PREDICTORS OF UNSAFE ABORTION AMONG WOMEN SEEKING POSTABORTION CARE AT THE NAKURU COUNTY REFERRAL HOSPITAL, NAKURU COUNTY KENYA

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ABSTRACT

Unsafe abortion is common all over the world but is more prevalent in developing countries especially Africa. Kenya is one of the developing countries, where unsafe abortion is a common occurrence and it significantly contributes to maternal mortality in the country. Even when it has not been properly quantified in sub-Saharan Africa, studies in Kenya show that for many years' unsafe abortion has caused many maternal deaths. Nakuru County is the fourth in the country on maternal mortality. In the referral hospitals there has been increased admission due to induced abortions many of them unsafe. The main objective of this study was to establish the predictors of unsafe abortion among women in Nakuru County. The specific objectives sought to establish if demographic factors influence the choice for unsafe abortion, to determine the extent to which women's knowledge on reproductive health affect the choice of unsafe abortion and to determine how socio-cultural factors influence women's choice for unsafe abortion in Nakuru County. The study was conducted at the Nakuru County referral hospital among women seeking post-abortion care (PAC) services. The study employed a mixed method design comprising cross-sectional survey, focus group discussions and key informant interviews. The sample size of the respondents was one hundred and Eighteen (118) selected to fill questionnaires using systematic sampling from the admission and out-patient registers. In addition, twelve community healthcare workers (CHVs) were selected for a Focus Group Discussion using simple random sampling. The study used purposive sampling to select four healthcare workers who work at the Post-Abortion Care units of Nakuru County Referral Hospital for interviews. Trained healthcare professionals were recruited as research assistants, who after training administered the semi-structured questionnaire and conducted the focus group discussion. The researcher conducted the key informant interviews. The data was then cleaned, coded, entered and analyzed using statistical package for social scientists (SPSS) version 25. The study found that age group, marital status, education level and monthly income influenced the choice of unsafe abortion among women in Nakuru County. However, it was found that religion, ethnicity, livelihood and residence of the women do not influence the choice of unsafe abortion among women in Nakuru County. The study found that Reproductive Health knowledge had statistically significant effect on unsafe abortion as evidenced by a t-statistic of 9.423 and $p<0.905$. The study established that socio-cultural factors do not affect the choice of unsafe abortion among women in Nakuru County. This is evidenced by $t=6.258$ and $p<0.05$. The study recommends legal measures are taken against healthcare workers both in public and private health facing helping young girls to procure abortion unless it is to save their lives. The study recommends use of provision measures that deter pregnancy even in the use family planning products, educating young girls and women on risk of abortions and encouraging girls to keep their pregnancy to full term. Health education is encouraged in the community as well as in schools by all health care workers on use of family planning is also recommended. The findings of this study may be used to develop policies & design program interventions to alleviate the problem of unsafe abortion.

INTRODUCTION

Abortion is defined by the World Health Organization as the termination of a pregnancy before the fetus is capable of survival outside uterus which results in the death of the fetus (WHO,2012). It can be either induced where it deliberately interfered with or spontaneous in which the uterus expels the embryo without external interference. Induced abortions are usually carried out as a result of unwanted or unintended pregnancies or when there is a risk to the patient or where any law may demand the termination of the pregnancy. The methods used vary depending on circumstances and place where they are practised. Induced abortions can also be either safe or unsafe denoting whether it was carried out by a skilled person in a safe and sanitary environment or by a non-skilled person and in an unsanitary and unhygienic environment.

The World Health Organization (2011) concluded that induced unsafe abortion to be a world public health problem. This problem is more challenging in Africa which like all other developing regions in the world unsafe abortion is a popular discourse (Benson et al,1996). Countries of the world have different legal, cultural and religious beliefs on abortion and different healthcare provisions regarding abortion. The principles of abortion and the removal of pregnancies also differ. The new constitution in Kenya explicitly permits termination of pregnancy wherein the life of the mother is in danger and or when permitted under any other law but not any other circumstances. According to the Ministry of Health study of 2012, an average of 450,000 abortions were carried out in Kenya that year. This was an increase from the previous study of the year 2002 that reported an estimate of 300,000 abortions(Gebreselessie,2005) However, the studies did not differentiate between induced abortions and miscarriages. Kenyan women seek and get abortion services from various providers that include medical officers, village clinics, nurses and midwives, community traditional herbal healers, untrained people claiming to be health workers and some are self-induced either by use concoctions or by insertion of foreign objects into the birth canal. It has been noted that some trained health personnel also conduct unsafe abortions by using unhygienic equipment or in venues that lack the necessary facilities and cleanliness.There could be many reasons that can make a woman seek an unsafe abortion.

Globally it is generally acknowledged that restrictive abortion laws are a major cause (Grimes, 2007). It is given the fact that even in countries where the law is liberal, weak health systems to contribute to the lack of abortion services (Kirigia & Ovberedjo, 2008). Lack of knowledge, community, social and cultural factors could also contribute to the choice for and where to seek abortion services. The socio-cultural environment in which women are found could influence their choice for unsafe abortion such as providers of unsafe abortion in the community, community norms, religious beliefs among others tend to determine the choice for unsafe abortion. The outcomes of unsafe abortions are morbidity and mortality which have implications on public health. It is important to note that whereas governments are concentrating on policy guidelines, changes in law and taking care of the complications due to unsafe abortion nothing has is being done to understand what pushes the women to choose and undergo an unsafe abortion.

Statement of the Problem

Nakuru County is the fourth in the country on maternal mortality with 374/100,000 (UNFPA, 2014) live births. In the last three years 2014, 2015 and 2016 admissions due to induced abortions have been increasing from 1533, 1546 and 1852(DHIS2,2017) respectively in the county public health facilities. The referral hospital carries the greatest burden as the majority of these cases are admitted here. There were 792 admissions in the year 2014, 851 in 2015 and 848 in the year 2016. This constrains not only the hospital's resources both human and financial but space which would be used for other deserving cases. Even then data does not tell the number of unsafe abortions probably due to legal or moral reasons it is therefore assumed that 30% of the number of these abortions is unsafe (Caroline &Akinyi, 2019). This is despite the strides that have been made in reproductive health through in health education, provision of contraceptives and the increase of health facilities in the county that can provide post-abortion care (PAC). The non-segregation data in induced abortions makes it difficult to get data that can be used in initiating interventions in addressing the unsafe abortion problem. This study is therefore meant to establish predictors that can help characterize those women at risk to unsafe abortion in Nakuru County for targeted, planned and designed interventions and thus contribute to the efforts in the country and the world in the reduction of maternal deaths.

