Prevalence and Determinants of Unintended pregnancies in Malawi

Abstract

Introduction: Despite the success of family planning programs in Malawi during the recent years, surveys indicate that a significant percentage of pregnancies are unintended. The objectives of this study are to determine the rate of unwanted pregnancies in Malawi and identify social, economic and demographic variables influencing unwanted pregnancies.

Materials and Methods: The data for this study were obtained from the 2010 Malawi Demographic and Health Survey (MDHS) undertaken by the Ministry of Health. The study was performed on 2144 pregnant women. Data were analyzed using descriptive statistics, Chi-square and multinomial logistic regression models.

Results: The data showed that nearly 43 percent of the pregnancies were unintended of which 25 percent were mistimed and 28 percent were unwanted. The multivariate analysis indicated that mistimed pregnancies are significantly influenced by age of the respondent, fertility preference, number of children ever born and number of living children. Among the variables that significantly raised the likelihood of unwanted pregnancy are age of respondent, wealth status, fertility preference and region even though potential confounding factors were used as control.

Conclusion: Based on the results of the study we recommend the improvement of quality of family planning services in order to decrease the level of unwanted pregnancies in the future. The programs should target the couples in Central Region and those who have large number of children.

Keywords: Unintended pregnancy, Timing of pregnancy, Malawi women

INTRODUCTION

Unintended pregnancy is an important public health concern in both the developing and developed world because of its association with adverse social and health outcomes, for both mothers and children. These include the higher likelihood of unsafe abortion, of late initiation and underutilization of prenatal care, and of low birth weight (Goto et. al. 2002; Ikamari et. al 2013). The level of unintended pregnancy also can serve as an indicator of the state of women's reproductive health, and of the degree of autonomy women have in determining whether and when to bear children. It is important to identify factors associated with unintended pregnancy, to enable policymakers and program planners to design legislation and services specifically for the women who are most likely to experience this problem.

This article examines the determinants of unintended pregnancy in the Malawi where fertility has declined markedly over the past two decades and contraceptive use has increased tremendously. For example, Total Fertility Rate (TFR) has marginally declined from 6.7 children per woman in 1992 to 6.4 children per woman in 2000 and 6.0 children per woman in 2004 (Malawi Government, 2011). To a certain extent, this decrease in fertility reflects the increased availability and use of modern contraceptive methods. The contraceptive prevalence rate (CPR) has increased six-fold, from 7% in 1992 to 22% in 2004 and 46% in 2010 (Malawi Government, 1994, 2011).

Despite the decrease in overall fertility and the increase in contraceptive prevalence, however, many women in Malawi, where induced abortion is illegal, still experience unintended pregnancies. Given the observed increase in contraceptive prevalence rate in Malawi one would expect a decline in unwanted pregnancies in the county. However available data indicate that the level of unwanted pregnancy has increased in recent years. For example, according to 1992 MDHS 20% of women in Malawi reported that their most recent pregnancy was unwanted. A similar percentage in 2010 was 28.2%.

The issue of unintended pregnancy has received attention among demographers seeking to understand fertility, to public health practitioners in preventing unintended childbearing and to both groups in promoting a woman's ability to determine whether and when to have children (Bongaarts 1997; Bradley, Croft and Rutstein 2011, Kost, et. al. 2012; Ikamari et. al 2013). Unintended pregnancy can result from contraceptive failure, non-use of contraceptives, and less commonly, rape and it can create serious health consequences for women, children and family (Kost, et. al. 2012; Ikamari et. al 2013). There is very little published literature that focuses on the determinants of unintended pregnancy in developing countries and particularly in Malawi. However, some research studies conducted outside of Malawi have shown the relation between unintended pregnancy and socioeconomic and demographic characteristics (Kost, et. al. 2012; Ikamari et. al 2013). Moreover, there is very little known about unintended pregnancy in cultural contexts.

