

Use and determinants of postpartum contraception among women in Malawi

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Abstract: The period after child birth is associated with physical and psychological challenges some of which may affect future childbearing and contraceptive use. This study examines the factors influencing postpartum use of contraception in Malawi. The analysis was based on the data from the 2010 Malawi Demographic and Health Survey (MDHS). Postpartum contraceptive use was analyzed for fecund, non pregnant women who had given birth in the last five years preceding the study. The study employed the bivariate and multivariate regression models to investigate the association between the outcome variable (postpartum use of contraception) and several independent variables. Overall, 49.5 percent of women used a modern method of contraception during the postpartum period and injections, condom, pills and withdrawal were the popular methods. The significant predictors of the use of a modern method in the postpartum period include age, region, education, children ever born, type of marriage and exposure to family planning messages through health facility and family planning worker. The findings suggest that contraceptive use among postpartum women will increase substantially if more women use maternal health care services, especially for antenatal care and postnatal care.

Keywords: postpartum, contraceptives, Demographic and Health Survey, Malawi

I. Introduction

Postpartum family planning (PPFP) is the term used to describe the initiation and use of contraceptives during the first year after delivery (1). The period after delivery is a complex and challenging, during which a woman has to care for her newborn child as well as cope with cultural, emotional and physical changes (2). In the past some traditional society's customs demanded that husbands and wives have to separate. This was enforced by practices that required that women return to their kinsmen for a certain period of time. At the height of migrant labour men were usually away for a period of at least two years only to return to make their wives pregnant again (3). With the emergences of HIV/AIDS the trend is to discourage separation and encourage couples to resume sexual relations as soon as it is feasible. Various studies have also demonstrated that both men and women, but especially women, suffer from postpartum stress and depression (4, 5). This postpartum period presents a rising risk of unwanted conception and often frustrated desire for contraceptive protection (6, 7). The risk is even greater among the first time mothers who do not know what to expect after their first delivery and rely on the advice and explanations from their female relatives, neighbours and friends (1). The new mothers are often victims of myths, superstitions and misconceptions surrounding use of modern contraceptive from the "informal consultants" (friends and relatives); mainly because they have inadequate knowledge and limited

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experience on postpartum contraception compared to the women of higher parity (1). Indeed, contraception and sex are probably the last things on a new mothers list of priorities during the first days after delivery (8). In addition, the post partum period is considered opportune for counseling women on modern FP methods because this period is often associated with a woman's frequent encounter with the health system (4).

Using data from 27 countries some researchers established that by 7-9 months after delivery, most postpartum women are exposed to pregnancy, yet have not obtained contraceptives (6). Some of these women would have experienced a return of menses, are sexually active and are unprotected from conception, which increases exposure to the risk of unintended pregnancy and translates into unmet need for PPF. Yet a number of studies have revealed that most of the postpartum mothers are not aware of the factors associated with fertility return and do not think they are at risk of pregnancy during the first year after giving birth. Consequently, these mothers are reluctant to use family planning or are using unreliable methods associated with high failure rate such as withdrawal and condom (1, 12, 13, 14).

Analysis of 27 Demographic and Health Surveys by Ross and Winfrey (2001) found that the unmet need for contraception during the first year in sub Saharan Africa was 74 percent, of which about three quarter is for spacing births (6). Only 18 percent of postpartum mothers were using a method and only 5 percent reported to have the intention of conceiving again. In Nigeria and India, the unmet need for PPF is alarmingly high at 62 and 73 percent respectively, and only one fifth of the postpartum mothers use family planning during the first year after birth (15, 16, 17, 18).

A study of based on data from the Kenyan Demographic and Health Survey of 2003 identified 90 percent unmet need for PPF during 0-3 months after delivery, 80 percent between 7-8 months and by the end of the first year after delivery the level of unmet need is at 68 percent (17). The high unmet need for PPF prevails despite Kenya having recorded remarkable rise in contraceptive use over the years since 1980s, which currently stands at 46 percent (19). Yet the Demographic and Health Surveys have over the years underestimated the contribution of the new mothers to the unmet need in the extended postpartum period.