Objectives

Broad Objective

To establish predictors of unsafe abortion among women in Nakuru County

Specific Objectives

1. To establish demographic factors that may influence the choice for unsafe abortion among women in Nakuru County
2. To determine the extent to which women's knowledge on reproductive health affect the choice of unsafe abortion in Nakuru County
3. To determine how socio-cultural factors influencing women's choice for unsafe abortion in Nakuru county.

Research Questions

1. To what extent do demographic factors influence the choice for unsafe abortion among women in Nakuru county?
2. To what extent does women's knowledge on reproductive health affect their choice for unsafe abortion?
3. How do socio-cultural factors affect women's choice of unsafe abortion?

REVIEW OF LITERATURE

Incidence of Abortion

According to Grimes D.A et al (2006), the incidences of unintended pregnancies in developing countries are higher than reported if accurate abortion data was available. There is evidence available from data showing that many the unintended pregnancies are candidates for abortion. It is reported that in Tanzania, Latin America (Mexico and Chile) 61%,43% and 63% of unintended pregnancies respectively end up in abortion (D. A. Grimes D.A et al., 2006). In some of the former Soviet republics of Kazakhstan and Uzbekistan, it is reported that one-third or more of mistimed pregnancies and about 80% of pregnancies among women who have had a number of children they don't want to end up in abortion. (Stanley K. Henshaw Susheela, Singh, Taylor Haas, 2013). Even when it has been acknowledged that unintended pregnancy is an explanation to many abortions, for most of the women there are many other underlying factors (Atindanbila, 2014). Half(20M) of the 40M of the induced abortions are unsafe (WHO, 2011) resulting to deaths of 47000 girls and women constituting 13% of all deaths related to pregnancy in the world (WHO,2008). Most of them (98%) occur in developing countries (Iqbal S,& Ahman, 2004).In a study on unsafe abortion by the WHO, the case fatality rate in developed countries (the United States and Europe) was about 30 deaths per 100,000 unsafe abortions whereas in Eastern Africa it was 530 deaths per 100,000 (WHO,2011).

In a study that was based in Gaborone, Botswana, Melese et al. (2017) conducted a research to examine the level of post abortion complications where abortion is not accepted. The study made use of patients' records from 619 patients and the data was subjected to bivariate analysis; where descriptive research design was employed. The research revealed that most of the abortions that were reported were impulsive. Two thirds of the respondents suffered incomplete abortion which was associated with unavoidable abortion. In addition, the common complications related with abortion were tenderness of the uterus (11.3%), septic shock (3.9%), vaginal discharge (17.9%) and pelvic peritonitis (2.4%). The study revealed a relationship that was significant between self-induced abortion and post-abortion complications ($P<0.05$). It was therefore concluded that in places where abortion was not legalized, deaths and other related complications were high.

In a study by Osur, (2012) that was examining drivers, decision making and consequences of unsafe abortion among patients in Siaya County among 320 patients showed that majority of the women who procured unsafe abortion were below 24 years. Though the study among others have not gone beyond examine who are these women apart from the age and whether one can predict by examining specific characteristics and say this woman may seek unsafe abortion. The study revealed few (5.5%) of the health workers interviewed was willing to support abortion services. The study further found that almost all women terminating pregnancies were consulting their "social networks" before terminating the pregnancy. It also revealed that pressure from others played a significant role unsafe abortion among the women in the community.

Socio-demographic Predictors and Choice for Unsafe Abortion

Socio-demographic factors refers to sociological and demographic characteristics of a given population. They may include age, sex among other characteristics that describe an individual in a society. These characteristics are believed to have a huge influence on how people behave and do things especially health outcomes. Sundaram in 2011found out that unsafe abortions was influenced by these characteristics (Sundaram,2012). These factors include income, education, race and ethnicity and employment. Another study in Nigeria concurs that socio-demographic factors influence the utilization of health care services such and including but not limited to maternal health; this was noted especially the age and level of education of the person (Celic & Hotchkiss, 2000). This was noted amongst where educated women in use of antenatal care as compared to uneducated women (Nwosu et al. 2012).

Boah et al. (2019) carryout a study among women to establish predictors of unsafe abortion among women in Ghana. He made use of Ghana Maternal Health Survey data that was collected in 2017. A sample of 1880 women aged between 18 years and 49 years was used. It was revealed that 64.1% of 1880 women had induced unsafe abortion. It was also found that married women and older women had low odds of having unsafe induced abortions. The odds were 0.61 for married women and 0.50 for older women at 95% confidence interval. In addition, those not aware of what law says on abortion, women whose bills were paid by some body for the abortion services, the ones who had not aware of the menstrual cycle and the fertile period and the respondents who were less exposed to media had high and increased odds for unsafe abortion at 95% confidence interval. The study concluded that the predictors of unsafe abortion were knowledge of the legal status of abortion in Ghana, age of women and the cost of the abortion services. It was suggested that safe abortion services and contraceptives should be made available to all women who need them.

In another study by Ahinkorah et al. (2021) carried to examine predictors of pregnancy termination among young women in Ghana, among a sample of 2114 young women who were between 15 and 24 years. Both descriptive and inferential statistics were used to analyze data that was collected in 2014 from the demographic and health survey of Ghana. It was established that young women who belonged to an age group of 15-19 years were less likely to have their pregnancies terminated while majority of young women between 20 and 24 years had their pregnancies terminated. In addition, the subjects of the study who had their first sex at the age of 20-24 years and those who had their first sex when they got engaged had lower odds of terminating their pregnancies compared to those who had their first sex before 15 years. On the other hand, young women who had given birth more than three times had lower odds of having their pregnancies terminated compared to those who had not given birth before. It was further revealed that the respondents who lived in rural areas had a tendency of pregnancy termination. The study therefore recommended that the government should develop educative programs that will reduce cases of unplanned pregnancies which will later lead to abortion.

