

**DRIVERS, DECISION MAKING PROCESSES AND OUTCOMES OF UNSAFE
ABORTION IN FOUR DISTRICTS OF SIAYA COUNTY, KENYA**

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Philosophy in Public Health in the School of Public Health of Kenyatta University.**

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DECLARATION

This thesis is my original work and has not been presented before in any other university or any other award.

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DEDICATION

To all women who bare the brunt of unwanted pregnancy, unsafe abortions and resultant consequences.

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ACRONYMS AND ABBREVIATIONS

CBD – Community based distributor of contraceptives

CBO – Community based organization

CHW – Community health worker

FCI – Family Care International

FGD – Focus group discussion

FWCW – Forth World Conference on Women

ICPD – International Conference on Population and Development

Ki-MET – Kisumu Medical and Educational Trust

MoH – Mistry of Health

MVA – Manual vacuum aspiration

NGO – Non-governmental organization

PAC – Post-abortion care

TBA – Traditional birth attendant

UN – United Nations

USA – United States of America

WHO – World Health Organization

DEFINITION OF TERMS

The following definitions apply to the words as used in this study:

- a) **Abortion** = termination of pregnancy before the foetus is able to survive outside the uterus.
- b) Unsafe abortion = termination of pregnancy either by an untrained person or in a condition lacking the necessary equipment and hygiene or a combination of both conditions.
- c) Unsafe abortion provider = a person lacking in skill to terminate unwanted pregnancy or providing the service in conditions lacking the necessary equipment and hygiene or a combination of both situations.
- d) Social network = a social structure made up of individuals or organizations (also referred to as nodes) that are tied by one or more specific types of interdependencies such as values, visions, ideas, financial exchange, friendship, kinship, or trade.
- e) Outcomes of unsafe abortion = mortality and morbidity resulting from unsafe abortion.
- f) Methods of unsafe abortion = uterine evacuation methods used to extract the conceptus from a pregnant uterus.
- g) Magnitude of unsafe abortion = incidence of unsafe abortion.

ABSTRACT

Unsafe abortion is a major public health problem causing 13% and 30% of maternal deaths globally and in Kenya respectively. Despite this, the drivers of the practice in Kenyan communities are scarcely documented. Further, little is documented about the decision making process for women who chose unsafe abortion and whether social networks have a role on this. In addition, not much is known about the methods unsafe abortion providers use and the outcomes of the methods. The objectives of this study were, therefore, to determine the drivers of the practice; find out how social networks influence women's decisions to procure abortion; and determine outcomes of methods used in Siaya County. The study employed a mixture of quantitative and qualitative techniques including cross-sectional survey of 320 patients presenting to health facilities after attempted unsafe abortion; case studies of 8 women who had undergone unsafe abortions; one enquiry into unsafe abortion related death using Rashomon technique and in-depth interviews with 12 unsafe abortion providers and 21 key informants. The findings indicated that women procuring unsafe abortions were mostly below the age of 24 years (76%), in their first trimester of pregnancy (85%) and presenting to health facilities with incomplete abortion (87%). The most commonly reported drivers of unsafe abortion included inadequate infrastructure and equipment in health facilities with all facilities studied not having a full complement of recommended conditions. Only 5.5% of eligible health workers were competent and willing to provide termination of pregnancy services. At community level, unsafe abortions were associated with desire for a good life, pressure from social contacts, and the determination of unsafe abortion providers to give the service. Social networks were found to play a role in the woman's decision making process with 95% of the women consulting with their social networks before making a decision. These consultations led to 63% of women owning a decision to abort while the rest were either not sure or even felt compelled to abort. Logistic regression predictions showed that the man causing the pregnancy and the woman's mother were the most influential persons in cases of unsafe abortion. A case fatality rate of 0.3 per 1000 women aged 15 – 44 was recorded. Other severe complications included hemorrhage requiring blood transfusion and pelvic infection. A Chi square test revealed significant difference in the outcomes of unsafe abortion based on the methods used ($\chi^2 = 193$, $df = 30$, $p < 0.05$). Logistic regression predictions confirmed that the outcomes depended on methods used, genital tract injury, for example, being 30%, 120% and 370% more likely to occur with use of self -inserted gadgets, self- inserted medicine and gadgets inserted by someone else respectively as compared to hemorrhage not requiring transfusion. It is recommended that the Ministries in charge of Health and NGOs running programs to reduce unsafe abortion prioritizes community involvement as a way of reducing unsafe abortion; give unsafe abortion providers capacity to counsel and refer patients to health facilities; and that the identified drivers of unsafe abortion are addressed comprehensively.

CHAPTER 1: INTRODUCTION

1.1 Background Information

Unsafe abortion is the termination of pregnancy by untrained people lacking the skill to provide such a service; the provision of the service in conditions lacking the minimum recommended equipment and hygiene standards; or a combination of the two situations (WHO, 2003). For a person to qualify to be trained to provide abortion services, they need to have basic medical or nursing qualification and to be registered to practice in their profession. Such a person would then have to undergo specific training on how to do termination of pregnancy. The competency to provide the services is based on guidelines that the World Health Organization (WHO, 2003) has developed. The guidelines specify the recommended minimum equipment and hygiene standards for the provision of safe abortion services (WHO, 2003).

It is estimated that more than 40 million abortions occur in the world annually half of which are unsafe and contributing to 13% of global maternal deaths (WHO, 2003). Of all the unsafe abortions, 95% happen in the developing world where complications kill at least 68,000 women each year (FCI, 2007). It is also estimated that in many sub-Saharan African countries, 20 to 50% of maternal deaths result from unsafe abortions (FCI, 2007).

Other than mortality, unsafe abortion is associated with high rates of morbidity. From a range of studies, WHO estimates that 10% to 50% of women undergoing unsafe abortions in developing countries need subsequent medical care (Info for Health, 2007). Complications

resulting from such abortions account for the largest proportion of hospital admissions for gynecological services in developing countries (Singh, 2006).

In Kenya, there has been only one national study to estimate the incidence and consequences of unsafe abortion. The study estimated that 300,000 abortions occur in Kenya annually with over 20,000 women presenting to government hospitals with complications (Gebreselessie, 2005). Some of these women die from serious complications and others have short and long term sequel.

Many reasons may cause a woman to seek unsafe abortion. It is widely acknowledged that restrictive abortion laws are a major cause (Grimes, 2007). Even where the law is liberal however, weak health systems do contribute to lack of services (Kirigia, 2008). Community and social factors could also be contributory. The social network in which the woman finds herself could determine her choice for unsafe abortion. Further, providers of unsafe abortion and their networks, by getting in-roads into the community, could influence the magnitude of the problem. There may also be motivating factors that make these providers intensify their work.

Whatever the case, the consequences of unsafe abortion are a major public health problem. To date programs have concentrated on legal, policy and service delivery improvement as a way of responding to the problem. Little has been done to understand the social dynamics of the problem including who the providers are, the outcomes of the procedures they undertake and the social networks that support their services. This study therefore investigated these background social dynamics as well as quantifying the problem and the consequences in four districts of Siaya County.

1.2 Statement of the Problem

Unsafe abortion remains a major public health problem globally and in Kenya (JHPIEGO, 2003; Gebreselessie, 2005). It affects the health and wellbeing of women in the reproductive age group and is estimated to cause 20 - 50% of maternal deaths in developing countries (Gil, 2004; Rogo, 1999). With over 300,000 abortions in Kenya, high stigma and a restrictive legal status, services are possibly unavailable in health facilities and most of the procedures could be unsafe (Gebreselessie, 2005).

The Kenyan abortion law is found in the new constitution section 26 as well as the Penal Code Cap 158 to 160. The code spells out punishment for the person who provides abortion, the woman who procures abortion, and the person who sells abortifacient substances if such actions are undertaken *unlawfully*. There are lawful abortions though. The new Kenyan constitution section 26(4) as well as the Penal Code Cap 240 explain that a person is not criminally responsible for performing in *good faith* and with reasonable *care and skill* a surgical operation upon any person for his *benefit*, or upon an unborn child for the *preservation* of the mother's life, if the performance of the operation is *reasonable*, having regard to the patient's state at the time, and to all the circumstances of the case. The constitution allows only qualified health professionals to undertake the procedure. This therefore means that while some safe abortions are legal in Kenya, unsafe abortions are illegal under all circumstances. This is because unsafe abortion providers may lack *skill* and the procedures may lead to injury. The procedure cannot be justified as *reasonable* and cannot be said to *preserve* the mother's life given the mortality and morbidity associated. Despite the stiff penalties for unsafe abortion, women continue to go for the procedure and there are people in the community providing the service.

The root causes (drivers) of unsafe abortion must be very compelling for women and unsafe abortion providers so as to take the medical and legal risks associated with the procedure. These drivers are not well documented in Kenya though.

Further, given the stigmatized nature of unsafe abortion, there are social structures within the community which should be working to eliminate it yet little is known about their contribution in impacting women's choices for the procedure. Little is documented in Kenya on whether social networks of the pregnant woman as well as the unsafe abortion provider work to limit or enhance the performance of the procedure.

In fact very little is documented in Kenya on who the providers of unsafe abortion are and the methods that they use. It is the methods used that result in morbidity and mortality yet little has been done to identify the methods and their outcomes.

Under the current situation, effective interventions may not be possible to develop to address unsafe abortion. This study therefore identified drivers of unsafe abortion, defined how social networks influence choice for unsafe abortion and showed how methods used influence outcomes of the procedure.

1.3.1 General Objective

The general objective of this study was to establish drivers, decision making processes and outcomes of unsafe abortion in four districts of Siaya County, Kenya.

1.3.2 Specific Objectives

The specific objectives of the study were:

- a) To identify drivers of unsafe abortion at health system and community levels in four districts of Siaya County

- b) To determine the role of social networks in the decision making process for unsafe abortion in the four study districts.
- c) To establish the relationship between methods used and outcomes of unsafe abortion among women in the four study districts.

1.3.3 Research Questions

This research answered the following questions:

1. What are the drivers of unsafe abortion in the four study districts?
2. How do social networks affect women's decision making process to have unsafe abortion in the four study districts?
3. How do methods used to procure unsafe abortions relate to outcomes in the four study districts?

1.3.4 Null Hypotheses

- a) There are no drivers of unsafe abortion in the four study districts of Siaya County.
- b) Women's decision to have unsafe abortion is not influenced by social networks in the four study districts.
- b) There is no difference in outcomes for the methods used by unsafe abortion providers in the four study districts of Siaya County.

1.4 Significance of the Study

Unsafe abortion is a recognized cause of maternal mortality as well as short and long term morbidity. So far, focus has been on legal change and improvement of clinical services in tackling the problem (WHO, 2006). There seems to be a big gap on tackling the problem by focusing on women's decision making processes at community level. The role of social

networks in this and how this can be used to reduce harm remains unstudied. Segmenting the root causes and the drivers and focusing on these to limit the impact of the problem is one area that could be used to mitigate the problem. This study therefore opens a new area of focus on the fight to eliminate unsafe abortion and results could help programs to design new interventions.

Providers of unsafe abortion and social networks in the community may hold a lot of knowledge on the health behavior of women with unplanned pregnancy and could be channels of education and information to women. Further, they already have inroads into the community and could assist in community mobilization for advocacy as well as for provision of safe services. Yet little is known about them and the factors that motivate them. This study endeavored to bring these aspects of unsafe abortion to the fore so that appropriate interventions can be developed to respond to unsafe abortion at community level.

The methods that unsafe abortion providers use are the cause of complications. By documenting these methods and relating them to complications, important talking points can be developed for advocating with the providers and women in the hope that they change or abandon the methods.

In general this study opened a new aspect of the fight against unsafe abortion that has hitherto been neglected: the community dynamics of the problem. The recommendations from the study may provide new insights for organizations working to reduce maternal mortality from unsafe abortion and may call for policies and laws to enhance the involvement of unsafe abortion providers and community social networks in this work.

1.5.1 Limitations of the Study

Some unsafe abortion providers refused to be interviewed, fearing arrest. Others only accepted to be interviewed by proxies known to them. A few others denied providing the service despite being named by more than one victim of unsafe abortion. The study therefore lacks views of the unsafe providers who were unwilling to be interviewed. They included a herbalist, a cook in a secondary school, and a nurse who was reported to provide abortions in her house.

Not all women with complications of unsafe abortion were captured in the study. A number of women visiting public health facilities were missed out, some because they refused to participate in the study but others because health workers did not record their treatment in the hospital books. When the study started, public health facilities did not have logbooks for collecting abortion related clinical data. Working with Kisumu Medical and Educational Trust (Ki-MET) the study team introduced a post-abortion care (PAC) register. Not all service providers recorded clinical data for the patients they attended to even after that. In the process, a number of women were treated and discharged without being listed in the hospital records and as such the study team could not capture them.

According to key informants, collecting data on abortion complications had previously led to service providers being victimized by their seniors. When such data reached the managers at district level, service providers were accused of terminating pregnancies leading to high figures of post-abortion care being reported. As a result, most facilities were not keen on recording every patient attended so as to avoid being victimized. This led to a number of patients being missed out by the study team.

In addition, some service providers were reported as avoiding recording of patient data after carrying out procedures to avoid stigma from colleagues. Abortion related procedures were considered dirty and not meant for serious professionals. Sometimes patients were charged heavily for such procedures.

The community was also sometimes unsupportive of abortion related services. In one health facility, a patient with abortion complications who is a member of a nearby church was treated. The next day, the church mobilized its congregation to demonstrate against the health facility, condemning it for *doing abortions*. Because it was hard for health personnel to explain what had happened, they kept quiet about it but developed cold feet towards treating women with complications of unsafe abortion or miscarriage.

Study team members in public health facilities tried to capture the cases they could get when they were physically present, especially during the day but a number of cases coming at night were missed. Data from private health facilities were more accurate.

1.5.2 Delimitations of the study

The use of multiple study methodologies improved the quality of information received and reduced errors related to non-response. Further, data collectors were well trained and acted professionally to extract the needed but sensitive information from interviewees. They were from the study community and easily struck rapport with interviewees. Some unsafe abortion providers were interviewed more than once to verify the authenticity of or get more information. Data collectors developed a mutual relationship with interviewees resulting in mutual trust and this helped in getting classified information.

1.5.3 Assumptions

This study was done at a time when Kenya was undergoing constitutional review process in which disagreements over abortion took centre stage. It is assumed that the charged political and religious arguments of the time did not affect the behavior of social networks, unsafe abortion providers, and women seeking unsafe abortion.

Just before the study started, one NGO had just introduced misoprostol for the management of post-partum hemorrhage in the study area. Given that misoprostol is also used for termination of pregnancy, it is assumed that its increased availability in the community at this time did not affect the choice of methods unsafe providers of abortion used.

1.6 Conceptual and Theoretical Framework

Women with unwanted pregnancy consider options of how to deal with their condition. Should they find themselves in a social network that supports unsafe abortion, their decisions could possibly be influenced and they go for unsafe abortion. Theories that have been developed to explain health seeking behavior recognize the importance of social networks in influencing decisions that people make in seeking health care. According to the socio-behavioral theory or the Anderson model (Anderson and Neuman, 1975), health seeking behavior is affected by predisposing factors, enabling factors, and need factors. Examples of predisposing factors include previous experience, formal education and knowledge of the illness. One of the enabling factors is the influence of the social network, the influence that relations within the community has on health seeking behavior.

Another theory that explains health seeking behavior is the theory of reasoned action (Campbell and Mzaidume, 2001; Ajzen, 1991). According to this theory, a person's voluntary

behavior is influenced by his/her attitude toward that behavior and his/her perception of other people's expectation. The theory stipulates that, a person's intention to perform a specific behavior is a function of two factors: attitude toward the behavior and the influence of the social environment (general subjective norms) on the behavior. The attitude toward the behavior is determined by the person's belief that a given outcome will occur if s(he) performs the behavior and by an evaluation of the outcome. The social or subjective norm is determined by a person's normative belief about what important or "significant" others think s(he) should do and by the individual's motivation to comply with those other people's wishes or desires.

The third theory of health seeking behavior is the pathway model (Good, 1987). According to this theory, a person feels symptoms of a disease and this is immediately followed by seeking advice from social contacts considered important or significant (Good, 1987). The decision and behavior that follows is a result of what the 'significant other' advises. The 'significant others' include relatives, friends, peers, and so on.

It therefore appears that social networks may play an important role in health seeking behavior and this may be applicable to the case of unwanted pregnancy and unsafe abortion. The network could discourage or encourage the choice for unsafe abortion services.

Given that unsafe abortion is a crime, drivers of the practice can be explained using crime related sociological theories. At a personal level, the strain theory could explain why women engage in unsafe abortion. According to Farnworth (1989) the strain theory is founded on the fact that modern industrial cultures create definitions of success for which each member of a community want to be identified. Not all members of a community can achieve the set standards though and the perception of inability to achieve success causes personal perceived

strain that can lead to deviance and crime. Engagement in crime is seen as a way of reducing or escaping from the strain being experienced. For example, people may engage in violence to end harassment from others, they may steal to reduce financial problems, or they may run away from home to escape abusive parents. They may also engage in crime to seek revenge against those who have wronged them. And they may engage in the crime of illicit drug use to make themselves feel better. At a personal level, therefore, it is possible that personal disappointments in trying to achieve success as defined by the community forces women to terminate unwanted pregnancies unsafely and illegally.

The social disorganization theory could explain why the practice continues to thrive in the community despite its illegal nature. According to Kubrin (2003), this theory explains why crime happens in some communities and not in others. He postulates that such communities have lost social control over its members. The communities may have high poverty levels, may be large in size, may be high in residential mobility (people frequently move into and out of the community), and high family disruption, e.g. high rates of divorce, widowhood and single-parent families. These factors are said to reduce the ability or willingness of community residents to exercise effective social control, that is, to exercise direct control, provide young people with a stake in conformity, and socialize young people so that they condemn delinquency and develop self-control. It is possible that a number of women who find themselves with unwanted pregnancy may end up aborting unsafely and illegally due to weakened social controls that prevent unwanted pregnancy.

Unsafe abortion providers also play an important role in driving unsafe abortion. The interest of the unsafe abortion providers in continuing to provide the service can be explained by the social learning theory. As explained by Asher (2009), the theory states that people engage in

crime through their association with others. They are reinforced for crime, they learn beliefs that are favorable to crime, and they are exposed to criminal models. As a consequence, they come to view crime as something that is desirable or at least justifiable in certain situations. Applied to unsafe abortion, the unsafe abortion provider may have a strong social network with whom to associate, may get reinforcements through appreciation and gifts from the community and may view the practice as something desirable as more women go to them to seek services.

Social networks having influenced decisions for unsafe abortion and driving factors having acted upon victims, the result is occurrence of unsafe abortions. The outcomes of unsafe abortions are, however, varied. The variation is based on the methods that providers use.

Figure 1.1 below summarizes the conceptual and theoretical framework where these variables interplay:

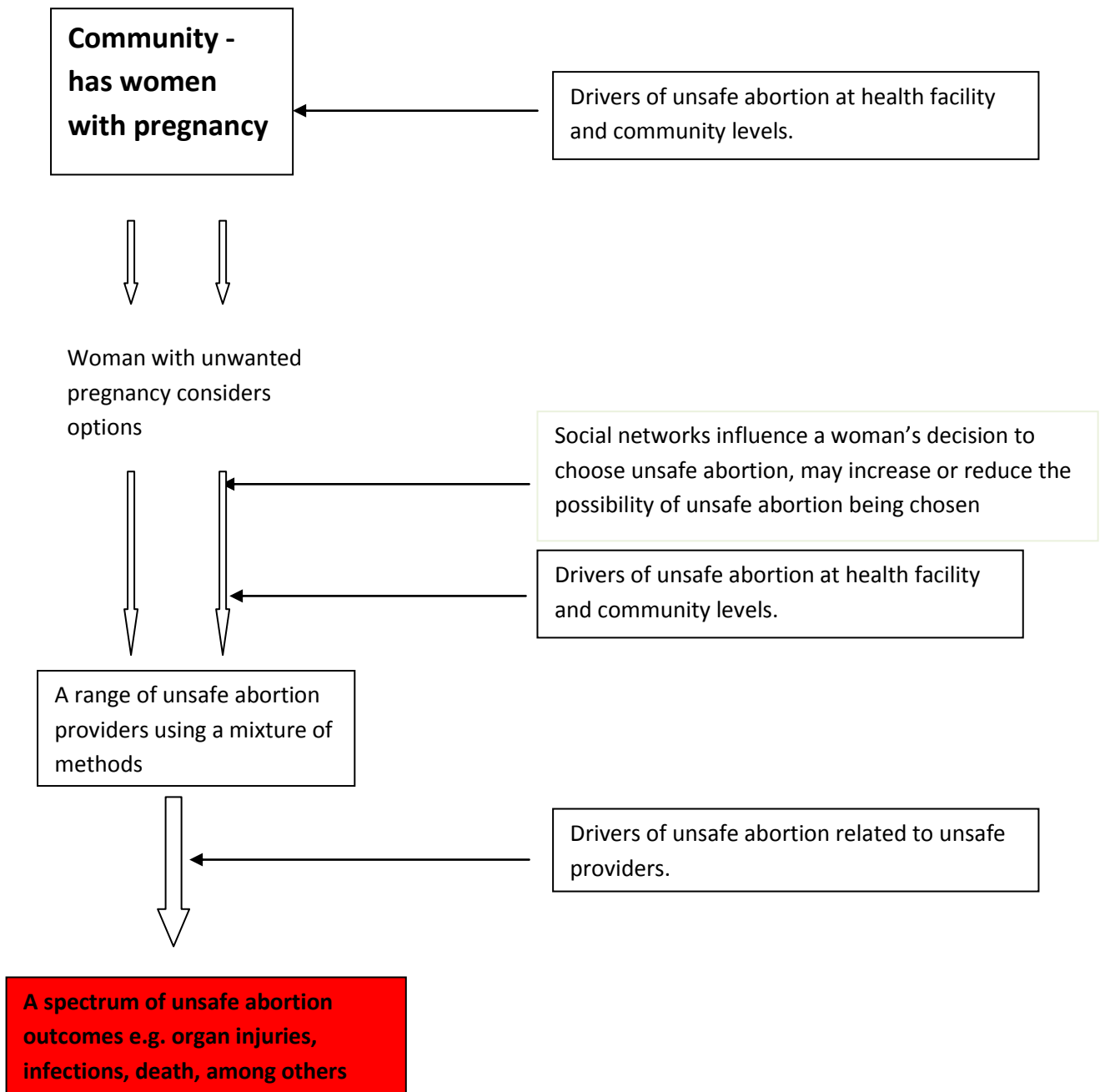


Figure 1.1: Summary of conceptual framework (developed from synthesis of literature)

CHAPTER 2: LITERATURE REVIEW

There is minimal data on abortion in Kenya and generally in Africa. Many studies on abortion have been done in developed countries. This literature review therefore borrows heavily from literature from North America and Europe.

2.1 Drivers of Unsafe Abortions

It is not known whether providers of unsafe abortion are motivated by similar factors as providers of safe abortion. This is grossly lacking in literature. Further, the diversity of providers of unsafe abortion is broad and includes the woman herself, traditional practitioners, paramedical practitioners, pharmacy staff, traditional birth attendants, midwives, nurses and physicians. Motivating factors are unlikely to be the same for these different groups.

For providers of safe abortion, the motivations include the preservation of the life of the mother, right to choice, prevention of maternal mortality, and autonomy of the woman in making reproductive health decisions (Okonofua, 2008).

According to the Abortion Clinic Directory (2008), physicians and other clinicians who choose to provide abortions do so because they believe that women should have a choice. Many older physicians remember when they saw women who were desperate with unplanned pregnancy and sought unsafe abortions after being denied safe services. Such abortions were performed under poor sanitary conditions, and women got infections, became infertile, or died from complications. By being hands off, these physicians feel that they contributed to such consequences. They believe that denying women a choice can be catastrophic.

Other providers of safe abortion want every child that is born to be born into a family that wants a child (Griffin, 2006). Their motivation is that no child should be born into a family where they are not wanted and cannot be cared for fully. They see this as a tragedy that must be avoided by providing safe abortion.

The safety of abortion has to some extent contributed to providers' willingness to provide safe services (Feminist Women's Centre, 2008). Today it is known that abortion is about 10 times safer than giving birth. Modern technology has also made it one of the easiest procedures to perform. Done safely, there are no long term consequences. Hence, providers have no reason to worry about the safety of their patients.

In some countries, the law mandates health workers to provide or facilitate the provision of safe abortion services (bpas, 2008). While some countries give no provision for refusal to provide services, others allow providers to refuse but without the legal right to refuse to refer a patient to another provider who does perform abortions. In addition, in circumstances where it is not practical for the patient to make their own arrangements to see another doctor (for example a very young patient, or an in-patient in hospital) the attending doctor must ensure that arrangements are made, without delay, for another doctor to take over the care of the patient. Hence, the law may be motivating for the doctor to provide abortions.

While motivations to provide safe abortions look well documented, this is not the case with unsafe abortions. There is limited literature on the motivations of unsafe abortion providers. It is not clear why researchers have had little interest in this area.

2.2 Role of Social Networks in Decision Making for Unsafe Abortion

2.2.1 Defining social networks

A social network is a social structure made up of nodes (which are generally individuals or organizations) that are tied by one or more specific types of interdependency, such as values, visions, ideas, financial exchange, friendship, kinship, or trade (Wasserman, 1994). For unwanted pregnancy the point of interest for the social network may be to ensure that abortion happens and the interdependencies may include supply of ideas, financial exchange, referral for services, etc. The resulting structures are often very complex. What ties information architecture, knowledge management and social network closely together is the reciprocal relationship between people and content.

Social network analysis views social relationships in terms of *nodes* and *ties*. Nodes are the individual actors within the networks, and ties are the relationships between the actors. Examples of nodes in a social network for abortion services may be the man who caused pregnancy, the relatives that a woman confides in, the friends that provide ideas and so on. There can be many kinds of ties between the nodes, i.e. the specific contributions that a node may make in the relationship. Research in a number of academic fields has shown that social networks operate on many levels, from families up to the level of nations, and play a critical role in determining the way problems are solved, organizations are run, and the degree to which individuals succeed in achieving their goals (Scott, 1992).