An unintended pregnancy is a pregnancy that is either mistimed (pregnancies that occur earlier than desired) or unwanted (pregnancies that occur when no children, or no more children were desired) at the time of conception (Bongaarts,1997). Unintended pregnancy is a potential hazard for every sexually active woman. It is a worldwide problem that affects women, their families, society and nation. A complex set of social and psychological factors puts women at risk of unintended pregnancy. Abortion, infertility, child abandonment and maternal deaths are negative consequences of unintended pregnancies (Adetunji 1997; Bongaarts 1997; Bradley, Croft and Rutstein 2011, Kost, et. al. 2012; Ikamari et. al 2013).

Women living in every country, irrespective of the development status, have been facing the problem of unintended pregnancy. Over 100 million acts of sexual intercourse take place each day resulting in around one million conceptions, about 50 percent of which are unplanned and

about 25 percent are definitely unwanted (UNFPA, 1997). Data suggest that approximately 49 percent of all pregnancies in the United States (Finer and Zolna, 2006, 2011; Finer and Henshaw, 2006), 46 percent in Yamagata, Japan (Goto et. al. 2002), 43 percent in Kenya (Ikamari et. al 2013), 35 percent in both Iran (Abbasi-Shavazi et. Al. 2004; Najafian et. al. 2010) and Nepal (Adhikari, et.al. 2009) are unintended. Almost all occurred due to nonuse of family planning method or contraceptive failure. About 50 percent of all unintended pregnancies in the United States are due to contraceptive failure (Finer and Zolna, 2006, 2011; Finer and Henshaw, 2006). Therefore, unintended pregnancy is an issue that cannot be ignored. Many pregnant women will want or need to end a pregnancy to avoid risks to their lives and health, psychological trauma, and socioeconomic turmoil.

International Conference on Population and Development (ICPD) held in Cairo in 1994 and fourth world conference on women held in 1995 in Beijing have emphasized women empowerment as a basic tool for a country's overall development and improving the quality of life of the people (United Nation, 1995). ICPD declared that advancing gender, empowering women and eliminating all kinds of violence against women, and ensuring women's ability to control their own fertility are cornerstones of population and development related programs (United Nations, 1995).

Some studies indicate that nearly half of all unwanted pregnancies end up in abortion (Kinoti et al, 1995). Although abortion is illegal in Malawi, many women still seek abortion clandestinely and most often they consult unskilled or unqualified health workers, resulting in high rates of abortion related morbidity and mortality (Mtimavalye, 1996). Furthermore, a study conducted at 5 major hospitals in Malawi showed that abortion related hospitalization accounted for 20 percent to 48 percent of the total obstetric and gynecological cases (Mtimavalye, 1996). Complications from spontaneous and induced abortions - primarily hemorrhage, infection and injury to the genital tract - remain a serious threat to the health of women in Malawi. These complications account for as much as 60% of acute gynecological admissions into both public and private health facilities in Malawi (Kinoti et al, 1995). As well, an estimated 30% of maternal mortality in Malawi is due to complications of abortion (Mtimavalye, 1996).

The underlying cause of high prevalence of unintended pregnancy needs further investigation and exploration in order to be better understood and appropriately addressed by reproductive health programs. It is essential to identify the risk factors of unintended pregnancy and to provide services to address those who are at risks. To develop effective strategies for the prevention of unintended pregnancies, it is necessary to understand the factors affecting unintended pregnancies. It is hypothesized that women in the vulnerable group (illiterate, living in the rural area, working on agricultural sector), and who are not exposed to mass media lead to low knowledge of family planning methods and low utilization of the health services which in turn lead to higher unintended pregnancy.

This study aims to determine the prevalence and the factors influencing unintended pregnancy among currently pregnant women in Malawi. The findings of this study aim to guide

reproductive health program planners and policy makers to understand various factors influencing unintended pregnancy and to assist in implementation of the reproductive health program which will decrease unintended pregnancy as well as reduce the risk of maternal and infant morbidity and mortality. Though there are very few studies on unintended pregnancy in Malawi, this type of research which focuses on currently pregnant women has not yet been undertaken in the country.

