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Research Article

Healthcare providers' attitude towards abortion service provision in Gulu city, Northern Uganda

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Abstract

Background: Although induced abortion is legally allowed on various grounds in several sub-Saharan African countries, health care providers in these countries often persist in viewing induced abortion as immoral. Providers' attitudes may conflict with the national abortion law or their personal and or religious values. Abortion services are severely restricted and highly contentious in Uganda. This study, therefore, is aimed at determining attitudes among healthcare providers on induced abortion service provision in Gulu City.

Procedures: A cross-section survey was conducted among health workers about attitudes toward induced abortion between September and November 2019 using a modified abortion attitudinal score. The study was conducted in the Hospitals and Health centers in Gulu City, in Northern Uganda, the participants were drawn from Public, Private non-for-profit faith-based, Private for Profit and, Private non-for-profit Non-Government Organisation health centers.

Findings: A total of 252 health care providers were surveyed. The mean attitudinal score for generally in support, generally not in support, conditional in support, personal attitude, and beliefs against and toward abortion provision were 2.80, 2.71, 2.86, 3.239, and 3.35 respectively. Factors that were positively associated with general support included age 40 years and above; and being employed in private non-for-profit non-governmental health facilities, with coefficients of 0.85 and 0.67 respectively. Factors that were positively associated with conditional support were; age 40years or above; being employed in a non for profit non-governmental health facility; private for-profit and private not-for-profit faith-based health facilities coefficients 0.55, 0.54, 0.40, and 0.37 respectively. However, being a born-again Christian was negatively associated with general support for induced abortion provision.

Conclusion: Healthcare providers' attitude is an important element in the provision of quality stigma-free post-abortion care services. A clear national effort to improve post-abortion and comprehensive abortion care training should include value clarification and attitude transformation among all healthcare providers.

Abbreviations

AOGU: Association of Obstetricians and Gynaecologists of Uganda; CPR: Contraceptive Prevalence Rate; UDHS: Uganda Demographic Health Survey; GUREC: Gulu University Research and Ethics committee; LHIREC: Lacor Hospital Institutional Research and Ethics Committee; NGO: Non-Government Organisation; PI: Principle Investigator; TFR: Total Fertility Rate; VCAT: Value Clarification and Attitude Transformation

Background

Globally, an estimated 20 million induced abortions are being performed unsafely each year leading to significant maternal mortalities and morbidities worldwide [1]. complications of induced abortions are the second leading cause of maternal death [2]. The mortalities and morbidities correlate to poverty, social inequity, and the constant, methodical denial of women's human rights [3] and as such developing countries contribute a bigger share(97%) of the burden [4,5].

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In countries with legal access to safe abortion services, deaths related to abortion are virtually non-existent [6]. Although it is legally allowed on various grounds in several sub-Saharan African countries, Uganda inclusive, health care providers in these countries often persist in viewing induced abortion as immoral, rather than knowing the lawful position of abortion in their countries [7].

Abortion providers' attitudes may conflict with the national abortion law [8] or their values [9] or their religious affiliations [10]. Post-abortion care services, especially in low-income countries are normally associated with substantial stigma and discrimination against providers. The discrimination causes many providers to cease providing post-abortion services [11]. Health care providers' unacceptance of abortion care as a critical sexual and reproductive health intervention also aggravates the inaccessibility problem facing women globally [12-14].

Abortion services are severely restricted and highly a controversial social issue in Uganda, particularly on religious grounds [15]. The restrictive abortion laws make induced abortion a clandestine practice [16]. Although the Uganda Ministry of Health lifted the restriction for induced abortion under circumstances such as when the pregnant woman is HIV positive, the pregnancy is a result of rape, defilement, or incest [17], this provision has been withdrawn.

The unclear and ambiguous interpretation of the laws on induced abortion in the country has created stigma and diverse attitudes among skilled healthcare providers. Stigma and passive resistance among healthcare providers remain insidious barriers to the full realization of reproductive equality [18]. This study, therefore, is aimed at determining attitudes among healthcare providers on induced abortion service provision in Gulu City.

