



KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS UNSAFE ABORTIONS AMONG TERTIARY EDUCATION FEMALE STUDENTS IN KITWE, ZAMBIA

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ABSTRACT: Background: *The World Health Organisation estimates that at least 33% of all women seeking hospital care of complications related to abortions are under the age of 24. We conducted a cross-sectional study to describe knowledge, attitude and practice regarding unsafe abortions among tertiary education female students in Kitwe, Zambia. Methods:* A cross sectional descriptive study was conducted among 238 randomly selected female students in tertiary education institutions in Kitwe. Using cluster sampling, three (3) government institutions were selected for inclusion in this study. A pre-tested self-administered questionnaire was used. Responses regarding knowledge, attitudes and practices were scored and graded. Pearson's chi-square was used to ascertain the associations of knowledge, attitudes, practices and age. **Results:** *The majority of the respondents (69.2%) had good knowledge on unsafe abortion. More than three quarters of the respondents (78.6%) had negative attitude towards the practice of unsafe abortion. Age was significantly associated with knowledge ($p < 0.005$). Death (65.5%) was the most reported complication of unsafe abortion. Others were bareness (52.9%), womb damage (34.0%), haemorrhage (17.2%) and infections (11.8%). Among the reasons reported to lead to unsafe abortions among female students, unpreparedness (43.7%) of bearing the child was the most common. 9.2% of the students reported having had an abortion before and 14.7% reported that they would abort if they fell pregnant. More than half (58%) indicated that they were aware about the Termination of Pregnancy Act. Out of those who had an abortion, the majority (54%) reported having used traditional herbs to terminate the pregnancy while about 2.7% reported having terminated the pregnancy at the hospital. Conclusion:* *Our findings show that abortions are endemic among females in institutions of higher learning in Kitwe district. Public health interventions should be centred on increasing awareness on safe abortion methods and improve female student's access to safe abortion services in health centres.*

KEYWORDS: Abortion, Unsafe abortion, Tertiary education, Knowledge, Attitude, Practice, Termination of Pregnancy Act



INTRODUCTION

Unsafe abortions remain a major concern and continue to pose a public health challenge in developing nations, including Zambia, (Blystad *et al.*, 2019). The WHO estimates that about 210 million pregnancies occur each year throughout the world with 46 million of these ending in abortion: 36 million in developing countries and 10 million in developed countries (YAZDKHASTI *et al.*, 2015; Sedgh *et al.*, 2016; Ganatra *et al.*, 2017a). It is estimated that 97% of all global abortions between 2010 and 2014 occurred in low income countries. Further, the percentage of unsafe abortions is higher in countries with highly restrictive abortion laws when compared with countries with more liberal laws, (Berer, 2017; Ganatra *et al.*, 2017b). In countries with liberal abortion laws, barriers such as lack of facilities, waiting periods, health care worker's negative attitudes towards abortions, and parental consent have been identified (Atakro *et al.*, 2019). Despite existing options to combat abortions, such as self-management of abortions with use of pills, and safe medical procedures in most countries (Marlow *et al.*, 2014; Jayaweera *et al.*, 2018), lack of knowledge and attitudes on safe methods can lead to use of wrong dosages and wrong choices which consequently ends in unsafe abortions, (Ganatra *et al.*, 2017b).

Young adolescent women, including those of secondary and tertiary education, represent a large proportion of those procuring unsafe abortion (Abiola *et al.*, 2016), with female adolescents and youths aged between 16 and 24 years disproportionately affected, (Yaacob, Abera and Meleko, 2018). This is because most female adolescents experience physiological, psychological and emotion changes which puts pressure on them to experiment on sexual related issues such as abortions, unprotected sex and substance abuse, (Reardon, 2018). Other factors influencing female students' decisions to engage in unsafe abortion acts include, peer pressure, fear of dropping out of school, social stigma against abortions and fear of judgement from parents and their relations, (Cadmus and Owoaje, 2011; Vinh and Tuan, 2015; Frederico *et al.*, 2018; Håkansson *et al.*, 2020). Research into the knowledge and perceptions on abortion among female students in higher learning institutions reveal various reasons for abortion including strict abortion laws, bad-will, stigma and negative socio-cultural attitudes from society about premarital pregnancies, financial instability, possible end of hope or interference with further education, improved social opportunities and lack of knowledge on safe abortion services and contraceptive use, (Sedgh *et al.*, 2016; Ganatra *et al.*, 2017b; Atakro *et al.*, 2019).