Social network analysis is the mapping and measuring of relationships and flows between people, groups and organizations and other information/knowledge processing entities

(Borgatti, 2007). The analysis provides both a visual and a mathematical analysis of human relationships.

To understand networks and their participants, an evaluation of the location of actors in the network is done. Measuring the network location is referred to as finding the centrality of a node. These measures give insight into the various roles and groupings in a network, i.e. who are the connectors, mavens, leaders, bridges, isolates, where are the clusters and who is in them, who is in the core of the network, and who is on the periphery and so on.

The "Kite Network," (Fig 2.1 below) developed by David Krackhardt, a leading researcher in social networks, has been used to explain principles behind social networks theory. Two nodes are connected if they regularly talk to each other, or interact in some way, e.g. a pregnant woman may talk regularly to the boyfriend about progress in procuring the abortion. In the kite below, Andre regularly interacts with Carol, but not with Ike. Therefore Andre and Carol are connected, but there is no link drawn between Andre and Ike. In the case of a pregnant woman seeking abortion, there may be frequent interaction with the provider of abortion but no contact with the supplier of abortion drugs.

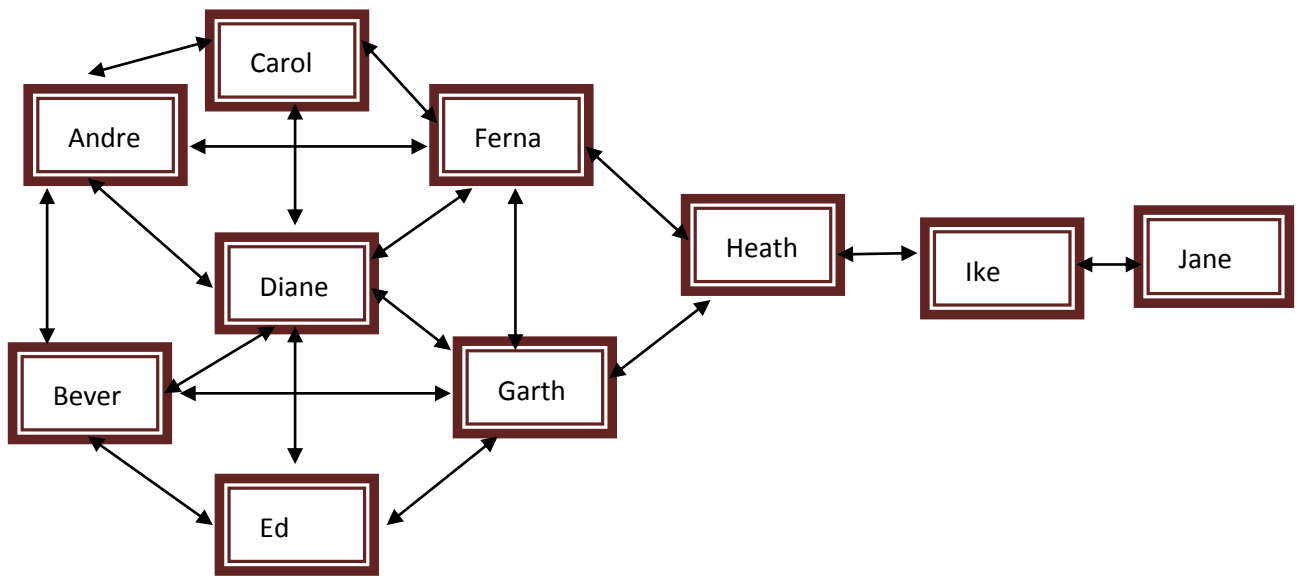


Fig. 2.1: Kite network: The social network diagram (Krackhardt, 2010)

Social network researchers measure network activity for a node by using the concept of degrees -- the number of direct connections a node has. In the kite network above, Diane has the most direct connections in the network, making hers the most active node in the network. She is a 'connector' or 'hub' in this network. Although common wisdom in personal networks is "the more connections, the better," this is not always so. What really matters is where those connections lead to and how they connect the otherwise unconnected. Here Diane has connections only to others in her immediate cluster -- her clique. For a pregnant woman, this, for example, can be connections to family members only. She connects only those who are already connected to each other.

While Diane has many direct ties, Heath has few direct connections -- fewer than the average in the network. Yet, in many ways, she has one of the best locations in the network -- she is between two important constituencies. She plays a 'broker' role in the network. She plays a

powerful role in the network, although, she is also a single point of failure. Without her, Ike and Jane would be cut off from information and knowledge in Diane's cluster. For a pregnant woman, this may be the single person who knows the provider of unsafe abortion without whom there would be no action. A node with high *betweenness* has great influence over what flows and does not in a network. A node like Heath holds a lot of *power* over the outcomes in a network. Hence, nothing is more important in a social network than the location of a node.

Fernando and Garth have fewer connections than Diane, yet the pattern of their direct and indirect ties allow them to access all the nodes in the network more quickly than anyone else. They have the shortest paths to all others -- they are close to everyone else. They are in an excellent position to monitor the information flow in the network -- they have the best visibility into what is happening in the network. They make important key informants. For unsafe abortion, they carry community knowledge of what goes on and could be good community counselors.

2.2.2 Documented roles of social networks in women's decision making for abortion

According to a study by Colman (2009), minors nearing the age of 18 years delayed their abortions till they crossed over to adulthood in order not to involve their parents in decision making for abortion which is a legal requirement in Texas where the study was done. The law in Texas requires parents to give consent for the minor to have abortion. The study suggests that minors would rather not involve their parents in decision making to have abortion.

In another study done in the Netherlands (Loeber, 2008), it was found that the commonest reason why women decided to have abortion was because of relationship problems. An uncooperative man pushed the woman into opting for abortion. The study suggests that if

close social contacts (spouse, boyfriend) are not pleased with the pregnancy or the relationship a decision for abortion may be made.

One study in England and Wales confirmed this. Done in 2005 and involving 883 women with second trimester abortions, one of the main reasons for finally opting to have abortion after too much delay in decision making was because of the man's refusal to cooperate with the pregnant woman (Ingham, 2008). Either the relationship broke up when the woman reported that she was pregnant; the man refused to provide support to the woman if she opted to carry on with pregnancy; or the man simply changed his mind about having a baby.

In South Africa it was found that women in the process of making a decision to have abortion avoided discussions with the partner and instead talked to their women friends and their mothers whom they perceived to be more understanding and supportive (Harries, 2007). The man was kept in the dark in such circumstances and neither got to know about the pregnancy nor the abortion. The man was especially avoided in such circumstances if he was known to be looking for a baby.

Medical workers have also been found to be important contacts in decision making for abortion. Kumar *et al* (2004) found that women intending to do abortion sometimes went to health workers for reassurance. The counseling done at health facility level, however, did not make women already decided on having abortion change their minds. Contact with health workers as part of the decision making process therefore seemed to be aimed at getting more information on abortion (Kumar, 2004).

2.3 How Methods Used to Procure Unsafe Abortions Influence Outcomes

There are two aspects to unsafe abortion: skill of the provider and the environment of service provision including equipment and hygiene of the place (WHO, 2006). One or both of these two aspects are found to be inadequate for the abortion to be defined as unsafe. As such, there are two aspects to the outcome of unsafe abortion – skill of the person providing it and the environment of service provision (WHO, 2006).

2.3.1 Recommended skills for abortion provision

According to the *Choice on Termination of Pregnancy Amendment Act*, of the Republic of South Africa (2004), a medical practitioner or a midwife who has undergone training on termination of pregnancy is qualified to provide abortion services. A study carried out by Dickson-Tetteh (2000) in twenty seven health facilities in South Africa to evaluate provision of abortion services by midwives following the implementation of the Act concluded that midwives could provide quality abortion services in the absence of physicians.

The Royal College of Obstetricians and Gynaecologists (2006), however, specifies the role of nurses and midwives as limited to provision of medication prescribed by a doctor in abortion care and assisting the doctor in doing abortion surgical procedures. Nurses and midwives are therefore not allowed by this guideline to perform abortions.

According to WHO (2008), most developed countries still require that gynaecologists carry out abortions, yet this is not necessary, particularly for abortions performed under 14 weeks of pregnancy, given that the skills needed have been greatly simplified and that the rate of

complications is low. As such, WHO recommends that with appropriate training, nurse–midwives or those with comparable training would be the most appropriate abortion providers.

According to Hyman and Castleman (2005), training on abortion should include reproductive rights; community linkages; abortion pain management and medication abortion. It should also include patient assessment, uterine evacuation procedures, management of complications, contraceptive counseling and infection prevention.

The National Abortion Federation, USA, (2007) has developed a curriculum for training physician assistants and nurses on abortion care. The curriculum covers topics on pregnancy verification and estimation; counseling and informed consent; selection of appropriate uterine evacuation procedure; medication abortion; screening for medical conditions, pain management; and treatment of complications. Other topics include post-abortion follow-up and evaluation.

The WHO Technical and Policy Guidance on abortion (2003) has listed topics of importance in abortion care. These are not very different from the other curricula already highlighted and include: exposition on unsafe abortion as a public health problem; all aspects of clinical evaluation for a patient asking for abortion – history, clinical examination, laboratory tests; infection prevention; uterine evacuation methods; and pain management. Other topics covered include: how to set up clinical services; creating an enabling environment for abortion services; and monitoring and evaluating abortion services. Legal and policy considerations, which are country dependent, are also included in the guidance document.

In Kenya, until the new constitution came to being on 27th of August 2010, termination of pregnancy was allowed to save the life of the mother (Ogutu, 2001). The new constitution allows abortion in cases of emergency, to save life and to protect health of the woman or as may be allowed by any other law. The Kenya Medical Practitioners and Dentists Board, under the old constitution, stipulated that abortions could only be done by a medical practitioner after consultation with two senior colleagues. The current constitution requires a single trained health professional to take the decision. The Ministry of Health will be developing further guidelines on provision of abortion services based on the new constitution.

In summary, the current legal dispensation on abortion allows trained health professionals - nurses, midwives or other mid-level professionals as well as doctors to provide abortion. In addition to these basic professional qualifications, they need to have undergone a specific training in abortion care. Many curricular exist for training in abortion but the Ministry of Health is yet to come up with a Kenyan specific curriculum. Appendix 3 summarizes the competencies recommended by WHO for provision of (Reproductive Health Access Project, 2012)

2.3.2 Methods and outcomes of various unsafe abortion providers

Unsafe abortion is carried out by people of varying backgrounds and skills. In one study done in South Africa, Jewkes (2005) found that two-thirds of women with incomplete abortion seeking care in public hospitals had self-induced or had consulted a traditional healer for pregnancy termination. According to most of these women, self induction of abortion was a

‘natural’ response to a health problem (unwanted pregnancy). The rest of the women had received treatment from a doctor, nurse, or pharmacist. These service providers administered Misoprostol, a drug that causes abortion, without following the recommended protocols and patient follow up.

In a study done in Western and Nyanza provinces of Kenya, Rogo, (1999) found providers of abortion to include the pregnant women themselves, community based distributors (CBD), traditional birth attendants (TBAs), community health workers, herbalists, pharmacists, nurses, clinical officers and physicians. The study did not, however, classify the providers into safe or unsafe providers.

In another study done in Kaduna State, Nigeria, Adebisi (2006) found that 5.4% of women presenting with pelvic abscess after unsafe abortion had received abortion care from traditional healers. Another 32% had received care from pharmacy attendants. The rest had been treated by staff in clinics and hospitals with little or no knowledge of medicine (Adebisi, 2006).

Sing (2005) has found almost a similar list of unsafe abortion providers in Uganda. In a study to determine the incidence of induced abortions in Uganda, he found that women with complications had procedures carried out by trained providers who had little experience. In addition, a substantial proportion of abortions leading to complications had been carried out by informal and untrained providers, mainly traditional healers, lay practitioners, pharmacy workers or the women themselves.

Studies have shown that self-induced abortions pose the greatest risk of complications (Abortion Tips.Com, 2008). Methods used by women, who in most cases lack any knowledge of how to terminate a pregnancy, include physical exertion designed to bring about a miscarriage; abdominal massage; receiving blows to the abdominal area which can be self inflicted or at the hands of another person (Abortion Tips.Com, 2008).

Other methods of self induced abortions include attempted removal of the fetus with a coat-hanger or similar devices inserted into the uterus through the vagina; attempted piercing of the fetus with a knitting needle or similar device inserted into the uterus through the vagina and ingesting perceived abortifacients such as high quantities of vitamin C, or other substances believed to induce miscarriage (Abortion Tips.Com, 2008). Douching with substances believed to induce miscarriage is also frequently practiced. These observations show that most women who self induce abortions have very little or no knowledge and skill of terminating a pregnancy.

An observation made by Education for Choice, an NGO that sensitizes women on abortion issues, is that some people resort to inflicting physical abuse including falling down the stairs, blows to the belly, jumping from heights, etc when they cannot find any other way in which to end an unwanted pregnancy. This, the organization says, is extremely risky for the woman and is often not effective in ending the pregnancy.

Another group of abortion providers whose work leads to severe complications is the traditional practitioners (Benson 2008). In one study done in Bangladesh, traditional practitioners were found to insert tubers and other foreign objects into the uterus (Ahmed, 1998). It was concluded that the work of some traditional practitioners in abortion care could

lead to life threatening complications. The skills of some traditional abortion providers may therefore be in doubt.

Another group that has been associated with unsafe abortion is traditional birth attendants (Cardelina, 1999). According to WHO (2004), traditional birth attendants, irrespective of whatever training they may have undergone, are not categorized as skilled health workers. Their involvement in termination of pregnancy therefore automatically falls under the category of unsafe abortions.

In summary, unsafe abortion providers can be categorized into medical workers with little experience on abortion; pharmacy staff; workers in health institutions with no medical training; traditional birth attendants; traditional healers; and the pregnant women themselves. These providers use a variety of methods which lead to various complications.

2.3.3 Recommended infrastructure, equipment and sanitary standards for abortion services

Infrastructure and Equipment

Other than inadequate skills, abortions become unsafe because they have been performed in environments with inadequate infrastructure, equipment, supplies and sanitary standards WHO (2003).

The recommended infrastructure for clinics providing abortion services appears in many statutes that regulate this service. According to the regulations of Florida State, USA (2008), the infrastructure for clinics providing first trimester abortions is different from those providing second trimester services.

Regulations of the City of Modesto, USA, explain infrastructural requirements for first trimester abortions. A clinic providing abortion, according to these regulations, should have basic requirements for any medical clinic. In addition, such a clinic should have a post-procedure recovery room with a bed and curtains to ensure privacy, each bed space being 60 square feet. Pre-procedure and post-procedure counseling rooms both of which should be at least 60 sq feet are also necessary. There should also be a room for patients to keep their clothing (City of Modesto, 2008).

The regulations of South Carolina State (2008) expound further on these requirements to include resuscitation equipment, emergency drugs, clock with a sweep second hand, sterile suturing equipment and supplies, adjustable examination light, containers for soiled linen and materials with lids, refrigerators and equipment for administering general anesthesia if called for. Also required is a bed/recliner for recovery, oxygen with flow meters and oxygen administration masks as well as mechanical suction.

Clinics performing second trimester abortions have more requirements. According to Florida State regulations, these include consultation room(s) with adequate private space specifically designated for interviewing, counseling, and medical evaluations; dressing rooms designated for staff and patients; handwashing station(s) equipped with a mixing valve and wrist blades and located in each patient exam/procedure room or area; and private procedure room(s) with adequate light and ventilation for abortion procedures.

Other requirements include post procedure recovery room(s) equipped to meet the patient's needs; emergency exits wide enough to accommodate a standard stretcher or gurney; cleaning

and sterilizing area(s) adequate for the cleaning and sterilizing of instruments; adequate and secure storage area(s) for the storage of medical records and necessary equipment and supplies; and at least one general use toilet room equipped with a hand washing station.

The statutes seem to be at great variance with WHO recommendations. With the advent of manual vacuum aspiration (MVA), first trimester abortions are classified as outpatient procedures by WHO (WHO, 2003). Further, second trimester abortions, if performed by dilatation and evacuation which is the WHO recommended method, is an outpatient procedure with no need for general anaesthesia. The requirements for providing both first and second trimester abortions include MVA instruments, pain medication, local anaesthetics and anti-anxiety drugs. The required instruments are the simple instruments used in pelvic examination of patients – speculum, tenaculum, sponge forceps, and cervical dilators. Equipment for providing intravenous fluids are also recommended.

According to WHO (2003), some laboratory tests may be desirable but none is mandatory for a woman asking for abortion. Ultrasound scanning is not necessary unless ectopic pregnancy is suspected. General anaesthesia is not recommended. In fact WHO views some of the highly technical recommendations found in various statutes as barriers to women accessing services (WHO, 2007).

Sanitary Standards

All the statutes prescribe strict sanitary standards for abortion clinics. The Choice on termination of Pregnancy Act of South Africa (National Progressive Primary Health Care Network, 1997) states that such a clinic must have sterilizing equipment of appropriate type

and of adequate capacity to properly sterilize instruments and materials. The sterilizing equipment should have approved control and safety features

According to Arizona State Legislature (2007), an abortion clinic must have a designated area for pre-procedure hand washing. It is also mandatory for such a clinic to have appropriate lavatory areas. The clinic should have areas for cleaning and sterilizing instruments.

An example of laws on environmental sanitation for abortion clinics is provided by laws of Kentucky (2008). According to these regulations, sharp wastes, including needles, scalpels, razors, or other sharp instruments used for patient care procedures, shall be segregated from other wastes and placed in puncture resistant containers immediately after use. Needles should not be purposely bent or broken, or otherwise manipulated by hand as a means of disposal. The containers of sharp wastes shall either be incinerated on or off site, or be rendered nonhazardous.

On disposable wastes, the Kentucky laws stipulate that they shall be placed in suitable bags or closed containers so as to prevent leakage or spillage, and shall be handled, stored, and disposed of in such a way as to minimize direct exposure of personnel to waste materials. The abortion facility shall establish specific written policies regarding handling and disposal of all wastes. Pathological waste, such as tissues, organs, body parts, and bodily fluids, shall be incinerated.

The following wastes, according to the law of Kentucky State, shall be disposed of by incineration, or be autoclaved before disposal, or be carefully poured down a drain connected to sanitary sewer: blood, blood specimens, used blood tubes, or blood products.

Instruments that come in touch with patients raw tissues are at the greatest risk of transmitting pelvic infection. Proper processing of these instruments is therefore key to safety of abortion. The National Abortion Federation (2004) has developed a guide on how to process these instruments for safety, starting with disassembling the instruments, soaking them in chlorine, washing with soap, rinsing with clean water, drying them and finally autoclaving or using chemicals to sterilize or high level disinfect them.

According to WHO (2003), the basic requirements for clinics providing abortions include water-based antiseptics, detergent soap, clean water, chlorine or glutaraldehyde for decontamination/disinfection and a high-level disinfectant or sterilization agent.

It is recommended that all medical workers strictly adhere to universal precautions as a way of protecting themselves and their patients during abortion procedures (WHO, 2003). Medical workers should wash their hands thoroughly before coming into contact with patients. Barriers such as gloves, goggles, gowns and boots should be used if contact with patient's body fluids is expected. Clinic walls, floors, beds, toilets and linen and disinfected. Safe disposal of contaminated wastes by incineration or burying is recommended.

On handling of sharps (needles, blades), the recommendation is that recapping, bending or other forms of manipulation be avoided. Instead the sharps should be disposed of in puncture proof containers and incinerated.

The WHO (2003) recommendations on processing of equipment for abortion care are quite similar to that of National Abortion Federation (2004). The instruments should be

decontaminated immediately after use ideally by washing with soap and water. This is then followed by drying and high level disinfection or sterilization.

From the foregoing, there is no doubt that strict aseptic conditions are recommended in abortion related care. This ranges from hand washing, use of protective barriers, safe disposal of wastes and appropriate processing of equipment. Clinics providing abortion should have infrastructure, equipment and supplies that support the recommended sanitary conditions.

2.3.4 Methods used and outcomes of unsafe abortions in various environments

More is known today about the epidemiology of safely induced abortion in countries where the service is legal than any other operation (Grimes, 2003). In contrast, huge gaps persist in the understanding of the incidence, conditions under which care is given, morbidity and mortality of unsafe abortion especially in countries with laws that restrict abortion such as Kenya. Because of stigma or fear of legal reprisals, unsafe abortions are grossly under-reported and under-studied and the complications thereafter are often concealed or attributed to spontaneous miscarriage (Grimes, 2003).

Morbidity and mortality from unsafe abortions, however, vary according to conditions under which the abortion is performed in addition to other factors such as the procedure adopted, the skill of the person performing it, the stage of gestation, and health and parity of the woman (Kapilashrami, 2007). These variables explain why mortality ratio due to unsafe abortions ranges from 1 to 3.5 per 100,000 abortions in the developed countries. In India, the mortality is reported to be 7.8 per 1000 random abortions. These ratios could be higher in parts of Africa where unsafe abortions are performed in severely unhygienic conditions (Kapilashrami, 2007).

Unsafe abortions happen inside as well as outside of health facilities (Grimes, 2003). In health facilities, abortion providers vary widely in quality of their service provision. Even where abortion is legal and supposed to be safe, providers may be limited in skill. Many clinicians have little training in induced abortion. Experience with spontaneous abortion, where the cervix is often dilated, is common but that with induced abortion is limited. It is known that many clinicians continue to use obsolete instruments, such as the metal curette. Others insist on general anaesthesia for abortion care (Grimes, 2003).

The little that is known of the conditions under which unsafe abortions are performed outside of the health facilities show that the conditions do not respect any standards recommended in various statutes or by WHO. In a study to understand causes of gangrene of the uterus following unsafe abortion, Agarwal (2007) describe deplorable conditions under which unsafe abortions were performed. In one case a patient had infection following placement of a wooden “abortion stick” in the cervical canal to induce termination of pregnancy. The abortion stick may have been a wooden or bamboo twig, or a piece of an irritant plant such as *madar* (*Calotropis*) or *chitra* (*Plumbago zeylanica*). These sticks are soaked in an irritant solution (eg, marking nut juice; paste from white arsenic, lead, or asafoetida), or may act by themselves as abortifacients.

According to the Alan Guttmacher Institute (1999), women who want to terminate a pregnancy in countries with restricted law and poor access to services start with a homemade or locally purchased remedy. The home therefore seems to be a main location for unsafe abortion. Women then follow this up with visits to health facilities and chemists as complications set in.

A study by the Ministry of Health and its partners in Nepal (Ministry of Health, Nepal, 1999) show that providers of unsafe abortion like inserting foreign bodies into the cervix. A nurse working in a health post was found to insert a catheter in the cervix for days; a traditional birth attendant inserted a stick coated with unknown medicine; and a village provider inserted a tube full of herbal medicine. All the patients ended up with severe complications.

Sing (2005) has described how unsafe abortions are performed in Uganda. In health facilities, physicians were found to favor dilation and curettage over vacuum aspiration and medical abortion which are recommended by the WHO. Most informal providers in urban areas were thought to use hormonal drugs or rubber catheters, and many providers in rural areas, as well as women who induce their own abortions, were found to use herbs and sharp objects such as sticks and hangers.

In summary, little is known about the conditions under which unsafe abortions are performed. The available literature however classifies these into conditions inside of health facilities and those outside. In both cases, the conditions go against those recommended in various statutes as well as by WHO.

Summary of Literature Review

From this review of literature, motivations to provide safe abortions are well documented. This is however not the case with motivations to provide unsafe abortions as literature is grossly lacking in this area.

Social networks may play a role in influencing the woman's choice to have unsafe abortion. This is supported by theories of health seeking behavior and real life examples from research.

Literature also shows that only trained health professionals are allowed to provide abortion in Kenya. This only came into being with enactment of a new constitution. Earlier on only doctors could provide the service even though WHO recommendation has always been that nurses, midwives and other mid-level providers be allowed to provide the service. In addition to the basic professional qualifications, abortion providers need to have undergone a specific training in abortion care. Many curricular exist for such training.

Unsafe abortion providers can be medical workers (doctors, nurses, etc); pharmacy staff; workers in health institutions with no medical training; traditional birth attendants; traditional healers; and the pregnant women themselves.

As far as conditions under which unsafe abortions are performed is concerned, very little is found in literature. The available information however classifies these into conditions inside or outside of health facilities. In both cases, the conditions go against those recommended in various statutes as well as by the WHO.

CHAPTER 3: MATERIALS AND METHODS

3.1 Introduction

This chapter details the methodological approaches used in the study. Given the sensitivity of the topic, a mixture of approaches was used. Information was also solicited from a variety of audiences. The next sub-sections describe the details of the methodologies used.

3.2 Research Design and Data Collection Methods

The following designs were used:

- i) Cross-sectional survey - women presenting with complications of unsafe abortion in health facilities were interviewed.
- ii) Case studies – women with typical signs and symptoms of unsafe abortion and/or confessing have had the procedure underwent case studies.
- iii) Rashomon technique – this methodology involves investigations into tragic incidences. Through snowballing, people having knowledge of the incident are interviewed. By analyzing perspectives of all interviewees, the truth about the incident is arrived at. The technique was used to investigate maternal deaths arising from unsafe abortion.
- iv) Key informant interviews with community health workers, pharmacy workers, clinicians, teachers, women leaders and sampled unsafe abortion providers.
- v) Focus group discussions with community health workers from each division.
- vi) Social network analysis – using information from focus group discussions, key informants, case studies and the Rashomon technique, the inter-relationships that lead to and support unsafe abortion were identified. Determined in the analysis were lines

of communication, lines of referral, sources of advice on unsafe abortion, and the flow of gains that maintain the social network that promotes unsafe abortion.

