ethiopia.

Methods: Facility-based cross-sectional study was conducted among 411 health care providers who were working at public health facilities in Harari regional state, in eastern Ethiopia. A simple random sampling technique was used to select study participants. Data were collected using self-administered questionnaires, and collected data were entered into EpiData version 4.6 and then exported to SPSS version 26 for cleaning and analysis. Descriptive statistics, bivariable, and multivariable logistic regression analysis were carried out to compute the prevalence of the outcome variables and to identify factors associated with the outcome variable, respectively. Adjusted odds ratio at 95% confidence interval and p-value < 0.05 was used to declare a significant association.

Results: More than half (58.4%, 95% confidence interval: 53.8–63.2) of the health care providers had a favorable attitude toward safe abortion care. Being male (adjusted odds ratio = 2.90; 95% confidence interval: 1.80–4.65), ever trained on safe abortion (adjusted odds ratio = 2.55; 95% confidence interval: 1.39–4.66), familiarity with the current abortion law of Ethiopia (adjusted odds ratio = 2.38; 95% confidence interval: 1.40–4.05), preference of unrestricted abortion law (adjusted odds ratio = 1.86; 95% confidence interval: 1.15–3.02), and being medical doctors or health officers (adjusted odds ratio = 1.90; 95% confidence interval: 1.06–3.41) were the factors significantly associated with health care providers' favorable attitude toward safe abortion care.

Conclusion: Approximately three in five of the health care providers working at public health facilities had a favorable attitude toward safe abortion care in eastern Ethiopia. We suggest giving pre-service or in-service training on safe abortion care and supporting health care providers to be familiar with the country's abortion laws are crucial to improve health care providers' attitudes toward safe abortion service in Ethiopia.

Keywords

Attitude, health care providers, safe abortion, Ethiopia

Date received: 20 January 2022; accepted: 31 May 2022

Introduction

World Health Organization (WHO) defines unsafe abortion as a procedure for terminating unplanned pregnancy, carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical requirements, or both.^{1,2} As a result of unsafe abortion complications, women have encountered a variety of problems that have affected their quality of life and well-being, including life-threatening complications such as hemorrhage, infection, and injury to the vaginal tract and internal organs.³

Evidence from different studies indicated that lack of trained providers, absence of adequate medical supply, misinformation regarding abortion laws, providers'

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unwillingness to perform safe abortion care, religious belief, social stigma, and personal belief among health care providers are potential barriers to providing safe abortion service for women in need.⁴⁻⁷

Globally, an estimated 55.7 million abortions occurred from 2010 to 2014. Of these, 25 million (45.1%) abortions were unsafely performed.⁸ The majority (97%) of these unsafe abortions were recorded in developing countries.⁸ Each year, 47,000 women die as a result of unsafe abortions, accounting for nearly 13% of all maternal deaths worldwide, with 99% of these deaths occurring in underdeveloped nations.^{9,10}

In Ethiopia, an estimated 620,300 induced abortions were performed in 2014. Of these, approximately half (47.4%, 294,100) of induced abortions occurred outside of the health facilities.¹¹ The number of women who have received post-abortion care/treatment for complications from induced abortion was 103,600. Unsafe abortion caused 14% of maternal mortality in the country.^{12,13}

To reduce unsafe abortion and its complications, Article 551 of the penal code of the Federal Democratic Republic of Ethiopia allows termination of pregnancy under broad conditions (in case of rape, incest, fetal impairment, if pregnancy continuation endangers the life of the woman or fetus, if the woman has physical or mental disabilities, and if the woman is a minor or under 18 years). Furthermore, the Federal Ministry of Health (FMoH) also revised the technical and procedural guidelines for safe abortion to permit the termination of first-trimester pregnancy by midlevel providers in health centers as part of task sharing and task shifting.¹³ To overcome problems caused by unsafe abortion, DKT Ethiopia developed three strategic pillars: improve the accessibility of services, create demand for safe abortion services, and support the service delivery mechanisms of facilities working on the maternal area.¹⁴ Despite the government's commitment and various stakeholders' interventions toward legalization and access expansion of safe abortion,^{4,6} problems relating to unsafe abortion have persisted due to health care providers' negative attitude, lack of readiness, and poor service quality.^{4,15}

Existing evidence indicates that training health care providers about safe abortion care can affect their knowledge and care delivery.^{4,6,16,17} As a result, continuing to focus on such factors can assist in determining health care providers' attitudes toward safe abortion services and implementing evidence-based interventions. Even though many studies were conducted on abortion in Ethiopia, there is limited study on health care providers' attitudes toward safe abortion care and its determinant factors. Hence, this study attempts to assess providers' attitudes toward safe abortion and its associated factors in public health facilities of Harar city, eastern Ethiopia.