The consequences of the high unmet need for postpartum family planning in sub-Saharan Africa include millions of unplanned pregnancies and short inter-pregnancy spacing; with

poor maternal and infant health outcomes (1, 7, 20). Although maternal mortality has improved in Malawi available estimates indicate that it is still unacceptably high. The Maternal Mortality Ratio (MMR) almost doubled between 1992 (620 maternal deaths per 100000 live births) and 2000 (1120/100000) in 2000), declining to around 984 in 2004 and 675 in 2010 (21, 22, 23, 24).

While extensive literature is available on unmet need for PPF and general postpartum, women's intention to use contraception after birth has not been fully taken into account. Yet intention to use PPF may be a more valid indicator of demand for family planning than unmet need, and has currently received attention as an alternative or supplement to information on unmet need (25). Consequently, contraceptive intentions appear to be better predictors of actual contraceptive use than the unmet need.

Although there are concerted efforts by governments and development partners especially JHPIEGO/ACCESS-FP to meet the contraceptive need of postpartum mothers through training of health workers and integration of family planning services to the maternal and child health services, the proportion of postpartum women using contraception is still low. Furthermore, even with the high unmet need for postpartum family planning factors determining the intention to use postpartum contraception among the first time mothers are not fully known and this calls for such investigation.

The major concern of this paper therefore, is to investigate factors that influence the intention of the first time mothers to use postpartum family planning by examining demographic factors, perception of risk of repeat pregnancy, socioeconomic factors, contraceptive knowledge and prior contraceptive use. The paper will also examine the influence of prenatal counseling on the intention to use postpartum family planning.

II. Data and methods

Data

This paper reports on data drawn from 2010 Malawi Demographic and Health Survey (MDHS), which is a nationally representative sample survey (24). 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 (24). 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, 3617 fecund and non pregnant women had given birth in the past 5 years at the time of the survey were used in the analyses (V208>0 and V602<4 and V454=1).

Association between use of contraceptives during the postpartum period and the explanatory variables was assessed in bivariate logistic regressions. Multivariate logistic regression was used to assess the net effect of independent variables on contraceptive use. 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, 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 (25, 26, 27, 28).

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.

III. Results

Characteristics of Respondents

Table 1 gives the summary statistics of the study population. The majority of the study population (88.8%) lived in rural areas. The majority of the study population came from the Southern Region (48.3%), followed by Central Region (34.5%) and then Northern Region (17.2%). The majority of the study population had primary education (68.2%) whereas women with no education and women with secondary and higher education comprised of 15.8% and 16% respectively each. The study population comprised 83.5% married women, 13.4% formerly married women and 3.1% never married women.

Table 1: Socio-economic characteristics of fecund women who gave birth in the last five years: Malawi, 2000

Variables	N	%
Age of respondent		
15-24	1295	35.8
25-34	1664	46.0
35 +	658	18.2
	3617	100.0
Children ever born		
0	0	0.0
1-2	1378	38.1
3-4	1152	31.8
5+	1087	30.1
	3617	100.0
Number of living children		
0	39	1.1
1-2	1528	42.2
3-4	1244	34.4
5+	806	22.3
	3617	100.0
Current Marital Status		
Never Married	113	3.1
Currently Married	3019	83.5
Formerly Married	485	13.4
	3617	100.0
Type of marriage		
Monogamy	2567	85.8

Polygamy	425	14.2
	2992	100.0
Region		
Northern Region	623	17.2
Central Region	1247	34.5
Southern Region	1747	48.3
	3617	100.0
Type of residence		
Urban	404	11.2
Rural	3213	88.8
	3617	100.0
Education		
None	573	15.8
Primary	2467	68.2
Secondary and over	577	16.0
	3617	100.0
Work status		
No	1448	40.1
Yes	2161	59.9
	3609	100.0
Wealth status		
Poor	1540	42.6
Medium	1526	42.2
Rich	551	15.2
	3617	100.0
Heard FP on radio		
No	1330	36.8
Yes	2287	63.2
	3617	100.0
Heard FP on TV		
No	3318	91.8
Yes	296	8.2
	3614	100.0
Heard FP Newspaper		
No	3173	87.8
Yes	440	12.2
	3613	100.0
Visited by FP Worker		
No	2939	81.3
Yes	674	18.7
	3613	100.0
Visited health facility		