In Zambia, the Termination of Pregnancy Act of 1972 postulates that an abortion may legally take place if the continuation of the pregnancy involves a risk to the pregnant woman's life, physical or mental health; a risk to the physical or mental health of any existing children; or if there is a substantial risk that the child will be born with birth abnormalities (Cresswell *et al.*, 2016; Haaland *et al.*, 2019). Additionally, there is a rigorous clinical vetting procedure involving more than one physician before the termination of pregnancy can be carried out. However, the 2005 amendment of the termination of the pregnancy act, provides for safe abortion to be conducted in cases of child rape, (Cresswell *et al.*, 2016). However, in as much as the law makes it a criminal act to perform or seek for abortion, except for the purpose of saving the women and the people demanding for it, it is still secretly practiced mostly in unsafe conditions and is still high among female adolescents, (Cresswell *et al.*, 2016). Further, with a number of cultures and religions discouraging the termination of pregnancies, abortion still remains a closely guarded secret and has been seen to affect women and girls from all sectors of society in Zambia (Haaland *et al.*, 2019).



A survey conducted in 2014 in Zambia revealed alarming numbers of monthly average cases of unsafe abortion by some provinces. Central province had 201, Copperbelt 763, and Lusaka Province had 228. The age group percentages were as follows: 17 per cent for those aged 19 years and below, 29 per cent were between 20 and 24 whilst 54 per cent were 25 and above (IPAS, 2014). Despite the existing safe abortion legal framework, the maternal mortality ratio is currently at 183 maternal deaths per 100000 live births with around 30% maternal deaths thought to be due to unsafe abortions (Guttmacher, 2009). Further, social attitudes towards abortions remains conservatives and knowledge of safe abortion services among female adolescents remain poor (Cresswell *et al.*, 2016). Consequently, most women may not want to access safe abortion services from health facilities for fear of stigma and judgement by health care workers. Knowledge and attitude towards abortion services are important factors in decision -making processes for access to reproductive health care among Zambians. When people are provided with reproductive and sexual health information, they are more likely to perceive the threat and risk of intended actions, (Nkata, Teixeira and Barros, 2019). We conducted a study to understand the knowledge, attitude and practices towards unsafe abortions among female adolescent students from three institutions of higher learning in Kitwe, Zambia.

METHODS

Study Design

We adopted a cross-sectional study design and used a self-administered questionnaire to collect qualitative and quantitative data.

Study Setting and Study Population

The study was conducted in Kitwe, in the Copperbelt province of Zambia. It is the second largest city by population and size in Zambia (NDHS, 2016). The main economic activity in Kitwe is copper mining. The target population were female students aged 19 to 30 years from three institutions of higher learning namely; Kitwe School of Nursing, Kitwe College of Education and Zambia Institute of Business Studies and Industrial Practice (ZIBSIP).

Sampling and Sample Size

Based on the proportion of unsafe abortion of 0.4%, 95% confidence interval and a 6% margin of error, a sample size of 238 was derived and probability cluster sampling was employed. The three (3) institutions (Kitwe Nursing and Midwifery, Kitwe College of Education, Zambia Institute of Business Studies and Industrial Practice) formed appropriate clusters. Proportionate simple random sampling was done in each cluster.

- i. A health institution; Kitwe school of Nursing and Midwifery
- ii. An education institution; Kitwe College of Education and
- iii. A business and industrial institution; Zambia Institute of Business Studies and Industrial Practice (ZIBSIP)



This was done with the purpose of gathering information from students from a wider range of study programs. Female students below the age of 30, in all years of study were selected from the three institutions. Selection of participation from each school was proportional to size. In each cluster simple random sampling was used to recruit students who gave verbal consent to take part in the study and were part of that institution.

Variables

Abortion: It is the termination of pregnancy before the age of viability.

Unsafe Abortion: Procedure for terminating unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both.

Unwanted Pregnancy: A pregnancy that occurs in circumstances where the woman did not plan to conceive or one that is not desired by one or both biological parents.

