Future contraceptive intentions of women who have an unmet need for family planning

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Short Abstract

Unmet need for contraception is a simple concept: non-use of contraception among women who could become pregnant without wanting to do so. An important critique of this construct is its inability to account from women's contraceptive motivations. In this study, we use the latest data from the DHS to explore levels and correlates of future contraceptive intentions among women at risk of an unintended pregnancy in 32 countries in Sub-Saharan Africa. We use bivariate and multivariate logistic regression to evaluate individual and relationship factors associated with contraceptive intentions and compare reasons for non-use of contraception by future intentions. We synthetize results across countries using meta-analysis techniques. Preliminary results indicate wide variation in contraceptive intentions, from 21% in Gambia to 68% in Zambia. Bivariate analyses suggest consistent decrease in intentions by age and consistent increase by education, while wealth and area of residence were inconsistently related to contraceptive intentions across countries.

Introduction

Developed in the 1970s to describe the difference between women's reproductive intentions and contraceptive behaviors[1,2], unmet need for contraception is a simple concept: non use of contraception among women who could become pregnant without wanting to do so[3]. Over the years, the construct has become a key reproductive health indicator, consecrated at the 1994 International Conference on Population Development as the primary justification for expanding family planning programs[4]. Unmet need has continued to gain momentum ever since. It was integrated in the Millenium Development Goal framework in 2007 as a priority to reduce maternal mortality (MDG5B)[5]. It is also incorporated in the Sustainable Development Goals (SDG) with the metric of "contraceptive need satisfied with modern family planning" (SGG indicator 3.7.1), that measures progress towards universal access to sexual and reproductive health[6].

A series of recent studies have shown substantial progress towards reducing the global proportion of women with unmet need in the last two decades[6,7,] although the absolute number of women with unmet need has increased due to population growth and greater preference for smaller families[6]. Reductions in unmet need due to uptake of contraception directly translate into a decline in unintended fertility [8-10]. As a result, it is estimated that in 2008 there were 38 maternal deaths averted for every 100,000 reproductive-age women using contraception[11]. Projections indicate that elimination of global unmet need would prevent another 29% of maternal deaths and avert 54 million unintended pregnancies and 26 million abortions each year[8]. The benefits may even be greater as the prevention of unwanted fertility also reduces obstetric risks by averting higher risk pregnancies that occur too early, too soon, too late, or after too many births [12]. Improvements in maternal health also correlate with improved perinatal outcomes [13,14]

While the concept is simple, estimates of unmet need are clouded with uncertainty due to conceptual issues regarding the definition of the indicators currently used[3]. One of the most important critiques of the concept is its inability to distinguish fertility preference from contraceptive motivations[15]. The assumption underlying the construct is that a gap between the percentage of women exposed to unintended pregnancy and contraceptive prevalence equates to an unfulfilled demand for contraception that can be addressed by improving knowledge and access to contraceptive services. This assumption fails to recognize that contraceptive

motivations may not align with fertility motivations. While motivations to use contraception are not directly addressed in DHS surveys, studies have indirectly drawn attention to the distinction between "demand for" and "need for" contraception showing that knowledge and access are among the least commonly cited reasons for unmet need [3,16] and that a sizable proportion of women with unmet need indicate that they have no intention of using contraception in the future[17]. To date, little attention has focused on women's future intentions to use contraception despite its potential value in predicting behavioral change [18].

In this study, we investigate the levels and correlates of future intentions to use contraception among women who are exposed to the risk of an unintended pregnancy and are not using contraception in 32 countries in Sub-Saharan Africa. We expand on previous work related to unmet need for family planning by focusing attention on women who are exposed to the risk of an unintended pregnancy at the time of the survey and by considering women's future intentions to use contraception is an opportunity to investigate the links between fertility intentions and contraceptive intentions and enhance our understanding of factors influencing contraceptive acceptability on the one hand and factors limiting access to contraception on the other. An integration of women's motivation to use contraception in relation to unmet need is also likely to be a predictor of future contraceptive uptake that could inform targeted interventions and more effective allocation of resources.

