

## ORIGINAL RESEARCH ARTICLE

# Socio-Economic and Demographic Factors Affecting Contraceptive use in Malawi

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## Abstract

Malawi has one of the highest Contraceptive Prevalence Rate (CPR) in Sub-Saharan Africa. However, fertility remains high and fertility decline is slow. This paper uses data from the 2000 and 2004 Demographic and Health Surveys to examine correlates of contraceptive use among currently married women in Malawi. Bivariate and multivariate logistic regression analyses were used to establish the relationships between socioeconomic variables and current use of contraception. The results show that the major determinants of contraceptive use are age, respondents' and partners' approval of family planning, family planning discussion with partner, number of living children, work status, education and visit to a health centre. As a policy measure, information, education and communication programmes on family planning should be intensified, particularly in rural areas and targeting men. (*Afr J Reprod Health* 2013; 17[3]: 91-104).

## Résumé

Le Malawi possède l'un des taux de prévalence du contraceptif le plus élevé (TPC) en Afrique sub-saharienne. Cependant, la fécondité reste élevée et la baisse de la fécondité est faible. Cet article se sert des données recueillies des enquêtes démographiques et de santé 2000 et 2004 afin d'examiner les corrélats de l'utilisation des contraceptifs chez les femmes mariées au Malawi. L'on s'est servi des analyses de régression logistique bi variées et multi variées pour établir les relations entre les variables socio-économiques et l'utilisation actuelle de la contraception. Les résultats montrent que les principaux déterminants de l'utilisation des contraceptifs sont l'âge, l'approbation des interviewés et des partenaires, la discussion sur la planification familiale avec son partenaire, le nombre d'enfants vivant, le statut professionnel, l'éducation et la visite à un centre de santé. Comme une mesure de politique, les programmes d'information, d'éducation et de communication sur la planification familiale devraient être intensifiés, en particulier dans les milieux ruraux et en ciblant les hommes. (*Afr J Reprod Health* 2013; 17[3]: 91-104).

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**Keywords:** Malawi, Contraceptive use, logistic regression, socio-economic, Demographic and health survey

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## Introduction

The persistently high levels of fertility in Malawi, combined with declining mortality, have given rise to rapid growth in population. The population growth rate has increased from 2.0% to 2.7% per annum between 1987-1998 and 1998-2008<sup>1</sup>. The high population growth has contributed to environmental degradation, increased poverty and a deteriorating quality of life for the majority of the people in the country. The negative consequences of rapid population growth compelled the government to draft and adopt the population policy that aimed at reducing the rate of population growth to manageable levels<sup>2</sup>.

In the past, the high fertility in Malawi has been attributed to a low level of contraceptive use<sup>2</sup>. This may not be the case now as Malawi has one of the highest contraceptive prevalence on the continent<sup>3</sup>. According to the 2011 World Contraceptive Use data sheet, contraceptive prevalence rate in Malawi is estimated at 41%, which is nearly twice the estimate for Sub-Saharan Africa<sup>3</sup>. Such a high contraceptive prevalence is somewhat surprising given that Malawi is a relatively new comer in the area of family planning. In sub-Saharan Africa the national family planning programme was introduced in the

late 1960s in Kenya, early 1970s in Ghana and mid-1970s in South Africa<sup>4</sup>. Although the initial attempts to introduce family planning in Malawi were in the early 1960s, the programme was banned in the late 1960s due to public misconceptions about its intent<sup>4</sup>. In 1982, government approved and established the national child spacing programme following nearly two decades of dialogue on the need to revive the family planning programme.

Since then there have been a number of improvements in the provision of family planning services in Malawi. First, an increasing number of institutions are involved in the provision of family planning in Malawi. Family planning service provision is an integral part of maternal and child health services of the Ministry of Health and some private and mission hospitals. In addition, some Non-Governmental Organizations and private companies such as *Banja La Mtsongolo* (BLM), Family Planning Association of Malawi (FPAM), ADMARC, Limbe Leaf Tobacco Company operates family planning clinics. Second, non-prescriptive contraceptives are also distributed through commercial outlets (e.g. pharmacies) and Community Based Distributors of contraceptives (field workers). Third, an enabling environment for family planning provision has been established by formulating appropriate policy guidelines and providing basic and refresher courses to family planning providers<sup>5</sup>. The policy guidelines which were first developed in 1992 and revised in 1996 removed barriers of spousal consent, age, and parity and allowed a wider range of cadres to offer various services.