Tertiary Education: Higher education; education generally begun after high school, usually carried out at a university or college, and usually involving study for a degree or diploma

Knowledge: The facts, feelings or experiences known by a person or group of people; the state of knowing; awareness, consciousness or familiarity gained by experience or learning; specific information of a study. In our study, knowledge on unsafe abortion was used to mean, participants state of knowing, awareness and familiarity gained on unsafe abortions.

Attitude: Personal views of something. In our study, attitude was used to mean personal views and feelings towards unsafe abortions.

Practice: Usual pattern of action; an established way of doing something, especially one that has developed through experience and knowledge.

Abortifacient: An agent that produces abortion

Assessment of the dependent variables for the quantitative aspect of this study, was as follows; **Knowledge on Unsafe Abortion:** Participants were asked four fact questions on unsafe abortion in order to measure knowledge. Every correct response was given a score of one or one point and wrong response was given a score of zero. The four (4) questions were summed and a composite knowledge variable was thus computed with scores ranging from zero (0) to four (4). Zero being no knowledge of unsafe abortion and four having excellent knowledge. For simplicity, the study further classified the scores into two categories. A score above 2 was classified as good knowledge whereas a score below 3 was classified as poor knowledge.

Attitudes Towards Abortion: Similarly, attitudes towards abortion was assessed by summing and scoring the attitude questions, every response showing positive attitudes was given a score of one whereas a response showing negative attitudes was given a score of zero. A total score of half and above was scored as having positive attitude and anything less than half was scored as having negative attitude.



Data Collection

A self-administered questionnaire was used to collect data from a randomly selected sample of female students from the study sites. The questionnaire captured socio-demographic characteristics, knowledge about unsafe abortion, causes, complications and beliefs and practices of abortion. The original questionnaire was then modified to suit the context of the study after pre-testing it on 10 students who all completed and returned.

Data Analysis

The data from the questionnaire were cleaned and verified to minimize entry errors, outliers and missing values. Responses from the questionnaire were then coded and entered into Microsoft excel. The entries were then exported to IBM SPSS version 23 for analysis. Responses were analysed to determine frequencies, percentages and relationships among variables. In order to test the association between the dependent variables and independent variables, Chi square test was done

Ethical Consideration

This research was conducted after approval by the ethical committee of the Tropical Disease Research Centre (Ethical clearance no: 00002911) and permission was sought from the Nation Health Research Authority. An information sheet was provided to all participants to ensure that they understood the study. Informed consent was obtained prior to participation in the study and no identifiers were used in the study. All data was anonymised and data were restricted to investigators only.

RESULTS

Social Demographic Characteristics

Information used was obtained from 238 female respondents. Respondents under the age of 20 years accounted for only 14.7%, whilst those between ages 20-24 years 62.6% which was the majority and those of ages 25-30, 22.7%. Mean age range was 20-24 years. All respondents were of Christian affiliation as seen from table 1. The majority of respondents were from the Bemba ethnic group (n=113) and accounted for 47.5% whilst the least represented ethnic group was Lozi with only 2.1% (n=5), and about a quarter (27.2%) represented the other ethnicities. Majority of respondents 86.6%, were single (never married) and 10.5% were married. Over half (51.3%) were first year students whilst 23.1% were in second year and a quarter (25.6%) in third year.

**Table 1: Demographic Characteristics of Respondents**

Variable	Percentage	Frequency
<u>Age of respondents</u>		
<20	35	14.7
20-24	149	62.6
25-30	54	22.7
Total	238	100.0
Mean age range	20-24	
<u>Religious affiliation</u>		
Roman Catholic	42	17.6
Pentecostal	77	32.4
SDA	28	11.8
Jehovah's Witness	25	10.5
UCZ	42	17.6
Others	24	10.1
Non-Christian	0	0.0
Total	238	100.0
<u>Ethnic Group</u>		
Bemba	113	47.5
Nyanja	34	14.3
Tonga	21	8.8
Lozi	5	2.1
Others	65	27.3
Total	238	100.0
<u>Marital status</u>		
Single	206	86.6
Married	25	10.5
Separated/divorced	7	2.9
Total	238	100.0
<u>Level of study</u>		
1st year	122	51.3
2nd year	55	23.1
3rd year	60	25.6
Total	238	100.0

Knowledge of Unsafe Abortion

Knowledge on Personnel to Conduct Abortion Procedure

Participants were asked to indicate personnel who were likely to conduct unsafe abortions. The findings indicate that 92% indicated that it is conducted by an individual him/herself, (Table 2). About half (54.2%) still defined it as one done by a trained personal at a hospital. However,



less than half (41.6%) knew that an abortion is considered unsafe if it is done by trained person in an unsafe environment such as at one's home where sterility is not guaranteed.