Methods

We propose secondary analyses that use data from Phases VI and VII of the Demographic and Health Surveys (DHS) conducted in countries in Sub Saharan Africa. DHS data are collected during face to face interviews with women ages 15 to 49 years who are asked a series of questions about their socio-demographic characteristics, past and current contraceptive and reproductive histories, their future intentions to use contraception, their breastfeeding practices and fertility preferences. A total of 32 surveys corresponding to the latest round of DHS data in each country conducted since 2010 are included in the current analysis. Analysis are restricted to women who are exposed to the risk of an unintended pregnancy at the time of the survey and not using contraception. We therefore exclude women who are pregnant or 2-month post-partum, women seeking to become pregnant, women who are sterile or not sexually active in the last 12 months as well as contraceptive users. We conduct this analysis among women in union (either married or cohabitating) because unmarried women are not asked about contraception and reproduction in all DHS countries. We will also conduct a sub-analysis including all women of reproductive age (unmarried and married) in countries that collected data on reproductive health among unmarried women.

Our primary outcome measure "intention to use contraception" is based on a question asking non-contraceptive users about their intentions to use contraception in the future "Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future".

Informed by previous studies on unmet need[19], we will consider women's socio-demographic characteristics (age, marital status, area of residence (rural/urban), education, wealth quintile as defined by DHS) and reproductive health characteristics (parity, time since last birth, ever use of contraception) as potential factors related to future contraceptive intentions. We also recognize the couple-based nature of reproduction[20-21] and the gender dynamics surrounding contraceptive decisions and therefore include partner characteristics (age, education, fertility intentions), couple characteristics (duration of marriage, type of marriage, couple communication) and indicators of women's empowerment[22-23] in our analysis.

For each country, we will first assess the proportion of women who intend to use contraception in the future among women at risk of an unintended pregnancy. We will conduct bivariate analysis followed by multiple logistic regression to evaluate individual and relationship factors related to future contraceptive intentions among women with unmet need. Analysis will

also compare reasons for non-use of contraception among women with current unmet need by women's future intentions to use contraception.

Following country specific analysis, we will use meta-analysis techniques to provide a synthesis of the associations across countries. Specifically, country coefficients (unadjusted and adjusted coefficients and standard errors) produced from country regression models will be extracted to summarize measures across countries (effect sizes) calculated as the weighted averages of country effects[24]. The country weight corresponds to the inverse of the variance of the effect estimate and is adjusted for heterogeneity of effect size across surveys. We assume that country effects are random effects[25]. Results will be presented graphically, using forest plots of country.

Preliminary Results

The distributions of women at risk of unintended pregnancy and their future contraceptive intentions are reported in Table 1. The percentage of women at risk of pregnancy ranged from 5.6 in Zimbabwe to 22.6% in Angola. Among women at risk, a substantial percentage indicate they intend to use contraception sometime in the future, although intentions vary substantially by country from 21% in Gambia to 68% in Zambia. Intentions are generally higher in the Southern region of Africa and lower in Western and Central Africa.

Table 1: Proportion at risk of unintended pregnancy and future contraceptive intention amongst at-risk women, by country

	Women at risk of unintended pregnancy		Future contraceptive intention amongst women at risk
DHS country and survey year	weighted n	%	%
Angola 2015-16	1799	22.6	38.1
Burkina Faso 2010	2490	18.4	60.6
Benin 2011-12	2082	17.8	29.2
Burundi 2010	971	17.9	60.2
Congo Democratic Republic 2013-14	1740	14.4	37.9
Congo 2011-12	499	7.9	52.3
Cote d'Ivoire 2011-12	1067	16.9	44.1
Cameroon 2011	1215	12.4	49.9
Ethiopia 2016	1277	12.5	44.6
Gabon 2012	638	14.3	45.6
Ghana 2014	931	17.5	37.5
Gambia 2013	1126	16.6	21.0
Guinea 2012	1022	15.2	36.9
Kenya 2014	836	4.5	52.9
Comoros 2012	662	20.3	18.1
Liberia 2013	961	17.8	50.3
Lesotho 2014	319	8.8	77.4
Mali 2012-13	1480	16.8	32.1
Malawi 2015-16	1294	8.0	62.6
Mozambique 2011	1756	18.8	44.7
Nigeria 2013	3582	12.9	25.4
Niger 2012	1440	14.6	43.8
Namibia 2013	311	10.0	58.2
Rwanda 2014-15	639	9.2	61.7
Sierra Leone 2013	1250	11.5	48.2
Senegal 2010-11	1835	17.7	32.5
Chad 2015-15	2353	17.7	24.8
Togo 2013-14	1293	20.6	43.5
Tanzania 2015-16	1036	12.6	51.4
Uganda 2011	818	15.1	65.6
Zambia 2013-14	1076	10.9	68.5
Zimbabwe 2015	342	5.6	64.9