DATA AND METHODS

This paper reports on data drawn from 2010 Malawi Demographic and Health Survey (MDHS), which is a nationally representative sample survey (Malawi Government 2011). This cross sectional survey was conducted among women in the reproductive age (15–49 years). The primary purpose of the MDHS is to generate recent and reliable information on fertility, family planning, infant and child mortality, maternal and child health, and nutrition (Malawi Government 2011). The sample for the survey is based on a two-stage, stratified, nationally representative sample of households. At the first stage of sampling, 257 PSUs, 42 in urban areas and 215 in rural areas, were selected using systematic sampling with probability proportional to size method. Out of 23020 women of the reproductive age interviewed, 2144 (8.6%) were currently pregnant at the time of the survey.

Association between unintended pregnancy and the explanatory variables was assessed in bivariate analysis using Chi-square tests. Significant differences were determined using chi-square at $p<0.05$. Multinomial logistic regression was used to assess the net effect of several independent variables on unintended pregnancy. Before the multivariate analysis, multicollinearity between the variables was assessed and the least important variables were removed from the logistic model. Statistical Package for Social Science (SPSS) was used for analysis.

Variables

The dependent variable for this analysis, pregnancy status, measured by respondents' perceived desire of current pregnancy. Women were asked the question: "At any time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all? The three allowed options were wanted then (planned), wanted the pregnancy to happen later (mistimed) and did not want at all (unwanted). Since the dependent variable has more than two categories multinomial logistic regression was used. The multinomial regression model allows for multiple outcomes that are nominal in nature, rather than ranked in some meaningful ways. The multinomial regression model breaks the regression up into a series of binary regressions, comparing each group to a baseline group. The reference group was women whose pregnancy was wanted. Multinomial regression will assess the odds of mistimed and unwanted pregnancies versus wanted pregnancies.

The independent variables were selected for inclusion in the analysis based on their significance in previous studies of pregnancy intention status or on their hypothesized association with pregnancy intention (). These variables were group into four areas: programmatic, demographic,

socio-cultural, attitudinal and regional. All the independent variables were obtained from the various sections on the women questionnaire. To make analysis and interpretation simpler and more meaningful, some variables were regrouped from their original categories in the dataset. The subsequent paragraphs describe the variables used in the analysis.

RESULTS

Characteristics of Respondents

Table 1 gives the summary statistics of the study population. The majority of the study population (92%) lived in rural areas. The majority of the study population came from the Southern Region (49%), followed by Central Region and then Northern Region. The majority of the study population had primary education (72%) whereas women with no education and women with secondary and higher education comprised of 14% each. The majority of the study populations were married (92%),

The majority of the respondents were below the age 30 years (71%) with the mean age of 26.75 years.

Table 1: Socio-economic characteristics of currently pregnant women and pregnancy status in Malawi, 2010

Background Characteristics	N	%	Wanted	Mistimed	Not wanted
Age of respondent **					
15-19	367	17.1	51.8	24.0	24.3
20-24	611	28.5	54.3	26.8	18.8
25-29	545	25.4	52.5	25.7	21.8
30-34	319	14.9	33.5	29.2	37.3
35-39	219	10.2	31.1	19.2	49.8
40-44	66	3.1	19.7	21.2	59.1
45-49	17	0.8	29.4	0.0	70.6
Region **					
Northern Region	393	18.3	53.4	31.3	15.3
Central Region	738	34.4	42.7	22.6	34.7
Southern Region	1013	47.2	47.0	24.8	28.2
Type of residence **					
Urban	183	8.5	60.7	16.9	22.4
Rural	1961	91.5	45.4	26.0	28.6
Marital Status **					
Never married	68	3.2	13.2	26.5	60.3
Currently married	1965	91.7	48.9	24.9	26.2
Formerly married	111	5.2	28.8	29.7	41.4
Spouse Residence					
Living with her	1695	79.1	48.6	25.5	25.9
Staying elsewhere	261	12.2	52.1	20.7	27.2
	1956	91.2	49.0	24.9	26.1
Work Status					
Not Working	1057	49.3	47.8	24.3	27.9
Working	1086	50.7	45.7	26.1	28.3
	2143	100.0	46.7	25.2	28.1
Wealth Status **					
Poor	958	44.7	43.6	25.8	30.6