No	547	15.1
Yes	3067	84.9
	3614	100.0
Last birth Caesarean		
No	3449	95.5
Yes	164	4.5
	3613	100.0
Currently breastfeeding		
No	1336	36.9
Yes	2281	63.1
	3617	100.0
Currently amenorrheic		
No	2384	65.9
Yes	1233	34.1
	3617	100.0
Currently abstaining		
No	2801	77.4
Yes	816	22.6
	3617	100.0
Visits		
1	1974	55.2
2	1605	44.8
	3579	100.0
Assistance		
No	939	26.0
Yes	2674	74.0
	3613	100.0

Contraceptive Method Mix

Available statistics indicate that knowledge of family planning among the study population is universal (99.8%) and 81% of the women have ever used family planning methods. Current use of family planning is high with 49.5% of the women reporting that they were currently used family planning method. Figure 1 show contraceptive prevalence by method for the study population. In 2010 Injectables are the most popular method among the women in Malawi. Injectables alone account nearly 71.5% of all the contraceptive use among women who had given birth in the last five years. The second most popular post partum method is male condom closely followed by pill and withdrawal.

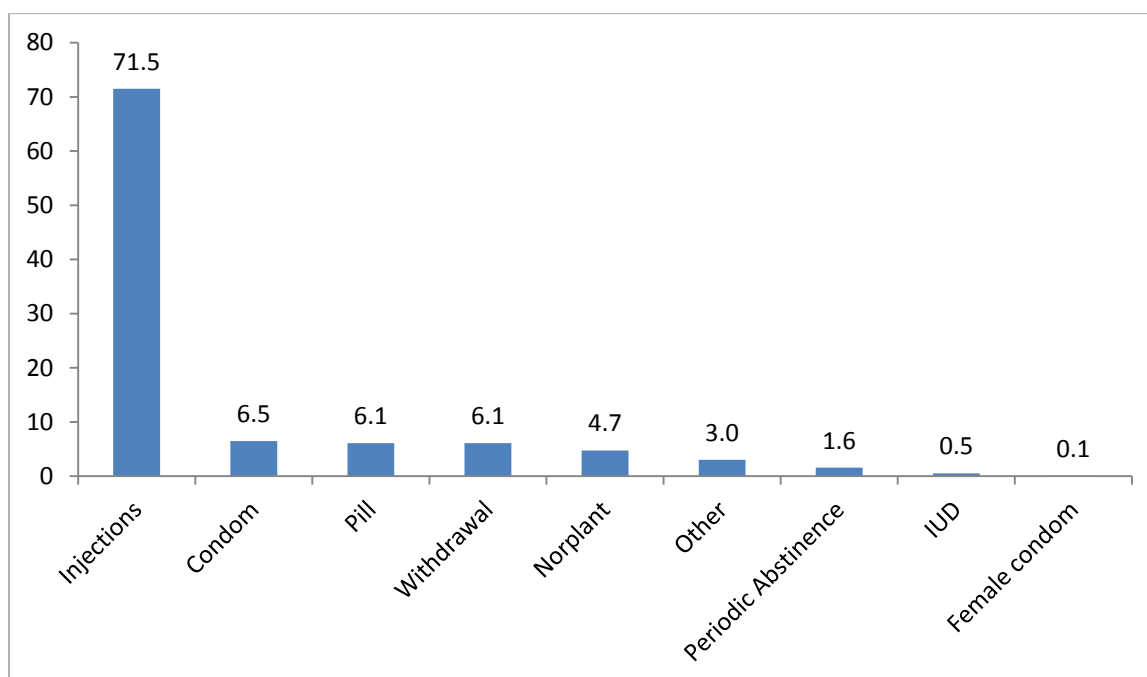


Figure 1: Contraceptive method mix among women during the post partum period, Malawi, 2010

Of those who are not using 80% indicated that they intend to use family planning in future. Regarding contraceptive non uses during the post partum period, the reasons for not using contraceptives were analyzed and these are presented in Table 1. The main reasons reported by the non users were breastfeeding (29.5%), not having sex (25.2%), fear of side effects (12%), not married (10.4%), infrequent sex (7.2%) and respondent opposed (6.8%).