Methods

Study design, settings and participants

The study was a cross-sectional survey conducted between September and November 2019 in Gulu Municipality in Gulu district (now Gulu City as of 1st July 2020) located about 360km north of Kampala, the capital city of Uganda. The participants were drawn from Public, Private non-for-profit faith-based, Private Profit, Private non-for-profit Non-Government organizations' health centers.

Sample size and sampling procedure

The sample size was calculated using a formula for a single sample proportion with a finite population. The estimated population size of health workers in Gulu City was 600 as provided by the district health office, with Z being 1.96 at 95% confidence intervals and taking a non-response rate of 5%, a minimum sample size of 247 health workers. Participants were conveniently sampled from each health facility based on their availability at the duty stations.

Data collection procedure and instrument

Data was collected using a self-administered paper-based structured questionnaire written in English. The questionnaire had two parts, In the first section the questionnaire captured the demographic characteristics of research participants and the last part obtained information about participants' attitudes towards abortion using a Likert-like attitudinal score adopted from a study conducted among South African medical students [19]. The South African study used three sub-scales with 25 total items. A modification was done by dropping out three items that were not relevant for our participants and these 22 items were regrouped into five subscales (see Supplementary material). The 22-statement item was measured on a 5-point Likert scale (5-Strongly Agree, 4-Agree, 3-No Opinion, 2-Disagree, 1-Strongly Disagree). Participants who scored equal to or above the means were considered as having positive attitudes while participants who scored below the means were categorized as having negative attitudes. The internal reliability of the sub-scale was calculated using Cronbach's alpha statistics and found to be 0.75, 0.58, 0.76, 0.71, and 0.44 for Generally in Support, Generally not in support, conditionally in support, personal attitude or beliefs towards, and personal attitudes and beliefs against abortion provision respectively (Supplementary material).

Quality control

We pretested the questionnaire among 10 health workers who were working in Anaka general hospital to ensure that the wordings were well understood and correct any errors in word meaning. We trained research assistants on research ethics, privacy, data collection tool, and consent procedures. The Principal Investigator (PI) monitored data collection and cross-checked that the questionnaires were correctly filled. Data were entered twice in a database, merged, and cleaned before data analysis.

Data management and analysis

We used EpiData version 4.6.0.2 to create a database for this study and data was exported to Stata 16 for analysis. Categorical variables were displayed in a table together with their frequencies and percentages. Continuous variables were categorized using means and presented with their ranges, standard deviation, and means.

We used ordinary least-square regression methods to assess for an association between research participants' demographic characteristics and attitudes as measured using the five scales (Generally in support of abortion provision; Generally, not in support of abortion provision; Conditional support for abortion provision; Personal attitudes toward abortion provision and Attitude against abortion provision). All participant demographic characteristics were included as a covariate in the analysis.

Patient and public involvement

No patient involved

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Results

Demographic characteristics

A total of 252 healthcare providers completed the self-administered questionnaire, 84% were below 40 years of age, and 68% were female. The majority were Government employees (40%) while 30% were employed in faith-based health facilities, (18%) were employed in Private for-profit facilities, 26(10%) in Private not for Profit Non-Governmental Health facilities, and 6(2%) were employed in both Private and Government Health facilities. More than half of the respondents were Catholic believers (56%) and up to 80% had a strong affiliation to their religion. Nurses and midwives comprised a majority with 85(34%) and 86(34%) respectively; while 30 (12%) were Clinical Officers, 26(10%) were Doctors, and 24(10%) other health care cadres (pharmacists, Anaesthetists). More than 1/3 (38.6%) of the respondents have been in practice for at least six years (Table 1).

The mean score of the respondents in the subscales for general and conditional support of abortion provision was 2.8 (CI 2.65-2.99) and 2.86 (2.75-2.96) respectively. The mean score for the scale generally not in support of abortion service provision was 2.71 (CI 2.54-2.87). Meanwhile, the mean score for personal attitudes and beliefs against and toward abortion service provision was well above the average of 3.239 (CI 3.12-3.35) and 3.35 (CI 3.04-3.35) respectively (Table 2).

