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Prevalence of Induced Abortion among Female Students in Selected Tertiary Learning Institutions in Gaborone City, Botswana

Mabole Masweu, Isaac Ogweno Owaka, Rosebella Kipkalom

Department of Environmental and Occupational Health, School of Health Sciences, Kenyatta University, Nairobi, Kenya
Email: masweumabole@students.ku.ac.ke, mmasweu1971@gmail.com

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Abstract

Induced abortion signifies that pregnancy has been tempered with. Abortion is the removal of an embryo or fetus weighing less than 500 grams from its mother. It can either be spontaneous (unprompted) or induced. Abortion remains one of the leading causes of maternal deaths in developing countries with induced abortion being the key cause. In 2014 from January to August, 9 abortion related deaths occurred in Botswana. There are several reasons female students in tertiary institutions resort to seeking induced abortion which include the socio-demographics like age and socio-economic factors like financial instability. Parental fears, unintended pregnancy and pressure from the partner also force females to terminate pregnancy. Induced abortion has claimed many women's lives especially in developing countries with very restrictive abortion laws like Botswana as women do not access safe abortion care services. The study intends to establish the determinants of induced abortion among female students in selected tertiary learning institutions in Gaborone City, Botswana. It concentrated primarily on determining the prevalence of induced abortion. This was a descriptive cross-sectional study using both quantitative and qualitative data collection techniques. Systematic random sampling technique was used to come up with 278 participants. Prior to commencement of data collection, all ethical and logistical prerequisites were satisfied. Informed consent was solicited from all the study participants and the purpose of the study was fully explained. A self-administered questionnaire was used to collect data. Microsoft Excel spread sheet was used to code, clean, and enter the data, which was then exported for analysis to the statistical package for social sciences version 24. Frequency distribution

tables, percentages graphs, and pie charts were used to illustrate the descriptive information. The study revealed that prevalence of induced abortion among female students in Gaborone City is 7.9%. They even suggested that induced abortion be liberalized. Age was the only socio-demographic factor associated with induced abortion with $p = 0.047$ using Chi Square test $\chi 2 = 7.609$, $df = 3$. The study findings concluded that female students resort to induced abortion as a result of pressure from both parents and male partners especially when the pregnancy is unintended. The study recommends that the abortion law in Botswana be made liberal to ease access to safe abortion care services. It also recommends that contraceptive commodities should consistently be available in public health facilities.

Keywords

Induced Abortion, Prevalence and Family Planning

1. Introduction

Induced abortion which can be categorized as either safe or unsafe refers to the interruption of a pregnancy by artificial means [1]. Globally, around 73 million induced abortions take place each year. However, nearly 1 out of 2 (45%) induced abortions are unsafe [2]. The rate of unsafe induced miscarriage is higher in underdeveloped countries, particularly in Africa, where induced abortion is prohibited [3]. Majority of the countries in Africa are low and middle income, thus high levels of unmet needs for contraception are observed which probably accounts for the increased rate of induced abortion. Induced abortion is not performed in public health institutions in Botswana, as it has the most restrictive laws on abortion in Africa. As a result, some doctors in private practice perform induced abortions, while the rest are self-inflicted or performed by other health professionals and quacks [4].

Induced abortion is amongst the most common causes of pregnancy-related deaths, contributing 7.9% of all maternal deaths worldwide [4]. Septic shock is the leading cause of mortality, followed by respiratory, cardiac and renal failure, including disseminated intravascular coagulation (DIC) [5].

Unwanted or unintended pregnancy has been demonstrated to play a significant role in unsafe induced abortions. Gaborone, Botswana's capital city, has the country's highest pregnancy rate (43 percent), with the majority of pregnancies being unplanned [6]. Similarly, teens are at a significant risk of unwanted pregnancy and, as a result, induced abortion [7]. These are found in all levels of education; primary, secondary and tertiary or higher learning institutions. Many students in tertiary or higher learning institutions view their time there as a step toward freedom from parental control, opportunity to start new friendships, as well as time to engage in sexual or romantic relationships. A study carried out by [8] showed a high rate of unintended pregnancies (52%) occurring in universi-

ties across Botswana.

However, an important strategy of curbing the high rate of induced abortion and its adverse effects in communities is through sexual and reproductive health care education. Tertiary learning institutions serve as an important setting to improve reproductive healthcare education in communities. These institutions offer opportunities to reach communities having different backgrounds both gender and socioeconomic. Moreover, students in tertiary level of education represent the active reproductive age group (≥18 years), some of whom are married, engaged to be married or even pregnant. The awareness and attitudes towards induced abortion and its determinant factors is therefore very crucial for students in tertiary institutions as they serve as a better communication channel to promote reproductive health and contribute immensely to reduction of abortion in communities.