Table 1: Reasons for not using contraceptives

Breastfeeding	414	29.5
Not having sex	354	25.2
Fear of side effects	169	12.0
Not married	146	10.4
Infrequent sex	101	7.2
Respondent opposed	95	6.8
Postpartum amenorrheic	82	5.8
Health concerns	73	5.2
Interferes with body's processes	56	4.0
Husband/partner opposed	46	3.3
Menopausal/hysterectomy	20	1.4
Lack of access/too far	13	0.9
Subfecund/infecund	12	0.9
Others opposed	9	0.6
Religious prohibition	9	0.6

Fatalistic	7	0.5
Knows no method	6	0.4
Costs too much	5	0.4
Knows no source	4	0.3
Inconvenient to use	3	0.2

Determinants of Postpartum Use of Contraceptives

To examine the determinants of post partum use of contraceptives bivariate and multivariate logistic regression were conducted. Bivariate logistics regressions analysis revealed that age, children ever born, marital status, type of marriage, region, place of residence, education, wealth status, heard family planning on radio, heard family planning in the newspaper, visited by family planning worker, visited a health facility in the last twelve months, currently amenorrhic and currently abstaining are significantly related to use of contraceptives during the post partun period.

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 postpartum women through the execution of a multivariate analytical technique based on logistic regression. 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 among post partum women in Malawi are: age, region, education, children ever born, type of marriage, visited by a family planning worker, whether or not the respondent visited a health facility, whether or not the respondent is currently amennoric and whether or not the respondent is abstaining.

Age of the respondent is one of the variables influencing postpartum contraceptive use in Malawi. Women in age group 15-24 are 1.98 times more likely to use contraceptives than in age range 35 and over. Women in the age range 25-34 are 1.75 times more likely to use contraceptives than women in the reference category. In general, the odds ratio decrease with

increasing age of the respondent probably reflecting the decline in contraceptive use as women become older.

The analysis indicates that women's education is one of the strongest predictor of post partum use of contraceptives in Malawi. Women with no education were 1.56 times less likely to use contraceptive than women who had secondary and higher education whereas women with primary education were 1.28 times less likely to use contraceptives than women with secondary education and higher. 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 influence post partum use of contraception. Women with 1-2 children are 1.45 times less likely to use contraceptives than women with more than 5 children whereas women with 3-4 children are 1.06 times more likely to use contraceptives than women in the reference category.

The results in Table 2 also indicate post partum use of contraceptives analysis is influenced by the type of marriage. Women in monogamous marriages are 1.30 times more like to use contraceptives than women in polygamous marriages.

Use of contraceptives among women in post partum period is influenced by whether or not women were visited by a family planning worker and whether or not women visited a health facility. Women who were not visited by a family planning worker were 1.31 times less likely to use contraceptive than women who were visited by a family planning worker. In addition women who did not visit a health facility were 1.57 times less likely to use contraceptive than women who visited a health facility.

Women who are not abstaining are 9.31 times more likely to use contraceptive than women who are abstaining.

Women who are not amenorrhoeic are 2.37 times less likely to use contraceptive than women who are amenorrhic.

Table 2: Unadjusted and adjusted logistic regression coefficients of factors associated with postpartum use of contraception in Malawi, 2010

Variables	Unadjusted	Adjusted
Age of respondent		
15-24	1.326**	1.979**
25-34	1.730**	1.746**
35 + (R)		
Children ever born		
0		
1-2	1.036	0.688
3-4	1.452**	1.057
5+ ®		
Number of living children		
0	0.174	
1-2	1.093	
3-4	1.452	
5+ ®		
Current Marital Status		
Never Married	1.052	
Currently Married	3.251**	
Formerly Married ®		
Type of marriage		
Monogamy	1.445**	
Polygamy ®		
Region		
Northern Region	0.626**	0.642
Central Region	0.912	0.778
Southern Region ®		
Type of residence		
Urban	1.383**	1.386
Rural ®		
Education		
None	0.629*	0.641