In sub-scale 1, attitude generally in support of abortion service provision, nearly half 115 (46%) of the respondents agree that the provision of safe voluntary abortion should be made legal and accessible meanwhile 122(48%) disagreed with the idea. About 38% of the respondents agree with the idea of including abortion services as part of the minimum health care package, this is contrary to 52% who disagree with that provision. Although 43% of the respondents agree that a woman has a right to decide whether or not to abort, 53% disagree with the idea (Table 2).

In subscale 2, attitude generally not in support of abortion had two items. Half of the respondents (50%) reported that it's morally unacceptable for a woman to abort irrespective of any reason, contrary to this, about 71% of the respondents agree that abortion services should not be provided for any reason but very good reasons (Table 2).

In sub-scale 3, conditional support for abortion provision, the respondents had varying opinions on the legal provision of abortion depending on the conditions; 81% of the respondents reported agreement if the woman's physical health is endangered, 65% if the mental health is endangered, and 71% if the fetus shows serious congenital anomalies. On the other hand, respondents reported that abortion services should not be provided in the case the woman was raped(49%), a woman is not married(78%), the woman is not able to raise the child (71%), the pregnancy was a result of incest (58%), the woman had to drop out of school (69%) and unplanned pregnancy(65%) (Table 2).

Table 1: Demographic characteristics.

Variables	Frequency	%
Gender (n=252)		
Male	80	32
Female	172	68
Age group (n=252)		
Less than 20 years	25	10
20 - 29 years	109	43
30 - 39 years	78	31
40 and above years	40	16
Marital status (n=252)		
Single/Separated/Widowed	101	40
Cohabiting	35	14
Married	116	46
Religion (n=252)		
Catholic	140	56
Anglican	59	23
Born again Christian	42	17
others (Muslim/Seventh Days Adventists/Nonbelievers)	11	4
Religious beliefs (n=251)		
Very strong	200	80
Somewhat strong	27	11
Neither strong nor weak	24	9
Education level (n=252)		
Certificate	97	39
Diploma	99	39
Degree	56	22
Employment status (n=251)		
Employed in Government only	100	40
Employed in NGO Health Centre	26	10
Employed in Private For-Profit Hospital	44	18
Employed in a private non-for-Profit Hospital	75	30
Employed in Both Government and Private Hospitals	6	2
Type of health care provider (n=251)		
Nurse	85	34
Midwives	86	34
Doctor	26	10
Clinical Officer	30	12
Others	24	10
Numbers of years working (n=251)		
Less than one (1) year	45	17.9
1 to 5 years	109	43.4
6 to 10 years	51	20.3
11 years and above	46	18.3

In sub-scale 4, personal attitudes and beliefs against abortion service provision, nearly half of the respondents 48% agreed that they will not perform an abortion under any circumstance, meanwhile, 42% disagreed; 56 % claimed they would not refer a patient for abortion under any

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circumstances, 35% agreed for such referral. More than half of the respondents (69%) reported they would discourage women from seeking abortion procedures, and about (53%) said they would discourage other healthcare providers from providing such services. About half (50%) of the respondents agreed that abortion service provision is a source of stigma/discrimination, and (54%) said that health care providers who conscientiously object to abortion service provision should be allowed to say no to it (Table 2).

In sub-scale 5, personal attitudes and beliefs towards abortion provision, more than half of the respondents (57%) agreed to refer patients for the services only if they cannot can-not or will not provide the services themselves and about 43% said the objecting providers should be required to refer patients seeking abortion provision to non-objecting providers (Table 2).

In ordinary least-square regression analysis, being of age 40 years and above was positively associated with general support for abortion provision and conditional support for abortion provision (coefficients 0.85 and 0.55). Participants who had strong religious beliefs were positively associated with personal attitudes/beliefs towards abortion provision (coefficient 0.73). Being employed in the NGO Health facility was positively associated with general support for abortion provision and conditional support for abortion provision (coefficients 0.67 and 0.54). While being employed in a private for-profit health facility was positively associated with conditional support for abortion providers and personal

Table 2: Attitudinal scores for abortion.