So far the family planning programme in Malawi seems to have succeeded in narrowing the gap between the knowledge and ever use of contraceptives. However the success in reducing the level of fertility is limited<sup>6</sup>. 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<sup>7, 8, 9</sup>. The 2010 Demographic and Health Survey estimate TFR to be 5.6 children per woman<sup>10</sup>. These estimates indicate a decline of 1.1 children in 18 years. The contraceptive prevalence rate (CPR) has increased six-fold, from 7% in 1992 to 22% in 2004 and 46% in 2010<sup>7, 8, 9, 10</sup>. Given the minimal

impact of contraception on fertility in Malawi, a number of questions come to mind: why has fertility not declined by the same magnitude as the increase in contraceptive use? Are women using effective methods? What should be done to encourage Malawian men and women to use contraceptives with the aim of realising their fertility desires and goals? A number of studies have been conducted in Malawi to investigate the correlates of contraceptive use in Malawi<sup>11, 12, 13, 14, 15</sup>. However these studies have focused on small areas<sup>12</sup> or have made use of earlier data sets conducted in the initial stages of the family planning programme. For instance, Cohen<sup>11</sup> used the 1992 MDHS whereas Kalipeni and Zulu<sup>13</sup> and Madise and Diamond<sup>15</sup> relied on the study that was conducted in 1988 by the University of Malawi. Given the availability of new data sets and the fact that contraceptive use is one of the indicators of millennium development goals, there is need to reexamine the correlates of contraceptive use in Malawi.

In an attempt to answer some of these questions this paper analyses, at the individual level, a number of socioeconomic factors associated with the use of modern contraception in Malawi. It is hoped that the findings of this study will assist the Government of Malawi to reposition the national family planning programme in the country.

### Determinants of contraceptive use

This section reviews the literature on the determinants of contraceptive use especially in developing countries. The aim is to present the theoretical framework that is used to guide the empirical analysis that follows. The simple framework used in this paper is based on the understanding that determinants of contraceptive use extend from the characteristics of the individual (such as age, gender, marital status, education, etc.), through resources of the household (say income, ownership of radio, television, car, cattle, etc.) and community in which (s) he lives, to socio-cultural mores and institutions that affect autonomy, behaviour and lifestyle, and access to health care services<sup>16</sup>. These factors are inter-related, complex and vary from one society to another. For simplicity, determinants of contraceptive use have been

grouped into three categories: Demographic, socio-economic and attitudinal factors.

### Demographic factors

Different studies have identified such demographic factors as age of women, number of living children, desired family size and experience of child death as major factors that influence contraceptive use<sup>17</sup>. Contraceptive use is lowest among young women, reaches a peak among women in their thirties and declines among older women<sup>17</sup>. This is indicative of a high desire for child bearing among young women, and a high growing interest of spacing births among women in their thirties. Percentage of users declines at older ages of reproduction due to the fact that older women are not at a high risk of pregnancy. Studies have shown that use of contraception increases with parity of woman up to the third or fourth child and then decline thereafter<sup>18,19,20</sup>. This is partly because, many women have a desire to space births at early reproductive age and seek to stop after the desired family size has been achieved.

Survival status of children is likely to affect the practice of contraception. Parents who have experienced a death of a child may be less likely to use contraceptives than others of the same parity<sup>19, 20, 21, 22</sup>. This may arise from the desire to replace a dead child or to insure against childlessness contributes to high fertility.

Studies indicate that women in a polygamous marriage are less likely to use contraceptives than women who live in monogamous marriages<sup>23</sup>. A lower frequency of intercourse for women in polygamous marriages can discourage them from using contraception. Also, these women are likely to adhere to traditional values and customs that encourage large families.

### Socio-economic factors

It has also been hypothesized that there is a positive correlation between contraceptive use and level of education<sup>24, 25, 26, 27</sup>. Other things being equal the higher the level of education the higher contraceptive use is expected to be. Although both the wives' and husbands' education is important there appears to be a consensus that the former is more important than the latter.

Use of family planning is higher in urban than rural areas. Urban-rural difference in the adoption of contraception is the highest in Sub Saharan Africa, where the rate is more than twice as high as among urban than among rural in all surveyed countries<sup>28</sup>.

The observed variation in contraceptive use by place of residence may be attributed to differences in the availability of such social services as education, information about family planning, access to family planning and health care services.

Religious affiliation also affects contraceptive use<sup>29, 30, 31, 32</sup>. Religions differ in their stand on fertility regulation and among the major world religions, Catholicism and Islam are widely regarded as pronatalist in their ideology. However, the relationship between religion and contraceptive use is much more complex than expected. In one study conducted in India, it was discovered that even though the average number of children born to a Muslim or Christian couple is higher than that born to a Hindu couple, the acceptance of sterilization to limit family size was greater among Muslims and Christians than Hindus<sup>29</sup>. A study of contraceptive use in Bangladesh found that Muslim women here were less likely to use contraception than Hindu women<sup>29</sup>. The strength of one's religiosity or degree of one's adherence to the norms of a given religion may exert an influence on ones' mode of life including reproductive behaviour. Furthermore, studies in developing countries reveal that social, cultural and religious unacceptability of contraception frequently emerged as an obstacle to use contraception<sup>33, 34, 35</sup>.