In Nepal, Yogi et al. (2018) examined both the factors associated with abortion and the prevalence associated unsafe abortion. The study made use of a sample of 2395 women who

had procured an abortion. It was established that 16 % of the total abortions were unsafe. It was further found that those who had undertaken abortion were the literate women, those who knew where to get safe abortion, they knew the legal implication and they belonged the Buddhist religion. On the other hand, women who were between 25 years and 34 years had lower tendency to undertaking unsafe abortion which was also the same case for those from rich families. The study concluded that in Nepal, the prevalence of abortion was high where education, religion, knowledge on legal abortion and age were the factors linked with abortion. Therefore, it was recommended that safe and efficient measures should be encouraged among these subjects of the study to lower the number of unsafe abortion.

Knowledge on Reproductive Health

In a study based in North Carolina, USA, Espinoza et al. (2020) sought to the examine the knowledge on abortion and reproductive health among girls of the age group of 10-14 years. 35 respondents were picked as sample from a target population of 1228. The results revealed that the respondents had a general knowledge on abortion and its effects. Despite having knowledge on abortion, they feared seeking for care due to the fear of being stigmatized, biasness from the providers and lack of resources. It was therefore recommended that adolescent especially those between 10 and 14 years should be educated more on safe abortion and should receive special care and handling at the health facilities.

A study in Ghana by Kyilleh et al. (2018) who sought to establish on the knowledge on reproductive health among the adolescents of between 10 years and 19 years. The study employed the qualitative approach. There were eight focus group discussions where each group had 10 respondents which meant that the total sample had 80 subjects of the study. Findings from the study revealed that majority of the respondents had a low knowledge on choices of their reproductive health. A common thing among the subjects of the study was that they engaged in pre-marital sex without protection and also had several sexual partners, which they said that it was an assurance for love and testing their fertility.

Nkata et al. (2019) performed a study to examine on the reproductive health, behaviors and understanding among the adolescents aged between 10 and 19 years in Tanzania. Data was retrieved from the electronic databases which provided data from 2000 to 2017. Both qualitative and quantitative analysis approaches were employed to analyze the data and provided the required results. Findings from the study depicted that the adolescents were sexual active and had more than one partners, engaged in early sex and also had unprotected sex. The study concluded that the adolescents engaged in risky sexual behaviors and therefore, important health services including reproductive health should be provided to these subjects of the study. Bhattarai & Dhakal (2015)had sought to establish the knowledge regarding the reproductive health among the undergraduate students. A descriptive research method was used and a sample consisting 317 undergraduate students participated in the study. Systematic and stratified random sampling was employed and finding revealed that majority of the undergraduates (91.48%) had knowledge on reproductive health and rights. In addition, 83.3% of sample had knowledge on issues of infertility. The study revealed that there was a significant

association between knowledge on health and the number years one has in the university or the year of study. It was concluded that majority of the undergraduate students had an average knowledge on reproductive health and rights at the same time.

Reproductive Health

It refers the complete well-being of a person physically, mentally and socially and the absence of disease relating to the reproductive system and its function and processes (WHO, 1994). It includes issues on responsible sexuality and decisions when and how often they reproduce safely. The knowledge on reproductive helps determine whether one has to be pregnant and what to do with the pregnancy. It also shapes perceptions toward sex, use of contraceptives, giving birth and abortion; be it safe or unsafe. Many women encounter unexpected pregnancies with consequent abortions and pregnancy complications as a result of being sexually active yet have inadequate knowledge of them (Bwana, 1996).

Obono avers that adolescent lack knowledge about contraception (Obono, 2008) which is compounded by the culture of silence that still surrounds most reproductive health issues in Africa. Adequate knowledge in reproductive health helps women to determine the risks and the repercussions of unsafe abortion. Knowledge on the repercussions and complications of unsafe abortion including hemorrhage, peritonitis as a result of sepsis and toxicity that result due to plant infusions (Grimes et al., 2006a).

Methods of Abortion

Women who want abortion resort to different broad approaches that include systemic and mechanical abortifacients. The methods used include vacuum aspiration which is used to remove the pregnancy by applying suction either by a manual or an electric aspirator by a trained and experienced health worker. The method is thought to be safe, but it may have some side effects such as abdominal cramping and bleeding. The other method is the dilation and curettage which refers to the use of mechanical dilator that opens the cervix and metal instruments used to scrape the uterus walls. The third method of abortion is medication abortion which is the use of drugs such as misoprostol (Cytotec) and mifepristone to expel the pregnancy. Documented methods for self- induced unsafe abortion that has been mentioned include the use of tea leaves, quinine tablets, detergents and concentrated fruit juices, traditional herbs and roots, insertion of metal rods, glass or wire through the vagina to the uterus (Marlow. Metal, 2014). Overdoses of drugs such as paracetamol, prescription antibiotics amoxicillin or Flagyl, and contraceptive pills are also used. Most women with incomplete abortion who sought health care in public hospitals had induced the abortion themselves or had gone to a traditional healer or persons not trained (Jewkes 2005). Self- induced abortion was the first choice to solve the of problem unwanted pregnancy.) Pregnant women themselves are also providers of unsafe abortion (Rogo, 1999). Induced abortion providers include TBAs and CHWs, Pharmacists, Nurses, Clinical officers, Physicians among others.