Thus, our present study aimed at identifying the determinants of abortion among students in selected tertiary learning institutions in Gaborone City, Botswana.

2. Methods

This study was carried out in 5 selected tertiary learning institutions in Gaborone which is the capital city of Botswana. This was mixed cross sectional descriptive study with qualitative and quantitative research. The study was aimed at determining the prevalence and determinants of induced abortion among female students in 5 selected tertiary learning institutions in Gaborone City, Botswana. Multistage sampling technique was carried out to obtain calculated sample size. This was so because when the population is big and dispersed, multistage sampling may be more effective than simple random sampling. By breaking the population down into smaller, more manageable stages, it enables researchers to obtain a representative sample while requiring less time and resources for data collection. Furthermore, by choosing samples from various geographic regions or clusters, multistage sampling allows researchers to obtain a larger geographic coverage. This is especially helpful in situations where the population of interest is dispersed over a large area or when directly sampling the entire population would be impractical. Simple random sampling technique was used to select institutions providing hostel accommodation. Simple random sampling technique was used to pick 30% of the institutions with female hostels. Systematic random sampling technique was used to identify the respondents in the rooms. This was because each individual in the population has an equal probability of being chosen, guaranteeing that the sample fairly represents the population. This lessens the possibility that the sample selection procedure will be biased. Moreover, in comparison to other sampling techniques, it is comparatively simple to comprehend and use. There are no complex procedures involved; instead, elements are chosen at random, which makes it appropriate for a variety of research settings. To determine the sample size,

Fishers *et al.* second correction formula was used to achieve sample of 278 respondents from 5 tertiary learning institutions since the population estimate was <10,000.

Responses from respondents were coded, entered into a Microsoft excel sheet then exported to SPSS version 24 for analysis. Descriptive statistical analysis of data involving frequency, percentages, and graphical presentations were used to describe socio demographic features of respondents. The prevalence of induced abortion among female students was presented using a table. Inferential statistical analysis involving multivariate logistic regression was used to analyze attitude, level of knowledge and factors relating to induced abortion. Relationships among the study were tested at 95% confidence interval ($p < 0.05$) (Table 1).

3. Results

The study aimed at sampling 260 participants however, 278 respondents were approached and they all consented. The study participants were mostly aged 17 - 26 years 216 (77.7%), 27 - 36 years 48 (17.3%), 36 - 47 years 9 (3.2%) and 47 - 56 years 5 (1.8%). Majority of the study participants were in year 2 of study 72 (25.9%), year 3 70 (25.2%) and year 1 68 (24.5%). Most of the respondents were unemployed 249 (89.6%) and majority of the employed respondents had formal kind of employment 17 (58.6%). Majority of the study participants reported to be Christians 246 (88.5%). Most of the participants were not married 231 (83.1%). Majority of the respondents have engaged in sexual activity 212 (76.3%). Most had their sexual debut from the age of 18 years and beyond 163 (76.9%) while 49 (23.1%) have had their sexual debut at the age of 18 years and below (Table 1).

More than half of the respondents who have engaged in sexual activity 126 (59.4%) have never been pregnant and only 86 (40.6%) have been pregnant. More than half of the participants who have been pregnant, have been so once 47 (54.7%) while 29 (33.7) have been pregnant twice. Significant proportion of

Table 1. Prevalence of induced abortion among the respondents.

Variable	Category	n (%)
What was the nature of the abortion	Spontaneous (miscarriage)	9 (3.2)
	Induced (use of substances or devices)	22 (7.9)
What period of pregnancy did you undergo abortion	1month	4 (18.2)
	2 months	3 (13.6)
	3 months	8 (36.4)
	Above 3 months	7 (31.8)
What year of study did you undergo induced abortion	After High school (after Form 5 but before Year 1)	8 (57.1)
	Year 1	6 (42.9)

the participants who have ever been pregnant reported to have experienced an abortion 31 (36.0%) and 55 (64%) have not experienced it. Most respondents experienced abortion once 29 (93.5%) while 2 (6.5%) experienced it 2 or more times (Table 1).

Most abortions were induced 22 (7.9%) and were equally induced by both health workers 11 (50.0%) and non-health workers 11 (50.0%). Only 9 (3.2%) were spontaneous abortions. Most of the induced abortions were carried out at home 11 (68.2%). These induced abortions were mostly done at 3 months' gestation 8 (36.4%) and 7(31.8%) were done above 3 months gestation. Majority 8 (57.1%) of the induced abortions were done after high school (after Form 5 but before Year 1) (Table 2).