The work status of women has also been linked to knowledge and use of contraceptives. Women who work outside the home have higher rate of use than women who do not work outside home (housewives)<sup>17,25,36</sup>. Working women, particularly, those who earn cash incomes are assumed to have greater control over household decisions and increased awareness of the world outside home. Consequently, they have more control over reproductive decisions<sup>25,36</sup>. Some studies also add that paid work also provides alternative satisfactions for women, which may compete with bearing and rearing children and may promote contraceptive use.

### **Attitudinal factor towards Family planning**

Traditional African society is constructed in such a way that high fertility and large surviving families have usually been economically and socially rewarding in contrast to modern societies. In this context African societies may offer resistance to contraceptive use and fertility control<sup>33,34</sup>. Generally speaking, Sub-Saharan Africa is known for low literacy rate, poor access to information, poor health care and other infrastructure services. All these factors have strong correlation with family planning program.

Individual's awareness for family planning is among the important variables in influencing the use of contraceptives. Studies have documented that some of the obstacles individuals or couples who want to delay or avoid a birth include lack of knowledge about methods and how to use or where to obtain services<sup>17</sup>. Thus knowing at least one method of contraceptives is an essential pre-condition for the practice of contraception.

In addition to the above-mentioned factors that are known to affect the contraception behaviour of women, various research findings show that a woman may not use or even not want to use contraceptives because of disapproval of the husband, fear of side effects, unavailability and inaccessibility of contraceptives<sup>17</sup>. Husbands' approval is also of paramount importance in the adoption of contraceptive use<sup>37</sup>. Especially in traditional societies, where issues related to procreation are hardly discussed by marital partners, husbands are the primary decision makers in reproductive matters.

### ***The setting***

Malawi is a land-locked country in southern Africa, bordered by three other countries: Tanzania in the north, Zambia in the west and Mozambique in the east and south. According to the 2008 population census, of the 13.1 million people living in Malawi, 17% of the population resides in urban areas<sup>38</sup>. Like many developing sub-Saharan countries, Malawi continues to struggle with very poor socio-economic and demographic indicators. It is one of the poorest countries in the world with a Human Development Index of 0.404 in 2009 and ranked 166 out of 178

countries<sup>39</sup>. Malawi switched from a single party system of government to a multiparty democracy in 1994. The re-introduction of multiparty politics in Malawi also saw the approval of family planning and the introduction of free primary education and the consequent increase in literacy rates especially among women. For instance, adult literacy rates for women aged 15-49 years increased from 49% in 2000 to 62% in 2004<sup>8,9</sup>. It is expected that these changes will lead to improved socio-economic and demographic condition including increased contraceptive use and reduced fertility.

### **Data Sources and methods**

#### **Sources of Data**

The study is based on the analysis of data obtained from the 2000 and 2004 Malawi Demographic and Health surveys<sup>8,9</sup>. Both surveys were nationally representative surveys designed to provide information on levels and trends in fertility, family planning knowledge and use, and early childhood mortality and morbidity in Malawi. Full details of the sampling methodology employed in collecting the data are described in the appropriate survey reports<sup>8,9</sup>.

The MDHSs involved the use of three basic questionnaires: household, male and female questionnaires. First, the household questionnaire recorded information on all household members. Second, the individual men questionnaire was administered to men aged 15-54 years. A total of 3092 and 3261 men were interviewed in 2000 and 2004 respectively. The male questionnaire was similar to that of the individual women questionnaire but excluded the birth history and maternal and child health sections. Third, the individual women questionnaire recorded detailed information on eligible women who were identified from the household questionnaire. The 2000 MDHS collected data from 13220 women aged 15-49 whereas the 2004 MDHS collected data from 11698 women of the same age range. The questionnaires on individuals collected information on the respondent's background characteristics, reproductive history, knowledge and practice of family planning, breast-feeding practices, marriage, fertility preferences etc., as well as on her husband's background

characteristics. The analyses in this paper will use data from the individual women questionnaire only. The study population comprised a sub sample of currently married women aged 15-49 years old. Currently married included women who reported that they were married or living together at the time of the survey. The study population comprised of 9361 and 8385 women in 2000 and 2004 respectively.

## Methods

Three approaches were used in the analysis. Descriptive univariate analyses were performed to inspect the frequency distributions of the variables. Bivariate analysis was employed to examine the relationships of the independent variables and contraceptive use. Chi-square tests of independence were conducted for categorical variables. Significant differences were determined using chi-square at  $p < 0.05$ . Lastly logistic regression was used to examine the impact of social and economic factors on contraceptive use in Malawi. The use of the logistic regression is based on the fact the dependent variable is dichotomous.

## Description of Variables

The dependent variable for this analysis, contraceptive use, was obtained from a question in the section on contraception in the individual woman's questionnaire. Women were asked the question: Are you currently doing something or using any method of contraception to delay or avoid getting pregnant? If a woman reported that she was using any method, she was coded 1 and 0 for otherwise.

The independent variables were selected for inclusion in the analysis based on their significance in previous studies of contraceptive behavior or on their hypothesized association with contraceptive use<sup>16, 17, 18,21,22,26</sup>. 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.