Legal and Policy Framework on Unsafe Abortion

Many countries in the world have permitted abortion without restrictions but they have put some conditions such as to protect the life of the woman, save her health and her socio-economic conditions (Jones, 2011). These laws allow abortion in the first trimester, when the pregnancy is due to a rape incident and when it is due incest. Another condition is when the woman's mental and physical health cannot carry the pregnancy. In these countries, abortion services are available only to those women who can afford the cost (D. A. Grimes, et al, 2006d) depending on gestation, health facility, health providers, the age of a woman, her consent including undergoing counseling (Cook, Dickens & Erdman 2006; Finer & Fine, 2013) are conditions that allow abortion. Many countries in Africa in which the burden of induced unsafe abortions are high, the laws have continued to be very restrictive where abortion is a crime and can only be allowed in order to save the life of the woman life. Even when the constitution allows to save the life of the woman most African countries abortion still remains prohibited in other laws such as the penal code. Professionals are still afraid and women still fear to seek a safe abortion even when there are policies and guidelines for post-abortion care are available.

Socio-Cultural Predictors and Unsafe Abortion

Social and cultural predictors can be described as characteristics within culture and society. These affect the thinking, feelings and behavior of community members to act and do things and certain ways. In some countries even when abortion is legal, personal, religious beliefs, psychological inclinations and other social-cultural issues affect the decision of the woman to procure an abortion (Norris, 2011). Termination of pregnancy does not just occur they are a result of elements, happenings or situations that warrant the seeking of abortion by women. Culture and traditional lifestyles of communities including beliefs, community norms and values influences health-seeking behaviour; especially in reproductive health more so unwanted pregnancies.

According to Hewson abortion concerns the autonomy and dignity of a woman herself(Hewson, 2013). But that is not always the case because social, cultural, and personal issues influence women to procure abortions. The most common being the negative impact on the woman career, academic progression, financial vulnerability and souring relationships and the consequences of being a single mother. In many countries, when the health of woman is at risk due the pregnancy it has been accepted as a reasonable factor to induce abortions thus many of them have legalized this procedure to save the life of the mother. Socio-cultural factors including gender preference, social support from family, the value of the child, partner relationship and decision making in the relationship. Motherhood aspirations, moral and material support from significant others play a role influencing termination of pregnancy.In the then Roman empire abortion was commonly and socially accepted as a way of family planning until Christian theologians condemned it.

Orisaremi, (2012) carried out a study to find out the influence of socio-cultural factors on the reproductive health among women from Tarok ethnic group in Nigeria. The study utilized a

descriptive and qualitative approach and data from 30 questionnaires and Focus Group Discussions. He found out that women from this community were exposed to unplanned pregnancy which was based on traditional gender roles, gender relations and social taboos. He therefore recommended that strategies should be put to lower the cases of unsafe abortion influenced by the social cultural practices which overwhelm most women.

In a study that was based in Migori Sub-County, Kenya, Caroline and Akinyi (2019) carried out a study to examine among other factors the social and other cultural issues that influenced unsafe abortion among the Luo community. They employed descriptive cross- sectional design; focus group discussions, together with life histories and interviews. The study revealed that a breakdown in societal structures, cultural barriers, poverty and lack of family planning services influenced the social cultural practices influenced unsafe abortion among women from Luo community in Migori Sub-County. The study recommended that awareness should be made by creation of programs and policies that will lower the number of cases of unsafe abortion.

Adenike Idowu, (2013) sought to establish among other aspects on the social factors affecting maternal health which was associated with unsafe abortion. The study was conducted among women in Lagos state in Nigeria. Questionnaires were administered to collect information from 1362 respondents, 20 key informants were interviewed and 4 case studies were also conducted. The study revealed that age, education, income, religion, marital status, occupation and the type of marriage were some of the social factors that were associated with the maternal health complications. It was further recommended that in order to reduce maternal morbidity and mortality, respective health organizations should introduce interventions that will aid in reducing the cases.

Maternal health is sometimes associated with cases of unsafe abortion. Afrizal, (2011) did a study to examine the socio-cultural factors that affects women from Owukpa and Obollo-Eke communities in Nigeria. The study adopted the clustered random sampling to select a sample of 572 respondents. It revealed that inadequate and inaccessible health care services, poverty, lack of family planning, education, lack of basic social amenities, nutrition, lack of family planning, gender based violence, paternity pattern and low status of women were the factors associated with this maternal health complication.

MATERIALS & METHODS

The study used was a cross-sectional survey which included women seeking post abortion care at Nakuru county referral hospital, focus group discussions and key informant interviews. Given the sensitive nature of the study, this mixed design permitted the use of multiple data collection methods. The dependent variable in this study was the choice of unsafe abortion by women who had sought post abortion care after terminating a pregnancy.

Independent variables in this study were;socio-demographic factors such as educational level, religion, marital status, age, economic activity and the number of living children; knowledge and perceptions on reproductive health, legal and policy framework, methods, and

complications of unsafe abortion, attitude and perceptions; socio-cultural factors including beliefs, norms, and practices that include stigmatization and discrimination.

The study was conducted at Nakuru county referral hospital. Currently this is a referral hospital serving most of Rift valley counties with a population of about 3.6 million-plus patients coming as far as western, Nyanza and Central part of Kenya. It serves as a teaching and referral hospital for several health training institutions within its catchment area including Egerton and Kabarak Universities' schools of medicine. It has a capacity of 600 beds. This hospital was purposely selected not only because it is the largest but also that most of the PAC clients of unsafe abortion are referred to this hospital. According to the health information system (DHIS), 900 of the total 1000 admission for PAC in 2015 were admitted at a county referral hospital. The hospital provides curative, rehabilitative, promotive and preventive health services.

The target population of the study were women seeking post-abortion care at Nakuru County Referral Hospital. It was estimated that about 900 post abortion care clients are admitted due to incomplete, spontaneous, miscarriages and induced abortions in the year 2015. The study also targeted community health workers who are attached to Nakuru County Referral Hospital. The community health workers were targeted for they understand unsafe abortion as one the issues affecting the communities they serve. There are approximately 120 community health workers who served within and attached to Nakuru County Referral Hospital but a few were randomly picked to represent the others. The study further targeted healthcare workers who work at the Post-Abortion Care units of Nakuru County Referral Hospital as key informants. There were 14 healthcare workers who work at the Post-Abortion Care units of Nakuru County Referral Hospital.