Table 2: Proportion of participants with knowledge of who's likely to conduct unsafe abortion procedures

Unsafe abortion is done	Frequency	Percentage
By self		
Yes	219	92.0
No	19	8.0
By doctor at hospital		
Yes	109	45.8
No	129	54.2
By untrained person at hospital		
Yes	145	60.9
No	93	39.1
By trained person at my or his home		
Yes	99	41.6
No	139	58.4
By elderly woman in community		
Yes	156	65.5
No	82	34.5

Knowledge on Unsafe Abortion Scoring

Findings reveal that 69.2% of the study participants had their knowledge on unsafe abortion rated as good, whilst 30% had theirs rated as poor, (Table 3). Also, 58% of the respondents said they were aware of the existence on the law concerning abortion.

Table 3: Knowledge on Unsafe Abortion^a

Variable	Frequency	Percentage
Knowledge on unsafe abortion		
Poor	73	30.3
Good	165	69.2
Total	238	100.0
Knowledge of law concerning abortion		
Yes	138	58.0
No	100	42.0
Total	238	100.0

^a Criteria for good knowledge are given under heading measurement



Respondent's knowledge about complications and adverse outcomes of unsafe abortion

Table 4: Complications of Unsafe Abortion

These were grouped into the following:

Variable response	Frequency	Percentage
Lead to death	156	65.5
Causes infertility	126	52.9
Womb damage or problems	81	34.0
Severe bleeding	41	17.2
Infection	28	11.8
Negative Mental/ psychological impact	6	2.5
No response/Don't know	7	2.9

Two thirds (66%) of the participants (n=156) mentioned that unsafe abortion could lead to death. The other more frequently mentioned complication was bareness (n=126) whilst negative mental or psychological impact was the least mentioned with only n=6, (Table 4 and Figure 1).