- vii) Baseline assessment of health facility capacity to prevent unsafe unsafe abortion/provide safe abortion

Table 3.1 in the next page shows the sources of data, methods used in data collection, and the data collected:

Table 3.1: Study design and data collection methods

SOURCE OF DATA	STUDY TYPE	METHOD OF COLLECTION	SAMPLE SIZE	EXAMPLE OF DATA COLLECTED (See data collection tool)
Patients with complications of unsafe abortion	Cross sectional survey	Interview	320	Demographic details Clinical findings at admission People talked to about the pregnancy Advice given by those talked to Amount of influence from other people in making decision on unsafe abortion Method of unsafe abortion used Types of complication resulting Details of provider of unsafe abortion Name of provider of unsafe abortion (optional)
Social network influencing woman to have unsafe abortion	Case study of women with complications	Interview with woman, her associates of in the social network, and Rashomon technique for women dying from unsafe abortion	8 women 1 case of death	Flow of information about a woman with unwanted pregnancy Referral system Benefits of participating in the network Demographic details of the provider Professional description of provider Type of RH services they provide How they deal with cases of unwanted pregnancy Description of what follows when a woman chooses abortion If providers accept that they do provide abortion reasons why How they make community aware of abortion services
Community key informants	Key informant interviews	In-depth interviews	25	Demographic details of key informant Professional description of key informant Description of how unwanted pregnancy is dealt with in the community, Description of what follows when a woman chooses abortion Description of providers of abortion in the community, Perception of why people provide abortion, Discussion on how women learn about abortion providers, Cost of the procedure
Unsafe abortion providers	Key informant interviews	In-depth interviews	12	Description of services to the community, magnitude of abortion, abortion methods, outcomes, referral systems, reasons for providing services, reasons for seeking abortion
Focus group discussants	FGD	FGD	4 FGDs	Providers and magnitude of abortion, abortion methods, outcomes, referral systems, reasons for providing services, reasons for seeking abortion
SDP observation/interview of head	Observation/interview	Observation, in-depth interviews	8 health facilities	Clinic infrastructure, equipment, record keeping, contraceptive supplies, youth friendly services.

3.3 Variables

The variables that were studied included the following:

Independent Variable	Dependent Variable
Drivers of unsafe abortion	Unsafe abortion rate
Social networks	Women's decision making processes for unsafe abortion
Methods of unsafe abortion	Outcomes of unsafe abortion

3.4 Location of Study

The study was carried out in Ugenya, Ugunja, Gem and Siaya Districts of Siaya County in the southwestern part of Kenya. At the beginning of the study the district was one – Siaya but midway through it was divided into four. The districts are bordered by Busia Districts to the North, Vihiga and Butere/Mumias Districts to the North-East, and Bondo District to the South. The Districts lie between latitude 0° 26' to 0° 18' north and longitude 33° 58' east and 34° 33' west (Republic of Kenya, 2002). The Districts are divided into seven administrative divisions as shown in table 3.2 below:

Table 3.2: Administrative divisions of ugenya, Ugunja, Gem and Siaya Districts

District	Division	Population	Area (Km²)	Sub- Locations
Siaya	Boro	52,703	180.1	12
	Karemo	88,705	25.1	17
	Uranga	45,835	183.4	13
Ugunja	Ugunja	88,458	198.8	21
Ugenya	Ukwala	113,848	319.5	28
Gem	Wagai	62,313	193.3	18
	Yala	98,362	209.8	19
	<i>Total</i>	<i>550,224</i>	<i>1,520</i>	<i>128</i>

Source: National Census Results (2010)

Figure 3.1 in the next page is the map of the study area:

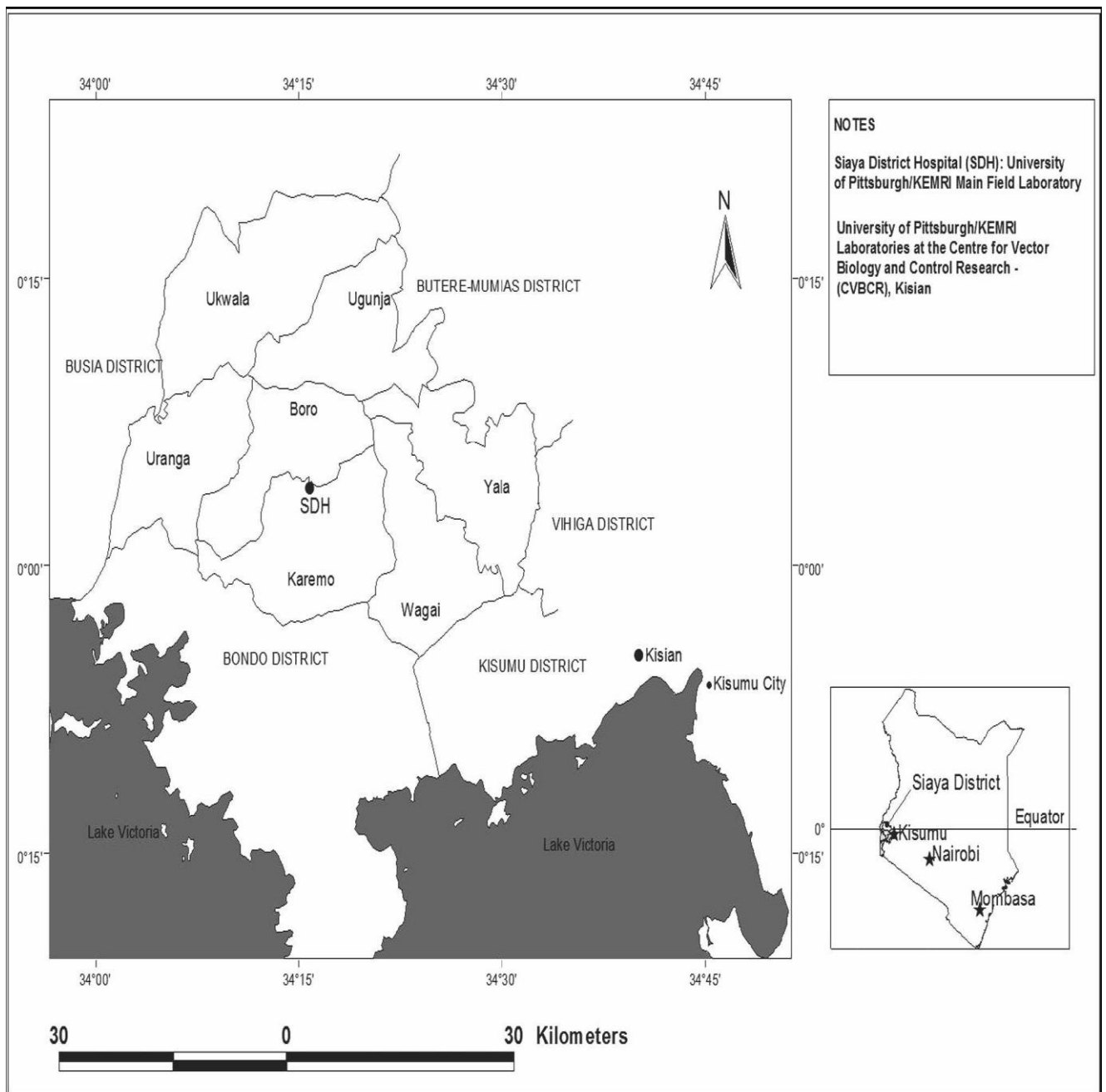


Figure 3.1: Map of Study Area Showing Divisions of Ugenya, Ugunja, Gem and Siaya Districts

3.5 Target Population

International Community for the Relief of Starvation and Suffering (2008) reports the study districts to be exclusively occupied by the Luo community. The population studied came from the catchment areas of the health facilities made up of 221,986 people and distributed as per the table 3.3 below:

Table 3.3: Catchment Population of Study Health Facilities

Division	Health Facilities	Catchment Population
Karemo	Siaya D/H, Paula N/H	76,986
Ugunja	Ambira Sub D/H, Mama Uzima Clinic	50,000
Ukwala	Sega Cottage Hospital	30,000
Yala	Yala Sub D/H	65,000
<i>Total</i>		<i>221,986</i>

3.5.1 Inclusion Criteria

The study had four categories of participants, women with complications of unsafe abortion seeking treatment from sampled health facilities; unsafe abortion providers; key informants and focus group discussants. There were criteria for selecting participants for each category as follows:

i) Women presenting with complications of induced unsafe abortion at any gestational age in the sampled health facilities were included in the study if they fulfilled the following criteria:

- Qualified as having induced rather than spontaneous abortion according to the classification used by Gebreselessie *et al* (2005) shown in table 3.4:

Table 3.4: Likelihood of induced/spontaneous abortion

CLINICAL FINDINGS	DIAGNOSIS	CONCLUSION
Temp $\leq 37.2^{\circ}\text{C}$ And no clinical signs of infection And no system or organ failure And no suspicious findings on evacuation	Unlikely to be induced abortion	Consider as spontaneous abortion unless the history suggests otherwise
Temp $37.3 - 37.9^{\circ}\text{C}$ Or offensive products Or Localized peritonitis	Likely to be induced abortion	Consider as induced abortion unless history suggests otherwise
Temp $\geq 38^{\circ}\text{C}$; Or organ or system failure Or generalized peritonitis Or pulse ≥ 120 beats/min; Or shock Or foreign body or mechanical injury on evacuation	Highly likely to be induced abortion	Treat as induced abortion

Source: Gebreselessie, 2005

Other considerations for induced abortion for inclusion into the study included:

- Poisoning from herbs, other medicines
- Based on reporting/confession by the patient

- Patient accepting to participate in the study after being given information

Unsafe abortion providers were included in the study only if they were mentioned by more than one survivor of unsafe abortion. This guarded against the remote risk of untruths by patients as well as the risk of an unsafe provider associating the research with any specific patient they may have attended to.

Except for one male herbalist, all the unsafe abortion providers identified and interviewed were females. In fact the male herbalist was not from the local community – he was a Maasai selling herbs in a local market. The rest of the unsafe abortion providers identified by women undergoing unsafe abortion were women. It would generally appear that unsafe abortion providers from the Luo community in the two districts are females. The unsafe abortion providers offered a number of health services in the community and abortion was just one of them. The table below summarizes the types of providers who accepted face to face interviews and gave insights into their work:

Table 3.5: Unsafe abortion providers interviewed face to face

Type of Provider	Number Interviewed
Herbalists	4
Community based distributors of contraceptives	5
Community health workers	3
TOTAL	12

Two other unsafe abortion providers refused face to face interviews, only accepting interviews through proxies who were known to them. One was a cook in a boarding school and one was a nurse aid.

Two unsafe abortion providers were mentioned by patients and key informants but denied providing the service. They were a nurse and a pharmacy worker. They were therefore not interviewed.

- ii) Women with typical features of induced unsafe abortion and who confessed that they had undergone the procedure underwent a case study for social network analysis to determine the influence the network had on them.
- iii) Women dying from unsafe abortion in the study sites in the duration of the study were studied using the Rashamon technique.
- iv) Key informant interviewees were selected on the basis of their knowledge, contact and/or relationship with survivors of unsafe abortion. Table 3.6 summarizes the details of the key informant interviewees:

Table 3.6: Key informants interviewed

Title of interviewee	Number interviewed
Medical officer of health	1
Siaya District PAC coordinator	1
Clinical officers	3
Nurses	4
Pharmacy workers	1
Community health workers	3
Community based distributors	2
Secondary school headmasters	2
Secondary school counseling masters	2
Primary school head teachers	2
Cultural leaders	2
Reproductive health NGO workers	2
TOTAL	25

- v) Community health workers from each of the four divisions of study were interviewed in a focus group discussion.

3.5.2 Exclusion criteria

Those excluded from the study were:

- Women with complications of spontaneous abortion – according to classification by Gebreselessie, (2005).
- Those not willing to participate in the study.

3.6 Sampling technique and sample size determination

3.6.1 Sampling technique

Ugenya, Ugunja, Gem and Siaya Districts were purposively sampled for the study because they have some of the highest maternal mortality ratios in Kenya (KDHS, 2003). The Districts were sub-divided into their seven divisions. The urban divisions that host the Districts headquarters (Karemo and Ugunja Divisions) and two rural divisions with the highest numbers of cases of post abortion care (Ukwala and Yala) were purposively sampled. In each urban division sampled, one public and one private health facility with the highest cases of post abortion care participated in the study. In the rural divisions, one facility seeing the highest number of post abortion care cases was sampled. In Yala this was a public health facility (Yala sub-district hospital) and in Ukwala it was a private facility (Sega Cottage hospital). The following table summarizes the health facilities in which the studies were done:

Table 3.7: Distribution of participants across the study health facilities

DISTRICT	HEALTH FACILITY		NUMBER OF PARTICIPANTS
	PUBLIC	PRIVATE	
Ukwala		Sega Cottage Hospital	79
Siaya	Siaya D/H		44
		Paula N/H	54
Ugunja	Ambira H/C		25
		Mama Uzima Clinic	23
Yala	Yala Sub-District Hospital		95
Total			320

Because not many patients met the inclusion criteria, all patients meeting the inclusion criteria were purposively sampled into the study.

The unsafe abortion providers were identified by patients, community health workers, key informants and by fellow unsafe abortion providers. This snowballing in identification of unsafe abortion providers was done up to the point of saturation. At the end of it, 16 providers were identified, 12 accepted face to face interviews, two accepted interviews through proxies and two refused to be interviewed.

As for case studies, 8 women with most obvious signs of induced unsafe abortion or those confessing having undergone the procedure were purposively sampled. Two women per division underwent case studies. One woman who died of complications of unsafe abortion in the thirteen months of data collection was studied using the Rashomon technique. Snowballing was used to identify participants for interview during the case study and the Rashomon technique. Social network analysis has been done using results of the case study and the Rashomon technique. The population in the division formed the census population for the network analysis while the divisional boundary marked the network boundary.

Key informants who underwent in-depth interviews were purposively sampled from each division and included those who hold indigenous knowledge in the community, key opinion leaders, those who take care of the girl child's welfare (school teachers), as well as community healthcare providers: community based distributors (CBD), traditional birth attendants (TBAs), community health workers, herbalists, pharmacy workers, nurses and clinical officers.

Four FGDs were done, one per division.

3.6.2 Sample size determination

The sample size for patients interviewed for the cross-sectional survey was calculated using the formula as used by Fisher *et al* (1998) shown below.

$$n = \frac{Z^2 pq D}{d^2}$$

- n = the sample size
- Z = the standard normal deviate (1.96), i.e 95% confidence interval
- P = Proportion of the target population estimated to have a particular characteristics i.e. those who have had unsafe abortion (not known in this case).
- q = 1-p
- d = degree of accuracy = 0.05 D = design effect. = 2 (urban vs rural divisions)

Therefore:

$$n = \frac{(1.96^2 \times 0.5 \times 0.5 \times 2)}{0.05^2} = 768.32 \text{ rounded off to } 770$$

Because the population of women admitted to hospital after unsafe abortion in a year in the two districts is less than 10,000 (estimated at 20,000 for public health facilities in the 200 districts at the time, hence, averagely 100 women per district; 200 for the two districts), the correction factor for the sample size was used as shown for n_f

$$n_f = \frac{n}{\text{_____}}$$

$$\begin{aligned}
 & 1+n/N \\
 = & 770/1+ (770/200) \\
 = & 159
 \end{aligned}$$

Because private health facilities were included in the study and it is estimated that 50% of SRH services are normally provided by the private health facilities (Kenya Service Provision Assessment Survey, 2004), this figure was doubled to take care of the private facilities included in the study.

Hence, sample size = 318, averaged off to 320.

As part of the cross-sectional survey, women identified unsafe abortion providers in the community who terminated their pregnancies. A census was done of providers identified by more than one woman underwent interview.

3.7 Construction of research instruments

Study instruments were constructed for each of the study designs and in response to every objective as follows:

- Cross-sectional survey – variables relevant to each objective were listed. For each variable a set of relevant questions were developed. Possible answers for each question were developed and listed as choices. A logical sequence was then developed for the questions resulting in a questionnaire.
- The rest of the methodologies being qualitative (see section 3.2 above) guide, open ended questions were developed in line with each objective and with each variable to be studied. The questions were then listed a logical sequence forming interview guides.

3.8 Pretest of Tools

Following training for research assistants, each of them was given the questionnaires for testing in the health facilities and in the community. Each had a chance to administer the questionnaires and qualitative research study guides. A review meeting was held with all research assistants for feedback. Further clarifications were made on the questionnaires. A few questions were reworded to bring out the meanings more clearly.

3.9 Data Collection Techniques

Cross-sectional survey data was collected through face to face interviews using structured questionnaires.

Case studies were done through interviews with the service providers who were treating the patient, interviewing the patient, and interviewing contacts of the patient for whom the patient had consented.

Key informant interviews and FGDs were conducted using guide tools. Given the sensitivity of the subject, some key informants, especially unsafe abortion providers preferred not to have the interviews recorded. They however allowed repeat interviews to clarify points that were not clear.

Using a data collection sheet, baseline data on the infrastructure, supplies and services for health facilities under study was collected.

3.10 Data Management and Analysis

Nominal and ordinal variables such as sex of the patient, marital status, and type of provider were coded with easily recognizable symbols, e.g. M for male, F for female, etc. Interval and

ratio scale variables, including age of the patient, age of the provider, and cost of services were coded using numbers. The coded quantitative data were entered in to SPSS.

After entering data into SPSS, it was cleaned up. This involved confirming that right codes had been used for every variable, that all variables were falling within the expected range, and that there were no erroneous outliers. Doubtful figures were counterchecked with original questionnaires and corrected as necessary.

Cross-tabulation was used as a first step in exploring the relationship between variables. This was followed by statistical tests to find out the significance of the relationships. Chi square and t-test have been used to explore most of the relationships.

The magnitude of unsafe abortion has been calculated by adding up cases collected over the 13 months, getting average for 12 months, relating this to the catchment area of the study sites and using a multiplier to calculate to include women who did not go to health facilities following termination of pregnancy in the community.

Abortion case fatality rate has been calculated by dividing the number of deaths resulting from abortion by the cases of the condition. Deaths identified in the health facilities as well as those reported in the community were considered.

Qualitative data has been organized using NVivo software. Data from case studies and Rashomon technique has been used to construct the kite network.

Generally for qualitative data, field notes were read repeatedly; audio recordings (where applicable) were also played repeatedly so as to familiarize with the content and audio content used to update field notes. The data was then organized according to the study objectives.

For each objective, the data was coded into themes and the themes graded from the most common to the least common. Patterns arising from the themes were identified. This qualitative data has been used to enrich the results for each objective. The summary of the analysis has been presented in a narrative form and dominant themes presented verbatim.

3.11 Ethical Considerations

This study was conducted in compliance with the principles of the Declaration of Helsinki (World Medical Assembly, 1983). The protocol was approved by the ethical committee of Kenyatta University and the Ministry of Education according to the requirements of the Declaration that an independent ethical committee approves research involving human subjects.

As per the requirements of the Declaration, inherent risks to the patients were assessed and found to be negligible – patient autonomy and privacy were maintained and any information shared with patients was not divulged to the community or to the police. Because the study targeted unsafe abortion providers that had been identified by more than one patient, it was not possible for the provider to link the source of information to any patient.

The Declaration of Helsinki also requires that consent be obtained from the patient after the patient is informed of all the aspects of the study including risks. This principle was adhered to. Refusal by a patient to participate in the study did not compromise the care given by medical personnel.

Among other requirements, the Declaration demands that studies involving human subjects must carry inherent benefits that outweigh the risks. This study will contribute to program

work aimed at reducing maternal mortality and morbidity resulting from unsafe abortion. It is therefore very much in line with the tone of the Declaration.

Other than the welfare and respect for the patient, the study respected the privacy and autonomy of the unsafe abortion providers, key informants and focus group discussants. The knowledge obtained will not be used for prosecution but for the improvement of program work.

Any indigenous knowledge gained by interacting with the community either through unsafe abortion providers or through key informants has been respected.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 RESULTS

Introduction to the Results

The results are arranged according to the objectives. The first section however gives characteristics of study participants as well as the study sites (health facilities) where participants came from. In addition, the magnitude of unsafe abortion in the study area is discussed in the first section. Results of objectives 1, 2 and 3 are discussed in sections 4.3, 4.4 and 4.5 respectively.

4.1.1 Characteristics of Survivors of Unsafe Abortion

a) Age of patients

Young women were disproportionately affected by unsafe abortion. Out of the 320 patients interviewed, 110 (34.4%) were below the age of 18 years and another 133 (41.6%) between 18 and 24 years. Hence, 76% were between 10 and 24 years old. This is demonstrated in figure 4.1:

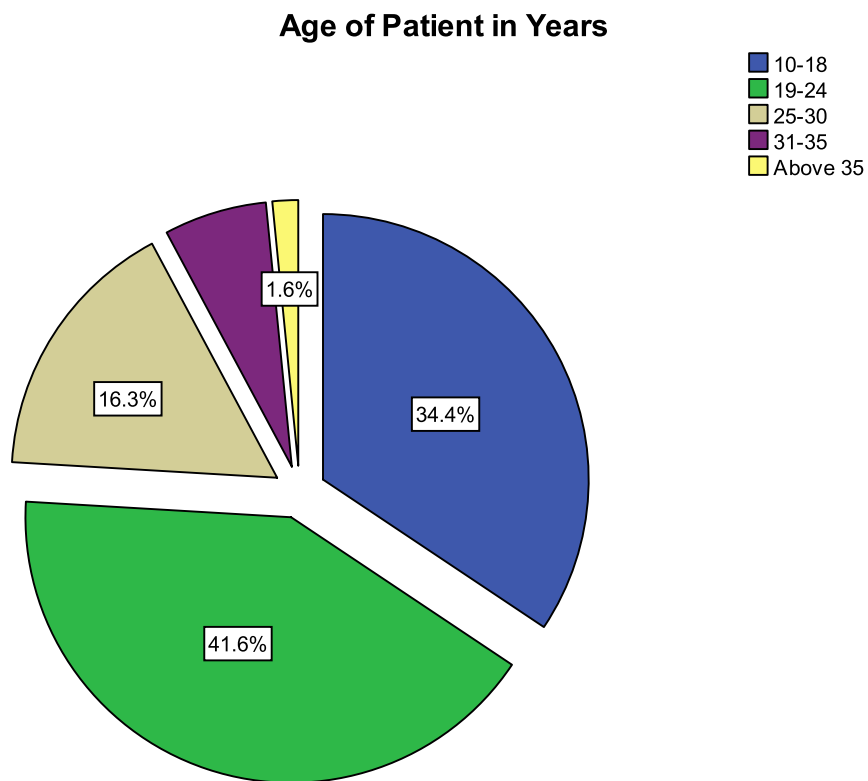


Fig 4.1: Age distribution of women undergoing unsafe abortions

b) Previous pregnancies and live births

The majority of patients (62.2%; N =199) were nulliparous (never been pregnant before). As parity increased, the number of women aborting unsafely tended to reduce so that 17.2%, 8.4%, 9.2%, and 2.5% had 1, 2, 3 and 4 children respectively. Seventeen patients had had a previous miscarriage. Four others had had previous pregnancy terminations and were having repeat termination of pregnancies.

c) Gestation

Over three quarters of the pregnancies being terminated (85%; N = 272) were in the first trimester. Table 4.1 below shows the distribution of gestational ages across the study sites (health facilities):

Table 4.1: Distribution of gestational ages across health facilities

Name of Health Facility	Gestation in Weeks				Total	
	12 and Below		Above 12			
	n	%	n	%	n	%
Yala Sub DH	84	26	11	4	95	30
Paula NH	52	16	2	1	54	17
Uzima clinic	23	7	0	0	23	7
Sega Cot. Hos	56	18	33	7	79	25
Siaya DH	34	11	10	3	44	14
Ambira HC	23	7	2	1	25	8
Total	272	82	58	18	320	100

There was a significant difference in the gestational ages distributions across health facilities ($\chi^2 = 40.19$; $df = 5$; $p < 0.05$). The difference arose from Segga Cottage Hospital where women had more second trimester abortions compared to Yala, Paula and Uzima clinics. Segga borders Busia District and contamination from the district could have been the source of the difference.

d) Clinical findings in women undergoing unsafe abortion at the time of admission

The commonest type of abortion at admission was incomplete abortion (87.5%) followed by septic abortion (8.8%), complete abortion (2.2%) and missed abortion (1.6%).

All patients had vaginal bleeding at the time of admission to hospital. In addition, tenderness both in the supra pubis and adnexia was a common finding at admission. Table 4.2 summarizes the frequency of clinical findings among affected patients:

Table 4.2: Common clinical findings at admission

Symptom	Number of cases	Proportion (%)
Fever	30	16.1
Organ or system failure	1	0.5
Poisoning from herbs/medicine	9	4.8
Tachycardia	17	9.1
Offensive POCs	25	13.4
Suprapubic tenderness	41	22.0
Adnexial tenderness	36	19.4
Foreign body in vagina	8	4.3
Low genital tract injury	15	8.1
Shock	4	2.2
Total	186	100

e) How patients learnt of their pregnancies

Over half of the patients (60%) had pregnancy tests on realizing that they could be pregnant. The rest used pregnancy symptoms to diagnose pregnancy including missing monthly periods and morning sickness.

4.1.2 Women's desire for pregnancy

The majority of women (84.1%) who had unsafe abortions did not desire the pregnancy from the start. Only 2.2% had desired the pregnancy while the rest (13.8%) were not sure as shown in the table 4.3:

Table 4.3: Desire for pregnancy among women aborting unsafely

Desire for pregnancy	Number of women	Proportion (%)
Pregnancy desired	7	2.2
Unsure of desire	44	13.8
Pregnancy not desired	269	84.1
Total	320	100

Hence, it is notable that although unsafe abortion did happen among women who did not desire to be pregnant, it occasionally occurred in those who either desired or were unsure about their desire for pregnancy.