Statements	Strongly Disagree (1)	Disagree (2)	No Opinion (3)	Agree (4)	Strongly Agree (5)
General support for abortion provision (alpha=0.75, mean score=2.8, 95% CI 2.65 - 2.99)					
General support for the provision of safe, voluntary abortion should be made legal and accessible (n=251).	89 (35)	33 (13)	14 (6)	50 (20)	65 (26)
The government should be responsible for providing abortions as a part of the minimum healthcare package (n=251).	88 (35)	43 (17)	21 (9)	46 (18)	53 (21)
A woman should have the right to decide for herself whether or not to have an abortion (n=252).	87 (35)	44 (17)	12 (5)	34 (13)	75 (30)
Generally not in support for abortion provision (alpha=0.58, mean=2.71, 95% CI 2.54 - 2.87)					
Abortion is morally unacceptable irrespective of the reasons (n=250).	65 (26)	37 (15)	22 (9)	39 (15)	87 (35)
Abortion should not be provided for any reason (n=249).	107 (43)	69 (28)	10 (4)	22 (9)	41 (16)
Conditional support for abortion provision (alpha=0.76, mean score=2.86, 95% CI 2.75 - 2.96)					
Abortion provision should be legal if the woman's physical health is endangered by the pregnancy (n=252).	30 (12)	13 (5)	5 (2)	43 (17)	161 (64)
Abortion should be legal if the woman's mental health is endangered by the pregnancy (n=252).	38 (15)	31 (12)	20 (8)	44 (18)	119 (47)
Abortion should be legal if the woman is not married (n=252).	152 (60)	44 (18)	21 (8)	10 (4)	25 (10)
Abortion provision should be legal if the family (or woman) cannot afford to raise the child (n=252).	128 (51)	51 (20)	17 (7)	24 (9)	32 (13)
Abortion provision should be legal if the fetus shows signs of serious congenital defect or malformation (n=252).	38 (15)	15 (6)	20 (8)	44 (17)	135 (54)
Abortion provisions should be legal if the woman was raped (n=252).	66 (26)	57 (23)	28 (11)	34 (13)	67 (27)
The abortion provision should be legal if the pregnancy was a result of incest (n=251).	88 (35)	57 (23)	28 (11)	26 (10)	52 (21)
Abortion provisions should be legal if the pregnancy would mean that the mother had to drop out of school (n=251).	120 (48)	52 (21)	16 (6)	29 (11)	34 (14)
The abortion provision should be legal if the pregnancy was unplanned, and the woman does not want to be pregnant (n=252).	117 (46)	48 (19)	21 (8)	32 (13)	34 (14)
Personal belief or attitude against abortion provision (alpha= 0.71, mean score= 3.23, 95% CI 3.12 - 3.35)					
I prefer not to perform an abortion under any circumstances (n=252).	62 (25)	44 (17)	25 (10)	46 (18)	75 (30)
I would not refer a patient for abortion under any circumstances (n=252).	89 (35)	54 (21)	22 (9)	38 (15)	49 (20)
If a female patient requested an abortion, I would try to discourage her from seeking the procedure (n=252).	35 (14)	23 (9)	20 (8)	71 (28)	103 (41)
I would try to convince other health care providers not to perform abortions (n=252).	48 (19)	40 (16)	31 (12)	53 (21)	80 (32)
I think I would be discriminated against/stigmatized if I provided abortions to women (n=252).	43 (17)	43 (17)	41 (16)	48 (19)	77 (31)
Health care providers who conscientiously object to abortion should be allowed to refuse to perform abortions (n=252).	45 (18)	32 (13)	39 (15)	59 (23)	77 (31)
Personal attitudes/beliefs toward abortion provision (alpha=0.44, mean=3.19, 95%CI 3.04 - 3.35)					
I would refer patients for abortion services, in situations where I cannot or will not provide those services myself (n=252).	56 (22)	27 (11)	26 (10)	53 (21)	90 (36)
Health care providers who conscientiously object to abortion should be required to refer patients seeking an abortion to non-objecting providers (n=252).	64 (25)	38 (15)	39 (16)	52 (21)	59 (23)

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attitudes/beliefs towards abortion provision (coefficients 0.40 and 0.54). Similarly, being a participant who was employed in a private not-for-profit faith-based health facility was positively associated with conditional support for abortion provision (coefficient 0.37). However, being a born-again Christian was negatively associated with general support for abortion provisions (coefficient -0.51). Table 3 summarises the result for the five scales of abortion attitude.

