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Pregnancy Termination in Sub-Saharan Africa: The Need for Refined Data

Abstract

PURPOSE: This study examines the levels and pattern of, as well as the factors associated with, pregnancy termination in seventeen Sub-Sahara African countries.

METHODS: The 2000 round of demographic and health survey (DHS) data sets for the countries are used. The study population are women aged 15-49 who have ever been exposed to the risk of pregnancy and interviewed during the surveys. Univariate analysis is done to examine the distribution of the women. Bivariate analysis of selected background, contraceptive, sexual behaviour and fertility variables by having ever had a terminated pregnancy are also carried out. Lastly, multivariate logistic regression models are fitted to examine the magnitude of associated variables while controlling for others.

RESULTS: the associated factors vary from country to country. However, age and marital status are associated with and are critical predictors of having ever had a terminated pregnancy in all the countries. For example, the odds of having ever had a terminated pregnancy is about 54 and 32 times (for currently and formerly married women, respectively) that of those that have never married in Rwanda.

CONCLUSION: This study has come up with findings that provoke more thinking and research on the topic of pregnancy termination and to reproductive health in general. This is because 'ever had a terminated pregnancy' as used in the DHS context made no distinction between the three different pathways through which a pregnancy may not result into a live birth.

Key Words: Abortion; Stillbirths; Pregnancy termination; Sub-Saharan Africa.

Latifat Ibisomi[1*]
Clifford Odimegwu[2]

[1]African Population and Health Research Center, Nairobi, Kenya

[2]Demography and Population Studies Program, University of the Witwatersrand, Johannesburg, South Africa.
Email:
Clifford.Odimegwu@wits.ac.za

***For Correspondence:**

Tel: +254 722361634

        +254 20 2720400

E-mail: libisomi@aphrc.org

Introduction

Although pregnancy termination is often seen as being synonymous with induced abortion (deliberate termination of pregnancy), it could be due to miscarriage or stillbirth. For clarity purpose, abortion is the removal or expulsion of an embryo or foetus from the uterus, resulting in, or caused by, its death. This can occur spontaneously (medically defined as a miscarriage) or be artificially induced through chemical, surgical or other means [1,2]. A pregnancy that ends after 20 weeks with an infant dead upon birth at any gestational stage, due to causes including spontaneous abortion or complications during delivery, is termed a stillbirth[2]. Some associated causes include: antepartum haemorrhage (bleeding caused by placentae praevia or abruptio placentae); malformed babies, pregnancy-induced hypertension, diseases in the mother such as diabetes, heart disease as well as rhesus iso-immunization. Other causes include rubella, genital herpes and other infections. As high as 30% of the causes are unknown although most of these babies are born prematurely or weigh less than expected at the time of birth[3].

It has been estimated that one in every seven pregnancies ends in a miscarriage, often between six and ten weeks of pregnancy. Miscarriage is less common among women under the age of 25 but becomes so as a woman grows older Indeed, after the age of 35, one out of every five pregnancies may end in miscarriage. Factors associated with miscarriages include improper formation of foetus and nature therefore getting rid of it, severe fever particularly due to a virus infection, abnormality of the uterus particularly cervical incompetence as well as immunological relationship of the couples being too close such that the mother is unable to secrete the blocking antibodies which prevent the foetus from being rejected (the latter usually in cases of recurrent abortion)[3].

Induced abortion could be therapeutic or elective. It is therapeutic if carried out to save the life of the pregnant woman; to preserve the woman's physical or mental health; to terminate a pregnancy that would result in a child born with a congenital disorder, which would be fatal or associated with significant morbidity; as well as to selectively reduce the number of foetuses to lessen health risks associated with multiple pregnancy. Elective abortion is however that performed for any other reason outside the ones listed under therapeutic.

While some advocates regard (induced) abortion as a basic human right, others do not see abortion in the concept of rights due to religious prohibition, philosophical beliefs or conflicting political agenda. Abortion laws are generally restrictive, especially in Sub-Sahara African (SSA) countries, with the notable exception of post apartheid South Africa. However, their enforcement and practices vary widely (even within a country) and penal codes are sometimes ambiguous (such as not specifying whether health includes both physical and mental health), and are generally manipulated and exploited in their practices and enforcement.

In many countries where the performance of abortion is generally illegal, statistics indicate that large numbers are being carried out; most of them illegally, with few prosecutions. Reasons for this include the lack of will or resources to prosecute particularly in the light of more pressing social needs. The situation is even so gross in some countries that those performing abortions or enforcing laws do not know what the provisions of the law actually are[4,5].

Restrictive abortion laws have been blamed for unnecessary deaths and injuries to millions of women especially in the developing world[6]. Where and when access to safe abortion is barred, due to explicit sanctions or general unavailability, women seeking to terminate their pregnancies have sometimes resorted to unsafe methods with

repercussions, too, for their families and wider social networks. For the most part, the mainstream health system learns of these events only when women experience post-procedural complications that compel them to seek treatment at a hospital. Some women even get away by explaining induced abortion as spontaneous and that they are only in the hospital to get the womb cleaned out.