Methods

Study setting

The study was conducted in public health facilities of Harar city, eastern Ethiopia from 20 June to 20 July 2021. Harari people's regional state is located in Eastern Ethiopia. Harar is the capital

city of the Harari regional state which is found 526km away from Addis Ababa. Harari has an estimated population of 263,656. Of these, 60,667 were women of reproductive age in 2020/2021.¹⁸ In total, 2 public hospitals, 1 police hospital, 1 private hospital, 8 health centers (4 urban and 4 rural), 24 health posts, and 50 private clinics were functional health facilities in the study area.¹⁹ Of these, Hiwot Fana Specialized University Hospital (HFSUH) and Jogula Hospital (JH) were providing comprehensive care and serve as referral destinations for patients who need high level/specialized health care services and each hospital delivers the services for an estimated more than 5 million populations in the catchment area. According to evidence from Harari Regional Health Bureau (HRHB), 1511 health professionals are working in the study area.¹⁹

Study design and population

A facility-based cross-sectional study design was conducted using a quantitative method. Health care providers (Obstetricians and Gynecology Specialists, General Practitioners (GPs), Nurse, Midwifery, and Health officers) who were working in the public health facility of Harari regional state were eligible for the study to assess health care providers' attitudes toward safe abortion care provision. But health care providers who were on annual leave and traveled for training or study were excluded.

Sample size determination and sampling techniques

The sample size for this study was calculated using single population proportion formula considering parameters of 95% confidence level, 5% margin of error, and the prevalence of favorable attitude toward safe abortion among health care providers taken from a previous study (48%).²⁰ Then 10% of the possible non-response rate was added, and eventually, 422 was the final calculated sample size in this study. There are six public health facilities in the study area, two of them were public hospitals and four of them were public health centers. The study includes all public health facilities in Harar city to obtain an adequate sample of health care professionals in the study region. However, the study excludes private health facilities since the attitudes and practices they demonstrated might be different from those of public health facilities. After getting the number of health care providers in each health facility, the sample size was allocated proportionally for each health facility and health care providers based on their size. The employee registration book was used to construct a sampling frame and used to recruit study participants. Study participants were recruited using simple random sampling methods by using computer-generated random numbers (Figure 1).

Data collection tools and methods

The questionnaires were prepared by reviewing similar studies in such a way that they included all the variables that can