The programmatic factors included in the model were whether or not the individual heard family planning on the radio, whether or not the individual heard family planning on television; whether or not the respondent heard family planning in the newspaper, whether or not the respondent was visited by a family planning worker and whether or not the respondent visited a health facility. These variables are strongly affected by the activities of the national family planning programmes especially its information, education and communication (IEC) component.

Five variables were included to capture attitudinal factors affecting contraceptive use. The attitudinal variables included husband's approval of family planning which was coded 1 if the husbands approve and 0 otherwise; respondents approval of family planning which was coded 1 if the respondent and 0 if the respondent does not approve family planning. Another attitudinal variable was discussion of family planning between spouses and this was coded 0 in cases where couples did not discuss family planning, 1 where couples only discussed once and 2 for couples who discussed family planning more than once. Furthermore couple's desire of children which was coded 1 if both want the same number of children, 2 if the husband wants more and 3 if the husbands want less. Fertility preference was coded 1 if the respondent wanted more children, 2 if the respondent was undecided and 3 if the respondent wanted no more children.

The demographic variables that were included in the study were age of the respondent, marital status, type of marriage, marital duration, number of children ever born and number of children living. Age regrouped into the standard five year age groups 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49; marriage were categorised into two: monogamous and polygamous marriage; marital duration was grouped into 0-4 years, 5-9, 10-14 years, 15-19 years, 20-24 years and 25-29 years; Number of children ever born which was originally a continuous variable was categorized into no children, 1-2 children, 3-4 children and 5 children and over.

The following three social-cultural variables were included in the model: maternal education, religion and wealth status. Education was also regrouped into no education, primary and Secondary and over. Religion was regrouped into Christian, Muslim and no religion/other. In this study wealth index was constructed using the following household assets data: electricity, radio, TV, bicycle, motorbike and car. Each item was given a score of 1 if it available and 0 if it is not available and it was summed across items for each household. Individual wealth was ranked as poor; middle-class and rich, based on the total score. In other words, an individual was categorized as Poor if the total score was in the range 0 to 2; middle, if the total score was 3 to 4 and rich if the total score was 5 to 6. This process was followed because although the 2004 MDHS has a variable called wealth index, the 2000 MDHS does not have this variable. Wealth index variable was created by ORC Macro, a firm that provides technical assistance to governments in developing countries that participate in periodic surveys such as the DHS<sup>40</sup>.

Lastly, the study included two geographical variables: region and type of place of residence. Region had three categories namely, Northern Region, Central Region and Southern Region and type of place of residence had two categories (rural and urban).

### Study Limitation

Although our interest is in exploring the relationship between contraceptive use and socio-economic factors, our study has some limitations. First, the reporting of current contraceptive use might be inaccurate. This might arise from the fact that in traditional societies any discussion on sex and sex-related subjects is regarded as a taboo. This challenge might be more severe in remote rural areas where literacy levels are low and health centres that are a source of family planning may not be available. Also, in such societies use of contraceptives may be regarded being promiscuous, loose and immoral. Second, our study includes only currently married women. This may bias downward contraceptive prevalence

because women who have never married or formerly married were excluded. Third, the study includes only women so there might be still much unknown about trends and determinants of contraceptive use among men.

Lastly, a detailed examination of contraceptive use also requires an understanding of the cultural changes in a society. In most national datasets, including MDHSs, cultural variables are not available since the focus is on structural variables. Data on cultural change are typically obtained from attitudinal studies. Shifts in people's attitudes on different issues generally reflect changes in cultural norms and values. However, DHSs, like many datasets does not as yet collect data on people's attitudes. This prevented us from understanding the cultural component of contraceptive use. Despite these limitations, we hope this study will shed some light on the factors influencing contraceptive use in Malawi.

## Results

### Characteristics of Respondents

Table 1 gives the summary statistics of the study population. The majority of the respondents lived in rural areas (80% in 2000 and 88% in 2004). The 2008 population census suggests that the percentage of the population living in urban areas is 17%<sup>38</sup>. This means that the urban population is over represented in the study population in 2000 and the opposite is true in 2004. The majority of the respondents were in the Southern Region (49% in 2000 and 51% in 2004), followed by Central Region and then Northern Region. The 2008 population census indicate that the highest population is in the Southern Region (45%), followed by Central Region (42%) and lowest in the Northern Region (13%)<sup>38</sup>. This finding is consistent with the distribution of the population at the national level where the southern region is home to almost half of the population. The majority of the study population have at least primary education (70.3% in 2000 and 73.3% in 2004). Women with secondary and higher education comprised of 8.6% in 2000 and 10.6% in 2004.