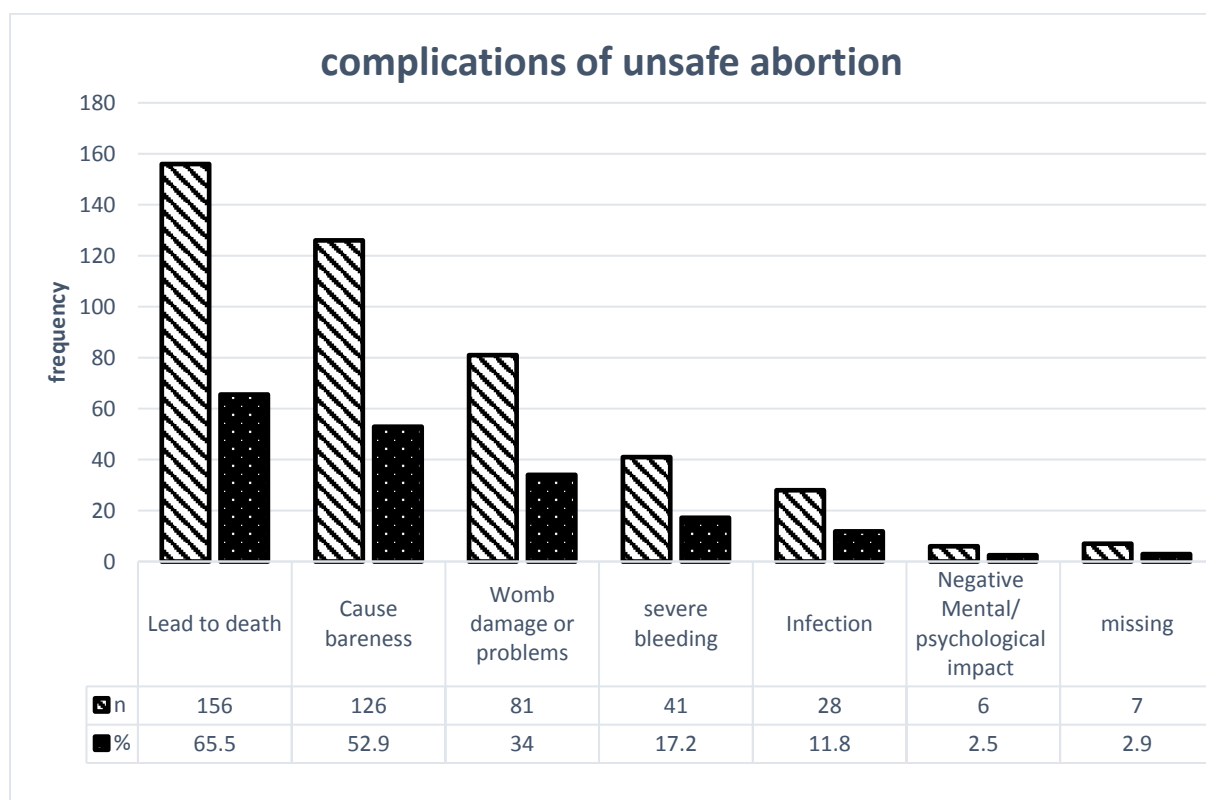


Figure 1: Complications of Unsafe Abortions



Attitudes and Beliefs Towards Abortion

The majority of respondents, 80.3%, felt that unsafe abortion is a problem and that it is common amongst students (87%). Sixty-three (62.9%) of students felt that the level of education affects decision and method to abort. The majority of students believe that abortion is a sin according to religion and 54% perceive it to be considered a normal practice in today's society. Of the total number of participants, 35 (14.7%) mentioned that they would abort if they felt not ready to keep the pregnancy, (Table 5).

Table 5: Attitudes and Beliefs of Unsafe Abortion

Attitudes and beliefs	Frequency	Percentage
Is unsafe abortion a problem?		
Yes	191	80.3
No	4	1.7
I don't know	41	17.2
Total	236	99.2
Missing	2	.8
Total	238	100.0
How common is unsafe abortion amongst students?		
Common	207	87.0
Not common	26	10.9
I don't know	5	2.1
Total	238	100.0
Would abort if pregnant		
Yes	35	14.7
No	199	83.6
Total	234	98.3
Missing	4	1.7
Total	238	100.0
Abortion is a sin		
Yes	207	87.0
No	3	1.3
I don't know	28	11.8
Total	238	100.0
Considered normal nowadays		
Yes	129	54.2
No	46	19.3
I don't know	63	26.5
Total	238	100.0

Overall Attitude Towards Abortion

Over three quarters (78.6%) of the respondents were rated to have a negative attitude towards abortion whilst 21.4% had a positive attitude towards it, (Table 6 and Figure 2).