Desire for pregnancy did not depend on the age of the woman ($\chi^2 = 7.26$; $df = 4$; $p = 0.12$) as shown in Table 4.4:

Table 4.4: Desire for pregnancy disaggregated by age

Age of Patient in Years	Pregnancy Desired				Total	
	Yes or Unsure		No			
	n	%	n	%	n	%
10-18	20	6	90	28	110	34
19-24	17	5	116	37	133	42
25-30	6	2	46	14	52	16
31-35	6	2	14	4	20	6
Above 35	2	1	3	1	5	2
Total	51	16	269	84	320	100

4.1.3 Study Sites and their Performance

The distribution of patients between the public and private facilities was almost equal (164 for public and 156 for private facilities). Of the public health facilities, Yala Sub-District hospital had the highest number of cases (95) while among the private Segga Cottage Hospital was leading with 79 cases. Table 4.5 below summarizes these findings:

Table 4.5: Distribution of patients in the health facilities

Name of Health Facility	No. of Patients	Proportion (%)
Yala Sub DH	95	29.7
Segga Cot. Hos	79	24.7
Paula NH	54	16.9
Siaya DH	44	13.8
Ambira HC	25	7.8
Uzima clinic	23	7.2
Total	320	100.0

Monthly distribution of patients

Most unsafe abortions happened in the month of December (12.2% of all cases). It also appeared that the months following school holidays (May and September) had relatively high cases as shown in the figure below.

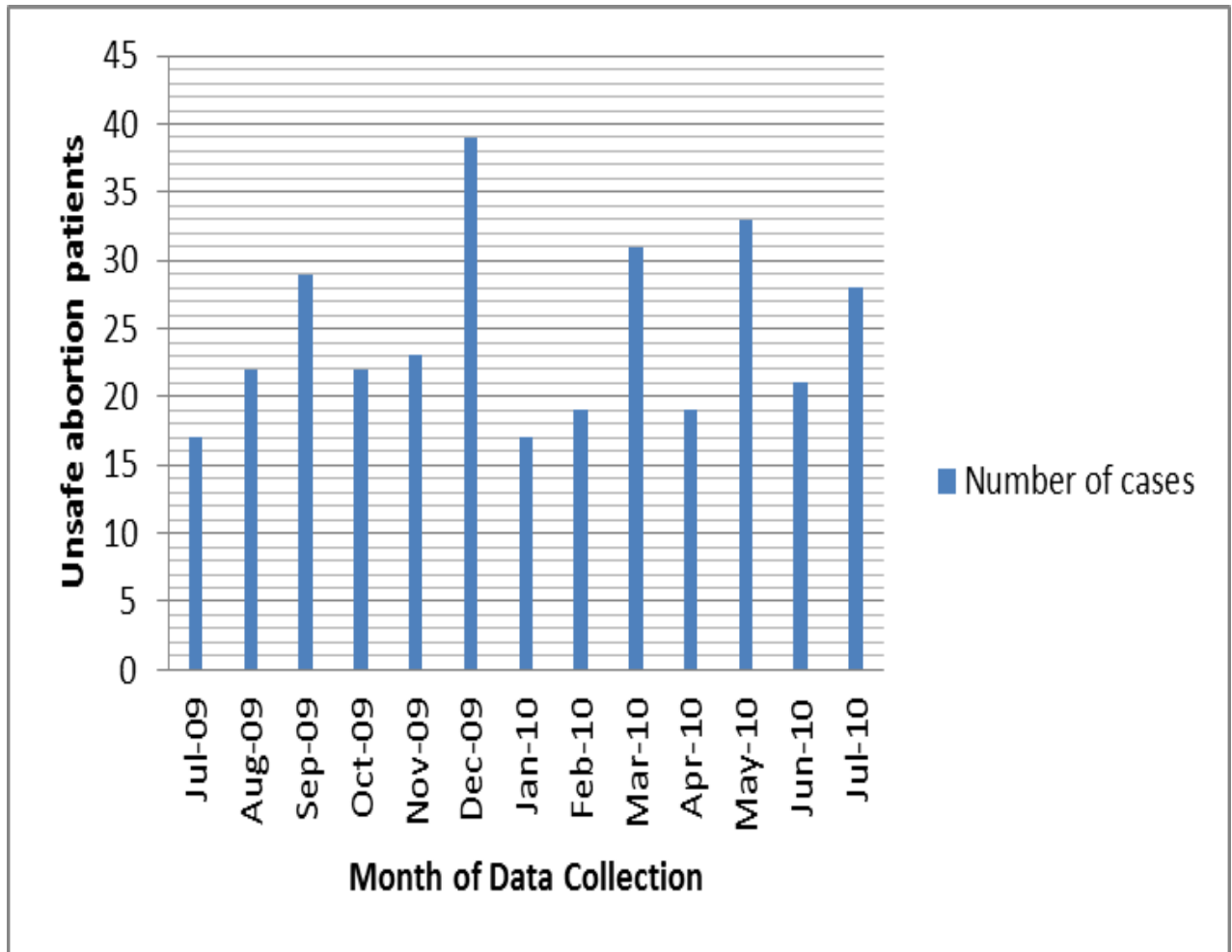


Fig 4.2: Monthly distribution of unsafe abortion cases seen in health facilities

4.1.4 Unsafe Abortion Rate

The average population under study derived from the catchment population of the health facilities under study was 221,986.

The number of women treated in the health facilities due to unsafe abortion in the 13 months of data collection was 320. This is averagely 296 ($320/13 \times 12$) women per year.

Key informants, community health workers and unsafe abortion providers indicated that 30% or less of women having unsafe abortion in the community seek further care in health

facilities. This figure does not differ from the known rate of hospital based deliveries for the area which mirrors the proportion of women who would seek care following abortion (Nangendo (2006); Ouma (2010)). Using this average therefore, the annual total number of women procuring abortions unsafely in the catchment population is calculated as follows:

$$30\% = 296 \text{ women}$$

$$100\% = 100 \times 296/30 = 987 \text{ women}$$

This figure can be used to calculate the unsafe abortion rate in the catchment population. The unsafe abortion rate is the number of unsafely induced abortions per 1000 women aged 15 to 44 years. It is calculated as follows:

Number of abortions $\times 1000 \div$ the female population aged between 15 and 44 years.

According to Kenya Bureau of Statistics (National Census Results, 2010):

Proportion of females in the population in Siaya District = 53%

Proportion of women aged 15 to 44 years = 46% of the female population

Hence, in a population of 221,896 the female population is:

$$221,896 \times 53/100 = 117,605$$

The number of women aged 15 to 44 years is calculated as follows:

$$117,605 \times 46/100 = 54,098$$

The unsafe abortion rate is therefore calculated as follows:

$$987 \quad X \quad 1000/52061 \quad = \quad \mathbf{19 \text{ per } 1000 \text{ women aged } 15 - 44 \text{ years.}}$$

As discussed in section 4.2, this figure is unacceptably high compared to rates in developed countries but falls within what is expected for Kenya.

4.2: Objective 1: Drivers of Unsafe Abortion at Health System and Community Levels

4.2.1 *Health System Drivers of Unsafe Abortion*

The area of study has a total of 34 level 3 and level 4 health facilities and these qualify to provide abortion related services. Only 15 (44%) of these facilities however reported providing at least one post-abortion care service in three months leading to the study. The other facilities did not have the service and referred patients.

- a) Basic infrastructure and equipment for the provision of post-abortion care (PAC) and termination of pregnancy (TOP) services

The health facilities reporting provision of services were further assessed. In order to establish their capacity to offer PAC and TOP to women in need, a standard check list was used. The 15 health facilities were all assessed. The assessment looked at: 1) Existence of a room for doing the manual vacuum aspiration (MVA) procedure with provision for counseling 2) availability of a procedure couch and lamp and functioning MVA equipment; and 3) a register for recording procedures. Overall, none of the sites had everything required for a standard MVA procedure. Statistically there was no significant difference between the public and private health facilities as far as adequacy of infrastructure and equipment was concerned ($\chi^2 = 2.14$; $df = 4$; $p = 0.71$). Table 4.6 summarizes these findings:

Table 4.6: Availability of basic infrastructure and equipment for the provision of PAC and TOP services

SDP TYPE	% WITH MVA ROOM	% WITH PROCEDUR E COUCH	% WITH PROCEDUR E LAMP	% WITH FUNCTIONING MVA EQUIPMENT	% WITH PAC/TOP REGISTER
Public	27	40	13	13	13
Private	7	20	13	20	13
Total	34	60	26	33	26

b) Health Worker's willingness to Provide Safe Abortion

It was found that 110 of the 145 (76%) health workers eligible to provide PAC were willing to provide the service. However only 21 out of the 145 (14.5%) were willing to provide safe abortion. Those willing to provide the service were either at the district or sub-district hospital level or in private health facilities. Incidentally, health centres, which are the most accessible and provide most of the maternal health services, had no service providers willing to provide safe abortion.

Table 4.7: Health worker willingness to provide PAC/safe abortion

SDP TYPE	% OF HEALTH WORKERS WILLING TO PROVIDE PAC SERVICES	% OF HEALTH WORKERS WILLING TO PROVIDE SAFE ABORTION
Public	74	12
Private	2	2
Total	76	14

Out of the 18 service providers in the public health facilities that were willing to provide safe abortion, only 5 indicated that they were competent to provide the services while all the providers in the private sector who were willing to provide also indicated that they were competent as summarized in table 4.8:

Table 4.8: Health worker competence in providing PAC/safe abortion

SDP TYPE	% OF HEALTH WORKERS COMPETENT IN PROVIDING PAC SERVICES	% OF HEALTH WORKERS COMPETENT IN PROVIDING SAFE ABORTION
Public	24	3
Private	2	2
Total	26	5

Importantly to note therefore, only 38 out of 145 (26%) and 5 out of 145 (5.5%) of all eligible health workers could provide PAC and TOP services respectively. There was a difference between the public and private health facilities, the public ones being more affected by lack of competence for this service than the private ($\chi^2 = 5.5$; $df = 1$; $p < 0.05$). This is despite the

fact that private health facilities have profits as their bottom line and not many women in need can access health services through them.

The reasons why health workers were unwilling to provide TOP were mostly to avoid being in conflict with the law and SDP administration. There were also issues around competence, professional image in the community and personal values. These are summarized in table 4.9 below:

Table 4.9: Reasons for unwillingness to provide safe abortion

Reason	Frequency	Proportion %
It is illegal	40	31.6
It is not allowed by administration of this health facility	24	19.0
Am not competent to provide it	20	15.8
It is against my religion	16	12.6
The community around does not expect us to do it	10	8.0
It is killing	10	8.0
It is unprofessional	6	5.0
Total responses	136	100

c) Contribution of clinics to the prevention of unwanted pregnancy

While most unwanted pregnancies and unsafe abortions occurred among young people, none of the public health facilities had youth friendly services. Only one private clinic had made attempts to target the youth with services.

Further, none of the SDPs had all methods of contraception at the time of the study. All SDPs reported irregular contraceptive commodity supplies sometimes making women to drop out of the family planning programs. Table 4.10 summarizes these findings.

Table 4.10: Pregnancy Prevention Services in SDPs

SDP TYPE	% OF SDPs WITH ADOLESCENT/YOUTH FRIENDLY CLINIC	% OF SDPs WITH METHODS OF CONTRACEPTION		
		All methods	Some methods	No method
Public	0	0	80	0
Private	2	0	20	0
Total	2	0	100	0

None of the clinics had a community component of the family planning and unwanted pregnancy prevention program – funding for this was reported to have been stopped some time back.

Health system drivers for unsafe abortion can therefore be summarized as inadequate infrastructure and supplies for performing safe abortions, inadequate health workers who are willing and competent to provide safe abortion services, and inadequate preventive strategies for unwanted pregnancies within health facilities as shown in table 4.11 below:

Table 4.11: Summary of health system drivers of unsafe abortion

INDICATOR	LEVEL
No. of level 3 and 4 health facilities in the study area	34
Level 3 and 4 health facilities providing PAC at least once in 3 months	15
PAC providing facilities with adequate infrastructure, equipment and supplies	0
Health workers eligible to provide abortion services	145
No. of eligible health workers competent to provide safe abortion services	5
Facilities with stable contraceptive services	0
Facilities with youth friendly SRH services	1

4.2.2 Community Drivers of unsafe abortion

a) Personal level drivers of unsafe abortion

Women gave varying reasons to account for their actions. Table 4.12 summarizes the reasons:

Table 4.12: Main reasons given by women for aborting unsafely

Reason	Frequency	Proportion (%)
Still in school/college	82	25.7
Single, hoping to marry in future	61	19.1
Man who caused pregnancy has a wife	53	16.5
Man causing pregnancy needs protection from embarrassment	38	11.8
Parents will not tolerate the pregnancy	24	7.4
Too young to be a parent	22	6.8
Relationship problems	17	5.2
Single and having other child/children	12	3.8
Others (widowhood, marital problems, having a young baby, religion, infidelity)	12	3.8
Total	320	100

Being in school or college was the reason most frequently mentioned by women (25.7%).

According to key informants, peer pressure as well as lack of basic needs make school girls engage in sex which results in pregnancy as noted by a community health worker below:

“Most girls lack money for lunch while at school. Some have no money to buy pads. Yet they want to be like their richer classmates. They easily give in to men’s demands for sex when

promised money. It is a big problem because most of our people are poor.” Source: CHW key informant, Siaya town

Poverty therefore seems to be an underlying driver of unwanted pregnancy and unsafe abortion in this community. According to teachers interviewed, parents contributed to the problem by either tolerating or even encouraging their daughters to engage in relationships. For some poor parents, this was said to be an avenue for earning a living as the men gave them money.

“Parents know when their children are having affairs with teachers or other men but do nothing about it. Some actually encourage their daughters to continue. They see this as a way of the girl getting a responsible man to marry and supporting the family.” Source: counseling teacher, Yala

When pregnancy results from these relationships, the girl is under pressure to abort because there are no social systems of support for her. Further, they do not have economic means to continue with pregnancy, delivery and baby care. This fact was stressed by unsafe abortion providers:

“When a woman or a girl has unwanted pregnancy, she stops thinking about anything else except her future and the future of the child to be born. When they realize that social support will not be forthcoming and they have no economic means to carry on with pregnancy they decide to abort. Once they have decided you cannot stop them. It is a matter of life and death for them. They would rather die than have the pregnancy. They can do anything. You just have to help them abort. Unwanted pregnancy is very stressful.” Source: TBA unsafe provider of abortion.

The face of poverty as a driver of unsafe abortion is therefore multipronged, making girls give in to sex for basic needs, making parents tolerate this behavior for material gain and making a pregnant girl with a bleak future resort to whatever means to terminate the pregnancy.

Most of the girls are single but end up having sex with married men because they are the ones with money. This however compounds the problem as the man will want to protect himself from embarrassment and will not want to be associated with pregnancy.

Key informants indicated that in some instances, parents are too harsh and unapproachable when pregnancy occurs. Fathers were said to be especially bad. At least two fathers were reported to have involved the police in the course of the study when they discovered that their daughters were aborting. In one case the girl ran away from home while still sick and ended up dying. In cases where the mother of the child got to know about the pregnancy in good time she helped the girl to abort without the knowledge of the man. Other than poverty, therefore, lack of coping mechanisms between parents and their daughters is a driver of unsafe abortion.

Culture was also found to be a driver for unsafe abortion, for example conceiving while still breastfeeding was not culturally acceptable in this community. The cultural belief behind this was that if a pregnant woman breastfed, the baby was likely to die. Culturally such women had to stop breastfeeding to continue with pregnancy or have abortion to continue with breastfeeding, especially if the baby was too young. Options for abortion in this community being rare, women ended up aborting unsafely.

Another cultural reason for abortion was *goyo dala* or *starting a new home*. At some point a married man was expected to move from his father's home and build his own home. There

was an elaborate culture to follow for this including the man and the first born son spending a night in the site of the proposed homestead, slaughtering a cock the next day when a new structure (temporary house) would be erected, and the man and the wife *opening* the new home.

Opening the new home meant that the man had sex with the wife in the new home for the first time. The woman was not supposed be pregnant at such a time. According to a cultural leader, failure to follow the steps for *goyo dala* was a serious breach of culture and this had caused many men and women to die. In this community serious breaches of culture were believed to result in mysterious deaths. If a woman got pregnant just before *goyo dala*, abortion had to happen or the family had to wait for the delivery to happen then wait for another one year before proceeding. Unsafe abortion providers reported performing abortions on such women, the decisions having been arrived at after family consultations.

“Recently I had a married woman asking for abortion. She was sent to me by her husband. The man was to build a new home. Culture does not allow a new home to be put up when the woman is pregnant. They had no choice but to have the abortion or wait for very long before building the new home. I provided the abortion successfully.” Source: CHW unsafe abortion provider, Siaya.

Widows also faced a cultural challenge when they got pregnant. Culturally widows were supposed to be inherited. Sex would then take place within this *second marriage* setting. With the advent of HIV, more women were opting not to be inherited. According to a cultural leader, this meant that they were not supposed to have sex. It was also reported that wife inheritors were no longer the responsible relatives of the dead man. Because wife inheritance has an aspect of cleansing, a cultural leader from Segla said that sometimes women just

allowed any *mad man* to have sex with them so that they were cleansed. The first sexual activity after the death of the man cleansed the widow of *dirt* associated with death.

Sometimes widows conceived from the cleansing activities. Some also opted not to be inherited but had secret relationships with other men. When pregnancy resulted such widows had no choice but to abort. Sometimes it was the close relatives of the woman who forced her to abort to avoid shaming the family as depicted by one unsafe abortion provider:

“Widows also do abortions. In one case I had, the widow had children supported in primary and secondary schools by one NGO. It is a poor family. She conceived from an affair with a secret boyfriend. When her children discovered this, they told her off and said they would never accept such a thing. She was so embarrassed. She did not have money. I found her waiting at my door with a cock. I took the cock and helped her. She was so relieved to abort.”

Source: CBD unsafe abortion provider, Kogelo.

For most cultural problems requiring abortion, the decision for abortion was made by close relatives of the woman and the woman had to go by the choice of the family.

Relationship problems were also given as a cause for unsafe abortion. Women worried that the pregnancy would complicate the relationship further.

b) Social networks as drivers of unsafe abortion

Over 95% of women consulted with their social contacts before terminating their pregnancies unsafely. A wide variety of people were consulted by the pregnant woman including the man who caused pregnancy, the woman’s mother, sister, and friend among others. In 92% of the time, the woman was advised to terminate the pregnancy. Table 4.13 shows these findings:

Table 4.13: Summary of Advise^x from People the Pregnant Women Undergoing Unsafe Abortion Talked to:

Person talked to	Advice from the person on what to do with the pregnancy				
	Terminate	Keep it	Decide for yourself	Other	Total
Man who caused pregnancy	193	5	13	1	212
Other man friend	1	0	1	0	2
Friend of the same sex	105	0	0	0	105
Sister	30	0	0	0	30
Mother	66	3	0	0	69
Father	2	0	0	0	2
Teacher	0	0	0	0	0
Health worker	30	2	10	0	42
Non health worker provider of abortion	20	0	0	0	20
Other persons	22	1	4	0	27
Total	469	11	28	1	509

X = multiple responses allowed

Women reported that the reasons why their social contacts advised on abortion were quite different from theirs. The interest of the person advising seemed to be contrary to the interests of the woman. They were especially worried about financial responsibility that would follow if the pregnancy was to continue. Further, a number were concerned about their image in the society. Figure 4.3 summarizes reasons why social contacts advised on abortion:

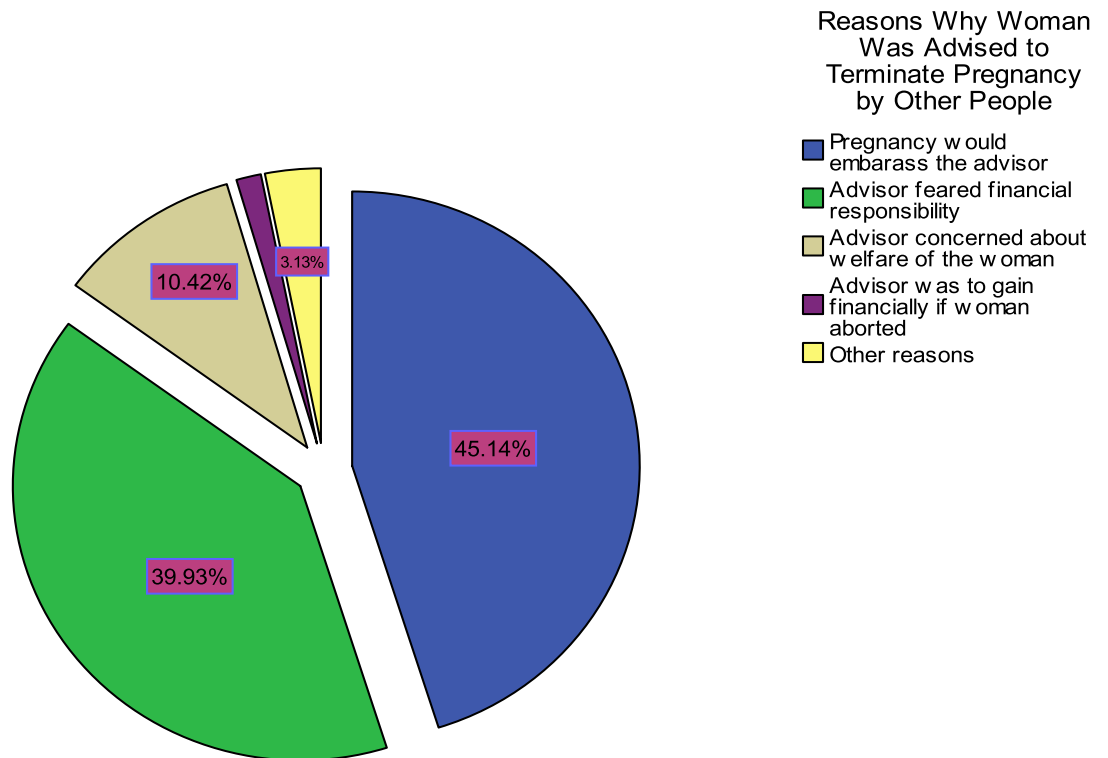


Fig 4.3: Social contacts' reasons for advising on abortion

There was a significant difference among advisors in the distribution of reasons for advising on abortion ($\chi^2 = 96.4$; $df = 20$, $p < 0.05$). The difference arose mainly from whether the advisor had the main reason as avoiding embarrassment or whether it was fear of financial responsibility compared to other reasons. These findings are summarized in table 4.14:

Table 4.14: Reasons why social network advised woman to abort

Person Who Influenced the Woman Most to Terminate Pregnancy	Reasons why advisor told woman to abort				Total
	Pregnancy would embarrass the advisor	Advisor feared financial responsibility	Advisor concerned about welfare of the woman	Other reasons	
Man who caused pregnancy	92	77	15	3	187
Sister	2	13	5	6	26
Father	13	10	1	0	24
Mother	6	1	1	1	9
Non-medical provider of abortion	3	2	3	0	8
Others	6	5	2	3	16
Total	123	108	28	13	270

Other than advising women to abort, the social network of the woman responded to the actions of the unsafe abortion providers with respect and appreciation. The providers were seen as helping the community solve a problem. The unsafe abortion providers knew this and chose to continue providing the service in response.

“They (the community) call me doctor. They salute me with a lot of respect whenever I meet them in the paths or in the market. This appreciation makes me feel that my work is valuable to our people and I must continue.” Source: CHW provider of unsafe abortion, South Alego

The CHWs and CBDs especially valued the respect that came with providing the service. They compared their reputation in the community before and after they started the services and really appreciate the new found status:

“Even people who used to despise me now respect me. This thing (provision of abortion services) has given me value. I should say it is the best thing that has happened to me.”

Source: CBD provider of unsafe abortion

The behavior of the woman’s social networks not only led women with unwanted pregnancy to abort unsafely but also encouraged the unsafe abortion providers to carry on with their activities.

c) Unsafe abortion providers as drivers of unsafe abortions

Table 4.15 summarizes the prevalent themes for providing unsafe abortion as brought out by the unsafe abortion providers:

Table 4.15: Reasons for providing unsafe abortion

Type of Provider	Reasons for Providing Abortion
All providers	Responding to demand in the community
	Identifying with women’s problems
	Personal satisfaction
	Material gain – cash, gifts
Providers other than herbalists	God understands that abortion is necessary
Herbalists	Perpetuating an inherited family art

Unsafe abortion providers reported that there was demand for abortion services in the community and that what they were doing was to respond to the demand. They saw it as a duty that nobody else could perform if they did not.

“Termination of pregnancy has always been there. Women in the village always come requesting. If I don’t assist them I will have failed in my role.” Source: Herbalist Segá.

The unsafe abortion providers also understood and chose to identify with women’s problems. There was shared belief between the providers and the women that some pregnancies needed to be terminated. This mutual understanding of community problems made it easier for the woman to approach the provider and for the abortion to be performed. One community health worker had the following to say:

“Some of these women are very poor. They have malnourished children. Some school girls who conceive do not even have parents. They are orphans and they stay with their grandmothers. It would be too bad if they had to deliver another baby. I understand the problem and it is important for me to help.” Source: CHW provider of unsafe abortion, South Alego.

The providers indicated that even God understood the problems of the women. They seemed to have a struggle with their religious beliefs but justified that God was on their side.

“We say that even if God will punish us, we have helped someone and we hope He understands.” Source: CBD provider of unsafe abortion

This belief that God understands was also shared in the community. According to the unsafe abortion providers and key informants, religious people in the community help needy women to abort. Community members, irrespective of their religious affiliation, sometimes saw need for abortion and this gave the unsafe abortion providers comfort and reinforced the belief that God understands. One unsafe provider had the following example:

“The student did not have money. She however has an uncle who is an engineer but also a staunch Catholic. She decided to call the uncle and ask for help. I really feared. I thought I would be reported to the police. The uncle requested to talk to me on phone, I was so worried but I gathered courage and talked to him. To my amazement, he pleaded with me to do it (the abortion) but keep it a secret. He sent me money by M-PESA. A few days later he visited me to thank me. He said he has helped many girls to go back to school. On the issue of his faith, he said many Catholics do the same.” Source: CHW provider of unsafe abortion, Karapul.

Herbalists said that they inherited the art of performing abortions from their parents or grandparents and for them the more important thing was to carry forward the family practice. It was an honor to be the one chosen in the family to inherit the practice of herbal treatment. In fact the most responsible and trusted child was the one chosen. There was divine connection between such a child, the elder passing over the practice, the ancestors and the gods. It was therefore important for the herbalist not only to practice the art but to identify and mentor a chosen heir through apprenticeship.