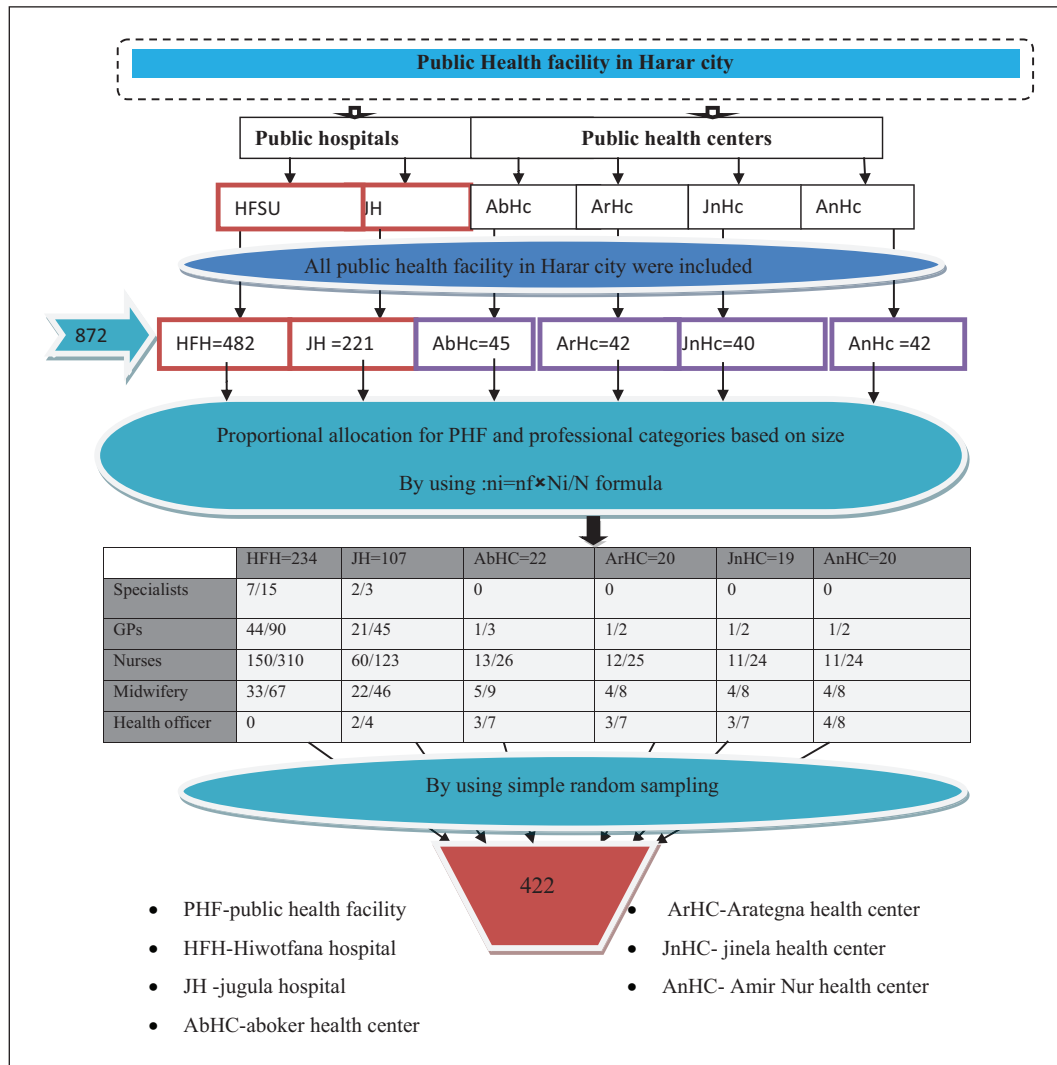


Figure 1. Sampling technique for the study conducted on attitude of health care providers and associated factors toward safe abortion care in public health facilities of Harar city, Eastern Ethiopia.

$n_i = n_f \times N_i / N$ where N = number of total eligible health care providers in all public health facility; N_i = total health care workers from each facility; n_i = proportioned sample to be drawn from each facility; and n_f = total sample size to be drawn from all health facility.

meet the study's objectives because there were no standard instruments^{4,6,16,20,21} and modified into the local context. It was prepared in English and the English version was used for data collection. The questionnaires contain socio-demographic characteristics, a question related to training, and practice of health care providers, a question related to abortion legalization, and 16 attitudinal questions. The reliability of the questionnaire was checked for internal consistency by using Cronbach's alpha (α) estimates and yielding a score of 0.87 for 16 attitude items. A structured self-administered method was applied to collect the data. Four midwives and two public health officers with a minimum of bachelor's degree qualification were recruited and trained about the overall study objective, questionnaire clarification, sampling strategy, ethical considerations, and how to facilitate the data collection process. Data collectors facilitated the data

collection process and checked the completeness of the data. All COVID-19 precautions were applied during the data collection period.

Outcome measurement and operational definition

Attitude of health care providers toward safe abortion care was measured as favorable and unfavorable. The details of the outcome measurement are presented as follows: the attitudes of health care providers toward safe abortion were examined using 16-item attitudinal questions with a possible 5-point Likert-type scale response. One of the items from this questionnaire was negatively worded, thus it was reversely coded and scored before analysis. The mean cut-off after computed on SPSS was 3.31 with $SD \pm 0.68$. Then

the total score for attitude was dichotomized into favorable for those who have scored above or equal to the mean and unfavorable for those who have scored below the mean.

Favorable attitude: Health care providers who score mean and above mean for attitude question were considered as they had favorable attitude.^{4,20}

Unfavorable attitude: Health care providers who scored below the mean cut-off were regarded as they had unfavorable attitudes.^{4,20}

Pre-service training: It is formal training that an individual must be completed before they take responsibility to perform the actual procedures or duties.²²

In-service training: It is a type of training given while a person is on the job to strengthen their level of knowledge, skill, and practice or to maintain or upgrade professional qualifications.²²

Health care providers: Health personnel whose profession was giving health care services to the client through the application of the principle and procedures of evidence-based medicine and caring. The health care providers in this study were obstetricians and gynecology specialists, general practitioners (GPs), nurse (diploma and degree), midwifery (diploma and degree), and health officers.²³ Medical doctors or health officers in this study imply either of the two, whether they had a favorable attitude or not as compared to nurses or midwives.