Table 6: Respondents Overall Attitude Towards Abortion^a

	Frequency	Percentage
Negative	187	78.6
Positive	51	21.4
Total	238	100

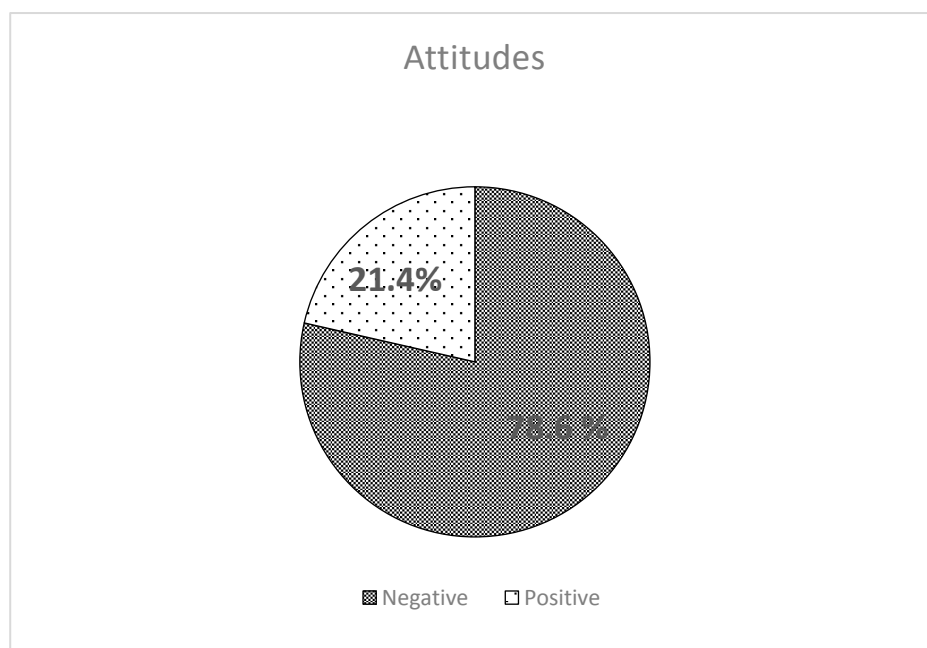


Figure 2: Respondents Overall Attitude Towards Abortion

Practices of Abortion

Twenty-two (22) participants (9.2%) indicated that they have had an abortion before. 46.6% of all students mentioned the types of abortion methods known to them that are usually used amongst females. Of the methods, the use of herbs was the majority, (Table 7).

**Table 7: Practices of Abortion**

Variable	Frequency	Percentage
Ever had an abortion		
Yes	22	9.2
No	216	90.8
Total	238	100.0
Know fellow student or friend who's aborted unsafely		
Yes	111	46.6
No	127	53.4
Total	238	100.0
Method used (n=111)		
Traditional herbs*	60	54.1
Tablets/pills	23	20.7
Inserted object	12	10.8
Concoction*	13	11.7
At hospital	3	2.7
Total	111	100.0

Cross Tabulations

Pearson chi square test was used to check for associations between the dependent (knowledge) and independent (age) variables. Level of significance was set at p value of 0.05. Table 9 shows that there was a significant association between respondents' knowledge on abortion and their age with a p value <0.05

Table 8: Cross Tabulations

Knowledge on unsafe abortion by socio-demographic characteristic					
Variable	Poor knowledge	Good knowledge	Total	P value	Remarks
Age					
<20	7	28	35	0.041*	Significant
20-24	18	132	150		
25-30	15	38	53		
Total	40	198	238		
Attitude towards unsafe abortion by socio-demographic characteristics					
	Negative	Positive	Total	P value	Remarks
Age					
<20	24	11	35	0.229	Non-significant
20-24	128	21	149		
25-30	35	19	54		
Total	187	51	238		

*significant p- value $P < 0.05$



Open Ended Responses

Responses to the questions requesting written thoughts were grouped into categories and main themes were made. This was then analysed to note the patterns in which the responses were being given as well as note the most and least mentioned responses.

Reasons Leading to Unsafe Abortion

Majority of the respondents (43.7%) mentioned unpreparedness / unwanted pregnancy as being the major reason of having an unsafe abortion. 12.2% attributed the reason to pressure from peers. The majority of the respondents (63.4%) thought practice of unsafe abortions amongst students can be reduced by education and sensitization on the topic, whilst 2.1% felt that stiffening punishments or putting up strict measures in the institutions can he reduce this problem, (Table 9).

Table 9: Open Ended Responses

Reasons leading to unsafe abortion	Frequency	Percentage
Unpreparedness/ unwanted pregnancy	104	43.7
Inadequate social support	47	19.7
Academic challenges	45	18.9
Pressure from peers	29	12.2
Others	13	5.5
Total	238	100.0
How it can be reduced	Frequency	Percentages
Education and sensitization	151	63.4
Provision of family planning services	63	26.5
Others	19	8.0
I don't know	5	2.1
Total	238	100.0

DISCUSSION

Our study found that knowledge was higher compared to findings in a previous study (Perera and Abeysena, 2018). In the present study, more than half (58%) knew about the safe abortion legal framework. This is in contrast to other findings reported in another study conducted among adolescents in the general population, (Cresswell *et al.*, 2016). In spite of the majority (58%), having knowledge on the safe abortion legal act in Zambia, the rate of unsafe abortion cases has continued to rise. This could be due to the fact that restrictive abortion laws prompt women to seek abortion services elsewhere, rather than in the hospital setup. Such findings are consistent as those reported elsewhere (Jewkes *et al.*, 2005; Geary *et al.*, 2012) where the majority (68.6%) of respondents reported that legal abortion restrictions drive women to pursue unsafe abortions, and that making abortion services through the hospitals could increase the inappropriate sexual behaviour among women. However, evidence also suggests that women with no knowledge of legal abortion act are more unlikely to seek safe abortion from trained health personnel, but may seek unsafe induced abortion methods using traditional herbs, (Jewkes *et al.*, 2005). In contrast to our study, some studies found no significance association between age and the level of knowledge on unsafe abortions, (Geary *et al.*, 2012; Cresswell *et*