The World Health Organization (WHO) suggests that there are 19 million terminations annually which fit its criteria of unsafe abortion[7]. Unsafe abortion is defined as being, "a procedure...carried out by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both." This can include a person without medical training, a professional health provider operating in sub-standard conditions, or the woman herself.

Unsafe abortion remains a public health concern due to the higher incidence and severity of its associated complications, such as incomplete abortion, sepsis, hemorrhage, damage to internal organs and even death. Long term consequences include chronic pelvic pain, incontinence, obstetric problems and infertility. WHO estimates that of the 19 million unsafe abortions that occur around the world annually, 68,000 of them result in the death of the woman. Complications of unsafe abortion are said to account, globally, for approximately 13% of all maternal mortalities, with regional estimates including 12% in Asia, 25% in Latin America, and 13% in sub-Saharan Africa[8].

One method for bringing down high rates of abortion-related morbidity and mortality is the establishment of menstrual regulation services in countries like Bangladesh. In practice, family welfare visitors often perform menstrual regulation without registering it, in exchange for a fee - even though the procedure is supposed to be provided free of charge. The procedure is backed by the Catholic doctrine of ensoulment and the concept of quickening in Islam. Most theologians believe that abortion is acceptable before this event occurs at about the 40th day of pregnancy[3,9]. It is reported that menstrual regulation is also used to cleanse the womb in Guinea and is often employed in the absence of a pregnancy determination. By and large, the technique has the potential to greatly increase the safety of pregnancy termination where abortion is legal and where it is not.

A population-based study of the prevalence of induced abortion and its determinants in two Nigerian communities show that about 58% of the respondents had successfully terminated an unwanted pregnancy while about 9% attempted to do so but failed[10]. Another study in South West Nigeria on the prevalence of unwanted pregnancy in the community as well as associated factors including the views, perceptions and attitudes of community members towards unwanted pregnancy and the pattern of help-seeking behaviour on unwanted pregnancy show that at some point in life, 26.6% of the respondents had had an unwanted pregnancy while abortion prevalence was 21.7%[11].

Ahmed, Rahman and van Ginneken[9] used data from a longitudinal demographic surveillance system to analyse the outcomes of about 75,000 pregnancies between 1982 and 1991 in Matlab, a rural area of Bangladesh. Outcomes among women in the Matlab treatment area, who have access to an intensive maternal and child health, and family planning program, were compared with those among women in a comparable neighbouring area who received the standard government-sponsored services. They also examined contraceptive use prior to and following an abortion. They found that the incidence of abortion was higher among women who had had six or more children or who become pregnant fewer than twelve months after delivering the previous pregnancy. They concluded that a high

quality reproductive health programme offering use-effective contraceptive methods can reduce the burden of induced abortion in Bangladesh.

A community and hospital based study in Karachi, Pakistan using both qualitative and quantitative data found that 50.8% of abortions were done due to too many children in the family while 49% of abortions were done due to poverty. A woman in Karachi during an in-depth interview was quoted as saying, 'I have no feelings of guilt for terminating my pregnancy. My children do not get enough food, clothing or schooling. Had this child been born, he would have been in a worse state'. About 90% of the women also consult their husband first prior to terminating their pregnancies unless there is a conflict with the spouse or family. Women aged between 26 and 35, literate and of parity four and above were found to be more likely to have had an induced abortion[12]. Some other studies have shown (among them a 1998 study of aggregated data from studies in 27 countries) that factors that influence women to seek to terminate their pregnancies include: age; the desire to delay or end childbearing; concern over the interruption of work or education; issues of financial or relationship instability; health concerns; inadequate knowledge of the legal status of abortion and women's rights, current use of family planning and knowledge of the fertile period; fear of dishonoring the family by having a child out of wedlock; rape as well as incest[3,8,10,13,14,15,16]. Some abortions are also procured as a result of societal pressures such as stigmatization, preference for children of a specific sex, lack of access to or rejection of contraceptive methods, as well as efforts toward population control (such as China's one-child policy).

Data on abortion and on pregnancy termination is grossly incomplete and inadequate for any meaningful analysis in sub-Sahara Africa especially at the community level. Hence, few commnunity-

and facility-based studies are available. To estimate abortion and related rates in these countries, demographers start with the number of abortion-related hospital admissions. Modeling methods are often employed using this information in addition to some assumptions based on other observations to determine the rates[7]. Even in countries and regions where induced abortion is generally permitted (e.g. United States, most European countries, China and India), 'WHO statistics of these areas reported a considerable margin of error'[7]. The need to address the quality of statistical data and the under funding of surveys and monitoring systems has been stressed previously[17]. For example, in Switzerland, uniform national statistics on legal abortion are unreliable because of wide variations in the local application of the law and in public health data among the 26 cantons. However, Switzerland's long history of school-based sex education, reinforced by a national AIDS campaign promoting condom use; the broad availability of contraceptives, including post-coital methods, through general practitioners' offices and family planning clinics; and access to abortion services greatly reduce the incidence of unplanned pregnancy as well as of abortion[18]. The incidence and associated factors in these countries also vary depending upon the stage of pregnancy and the method practised. Some countries, such as Belgium and the Netherlands, have a low rate of induced abortion, while others like Russia and Vietnam have a comparatively high rate[19].