Inclusion riteria included: Study participants were all women of reproductive age (15-49) with complications of unsafe abortion seeking post-abortion care at the Nakuru referral hospital and fulfilling the following criteria; Having induced abortion and not miscarriage or spontaneous abortion as classified and used by Gebreselesie *al* (2005) and Osur. J2012 as shown in Table 1

Table 1: Classification of Abortion Complications

CLINICAL FINDINGS	DIAGNOSIS	CONCLUSION
• Temp of 37.2°C or less • no signs of infection • No system/organ failure • No debris findings on evacuation	Not likely an induced abortion	Spontaneous abortion until history suggests contrary
• Temp between 37.3 and 37.9°C • Offensive products on evacuation • Localized peritonitis on exam	Likely induced abortion	Induced abortion till history disapproves
• Temp more than 38°C; • Evidence of organ/ system failure • Evidence peritonitis • Pulse of more than120beats/min; shock • Presence a Foreign body or mechanical injury on evacuation	Highly induced abortion	Treat as induced abortion

Source: Gebreselesie et al (2005) and Osur. J2012

ii) Having used poisoning from herbs or from other medicines
iii)Confession by patient
iv)The patient accepting to participate through informed consent.

Exclusion Criteria

1. Women not meeting the criteria set out (spontaneous abortion).
2. Women who were not willing to participate in the study not signing the informed consent form.

The study sampled 12 commuinitry healthcare workers from the 120 community health workers who served within and attached to Nakuru County Referral Hospital for Focus Group Discussions (FGDs). This represeted 10% of the p[opulatiuon which is acceptable for a research (Leung, 2016). The sampling of the 12 commuinitry healthcare workers was done using simple random sampling. In doing this, the list of the 120 community health workers who served within and attached to Nakuru County Referral Hospital was randomized using Microsoft Excel and then the first 12 names selected after the randomization. Random sampling ensures that there is no sampling biasness and that the respondents have equal chances of being selected for the study (Bilgin, 2017).Therefore from the 12 commuinitry healthcare workers, two groups were formed and interviewed for the Focus Group Discussions (FGDs).

Out of the 14 healthcare workers who work at the Post-abortion Care units of Nakuru County Referral Hospital, the study interviewed four of the key informants to obtain details on the predictors of unsafe abortion among women in Nakuru County. This represents at least 20% (28.6%) as recommnded by Creswell (2014) for interviews.

A semi-structured questionnaire was used to collect data from women of reproductive health meeting the inclusion criteria, focus group discussion guide was used during the focus group discussion for women of reproductive age picked randomly from antenatal clinic, and key informants a discussion guide was used to collect data from health care providers and opinion leaders.

Data was collected after the training and briefing of research assistants who were health workers at the service provision sites; ward and outpatient where those seeking post abortion report. The research assistant then administered the questionnaire or asked the client to respond to the questionnaire.

Key informant were interview by the research for clarity, own experience and their opinions on the subject. A focus group discussion was used to collect data from the community health care workers by use a recorder which was decoded, translated and summarized for themes.

After collecting data, the tools were checked for completeness and consistency and after coding the data was entered into excel worksheet for cleaning and corrections. Statistical analysis was performed using SPSS version 25. Descriptive analysis was done using frequencies, means and standard deviations. Chi-square tests were performed to test the association between the

demographic variables with the dependent variable at 95% confidence intervals. Simple linear regressions were performed to test the influence of knowledge on reproductive health and socio cultural factors on the complications of unsafe abortion. Qualitative data was analyzed after transcription and coding into themes. Tables were used to display the findings. Qualitative data from key informants and Focus Group Discussions were analyzed after transcription by coding and classification and content analysis done so as to make sense from data collected and report important issues and findings.

Academic approval was sought from Kenyatta University graduate school while ethical approval was obtained from Kenyatta University Ethics Review Committee (KUERC). The permit to carry out the study will be sought from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher also sought permission from the Nakuru Health Management Teams; at the county hospital level. Informed consent was mandatory for all the respondents in the study more so anonymity was ensured as no identifier was used in any of the research instruments and tools.

RESULTS AND DISCUSSION

The study sought to collect data from 140 women seeking post-abortion care at Nakuru county referral hospital through administering questionnaires, 12 healthcare community workers using Focus Group Discussions and 4 healthcare workers from Nakuru county referral hospital through interviews. The study achieved 100% response rate from all the sampled respondents and groups. According to Bhattacherjee (2012) a response rate of at least 80% is adequate for sample representation of the target population. This 100% response rate was attributable to good planning for the data collection as well as ethical consideration of the respondents with a good informed consent to the respondents.

The study revealed that majority respondents were aged between 20 and 29 ([20-24] and [25-29] at 19.5% each), followed by those aged 40-44 at 17.8%. On third place were those aged between 15 and 19 at 15.3% closely followed by those in age group of 30-34 followed at 14.4% and in the fifty place those aged 35-39, were at 11.0%. The least were those between 45 and 49 years and those above fifty at 1.7 and 0.8% respectively. This implies that unsafe abortion is prevalent in young ages below 30 years and less prevalent in older ages above 30 years. In other words, prevalence of unsafe abortion increases with increase in age and vice versa.

On Age Group and unsafe abortion, the result shows that 82.8% of the patients below 30 years had high abortion complications while 17.2% of them had low complications. It was also noted that 81.5% of the patients aged 30 years and above had high compared to 18.5% who had low complications in the same age group.

On marital status, Majority of respondents were married, which representing 41.5%, followed by those who were single (37.3%). It was also found that 12.7% were widowed while 8.5% of the respondents were found to have been divorced. It was in this respect noted that majority of

those who procured unsafe abortion were the married women as well those women who were single.

On religion of the women, Protestants at (60.2%), were Catholics 34.7% while 5.1% comprised of women from Islamic religion. This therefore implied that all the respondents were oriented in a certain religion and subject to a supernatural being. All the religions cited are against unsafe abortion procured outside medical consideration and purposes. This implied that if a woman procured unsafe abortion, it was against their region and that the decision had been reached out of full realization of the consequences religion wise.

On the respondent's ethnicity, Nilotic were 45.8% of the respondents, Bantus were 43.2% and the Cushites were 11.0%. This implied that unsafe abortion was prevalent among the Nilotic and Bantus. However, it was noted that the residents in Nakuru Country were majorly the Nilotic and the Bantus.