“I inherited the art of treatment from my mother who used to provide similar services. My mother also inherited the art from my grandmother. The art therefore runs in the family. I will also pass it on to the child in the family whom I like and trust. I have identified one of my granddaughters to whom I will pass the art. I intend to work closely with her till she is competent.” Source: herbalist unsafe provider of abortion, Sega.

Because they believed that they are responding to a need in the community and that God (and ancestors) was on their side, unsafe abortion providers derived satisfaction in providing the service. They had no feelings of guilt and even when complications happened, they saw it as part of treatment and God’s plan and not their mistake.

In terms of financial gain, every woman treated paid something but there was no fixed price. Some paid chicken, some 500 shillings while others paid 1000 shillings. Sometimes they paid little money and followed up with a bigger gift after the procedure was completed. CBDs and CHWs bought medicine for the procedure and indicated that their clients had to pay at least 500 shillings:

“The women I treat must have at least 500 shillings for buying the medicine. I get the medicine at 300 shillings and I pay for transport to go and buy the medicine. Those who can afford always offer to pay more. I don’t force them. Some have paid as much as 1000 shillings. In addition some just bring me a gift after the procedure is completed.....the gift can be sugar, sometimes chicken or even a dress.” Source: CHW provider of unsafe abortion, Karapul.

Overall, unsafe abortion providers had other sources of income. They treated other diseases and were involved in farming or in business. Some were attached to NGOs and helped with community programs such as distribution of contraceptives. Abortion did not seem to be their main or only source of income. The social benefits for providing abortion seemed to be the major sources of inspiration.

4.3 Results for objective 2: The role of social networks in women's decision making process for unsafe abortion

4.3.2 Consultation with the social network

Almost all women who ended up having unsafe abortions talked to one or more people either directly (88.4%) or indirectly (6.9%) about the pregnancy seeking advice.

Table 4.16: Consultation with the social network prior to aborting unsafely

Consultation with social network	Number of women	Proportion (%)
Sort advice directly	283	88.4
Sort advice indirectly	22	6.9
Did not seek advice	15	4.7
Total	320	100.0

The pregnant woman was likely to discuss the pregnancy with the man who caused pregnancy (64.1% of the time), friend of the same sex (32.8% of the time) and her mother (21.6% of the time), among others. The variety of people consulted was higher among younger women and reduced as age increased. Figure 4.4 is a summary of the people the pregnant women consulted as organized by age group:

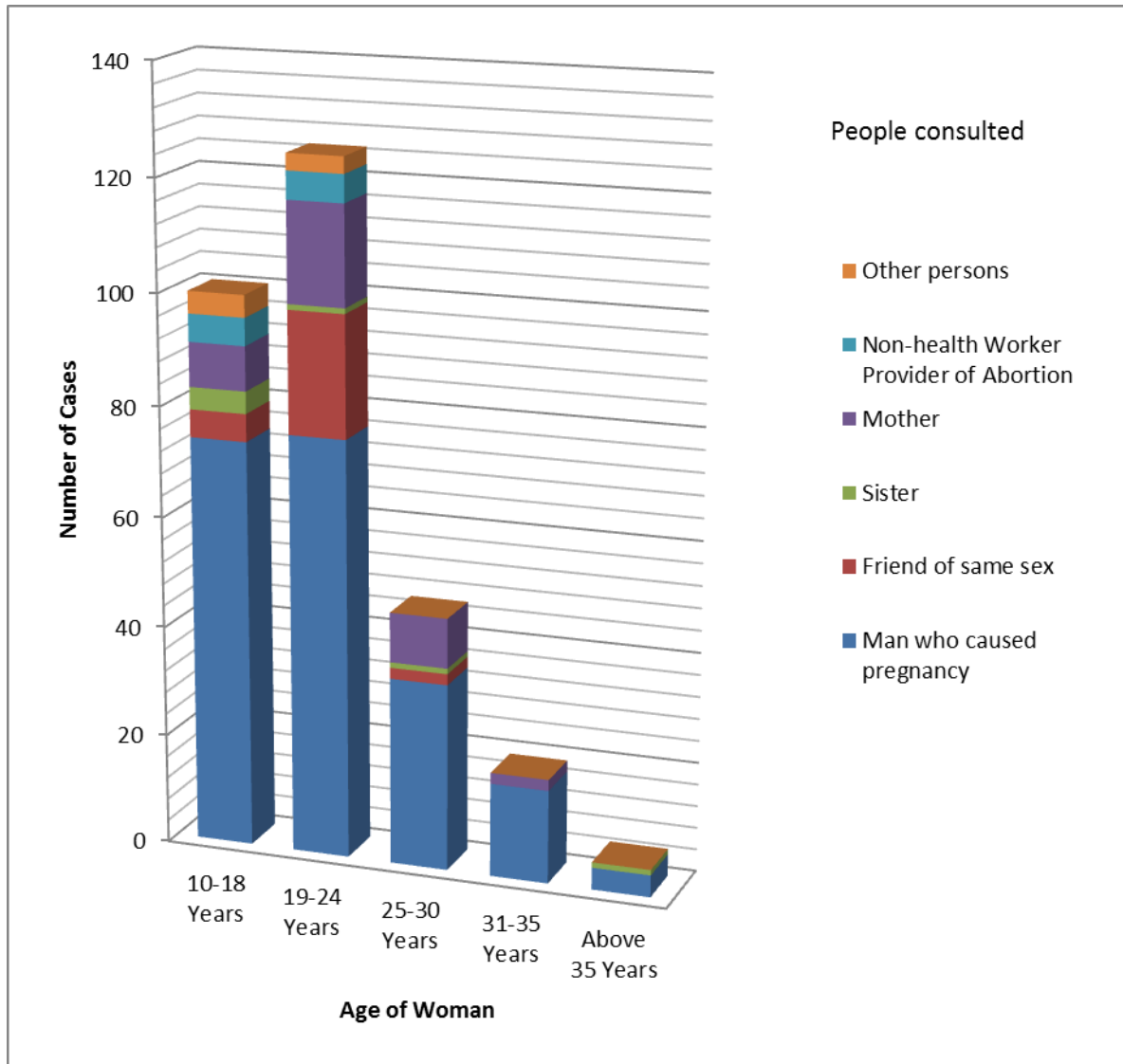


Fig. 4.4: People consulted for advice on the pregnancy by women of various ages

The type of person consulted did not however depend on the previous deliveries that a woman had had ($\chi^2 = 19.6$; $df = 12$; $p = 0.07$) as shown in table 4.17:

Table 4.17: Relationship of number of previous live births to type of person consulted

Previous Live Births	Type of person consulted				Total
	Man who caused pregnancy	Mother	Health Worker	Other persons	
0	120	24	11	38	192
1	32	7	1	14	54
2	22	3	1	1	27
3	15	2	3	0	20
4 and above	16	1	1	1	19
Total	205	37	17	54	312

Compared to women advised by other advisors, most women having unsafe abortion in the second trimester had received advice from non-health worker provider of unsafe abortion, mother or friend of the same sex as shown in table 4.18 below ($\chi^2 = 23.8$; $df = 5$; $p < 0.05$).

Table 4.18: Relationship of person consulted to gestation when abortion was done

Gestation in Weeks at the time of abortion	Type of person consulted						Total
	Man who caused pregnancy	Friend of same sex	Mother	Health Worker	Non-health Worker Provider of Abortion	Other persons	
12 and Below	181	22	32	14	4	13	266
Above 12	24	7	2	3	6	1	46
Total	205	29	37	17	10	14	312

4.3.3 Advice from the social network

As shown in table 13 above, the people consulted almost always advised the woman to terminate the pregnancy. Out of the 509 pieces of advice given to the women, 469 (92%) were recommendations for abortion. Advice on either to keep the pregnancy (2.2%) or for the woman to autonomously decide for herself (5.5%) was rare.

Desire for pregnancy and choice of unsafe abortion

A logistic regression analysis was conducted to examine the relationship between desire for pregnancy as an independent variable and the woman's age, number of previous deliveries and the person influencing the woman most to abort as predictors for unsafe abortion. A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set had a significant relationship with the independent variable – desire for pregnancy (chi square = 54.84, $p < 0.05$ with $df = 26$) as shown in table 4.19 below:

Table 4.19: Model Fitting Information: Predictors for Desire for Pregnancy in Women Aborting Unsafely

	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept	117.776			
Only				
Final	62.929	54.847	26	.001

Nagelkerke's R² was 0.308 indicating a weak relationship between prediction and grouping though. Parameter estimates demonstrated that only the type of person influencing the woman to abort unsafely made a significant contribution to the prediction ($p < 0.05$). Both age and the number of previous deliveries were not significant predictors.

Table 4.20: Likelihood Ratio Tests: Predictors for Desire for Pregnancy

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	62.929 ^a	.000	0	.
Age	68.684	5.755	2	.056
Births	74.256	11.327	10	.333
Influence	89.426	26.497	14	.022

The Wald criterion showed that the significant relationship arose when women who had desire for pregnancy were compared to those who did not. The significant relationship arose from advice to the groups by the man who caused pregnancy or by the mother of the woman. The Odd's ratios show that the women who had desire for pregnancy was thousands of times likely to end up aborting after advice from the man/mother as compared to those who did not have desire for the pregnancy.

4.3.4 Ownership of decision to abort unsafely

Although 66.6% of women indicated that the decision to abort was personal, a good 33.4% said they were either not sure (10.6%) or felt that they were coerced into aborting by the social networks (22.8%). The table 4.21 depicts this:

Table 4.21: Ownership of decision to terminate pregnancy

Ownership of Decision	Number of women	Proportion (%)
Decision was woman's	213	66.6
Decision was not woman's	73	22.8
Woman not sure	34	10.6
Total	320	100.0

Multinomial logistic regression analysis was done to examine the relationship between the woman's ownership of the decision to abort unsafely and her desire for pregnancy, her age, number of previous deliveries, abortions and previous miscarriages.

A test of the model with the independent variables against a constant only model was statistically significant, showing that the independent variables as a set had a significant relationship with the woman's ownership of the decision to abort unsafely (chi square = 51.43, $df = 24$, $p < 0.05$). Nagelkerke's R^2 was 0.182, indicating a weak relationship.

Table 4.22: Model Fitting Information: Predictors for Ownership of Decision to Abort Unsafely

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	180.087			
Final	128.655	51.432	24	.001

The significance of the relationship was brought about by ownership of decision in relation to age and previous deliveries. Compared to those who were unsure of owning the decision to abort, those who owned the decision were 60% more likely to own the decision as age increased. Further, their odds of owning the decision increased with increasing number of

previous births from 1.7 in those with no previous deliveries to 2.3, 3.6 and 18.3 in those with 1, 2 and 3 children respectively. Hence, the higher the number of children one had the higher was the possibility of her owning decisions for abortion. Compared with those who were unsure of their decision to abort, those who did not own the decision had strikingly opposite findings in relation to age and previous number of deliveries, the regressions being negative.

Table 4.23: Likelihood Ratio Tests: Predictors for Ownership of Decision to Abort Unsafely

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	128.655 ^a	.000	0	.
Age	140.539	11.884	2	.003
Births	160.175	31.520	10	.000
Terminations	132.184	3.529	2	.171
Miscarriages	136.230	7.575	6	.271
Desire	137.371	8.716	4	.069

4.3.5 How women ended up in the hands of unsafe abortion providers

There was an intricate network in the society that led women to unsafe abortion providers. Providers had contacts in key places in the community who referred women to them. Further, the social networks that influenced the woman's decision to have abortion helped with finding a provider of the service. Below are some of the key intermediaries who were identified as important sources of referral:

a) Fellow students, peers and teachers

Schools were important sources of girls who wanted abortions. Unsafe abortion providers acknowledged this and put systems in place for girls in need to reach them. One unsafe abortion provider had the following to say:

“I realized that I could help the many school girls who get unwanted pregnancies..... I have a cousin in XX secondary school. The school is close to my home and my cousin who is a student there has been instrumental in referring pregnant schoolmates to me. My neighbor also has a daughter who goes to YY, another nearby school and has been referring school girls from that school to me.” Source: unsafe abortion provider in Kogelo village.

Teachers reported that girls in boarding schools sometimes wrote to their friends to get them herbs or medicines from unsafe abortion providers and take the drugs to them in school, especially during school visiting days. Girls in day schools had an easier time as they had the procedures done on weekends.

Some teachers had sexual relationships with students and helped them get unsafe abortions. They prevailed upon the students not to reveal their pregnancies to the school. One girl who had been impregnated by a teacher and ended up with unsafe abortion had this to say:

“Last month I missed my periods and decided to do a pregnancy test. It was positive. The first person I discussed with was the teacher. He said there was a lot at stake and advised me not to talk to anybody else about it. He also advised me not to talk to any medical people in the town as they could leak the news. I got scared and called my sister. She advised me to have abortion but I did not have money. The teacher told me not to worry. He had a friend living in Ugunja who knew a doctor who could provide the service. The teacher’s friend had a similar problem at one time and was easily helped in Ugunja. He escorted me to Ugunja where I had the abortion.” Source: secondary school student, Siaya.

b) Women who have had previous experience with unsafe abortions

Women who had had abortion became important sources of referral to the provider. Pregnant women tended to consult with their friends and those who had aborted before become the key sources of information and referral. Unsafe abortion providers indicated that they got cases from previous clients:

“I get at least 3 cases per month, mostly 1 per week. They are mostly school girls. They are referred by those I have treated before..... I only help those referred by women I know, mostly the women I have treated before.” Source: CHW unsafe abortion provider, Siaya town.

d) Parents and other close relatives

Unsafe abortion providers confirmed that some girls were assisted by parents and other close relatives to have the procedure. They took the girls to the unsafe abortion providers, paid for the procedure and assisted the girls to return to school.

e) Self referral by regular clients

A number of unsafe abortion providers provided other health services. This helped them in getting clients for abortion. The contraceptive service was especially an important link to abortion services. When a contraceptive failed or if a woman wanted to start on a contraceptive and she realized that she was already pregnant, she requested the provider for abortion.

“There are a number of women who want contraceptives but are not sure of having conceived. I therefore keep pregnancy test kits. Some women also just come to me having confirmed pregnancy but I still confirm by doing my own pregnancy test. Most of the women who have positive pregnancy test ask for abortion. I provide the abortion then give them contraceptive.” Source: CBD unsafe provider of abortion in Siaya.

f) Unsafe abortion providers (cross-referral)

Unsafe abortion providers knew each other. When one failed to terminate a pregnancy, they would refer the woman to other providers. Community health workers and CBDs considered themselves superior to herbalists whom they called *bush doctors*. They themselves were called *nyamrerwa* – people who have been trained by the MoH or NGOs and who provided modern health services at community level. They said the *bush doctors* referred patients to them after failing to terminate pregnancies:

“A number of my patients are referred by people who know me and those I have previously helped. Other patients are referred by bush doctors when they fail to terminate the pregnancies. You know their methods are crude and many times they fail.” Source: a community health worker provider of unsafe abortion from Karapul.

- g) Other social organizations and structures within the community referred women to unsafe abortion providers

Because of their training in aspects of community healthcare, CBDs and CHWs had connections with the church, women's groups, CBOs and NGOs. These organizations referred patients to them for healthcare but that care was not specified. As a result, patients asked for abortions as part of the care.

According to one herbalist in Sega, termination of pregnancy has always been there. She inherited the practice from her parents. The community therefore knew that her family had that *gift* because the family has lived among them since time immemorial and always helped them have abortion for cultural reasons. Women in the village with culturally unacceptable pregnancies were referred to her by the community.

4.3.6 Analysis of social interactions affecting unsafe abortion

Decision making on how to handle unwanted pregnancy was found to be one of the biggest roles of social contacts with over 95% of women consulting the network before making decisions. The man causing pregnancy was the most consulted followed by friend of the same sex, mother, sister and health workers among others.

The second issue which was found to bring social contacts into play was the need for referral. Agents of unsafe abortion providers, women who had had abortion before, mother, sister and friends of the woman were important for referral. Social groups such as women's groups, NGOs and community leaders also referred women generally and not specifically for abortion. Unsafe abortion providers were also found to do cross referral among themselves.

Although young women of school going age were the most affected by unsafe abortion, the role of teachers remained unclear. Abortions were found to happen in girls from both primary and secondary schools. Teachers reported that their pupils did get pregnant and while some dropped out of school, some went for abortion. In both primary and secondary schools it was reported that about 2 out of 100 of the girls got pregnant per term.

“At one time we decided to do pregnancy test on all our girls. Some tricked us. They gave us water instead of urine. Our school has 200 girls. When we did the test 4 were pregnant. I would say 3-5 get pregnant every term.” Source: secondary school counseling master, Yala

Counseling teachers reported that the girls never consulted them before going for the unsafe abortions. They also said that they had a very packed syllabus and supporting such girls was not incorporated in their scope of work. Even if they offered to help like the counseling teachers had offered to, they said that they lacked capacity to provide professional counseling because they had no training in adolescent sexuality.

“We try to help but we are not trained in the counseling. It is also not our official scope of work. We do it outside normal working hours. It is a big sacrifice.” Source: primary school head teacher, Sega

Unfortunately some school girls were impregnated by teachers. This was described by key informants as a perennial problem.

“The problem of errant teachers is very common. I know two who were interdicted last year for sleeping with pupils. Many times they get transferred.....Parents tolerate errant teachers. In fact there are instances when the head teachers have reported errant teachers to TSC but parents of the girl come out strongly to defend the teacher and he is let scot free. Poor

parents see such relationships as a source of income and encourage their daughters to get involved.” Source: Head teacher key informant, Siaya

There was no collaboration between teachers and parents to help the girls. In fact they disagreed most of the time and amorous teachers colluded with parents to hide their acts. Teachers who wanted to get involved to correct the situation were viewed as the bad ones.

Parents are not supportive of the help we try to give. There is a student who was pregnant and aborted and continued to misbehave. I walked to their home to talk to the parents so that we work together to help her. They talked to me very badly and I looked like the bad one who was witch hunting their daughter. I promised myself never to follow students beyond the school compound again. Secondary school counseling teacher, Yala

Not all social contacts supported unsafe abortion though. In one case, an unsafe abortion provider was taken to the police by the father of a girl she was treating. Two other providers indicated that they had been reported to the police at different times. They had however learnt to negotiate with the police and always went scot free. Some relatives of the girl therefore played the role of fighting unsafe abortion by engaging the police who appeared to sort the case *out of court* with the affected provider.

Unsafe abortion also brought fights between herbalists and medical workers. Herbalists always feared referring patients to hospitals. This is because medical workers reported them to the police sometimes. They preferred referring patients to CHW and CBDs. These two cadres have good relationships with both public and private health facilities and easily refer patients. Instead of facing the police, herbalists found it better to just refer to CHWs and CBDs. Overall however, there was more social support than opposition for unsafe abortion in the community.

The kite network that follows summarizes the social interactions around unsafe abortion:

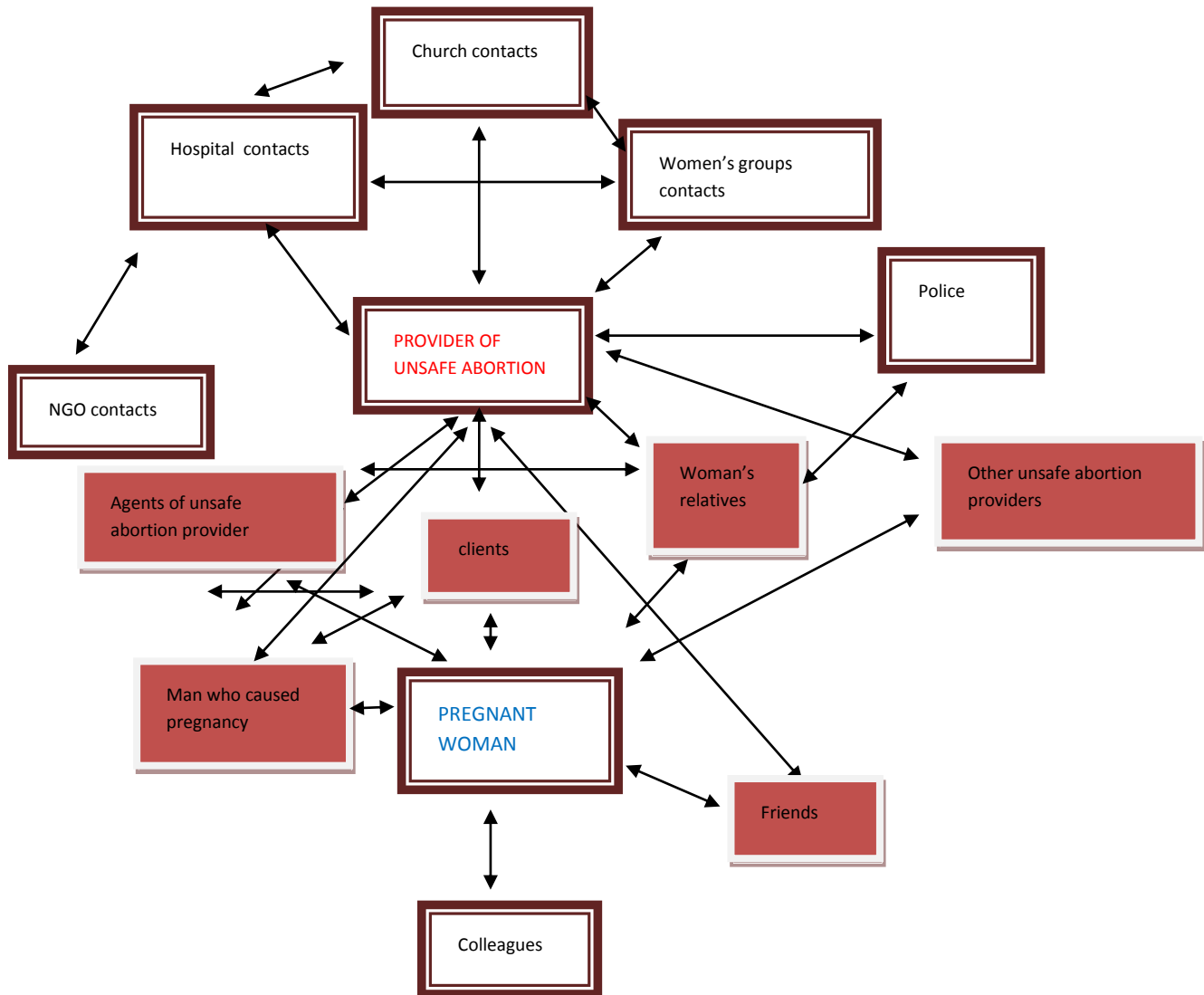


Fig 4.5: Social interactions for unsafe abortion

The nodes highlighted in red color are key in sustaining the unsafe abortion service. They are the links between the pregnant woman and the unsafe abortion provider. Without them the outreach of the unsafe abortion provider would be highly curtailed.

4.4 Results for Objective 3: How Methods Used to Procure Unsafe Abortions Influence Outcomes

4.4.1 *Methods, where they were used and the type of providers who used them*

a) Unsafe abortion methods

Use of medicines either by swallowing (65.6%) or through the vagina (9.4%) was the commonest method of abortion. Misoprostol was the most mentioned medicine.

Use of herbs orally accounted for 6.9% while 4.1% of women self inserted gadgets into the vagina to initiate abortion. Table 4.23 below summarizes the methods that were used:

Table 4.24: Unsafe abortion methods used by women

First line method used	Number of Women	Proportion (%)
Oral conventional medication	210	65.6
Conventional medication self inserted into vagina	30	9.4
Oral herbs	22	6.9
Use of gadgets by self through the vagina	13	4.1
Use of gadgets by someone else through the vagina	7	2.2
Injection	4	1.3
Others	9	2.7
Method not known	25	7.8
Total	320	100.0

There was a significant difference in the range of methods used in the catchment areas of the clinics where the patients came from ($\chi^2 = 92$; $df = 12$; $p < 0.05$). Table 4.24 shows these differences:

Table 4.25: Distribution of Methods Used Per Catchment Area

Name of catchment area	Methods of unsafe abortion					Total
	Other methods	Oral conventional medication	Use of herbs	Conventional medication inserted into vagina	Use of gadgets through vagina	
Yala catchment	15	28	16	21	16	95
Siaya catchment	15	80	0	2	1	98
Ugunja catchment	3	37	2	2	3	48
Sega catchment	1	65	5	8	0	79
Total	31	210	24	33	20	320

Women from around Yala Sub-District Hospital used the widest range of methods. The use of herbs was also most common in the area. In fact there was almost an even distribution of unsafe abortion methods in Yala.

The rest of the health facilities majorly had conventional medicine as a dominant method. In fact in Siaya almost all women used the medicine. These findings are further shown shown in figure 4.6 below.