This study uses available, comparable national data sets to examine the levels and pattern of as well as the factors associated with pregnancy termination in seventeen Sub-Sahara African countries.

Methodology

Data source

The study is a secondary data analysis of the 2000 round of Demographic and Health

Table 1: Grounds on which abortion is permitted in the seventeen SSA countries examined and in South Africa

	SL	PH	MH	RI	FI	ES	AR
Burkina Faso	x	x	x	x	x		
Benin	x						
Cameroon	x	x	x	x			
Ethiopia	x	x	x				
Gabon	x						
Ghana	x	x	x	x	x		
Kenya	x	x	x				
Mali	x						
Malawi	x						
Mozambique	x	x	x				
Nigeria	x	x	x				
Namibia	x	x	x	x	x		
Rwanda	x	x	x				
Chad	x						
Tanzania	x	x	x				
Uganda	x	x	x				
Zambia	x	x	x		x	x	
South Africa	x	x	x	x	x	x	x

SL - To save life of the woman, PH - To preserve physical health, MH - To preserve mental health, RI - Rape or incest, FI - Foetal impairment, ES - Economic or social reasons, AR - Available on request

Source: *World Abortion Policy – Available from: http://www.un.org/esa/population/publications/abortion/ profiles.htm*

Survey (DHS) datasets of seventeen sub-Sahara African Countries. The Countries are: Burkina Faso (BF), Benin (BJ), Cameroon (CM), Ethiopia (ET), Gabon (GA), Ghana (GH), Kenya (KE), Mali (ML), Malawi (MW), Mozambique (MZ), Nigeria (NG), Namibia (NM), Rwanda (RW), Chad (TD), Tanzania (TZ), Uganda (UG) and Zambia (ZM). The DHSs are nationally representative cross-sectional surveys of women aged 15-49. Structured questionnaire was used to collect information on fertility and allied issues from the respondents. For details on the conduct of the survey, please refer to the 2000 round of DHS full reports of the countries.

The study population consists of women aged 15-49 interviewed during the surveys that had been exposed to the risk of having ever had a pregnancy (that is, ever been exposed to the risk of pregnancy termination). Pregnancy termination is defined in the DHS as: any pregnancy that respondents have ever had that terminated in a miscarriage, abortion or stillbirth (i.e. did not result into a live birth).

Data Analysis

The data analysis was carried out using Microsoft Excel and Statistical Package for Social Scientists (SPSS) for Windows. Three levels of analyses were carried out. The first was the univariate analysis of some background characteristics of respondents that had been at risk of having ever had a terminated pregnancy. Cross tabulations of selected socio-demographic, contraceptive, sexual behaviour and fertility characteristics of these respondents by having ever had a terminated pregnancy for all the countries were done at the second level. At the third

level, binary logistic regression model was fitted using the forward stepwise conditional method. All the selected respondents' characteristics were used in the model for each of the countries. The independent variables are: age group, type of place of residence, education, marital status, work status, ever use of contraception, would have problem if become pregnant, fertility preference, number of sexual partners and religion (which was regrouped into the three categories of Christian, Muslim and Other). Binary logistic model was used because the dependent variable 'ever had a terminated pregnancy' is dichotomous.

Results

A summary of the total sample of women interviewed in the 2000 round of DHS for the 17 Countries is highlighted in Table 2.

The percentage of respondents who have ever had a terminated pregnancy is highest in Gabon, followed by Cameroon and Benin while the lowest prevalence is found in Namibia. Examination of the period that the termination occurred shows that over 40% of respondents had pregnancy termination in 11 of the 17 Countries in the last 5 years before the surveys. Over 40% equally had the pregnancy terminated in 13 of the 17 SSA Countries in period greater than five years before the survey. Nine of the 17 Countries have over 10% of the respondents unable to state the period that the pregnancy termination occurred. This is particularly high in Benin (73.6%), Ethiopia (54.9%), Gabon (31.7%) and Cameroon (24.2%). Figures 1-3 further give a pictorial representation of these.

Univariate analysis of respondents that have ever had a terminated pregnancy

Figure 4 shows the age distribution of the respondents that have ever had a terminated pregnancy. The patterns are generally similar in all the countries and typically depict the normal fertility pattern over the reproductive ages. The percentage of respondents that have ever had a terminated

Table 2: Total number of respondents, percentage of them that have ever had a terminated pregnancy and the period the pregnancy ended by country