Medium	903	42.1	45.6	26.8	27.6
Rich	283	13.2	60.4	18.4	21.2
Education **					
None	300	14.0	42.0	24.0	34.0
Primary	1543	72.0	45.2	26.2	28.6
Secondary+	301	14.0	59.1	21.6	19.3
Children Ever Born **					
0	387	18.1	61.5	15.5	23.0
1-2	768	35.8	56.8	26.6	16.7
3-4	555	25.9	40.7	30.3	29.0
5+	434	20.2	23.3	25.1	51.6
Living children **					
0	455	21.2	63.1	15.6	21.3
1-2	855	39.9	54.2	27.3	18.6
3-4	544	25.4	34.7	30.1	35.1
5+	290	13.5	21.4	25.2	53.4
Fertility preference					
wants more	1085	50.6	59.3	24.5	16.2
Undecided	84	3.9	57.1	20.2	22.6
wants no more	946	44.1	31.8	26.8	41.3
	2115	98.6	46.9	25.4	27.7
No	1085	50.6	59.3	24.5	16.2
Yes	946	44.1	31.8	26.8	41.3
	2031	94.7	46.5	25.6	27.9
Type of Marriage					
Monogamy	1638	76.4	50.5	24.4	25.0
Polygamy	309	14.4	39.8	27.5	32.7
	1947	90.8	48.8	24.9	26.2
Child dead					
No Dead	1465	68.3	49.1	25.3	25.6
1	630	29.4	41.7	25.7	32.5
2	49	2.3	38.8	16.3	44.9
	2144	100.0	46.7	25.2	28.1
Media					
0	454	21.2	46.0	25.3	28.6
1	604	28.2	42.4	29.8	27.8
2	779	36.3	46.5	23.0	30.6
3	299	13.9	56.5	21.4	22.1
	2136	99.6	46.6	25.2	28.2
Heard FP on radio					
No	819	38.2	46.3	25.9	27.8
Yes	1325	61.8	46.9	24.8	28.2
	2144	100.0	46.7	25.2	28.1
Heard FP on TV **					
No	1986	92.6	46.0	26.1	27.8
Yes	157	7.3	55.4	13.4	31.2
	2143	100.0	46.7	25.2	28.1
Heard FP Newspaper					
No	1905	88.9	46.0	25.6	28.3
Yes	237	11.1	52.3	21.9	25.7
	2142	99.9	46.7	25.2	28.1
Visited by FP worker					

No	1784	83.2	46.1	25.6	28.3
Yes	359	16.7	49.6	23.4	27.0
	2143	100.0	46.7	25.2	28.1
Visited health facility*					
No	429	20.0	50.1	20.5	29.4
Yes	1714	79.9	45.9	26.4	27.8
	2143	100.0	46.7	25.2	28.1
Age at marriage					
<18	1509	70.4	45.9	26.5	27.6
>=18	567	26.4	52.9	21.7	25.4
	2076	96.8	47.8	25.2	27.0

**significant at 0.1%; **significant at 5%*

Bivariate Analyses

Approximately 27% of the women reported that their most recent pregnancy had been unwanted, 25% characterized the pregnancy as mistimed and 48% classified it as planned (Table 2). Pregnancy intention varied significantly by all background characteristics considered; moreover, the women most likely to have had an unwanted pregnancy differed from those most likely to have experienced a mistimed pregnancy. As expected, the percentage of women reporting unintended pregnancies increased with age (24% of the women aged less than 20 years to 70% of the women aged 35 and above years). Similarly, women with higher birth order reported significantly higher rate of unintended pregnancy. Furthermore, women who got married at early age (before 18 years) had significantly higher rate of unintended pregnancy (46%) compared to those who got married at 18 years or later (36%).