Bivariate analysis exploring sociodemographic factors related to future contraceptive intentions among women at risk are presented in Table 2. Results suggest consistent decreasing contraceptive intentions by age in almost all countries as well as increasing intentions by level of education. On the other hand, wealth and area of residence were inconsistently related to future contraceptive intentions.

Table 2a. Bivariate logistic regression of future demand for contraception amongst women at risk of unintended pregnancy, by country[1]

	Angola			Burkina Faso			Benin			Burundi			DR Congo			Congo			Cote d'Ivoire			Cameroon		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
Age	**0.97**	**0.96**	**0.99**	**0.94**	**0.93**	**0.95**	**0.97**	**0.96**	**0.99**	**0.93**	**0.91**	**0.95**	**0.97**	**0.95**	**0.98**	0.99	0.95	1.02	**0.95**	**0.94**	**0.97**	**0.97**	**0.95**	**0.99**
Education																								
Never attended	**0.32**	**0.22**	**0.46**	0.90	0.54	1.51	0.79	0.58	1.08	0.76	0.40	1.44	**0.47**	**0.33**	**0.67**	**0.31**	**0.12**	**0.76**	0.69	0.37	1.28	**0.47**	**0.34**	**0.67**
Primary school	**0.65**	**0.47**	**0.91**	1.42	0.78	2.57	0.88	0.61	1.28	0.95	0.49	1.83	**0.73**	**0.54**	**0.98**	1.49	0.81	2.74	0.96	0.49	1.88	**0.65**	**0.47**	**0.90**
Secondary school or higher	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Wealth																								
Poorest	**0.27**	**0.16**	**0.44**	0.83	0.61	1.13	1.08	0.78	1.49	1.55	0.98	2.45	**0.39**	**0.25**	**0.61**	1.00	0.45	2.19	0.69	0.40	1.18	**0.64**	**0.42**	**0.98**
Second poorest	**0.44**	**0.28**	**0.68**	1.13	0.83	1.53	1.05	0.76	1.45	1.28	0.83	1.98	**0.62**	**0.40**	**0.97**	1.52	0.60	3.86	0.78	0.46	1.32	0.87	0.57	1.34
Middle	0.99	0.63	1.54	1.18	0.87	1.60	1.26	0.92	1.72	1.04	0.66	1.65	**0.54**	**0.35**	**0.84**	1.42	0.52	3.87	0.80	0.47	1.37	1.12	0.72	1.74
Second wealthiest	1.30	0.81	2.11	1.36	1.00	1.86	0.99	0.73	1.35	1.02	0.64	1.63	**0.55**	**0.35**	**0.86**	0.88	0.36	2.18	0.95	0.54	1.64	1.18	0.76	1.84
Wealthiest	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Residence																								
Rural	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Urban	**2.89**	**2.18**	**3.83**	0.87	0.69	1.09	0.72	0.59	0.89	0.93	0.62	1.40	**1.61**	**1.23**	**2.11**	0.96	0.60	1.53	1.19	0.86	1.65	1.26	0.97	1.64

[1]p<0.05 indicated by bolding

Table 2b. Bivariate logistic regression of future demand for contraception amongst women at risk of unintended pregnancy, by country[1]