Data quality controls

Before the actual data collection was conducted, a pretest was done on 21 health care providers (5% of the total sample size) in Haramaya general hospital on similar health care providers to check the consistency, reliability, understandability, clarity, and time required to complete the questionnaire. Then, the critical comments were incorporated into the final data collection tool to modify and increase its quality. A data collector was hired out of the study area to reduce information contamination. Then, 2-day training was provided to the data collectors and supervisor on the data collection tools and data collection procedure. Data collectors were supervised closely by the supervisor and the principal investigator. The collected data were checked for completeness, accuracy, and consistency by the principal investigator and supervisors on daily basis.

Statistical analysis

The data were cleaned, coded, and entered into EpiData version 4.6 and then exported to SPSS statistical software version 26 for analysis. Descriptive statistical analysis was carried out to compute frequencies, a measure of central tendency, and variability of study variables. Binary logistic

regression analysis was used to determine the association between each independent variable and outcome variable. Multicollinearity was checked to see the linear correlation among the associated independent variables by using variance inflation factor (VIF) and standard error. VIF of >10 or standard error of >2 was considered suggestive of the existence of multicollinearity. For that reason, variables with VIF >10 or standard error >2 were checked to be dropped from the multivariable analysis. The model goodness of fit was checked by Hosmer–Lemeshow goodness-of-fit test and omnibus test. The model was fitted well since the Hosmer–Lemeshow test was insignificant at ($p=0.10$) and the omnibus test was statistically significant at ($p=0.00$). Variable with p -value <0.25 at 95% confidence interval (CI) was taken into the multivariable regression model to control for all possible confounders. Finally, in the multivariable model, an adjusted odds ratio with 95% CI was considered to determine the strength and direction of the relationship between the independent variables and outcome variables and then p -value <0.05 was taken as a cut-off value to be declared as statistically significant.

Results

Attitude-related characteristics of respondents

The overall aggregated mean score for health care providers' attitude toward safe abortion care was 3.31 with SD ± 0.68 . Health care providers who scored the mean and above the mean were considered as having a favorable attitude toward safe abortion care and those who scored less than the mean were considered as having an unfavorable attitude toward safe abortion care. Based on the seated criteria, among 411 respondents, 240 (58.4%) had a favorable attitude toward safe abortion care (Table 1).

Socio-demographic characteristics of respondents

In this study, 411 participants completed the distributed self-administered questionnaire with a response rate of 97.4%. Slightly more than half (51.6%) of the study participants were male. The median age of the study participants was 28 years (± 4 interquartile range) and more than half (51.8%) of them were between the ages of 26 and 30 years. In total, 189 (46%) of the study participants belong to the Muslim religion, 52.8% were married, and 60.6% are nurses by profession. More than one-third (38%) of the study participants had 3–5 years of work experience (Table 2).

Facility-related factors

More than half (54.3%) of the health care providers were working in specialized hospitals. The majority (98.1%) of study participants reported that their facilities have been providing safe abortion services, and the majority (94.6%) of the health facilities had trained and skilled staff. Nevertheless,

Table 1. Attitude of health care providers working at the public health facility in eastern Ethiopia, 2021 (n=411).

Variables	Responses				
	Strongly disagree	Disagree n (%)	Undecided n (%)	Agree n (%)	Strongly agree
Abortion should be made legal and accessible	50 (12.2)	49 (11.9)	42 (10.2)	179 (43.6)	91 (22.1)
A woman has the right to decide for herself to have an abortion	41 (10.0)	61 (14.8)	45 (10.9)	186 (45.3)	78 (19)
Abortion should not be provided for any reason	161 (39.2)	111 (27.0)	44 (10.7)	54 (13.1)	41 (10.0)
Abortion should be legal if the woman's physical health is endangered by the pregnancy	16 (3.9)	34 (8.3)	33 (8)	201 (48.9)	127 (30.9)
Abortion should be legal if the woman's mental health is endangered by the pregnancy	17 (4.1)	29 (7.1)	36 (8.8)	192 (46.7)	137 (33.3)
Abortion should be legal if the woman is not married and want to terminate her pregnancy	46 (11.2)	127 (30.9)	88 (21.4)	112 (27.3)	38 (9.2)
Abortion provision should be legal if the family (or woman) cannot afford to raise the child	54 (13.1)	119 (29)	87 (21.2)	116 (28.2)	35 (8.5)
Abortion provision should be legal if the fetus shows signs of serious congenital defect	14 (3.4)	35 (8.5)	42 (10.2)	154 (37.5)	166 (40.4)
Abortion provision should be legal if the pregnancy was a result of incest or rape	15 (3.6)	35 (8.5)	50 (12.2)	164 (39.9)	147 (35.8)
Abortion provision should be legal if the pregnancy was unplanned and unwanted	58 (14.1)	106 (25.8)	93 (22.6)	117 (28.5)	37 (9.0)
Safe abortion should be accessible under any circumstances	60 (14.6)	97 (23.6)	104 (25.3)	123 (29.9)	27 (6.6)
If a woman requested an abortion, I will provide her or refer her to other facilities	39 (9.5)	64 (15.6)	92 (22.4)	173 (42.1)	43 (10.5)
I would try to convince other health care providers to perform abortions	47 (11.4)	112 (27.3)	115 (28)	116 (28.2)	21 (5.1)
I think I would be stigmatized if I provided safe abortions to women	51 (12.4)	161 (39.2)	77 (18.7)	96 (23.4)	26 (6.3)
All eligible HCPs should be able to provide medical abortion for first-trimester pregnancy	49 (11.9)	82 (20.0)	88 (21.4)	149 (36.3)	43 (10.5)
All eligible HCPs should be able to provide surgical abortion for first-trimester pregnancy	76 (18.5)	102 (24.8)	80 (19.5)	131 (31.9)	22 (5.4)
Referral arrangement for social support and care should be an integral part of overall abortion care	23 (5.6)	33 (8.0)	73 (17.8)	182 (44.3)	100 (24.3)
Overall attitude			Favorable 240 (58.4%)		Unfavorable 171 (41.6%)