By area of residence, rural women were more likely to have an unwanted pregnancy (28.6%) than urban women (22.4%). The same pattern is observed with mistimed pregnancy. Rural women were more likely to have a mistimed pregnancy (26%) than urban women (16.9%). Women living in the Central Region had the highest percentage of unwanted pregnancy (34.7%), followed by women living in Southern Region (28.2%) and women in Northern Region had the lowest percentage (15.3%). Mistimed pregnancies were highest in Northern Region followed by Southern Region and lowest in Central Region.

By socioeconomic status, women living in relatively poor households were most likely to report their pregnancy as unwanted (30.6%), while those in the highest-income households were least likely to do so (21.2%). Women in middle-income households were more likely than those of other socioeconomic backgrounds, however, to classify their most recent pregnancy as mistimed. Unwanted pregnancies declined with the education level of the respondent. Women with no education had the highest percentage of unwanted pregnancies, followed by women with primary education and lowest among women with secondary and higher education. On the other hand, mistimed pregnancies were highest among women with primary education, followed by women with no education and lowest among women with secondary and higher education. Women who are working had higher percentage of unwanted pregnancy than women who are not working.

In the bivariate analysis, age and parity were both significantly associated with pregnancy intention. The oldest women (those aged 30-49) were more likely than younger women to say

their pregnancy had been unwanted (33% vs. 10-16%), but women in their 20s were more likely than both younger and older women to have classified their pregnancy as mistimed (22% vs. 12-17%). High parity and unwanted pregnancy were clearly linked. Women with unwanted pregnancies had had an average of 3.7 previous births, while women with mistimed or planned pregnancies had had 1.9 and 1.7 previous births, respectively (not shown).

The data further show that single women were more likely than women in union to say their pregnancy had been unwanted (25% vs. 20%), while women in union were more likely than single women to have experienced a mistimed pregnancy (19% vs. 12%). Women with no formal education or who had not completed primary school were more likely to have had an unwanted pregnancy than women with a primary schooling. However, mistimed pregnancy was more common among women with a primary schooling than among less-educated women.

Unwanted pregnancy was also linked with knowledge of family planning. Both unwanted and mistimed pregnancies were more common among women who were knowledgeable and had ever used a method of family planning than among those who were not knowledgeable and had never a method before their most recent pregnancy. Women who were visited by family planning workers in the last 12 months had higher level of mistimed and unintended pregnancy compared to those who were not visited by family planning worker. Women who visited a health facility in the last 12 months had lower unwanted pregnancies than women who did not visit a health centre. On the other hand women who visited a health centre had a higher percentage of mistimed pregnancies compared to women who did not visit the health centre.

Multivariate Analyses

All the variables that were found to be statistically significant in the bivariate analyses were used to examine the correlates of unwanted pregnancy among women through the execution of a multivariate analytical technique based on logistic regression. The results of logistic regression analysis are presented in terms of odds ratio (if greater than unity, the probability of being a current user is higher than that of being a non-user), and p-values, to assess the relative importance of the selected variables.

Table 2: Multinomial logistic regression coefficients of factors that are associated with pregnancy status in Malawi

Background Characteristics	**Mistimed**		**Unwanted**	
	β	**Odds**	**β**	**Odds**
Region				
Northern	0.09	1.09	-0.671	0.51**
Central	0.01	1.01	0.451	1.57**
Southern (Ref. Cat.)		1		1
Place of residence				
Urban	-0.42	0.66	-0.099	0.91
Rural (Ref. Cat.)		1		1
Work Status				
Not Working	-0.21	0.81	-0.086	0.92