Discussion

To the best of our knowledge, this is the first study investigating the attitude of healthcare providers regarding abortion service provision in Northern Uganda. The internal reliability of each the sub-scale was calculated using Cronbach's alpha statistics and found to be 0.75, 0.58, 0.76, 0.71, and 0.44 for Generally in Support, Generally not in support, conditionally

Table 3: Healthcare provider's characteristics and their association with attitude to induced abortion.

Demographic characteristics	General support for abortion provision (alpha=0.75, mean score=2.8, 95% CI 2.65 - 2.99)	Not in generally support for abortion provision (alpha=0.58, mean=2.71, 95% CI 2.54 - 2.87)	Conditional support for abortion provision (alpha=0.76, mean score=2.86, 95% CI 2.75 - 2.96)	Personal belief or attitude against abortion provision (alpha= 0.71, mean score= 3.23, 95% CI 3.12 - 3.35)	Personal attitudes/ beliefs toward abortion provision (alpha=0.44, mean=3.19, 95%CI 3.04 - 3.35)
Gender (n=252)					
Male	Ref	Ref	Ref	Ref	Ref
Female	-0.39 (-0.85 – 0.06)	0.24 (-0.22 – 0.79)	-0.19 (-0.47 – 0.08)	0.24 (-0.22 – 0.69)	0.14 (-0.55 – 0.28)
Age group (n=252)					
Less than 20 years	Ref	Ref	Ref	Ref	Ref
20 - 29 years	0.50 (-0.11 – 1.10)	0.18 (-0.42 – 0.79)	0.08 (-0.28 – 0.45)	0.18 (-0.42 – 0.79)	0.45 (-0.11 – 1.00)
30 - 39 years	0.53 (-0.17 – 1.23)	-0.14 (-0.85 – 0.56)	0.41 (-0.02 – 0.83)	-0.14 (-0.85 – 0.56)	0.30 (-0.35 – 0.94)
40 years and above	0.85 (0.08 – 1.61) *	0.02 (-0.75 – 0.78)	0.55 (0.08 – 1.01) *	0.02 (-0.75 – 0.78)	0.39 (-0.32 – 1.09)
Marital status (n=252)					
Single/Separated/ Widowed	Ref	Ref	Ref	Ref	Ref
Cohabiting	0.22 (-0.35 – 0.79)	0.50 (-0.06 – 1.07)	0.18 (-0.17 – 0.52)	0.50 (-0.06 – 1.07)	0.13 (-0.39 – 0.65)
Married	-0.21 (-0.65 – 0.23)	0.24 (-0.20 – 0.68)	-0.13 (-0.39 – 0.14)	0.24 (-0.20 – 0.68)	0.35 (-0.06 – 0.75)