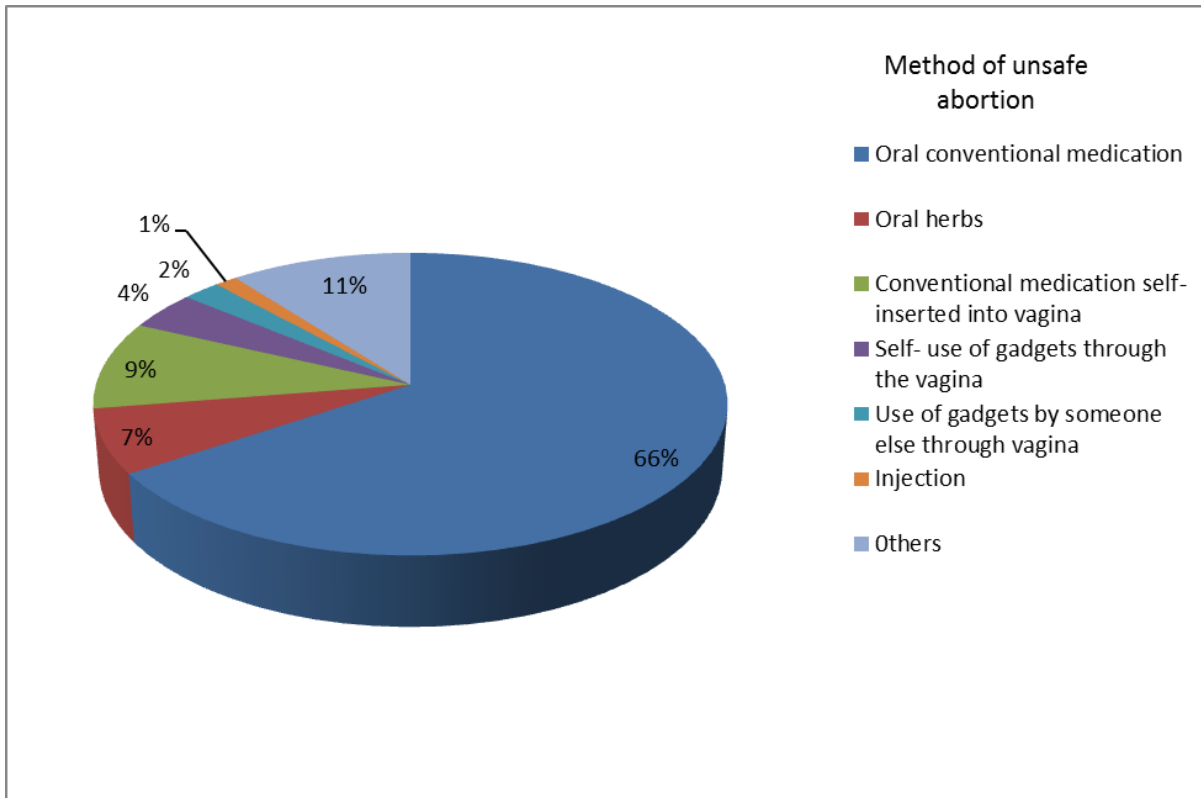


Figure 4.6: Unsafe abortion methods used in the catchment areas of the clinics

There was also a significant difference in the distribution of methods used based on the age group of the woman ($\chi^2 = 40.2$; $df = 15$; $p < 0.05$). The younger women tended to use a wider range of methods compared to the older women. Table 4.25 shows methods used by the various age groups:

Table 4.26: Fist line methods of unsafe abortion used by various age groups

Age of Patient in Years	Fist Line Methods Used in the Unsafe Abortion						Total
	Method not known	conventional medication	Oral herbs	Conventional medication self inserted into vagina	Self use of gadgets through the vagina	Others	
10-18	15	74	17	14	3	1	110
19-24	5	105	4	12	8	11	133
25-30	1	46	0	4	1	4	52
Above 30	4	15	1	0	1	0	20
Total	25	240	22	30	7	7	320

Although conventionally first and second trimester methods of abortion are known to be different, there was no significant difference in the choice of methods used by unsafe abortion providers in the first and in the second trimesters of pregnancy ($t = 1.38$; $df = 12$; $p = 0.19$). Table 4.26 below shows choice of methods for the two trimesters:

Table 4.27: Methods used in first and second trimesters of pregnancy

Trimester of pregnancy	Fist Line Methods Used in the Abortion					Total
	Others	Oral conventional medication	herbs	Conventional medication inserted into vagina	Use of gadgets through the vagina	
First	29	174	22	29	19	272
Second	4	36	2	4	2	35
Total	33	210	24	33	20	320

Further, the choice of methods was not significantly different in those who had desired compared to those who had not desired the pregnancy from the start ($t = 0.67$; $df = 20$; $p = 0.51$).

There was however a significant difference in the distribution of methods used based on the person initiating unsafe abortion ($\chi^2 = 113.0$; $df = 20$; $p < 0.05$). Health workers used a variety of methods to start off the process. Herbalists as well as women self inducing abortion also had relatively more methods than the rest of the providers as shown in table 4.27 and figure 4.7.

Table 4.28: Methods used by various unsafe abortion providers to initiate abortion

Person Who Initiated the Abortion	Fist Line Methods Used in the Abortion				Total
	Other methods	Conventional medication	Use of herbs	Use of gadgets through the vagina	
Self	3	92	8	2	105
Health worker	9	125	8	15	157
Pharmacy worker	0	21	1	0	22
Herbalist	5	3	7	1	16
Other	16	2	0	2	3
Total	33	243	24	20	320

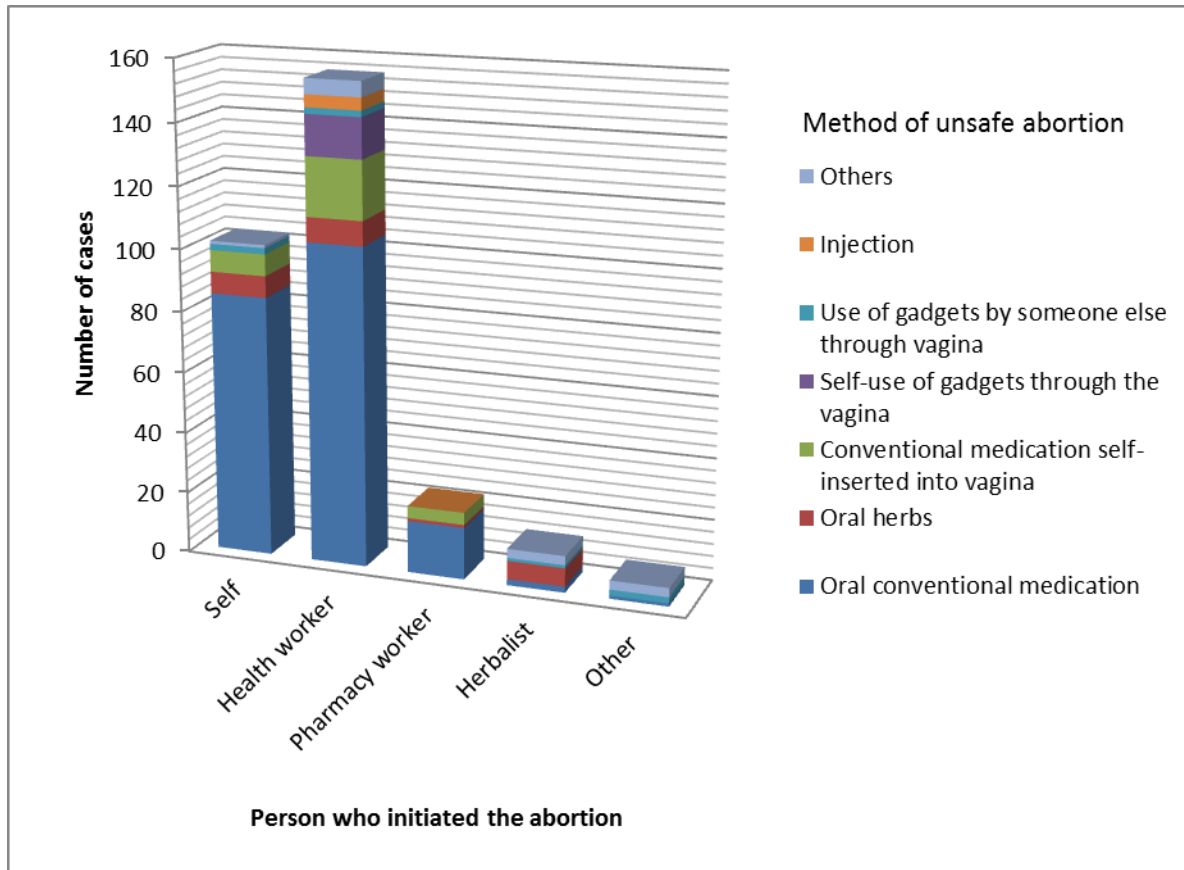


Fig 4.7: Methods used by unsafe abortion providers

In addition to the first line methods, 6.3% (n = 20) of women used a second line method before coming to hospital. Of these, 6 had used oral conventional medicine and followed it up with insertion of herbs into the vagina. Another 5 used conventional medicine per vaginum then followed this up with insertion of herbs in the vagina. Four cases used oral conventional medicine then followed it up with oral herbs while another 4 had self use of physical gadgets through the vagina following oral use of conventional medicine. Table 4.28 summarizes these findings:

Table 4.29: Use of second line methods

First line method of abortion	Second Line Method Used in the Abortion					Total
	No 2 nd line method	Oral herbs	Conventional medicine self inserted into vagina	Herbs self inserted into vagina	Self use of gadgets through the vagina	
Oral conventional medicine	202	4	0	0	4	210
Injection	4	0	0	0	0	4
Oral herbs	17	0	0	5	0	22
Conventional medicine self inserted into vagina	26	0	0	4	0	30
Use of gadgets by self through the vagina	13	0	0	0	0	13
Use of gadgets by someone else	6	0	1	0	0	7
Others	9	0	0	0	0	9
Method unknown	25	0	0	0	0	25
Total	300	4	1	9	4	320

The tendency to use a wide variety of methods among a group of women aborting unsafely (each method with its own inherent risks) was therefore seen in women from around Yala Sub-District Hospital, among younger women, and from those having their abortions initiated by health workers and herbalists.

b) Environments where unsafe abortion methods were used

The methods used depended on the place where the unsafe abortion was initiated. The sites of unsafe abortion included the woman's home, medical clinics, herbalists' clinics and herbalists' homes. Figure 4.8 summarizes the distribution of methods per site:

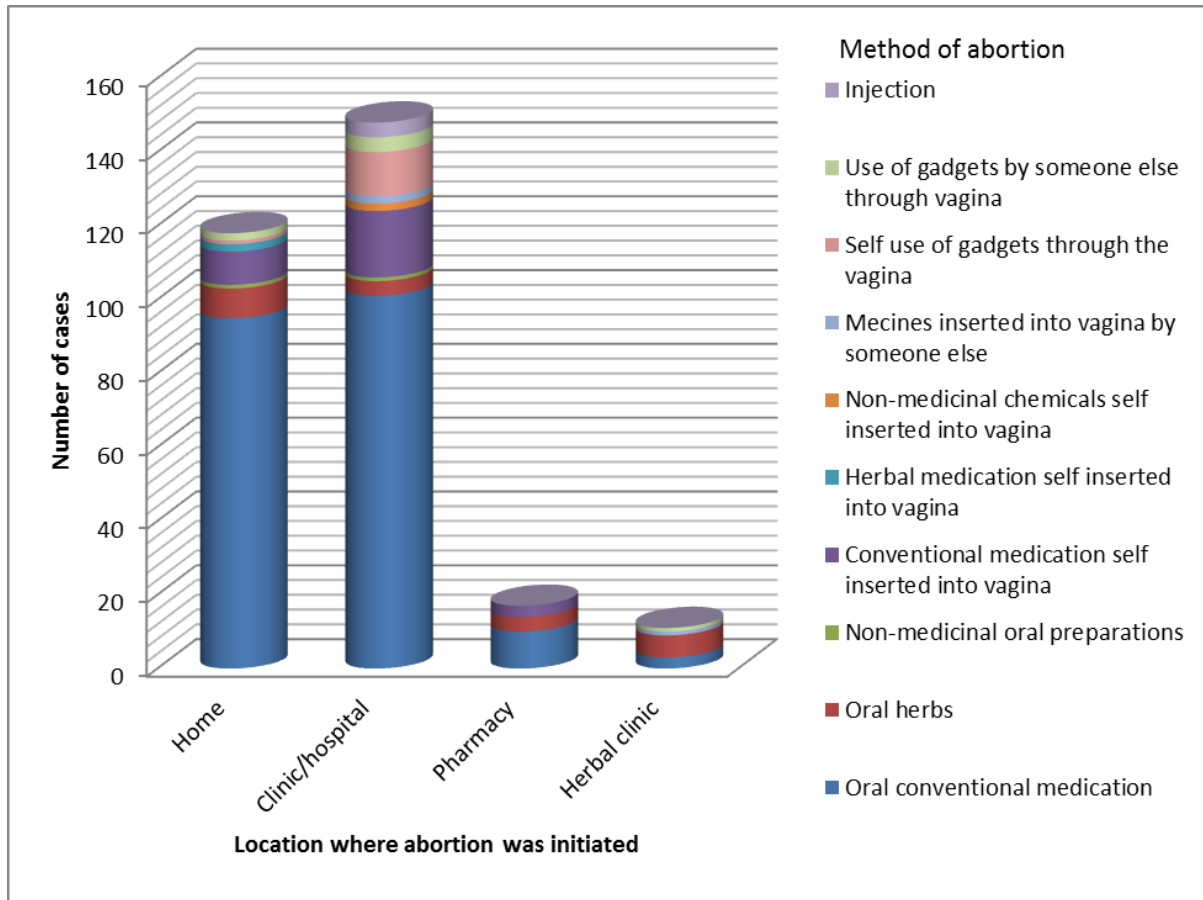


Fig 4.8: Locations where unsafe abortion methods were used

Clinics and homes had the highest mix of methods. Home methods were given to the woman by relatives or friends or sometimes by health workers to take at home. Girls in boarding schools sometimes used the medicine in school and this was also considered home use. On realizing that they were pregnant, girls in boarding school sent out messages to relatives and friends seeking help. One teacher had the following example:

For some reason I decided to open the letter. As a teacher sometimes you just find yourself doing this. The girl had written to her peer in the village instructing her on the leaves and roots of trees to fetch. She was then to boil them and get her the solution in a bottle. The two

girls must have done this at some point together and this must have been a repeat. Source: Key informant teacher, Siaya.

Some abortions actually went on and happened in the school compound. In the study, these were still considered as having happened at home. One head teacher had the following example to give:

.....the mother brought her the medicine during parent's day. She took it but the abortion did not happen the same day. The next day at class time she said she was going to the toilet. She delivered a formed baby before reaching the toilet. The baby died after a few minutes. I was so annoyed with the family. I told them to get her another school. Source: head teacher key informant, Segga.

Herbalists' clinics similarly had multiple methods. These were however less than methods used in medical clinics and at home. Occasionally herbs were used in the herbalist's home as some herbalists did not have clinics. The pharmacy was another location for abortion but used few methods.

There was a significant difference in the range of unsafe abortion sites used by women in the catchment areas of the different study health facilities ($\chi^2 = 45.7$; $df = 6$; $p < 0.05$). Women from Segga tended to have abortions initiated in their homes as compared to the other catchment areas. For the rest of the areas a health facility – clinic/hospital/pharmacy seemed to be the preferred place. These findings are summarized in table 4.29:

Table 4.30: Locations where unsafe abortions were initiated by the different catchment populations

Catchment population	Where Termination of Pregnancy Was Initiated			Total
	Woman's home	Clinic/hospital/pharmacy	Herbalist's clinic/home/other	
Yala catchment	13	68	14	95
Siaya catchment	32	55	11	98
Ugunja catchment	15	29	4	48
Sega Catchment	61	15	3	79
Total	121	167	32	320

There was however no difference in the range of locations chosen by the various age groups for initiation of abortion ($\chi^2 = 12$; $df = 6$; $p = 0.05$) as shown in table 4.30 below:

Table 4.31: Sites where abortion was initiated by the various age groups

Age of Patient in Years	Where Termination of Pregnancy Was Initiated			Total
	Home	Clinic/hospital/pharmacy	Herbalist's clinic/home/other	
10-18	32	59	19	110
19-24	56	68	9	133
25-30	23	27	2	52
Above 30	10	13	2	25
Total	121	167	32	320

Further, there was no difference in the locations chosen by women in their first trimester compared to those in their second trimester of pregnancy ($t = 1.56$; $df = 10$; $p = 0.15$).

What therefore appears to be is that each catchment area had a range of preferred options of locations for initiating abortion, possibly determined by community norms, which were not

affected by woman specific factors, the major determinant of the choice of location being majorly the geographical area where a woman found herself – if one was in Yala there were options, the same to Sega, Siaya town and others.

Determinants of choice of abortion method

From the foregoing findings, the determinants of choice for unsafe abortion methods can be summarized as:

- The area (community) where a woman found herself in – each community had its range of methods, some having more options than others.
- Being a young woman in whichever community predisposed a woman to using a wider variety of methods
- Those having their unsafe abortions initiated by health workers and herbalists also stood a risk of exposure to a variety of methods.

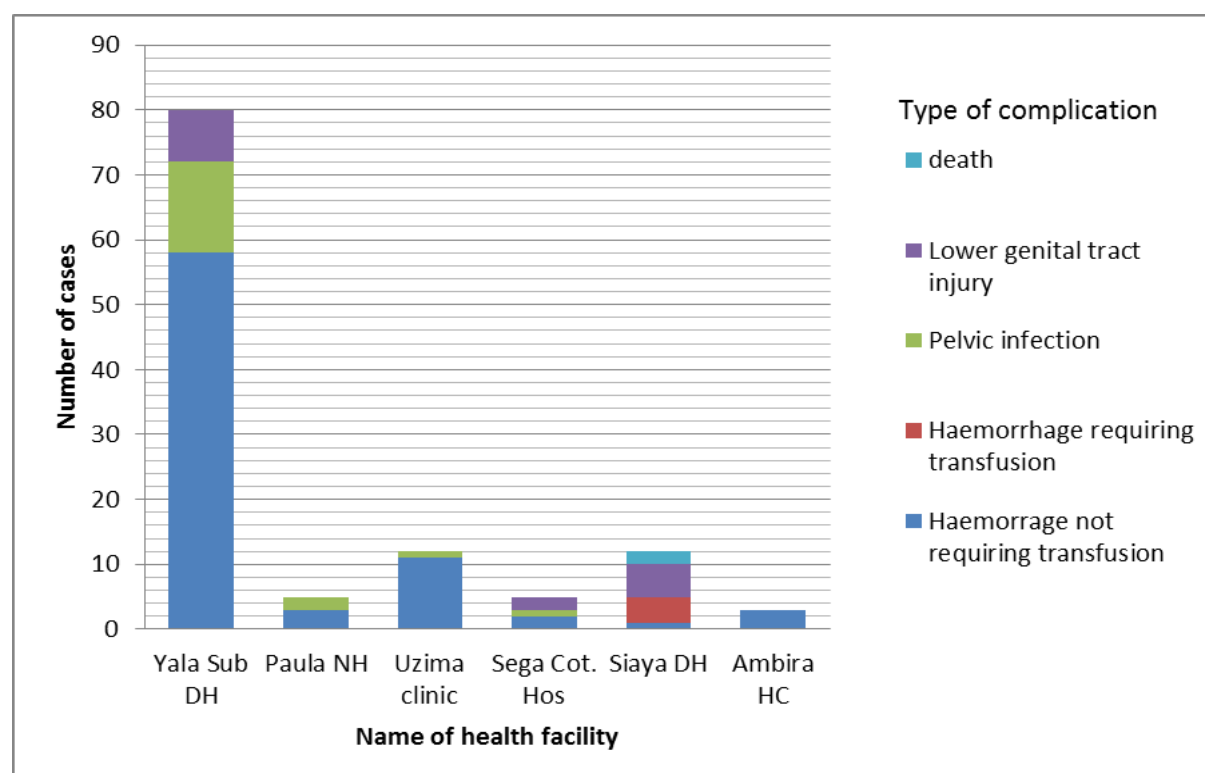
4.4.2 Outcomes of unsafe abortion

The majority (63.4%) of women presenting in health facilities after attempting unsafe abortion did not have complications and just presented with some pain and vaginal bleeding. A number of complications were however recorded including death, hemorrhage (sometimes requiring transfusion), pelvic infection and lower genital tract injury. Table 4.31 summarizes the complications recorded in the health facilities:

Table 4.32: Complications of unsafe abortion recorded

Type of complication	Number of women	Percent
Death	1	.3
Hemorrhage requiring transfusion	4	1.3
Haemorrhage not requiring transfusion	78	24.4
Pelvic infection	18	5.6
Lower genital tract injury	15	4.7
No complication	203	63.4
Total	320	100.0

The range and severity of complications were significantly different across health facilities ($\chi^2 = 218.11$; $df = 25$; $p < 0.05$). The bigger public health facilities registered a wider and severer range of complications as shown in figure 4.9 below:

**Figure 4.9: Range and frequency of complications across health facilities**

There was also a significant age related difference in the rate of complications with younger women tending to be more affected than the older ones

($\chi^2 = 36.11$; $df = 20$; $p < 0.05$) as summarized in table 4.32 below:

Table 4.33: Complications suffered by different age groups of women

Age of Patient in Years	Complications Suffered by the Woman						Total
	No complication	Haemorrhage not requiring transfusion	death	Haemorrhage requiring transfusion	Pelvic infection	Lower genital tract injury	
10-18	54	37	0	2	13	4	110
19-24	94	25	1	2	2	9	133
25-30	40	11	0	0	1	0	52
31-35	12	5	0	0	1	2	20
Above 35	4	0	0	0	1	0	5
Total	203	78	1	4	18	15	320

The type of provider initiating unsafe abortion also had a bearing on the outcomes and there was a significant difference in the range and severity of outcomes based on the provider type ($\chi^2 = 142.89$; $df = 20$; $p < 0.05$). Table 4.33 shows the complications arising from each type of provider:

Table 4.34: Provider based outcomes of unsafe abortion

Person Who Initiated the Abortion	Complications Suffered by the Woman						Total
	No complication	Haemorrhage not requiring transfusion	death	Haemorrhage requiring transfusion	Pelvic infection	Lower genital tract injury	
Self	87	6	0	0	6	6	105
Health worker	86	56	0	0	7	8	157
Pharmacy worker	13	8	0	0	0	1	22
Herbalist	9	3	0	4	0	0	16
Other/not known	9	5	1	0	5	0	20
Total	203	78		4	18	15	320

The widest range of complications were seen among health workers (45% of cases had complications), followed by herbalists (43%) and pharmacy workers (40%). Self induced abortions had the lowest complication rate (17%). The most severe complication other than death (hemorrhage requiring transfusion) was seen in women treated by herbalists. The second most severe complications were seen among those treated by health workers followed by those self inducing and finally those treated by pharmacy workers.

There was however no difference in outcomes between those aborting in the first and those in the second trimester ($t = 1.33$, $df = 10$, $p = 0.21$). Further, no significant difference was noted based on the number of previous deliveries a woman had had ($\chi^2 = 24.61$, $df = 25$, $p = 0.48$).

Determinants of outcomes of unsafe abortion

From the above findings, the following were associated with bad outcomes for unsafe abortion:

- Being of a young age

- Having abortion initiated by a health worker and herbalist unsafe providers of abortion.

These are the same determinants for use of a variety of unsafe abortion methods, hence, the bigger the variety of unsafe abortion methods in an area, the more the complications, a proportional relationship therefore exists between number of unsafe abortion methods and number of complications.

Health Facility Visit Following Unsafe Abortion

The recorded complications could just be a tip of the iceberg and many women could be suffering immediate and long term complications following unsafe abortion in the community. Because they believe that the methods they used were effective, unsafe abortion providers indicated that most of their patients did not need to go to medical facilities for further treatment after having unsafe abortion. This fact was confirmed by CHWs and CBDs among other key informants. The highest possible proportion estimated by unsafe abortion providers as going for further care in health facilities was 3 out of every 10 patients treated (i.e. 30%). Many unsafe abortion providers reported proportions much lower than this. Hence, the number of patients seen in health facilities could be 30% or less of the total number of women procuring abortions unsafely in this community.

According to one herbalist who reported that none of her patients ever go for further care in medical facilities, her *success* lay in terminating the pregnancies late. She reported that late terminations are easy to do and result in no complication:

I prefer terminating advanced pregnancies. I prefer that the abortion is done at 6 months. From my experience, small pregnancies are hard to terminate. I advise women to come late in pregnancy. I have never had to refer anybody because of complications. All my patients

recover well. That is why they refer others to me. Source: herbalist provider of unsafe abortion, Segá

One woman treated by the herbalist self reported the process as successful. She described the procedure and how it ended thus:

I accepted to terminate the pregnancy but it had to be done at 6 months. At that time (6 months), I was given herbs to drink three times a day. After one day I developed labor-like pains. I expelled a formed baby. It was alive and moved its legs and hands. As advised by the herbalist, I just left it on the ground. It breathed for sometime then went quiet. I dug a hole and buried it. There was no funeral ceremony or anything. I did not consider it a child. Source: girl assisted by a herbalist to terminate pregnancy.

Below is a description of the complications that were seen in the health facilities in the course of the study:

a) Death

Death was the severest complication. One death was recorded in the health facilities and was investigated using the Rashomon technique. It occurred following severe hemorrhage as per the medical report. Evacuation of the uterus was done but the patient collapsed and died thereafter. Service providers in the hospital reported that the patient was brought to the hospital in a critical state.

On further enquiry, the husband to the patient reported that the woman waited in the health facility for five hours while bleeding because they did not have money for her to be treated.

He went around looking for money and the woman was kept in the hospital bleeding and only treated after he paid. He blamed the death on negligent health workers.

The husband also reported that his mother (the woman's mother in law) had assured him that the bleeding was normal and expected but he did not understand why. The mother in law had given the deceased some medicine. She could have known the woman's problem but the man was not aware that the woman was pregnant. He lived in a far away town and the woman lived in the rural home with his mother and he had just visited them.

On interview, the mother in law to the woman insisted that there was no abortion and that the woman was not pregnant. She insisted that she had not given her any medicine. She was not ready to discuss the matter further. Her body language was one of a bothered person looking too shocked to discuss the incident.

It would appear that the man was kept in the dark and the mother in law could have worked with the dead woman to attempt termination of pregnancy. Service providers possibly contributed to the death by delaying intervention.

Apart from this maternal death that was recorded in the health facility, a number of abortion related deaths were reported to have happened in the community in the duration of the study.

Below are some of the quotes on the deaths:

Case 1:

I am aware that terminating pregnancies can be dangerous. I have had of a number of women who got serious problems. The last case I remember was a case in the village not long ago. A girl died having used aloe vera leaves given to her by her grandmother to terminate the pregnancy. The grandmother defended herself saying that the girl did not follow

instructions and overdosed. People were very annoyed with her but because she is too old, they could not punish her. Source: CHW provider of unsafe abortion from Karapul

Case 2:

A girl in form 1 at XX secondary school attempted abortion and died.....It was just this year, a few days after the new term started..... She had taken herbs. She was cheated by her mother. She got very sick after taking the herbs. She was taken to Yala hospital in critical condition but died the same day. Source: CHW Key informant, Yala

Case 3:

There is a girl who conceived in YY school and was helped by a cook to do abortion. She used school fees to pay for it and cheated her parents that she had lost the money. The father followed up with the school and got to know the truth. He was furious. The girl got scared and ran away to Mombasa where one of their relatives lives. Unfortunately the abortion was not over by the time she ran away. She died two weeks later. She was returned home dead. Source: CHW key informant, Yala.