Working (Ref. Cat.)		1		1
Use of FP				
Never Used FP	-0.03	0.97	0.196	1.22
Ever Used FP (Ref. Cat.)		1		1
Education				
No Education	-0.30	0.74	-0.287	0.75
Primary	-0.03	0.97	0.133	1.14
Secondary + (Ref. Cat.)		1		1
Number of children ever born				
0	-1.61	0.20*	-1.514	0.22*
1-2	-0.91	0.40	-1.391	0.25**
3-4	-0.47	0.62	-0.897	0.41**
5+ (Ref. Cat.)		1		1
Number of living children				
0	-1.53	0.22*	-1.114	0.33
1-2	-0.64	0.53	-0.494	0.61
3-4	-0.10	0.90	-0.138	0.87
5+ (Ref. Cat.)		1		1
Fertility preference				
wants more	-0.50	0.61**	-1.230	0.29**
Undecided	-0.88	0.42**	-1.094	0.33**
wants no more (Ref. Cat.)		1		1
Marriage type				
Monogamy	-0.15	0.86	-0.199	0.82
Polygamy (Ref. Cat.)		1		1
????????????????				
0	0.72	2.05	0.730	2.08
1	0.56	1.76	0.542	1.72
2+ (Ref. Cat.)		1		1
Heard FP on Radio				
No	0.06	1.07	-0.079	0.92
Yes (Ref. Cat.)		1		1
Heard FP on TV				
No	0.52	1.69	-0.310	0.73
Yes (Ref. Cat.)		1		1
Heard FP Newspaper				
No	-0.12	0.89	-0.082	0.92
Yes (Ref. Cat.)		1		1
Visited by FP worker				
No	0.30	1.35	0.233	1.26
Yes (Ref. Cat.)		1		1
Visited health facility				
No	-0.38	0.68*	0.050	1.05
Yes (Ref. Cat.)		1		1
Age at first marriage				
<18	-0.09	0.91	-0.021	0.98
>18 (Ref. Cat.)		1		1
Wealth Status				
Poor	0.19	1.21	0.520	1.68*
Medium	0.26	1.30	0.499	1.65*
Rich (Ref. Cat.)		1		1
Age of respondent				
15-19	1.86	6.40**	0.945	2.57*
20-24	1.02	2.77**	0.401	1.49
25-29	0.22	1.24	-0.295	0.74
30+ (Ref. Cat.)		1		1

Correlates of mistimed pregnancy

The data as shown in table 2 indicate that mistimed pregnancies are influenced by age of the respondent, fertility preference, number of children ever born, number of living children and whether or not women had visited a health facility in the last twelve months.

Women aged 15-19 are 6.4 times more likely to indicate that the current pregnancy was mistimed as compared to women aged 30 years and over. Women aged 20-24 and 25-29 are 2.77 and 1.24 times more likely to indicate that the current pregnancy in mistimed than women in the reference category. The odds ratio decrease with the increasing age of women suggesting that the incidence of mistiming decreases with age. Also, Women with no children were five times less likely to report that their current pregnancy was mistimed as compared to women with 5 or more children. Women with no living children were 4.54 times less likely to report that their current pregnancy was mistimed as compared to women with 5 or more living children.

Women who want additional children were 1.64 times less likely to report that their current pregnancy was mistimed as compared to women who want more children. Women who are undecided were 2.38 times less likely to report that their current pregnancy was mistimed as compared to women who want more children. Moreover, women who had not visited a health facility were 1.47 times less likely to report that their current pregnancy was mistimed as compared to women who had visited a health facility in the last twelve months.

Correlates of unwanted pregnancy

According to Table 2, multi-variant logistic regression analysis shows that the variables that influence whether or not pregnancy is wanted are: age of respondent, number of children ever born, wealth status, fertility preference and region. Younger women are more likely to indicate that the current pregnancy is not wanted than older women. Women in age group 15-19 and 20-24 are 2.57 and 1.49 times more likely to indicate that the current pregnancy is not wanted than women in the reference category. Women aged 25-29 are 1.35 less likely to indicate that the current pregnancy in not wanted than women 30 years and over. The odds ratio decrease with increasing age suggesting that as women become older and mature the current pregnancy tend to be wanted.

Women in the Central Region are 1.57 times more likely to indicate that the current pregnancy is unwanted than women in the Southern Region whereas women in Northern Region are 1.96 times less likely to indicate that the current pregnancy is unwanted than the reference category. Number of children ever born is another variable influencing pregnancy status. Women who have no child are less likely to indicate that the current pregnancy is unwanted as compared to women with 5 or more children. Women with 1-2 children are less likely to indicate that the current pregnancy is unwanted as compared to women with 5 or more children. The odds ratios increases with the increasing number of children suggesting that the more the number of children ever born the more likely for the women to indicate that the current pregnancy is unwanted.