al., 2016). Regarding complications and adverse outcomes of unsafe abortion, the most frequently reported complication was death, (65%, Table 1) which is very similar to findings in a study done among university undergraduates in Ibadan, Nigeria, (Cadmus and Owoaje, 2011). Our study also revealed that More than half (52.9 %), cited infertility as an adverse outcome of unsafe abortions. Knowledge on infertility, as a complication of unsafe abortion could be a deterrent for most women contemplating to engage in unsafe abortion acts. Further, while infertility is regarded as an unfortunate experience among most women, being pregnant is perceived as every woman's pride in most cultures in Zambia. Consequently, most women would not want to engage in unsafe abortion acts for fear of being infertile. These findings have been reported elsewhere, (Shahbazi, 2012). Our study found that the over three quarters of the students (78.1%) had negative attitude towards abortions which is in agreement with a similar study where 74.1% had negative attitude (Mekuriaw and Adissalem Dereje, 2015). In congruence with this, a study in Nigeria reported that attitudes of female students of secondary schools poorly supported unsafe abortions, (Paluku *et al.*, 2010). Conversely, a study in Uganda revealed more positive attitudes towards unsafe abortion, (Gedif T, 2016; Perera and Abeysena, 2018). This could be due to differences in demographic and socio-cultural values inherent in different countries.

The majority of participants had a negative attitude towards abortion similar to other findings (Lombe, 2014). In contrast, a study investigating knowledge and perception on consequences of abortion among adolescents in Amassoma community, Bayelsa state in Nigeria, revealed that half of the adolescents would abort if they fell pregnant, (Abiodun *et al.*, 2013). In our study, the most common reason given by the respondents regarding the reason female students would resort to abortion was unpreparedness of bearing the child. This is consistent with findings reported previously (Cadmus and Owoaje, 2011). We found that extra and premarital affairs were the most common cause for abortions as in other studies, (Kumar, Hessini and Mitchell, 2009).

In our study, the use of traditional herbs as an abortifacient was reported as the most commonly method used. Other studies elsewhere have revealed similar results where traditional herbs and concoction were the most used, (de Wet and Ngubane, 2014; Rasch *et al.*, 2014). In addition, only a few (2.7%) indicated that they aborted at the hospital. This could be due to the restrictive abortion law in place and negative attitudes towards abortions by health care workers and the fear of being stigmatised, (Cresswell *et al.*, 2016).

CONCLUSION

The majority of the respondents, (69.2%) had good knowledge on unsafe abortions and 78.6% had negative attitude towards the practice of unsafe abortion. Age was found to be significantly associated with unsafe abortion. Death was the most reported complication of unsafe abortion. Amongst the reasons reported to lead to unsafe abortions among female students, unpreparedness of bearing the child was the most common. Despite the existing safe abortion law, unsafe abortions are still prevalent.



RECOMMENDATIONS

There is need to prevent unintended pregnancies and unsafe abortions through the implementation of supportive policies that enhance commitment to the provision of comprehensive sexual education in tertiary institutions in Zambia. This can be achieved through the provision of a wide range of contraceptive methods, including emergency contraceptives, and family planning counselling sessions. Most importantly, heightened efforts should be directed towards expanding access to safe, legal abortion services in most health facilities.

Limitations

Being a sensitive issue, abortion is usually considered a taboo in Zambia, hence we wouldn't rule out the influence of the Hawthorne effect, where some respondents may not have revealed their true experiences. Additionally, our study would have assumed more power had we used a larger sample size, which we could not do due to financial constraints. However, sampling from different institutions in Kitwe would still enable a fair representation which is ideal for inferring.

Authors' Contributions

TZ and BM conceived the study and collected the data; **BM, THN, DM, VD** interpreted the results, participated in data analysis, and drafted the final manuscript. All the authors read and approved the final manuscript.

Competing Interests: The authors declare that they were no competing interests.

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