Case 4:

.....Deaths still happens though. A neighbor's daughter died last month attempting abortion. I really do not know what she had taken. She was bleeding and was very sick. The mother asked me to help but it was too late. We could not even take her to hospital. She died in the house. It must have been one of the dangerous methods. Source: CHW provider of unsafe abortion, Siaya

While two cases were reported as resulting from use of herbs, the methods used in the other two were not known. The four deaths were also not part of the hospital records. Key informants said that when deaths occur in the community people just moan and arrange for burial. Sometimes the area chief gets to know but there is no requirement for reporting the cause of death to the authorities.

Unsafe Abortion Case Fatality Rate

From the findings in the community and in the clinic, case fatality rate (CFR) for unsafe abortion in this community can be calculated. The formula for this is as follows:

$$\text{Case fatality rate} = \frac{\text{Number of deaths from unsafe abortion}}{\text{Number of unsafe abortions}} \times 100$$

If only the confirmed death that occurred in the health facility is used against the confirmed cases of unsafe abortion, the case fatality rate would be:

$$= \frac{1}{320} \times 100 = 0.31\%$$

If the deaths in the health facility together with those mentioned by community health workers (4) are used against the calculated magnitude of unsafe abortion in the catchment population (987), the case fatality rate would be as follows:

$$= \frac{5}{987} \times 100 = 0.5\%$$

b) Other complications

The other serious complication was hemorrhage requiring blood transfusion. Four patients suffered this and were transfused. They were reported to have come to hospital in near collapse following acute heavy bleeding.

Seventy eight women had hemorrhage not requiring transfusion. They were either treated with blood boosting drugs or advised on appropriate diet.

Eighteen patients suffered pelvic infection. They required antibiotics for several days. Another 15 patients suffered lower genital tract injury. This ranged from bruises to marks of gynecological instruments used on the woman.

The complications highlighted were acute. The study did not assess long term complications such as chronic pelvic infection and infertility.

According to key informants, the experience in the community was that pain and bleeding occurred commonly in women aborting unsafely. They reported that these two symptoms were the commonest reasons for women going to hospital for treatment after attempting abortion in the community. One woman who had survived unsafe abortion had this to report:

I approached my friend for advice. She told me to boil concentrated tea and add OMO to it. I did exactly that and after a few hours I got pain and bleeding. The pain and bleeding were however so much that I decided to go to the hospital. They cleaned me up in the hospital and I got well. I am happy to have survived the experience. I can never advice someone to do the same. I will always advice on hospital treatment for unwanted pregnancy. Source: woman treated for unsafe abortion, Sega.

It was reported by key informants that general ill health persisted in women who had terminated pregnancies unsafely. After surviving heavy bleeding, their health continued to be bad. One such case was reported by a community health worker in Yala:

I know a mother in advanced age. She conceived. She tried aborting and bled a lot. Fortunately she did not die but her health has remained very bad thereafter. She just looks sick. Source: key informant, Yala.

This may mean that women who undergo unsafe abortion may sometimes develop chronic sequel and continue to suffer in the community.

4.4.3 Relationship of outcomes to methods of unsafe abortion

The table below summarizes the outcomes of specific methods used by the unsafe abortion providers:

Table 4.35: Outcomes of specific unsafe abortion methods

First line unsafe abortion methods	Complications Suffered by the Woman						Total
	No complication	Haemorrhage not requiring transfusion	death	Haemorrhage requiring transfusion	Pelvic infection	Lower genital tract injury	
Method unclear	9	4	1	4	6	0	25
Oral conventional medication	165	32	0	0	6	7	210
Oral herbs	9	9	0	0	4	0	22
Conventional medication self inserted into vagina	11	17	0	0	0	2	30
Use of wooden/plastic/metalic gadgets by someone else	0	5	0	0	1	1	7
Use of wooden/plastic/metalic gadgets by self through the vagina	4	4	0	0	0	5	13
Others	5	8	0	0	1	0	14
Total	203	78	1	4	18	15	320

Repeat multiple regression analyses to identify predictors of the outcomes of unsafe abortion found significant relationships to exist between the outcomes and place (catchment area of facility) where the abortion was initiated, methods used for abortion, and the person who initiated the abortion. A test of the model with the independent variables against a constant only model was statistically significant, indicating that the predictors had a significant relationship with outcomes of unsafe abortion (chi square = 89.907, $p < .000$ with $df = 33$).

Table 4.36: Model Fitting Information: Predictors of Outcomes of Unsafe Abortion

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	108.581			
Final	18.675	89.907	32	.000

Nagelkerke's R^2 was 0.753 indicating a fairly strong relationship between prediction and grouping.

Table 4.37: Pseudo R-Square: Predictors for Outcomes of Unsafe Abortion

Cox and Snell	.589
Nagelkerke	.753
McFadden	.582

Likelihood ratio tests show the significant relationships for the predictors as shown in table 4.37:

Table 4.38: Likelihood Ratio Tests: Predictors for Outcomes of Unsafe Abortion

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	18.675 ^a	.000	0	.
Methods	61.365	42.691	14	.000
Facility	55.711	37.036	10	.000
Who	44.016	25.341	8	.001

The relationship between outcomes and the catchment area of the facility where abortion was initiated as well as with the person who initiated the abortion has been discussed in section 4.4.2.

The significant relationship between complications and methods in this relationship arose in the type of complications that were likely to occur with use of various methods:

- As compared to hemorrhage not requiring transfusion, genital tract injury was 30%, 70%, 120%, and 370% more likely to occur when women self inserted gadgets, inserted medicines, had someone insert gadgets, or had someone insert medicine into their vagina to initiate abortion respectively. Hence, methods involving use of the vaginal route to initiate abortion were more likely to lead to injury than hemorrhage.
- Pelvic infection was likely to occur at a higher frequency with all methods in comparison to genital tract injury with all methods except use of non-medicinal chemicals being 80% or more likely to lead to infection than to genital tract injury.
- The most severe complication noted was death. The second most severe complication was hemorrhage requiring transfusion. Both of these methods were associated with use of herbs making it the most dangerous method of unsafe abortion.

Below are the methods discussed in order of their safety with the most dangerous coming first:

a) Use of oral herbs

Over 50% (13 out of 22) of women presenting with incomplete abortion after using oral herbs had complications. Nine of them had hemorrhage not requiring transfusion while 4 had pelvic infection. Patients with severe bleeding requiring transfusion indicated that they had been treated by herbalists. Key informants confirmed the risk of using oral herbs when they indicated that two deaths in the community occurring during the time of the study were due to use of herbs. Use of oral herbs to terminate pregnancies therefore stands out as one of the most dangerous methods of unsafe abortion in this community.

According to key informants, the main compounding factor to use of herbs is that herbalists have no functional referral network with the health system. Health workers are hostile to them and so they advise patients to avoid the health facilities. In fact herbalists indicated that their care is superior to the health system and patients go to them after being failed by the health facilities.

The result of the non-functional health system is that patients with complications delay till they are in a critical condition before seeking care. The final outcomes then become worse than any other method of unsafe abortion.

b) Use of metallic/wooden/plastic gadgets to procure unsafe abortion

Seven women had their pregnancies terminated by use of gadgets inserted into the vaginal cavity by the provider of unsafe abortion. They all got complications. Five of them had hemorrhage not requiring transfusion, one had pelvic infection and the last had lower genital

tract injury. If not for the severity of complications, this method would have been worse than use of oral herbs. The fact that deaths and hemorrhage requiring transfusion were associated with use of oral herbs, however, makes it worse than use of this method.

Out of the 13 women attempting to terminate their own pregnancies with self use of gadgets, 9 had complications. Of the 9, lower genital tract injury occurred in 5 and 4 had hemorrhage not requiring transfusion. Four women had symptoms of incomplete abortion and no complication.

c) Conventional medicine self inserted into the vagina

Thirty women self inserted conventional medicine into their vaginal canals. Seventeen of these women had hemorrhage not requiring transfusion and two had genital tract injury. Eleven did not suffer complications. Genital tract injury could have resulted from improper technique of inserting the medicine while hemorrhage could have been due to the mode of action of the drugs.

d) Use of conventional medicine taken orally

Out of the 210 women using this method, 165 (78.6%) did not have a complication. Of the ones having complications, 8 had had the unsafe provider attempt to evacuate the contents of the uterus using gadgets following use of the medication. Four others had taken herbs in addition. The tendency to use multiple methods was therefore seen in this group and this was the cause of many complications. The reason for this behavior could be that most of the drugs taken to terminate pregnancies took time to act. Because women may not have known this, they moved on to other methods in desperation. The overall outcome was that the majority of

those with complications (71%) ended up with hemorrhage not requiring transfusion, another 15% had lower genital tract injury and the rest (13%) had pelvic infection.

Key informants and unsafe abortion providers confirmed that the drug in use was commonly misoprostol. They said it was much safer than other methods that they had used before as summarized by one unsafe provider below:

Misoprostol has saved our women. A lot more women used to die before we learnt about this drug because more dangerous methods (of abortion) were used. Many of the CHW and CBDs now know the drug and we use it frequently. Women do not get complications (with misoprostol) like with other methods used in the community. Source: CHW unsafe provider of abortion, Segha

The CHWs and CBDs have however not been trained on how to terminate pregnancies using the drug and used wrong doses and routes of administration

e) Other methods

Some other methods were used by very few women and it is hard to make conclusions on how dangerous they are. They are discussed in this sub-section:

Four women reported to have been injected in clinics with some unknown drugs to terminate their pregnancies. They all ended up with hemorrhage not requiring transfusion. Two other women drank non-medicinal concoctions to terminate their pregnancies. The common preparations were concentrated tea and Omo (a detergent) or a mixture of both. Incidentally they ended up with symptoms of unsafe abortion and no complication. As one woman who had used the method put it, what made them go to hospital was the pain and bleeding following use of this method:

I approached my friend for advice. She told me to boil concentrated tea and add OMO to it. I did exactly that and took the mixture. After a few hours I got pain and bleeding. The pain and bleeding were however so much that I decided to go to the hospital. Source: woman treated for unsafe abortion, Sega.

Two other women put the non medicinal preparations into the vaginal canal. They both got hemorrhage not requiring transfusion.

Two women self inserted herbs into their vaginal cavities. They ended up with incomplete abortion and no complication.

Three women had an unsafe provider insert conventional medicines into their vaginal canal. One did not have a complication, one had hemorrhage not requiring transfusion and one had pelvic infection.

Complications resulting from the various methods are summarized in figure 4.10:

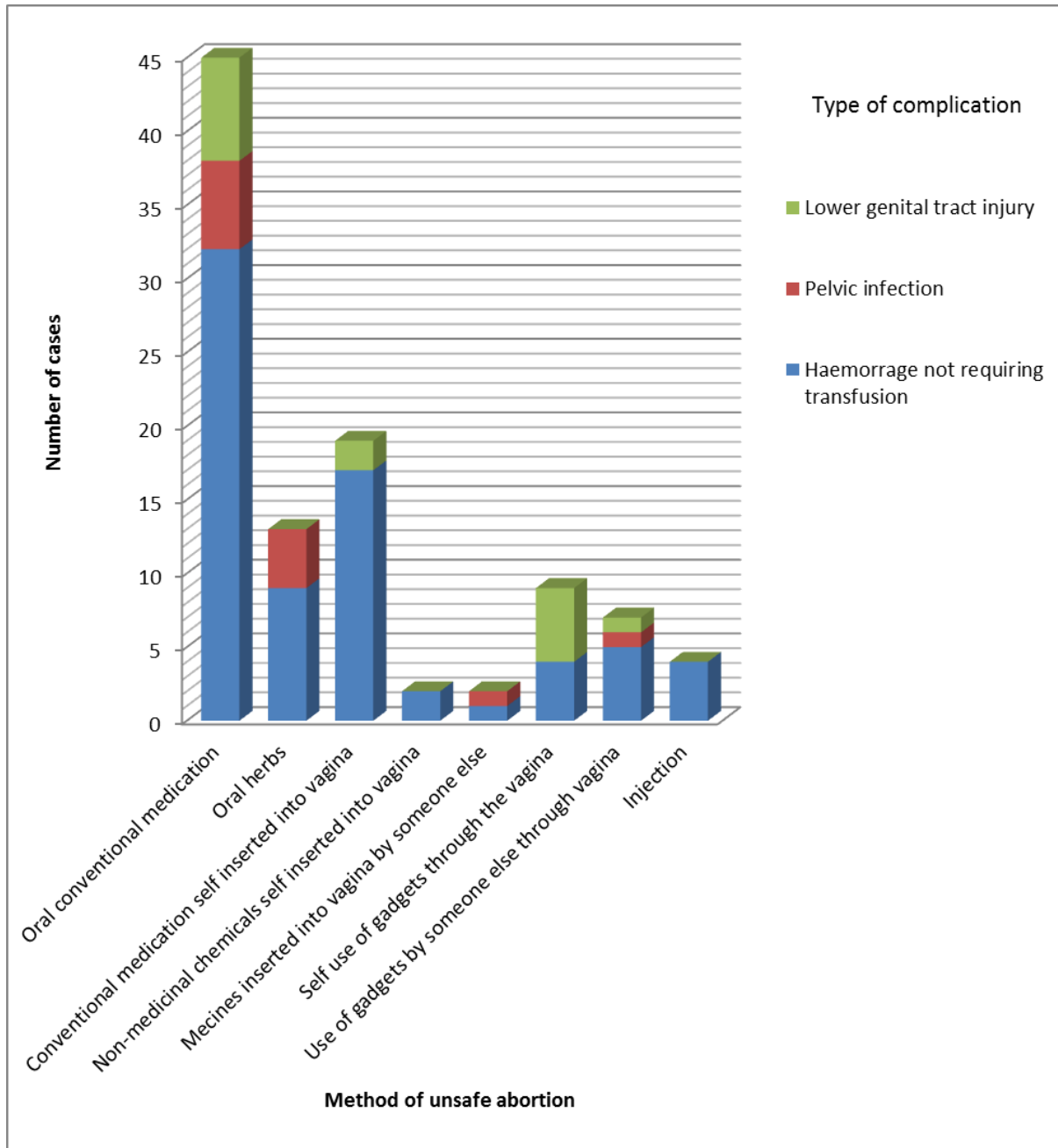


Fig. 4.10: Complications from various unsafe abortion methods

4.6 DISCUSSION

4.6.1 Unsafe Abortion Rate

This study estimated that 987 women had unsafe abortions in the study population of 221,986. The estimated unsafe abortion rate was 19 per 1000 women aged 15 – 44 years.

The most recent estimates of the world unsafe abortion rates were done by Shah and Ahman (2010). They estimated the world unsafe abortion rate to be 14 per 1000 women aged 15 to 49 years. They however found the overall rate for developing countries to be higher at 27 per 1000 women aged 15 – 49 years. In fact Sub-Saharan Africa had a higher rate of 31. Eastern Africa specifically had a rate of 36 per 1000 women aged 15 – 49 years making it the highest in Africa.

According to the Guttmacher Institute (2009), the overall abortion rate for Africa is 33 per 1000 women aged 15 – 49 years. Out of these, 95% are unsafe abortions. This estimate however includes countries with more liberal abortion laws in Africa in which there are more safe than unsafe abortions.

The unsafe abortion rate of 19 per 1000 women aged 15 – 49 years found in this study are higher than the overall estimated world unsafe abortion rates as expected for an African community. It is however lower than what other studies have found in the East African region which is quite high (36 per 1000 women aged 14 – 49 years). It is however notable that the country listing by the United Nations laments a number of countries with poor maternal health as part of Eastern Africa (Sedgh, 2007). The countries under the category include Burundi, Comoros, Djibouti, Eritrea, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Réunion, Rwanda, Somalia, Tanzania, Uganda, Zambia, and Zimbabwe. Among these

countries, Kenya has the best maternal health indicators and so is likely to have a lower unsafe abortion rate than the estimated 36 per 1000 women aged 15 – 49.

Further, the calculated unsafe abortion rate could have resulted from under reporting in public health facilities which was a big challenge for the study (see section on limitations). Some women may not also have volunteered information on termination of pregnancy and could have been misclassified as having miscarriages and excluded from the study. The study brings out a much known point though: the difficulty in estimating abortion rates, especially the unsafe ones.

4.6.2 Characteristics of women undergoing unsafe abortion

Unsafe abortion was found to affect young women disproportionately in this community. Out of the 320 patients presenting with incomplete abortion following unsafe abortion, 243 (75.9%) were below the age of 24 years.

These findings are in tandem with those of the Kenya Demographic and Health Survey of 2008 which found Nyanza Province to be having the lowest age at first sexual debut. The average age at first sexual exposure was found to be 16.5 years. The same KDHS also found that 73% of women aged 15 to 19 years and 37% of those aged 20 to 24 years who were sexually active did not use contraceptives. The risk of pregnancy was therefore found to be high. Nyanza Province was again found to have the highest number of child bearing adolescents in the country standing at 27% compared, for example, to Central Province which had 10%.

This study found that most women (85%) had termination of pregnancy in the first trimester. This is higher than findings by Gebreselessie *et al* (2005) who found women presenting with first trimester incomplete abortions to hospitals to be 66%. His study however combined those terminating pregnancies with those having miscarriages. Just like in the study by Gebreselessie however where 80% of women presented with incomplete abortion, 87% of women in this study had incomplete abortion at admission.

4.6.3 Drivers of Unsafe Abortion in Ugenya and Siaya Districts

Inaccessibility of safe abortion services through the health facilities due to inadequate infrastructure, supplies and willing and competent personnel was found to be a driver of unsafe abortion. This finding is in line with previous studies done in Kenya by Pearson and Shoo in which they found health facilities to lack basic infrastructure, equipment and drugs for providing emergency obstetric care services under which treatment of unsafe abortion complications falls. They also found staff morale to be low and working conditions to be poor (Pearson, 2005).

According to Kimani (2008), health facilities providing obstetric and gynecological services in Kenya exemplify the state of health facilities in Africa. The facilities lack basic infrastructure, equipment and supplies and sometimes patients are asked to buy supplies from elsewhere and bring to hospital before treatment can be provided.

As far as availability and willingness of staff to provide safe abortion services is concerned, studies done in South Africa by WHO concur with findings of this study. WHO found that several factors influenced decisions of service providers to become involved in some way with abortion service provision. These included a combination of circumstance and personal

interest. Some of the reasons for refusal to provide the services were religious and moral beliefs and fear of being ostracized (WHO, 2010).

Other than inadequate infrastructure, equipment and staff, clinics studied did not target the youth with pregnancy prevention services even though young people were found to be the most affected by unsafe abortion. It is known that access to contraceptives by young women remains a big challenge in developing countries. Studies done by the United Nations show that only 19% of married adolescents in developing countries use contraceptives compared to 54% of their counterparts in the developed world, (Rafalimanana, 2007).

A critical analysis of contraceptive trends among adolescents in Kenya by African Population and Health Research Centre (APHRC) using the demographic and health survey data shows low rates of contraceptive initiation, high discontinuation rates, and relatively high levels of use of traditional methods among young, unmarried sexually active women. All these factors combine to provide high potential for unintended pregnancy. The 1998 KDHS data show that about one in five women age 15-19 years were either pregnant or already had a child at the time of the survey, and there was little change in this figure between 1993 and 1998 (APHRC, 2001).

The low use of contraceptives by adolescents is to a large extent contributed to by a non-responsive health system. Studies done in Kenya and Zambia show that nurse-midwives disapproved of adolescent sexual activity, including masturbation, contraceptive use and abortion yet this is the cadre of health workers tasked with provision of these services in public health facilities (Warenus, 2006).

Lack of some methods of contraception and poor commodity security for contraceptives was found in all health facilities, a situation that could also promoted occurrence of unwanted pregnancy and unsafe abortion.

At community level, the drivers of unsafe abortion were found to be at personal level, driven by social contacts and fueled by unsafe abortion providers. Personal level drivers included poverty that made women indulge in sex for material gain, made parents tolerate such behavior, and caused pregnant women to go for unsafe abortions for the sake of securing a better future. These findings seem to support the strain theory; that the cause of deviance (if unsafe abortion is seen as a criminal deviant behavior) is as a result of an individual striving to meet goals that have been set by the community to define success (Farnworth (1989). Social networks advised women to abort as a way of evading social embarrassment. They also wanted to evade financial responsibility and were rarely worried about the woman's wellbeing. These actions, again, seem to be in congruence with the strain theory.

Recognition and respect accorded to unsafe abortion providers was found to be their main motivation for performing abortions. Due to this benefit, unsafe abortion providers braved risks of the practice and even developed strategies for mitigating the risks. This behavior fits well with the social learning theory as the community positively reinforced provision of the service by commending and even paying for the services (Asher, 2009). Further, herbalists learnt the practice from their families and were made to believe that they had a divine role to perpetuate it.

Overall, the continuing occurrence of unsafe abortion in the community is partly contributed to by the woman, social networks, and unsafe abortion providers. The woman and her social network are responsible for the demand while the unsafe abortion provider is responsible for

the supply of the service. In fact the reason why they command so much respect is because they provide solutions at a very desperate time to their clients. They are able to respond to the situations because they have shared beliefs with the community making it easy for them to identify with the needs of their clients.

Although the unsafe abortion providers exhibit internal conflict between their activities and their religious beliefs, they are convinced that God understands the situations they have to deal with and as such continue providing the service.

These findings echo what has been expressed at the international level in relation to abortion: it is a prevalent public health problem and where safe services are not available, communities resort to unsafe methods (McInerney, 2001). At the United Nations (UN) International Conference on Population and Development (ICPD) in Cairo in 1994, governments identified unsafe abortion as a public health problem and called for action by member states to reduce morbidity and mortality from it (ICPD, 1994). The 1995 Fourth World Conference on Women (FWCW) in Beijing brought further attention to the issue, and called on countries to consider reviewing laws that penalize women who have had illegal abortions (FWCW, 1995). The realization has been that abortion is prevalent and unless available safely communities resort to unsafe methods, hence, with or without the unsafe providers the magnitude of induced abortions remain unchanged.

The Cairo and Beijing conferences encouraged significant improvements in women's ability to obtain care for complications of unsafe abortion. In 1999, governments at a Special Session of the UN General Assembly reviewing global progress since the Cairo conference (ICPD+5) reaffirmed their commitment to addressing unsafe abortion and reached consensus

on new actions needed. The commitments addressed issues around abortion policy and services. Community mobilization as a response to the socio-cultural issues around abortion however remains unexplored yet this study shows that they may be the more important to individual women seeking abortion.

4.6.4 The Role of Social Networks in Women's Decision Making Process for Unsafe Abortion

This study found that 95.3% of women undergoing unsafe abortions discussed their problem with a social contact either directly or indirectly before taking a decision. Almost all social networks contacted advised on abortion, even though the reason for the advice was not necessarily for the benefit of the woman. The man causing pregnancy and the mother of the pregnant woman were the most influential causing women with desired pregnancy to go for abortion.

The result of advice by social networks was that 70% of the women had abortion out of their own volition while 30% felt it was not their own decision. Ownership of decision was more likely the older the woman was. It was also more likely the more the children a woman already had.

The concept of a social network as described by Wasserman (1994) was noted in the interactions that the pregnant woman had. According to Wasserman, a social structure is made up of individuals or organizations that are tied by one or more specific types of interdependency, such as values, visions, ideas, financial exchange, friendship, kinship, or trade (Wasserman, 1994). The people influencing decisions on abortion were driven by

community values that prohibit some types of relationships, for example that a teacher should not make a student pregnant; a married man should not impregnate a single girl; a widow should not conceive among others. These shared values made the man causing pregnancy to advice on abortion.

According to Cross *et al* (2001), there are many dimensions to an advice network. People who seek advice from others seek to understand their problem better, get solutions to the problem and justify their intended actions. The problem comes when the one giving the advice has personal interests and inadequate knowledge about the problem. The advice seeker is likely to end up taking the wrong action, especially when it is a sensitive topic like unwanted pregnancy that cannot be discussed by a wider audience. Unsafe abortion is likely to happen.

When it comes to accessing unsafe abortion, the most important people in the social network were the intermediaries who linked up the woman with the unsafe abortion provider. They included agents of the unsafe abortion provider, former clients of the services, relatives and friends of the woman and the man responsible for the pregnancy. Unsafe abortion providers also had cross-referrals among themselves. These intermediaries were the 'connectors' in the network. Without them there would be no unsafe abortion services in the community. In analyzing the social network, therefore these intermediaries form the key links to unsafe abortion service and the most important nodes in sustaining the service.

The study findings are in line with the theories of health seeking behavior. They are coherent with the socio-behavioral theory or the Anderson model (Anderson and Neuman, 1975), the theory of reasoned action (Campbell and Mzaidume, 2001; Ajzen, 1991) and the pathway model (Good, 1987). All these theories stipulate that people turn to their 'significant other',

friends, relatives and other social contacts for direction and advice whenever a health condition occurs.

The fact that almost all people contacted by the woman advised on abortion is an important point to note. It is possible that women chose to seek advice from people they thought would favor or side with their desire to abort. Colman (2009) and Harries (2007) in their studies in Texas and South Africa respectively found that women with unwanted pregnancies avoided talking to people they thought could stop them from having abortions and only sought advice from people with similar thinking as theirs.

Also important is that the younger a woman was, the higher the variety of people that she was likely to consult for advice on the pregnancy and the less the likelihood she had of owning the decision to abort. Further, most of the women having a desired pregnancy and ending up aborting unsafely were likely to be of the younger age. It may therefore appear that the effect of social networks was greater the younger the age of the woman was. This finding is in agreement with studies done elsewhere on pregnancies among adolescents and young people. According to Arai (2007), young people choose to either abort or carry on with the pregnancy based on either direct advise or pressure by peers and friends, or if they know of their age mates who have taken similar actions within their communities.