Fertility preferences also influence pregnancy status. Women who desire more children are less likely to indicate that the current pregnancy is unwanted than women who do not want additional children. Women who are undecided are less likely to indicate that the current pregnancy is unwanted than women who do not want additional children. Another variable affecting pregnancy status is wealth status of the women. Poor women are 1.68 times more likely to indicate that the pregnancy is unwanted than rich women. Women in the medium category are 1.65 times more likely to indicate that the pregnancy is unwanted than rich women.

DISCUSSION

This study has attempted to investigate the factors influencing unwanted pregnancy in Malawi. The study showed that unwanted pregnancy is common among Malawian women. It indicates higher demand for family planning programs. The result of this study suggests that all women, regardless of age, socioeconomic, or socio-cultural status, would benefit from increased efforts to ensure that pregnancies are intended

The bivariate analysis showed that the variables such as age, total children ever born, number of living children, age at first marriage, literacy status, radio exposure, travel time to the nearest family planning source, family planning workers' visit, religion, women's autonomy and knowledge about family planning methods are important in explaining unintended pregnancy. The multivariate analysis supported some of the findings of the bivariate analysis and indicated a different pattern of effect for few other variables. In the multivariate analysis, age of women, ideal number of children, age at first marriage, radio exposure, religion and knowledge about family planning methods were found to have significant influence on unwanted pregnancy.

This study has shown that the higher the age of women, the higher the probability of having current pregnancy as unintended. It is similar to the study conducted among currently married pregnant women in such countries as Iran and Nigeria (Adetunji1997; Abbasi-Shavazi, et. Al. 2004; Najafian, et. al., 2010).

In this study, we found significant relationship between age and unintended pregnancy in Malawi. Both mistimed pregnancies and unwanted pregnancies are higher among younger teenage women and decline with increasing age of the women. One of the reasons could be that young women are engaged in unprotected sex and are not married, which results in getting pregnancy outside marriage and is reported as unintended pregnancy. In Malawi teenage mothers are still ridiculed and discriminated. The non-use of contraception among teenagers could due to limited access to services or may experience particular difficulty in practicing contraception.

The multivariate results showed that unwanted pregnancies vary by region of residence. Women residing in Northern Region were less likely to report unintended pregnancy compared to those residing in the Southern Region whereas Women in the Central Region were more likely to report unintended pregnancy compared to those who reside in the Southern Region. Regional differences in unwanted pregnancies have been observed in other studies (Kost, et. al., 2012) and have been attributed to variations in the social and economic characteristics of the regions.

As expected, the present study found that women's wealth status has a significant impact on unintended pregnancy. It is often argued in literature that in a patriarchal society, like that of Malawi and other developing countries, women are often given less opportunity to be self-supporting and control their own reproduction and depend on the male partners/relatives for their own social and economic survival. Women from poor households are more likely to have unwanted pregnancy than their rich counterparts.

Women who wants no more children or are undecided likely to report unintended pregnancy compared to those who desire more children. Our findings are consistent with findings from other studies in Africa that showed that fertility preference was a major factor for unwantedness of the present pregnancy (Adetunji 1997; Shaheen et. Al. 2007; Roudi and Monem 2009). In a society like that of Malawi where children are cherished and childbearing outside marriage is frowned upon, women who have no children or have few children or have children outside marriage are more likely to report unintended pregnancy compared to women who have more children or are married.

We hypothesized that women who have higher knowledge about family planning methods (more than average) are less likely to experience unintended pregnancy. Our result supports the hypothesis that if a woman has higher knowledge of family planning methods, she is more likely to be aware of the benefits of those methods which in turn will motivate her to use the family planning methods and be less likely to have unintended pregnancy. The similar result is found in Ecuador as well (Eggleston, 1999, 2000; Eggleston et. al., 2001).