**Table 1:** Socio-economic characteristics of currently married women and percentage using contraception: Malawi, 2000 and 2004

	2000			2004		
	N	%	% Using	N	%	% Using
<b>Age of respondent</b>			( $\chi^2=191.3$ , $p=0.0$ )			( $\chi^2=109.1$ , $p=0.0$ )
15-19	948	10.1	14.7	819	9.8	18.6
20-24	2351	25.1	27.3	2251	26.8	28.0
25-29	2041	21.8	32.2	1818	21.7	34.3
30-34	1308	14.0	34.9	1242	14.8	34.2
35-39	1181	12.6	37.4	928	11.1	36.0
40-44	837	8.9	37.3	754	9.0	37.5
45-49	695	7.4	25.8	573	6.8	31.1
<b>Region</b>			( $\chi^2=7.6$ , $p=0.02$ )			( $\chi^2=52.1$ , $p=0.0$ )
Northern Region	1564	16.7	33.0	1109	13.2	40.1
Central Region	3287	35.1	30.1	3056	36.4	31.5
Southern Region	4510	48.2	29.3	4220	50.3	28.8
<b>Place of residence</b>			( $\chi^2=65.4$ , $p=0.0$ )			( $\chi^2=21.9$ , $p=0.0$ )
Urban	1853	19.8	38.2	1063	12.7	37.5
Rural	7508	80.2	28.2	7322	87.3	30.4
<b>Education</b>			( $\chi^2=100.2$ , $p=0.0$ )			( $\chi^2=77.9$ , $p=0.0$ )
None	2779	29.7	25.8	2234	26.6	25.9
Primary	5776	61.7	30.4	5261	62.7	31.8
Secondary & higher	806	8.6	44.2	890	10.6	41.9
<b>No. of children ever born</b>			( $\chi^2=478.9$ , $p=0.0$ )			( $\chi^2=365.1$ , $p=0.0$ )
0	723	7.7	2.4	626	7.5	1.4
1-2	3191	34.1	24.8	2807	33.5	27.9
3-4	2355	25.2	32.3	2268	27.0	34.4
5+	3092	33.0	40.8	2684	32.0	39.3
<b>No. of living children</b>			( $\chi^2=646.9$ , $p=0.0$ )			( $\chi^2=485.3$ , $p=0.0$ )
0	1020	10.9	3.5	816	9.7	2.1
1-2	3834	41.0	25.7	3277	39.1	28.1
3-4	2397	25.6	35.2	2373	28.3	36.6
5+	2110	22.5	45.6	1919	22.9	42.7
<b>Type of marriage</b>			( $\chi^2=14.5$ , $p=0.0$ )			( $\chi^2=11.5$ , $p=0.0$ )
Monogamy	7770	83.1	31.0	7006	83.8	32.1
Polygamy	1575	16.9	26.2	1357	16.2	27.4
<b>Marital duration</b>			( $\chi^2=178.0$ , $p=0.0$ )			( $\chi^2=127.3$ , $p=0.0$ )
0-4	2554	27.3	21.0	2115	25.2	22.2
5-9	2066	22.1	31.4	2157	25.7	34.4
10-14	1564	16.7	34.5	1409	16.8	32.3
15-19	1174	12.5	36.5	1010	12.0	34.5

20-24	951	10.2	36.7	831	9.9	38.9
25-29	709	7.6	35.3	576	6.9	36.3
30-34	343	3.7	21.9	287	3.4	27.2
<b>Husband approval of family planning (FP)</b>			( $\chi^2=392.2, p=0.0$ )			( $\chi^2=207.1, p=0.0$ )
Disapprove	1595	18.9	12.0	1288	16.7	16.3
Approve	6863	81.1	37.9	6409	83.3	37.1
<b>Respondents approval of FP</b>			( $\chi^2=164.1, p=0.0$ )			( $\chi^2=159.9, p=0.0$ )
Disapprove	598	6.5	7.2	662	8.0	9.7
Approve	8652	93.5	32.1	7639	92.0	33.5
<b>Discussion of FP</b>			( $\chi^2=766.0, p=0.0$ )			( $\chi^2=551.1, p=0.0$ )
Never	4253	59.3	30.1	2439	29.2	14.7
Once or twice	1484	20.7	22.0	2944	35.2	31.9
More than twice	1437	20.0	31.2	2976	35.6	44.5
<b>Couple desire of children</b>			( $\chi^2=40.8, p=0.0$ )			( $\chi^2=9.9, p=0.0$ )
Both want the same	2787	29.8	12.1	4115	69.6	31.3
Husband wants more	3310	35.4	31.1	1133	19.2	26.5
Husband	3254	34.8	44.9	667	11.3	30.9
<b>Religion</b>			( $\chi^2=38.4, p=0.0$ )			( $\chi^2=74.1, p=0.0$ )
Christian	7786	83.2	31.5	6917	82.5	33.3
Muslim	1425	15.2	24.1	1359	16.2	22.1
No Religion	147	1.6	20.4	69	0.8	15.9
<b>Fertility preference</b>			( $\chi^2=97.7, p=0.0$ )			( $\chi^2=28.0, p=0.0$ )
Wants more	5076	58.8	23.6	4528	58.2	26.1
Undecided	148	1.7	10.1	333	4.3	21.0
Wants no more	3412	39.5	32.2	2919	37.5	30.6
<b>Work Status</b>			( $\chi^2=43.7, p=0.0$ )			( $\chi^2=22.8, p=0.0$ )
Not Working	3808	40.7	27.2	3424	40.9	28.4
Working	5550	59.3	32.2	4955	59.1	33.3
<b>Wealth status</b>			( $\chi^2=129.3, p=0.0$ )			( $\chi^2=65.6, p=0.0$ )
Poor	5195	57.3	26.2	4414	15.3	28.5
Medium	3683	40.6	34.2	3605	14.8	33.7
Rich ®	185	2.0	56.8	204	1.3	52.0
<b>Child dead</b>			( $\chi^2=0.47, p=0.49$ )			( $\chi^2=0.65, p=0.42$ )
No	5341	57.1	29.9	5254	62.7	31.6
Yes ®	4020	42.9	30.5	3131	37.3	30.8
<b>Heard FP on radio</b>			( $\chi^2=96.6, p=0.0$ )			( $\chi^2=30.7, p=0.0$ )
No	2755	29.4	23.0	2402	28.7	26.9
Yes ®	6606	70.6	33.2	5981	71.3	33.1
<b>Heard FP on TV</b>			( $\chi^2=56.9, p=0.0$ )			( $\chi^2=51.8, p=0.0$ )
No	8889	95.0	29.4	7854	93.7	30.4