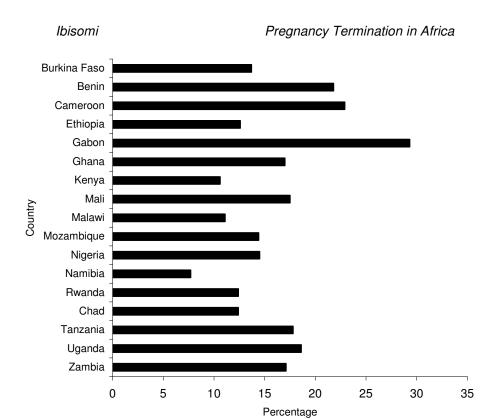| Country	Total Number	% ever had a terminated pregnancy	Year pregnancy ended		
			≤ 5 years	> 5 years	Don't know
Burkina Faso	12,477	13.7	39.5	42.3	18.2
Benin	6,219	21.8	19.2	7.2	73.6
Cameroon	10,656	22.9	44.0	31.8	24.2
Ethiopia	15,367	12.6	27.6	17.5	54.9
Gabon	6,183	29.3	23.2	45.1	31.7
Ghana	5,691	17.0	43.8	49.3	6.9
Kenya	8,195	10.6	39.4	47.2	13.4
Mali	12,849	17.5	48.4	46.1	5.5
Malawi	13,220	11.1	43.7	53.3	3.0
Mozambique	12,418	14.4	47.2	46.3	6.4
Nigeria	7,620	14.5	47.8	35.2	17.0
Namibia	6,755	7.7	39.5	47.7	12.7
Rwanda	10,421	12.4	46.6	49.7	3.8
Chad	6,085	12.4	43.9	49.0	7.1
Tanzania	10,329	17.8	44.1	47.8	8.2
Uganda	7,246	18.6	43.4	45.2	11.3
Zambia	7,658	17.1	42.0	52.7	5.2

Figure 1: Percentage of respondents that have ever had a terminated pregnancy by country
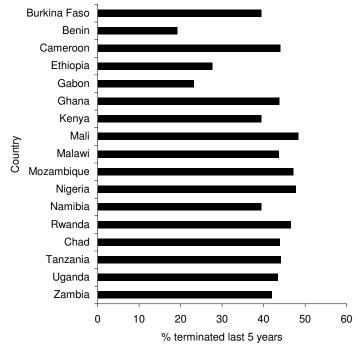

Figure 2: Percentage of respondents that had pregnancy termination in the last 5 years by Country
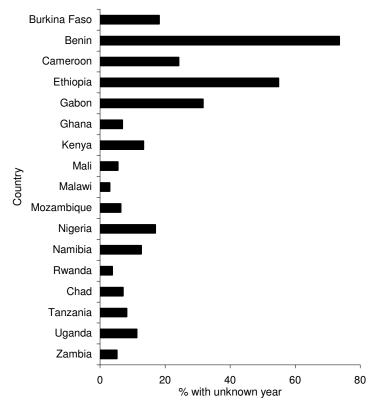
Figure 3: Percentage of respondents that have ever had a terminated pregnancy but did not know the year it occurred

pregnancy is lowest at the 15-19 year age group. This gradually increases till the 25-29 age group at which it basically stays the same to age group 30-34 and thereafter follows a downward trend.

Ever use of contraception among the respondents that have ever had a terminated pregnancy is good on the average. Over 60% of the respondents in Benin, Cameroon, Gabon, Ghana, Kenya, Mozambique, Namibia and Zambia have ever used contraception. The lowest percentage of women that have ever used is found in Chad at 18.4%.

Over 50% of respondents in all the Countries reside in rural areas except in Gabon

(30.7%) and Chad (48.5%). Regarding education, majority of the respondents that have ever had a terminated pregnancy in Burkina Faso (86%), Mali (81%), Ethiopia (78%), Chad (71.4%) and Benin (67.3%) had no formal education. For Cameroon, Kenya, Malawi, Mozambique, Namibia, Rwanda, Tanzania, Uganda and Zambia, majority of the respondents have primary level of education while Gabon and Ghana have most of the respondents in the secondary level education cadre at 50.2 and 48.3 percents respectively. At the topmost education category, Nigeria has the highest percentage of her respondents who have ever had a terminated pregnancy at 8.1% followed by Kenya at 7%. Further details are provided in Table 3 and Figures 5 to 7.
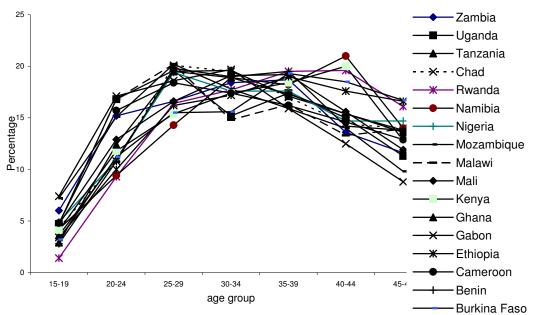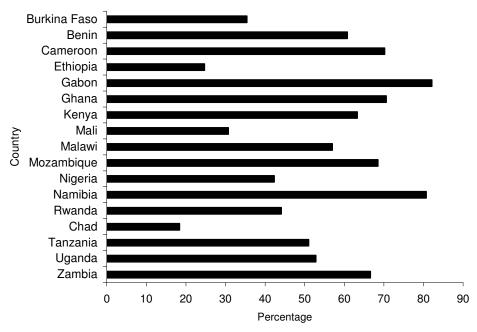
Figure 4: Age distribution of respondents that have ever had a terminated pregnancy

Table 3: Percentage distribution of respondents that have ever had a terminated pregnancy by ever use of contraception, residence and level of education