HCP: health care provider.

approximately three-fourth (71.5%) of the health facilities had essential equipment for safe abortion services. Three hundred forty-seven (84.4%) of the study participants had read safe abortion guidelines (Table 3).

Training, and practice of safe abortion care

Of the total participants, 116 (28.2%) health care providers had formal pre-service training on safe abortion care. Of 116 health care providers, two-thirds, 80 (69%), of them were practicing the safe abortion care procedure. Of those safe abortion practice providers, 73 (91.3%) of them performed manual vacuum aspiration (MVA), whereas 71 of them practiced medical abortion (MA). From 116 health care providers who got pre-service training on safe abortion care, sixteen of them did not practice the procedure because of they were assigned to other wards. Out of 411 health care providers, 50.6%, of them felt comfortable with working at the site

where safe abortion services were provided. Out of 203 health care providers not felt comfortable with working at the site where safe abortion services were provided, 167 (82.3%) were refused the site due to their religious impacts (Table 4).

Abortion legalization-related characteristics of participants

In 2005, the Ethiopian government amended its abortion penal code to allow the procedure in a broader range of situations, including Rape, Incest, Fetal impairment, if pregnancy continuation endangers the Woman or the Fetus' life, if the woman has physical or mental disabilities, and if the Woman is a minor or under the age of 18 years. In most cases, a woman's statement is sufficient to determine the legal indication for and allow her to obtain abortion services. Health care providers were asked about their understanding of Ethiopian

Table 2. Socio-demographic characteristics of health care providers working in a public health facility in Eastern Ethiopia, 2021 (n=411).

Variables	N	%
Sex		
Male	212	51.6
Female	199	48.4
Age		
20–25	99	24.1
26–30	213	51.8
31–35	68	16.5
36–40	27	6.6
≥41	4	1.0
Religion		
Orthodox	161	39.2
Muslim	189	46.0
Protestant	47	11.4
Others ^a	14	3.4
Marital status		
Single	185	45.0
Married	217	52.8
Others ^b	9	2.2
Educational level		
Diploma	94	22.9
BSc degree	228	55.5
MSc degree	14	3.4
MD/general practitioner	66	16.1
MD/specialist	9	2.2
Type of profession		
Nurse	249	60.6
Midwifery	72	17.5
Health officer	15	3.6
General practitioner/MD	66	16.1
Obstetrics and gynecology specialist	9	2.2
Work experience		
Less than 1 year	6	1.5
1–3	136	33.0
3–5	156	38
5–10	95	23.1
Above 10	18	4.4

^aCatholic and Waqefata.^bDivorced and widowed.

abortion regulations based on the current state of the laws. Nearly three-fourth, 292 (71%), of the total participants were familiar with Ethiopia's existing abortion law. Less than half of the participants, 191 (46.5%), said they were not asked to present proof from women seeking abortion services due to rape or incest. More than half of the respondents (52.6%) agreed that women should not be necessary in state of ill health to get abortion service if the pregnancy was putting their lives in jeopardy. Two hundred twenty-six (55%) of the total participants favored an unrestricted law for safe abortion services. More than three-fourth (79.2%) of those who support unrestricted law said that it helps to reduce maternal

Table 3. Facility-related characteristics of HCP working in a public health facility in eastern Ethiopia, 2021 (n=411).