Religion (n=252)					
Catholic	Ref	Ref	Ref	Ref	Ref
Anglican	0.03 (-0.39 – 0.46)	0.15 (-0.27 – 0.58)	0.06 (-0.19 – 0.32)	0.15 (-0.27 – 0.58)	0.17 (-0.22 – 0.56)
Born again Christian	-0.51 (-0.99 – -0.04) **	0.34 (-0.13 – 0.82)	-0.14 (-0.43 – 0.15)	0.34 (-0.13 – 0.82)	-0.04 (-0.48 – 0.40)
others	-0.08 (-0.93 – 0.77)	-0.07 (-0.92 – 0.79)	0.38 (-0.14 – 0.89)	-0.06 (-0.92 – 0.79)	0.17 (-0.61 – 0.95)
Religious beliefs (n=251)					
Very strong	Ref	Ref	Ref	Ref	Ref
Somewhat strong	0.40 (-0.19 – 0.98	-0.03 (-0.61 – 0.56)	0.26 (-0.09 – 0.61)	-0.03 (-0.61 – 0.56)	0.73 (0.19 – 1.26) *
Neither strong nor weak	-0.30 (-0.91 – 0.31)	0.17 (-0.44 – 0.78)	0.04 (-0.33 – 0.41)	0.17 (-0.44 – 0.78)	-0.12 (-0.68 – 0.44)
Employment status (n=251)					
Employed in Government only	Ref	Ref	Ref	Ref	Ref
Employed in NGO Health Centre	0.67 (0.05 – 1.29)	0.06 (-0.56 – 0.69)	0.54 (0.16 – 0.91) *	0.06 (-0.56 – 0.69)	-0.01 (-0.58 – 0.56)
Employed in Private For-Profit Hospital	0.48 (-0.08 – 1.03)	-0.18 (-0.73 – 0.37)	0.40 (0.07 – 0.74) *	-0.18 (-0.73 – 0.37)	0.54 (0.04 – 1.05) *
Employed in private non for-Profit Hospital	0.31 (-0.15 – 0.76)	0.30 (-0.15 – 0.75)	0.37 (0.09 – 0.64) *	0.30 (-0.15 – 0.75)	0.30 (-0.12 – 0.72)
Employed in Both	-0.50 (-1.64 – 0.65)	-0.44 (-1.58 – 0.70)	-0.22 (-0.91 – 0.47)	-0.44 (-1.58 – 0.70)	-0.35 (-1.40 – 0.70)
Type of health care provider (n=251)					
Nurse	Ref	Ref	Ref	Ref	Ref
Midwives	0.06 (-0.37 – 0.48)	-0.04 (-0.47 – 0.38)	-0.02 (-0.28 – 0.23)	-0.04 (-0.47 – 0.38)	0.25 (-0.14 – 0.65)
Doctor	-0.11 (-0.77 – 0.54)	0.20 (-0.46 – 0.85)	-0.06 (-0.45 – 0.34)	0.20 (-0.46 – 0.85)	-0.24 (-0.84 – 0.36)
Clinical Officer	-0.09 (-0.76 – 0.58)	-0.17 (-0.84 – 0.50)	0.28 (-0.12 – 0.69)	-0.17 (-0.84 – 0.50)	0.28 (-0.33 – 0.90)
Others	-0.10 (-0.78 – 0.58)	-0.35 (-1.03 – 0.33)	-0.02 (-0.43 – 0.39)	-0.35 (-1.03 – 0.33)	0.07 (-0.55 – 0.70)