Country	Ever use	Residence		Highest level of Education				Total No
		Urban	Rural	None	Primary	Secondary	Higher	
Burkina Faso	35.4	22.9	77.1	86.0	9.5	3.9	0.5	1,708
Benin	60.8	35.7	64.3	67.3	21.5	10.2	1.0	1,355
Cameroon	70.2	48.8	51.2	19.4	43.6	34.9	2.1	2,440
Ethiopia	24.7	24.6	75.4	78.0	11.9	8.7	1.4	1,929
Gabon	82.1	69.3	30.7	4.8	41.3	50.2	3.7	1,810
Ghana	70.6	48.1	51.9	28.0	20.0	48.3	3.7	966
Kenya	63.3	32.1	67.9	21.7	51.7	19.6	7.0	868
Mali	30.7	26.2	73.8	81.0	11.7	6.8	0.5	2,244
Malawi	57.0	17.1	82.9	31.4	61.5	7.0	0.1	1,470
Mozambique	68.5	49.1	50.9	35.1	54.3	9.9	0.7	1,789
Nigeria	42.3	41.9	58.1	44.6	23.1	24.1	8.1	1,106
Namibia	80.7	45.3	54.7	18.0	44.0	34.8	3.3	523
Rwanda	44.1	19.6	80.4	36.9	51.8	10.6	0.8	1,296
Chad	18.4	51.5	48.5	71.4	19.3	8.9	0.4	752
Tanzania	51.0	22.1	77.9	29.5	60.0	8.9	1.6	1,836
Uganda	52.8	31.1	68.9	24.7	58.0	13.2	4.1	1,350
Zambia	66.6	27.6	72.4	14.7	67.3	15.4	2.6	1,306

Figure 5: Distribution of respondents who have ever had a terminated pregnancy by ever use of contraception
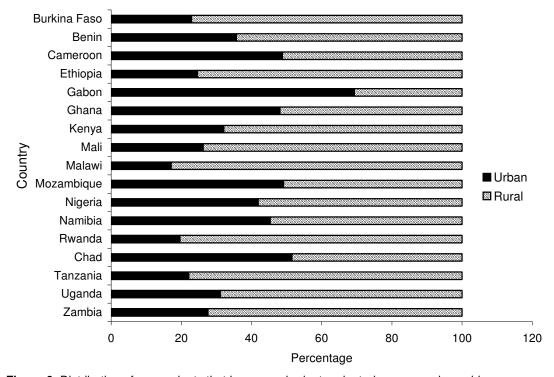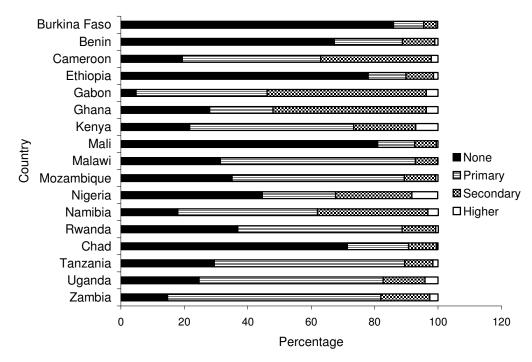

Figure 6: Distribution of respondents that have ever had a terminated pregnancy by residence

Figure 7: Distribution of respondents that have ever had a terminated pregnancy by highest level of education

Bivariate analysis

Cross-tabulations of some selected background, contraceptive, sexual behaviour and fertility characteristics of these respondents by having ever had a terminated pregnancy for all the countries were done. This was carried out to examine whether there is any significant difference between respondents that have ever had a terminated pregnancy and those that have never had. However, those that were never at risk of pregnancy were removed from the analysis (that is, those that never had sex) to eliminate its possible confounding effect. The characteristics examined are age group, type of place of residence, highest level of education, marital status, work status, ever use of contraception, would have problem if become pregnant, want more children (fertility preference), number of sexual partners in last twelve months and religion. The cells ticked **x** in Table 4 represent the characteristics that were found to be

associated with ever having had a terminated pregnancy in the various countries.

Factors associated with having ever had a terminated pregnancy vary from country to country. However, age, marital status and fertility preference are associated with having ever had a terminated pregnancy in all the countries. Work status, education and ever use of contraception and religion were also associated with having ever had a terminated pregnancy in quite a significant number of countries.

Multivariate logistic regression analysis

To examine the magnitude and direction of association (within the various levels of each factor) of all the selected background, contraceptive, sexual behaviour and fertility characteristics of the respondents and the variable of interest - ever having had a terminated pregnancy, binary logistic

Table 4: Characteristics of respondents found to be associated with having ever had a terminated pregnancy by country (based on χ^2 statistics at 5% level of significance)

Country	Agegp	Res	Educ	MS	WkS	Con	PPreg	FPref	NSP	Rel
Burkina Faso	x		x	x	x			x		x
Benin	x			x	x	x		x		x
Cameroon	x		x	x	x	x		x	x	
Ethiopia	x		x	x	x	x		x		x
Gabon	x	x	x	x	x	x		x		x
Ghana	x	x	x	x	x	x		x	x	x
Kenya	x		x	x	x			x		
Mali	x			x	x	x	x	x		
Malawi	x	x	x	x	x	x		x		x
Mozambique	x	x	x	x	x	x		x	x	x
Nigeria	x	x	x	x	x	x		x	x	x
Namibia	x		x	x	x		x	x	x	
Rwanda	x	x	x	x	x	x	x	x		
Chad	x	x		x		x	x	x		x
Tanzania	x			x	x		x	x	x	
Uganda	x		x	x	x			x		
Zambia	x	x	x	x	x	x		x		x