Yes ®	470	5.0	45.7	529	6.3	45.4
<b>Heard FP Newspaper</b>			( $\chi^2=87.7$ , $p=0.0$ )			( $\chi^2=47.5$ , $p=0.0$ )
No	7795	83.3	28.2	7421	88.5	30.1
Yes ®	1558	16.7	40.1	960	11.5	41.0
<b>Visited by FP Worker</b>			( $\chi^2=9.9$ , $p=0.0$ )			( $\chi^2=0.29$ , $p=0.6$ )
No	8063	86.1	29.6	7355	87.8	31.2
Yes ®	1297	13.9	33.9	1026	12.2	32.1
<b>Visited health facility</b>			( $\chi^2=134.1$ , $p=0.0$ )			( $\chi^2=70.5$ , $p=0.0$ )
No	3454	36.9	23.0	3269	39.0	26.0
Yes ®	5906	63.1	34.4	5115	61.0	34.7
<b>Total</b>	<b>9661</b>	<b>100.0</b>	<b>30.2</b>	<b>8385</b>	<b>100.0</b>	<b>31.3</b>

### Bivariate Analysis

Table 1 shows the percentage distribution of currently married women aged 15–49 currently using contraception by selected demographic and socioeconomic characteristics. The use of contraception among currently married women has slightly increased from 30.2% in 2000 to 31.3% in 2004. Table 1 also shows significant variations in contraceptive use by most socio-economic and demographic characteristics.

Current use is positively associated with respondent's age, number of living children and level of education. As expected, both the respondent's and her spouse's approval of family planning promotes higher current contraceptive use. Current use is directly related to frequency of discussion of family planning with the partner. Among currently married women, 7% of those who had never discussed family planning with their partner and 30% of those who had discussed family planning with their partner were currently using contraception.

Use of contraceptives among currently married women increases with age of the woman reaching a maximum in age 40-44 and declines slightly in age group 45-49. The 2000 MDHS indicate that use of contraceptives among currently married women is highest in Northern Region, followed by Central Region and lowest in Southern Region.

Table 1 further reveals that currently married Malawian women residing in urban areas have a higher contraceptive prevalence than those residing in rural areas. There is also an indication

that contraceptive use has remained unchanged in urban areas and has increased tremendously in rural areas.

Contraceptive use among currently married women increases with education level. In 2000 contraceptive prevalence was 22%, 26% and 42% among women with no education, primary education and secondary and higher education, respectively. Similar percentages in 2004 were 22%, 28% and 40%. The percentage using contraceptives has remained unchanged for women with no education, increased for women with primary education and declined for women in secondary and higher education. This pattern suggests that the increase in contraceptive use observed between 2000 and 2004 was largely due to the increase among women with primary education.

Number of children ever born and number of living children also influence contraceptive use among currently married women in Malawi. Based on 2000 MDHS, contraceptive use was 1.8% among women with no children, 21.8% among women with 1-2 children, 28.6% among women with 3-4 children and 36% among women with 5 children or more. In addition, in 2004, contraceptive use was 2.6% among women with no living children, 22.5% among women with 1-2 living children, 31.4% among women with 3-4 living children and 40.7% among women with 5 living children or more.

As expected, both the respondent's and her spouse's approval of family planning promotes higher contraceptive use. Both data sets indicate

that contraceptive prevalence among women whose husbands approve of family planning was nearly 34% as opposed to 10% in 2000 and 14% in 2004 among women whose husbands disapprove of family planning.