Primary	0.847	0.779
Secondary and over ®		
Work status		
No	0.880	
Yes ®		
Wealth status		
Poor	0.756**	0.857
Medium	0.900	
Rich ®		
Heard FP on radio		
No	0.725**	0.839
Yes ®		
Heard FP on TV		
No	0.863	
Yes ®		
Heard FP Newspaper		
No	0.853	0.764
Yes ®		
Visited by FP Worker		
No	0.770**	0.637
Yes ®		
Visited health facility		
No	0.632**	
Yes ®		
Last birth Caesarean		
No	1.178	
Yes ®		
Currently breastfeeding		
No	1.032	
Yes ®		
Currently amenorrhic		
No	2.347**	1.570**
Yes ®		
Currently abstaining		
No	9.308**	9.305**
Yes ®		
Constant		

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. Family planning also influences women empowerment.

Multivariate analyses identified age, education, children ever born, region, currently amenorrhic, currently abstaining, visited by a family planning worker and visiting a health center in the last 12 months as the most important explanatory variables of post partum contraceptive use in Malawi. The results of the analysis show that post partum 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 post partum use 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. Post partum contraceptive use is also influenced by whether or not the respondent is amenorrhic or abstaining. Women who are not amenorrhic are more likely to use contraceptives. The same applies to women who are not abstaining. This finding is consistent with other studies that reported high contraceptive use among women who have resumed sexual activity (Ndugwa, et. al., 2011). Women who were visited by a family planning worker in the last twelve months are more likely to use post partum contraceptives. This finding is consistent with the observation that family planning outreach programmes including Community Based Distribution of contraceptives can raise both awareness and use of contraceptives (Malarcher, 2007; Naanyu et. al, 2013). Lastly use of postpartum family planning is higher among women who visited a health facility in the last 12 months.

Finally, the determinants of post partum 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.

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 organizations, traditional leaders, communities and families should be sensitized 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.

Acknowledgment

The authors thank the ICF International in the United States of America, especially the DHS program, for releasing the data for this study.

References

1. Mc Kaig, C and Deller, B. (2006). After the fact: family planning for the postnatal period. ACCESS-FP/JHPIEGO. <http://www.maqweb.org/miniu/present/2006/After%20the%20Fact-PPFP.ppt>
2. Salway, S., and Nurani, S. (1998). Uptake of contraception during postpartum amenorrhea: understandings and preferences of poor, urban women in Bangladesh. *Social Science and Medicine*, 47(7): 899-909.
3. Palamuleni ME (1993)
4. Eliason S, Baiden F, Quansah-Asare G, Graham-Hayfron Y, Bonsu D, Phillips J and Awusabo-Asare K (2013) "Factors influencing the intention of women in rural Ghana to adopt postpartum family planning" *Reproductive Health*.
5. Mehata, S., Paudel, YR, Mehta, R., Dariang, M., Poudel, P. and Barnett, S. (2014). "Unmet Need for Family Planning in Nepal during the First Two Years Postpartum" *BioMed Research International*, Volume 2014 (2014), Article ID 649567, 9 pages, <http://dx.doi.org/10.1155/2014/649567>.