On the respondents level education, the study found that majority of those who had undergone for unsafe abortions had completed secondary school education at 53% and tertiary level of education at 32.5% whereas primary level of were at 13.5% and no formal education at 0.9%. On Respondents Monthly Income, the study established that most of the respondents had a monthly income of between 7,000 and 30,000 Kenya shillings at 41.7% followed by those get less Ksh. 7,000 at 32.3% whereas those getting between Ksh. 30,000 and 100,000 were 24%. Representing those who received a monthly salary of less than Ksh. 7,000. The lowest percentage of 2.1% represented those an income of 100000 and above. This study established that prevalence of unsafe abortion was high among women earning below Ksh. 30,000 on monthly basis. Increase in income was seen to reduce the prevalence of unsafe abortion.

On the Method of Payment, The study revealed that majority of the patients used cash in order to pay their hospital bills (48.0%), NHIF 35.9% while 16.2% used money out of pocket to pay hospital bills and 6.8% paid using commercial insurance to pay for post-abortion care. The study noted that most payment were through cash and output pocket indicating that most of the women procuring unsafe abortion were not registered under NHIF or any insurance plan.
Association between Demographic Factors and Unsafe Abortion

The first hypothesis of the study stated that demographic factors do not influence the choice of unsafe abortion among women in Nakuru County. Chi-Square correlations were done to ascertain whether demographic factors are related to unsafe abortion.

The study revealed that monthly income, education level, marital status and age group, were associated with unsafe abortion at 95% confidence interval and 5% significance level. This implied that the age of a woman is likely to determine whether the woman will go for unsafe abortion. The study revealed that young girls procured unsafe abortion more than older women. This could be due to unwanted pregnancies in young ages mostly composed of the school-going girls. Older women are within the child-bearing age and are less likely to procure abortion.

The study also revealed that marital status was associated with unsafe abortion. In respect to this, the study revealed that unsafe abortion was less prevalence among the divorced and widowed women and more on the married and unmarried women. This indicates that unsafe abortion prevails more among the sexually active.

Education level on the other hand was associated with unsafe abortion among the sampled women. This indicates that the education level of the respondents has influence on their choice of unsafe abortion. In respect to this, the current study established that unsafe abortion was prevalent among those who have competed tertiary level of education as compared to those who do not have any formal education. This implies that those without any formal education were less likely to procure abortion.

The study further revealed that the level of monthly income was associated with the unsafe abortion. This study noted that unsafe abortion was more prevalent among women with a monthly salary less than Ks. 30,000. This implies that women who have high income are able to seek medical opinion and procure abortion when they deem necessary and that they were able to afford family planning methods and thus avoid unwanted pregnancies. On the other hand, women with low income level could not afford medically procured abortion and also seek family planning.

The study also found religion, ethnicity, livelihood and residence of the women were not associated with the prevalence of unsafe abortion. This is an indication that it does not matter the region that one comes from, unsafe abortion is carried in either the religions. It further shows that there is no religion that favours unsafe abortion and that the decision for procuring unsafe abortion is not based on any religion. As revealed in this study, unsafe abortion was prevalence across the different ethnic groups and that the ethnic group that one come from did not determine whether to procure abortion or not.

Whether unemployed, informally employed or formally employed, the study found that unsafe abortion was prevalent across those different types of employment. This implied that the type of employment does not determine whether one will procure unsafe abortion or not. No type of employment encourages abortion. This study also found that the residence of the women does not determine the prevalence of unsafe abortion. Unsafe abortion occurs both in rural and urban setups. This finding therefore implies that awareness against unsafe abortion should be made across all religions, ethnic groups, careers and livelihoods and across all areas and regions.

The first hypothesis of the study stating that demographic factors do not influence the choice of unsafe abortion among women in Nakuru County was rejected at 5% significance level. This was because age group, marital status, education level and monthly income influenced the choice of unsafe abortion among women in Nakuru County. However, it was found that religion, ethnicity, livelihood and residence of the women do not influence the choice of unsafe abortion among women in Nakuru County. Therefore, there are some demographic factors do

influence the choice of unsafe abortion among women in Nakuru County, while there are other factors do not influence the choice of unsafe abortion.

Reproductive Health Knowledge among the respondents and Choice of Unsafe Abortion

The second objective sought to determine to what extent to which does knowledge on reproductive health by women respondents affect the choice of unsafe abortion in Nakuru County. Reproductive Health knowledge was measured after taking the reproductive history of the respondents as of the number of pregnancies before the unsafe abortion, number live births, still births, miscarriages including any induced abortions and if they any living children. They were then put through to several the Likert scale questions to establish their knowledge on reproductive health it was prudent to find out their reproductive history prior the abortion.

The study found that 29.7% of the respondents had one pregnancy, 26.3% had two pregnancies while 22.9% had three pregnancies before the abortion. On the other hand, 8.5% of the respondents had four pregnancies before, 3.4% had more than 5 pregnancies while 9.3% had no pregnancies before. This implied that the frequency and number of unsafe abortion decreased with increase in the number of pregnancies before. Those who have had other pregnancies were less likely to procure unsafe abortion. This concurs with Ahinkorah et al. (2021) who found that young women who had given birth more than three times had lower odds of having their pregnancies terminated compared to those who had not given birth before. The study noted that among those who had two or less pregnancies before the unsafe abortion, 83.3% of them had high abortion complications while 16.7% had low complications. On the other hand, among the respondents who had more than two pregnancies before abortion, 80.8% of them had high complications and 19.2% had low complications. This implies that majority of those who had high complications had less than two pregnancies prior to unsafe abortion.

Odds of abortion are 1.190 times more for those women who had less than three pregnancies before compared to those who had three pregnancies and above. This implies those who are likely to abort are those who had fewer pregnancies before (the first or the second) compared to those who have more than two children.

Majority of the women had 1 to 2 live births (44.1%) while 29.7% had no live births. Those who had between 3 and 4 live births were represented by 23.7% while only 2.5% were found to have more than 5 live births. This implied that the prevalence of unsafe abortion cases were many among women with less than three live births in the past.