Variables	N	%
Facility type		
Health centers	81	19.7
General hospital	107	26.0
Specialized hospitals	223	54.3
Unit of work		
MCH	54	13.1
Gynecology ward	39	9.5
Delivery ward	59	14.4
OPD	90	21.9
Medical wards	75	18.2
Surgical wards	28	6.8
Emergency OPD	59	14.4
Others ^a	7	1.7
Does your facility provide a safe abortion service		
Yes	403	98.1
No	8	1.9
Is there well-trained staff in your facility		
Yes	389	94.6
No	13	3.2
I do not know	9	2.2
Essential and functional equipment in your facility		
Yes	294	71.5
No	64	15.6
I do not know	53	12.9
Reading safe abortion guideline		
Yes	347	84.4
No	64	15.6

ART: Anti-retroviral Therapy; HCP: health care provider; MCH: Maternal and child health; OPD: Out patient department; OR: operation room.

^aPediatrics, ART, OR, and orthopedics wards.

mortality and morbidity. On the contrary, among 185 (45%) of those who did not accept unrestricted law, religious concerns were accounted for, 153 (81.8%) (Table 5).

Factors associated with health care provider's attitude toward safe abortion care

In the bivariate model, variables that had a p-value of <0.25 were further considered in the multivariable models. The candidate variables for multivariable analysis were sex, profession, work experience, ever trained on safe abortion, familiarity with current abortion law, prefer unrestricted law, presence of well-trained staff, reading safe abortion guidelines, and presence of essential equipment. All variables with a p-value <0.25 in the bivariable analysis were further considered in the multivariable logistic regression analysis to control confounders.

In multivariable logistic regression analysis, variables such as sex, ever trained on safe abortion, prefer unrestricted law, being familiar with current abortion law, and professional type were factors that were significantly

Table 4. Training and practice-related characteristics of HCPs working in a public health facility in eastern Ethiopia, 2021 (n=411).

Variables	N	%
Trained on safe abortion (n=411)		
Yes	116	28.2
No	295	71.8
Current practice of the training (n=116)		
Yes	80	69.0
No	36	31.0
Type of procedure practiced (n=80)		
Manual vacuum aspiration	73	91.3
Medication abortion	71	88.8
Evacuation and curettage	14	17.5
Dilatation and curettage	9	11.3
Reasons for not practicing (n=36)		
Lack of equipment and supply	6	16.7
Personal reason	7	19.4
Overload of work	9	25.0
Others ^a	16	44.4
Comfortable with working at a place where safe abortion is performed (n=411)		
Yes	208	50.6
No	203	49.4
Reason for not feeling comfortable (n=203)		
Against religion	167	82.3
Out of scope of practice	18	8.9
Against personal value	63	31.0
Not getting an opportunity to be trained	24	11.8

HCP: health care provider.

^aThose who are assigned to other wards.

associated with favorable attitudes of health care providers toward safe abortion care.

This study showed that male providers were nearly three times more likely to have a favorable attitude than female providers (adjusted odds ratio (AOR)=2.92; 95% CI: 1.84–4.66). The odds of having a favorable attitude toward safe abortion care among trained health care providers were 2.63 times higher (AOR=2.63; 95% CI: 1.46–4.75) when compared with those who had no training. Similarly, the odds of having a favorable attitude toward safe abortion care among those who were familiar with the current abortion law were three times higher as compared to those who were not familiar with the current abortion law (AOR=3.09; 95% CI: 1.86–5.12).

Health care providers who preferred unrestricted abortion law were 1.84 times more likely (AOR=1.84; 95% CI: 1.15–2.96) to had a favorable attitude toward safe abortion care as compared to those who do not prefer unrestricted abortion law. The likelihoods of having a favorable attitude toward safe abortion care among health care practitioners whose profession was medical doctors or health officers were nearly two times (AOR=1.90; 95% CI: 1.06–4.341) higher as compared to those whose profession was nurse or midwifery (Table 6).

Table 5. Abortion legalization–related characteristics of participants working at public health facilities in eastern Ethiopia, 2021 (n=411).