** Agegp – Age group; Res – Residence; Educ – Education; MS – Marital status; WkS – Work status, Con – Ever use of contraception; PPreg – Would have problem if become pregnant; FPref – fertility preference; NSP – Number of sexual partners; Rel – Religion

regression analysis was carried out for each of the countries using forward stepwise (conditional) method of entering the variables into the model. All the selected background, contraceptive, sexual behaviour and fertility characteristics were used for this purpose because of their theoretical association with the dependent variable. Since the model also allows the examination of associations between variables while controlling for others, some interesting findings (such as finding some factors that were not singly associated with having ever had a terminated pregnancy becoming associated in the presence of other factors) came up. A summary of the predictor variables in the final model, and that are statistically significant with ever having had a terminated pregnancy in each of the countries, is given in Table 5.

In all the 17 countries examined, age and marital status are critical predictors of having ever had a terminated pregnancy. The odds of having ever had a terminated pregnancy is higher (and as age increases) among the older age groups compared to respondents in age group 15-19, which is the reference category. The odds of having ever had a terminated pregnancy is also higher for ever (currently and formerly) married women compared to the never married. This is particularly marked in Rwanda where the odds of having ever had a terminated pregnancy is about 54 and 32 times (for currently and formerly married women, respectively) that of those that have never married.

Type of place of residence is significantly associated with having ever had a terminated pregnancy in Burkina Faso,

Table 5: Factors that have statistical significance with having ever had a terminated pregnancy in the binary logistic regression models by country

Country	Agegp	Res	Educ	MS	WkS	Con	PPreg	FPref	NSP	Rel
Burkina Faso	x	x	x	x				x	x	
Benin	x			x		x				
Cameroon	x			x		x		x	x	
Ethiopia	x			x		x			x	
Gabon	x	x		x	x	x		x		x
Ghana	x	x	x	x		x			x	
Kenya	x			x						x
Mali	x			x	x	x			x	
Malawi	x	x		x		x				x
Mozambique	x	x		x		x			x	
Nigeria	x			x	x	x			x	
Namibia	x		x	x					x	
Rwanda	x			x		x				
Chad	x		x	x		x				
Tanzania	x			x			x			
Uganda	x			x	x				x	
Zambia	x	x		x						x

Agegp – Age group; Res – Residence; Educ – Education; MS – Marital status; WkS – Work status, Con – Ever use of contraception; PPreg – Would have problem if become pregnant; FPref – fertility preference; NSP – Number of sexual partners; Rel – Religion

Gabon, Ghana, Malawi, Mozambique and Zambia. While the odds is however lower in rural areas in Burkina Faso, Gabon, Ghana and Mozambique, respondents in the rural areas of Malawi and Zambia are more likely to have had a terminated pregnancy. Education is significantly associated with having ever had a terminated pregnancy in only four of the seventeen countries. However, the magnitude and direction vary among the four countries. The odds of having ever had a terminated pregnancy is lower for respondents with no education compared to those with primary and secondary levels of education in Ghana and Chad but higher than for respondents with secondary education in Burkina Faso and Namibia. The odds of having ever had a terminated pregnancy is also found to be higher for respondents with no education compared to those with higher level of education in all the countries except Burkina Faso.

Current working status of respondents is a significant predictor of having ever had a terminated pregnancy in Gabon, Mali, Nigeria and Uganda. In these countries, the odds of ever having had a terminated pregnancy is higher among respondents that are currently working compared to those that are not. Ever use of contraception is associated with having ever had a terminated pregnancy in eleven of the seventeen countries and the odds is higher among the ever (currently and formerly) married respondents compared to the never married respondents. The variable 'would have problem' is a significant predictor of having ever had a terminated pregnancy in Tanzania only and the odds is found to be lower for respondents that would not have problem compared to those that would have problem.

The odds of having ever had a terminated pregnancy is higher among respondents that

do not want more children in Burkina Faso and Cameroon while the reverse is the case in Gabon. The odds of having ever had a terminated pregnancy is higher for respondents with multiple sexual partners in all the nine countries where number of sexual partner is a predictor of the outcome variable. The odds of having ever had a terminated pregnancy is lower among the Muslim and other categories of religion compared to the Christian category in Gabon and Malawi while the reverse is the case in Zambia. Further details of the odds ratio and the significance of the predictor variables are provided in appendix A and B.

Discussion

Consensus on women's human, sexual and reproductive rights has evolved over time through a number of International meetings and treaties. A landmark compromise on abortion was reached at the 1994 International Conference on Population and Development (ICPD) held in Cairo where 179 countries agreed to address the public health impact of unsafe abortion. 'The Cairo Programme of Action helped governments to move away from a narrow focus on family planning to a new concept of sexual and reproductive health throughout the life cycle'[20].

In most parts of the developing world, governments now actively support and promote availability and distribution of family planning services through government facilities as well as private and social marketing channels. Reproductive health care for the various groups of users including adolescents is also being integrated into the health system. Abortion law is however yet to undergo any substantial reform.