Those who had no miscarriages before were 1.853 times and were highly likely to attempt an abortion unlike those who have had miscarriage before. This implies that the prevalence of abortion is more among those who had no miscarriage before than those who had miscarriage. The people who had miscarriage analogously are less likely to go for unsafe abortion.

It was established that many of the respondents had a number of induced abortion cases ranging from 1 to 2 (83.1%). On the other hand, 1.7% had more than 3 induced abortions while 15.3%

of the patients had no induced abortions. Despite majority of the women having had one to two induced abortions, it was revealed that that they still procured unsafe abortion.

Socio-cultural Factors and Unsafe Abortion

The last objective of the study was to establish how social issues and culture influences the choice of unsafe abortion in the county Nakuru. This was measured by use the five-point Likert Scale composed of; Strongly Agree=1, Agree=2, Not Sure=3, Disagree=4, and Strongly Disagree=5. Table 1 presents the frequency, the mean score and the standard deviation for the social and cultural issues affecting unsafe abortion.

Table 1: Model Summary for Socio-cultural Factors

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.502[a]	0.252	0.246	0.20213

a. Predictors: (Constant), Socio-cultural factors

The obtained R value of 0.502 was obtained in regression of socio-cultural factors on unsafe abortion and thus good fit for the data. The study found out that the socio-cultural factors accounted for 25.2% of the changes in unsafe abortion (R Square of 0.252). Adjusted R Square of 0.246 implied that the model as a whole was optimal and the more predictors would improve the model less than expected. This model was accurate due to standard errors of 0.20213). Table 4.59 shows the significance of the model as a whole.

Table 2: Model Significance for Socio-cultural Factors

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.600	1	1.600	39.164	0.000[b]
	Residual	4.739	116	.041		
	Total	6.339	117			

a. Dependent Variable: Unsafe Abortion

b. Predictors: (Constant), Socio-cultural issues

The study revealed that the model was significant at 5% level as shown by F (1,116) =39.165 and $p<0.05$. This implied that Socio-cultural challenges in the community can predict unsafe abortion among women in Nakuru County. The table presents the model of coefficient regression model to establish the effects of socio-cultural factors on the choice of unsafe abortion among women in Nakuru County.

Table 3: Model Coefficientsfor Socio-cultural Factors

Model	Un-standardized Coefficients		The Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.809	0.165		10.931	0.000
Socio-Cultural Factors	0.344	0.055	0.502	6.258	0.000

a. Dependent Variable: Unsafe Abortion

The study established that socio-cultural factors do affect the choice of unsafe abortion among women in Nakuru County. This is evidenced by $t=6.258$ and $p<0.05$. In this regard, it was established that when there an increase of the socio-cultural challenges will results to increase incidences of unsafe abortion by 0.344 units with all other parameters held constant. This implies for reduction unsafe abortion among the women in Nakuru County, social-cultural challenges need to be addressed. Therefore, the third hypothesis stating that socio-cultural factors do not affect the choice of unsafe abortion among women in Nakuru County was rejected at 5% significance level.

These findings concur with those by Afrizal, (2011)in a study from Owukpa and Obollo-Eke communities in Nigeria who found that inadequate and inaccessible health care services, poverty, lack of family planning, education, lack of basic social amenities, nutrition, lack of family planning, gender base violence, paternity pattern and low status of women were the factors associated with this maternal health complication. In addition, it was further found that although paternity pattern was practiced in the two communities, it was revealed that the pattern differed. The results also depicted that attitudes like early marriages and sex preference affected the health of women.

Unsafe Abortion among Women in Nakuru County

The observed post-abortion complications were categorized as high or low as classified and used by Gebreselesie et al (2005) and Osur. (2012). Table 4 presents the observed complications from the study.

Table 4: Post-Abortion Complications

Low Complications	**High Complications**
Temp between 37.3 and 37.9°C	Temp more than 38°C;
Offensive products on evacuation	Evidence of organ/ system failure
Localized peritonitis on exam	Evidence peritonitis
	Pulse of more than120beats/min; shock
	Finding a Foreign object
	Physical injury on evacuation

Further analysis of the observed complications a below

Table 5: Analysis of Post-Abortion Complications

Category	Complications	Frequency	Percent
Low Complications	Temp between 37.3 and 37.9°C	18	15.25%
	Offensive products on evacuation	12	10.17%
	Localized peritonitis on exam	10	8.47%
Total		21	17.80%
High Complications	Temp more than 38°C;	82	69.49%
	Evidence of organ/ system failure	31	26.27%
	Evidence peritonitis	93	78.81%
	Pulse of more than 120 beats / min; shock	57	48.31%
	Presence a Foreign body or mechanical injury on evacuation	47	39.83%
Total		97	82.20%

The study revealed that a majority at 82.2% of the women seeking post-abortion care at the Nakuru County Referral Hospital, Nakuru County Kenya had high post-abortion complications while 17.2% had low post-abortion complications. This therefore implied that majority of the women seeking post-abortion care had high complications. These findings are in line to those by Melese et al. (2017)who found that two thirds of the respondents suffered incomplete abortion which was associated with unavoidable abortion. In addition, the common complications related with abortion were tenderness of the uterus (11.3%), septic shock (3.9%), vaginal discharge (17.9%) and pelvic peritonitis (2.4%). There was a significant relationship between self-induced abortion and post-abortion complications ($P<0.05$).

The study further conducted interviews with key informants who were health care providers and opinion leaders. The interviews were collected in Swahili language and then transcribed. The transcribed interviews were translated into English for this thesis was done in English. Through the qualitative data analysis, major themes and codes were established and source reference cited. Appendix VIII shows the qualitative data analysis outcome.

The theme that emerged from the qualitative data analysis was unsafe abortion. This in an indication that both the respondents and researcher were objective in meeting study objectives and the respondents obtained were within the topic of the study. The sub-themes obtained were; Prevalence of Unsafe Abortions, Reasons behind procuring unsafe abortion, common complications after abortion, and recommended measures. In respect to the prevalence of

unsafe abortion, the study established that there are case of unsafe abortions both in urban on rural setups though declining with increase in education on reproductive health among girls.