Variables	N	%
Familiarity with the current abortion law of Ethiopia		
Yes	292	71.0
No	119	29.0
A woman who requests abortion due to rape or incest		
Required to submit evidence	173	42.1
Not required to submit evidence	191	46.5
I don't know	47	11.4
In which state safe abortion is allowed if pregnancy endanger life of women or child		
Necessarily in state of ill health	156	38
Not necessarily in state of ill health	216	52.6
I don't know	39	9.5
Prefer unrestricted law of abortion		
Yes	226	55.0
No	185	45.0
Reason to prefer unrestricted law of abortion(n=226)		
Because abortion is a health problem	165	73.0
It helps to get service in a safe area by trained providers	158	69.9
Reduce mortality and morbidity	179	79.2
Solve problem related with an unwanted pregnancy	142	66.4
Reason for not supporting unrestricted law of abortion (n=185)		
My religion is not allowed	151	81.6
Culturally not acceptable	93	50
Homicide	42	22.7
Encourage to have an unwanted pregnancy	57	30.8
Encourage pre/extra marital sex	47	25.4

ART: Anti-retroviral Therapy; HCP: health care provider; MCH: Maternal and child health; OPD: Out patient department; OR: operation room.

Discussion

In this study, 58.4% of health care providers were in favor of safe abortion services. Factors that were significantly associated with attitudes of the health care providers toward safe abortion care were sex, ever trained on safe abortion, being familiar with current abortion law, prefer unrestricted law of safe abortion, and knowledge of safe abortion.

The finding was in line with the study conducted in Addis Ababa (54%),¹⁶ East Gojam (56.7%),¹⁷ and West Bengal, India (62%).²⁴ However, the finding of the current studies was higher than that of the studies conducted in Adama (48%),²⁰ Addis Ababa (37%),⁶ India(40%),²⁵ and Iran (13.1%).²⁶ This discrepancy might be due to the study setting difference and there is a time gap between the prior and present studies, in which the current period was marked by the adoption of several updated health programs.^{6,25} Furthermore, there is more recent health information, as well as a rise in interest from a variety of stakeholders in giving advanced training on safe abortion care. On the contrary, the favorable attitude of health care providers toward safe abortion

Table 6. Bi-variable and multivariable logistic regression analysis depicting factors associated with the attitude of health care providers working at public health facilities in Eastern Ethiopia, 2021 (n=411).

Variables	Attitude		COR (95% CI)	AOR (95% CI)
	Favorable	Unfavorable		
Sex				
Female	93 (46.7)	106 (53.3)	1	1
Male	147 (69.3)	65 (30.7)	2.58 (1.72–3.86)**	2.92 (1.84–4.66)**
Type of profession				
Nurse/midwives	175 (54.5)	146 (45.5)	1	1
Physician/Ho	65 (72.2)	25 (27.8)	2.17 (1.30–3.62)*	1.90 (1.06–3.41)*
Experience				
≤5 Years	164 (55.0)	134 (45.0)	1	1
>5 Years	76 (67.3)	37 (32.7)	1.68 (1.07–2.64)*	1.54 (0.92–2.59)
Ever trained on safe abortion				
No	145 (49.2)	150 (50.8)	1	1
Yes	95 (81.9)	21 (18.1)	4.68 (2.77–7.91)**	2.63 (1.46–4.75)**
Familiar with current law				
No	40 (33.6)	79 (66.4)	1	1
Yes	200 (68.5)	92 (31.5)	4.29 (2.73–6.76)**	3.09 (1.86–5.12)**
Prefer unrestricted law of SAC				
No	81 (43.8)	104 (56.2)	1	1
Yes	159 (70.4)	67 (29.6)	3.05 (2.03–4.58)**	1.84 (1.15–2.96)*
Availability of equipment				
No	56 (47.9)	61 (52.1)	1	1
Yes	184 (62.6)	110 (37.4)	1.82 (1.18–2.81)*	1.80 (0.98–3.32)
Trained staff in the facility				
No	6 (27.3)	16 (72.7)	1	1
Yes	234 (60.2)	155 (39.8)	4.03 (1.54–10.51)*	3.19 (0.88–11.54)
Reading of SAC guideline				
No	30 (45.5)	36 (54.5)	1	1
Yes	210 (60.9)	135 (39.1)	1.87 (1.10–3.17)*	0.48 (0.20–1.16)

1: reference; SAC: safe abortion care; COR: crude odds ratio; AOR: adjusted odd ratio.

Bold indicates the significantly associated variables.

*Significant at $p < 0.05$.

**Significant at $p < 0.001$.

services was considerably lower than the studies conducted in Mekelle (94.8%)⁴ and Asela (68.1%).²⁷ This disparity could be attributed due to the difference in the study setting. For instance, an earlier study in Asela was conducted only in one referral hospital, whereas the current study includes more than one public hospital and health center. In addition to this, the previous research conducted in Tigray and Asela used small sample sizes when compared with the current study.