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Number of years working (n=251)					
Less than one (1) year	Ref	Ref	Ref	Ref	Ref
1 to 5 years	-0.12 (-0.66 – 0.42)	-0.45 (-0.99 – 0.09)	0.08 (-0.25 – 0.40)	-0.45 (-0.99 – 0.09)	-0.00 (-0.50 – 0.49)
6 to 10 years	-0.14 (-0.86 – 0.57)	-0.46 (-1.18 – 0.25)	-0.14 (-0.57 – 0.29)	-0.46 (-1.18 – 0.25)	0.06 (-0.60 – 0.72)
11 years and above	-0.25 (-0.99 – 0.50)	-0.25 (-0.99 – 0.49)	-0.25 (-0.70 – 0.19)	-0.25 (-0.99 – 0.49)	0.02 (-0.66 – 0.70)
Intercept	2.60 (1.76 – 3.44)	2.56 (1.73 – 3.40)	2.51 (2.00 – 3.02)	2.56 (1.73 – 3.40)	2.36 (1.59 – 3.12)
Adjusted R2	0.12	-0.002	0.10	0.09	0.03

**Positively associated coefficient*
*** Negative associated coefficient r*

in support, personal attitude or beliefs towards, and personal attitudes and beliefs against abortion provision respectively.

Health providers who are 40 years or older and an employee in non-for-profit NGO health facilities were positively associated with general support for abortion provision. This can be because of exposure to post-abortion care training exposing healthcare providers to value clarification and attitude transformation (VCAT), a very important tool in clarifying abortion service provision in some circumstances(9) and help reduce judgemental approach by many providers [20]. Meanwhile, being a born-again Christians was negatively associated with general support for abortion provision, replicating a finding in a national survey about knowledge and perception of abortion law in Trinidad and Tobago in which Christians who are non-Catholics and non-Pentecostals are more prochoice compared to Catholics and Pentecostal [21]. The conservative approach by born again Christians will affect quality post-abortion care including post-abortion family planning [20].

Participants who had strong religious beliefs and those who are employees in the private for-profit health facilities were positively associated with personal attitudes/beliefs towards abortion provision. This is reassuring given the two items under this subscale relate to the referral of a patient for abortion services only if they cannot or will not provide the services themselves, and about objecting healthcare providers that should refer patients seeking abortion service provision to non-objecting providers. Conscientious objection has not been mentioned anywhere either in the Ugandan Penal Code [22] or the Constitution [23]. A South African study involving in-depth interviews among healthcare providers brought the lack of understanding concerning the circumstances in which healthcare providers were entitled to invoke their right to refuse to provide or assist in abortion services. Providers seemed to have poor understandings of how conscientious objection was to be implemented but were also constrained in that there were few guidelines or systems in place to guide them in the process [24].

This study has several limitations. First, responses from a self-administered survey may not be indicative of the actual behavior, particularly regarding current and future intentions and behavior. Furthermore, external issues, such as facility-based constraints preventing abortion provision, may influence their attitude to abortion services now and in the future. A comprehensive longitudinal assessment of attitudes requiring a large-scale cohort study among providers in various health facilities in Uganda will give more information.

Second, given the restrictive nature of abortion laws in Ugandan settings and despite all efforts to ensure confidentiality, providers' responses may be biased by socio-cultural and legal norms and dependent on the degree to which each respondent felt comfortable stating attitudes and practices contrary to such standards. We attempted to minimize such bias by administering the questionnaire privately and anonymously.

A third limitation is that our findings may not be generalizable to other healthcare providers in Uganda or other countries. Healthcare providers in Gulu City may differ demographically or otherwise in Uganda or elsewhere. Knowledge, attitudes, and beliefs about abortion and abortion provision can be quite different from country to country and should be considered in the appropriate political, religious, cultural, and educational context as was seen in Tanzania and Ethiopia [25].

Lastly. One sub-scale in the attitudinal scores (personal attitudes and beliefs against abortion provision) had poor internal consistency and questionnaire reliability.

We believe our study is the first to look at healthcare providers' attitudes towards abortion service provision using this attitudinal score adopted from the South African study [19] and modified to fit for our case piloted extensively, and tested for internal reliability and consistency.

Conclusion

A Healthcare provider's attitude is an important element in the provision of quality stigma-free sexual and reproductive healthcare services including the provision of comprehensive abortion care. This requires a basic understanding of situations under which one can choose to terminate a pregnancy or seek post-abortion care if they are to provide objective stigma-free care. A clear national effort to improve attitude in abortion training should be aimed at value clarifications in post-abortion and comprehensive abortion value clarification and attitude transformation.

Availability of data and materials

The data sets used and analyzed during this study are not deposited in the public repository but are available from the corresponding author on reasonable request.

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Ethical approvals

Gulu University Research Ethics Committee approved the study under number GUREC-079-19. and each research participant provided written informed consent before participation in the study. Administrative clearances were granted by Gulu Regional Referral Hospital ethical committee correspondence number ADM/2017-18/001 and St Mary's Hospital Lacor ethical boards with administrative clearance number LHIREC Adm 022/09/19. Marie Stopes Uganda provided an email clearance, and other health centers, and hospitals provided administrative clearance verbally by each institutional head before we recruited the participants into the survey. All information collected in this study is being kept with strict confidentiality and only accessible by the research team.

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Author's contributions

All authors contributed significantly to this work. PFP; Conceived, designed the study, participated in data collection, interpretation, and discussion; drafted the manuscript. AAG; participated in the proposal designs, data interpretation, and discussion. OJH participated in drafting the method, data analysis, and interpretation. All Authors read and approved the manuscript.

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