	Ethiopia			Gabon			Ghana			Gambia			Guinea			Kenya			Comoros			Liberia		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
Age	0.93	0.90	0.95	0.98	0.95	1.01	**0.95**	**0.93**	**0.97**	1.00	0.98	1.02	1.00	0.98	1.02	**0.93**	**0.91**	**0.95**	0.99	0.96	1.02	**0.95**	**0.93**	**0.97**
Education																								
Never attended	0.48	0.21	1.09	**0.13**	**0.05**	**0.39**	0.90	0.62	1.30	0.73	0.47	1.14	**0.48**	**0.29**	**0.80**	0.18	0.10	0.31	**1.86**	**1.02**	**3.39**	0.87	0.57	1.35
Primary school	0.99	0.42	2.35	**0.43**	**0.25**	**0.72**	1.19	0.78	1.83	1.17	0.64	2.14	0.84	0.45	1.60	0.97	0.63	1.49	1.39	0.68	2.85	1.04	0.65	1.67
Secondary school or higher	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Wealth																								
Poorest	0.58	0.33	1.02	**0.47**	**0.23**	**0.99**	1.21	0.73	2.00	0.82	0.47	1.44	**0.62**	**0.38**	**0.99**	0.59	0.34	1.03	1.27	0.58	2.77	1.00	0.56	1.82
Second poorest	**0.46**	**0.25**	**0.84**	0.79	0.36	1.72	1.49	0.87	2.56	0.88	0.51	1.52	0.79	0.48	1.29	1.09	0.60	2.00	1.19	0.55	2.58	0.96	0.52	1.76
Middle	0.70	0.39	1.27	0.59	0.26	1.35	1.47	0.85	2.55	0.64	0.36	1.15	0.92	0.56	1.53	0.81	0.43	1.54	1.70	0.79	3.68	0.79	0.41	1.52
Second wealthiest	0.77	0.42	1.42	0.72	0.32	1.66	1.00	0.56	1.79	0.84	0.43	1.66	1.12	0.71	1.78	1.08	0.55	2.13	1.12	0.45	2.76	0.98	0.49	1.97
Wealthiest	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Residence																								
Rural	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Urban	1.76	0.96	3.22	1.17	0.78	1.77	0.73	0.52	1.02	1.06	0.74	1.52	1.19	0.86	1.64	1.42	0.95	2.10	0.93	0.55	1.59	1.01	0.73	1.39

[1]p<0.05 indicated by bolding

Table 2c. Bivariate logistic regression of future demand for contraception amongst women at risk of unintended pregnancy, by country[1]

	Lesotho			Mali			Malawi			Mozambique			Nigeria			Niger			Namibia			Rwanda		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
Age	**0.95**	**0.91**	**0.99**	**0.96**	**0.94**	**0.98**	**0.95**	**0.93**	**0.96**	**0.94**	**0.93**	**0.95**	0.99	0.98	1.00	0.96	0.95	0.97	0.94	0.91	0.97	0.92	0.90	0.94
Education																								
Never attended				**0.50**	**0.31**	**0.80**	**0.61**	**0.39**	**0.96**	**0.65**	**0.45**	**0.94**	**0.22**	**0.18**	**0.28**	0.66	0.39	1.13	0.74	0.37	1.49	1.03	0.55	1.91
Primary school				0.53	0.27	1.04	0.97	0.67	1.41	0.70	0.49	1.00	**0.55**	**0.44**	**0.70**	1.36	0.72	2.58	0.87	0.50	1.54	1.19	0.71	2.01
Secondary school or higher	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Wealth																								
Poorest	1.00	0.38	2.62	0.95	0.64	1.41	1.05	0.67	1.66	0.95	0.67	1.37	**0.22**	**0.16**	**0.30**	0.78	0.54	1.14	1.44	0.60	3.44	1.61	0.92	2.82
Second poorest	1.04	0.39	2.78	**0.59**	**0.39**	**0.88**	1.19	0.76	1.86	0.80	0.57	1.12	**0.42**	**0.31**	**0.56**	1.17	0.81	1.70	1.55	0.61	3.93	1.55*	0.94	2.57
Middle	1.03	0.35	3.04	0.78	0.53	1.15	1.07	0.69	1.66	0.97	0.68	1.39	**0.49**	**0.37**	**0.65**	1.09	0.76	1.55	1.73	0.62	4.80	1.23	0.72	2.09
Second wealthiest	1.16	0.42	3.21	1.28	0.86	1.93	1.17	0.76	1.81	1.30	0.94	1.80	**0.71**	**0.54**	**0.94**	1.30	0.92	1.86	1.37	0.53	3.53	0.78	0.45	1.36
Wealthiest	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Residence																								
Rural	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Urban	0.92	0.43	1.98	1.16	0.87	1.54	1.21	0.81	1.83	1.1	0.87	1.42	**1.51**	**1.26**	**1.82**	**0.71**	**0.54**	**0.94**	0.78	0.46	1.31	**0.64**	**0.43**	**0.97**