In the current study, being male providers was nearly three times more likely to have a favorable attitude toward safe abortion care as compared to females. This study was supported by a study done in Addis Ababa.¹⁶ The reason for this could be that male providers are more pro-choice than female providers. Another possible explanation for males' favorable attitudes toward safe abortion is that in this study, male providers were exceeding by 5% than female providers by receiving pre-service training, which may have

influenced males' attitudes to be more positive than females because training was also an independent predictor of health care providers' attitudes.

Training was another predictor which was significantly associated with a favorable attitude of health care providers toward safe abortion services. Those who had training on safe abortion care were two times more likely to have a favorable attitude when compared to those who had not trained. This study was in agreement with a study done in east Gojam.¹⁷ This might be because training can provide more up-to-date information on the current abortion practices and improve their understanding which has an impact on their attitude.¹³ Furthermore, because the majority of trained health care providers were providing the services, they may have a positive outlook on safe abortion services since they spent much of their time with women in need. As a result, their attitude toward safe abortion care increased when compared to others.

The likelihood of having a favorable opinion toward safe abortion was three times higher among those who are familiar with current abortion law than those who were not familiar with the law. This result was supported by the study conducted in Addis Ababa.⁶ This could be because people who are knowledgeable about the legislation governing abortion are less concerned about whether the law will penalize them or not. Due to this reason, they might have a more favorable view toward the service than those who are not.

In this study, health care providers who prefer unrestricted law of safe abortion had nearly two times higher odds of having a favorable attitude toward safe abortion than those who did not support unrestricted law. This study is in line with studies done in Adama²⁰ and east Gojam.¹⁷ The possible explanation for this could be those who prefer unrestricted law understood the impact of unsafe abortion and were optimistic to help the women who need safe abortion services.

Health care providers whose profession was medical doctors or health officers were nearly two times more likely to have a favorable attitude when compared to those whose profession was a nurse or midwives. The finding of the study was supported by study done in Addis Ababa.²⁸ The possible explanation for this might be the influence of government policy which restricts the abortion service to be provided only by physicians which was later modified as task shifting and task sharing to involve nurses and midwifery.¹³

Implication of the study for health care providers

Based on the findings of the study, an intervention to change health care workers' attitudes toward safe abortion services should be designed and implemented. Sex, abortion training, being familiar with existing abortion laws, professional type, and preferring an unrestricted abortion law were all associated factors investigated in this study. As a result, health care providers should get pre-service and in-service training on currently preferred abortion care delivering procedures such as MVA and MA to improve their fundamental knowledge, skills, and attitudes. Furthermore, value clarification, which aids clinicians in distinguishing their values from their clients' rights to safe reproductive health, is an important part of all training programs.

During the provider recruitment period, we recommend hiring individuals who are willing to conduct the procedure and training them on current country abortion legislation and abortion standards, as well as retaining a trained health care provider at the procedure site. In addition, make the working atmosphere more appealing by fulfilling the necessary resources, equipment, and drugs that aid in providing acceptable service.

Strength and limitations

This study used primary data; it includes all the public health facilities of Harar city (multicenter), which increases the

external validity of the study. But this study includes only public health facilities due to time and resource constraints; since limited data were available, compression and discussion were difficult.

Conclusion

In the study area, favorable health care providers' attitudes toward safe abortion care are unacceptably low. Moreover, this has a significant impact on the quality of safe abortion care in the region. Some variables were found significantly associated with the provider's attitude toward safe abortion care. Interventions by the Harari Regional Health Bureau, health facilities managements, and stakeholders directed on these determinants may be effective in influencing health care practitioners' attitudes regarding safe abortion treatment and enhancing service quality.

Acknowledgements

We would like to thank Haramaya University, College of Health and Medical Sciences, School of Graduate Studies for allowing us to do this research. Moreover, we would like to thank the participants of this study, data collectors, and supervisors.

Author contributions

T.B., A.S., G.T., and D.T. are involved in the conception of the research idea, design, data acquisition, and interpretation of the finding. T.B. and A.S. drafted the manuscript, and all authors reviewed and contributed intellectual content. All authors have read and approved the final manuscript.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethical approval

Ethical clearance was obtained from Haramaya University, College of Health and Medical Sciences Institutional Health Research Ethics Review Committee (IHRERC) (Ref. No: IHRERC/100/2021). Permission letters were received from each health facility and informed written consent was obtained from the study participants. The study was conducted according to the recommendations of the Declaration of Helsinki. Confidentiality was kept by using anonymous codes and de-identified study participants' identifiers.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.


Informed consent

Informed written consent was obtained from all health care providers before data collection.

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Supplemental material

Supplemental material for this article is available online.

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