Current use of modern contraceptives is directly related to frequency of discussion of family planning with the partner. In 2000 contraceptive prevalence was 11% among women who never discussed family planning with their partner, 27% among women who had discussed once or twice and 40% among women who had discussed family planning often with their partners. Similar percentages in 2004 were 28%, 22% and 26% respectively.

### Multivariate analysis

All the variables that were found to be statistically significant in the bivariate analyses were used to examine the determinants of current use of contraception among women through the execution of a multivariate analytical technique based on logistic regression. Preliminary runs of the logistic regression model gave rise to large regression coefficients and the standard errors for knowledge and ever use of contraceptives. Although these variables are important determinants of current contraceptive use, they were not included in the final regression model. The variables that were found to greatly influence current use of contraceptives after keeping the other explanatory variables constant are presented in Table 2. The results of logistic regression analysis are presented in terms of odds ratios (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.

According to Table 2, multi-variant logistic regression analysis shows that the variables that explain most of the variations in current contraceptive use in Malawi are: age, region, wealth, education, children ever born, number of living children, husbands approval of family planning, respondents approval of family planning, discussion of family planning with partner, work status and whether or not the respondent visited a health facility.

**Table 2:** Results of logistic regression for current use of contraception, Malawi 2000 and 2004

Age of respondent	2000	2004
15-19	2.147*	3.271**
20-24	2.325**	2.575**
25-29	2.043*	2.319*
30-34	1.461	1.950*
35-39	1.437	1.405
40-44	1.160	1.168
45-49 ®		
<b>Children ever born</b>		
0	0.173**	0.256*
1-2	0.585*	1.125
3-4	0.649**	1.020
5+ ®		
<b>Number of living children</b>		
0	0.082**	0.045**
1-2	0.405**	0.269**
3-4	0.654**	0.579**
5+ ®		
<b>Fertility preferences</b>		
Wants	1.027	1.054
Undecided	0.431*	0.961
No more ®		
<b>Type of marriage</b>		
Monogamy	1.082	1.133
Polygamy ®		
<b>Marital duration</b>		
0-4	1.941	1.427
5-9	2.196*	1.607
10-14	1.793	1.172
15-19	1.510	1.051
20-24	1.338	1.277
25-29	1.395	1.186
30+ ®		
<b>Region</b>		
Northern Region	0.947	1.521**
Central Region	0.834*	0.875
Southern Region ®		
<b>Type of residence</b>		
Urban	1.238*	1.183
Rural ®		
<b>Education</b>		
None	0.585**	0.552**
Primary	0.610**	0.703**

Secondary and over ®		
<b>Work status</b>		
No	0.793**	0.865*
Yes ®		
<b>Spouse approval of FP</b>		
Disapproves	0.328**	0.633**
Approves ®		
<b>Respondent approval FP</b>		
Disapproves	0.292**	0.379**
Approves ®		
<b>Couple desire of children</b>		
Both want the same	1.001	0.984
Husband more	0.976	0.901
Husband fewer ®		
<b>Husband-Wife discussion</b>		
Never	0.251**	0.339**
Once or twice	0.642**	0.661**
> 2 ®		
<b>Wealth status</b>		
Poor	0.558*	0.697
Medium	0.693	0.742
Rich ®		
<b>Child dead</b>		
No	0.973	1.024
Yes ®		
<b>Heard FP on radio</b>		
No	1.012	1.075
Yes ®		
<b>Heard FP on TV</b>		
No	0.748*	0.825
Yes ®		
<b>Heard FP Newspaper</b>		
No	0.936	0.942
Yes ®		
<b>Visited by FP Worker</b>		
No	0.956	1.248*
Yes ®		
<b>Visited health facility</b>		
No	0.793**	0.811**
Yes ®		
Constant	2.704**	1.162

\* =  $p < 0.05$ , \*\* =  $p < 0.000$

Age of the respondent is one of the variables influencing current contraceptive use in Malawi.

In 2000, women in age groups 15-19, 20-24 and 25-29 were 2.14, 2.35, 2.04 times more likely to use contraceptives than in age group 45-49. Whereas women in age groups 30-34, 35-39 and 40-44 were 1.46, 1.44 and 1.16 times more likely to use contraceptives than women in age group 45-49. In general, with exception of age group 20-24 in 2000, the odds ratio decrease with increasing age of the respondent probably reflecting the decline in contraceptive use as women become older.

The prevalence of contraception depends to a large extent on the type of place of residence. In 2000 Malawian women residing in urban areas are 1.24 times more likely to use contraception than their counterparts residing in rural areas.

The analysis indicates that women's education is one of the strongest predictor of the use of contraceptives in Malawi. In 2000, women with no education were 1.71 less likely to use contraceptive than women who had secondary and higher education whereas women with primary education were 1.64 less likely to use contraceptives than women with secondary education and higher. The same pattern is observed in 2004. The odds ratio decrease as education level of the women increases indicating that the likelihood of using contraceptives increases as the educational level increases.