[1]p<0.05 indicated by bolding

Table 2d. Bivariate logistic regression of future demand for contraception amongst women at risk of unintended pregnancy, by country[1]

	Sierra Leone			Senagal			Chad			Togo			Tanzania			Uganda			Zambia			Zimbabwe		
	OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
Age	**0.95**	**0.94**	**0.97**	0.98	0.97	1.00	0.99	0.98	1.01	**0.96**	**0.95**	**0.98**	**0.96**	**0.94**	**0.98**	**0.96**	**0.94**	**0.98**	**0.94**	**0.92**	**0.96**	**0.94**	**0.91**	**0.98**
Education																								
Never attended	**0.45**	**0.29**	**0.68**	**0.42**	**0.25**	**0.71**	**0.27**	**0.19**	**0.39**	0.73	0.53	1.01	**0.55**	**0.33**	**0.91**	**0.42**	**0.24**	**0.73**	**0.52**	**0.32**	**0.86**	1.35	0.27	6.69
Primary school	**0.54**	**0.31**	**0.95**	0.96	0.53	1.73	0.83	0.56	1.23	0.93	0.66	1.30	0.71	0.46	1.12	**0.58**	**0.36**	**0.92**	0.71	0.49	1.02	0.62	0.36	1.06
Secondary school or higher	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Wealth																								
Poorest	**0.52**	**0.33**	**0.80**	**0.64**	**0.42**	**0.99**	1.02	0.71	1.48	1.26	0.88	1.80	**0.56**	**0.36**	**0.88**	0.63	0.37	1.09	1.04	0.59	1.83	0.57	0.26	1.28
Second poorest	0.76	0.48	1.19	**0.54**	**0.35**	**0.85**	0.90	0.63	1.28	1.23	0.81	1.86	1.11	0.68	1.80	0.88	0.51	1.53	1.18	0.67	2.08	0.85	0.37	1.98
Middle	**0.48**	**0.30**	**0.76**	**0.57**	**0.36**	**0.90**	0.71	0.49	1.02	1.32	0.89	1.98	0.76	0.47	1.21	0.62	0.36	1.09	1.25	0.70	2.23	0.77	0.32	1.85
Second wealthiest	1.05	0.65	1.70	0.80	0.48	1.31	**0.52**	**0.34**	**0.78**	1.06	0.71	1.59	1.05	0.64	1.72	0.76	0.43	1.34	0.86	0.47	1.58	1.41	0.58	3.40
Wealthiest	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Residence																								
Rural	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--	1.00	--	--
Urban	**1.62**	**1.20**	**2.20**	**1.62**	**1.24**	**2.12**	**1.43**	**1.08**	**1.89**	0.81	0.63	1.05	1.33	0.94	1.88	1.14	0.73	1.79	0.84	0.60	1.17	1.71	0.98	3.00

[1]p<0.05 indicated by bolding

We will pursue this analysis by exploring associations between future contraceptive intentions and women's reproductive history including prior use of contraception, their reproductive autonomy and empowerment as well as partnership characteristics. Analysis will then proceed with multivariate analysis and results will be synthesized across countries using meta-analysis techniques.

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