Prevalence of induced abortion among the respondents: Among the respondents, 9 (3.2%) respondents experienced spontaneous abortion while 22 (7.9%) experienced induced abortion. The abortions were equally induced by both health workers 11 (50.0%) and non-health worker 11 (50.0%). Most of the induced abortions were carried out at home 11 (50%) while 7 (31.8%) were carried out at the pharmacy/chemist and 4 (18.2%) were done at the hospital. The induced abortions were mostly done at 3 months' period of pregnancy 8 (36.4%) and before year 18 (57.1%) and 6 (42.9%) were in year 1. A significant number 7 (31.8%) had induced abortion while above 3 months pregnant, 4 (18.2%) were a month pregnant and only 3 (13.6%) were 2 months pregnant (Table 2).

The purpose of the study was to ascertain how socio-demographic factors affected induced abortion among the respondents. The demographic factors were age, level of education, employment, religion and conjugal status. There is significant association between age category and induced abortion among students in tertiary learning institutions in Gaborone, Botswana ($p < 0.05$) (Table 2).

4. Discussion

Despite the restrictive law on abortion in Botswana, the study found that out of 86 (40.6%) respondents who have been pregnant before, 31 (36%) have experienced an abortion and among them, 22 (7.9%) have experienced induced abortion thus making prevalence of induced abortion among female students in the 5 selected tertiary learning institutions in Gaborone City to be 7.9%. Similar findings were revealed by a study conducted in preparatory school student in Guraghe Zone, Southern region, Ethiopia where lifetime prevalence of induced abortion was 13.61%.

Majority of the respondents who have ever experienced abortion, 93.5% of them reported to have experienced it only once. Amongst those who had abortion half of them had induced abortions which were done either by health workers or non-health workers using Misoprostol tablets or pills sold in the chemist/pharmacy. The findings comply with a study done in Kinshasa which has shown that most women nowadays use tablets/pills to induce abortion by themselves or by the help of a health worker using Misoprostol which is readily

Table 2. Socio-demographic factors associated with induced abortion among students in tertiary learning institutions in Gaborone, Botswana.

Variable	Category	Induced Abortion		Chi²/Fisher's exact
Age Category	17 - 26 years	2 (22.2%)	16 (72.7%)	$\chi^2 = 7.609$ $P = 0.047$ df = 3
	27 - 36 years	5 (55.6%)	3 (13.6%)	
	36 - 47 years	1 (11.1%)	2 (9.1%)	
	47 - 56 years	1 (11.1%)	1 (4.5%)	
Level of Education	Year 1		4 (18.2%)	$\chi^2 = 8.115$ $P = 0.081$ df = 4
	Year 2		5 (27.2%)	
	Year 3	2 (22.2%)	3 (13.6%)	
	Year 4	3 (33.3%)	8 (36.4%)	
	Post graduate	4 (44.4%)	2 (9.1%0	
Employment	Yes	5 (55.6%)	55 (22.7%)	χ2 = 3.15 P = 0.09 df = 1
	No	4 (44.4%)	17 (77.3%)	
Type of employment	Formal	4 (80.0%)	2 (40.0%)	$\chi^2 = 1.667$ $P = 0.262$ df = 1
	Self-employed	1 (20.0%)	3 (60.0%)	
Religion	Christian	7 (77.8%)	18 (81.8%)	$\chi^2 = 0.714$ $P = 1.000$ df = 2
	Other religion followers		1 (4.5%)	
	Atheist (does not believe in God)	2 (22.2%)	3 (13.6%)	
Conjugal Status	Married	4 (44.4%)	3 (13.6%)	$\chi^2 = 3.673$ $P = 0.272$ df = 2
	Single	4 (44.4%)	13 (59.1%)	
	Cohabitation	1 (11.1%)	6 (27.3%)	
At what age did you start engaging sexual activity	<18	3 (33.3%)	7 (31.8%)	$\chi^2 = 0.007$ $P = 0.625$ df = 1
	≥18	6 (66.7%)	15 (68.2%)	
Employment of guardian	Formal	7 (77.8%)	10 (45.5%)	$\chi^2 = 3.735$ $P = 0.173$ df = 2

available in the market [9]. This is a drug registered to be used in obstetric practice, as a life-saving drug, however misoprostol-related self-induced abortion is becoming more common in many communities [10].