6. Ross, A.J., and Winfrey, W.L. (2001). Contraceptive use, intention to use and unmet need during the extended postpartum period. *International Family Planning Perspective*, 27(1):20-27.
7. Depineras, T., Blumenthal, P.D and Diener-West, M. (2005). Postpartum contraception: the New Mexico pregnancy risk assessment monitoring system. *Contraception*, 72(6): 422-425.
8. Glasier, A.F., Logan, J., and McGlew, T.J. (1996). Who gives advice about postpartum contraception? *Contraception*, 53(4): 217-220.
9. Naanyu, V., Baliddawa, J., Peca, E., Karfaki, J., Nyagoha, N., Koech, B. (2013) "An examination of postpartum family planning in western Kenya: "I want to use contraception but I have not been told how to do so" *African Journal of Reproductive Health* 17(3):45-53.
10. Ndugwa, R. P., Cleland, J., Madise, N.J., Fotso, J.C., Zulu, E.M. (2011). "Menstrual Pattern, Sexual Behaviors, and Contraceptive Use among Postpartum Women in Nairobi Urban Slums". *Journal of Urban Health*, 88:341-355.
11. Rojnik, B., Kosmelj, k., and Andolsek-Jeras, L. (1995). Initiation of contraception postpartum. *Contraception*, 51(2): 75-81
12. Shaaban, O.M., and Glasier, A.F. (2008). Pregnancy during breastfeeding in rural Egypt. *Contraception*, 77(5): 350-354.
13. Speizer, I.S., Fotso, J.C., Okigbo, C., Faye, C.M., Seck, C. () Use of Postpartum Family Planning in Urban Senegal: The Role of Integrated Services
14. Borda, M. R., Winfrey, W., McKaig, C. (2011). Return to Sexual Activity and Modern Family Planning Use in the Extended Postpartum Period: An Analysis of Findings from Seventeen Countries. *African Journal of Reproductive Health*, 14(4):75-82.
15. Borda, M. (2008). Family planning needs during the extended postpartum period in Uttar Pradesh, India. ACCESS-FP. http://pdf.usaid.gov/pdf_docs/PNADM908.pdf. Accessed: 14/6/2010.
16. Borda, M., and Winfrey, M. (2006a). Family planning needs during the extended postpartum period in Kenya. ACCESS-FP. http://www.k4health.org/sites/default/files/DHS_Kenya_0.pdf
17. Borda, M., and Winfrey, M. (2006b). Family planning needs during the extended postpartum period in Nigeria. ACCESS-FP. http://www.pfptoolkit.org/advocacyPolicy/files/DHS%20Analyses/ACCESSFP_Nigeria_analysis_2006.pdf.
18. Malarcher S, (2007) Family planning success stories in Sub-Saharan Africa. Global Health Technical Briefs, USAID: Washington, DC.
19. Smith, R., Ashford, L., Gribble, J., and Clifton, D. (2009). Family planning saves lives, 4th ed. Population Reference Bureau. Washington, DC: PRB.
20. Malawi Government 1992
21. Malawi Government. (2002). *Malawi Demographic and Health Survey 2000*, National Statistical Office and Macro International Inc., Zomba.
22. Malawi Government. (2006). *Malawi Demographic and Health Survey 2004*, National Statistical Office and Macro International Inc., Zomba.
23. Malawi Government. (2011). *Malawi Demographic and Health Survey 2010*, National Statistical Office and Macro International Inc., Zomba.
24. Roy, T.K., Ram, F., Nangia, P., Saha, U., and Khan, N. (2003). Can women's childbearing and contraceptive intentions predict contraceptive demand? Findings from a longitudinal study in central India. *International Family Planning Perspective*, 29(1): 25-31.
25. Hani,A., Moss, M., Cooper, D., Morroni, C & Hoffman, M. (2003). Informed choice-the timing of postpartum contraceptive initiation. *South Africa Medical Journal*, 93(11): 862-864.
26. Barber, L.S. (2007). "Family planning advice and postpartum contraceptive use among low-income women in Mexico". *International Family Planning Perspectives*, 33(1): 6-12.
27. Newmann, S.J., Goldberg, A.B., Aviles, R., De Perez, O.M and Foster-Rosales, A.F. (2005). Predictors of contraceptive knowledge and use among postpartum adolescents in El Salvador. *American Journal of Obstetrics and Gynaecology*, 92(5): 1391-1394.
28. Mwangi, A., Warren, C., Koskei, N & Blanchard, H. (2008). Strengthening postnatal care and postpartum family planning in Kenya. FRONTIERS final report. Washington, DC: population council and ACCESS-FP. http://www.accesstohealth.org/toolres/pdfs/ACCESSFP_KenyaPPFP.pdf
29. Vernon, Ricardo. (2008). Meeting the family planning needs of postpartum women. Frontiers Program Brief, No.10. Washington, D C: Population Council. <http://www.nestragel.org/pdfs/frontiers/pbriefs/PB10.pdf>
30. Atuyambe, L., Mirembe, F., Tumwesigye, N.M., Anika, J., Kirumira, E.K and Faxelid, E. (2008). Adolescent and first time mothers' health seeking practices during pregnancy and early motherhood in Wakiso District, Central Uganda. *Reproductive Health*, 5(13). <http://www.reproductive-health-journal.com/content/5/1/13>