According to Matyastick *et al* (2008), the inner circle of an adolescent has a great influence on sexual behavior, pregnancy and abortion. In fact the beliefs of the associates of an adolescent can be used to predict sexual behavior outcomes in a community.

4.6.5 How Methods Used to Procure Unsafe Abortions Influence Outcomes Among Women in Siaya and Ugenya Districts

According to key informants, community health workers and unsafe abortion providers, only 30% or less of women terminating pregnancies unsafely seek further care in health facilities. This finding is in agreement with estimates by WHO which put the proportion at 10% to 50% (Info for Health, 2007). A recent study by Gebreselassie *et al* (2010) in Malawi to estimate the magnitude of unsafe abortion put the proportion at 29% although the estimate was taken from the perspective of hospital based health workers. Studies done in communities in Nyanza and Western regions of Kenya have also consistently shown that home deliveries are over 70% (Nangendo (2006); Ouma (2010)). Home deliveries mirror health seeking behavior in women with abortion related problems. In essence therefore, over two thirds of women procuring abortions unsafely do not get to hospital for further care. Some deaths were reported to have occurred in the community in such women. Some could be suffering long term morbidity. This study did not assess chronic and long term sequel of the abortions.

Unsafe abortion providers were found to generally use a mixture of methods to terminate pregnancies. Methods used were not specific to a particular provider, for example herbalists used conventional medicines and medical workers used herbs. There was therefore a degree of shared knowledge among unsafe abortion providers in the community. This led to multiplicity of complications for every category of providers so that a given complication was not also necessarily specific to a particular provider.

Death was the severest outcome of unsafe abortion. A case fatality rate of 0.3 to 0.5% was recorded. Thonneau (2007) has estimated unsafe abortion case fatality rates in the Eastern

Africa region to be 0.8%. A smaller country based study done in Ethiopia however found a rate of 3.6% (Gebrehiwot, 2008). These variations not only point to differences in methodology but also to the difficulty in estimating unsafe abortion related deaths in a community. The community in Siaya District could be different from others where the other estimations were done and so having its rate different.

The death that happened in the health facility was partly due to the delay in providing uterine evacuation. Service providers insisted on payment being made before the procedure could be undertaken. It was also reported that monies paid for treatment of unsafe abortion were pocketed by service providers and that records of such treatments were not made. The attitude of health workers towards patients with abortion complications was that of irresponsibility and unprofessionalism. In fact many studies have found that health worker attitude is a major barrier to women with abortion related problems accessing healthcare (Kade, 2003). Programs aimed at transforming attitudes of health workers towards women with abortion related problems have shown promising results and could help save affected women (Turner, 2008).

As far as outcomes of specific methods are concerned, use of oral herbs led to the most severe complications. Two deaths reported in the community were as a result of using herbs. The four women who required blood transfusion had also been treated by herbalists. Previous studies by Benson (2008) and by Ahmed (1998) found traditional practitioners of abortion to be quite dangerous. It was concluded that the work of some traditional practitioners in abortion care could lead to life threatening complications. The situation appears to be the same in this community. The situation in this community could have been made worse by the

bad relationship that exists between herbalists and medical workers leading to delays in or total lack of referral of women treated by herbalists to health facilities.

The use of gadgets inserted through the vaginal cavity by an unsafe abortion provider or by the woman herself was the second most dangerous method of unsafe abortion. Previous studies have shown the dangers of this method. Agarwal (2007), for example, found women who had had an “abortion stick” inserted in the cervical canal to induce termination of pregnancy to develop severe pelvic infections. The abortion stick may have been a wooden or bamboo twig, or a piece of an irritant plant such as *madar* (*Calotropis*) or *chitra* (*Plumbago zeylanica*) or other sticks coated with irritant chemicals. In another study, Ahmed (1998) found life threatening complications to result from insertion of tubers and other foreign objects into the uterus. This method, which seemed to cut across providers of unsafe abortion in Siaya and Ugenya Districts, is therefore known to result in serious complications.

This study found the use of oral conventional medicine to be the safest method of unsafe abortion. The drug commonly linked to this method was misoprostol. In one study done in Kenya by Ongech *et al* (2008), misoprostol was found to be available for sale in 42% of pharmacies. Some pharmacies sold it directly to women while others only sold it on prescription. A similar study by Akiode *et al* (2007) in Nigeria found 20% of pharmacies to stock the drug. The drug is known to be in circulation in Africa, Kenya included (Ipas, 2009). The use of misoprostol for abortion in the community has been found to be associated with fewer complications and reduces morbidity and mortality from unsafe abortion (Monteblanco, 2010). This led the government of Uruguay to include a program for educating women on use of misoprostol at community level in their national reproductive

health policy (Monteblanco, 2010). The findings of this study are therefore consistent with these previous observations.

The tendency to use multiple methods was however seen in the women using oral conventional medicines to terminate pregnancy. This led to the women getting unexpected complications with the method. It is known that bleeding takes time to resolve when abortifacient drugs are used for pregnancy termination, the average duration of bleeding being 11 days, sometimes bleeding going on for more than two weeks (National Abortion Federation, 2010). Unless women are made aware of this fact, they may think that the method has failed and go for more methods. This could have been the case in this study.

One significant finding was that there was no difference in the choice of methods used for terminating pregnancies in the first and in the second trimesters of pregnancy ($t=1.38$; $df=12$; p value 0.19). According to WHO (2003), methods for terminating pregnancies in the first trimester are totally different from those in the second trimester and using one method across the two trimesters can lead to complications. Unsafe abortion providers did not seem to respect this however.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Findings

a) Incidence of unsafe abortion

The incidence of unsafe abortion was found to be 19 per 1000 women aged 15 – 49 years which, as expected, is greater than the global estimate but incidentally lower than the estimate for East Africa.

b) Characteristics of women aborting unsafely

The affected women were generally young, 76% of them being below 24 years old, mostly nulliparous and presenting to the clinic with incomplete abortion in the first trimester. Previous studies have similarly found young women to be the most affected by unsafe abortion.

c) Drivers of Unsafe Abortion

Poor infrastructure, lack of the right equipment, unwilling health providers and inadequate competent service providers were found to make health facilities unable to provide safe abortion and by extension, women to seek unsafe abortion services from elsewhere. Health facilities also lacked youth friendly services and comprehensive contraceptive services which are key to preventing unwanted pregnancy and abortion.

The other driver for unsafe abortion was found to be socially stressful social circumstances that made women go for unsafe abortion. At the centre of this was poverty, culture and a desire for a good future. Stigma due to unwanted pregnancy as well as abortion also made women seek unsafe abortion.

The pregnant woman's social networks not only recommend abortion to the woman but also appreciate unsafe abortion providers and this encouraged perpetuation of the service. Multiple social motivations to providers were found to be a driving force behind the practice of unsafe abortion. Material gain was present but seemed to play a less important role.

The incidence of unsafe abortion is therefore a result of demand and supply for the service. The woman and her social contacts cause demand while the unsafe abortion provider makes the service available.

d) The role of social networks in women's decision making process for unsafe abortion

The majority (84.1%) of pregnancies aborted unsafely were not desired from the start. Irrespective of whether a pregnancy was desired or not however, the tendency to consult with the social network for advice was high (95.3%). This observation is in line with the theories of health seeking behavior.

While the majority of women owned the decision to abort unsafely following consultations with the social network, a significant 30% felt that the decision was not theirs. Hence the fact that a pregnancy was not desired did not necessarily mean that unsafe abortion was needed. Neither was it true that a wanted pregnancy could not be aborted unsafely. Consultation with the social network played a determining role on the final decisions on the pregnancy. There was no difference in ownership of the decision to abort between women with desired, those with undesired or those not sure of their desire for the pregnancy. The social contacts highly recommended abortion for the women who ended up aborting unsafely. There was no difference in the type of advice given by the various contacts consulted. It would appear that social contacts had a great influence on the decision for unsafe abortion.

e) How Unsafe Abortion Methods Influence Outcomes

Methods of unsafe abortion included conventional medicines taken orally or vaginally, oral herbs, and gadgets inserted into the vagina by self or by the unsafe abortion provider. Rare methods included injections and use of herbs vaginally.

The community where a woman found herself determined the available methods that she could use. Despite this, a wide range of methods was seen among younger women and those receiving advice from men responsible for the pregnancies as well as from their mothers. Similarly, a wide range of methods were seen in abortions initiated by medical workers and herbalists.

Complications of unsafe abortion were hemorrhage, pelvic infection, genital tract injury and death. A case fatality rate of 0.3 – 0.5% was recorded. This is lower than the estimate for the East African region which has been put at 0.8%.

Severer and higher frequency of complications were seen in younger women, those influenced by the man causing pregnancy, those influenced by their sisters and those having their abortions initiated by health workers and herbalists.

The method of unsafe abortion used was the end result of a number of determinants and had a direct relationship with outcomes. Oral use of herbs was found to be the riskiest followed by use of gadgets per vaginum. Use of conventional medicine was found to be the least risky in terms of severity of complications. Bad outcomes from herbal clinics could have been due to poor referral networks resulting from the bad relationship between health workers in the mainstream health system and herbalists.

5.2 Implications of the Findings

With a low case fatality rate of 0.3 – 0.5 and a high incidence rate of 19 per 1000 women aged 15 – 45 years, the devastation of unsafe abortion lies in the numbers of women aborting rather than the dangers of the procedures used. The public health focus in tackling unsafe abortion should therefore aim to reduce demand and supply for the service, a fact that calls for changes in community knowledge, beliefs and practices. Reducing demand for unsafe abortion will be determined by how men, mothers, sisters, teachers, friends and other social contacts of women behave and guide the woman. Reducing supply also lies with the way the community treats providers of unsafe abortion including the amount of support they provide to them. Finding ways of motivating community providers of abortion to refer women for care in health facilities rather than providing the service could be a key strategy. Such motivations should surpass the gains that they get by providing unsafe abortion. Advocacy should target herbalists and health worker providers of unsafe abortion who are the most dangerous before proceeding to other providers. Generally the findings of this study lay greater responsibility for reducing unsafe abortion in the arena of interventions in the community.

5.3 Conclusions

Drivers of unsafe abortion exist at health system and community levels in the study area. Social networks are consulted by women before they opt for unsafe abortion and contribute to women's decisions to have unsafe abortions. Outcomes of unsafe abortion depend on a number of determinants that culminate in the methods used. Herbal methods are the riskiest followed by use of gadgets through the vagina. Use of conventional medicine, especially

through the pharmacy is the safest unsafe abortion method. Unsafe abortions flourish in the community because health facilities are unprepared to provide safe abortions.

5.4 Recommendations

- a) There is need for the Ministry of Health to improve health system response to the problem of unsafe abortion:
 - Infrastructure, equipment, supplies, personnel capacity should be improved.
 - Contraceptive services, youth friendly SRH services should be in place
- b) Because the decisions to have unsafe abortions are highly influenced by members of the community, the Ministry of Health and other players in reproductive health should develop strategies aimed at reaching the whole community and not just the pregnant woman or the unsafe abortion provider. Specifically:
 - Men and mothers of the women should be targeted and their capacity built to be able to provide guidance when unwanted pregnancy occurs.
 - Socio-cultural reasons for abortion should be interrogated with the aim of having the welfare and autonomy of women considered in any decisions made concerning them.
 - Intermediaries that link pregnant women to the unsafe abortion providers are important in guiding women on where to seek help for unwanted pregnancy and should be targeted in efforts to reduce unsafe abortion.
- c. The Ministry of Health should improve the relationship between medical workers and herbalists to enhance timely referral.

- d. The community holds unsafe abortion providers in high esteem. They should therefore not be stigmatized and demonized by health workers but rather collaborated with and involved in programs to reduce unsafe abortion.

5.5 Suggestions for Further Research

Grey areas that arose in the course of this study that need further research are as follows:

- How can the school system contribute more positively in the sexuality of pupils and students?
- What can be done to help widows enjoy healthy sexuality devoid of unwanted pregnancy and unsafe abortion in Siaya and Ugenya Districts?
- How can the relationship between herbalists and medical workers be improved for the benefit of patients?

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APPENDIX 1: DATA COLLECTION TOOLS**CROSS-SECTIONAL SURVEY QUESTIONNAIRE**

Interviewer _____ Health Facility _____ Date _____

Section 1: Patient Details and Clinical Findings

1. Age in years

i) 10 - 18 (ii) 19 – 24 (iii) 25 – 30 (iv) 31 – 35 (v) Above 35

2. Previous live births

i) 0 (ii) 1 (iii) 2 (iv) 3 (v) 4 (vi) 5 and above

3. Previous miscarriages

(i) 0 (ii) 1 (iii) 2 (iv) 3 and above

4. Previous pregnancy terminations

(i) 0 (ii) 1 (iii) 2 (iv) 3 and above

5. Gestational age in weeks

(i) 12 and below (ii) 13 – 16 (iii) 17 – 24 (iv) Above 24

6. Type of abortion

(i) Incomplete (ii) complete (iii) Septic (iv) Missed (v) Threatened

7. Mark the following findings for the patient as assessed at presentation to the hospital:

(Put a tick where applicable)

History/Symptom	Finding		
	0	1	2
Temperature	Less or = 37.2°C	37.3 - 37.9°C	38°C or higher
Pulse rate	Less than 100	100 - 120	Above 120
Products of conception	Fresh	Moderately altered	Offensive
Supra-pubic tenderness	None	Mild	Obvious
Adnexial tenderness	None	Mild	Obvious
Pregnancy is desired	Yes	Unsure	No
Score	0	3	6
Foreign body in vagina	None	Unsure	Obvious
Signs of genital tract injury	None	Unsure	Obvious
Patient in shock	No	Impending	Obvious
Organ or system failure	No	Impending	Obvious
Confession of attempted termination	No	Not clear	Yes
Poisoning from herbs/medicine	No	Unsure	Yes

Section 2: Fill for Patient Who Scores 3 or more in the Assessment Above

8. How did the patient discover that she was pregnant

(i) Pregnancy test (ii) Had symptoms (iii) Told by 3rd party (iv) Other (specify)

9. Is anybody else aware that the patient has been pregnant?

(i) Yes (ii) No (iii) Not sure

10. (If yes go to No. 11) If not what are the reasons for not disclosing?

(i) Fear of being punished (ii) Lack of someone to confide in (iii) Stigma

(iv) Other reasons (specify) _____

11. If someone else is aware of the pregnancy tick below as appropriate who the person is and the advise they gave:

Person talked to	Advise from the person on what to do with the pregnancy			
	Terminate	Keep it	Decide for yourself	Other (specify)
Man who caused pregnancy				
Other man friend				
Friend of same sex				
Sister				
Mother				
Father				
Teacher				
Health worker				
Non health worker provider of abortion				
Other persons a) b) c))				

12. From the assessment and history so far it is clear that the abortion is induced (score 6 and above or 3 and above with advise from at least one person to have abortion)

(i) Yes (ii) No (iii) Not sure

Section 3: Fill for Patient Likely to Have Had Induced Abortion

13. Would the patient say that the decision to have abortion was personal?

(i) Yes (ii) No (iii) Not sure

14. How can she grade the influence from the following in deciding to have abortion from 0 – 3 where 0 is no influence, 1 minimal influence, 2 moderate influence, and 3 strong influence

Person talked to	Amount of influence			
	0	1	2	3
Man who caused pregnancy				
Other man friend				
Friend of same sex				
Sister				
Mother				
Father				
Teacher				
Health worker				
Non health worker provider of abortion				
Other persons a)				

15. Fill in the table below why the person influencing wanted the pregnancy terminated?

Person who wanted pregnancy terminated	Reason why the person wanted pregnancy terminated				
	It would embarrass them	They feared financial responsibility	They were concerned about welfare of this patient	They were going to gain financially from the abortion	Other reasons (specify)
Man who caused pregnancy					
Other man friend					
Friend of same sex					
Sister					
Mother					
Father					
Teacher					
Health worker					
Non health worker provider of abortion					
Other persons a) b)					

16. Where was termination of pregnancy initiated?

(i) Home (ii) Clinic/hospital (iii) Pharmacy (iv) herbal clinic (v) herbalist's home (vi) Other

17. Who initiated the termination of pregnancy

(i) Self (ii) Doctor/nurse (iii) Pharmacy worker (iv) herbalist (v) Other

18. Other people who have contributed to completing the termination before coming to this hospital

(i) Self (ii) Doctor/nurse (iii) Pharmacy worker (iv) herbalist (v) Other

19. Tick the methods that were used to start off the abortion and others that have been used thereafter before patient came to hospital:

Method Used	To initiate process	Second line	Third line
Medicine from pharmacy/shop taken orally (name if known)			
Herbal preparation taken orally (name if known)			
Other oral preparations (specify)			
Medicine from the pharmacy self inserted into vagina (name if known)			
Herbal preparation self inserted into vagina (name if known)			
Other chemicals self inserted into vagina (specify)			
Medicine/herbs/other chemicals put in vagina by someone else (specify)			
Physical removal using solid wooden/plastic/metallic objects by self (specify)			
Physical removal using solid wooden/plastic/metallic objects by someone else (specify)			

20. Tick the complications that the patient has suffered to date?

Complication	Suffered	
	Yes	No
Hemorrhage not requiring transfusion		
Hemorrhage requiring transfusion		
Pelvic infection		
Pelvic abcess		
Lower genital tract injury		
Upper genital tract injury		
Injury to other organs		
Other organ failure (specify)		
Systemic poisoning		
Other (specify)		
a)		
b)		

21. Is patient ready to be followed up and to provide more information to assist the course of this study including understanding providers of abortion in the community?

(i) Yes (ii) No

22. Comment from interviewer from observation during the interview on how sincere the interviewee is and how helpful it will be to follow her up as a case study. If the patient is to be followed up please get physical address and phone numbers and agree on the best place to meet (home, hospital, etc)

INTERVIEW GUIDE FOR UNSAFE ABORTION PROVIDERS

Instructions to the Interviewer

The interviewer starts by introducing him/herself thus:

My name is I am participating in a research that aims to understand the health of women in our community. I have been informed that you have been helping women with problems and so you can help me understand the problems that they face. I have a few questions that you can help me answer. If you do not mind participating in this interview kindly sign the consent form then we can proceed.

Once the consent form is signed, the interviewer gets the following details of the provider

Identify the respondent: Name (optional) Sex Profession

The interview then continues as follows:

Interview Questions

1. What kind of diseases do women present to you with in this community?
2. How do they learn about the services that you provide?
3. Do you have a way of passing information to the community?
4. Do you have people who assist with informing the community about your services?
5. Who refers the women who require services to you?
6. Do you also refer your patients to other places? Where?
7. I would now like to learn more about women who come to you with pregnancy related problems. Do some come with bleeding in pregnancy?
 - a. Commonly what is the cause of their bleeding?
 - b. What kind of treatment do you give them?
8. Are there women who have unwanted pregnancy and ask for abortion?
9. What do you think about such women?
10. Do you think they deserve any help?
11. If so what exactly?
12. Can you provide abortion?
13. What would be your reason for helping such a woman (if at all)?
14. Why do you think providers actually choose to provide abortion to such women?
15. What methods of abortion do people use?
16. What method would you use if you were to provide the service?
17. Are there any consequences of abortion that you see here?
18. Do you know any woman who may have died of unsafe abortion?
19. I am interested in learning more about the woman who died. Can you introduce me to someone who knows her?

INTERVIEW GUIDE FOR KEY INFORMANTS

Instructions to the Interviewer

The interviewer starts by introducing him/herself as follows:

My name is I am involved in a study that aims to understand how women in our community deal with the problem of unwanted pregnancy. Because of your position in this community, you definitely have a lot of knowledge that you can share with me. I have a number of questions that you can help me answer. Kindly sign the consent form if you do not mind to participate in the interview.

Identify the respondent: Name Sex Profession Average age

Interview Questions

1. What are the causes of unwanted pregnancy in our community?
2. How common is unwanted pregnancy?
3. When women discover that they are carrying a pregnancy that they do not want, whom do they go to talk to?
4. What options are there for them for dealing with unwanted pregnancy?
5. Do some of them go for abortion?
6. Who provides abortion in this community?
7. How do pregnant women learn of these services?
8. Why do you think people who provide abortion choose to do it?
9. Are there some consequences that you see arising from abortion in this community?
10. Do you know any woman who has died in this community of unsafe abortion?
11. I would like to learn more from people who know these women, can you refer me to them?
12. How common is abortion here?
13. How can unsafe abortion be prevented in this community?

GUIDE QUESTIONS FOR THE CASE STUDY

Instructions to the Interviewer

Participants with typical features of induced abortion who are willing to give further information will undergo a case study. After reviewing how the interviewee has fared with treatment following the first contact, the interviewer proceeds with the case study. The interviewee should have signed consent to participate in the study during the first contact. The following are guide questions for the case study:

Get the following from the participant:

Name	Age	Parity
------	-----	--------

Interview Questions

1. How did the conception for this pregnancy come about?
2. After you realized that you could not carry on with the pregnancy who were the people who came to your mind as helpful to talk to?
3. How did you plan to introduce the topic to them given the sensitivity around it?
4. Tell me the discussions you had with each of them.
5. Why do you think some of them were ready to assist you to have the pregnancy terminated?
6. Why were some unwilling to assist you?
7. Who were you referred to by each of these first contacts?
8. What happened when you visited the people you were referred to?
9. How did you finally get to the provider of abortion?
10. Did the provider refer you to someone else?
11. How did you finally land in hospital, were you referred by the provider?
12. Why do you think the provider was willing to provide the service?
13. Will you go back to the provider at some point?
14. Can you refer someone to this provider?
15. I would like to learn more from the people you talked to just to understand their view on this subject. Can you introduce me to them?
16. Let me now learn more about the provider. Provide the following details of the provider:
 - a. Sex M F
 - b. Average age (yrs) below 20 21 – 35 36 – 50 Above 50
 - c. Name (optional)
17. I would like to talk to the provider to learn more. Are you able to introduce me to him/her?

Checklist for Assessing Health Facility Capacity to Prevent Unsafe Abortion/Provide Safe Abortion Services

Name of health facility _____

Facility type (a) Private

(b) Public

Availability of MVA room Yes _____

No _____

Availability of:

MVA couch Yes _____

No _____

Procedure lamp Yes _____

No _____

Functioning MVA equipment Yes _____

No _____

Human resource matters:

Health workers eligible to provide:

- PAC _____
- Safe abortion _____

Health workers willing to provide:

- PAC _____
- Safe abortion _____

Health workers competent to provide:

- PAC _____
- Safe abortion _____

Reasons for willingness to provide termination of pregnancy _____

Reasons for unwillingness to provide termination of pregnancy _____

Pregnancy prevention services

- Dedicated adolescent SRH/youth friendly clinic exists (Yes) _____(No)____

- Contraceptive services
 - Methods present (All) _____(Some) _____(None) _____

 - Commodity security (Good) _____(Fair) _____(Poor) _____
 - Linkage between clinic and community services (Present)____(Absent)

APPENDIX 2: RESEARCH AUTHORIZATION

REPUBLIC OF KENYA


NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telegrams: "SCIENCETECH", Nairobi
 Telephone: 254-020-241349, 2213102
 254-020-310571, 2213123.
 Fax: 254-020-2213215, 318245, 318249
 When replying please quote

P.O. Box 30623-00100
 NAIROBI-KENYA
 Website: www.ncst.go.ke

Our Ref:

NCST/5/002/R/1187

Date:

20th Jan, 2010

Joakim Osur
Kenyatta University
P.o Box 43844
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on
 "*Determinants, Magnitude and Outcome of Unsafe Abortion in Siaya
 and Ugenya Districts, Kenya*"

I am pleased to inform you that you have been authorized to undertake
 your research in *Siaya and Ugenya Districts* for a period ending **30th
 June 2010**.

You are advised to report to **the District Commissioners and the
 District Education Officers** of *Siaya and Ugenya District* before
 embarking on your research project.

Upon completion of your research project, you are expected to submit
 two copies of your research report/thesis to our office.

✓ **PROF. S. A. ABDULRAZAK Ph.D, MBS**
SECRETARY

Copy to:
 The District Commissioners
 Siaya District
 Ugenya District

APPENDIX 3: SKILLS CHECKLIST FOR COMPETENCY TO PROVIDE ABORTION SERVICES

Medical Knowledge
Resident demonstrates knowledge of contraceptive options
Describes the differences between an aspiration abortion and a medication abortion and know the indications and contraindications of each
Describes the criteria for no-touch and sterile procedures
Knows the elements of pre and post operative care
Knows appropriate use of medications associated with abortion care
Patient Care
Manages contraceptive needs in a patient centered manner
Physical exam: accurate, appropriate to the medical history
Uses the bimanual exam to describe the position of the uterus, estimate the GA and to identify normal and abnormal findings
Demonstrates proficiency in the administration of a para-cervical block
Applies the tenaculum and dilates the cervix without trauma
Aspirates the uterine cavity effectively and completely
Examines the tissue aspirate in order to identify the completeness of the procedure
Provides options counseling in a patient-centered manner
Able to perform and interpret sonograms for gestational dating, pregnancy location and completion of abortion procedure
Interpersonal and Communication Skills
Presents cases effectively, that are clear, concise and thorough
Establishes rapport with the woman
Solicits questions from the patient prior to the procedure and answers them
Asks the patient to position herself for the procedure without any physical handling

Uses respectful language, establishes trust, demonstrates compassion
Communicates with patients during the procedure with attention to her comfort
Fosters sense of cooperation, team spirit, works effectively with other team members
Professionalism
Demonstrates desirable work habits: perseveres, takes initiative
Demonstrates desirable work habits: responsible and reliable
Demonstrate desirable work habits: able to prioritize, manage time efficiently
Demonstrate desirable work habits: accepts and integrates constructive criticism/feedback
Demonstrates commitment to ethical principles
Demonstrates sensitivity and responsiveness to patients' culture, age, gender, language and disabilities
Demonstrates respect, compassion, integrity, and professional composure (esp. in high stress situations)