Similarly, the availability of abortifacient tablets like Misoprostol makes it easy for women including students to easily access it for termination of unintended pregnancy [11]. The study findings have shown that among 36.0% of respondents who have experienced pregnancy loss, 87.1% used tablets/pills to terminate the pregnancy. Other 12.9% used instruments like boiled match sticks and poi-

sonous tree branches which is termed least safe. This is consistent with the findings by 20 revealing that in a study on the incidence of abortion and unintended pregnancy in India, 2015, the prevalence of induced abortions done outside the medical facilities, 73% of abortions were performed using medication, while 5% were performed using means other than medication abortion. The induced abortion was done at 3 months gestation which is similar to the findings of a study by [12] which indicated that the type of method or instrument used for induced abortion, the gestational age at which induced abortion is done as well as the person doing it determine whether it is least safe or less safe [13]. With the respondents the induced abortion is least safe because it was done by both health workers and non-health workers mostly using the medicines and not invasive objects [14].

Even though the abortion law is restrictive in Botswana, the majority of induced abortions were done at home after high school but before starting year 1 in tertiary institutions. This is the period when students (males and females) are waiting for high school results as well as to be placed to tertiary learning institutions of their choice. These findings of high prevalence of induced abortion are maintained in the study by 3 among women in Ghana which revealed that 64.1% of the respondents had unsafe induced abortions [15].

Restrictive abortion laws do not help in reducing the rate of induced abortion in any country. According to the study findings, prevalence of induced abortion was high despite the restrictive abortion law in Botswana [16]. These findings are consistent with the ones in which a cross-sectional retrospective study conducted in four hospitals in Botswana by [16] which exposed that though abortion is verboten in the country, the rate of its complications and deaths were quite significant. The same study revealed a total of 9 deaths due to abortion related outcomes which occurred from January to August 2014, yielding a 1.5% case fatality rate [17].

Other similar findings were found in a publication by [17] which revealed that restricting access to abortion care services does not always deter women from getting one, but rather it does a lot to decide the morbidity and mortality associated with it because so many women turn to risky, covert procedures. Though induced abortion amongst the respondents was done at home, it was done at 3 months (12 weeks) gestation which is said to be safer [18]. These findings are consistent with a study by [19] which indicated that termination of pregnancy using medicines or tablets was usually done when the gestational age is around 9 weeks after the woman's last normal menstrual period after which vacuum aspiration is employed to evacuate the uterus [20].

The study explored what could be the hindrance to prevent induced abortion and several interventions were revealed by the qualitative data and it was evident that restrictive abortion laws play a critical role in the high prevalence of induced abortion. The results are in line with the findings of a study by [20] where it was indicated that restrictive laws do not stop women from doing induced abortion but rather play a pivotal role in increasing morbidity and mortality. [21] continued to show that women are not free to access safe abortion care ser-

vices as they can be prosecuted if found to have done induced abortion. When the abortion law is liberal, there is reduced numbers of induced abortion as well as less abortion related complications [22]. Despite this, abortifacients like Misoprostol are readily available in the market for females to easily access. Induced abortion is stigmatized in many communities as those who have done it are labelled as murderers [22].

Repeated stockouts of contraceptive commodities play an important role in the occurrence of induced abortion. The findings from qualitative data exposed that in most cases there were repeated stock outs of contraceptives (family planning commodities) which left female students with little or nothing to use except to engage in unprotected sexual activities resulting in unintended pregnancy. It was revealed that expanding the use of consistent and effective contraceptives in Eastern Europe led to a significant drop in induce abortion rates [23].

5. Limitations and Delimitation

The study was conducted in 5 selected tertiary learning institutions in Gaborone City, Botswana; 3 parastatals (both government and private owned) and 2 public institutions. These tertiary learning institutions were chosen because they provide female students with dormitories. The institutions were all located in and around (outskirts) of Gaborone City, making them accessible to the researcher. The study was conducted at a time when year 1 students were just starting their First Semester orientations and, in some institutions, continuing students were sitting for continuous assessment examinations and having laboratory practical sessions which posed a challenge to collect data during working hours. Nonetheless, data collection was achieved by arranging with housekeepers, guidance and counselling teachers) and ultimately student representative council (SRC) members to collect data even in the late afternoon after examinations and registration processes. Tertiary learning institutions which were purely private owned declined to be used as study sites citing the sensitivity of the study topic as an interference with one's privacy hence the parastatal ones were then used. Owing to the fact that in Botswana induced abortion is restrictive and considered a sensitive topic, some respondents might have not been free/genuine to give information about themselves.

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Declaration

The Government of Botswana through Ministry of Health funded my studies.

More so, this thesis is my original work and has not been presented for a degree in any other university. Additionally, written consent was sorted from each tertiary institute of learning under study. Throughout the study activity, the standards of informed consent, voluntary participation, and confidentiality were upheld in each of the sampled institutions. The respondents' identities were not revealed, thus ensuring anonymity. Participation in the survey was entirely on voluntary basis, and subjects were informed that they had the liberty to opt out at any time without consequences.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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