While this study is unable to give a clear cut level of 'abortion' in its general sense in the seventeen sub-Sahara African countries examined due to the limitation of the available data, the levels of having ever had a terminated pregnancy by the respondents is substantial. Between 19.2% and 48.4% of

respondents who have ever had a terminated pregnancy had it in the last five years preceding the surveys. A similar percentage of the respondents had it earlier than that except in Benin and Ethiopia where 73.6 and 54.9 percents of respondents could not state the period around when the pregnancy termination occurred. This could be as a result of problem with data quality control.

The pattern of respondents who have ever had a terminated pregnancy over the age groups is similar in almost all the countries and follows the normal fertility curve. The low incidence at the early ages could of course be attributable to lower level of exposure (compared to the older age groups) to the risk of pregnancy/pregnancy termination. Similar result has been shown by many studies including studies by Sedgh et al (2007)[21] of 60 countries and territories in which legal abortion is generally available in 2003; Okonofua et al (1996) of population based study in Nigeria and by Saleem and Fikree (1998) in Karachi, Pakistan. A study conducted by Bankole et al (2006)[22] in Nigeria however, showed 45% of abortions were by women under the age of 25. Although, these other studies were on induced abortion, they all (except one) show similar results to the ones found in this study, which might suggest that the proportion of induced abortion in the 'blanket pregnancy termination' as used in this study could be high.

The percentage of respondents who have ever had a terminated pregnancy as well as ever used contraception is good on the average except in Chad. However, this may actually have no relation to current situation or to the timing of the pregnancy that was terminated. Contraceptive use like any other behavioural habit is not static and is especially susceptible to high discontinuation rate. An example of this disparity between ever and current use of contraception is found in the Oye-Adeniran et al (2004) study where ever use of contraception was 36.6% while current use was 23.4%.

Having more respondents who have ever had a terminated pregnancy in the rural areas and among those with no formal education in most of the countries examined could be tied to the demographic and socio-economic conditions as well as accessibility to health care delivery and services within the countries. For instance, the limited reach of family planning services in Turkey is the main reason why rural women who already have several children and want no more dominate the clientele for abortion services. Similarly in India, the relative scarcity of family planning services in the countryside is a primary reason why rural women undergo a large majority of all abortions[18]. A detail examination of the urban/rural dichotomy is however beyond the scope of this paper.

Other factors in addition to age, marital status and fertility preference, which stood out as being associated with having ever had a terminated pregnancy in the bivariate analyses, are work status, ever use of contraception and education. The significance (or its insignificance) of ever use of contraception remain the same whether it is considered between the two groups of respondents or among the contraceptive types. The picture however changed when all the factors were put jointly in the multivariate logistic regression model. Some factors that were initially associated while alone were dropped while some others became important in the presence of others. At the end of it all, only age group and marital status remained significantly associated in all the models while ever use of contraception and number of sexual partners were the other critical predictors of having ever had a terminated pregnancy in a number of the countries. The importance of the interplay between employing effective contraception and reducing unwanted fertility as discussed earlier is quite obvious.

The odd of having ever had a terminated pregnancy was found to be higher for ever (currently and formerly) married women compared to the never married women in this study. Okonofua et al found that

divorced and unmarried women were more likely than married women to have reported an induced abortion while respondents with secondary and higher levels of education were more likely to report an induced abortion compared to women with lower level of education[3,9,11].

Ever had a terminated pregnancy as used in the DHS context did not distinguish between the three ***distinct*** pathways through which a pregnancy may not result into a live birth (namely induced abortion, spontaneous abortion or miscarriage and still birth). This has a profound limitation on the study as the three differ tremendously in terms of causes, factors associated with them, the healing process (where applicable), their management as well as the policy and programmes to address them. Another limitation of this study is that some of the characteristics of the respondents used as "predictors" in relation to the time the pregnancy termination occurred could have changed. Hence, factors found to be associated could not be strictly matched to the outcome (that is causality could not be established). This study also considered only respondents' individual factors. Community level variables such as availability and accessibility of health services were not considered.

Conclusion

This study has come up with findings that provoke more thinking and research on the topic and to reproductive health in general. It is therefore recommended that the DHS methodology consider distinguishing these three vital phenomena on pregnancy termination to obtain reliable national information on the three in view of their importance to women's reproductive health as well as the institution of public health in general. Questions probing the type of termination, its cause or reason for it should be collected in the DHS and other related surveys as a matter of urgency. Collection of other basic characteristics of the

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respondents as at the time of the occurrence of the event (pregnancy termination) will also go a long way in matching outcome to its predictors, thereby enabling policies and programs to be focussed on the groups that are at highest risk.

Program and policy recommendations and implementation can substantially be made after the evidence of magnitude, direction and associated factors are shown or proven by available data. Nonetheless, preventive and management efforts should be intensified into the (almost unchanging) factors associated with miscarriages and stillbirths. The governments should also look at modalities of expanding the general condition under which abortion is allowed in the various countries. They should equally show their affirmation to the resolutions of the various conferences by ensuring that women have access to quality services for the management of complications arising from abortion.