In respect to how the abortions were carried out, it was revealed that girls insert a straw ('lollipop') to break the amniotic fluid a little bit. Eruption starts and then once there is no fluid and it is just air, the fetus changes and comes out. Other girls in primary school levels take very strong concoction of green tea leaves ('strong tea') as overdose in order to terminate the pregnancy. Some older women bought drugs private hospitals and especially private clinics to induce labour on the pre-term fetus and hence aborting. In was also revealed that some of the women in the rural areas assists women and girls top procure the abortions. In addition, the interviews revealed that private hospitals and private clinics illegally provide abortion services to women.

Focusing on the reasons behind procuring abortion, the study revealed that some parents do not want to be ashamed that their child has been impregnate and thus push their children to go for abortion and for them to continue with their studies. It was also revealed that women who conceive outside the wedlock opted for abortion in order to avoid domestic violence with the husbands. The study further revealed that youths and adulterous women in churches procure abortion in order to avoid being chased away from the church. This was seen as the trend by widows and single mothers when they get pregnant when they were not ready for it. Risk factors revealed for abortion was lack understanding and others lack education. Other risk factors were multiple sex partners.

In respect to common complications after abortion, the study revealed that patients bled too much due to unprofessional procedures done in clinics or hospitals that use sharp objects which might tear the uterus, leading to sores and damage of the uterus. The healthcare workers revealed that some patients visit the hospital after they have done the abortion and their uterus is rotten and hence the person cannot conceive. The healthcare workers revealed that some of the women and girls procuring the unsafe abortion die from it and most such cases were hidden or the cause of death changed to normal illnesses. In some case, once the hidden abortion is known by the family members or village, some girls fled from their homes and never came back due to the associated stigma and shame.

From the interviews, several recommendations were made on how to reduce the prevalence of unsafe abortion. Some of the recommendations were use of family planning, educating women on risk of abortions, encouraging girls to keep their pregnancy to full term and taking punitive legal measures for doctors in the private hospitals helping young girls to procure abortion. Another measure suggested was encouraging community health workers to report cases of illegal abortions from the community and table the evidence obtained from the post-abortion care. The reporting was suggested to be done through a private hotline number and not via the local administration to avoid the cases being hidden. Civic education in the community as well as in schools by nurses and doctors on use of family planning was suggested. Others suggested this to be included in the syllabus of secondary schools.

Some healthcare workers recommended abortion to be legalized in order to ensure that abortions are carried out by doctors (and through the recommendation of doctors) and in the most professional way. This was suggested to reduce the cases of unsafe abortions through risky measures at home. A suggestions included parents taking full responsibility of the pregnancy and children from their school-going children as well as offering the necessary guidance and counselling. Church as well as teachers were suggested to offer moral support to teenagers who get pregnant.

CONCLUSIONS, AND RECOMMENDATIONS

Conclusion

The study concluded that demographic factors influence the choice of unsafe abortion among women in Nakuru County. In respect to this, age group, marital status, education level and monthly income influence the choice of unsafe abortion among women in Nakuru County. However, it was found that religion, ethnicity, livelihood and residence of the women do not influence the choice of unsafe abortion among women in Nakuru County. Therefore, there are some demographic factors do not influence the choice of unsafe abortion among women in Nakuru County, while there are other factors that do not do not influence the choice of unsafe abortion.

The study concluded that reproductive health knowledge has statistically significant effect on unsafe abortion. In respect to this, an increase in reproductive health results into decrease in unsafe abortion. This includes, knowledge on aspects such as family planning, access information on reproductive health and modern contraceptives services, abortion laws in Kenya and the health implications of unsafe abortion. Reproductive health knowledge on aspect such as menstrual cycle, contraceptives when having unprotected sex, awareness on emergency contraceptives and other key reproductive health aspects can reduce cases of unsafe abortion.

In respect socio-cultural factors, the study concluded that socio-cultural factors affect the choice of unsafe abortion among women in Nakuru County. In this regard, it was established an increase in socio-cultural challenges results into increase incidences of unsafe abortion. The study concluded that favourable social-cultural factors reduce cases of unsafe abortion while socio-cultural challenges increase the risk of unsafe abortion. Sexual encounters, sexual partners, friends, parents and community shapes the socio-cultural factors towards abortion.

Recommendations

Recommendation for Policy

The current study recommends robust measures by all stakeholders including health care providers both private and Public Health Care facilities especially on reproductive health education.

The study recommends the Ministry of health and the County departments of health collaborate with the ministry of Education, department of gender to set up structure at every level up to the village to look into issues gender based violence including rape.

The ministry of health and its partners to engage community networks including the national and county governments to plan, develop and implement community programs that are aimed at grassroots and communities to address challenges and opportunities for unsafe abortion in the community.

The study recommends implementation of the new reproductive health policy

The study recommends that community health workers to be engaged in reporting cases of underage pregnancies and illegal abortions from the community and refer for post-abortion care. The reporting was suggested to be done through a private hotline number and not via the local administration to avoid the cases being hidden.

Parents are recommended to take full responsibility of the pregnancy of their school-going children as well as offering the necessary guidance and counselling. Church as well as teachers were suggested to offer moral support to teenagers who get pregnant.

Recommendation for Practice

The study recommends educating women on family planning, risk of abortions and importance of the girls to keeping their pregnancy to full term. The study recommends community health workers to be encouraged to report cases of illegal abortions from the community and table the evidence obtained from the post-abortion care. The reporting was suggested to be done through a private hotline number and not via the local administration to avoid the cases being hidden. Public health education on reproductive health in the community as well as in schools by healthcare workers on use of family planning is also recommended. Parents are recommended to take full responsibility of the pregnancy of their school-going children as well as offering the necessary guidance and counselling. Church as well as teachers were suggested to offer moral support to teenagers who get pregnant. It is recommended that the county government to put in place a monitoring system for proper evaluation on the progress of the implementation measures that are put in place.

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