The analysis also suggests that the number of children ever born and number of living children influence the use of contraception. In 2000, women with no children are 5.78 times less likely to use contraceptives than women with more than 5 children whereas women with 1 to 2 children and women with 3-4 children are 1.71 and 1.54 times less likely to use contraceptives than women in the reference category. The odds ratio increases with an increasing number of children indicating that contraceptives use increases with parity. Furthermore, in 2000, women with no living children are 12.20 times less likely to use contraceptives than women with 5 or more living children whereas women with 1 to 2 living children and women with 3-4 living children are 2.47 and 1.53 times less likely to use contraceptives than women in the reference category. The odds ratio increases with an increasing number of living children indicating

that contraceptive use increases as number of living children increases.

As expected, approval of contraceptive by both the partner and respondent and discussion about family planning among spouses affect contraceptive use of currently married women. Table 2 indicates that women whose husbands disapprove the use of contraceptives are 3.05 times less likely to use contraception than women whose husbands approve use of contraceptives.

Women who disapprove family planning are 3.42 times less likely to use contraceptives than women who approve. At the same time women who have never discussed family planning are 3.98 times less likely to use contraceptives than women have discussed family planning issues with their spouses more than twice. Women who discussed family planning once or twice are 1.56 times less likely to use contraceptives than women who have discussed family planning with their spouses more than twice.

Contraceptive use in Malawi is also influenced by work status. Women who are not working are 1.26 times less likely to use contraceptives than women who are working. Lastly, Women who have not visited a health facility are 1.26 times less likely to use contraceptives than women have visited a health facility.

## Discussion and conclusion

Family planning is acknowledged in most developing countries to be an effective way of improving the health of mothers and children and plays leading roles in mortality and fertility transitions<sup>36,41</sup>. Family planning also influences women empowerment<sup>36,41</sup>. Multivariate analyses identified age, education, children ever born, number of living children, husband's approval of family planning, respondents' approval of family planning, discussion of family planning with partner, partner's occupation and respondent's work status as the most important explanatory variables of current contraceptive use in Malawi. The results of the analysis also show that contraceptive use increases with the age of the respondent. The low contraceptive prevalence among women aged 15-19 years may be due to the fact that most of these are newly married, and marriage is looked upon as an institution of

producing children. Young mothers may also have problems with accessing family planning services. The reduced contraceptive use among older women may be related to the fact that they have reduced their coital frequency and most of them rely on other methods like string tie and are afraid to talk about them in an interview. However, a good number of older women might be not sexually active. This analysis shows that the educational level of the respondent is one the major factors influencing the issue of contraceptives in Malawi. This indicates that raising the level of education is one effective strategy of promoting contraceptive use in Malawi. Our findings are consistent with studies conducted in other countries and confirm the importance of women's economic empowerment<sup>24, 25, 36</sup>. Respondent's approval of family planning is the most important predictor of current use of contraception. This is to be expected because respondents who approve of family planning are more likely to ensure that their favorable attitude is translated into high use of contraception. The study's finding that spouse' approval of family planning and discussion of family planning with partner are important predictors of contraceptive use in Malawi are in agreement with findings from other countries<sup>24</sup>.

Finally, the determinants of contraceptive use in Malawi, as presented in this study, have policy and programme implications for Malawi and for other African countries with similar social, cultural and economic conditions. First, the Malawi National Family Planning Programme should intensify not only its information, education and communication programmes on family planning to cover particularly the neglected rural areas but also, more importantly, adjust them to suit local conditions. In order to win more clients there is need for a continuous dialogue on the various contraceptive methods between service providers and clients so as to allay some of the clients' fears about supposed side effects of contraception. Second, the family planning IEC should target both men and women. Special emphasis should be put on encouraging men to play a leading role in family planning.

The importance of husband-wife communication in relation to fertility decision

making is also emphasized by these findings. Malawian society is largely male-dominated, even with regard to female reproductive health, so men's involvement in family planning can therefore hardly be over-emphasised. One of the crucial factors which have hindered successful implementation of the family planning programme in Malawi is minimal male involvement. This is perhaps not unrelated to male fertility preferences. The establishment of more family planning programmes for the men at work-places should help to improve communication between spouses and thereby promote more discussion on family planning and other health related issues.

Furthermore, it is crucial to continue improving girls and young women access to education in the country, as this is important avenue for increasing the women's use of modern contraceptives and for empowering women so as to enhance their active participation in market economy. Similarly, it is advisable to target young women, particularly those with no or little education, with information on reproductive health and to provide them with basic life skills to enable them to avoid early sexual activity and ultimately early marriage.

With regard to increasing the use of modern contraceptive methods, there are a number of conclusions and strategic implications that flow from these findings. Teenagers should be given priority. All opportunities, namely, the school system, youth associations, religious organisations, traditional leaders, communities and families should be sensitised and educated about contraception. Mass communication should be thought of and organized to increase knowledge of available options and access, while interpersonal communication should be considered at the community level to induce changes in contraceptive use.

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