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APPENDIX A

Odds ratio and the significance of the predictor variables

Variables	BF	BJ	CM	ET	GA	GH	KE	ML	MW
Age group	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
15-19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20-24	1.906	1.334	2.482	1.487	2.497	1.907	2.785	2.138	2.513
25-29	3.330	2.903	4.537	2.643	3.758	2.702	3.561	3.182	3.894
30-34	3.556	3.562	5.395	3.589	4.853	3.480	5.619	4.394	4.429
35-39	4.864	5.608	6.831	5.014	5.430	3.952	7.723	5.684	5.797
40-44	6.497	5.386	7.677	6.963	6.453	4.124	10.892	7.424	6.966
45-49	6.796	7.801	9.989	7.747	7.305	5.181	12.502	6.772	9.423
Residence	0.002*				0.019*	0.029*			0.002*
Urban	1.000				1.000	1.000			1.000
Rural	0.738				0.854	0.782			1.375
Education	0.032*					0.008*			
None	1.000					1.000			
Primary	1.115					1.238			
Secondary	0.625					1.567			
Higher	2.216					1.485			
Marital status	0.000*	0.002*	0.000*	0.000*	0.000*	0.018*	0.000*	0.000*	0.000*
Never married	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Currently married	5.439	2.540	2.598	9.399	1.685	2.041	2.997	3.647	3.557
Formerly married	4.137	4.078	2.751	7.468	1.990	2.188	2.689	2.195	2.897
Currently working					0.015*			0.023*	
No					1.000			1.000	
Yes					1.175			1.200	
Contraceptive use		0.000*	0.000*	0.004*	0.000*	0.000*		0.000*	0.035*
None		1.000	1.000	1.000	1.000	1.000		1.000	1.000
Traditional		1.623	1.301	1.046	1.384	2.474		1.870	1.382
Modern		2.009	1.654	1.312	2.510	2.445		1.374	1.099
Pregnancy problem									
Yes									
No									
Fertility preference	0.001*		0.031*		0.002*				
Want more children	1.000		1.000		1.000				
No more children	1.418		1.255		0.793				
Sexual partner	0.044*		0.000*	0.001*		0.023*		0.004*	
1	1.000		1.000	1.000		1.000		1.000	
2+	2.754		2.180	2.752		2.871		2.701	
Religion					0.007*		0.001*		0.004*
Christian					1.000		1.000		1.000
Muslim					0.602		1.709		0.697
Other					0.937		0.811		0.626
Constant	**0.010**	**0.025**	**0.021**	**0.005**	**0.048**	**0.017**	**0.009**	**0.012**	**0.007**

BF	*Burkina Faso*	*BJ*	*Benin*	*CM*	*Cameroon*	*ET*	*Ethiopia*
GA	*Gabon*	*GH*	*Ghana*	*KE*	*Kenya*	*ML*	*Mali*
MW	*Malawi*	*MZ*	*Mozambique*	*NG*	*Nigeria*	*NM*	*Namibia*
RW	*Rwanda*	*TD*	*Chad*	*TZ*	*Tanzania*	*UG*	*Uganda*
ZM	*Zambia*						

Appendix B

Variable	MZ	NG	NM	RW	TD	TZ	UG	ZM
Age group	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
15-19	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
20-24	1.783	1.635	2.536	2.200	1.679	2.142	2.680	1.396
25-29	2.642	2.492	3.110	3.576	2.578	4.447	3.346	2.005
30-34	3.652	4.043	4.926	4.381	4.097	5.324	3.665	3.698
35-39	4.255	4.169	5.267	6.136	5.553	7.079	6.868	5.398
40-44	4.489	5.173	8.891	6.726	6.533	8.304	9.217	4.759
45-49	4.991	6.895	9.443	7.887	7.077	10.145	9.557	4.974
Residence	0.000*							0.041*
Urban	1.000							1.000
Rural	0.712							1.216
Education			0.000*		0.039*			
None			1.000		1.000			
Primary			1.189		1.563			
Secondary			0.570		1.037			
Higher			0.588		0.451			
Marital status	0.012*	0.022*	0.005*	0.000*	0.012*	0.000*	0.000*	0.000*
Never married	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Currently married	1.688	2.831	1.628	53.655	9.440	3.602	3.113	6.028
Formerly married	1.501	2.598	1.603	32.478	4.756	2.918	2.966	4.742
Currently working		0.017*					0.007*	
No		1.000					1.000	
Yes		1.423					1.360	
Contraceptive use	0.000*	0.000*		0.000*	0.006*			
None	1.000	1.000		1.000	1.000			
Traditional	1.982	1.216		1.584	1.632			
Modern	2.176	1.864		1.370	2.060			
Pregnancy problem						0.004*		
Yes						1.000		
No						1.327		
Fertility preference								
Want more children								
No more children								
Sexual partner	0.000*	0.027*	0.000*				0.003*	
1	1.000	1.000	1.000				1.000	
2+	1.929	2.794	2.882				2.217	
Religion								0.000*
Christian								1.000
Muslim								2.473
Other								2.981
Constant	**0.023**	**0.012**	**0.018**	**0.001**	**0.005**	**0.014**	**0.017**	**0.013**

* - Significance of predictor variable