In this study, there was no significant association between the experience of unintended pregnancy and women's education. This is similar to the findings from studies conducted in Kenya, Japan and Nepal (Goto, et. al., 2002;). However, this finding contradicts conventional wisdom and other studies on the correlates of unintended pregnancy (Finer and Henshaw, 2006; Finer and Zolna, 2011). In Malawi, very few women are educated and the majority of women prefer to have more children. As such there is no significant difference in the experience of unintended pregnancy among different educational levels. However, it should not be concluded that education is not significantly related to intended pregnancy status and thus we should not ignore the importance of education for the better life of women.

Ever use of family planning method has significant relationship with intended pregnancy status of women in many literatures. However, the result from this study is not similar to those findings. Some of the reasons identified were the complexity of using contraceptive or lack of methods choice and financial barriers hindering effective use of contraceptive methods. It was seen that the individual or community perception about contraception is an important factor, which affects contraceptive use. Similarly, misconception leads to discontinuation and decreased use of contraception and increases the level of unintended pregnancy (Adhikari, et. al. 2009). Thus it can be argued that misconception about family planning methods exist among Malawi women. High family planning method failure among married women in the reproductive age has

also been cited as a reason for unintended pregnancies in other countries (Adhikari, et. al. 2009). However it does not imply that contraceptive use is not an important determinant of unintended pregnancy among married pregnant women in Malawi, it rather reflects the situation that the variable ever use of family planning methods acts indirectly on unwanted pregnancy in this study.

LIMITATION OF THE STUDY

There are some limitations to interpret the results of this study. First, the study population consisted of currently pregnant women at the time of survey. This means that the obtained prevalence of women who reported unintended pregnancy should not be generalized to the general population in Malawi. The main objectives of this study are to determine the prevalence and examine the factors influencing unintended pregnancy among currently pregnant women Malawi. Thus we intentionally selected a group of women who were currently pregnant during the period of survey, though risk factors of mistimed and unwanted pregnancy is not same, Second, because a cross sectional design of the study and all of the items analysed in the logistic regression analysis were information at the time of survey, the analysis can only provide evidence of statistical association between those items and the experience of unintended pregnancy and cannot show the cause-effect.

The concept of "intended ness of pregnancy" is complex and it would probably be better to treat it as a continuous rather than a bicategorical variable (Adhikari, et. al. 2009). Women are often unsure about their intention to become pregnant or not. Nonetheless, measures of unintended pregnancy that use the intended/unintended dichotomy remain valuable because they allow us to assess trends over time and differences among population subgroups (Adhikari, et. al. 2009). It has been shown that the perception of intended ness of pregnancy varies during the gestational period and after the delivery. As such some researchers have recommended the use of qualitative approach to capture such changes (Adhikari, et. al. 2009). The use of a measure of mistimed pregnancies may be especially problematic, since a birth can be mistimed by a short amount of time or a longer period of time, each possibly having different implications (Adhikari, et. al. 2009). Furthermore, many studies compare only intended pregnancies to unintended pregnancies, but do not examine mistimed and unwanted pregnancies separately, even though studies that do separate unwanted from mistimed pregnancies have found many differences in the mother's interpretation of pregnancy intention and the outcomes associated with it (Eggleston, 1999, 2000, Eggleston and Tsui, 2001). Moreover, if we take children born in the preceding five years or life time, that information may in fact underestimate unplanned childbearing since women may rationalize unplanned births and declare them as planned once they occur. The data used in this paper recorded the intendedness of current pregnancy among the currently pregnant women. It also minimizes underreporting of unintended pregnancy as well as reduces recall bias. In that sense, our study must be less biased than other studies that interview women at different times after

CONCLUSION

In conclusion, no single factor accounted for the high rates of unintended pregnancy; many factors contributed in this regard. Among them, this study has found that age of women, children ever born, region, fertility preferences and wealth statues are firm predictors of unintended pregnancy. In short, it can be concluded that the reproductive health program should aim to reduce unintended pregnancy by focusing on all these identified factors so that infant and maternal mortality and morbidity as well as the need for abortion is decreased and the overall well-being of the family is maintained and enhanced.

COMPETING INTERESTS

The authors declare that they have no competing interests.

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