

**Unmet Need for Family Planning in Rwanda
and Madagascar:
An Analysis Report for the Repositioning of
Family Planning Initiatives**

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**Unmet Need for Family Planning in Rwanda and
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An Analysis Report for the Repositioning of Family
Planning Initiatives**

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Introduction

More than a third of the women in many sub-Saharan African countries want no more children or would like to wait at least two years before having another pregnancy (Ashford, 2003; Ross & Winfrey, 2002). Yet, only a small proportion of these women use modern contraceptives. Indeed, discrepancy between women's desire to limit or space births and their contraceptive behavior is the basis for family planning programs aimed at improving maternal and child health. It is well established that the benefits of family planning services go beyond the goal of reducing fertility to helping women avoid poorly-timed pregnancies that put their health and that of their children at risk. Yet, an estimated 120 million couples living in developing countries who want to delay their next births have no access to a method or adequate information about family planning services (UNFPA, 1997; Potts, 2000). Nevertheless, in the past few years, donor and government funding for family planning programs has declined substantially, or at best stagnated in most countries (Gillespie, 2004; UNFPA, 2005). According to the United Nations, in 1995 family planning programs received 55% and only 13% in 2003 of total health support, which has continued to fuel the increasing number of women with unmet family planning needs leading to unwanted and mistimed pregnancies. Consequently, the recent initiative by the U.S. Agency for International Development (USAID), World Health Organization (WHO), and other international organizations of "repositioning family planning" should be supported to fill these program gaps in several countries. In preparing to secure additional resources for family planning programs, each country should identify and prioritize women's concerns and then develop programs that are targeted to addressing them. Therefore, there is an urgent need to examine patterns and predictors to use, and of nonuse/unmet needs, in order to develop relevant and cost-effective programs.

This report was commissioned by USAID/Africa Bureau to examine differentials across five groups of currently married women in two select countries (Rwanda and Madagascar) with need or no need for modern contraception, including: unmet need to space (UNS); unmet need to limit (UNL); met need to space (MNS); met need to limit (MNL); and nonusers with no need (NN). Both Rwanda and Madagascar have relatively high total fertility rates (TFR), 5.8 and 5.2, respectively; similar desired ideal numbers of children, 4.8 and 4.9, respectively; and high percentages of women who want to limit births. However, their contraceptive prevalence rates are significantly different (13% in Rwanda and 27% in Madagascar, which is twice as high as Rwanda's rate) (see Table 1). Recent data from the two countries provide an opportunity to examine the reasons why the use of contraception is lower in Rwanda compared to Madagascar, despite the similarities in TFR and comparable demand for children (number of children desired). The analysis explores whether the reported country differentials in contraceptive use can be attributed to country differences or to other factors that distinguish the family planning need types (UNS, UNL, MNS, MNL, and NN groups) in the two countries, and determine the significant predictors for each when controlling for other confounding factors. This information provides important evidence to guide program and policy decisions on the repositioning of family planning initiatives.

Table 1: Selected Background Characteristics for Rwanda 2000 and Madagascar 2004

Factors	Rwanda	Madagascar
Total fertility rate (births per woman)	5.8	5.2
Contraceptive prevalence rate (%)	13	27
Ideal mean number of children desired	4.8	4.9
Women who want to limit births (%)	41.2	33.7

Sources: Rwanda 2000 Demographic and Health Survey and Madagascar 2004 Demographic and Health Survey.

There are several known reasons why women do not use modern contraceptive methods, including fear and other cultural inhibitions. However, experience shows that effective program efforts have contributed significantly to increased contraceptive use (Bongaarts, 1997). Previous studies have mostly examined country variations and the factors influencing overall contraceptive use, but few have compared the differences among users and nonusers across countries, especially in the sub-Saharan African region, a region that shows dramatic differences in demand and use of modern contraceptives even for countries with similar fertility rates. The understanding of these differences across countries will help policymakers in their decision-making about family planning, including the “repositioning family planning initiatives” that will help women meet their reproductive needs. The aim of the initiative is to reinvigorate interest and reposition family planning as a critical component of reproductive health programs and to encourage national and international development agendas to provide adequate family planning services to women who need them.

Purpose

The overall purpose of this report is to assess and describe the magnitude of met and unmet need for family planning and to identify the key characteristics that differentiate those women who have met or unmet need to space or limit and those with no need (UNS, UNL, MNS, MNL, and NN groups) in Rwanda and Madagascar. The Demographic and Health Survey (DHS) data from Rwanda 2000¹ and Madagascar 2004 were used to analyze the factors motivating women to use family planning services, and determine which factors have an effect on unmet need to limit or space births in terms of need, accessibility, and knowledge, taking into account the other confounding factors. The analysis will provide policymakers with key information for advocacy and development of strategies and program interventions that could strengthen family planning programs.

¹ At the time of this writing, 2006 Rwanda DHS data were not available.

Research Questions

The following research questions guided the study for both countries:

1. Who are the typical users/nonusers/those with unmet need for family planning services?
2. Why do some women use family planning while others do not?
3. Why is there unmet need for family planning?
4. Controlling for other confounding factors, what are the significant distinguishing factors of women who use family planning services and those with unmet need to limit or space births that are related to need, accessibility, fear, and knowledge?
5. Are there any differences between the Rwanda and Madagascar in the factors affecting use and nonuse of family planning among married women aged 15-49?

Methodology

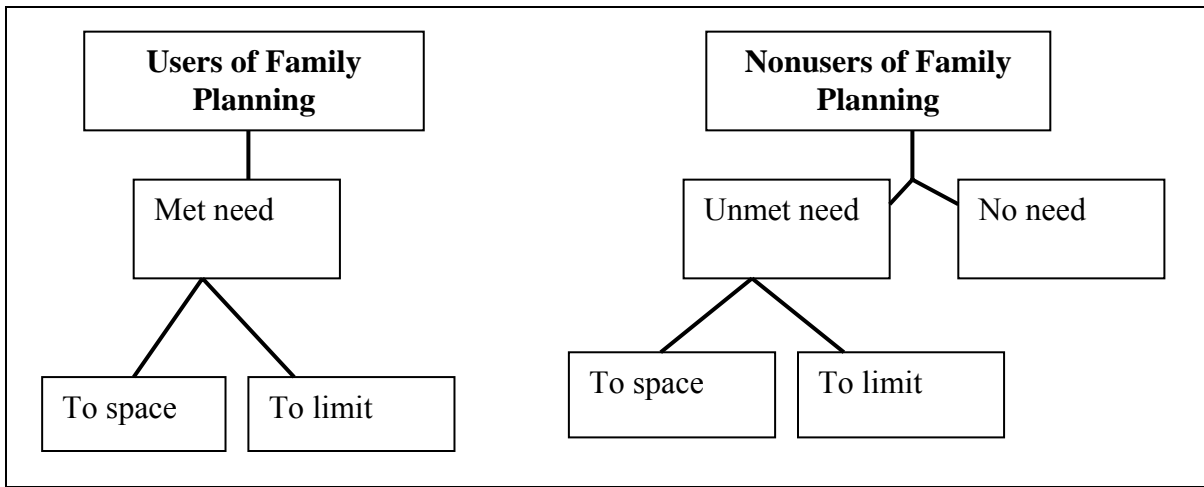
This study uses 2000 DHS data for Rwanda (Office National de la Population & ORC Macro, 2001) and 2004 DHS data from Madagascar (INSTAT & ORC, 2005). These surveys provide nationally representative samples of women aged 15-49 years for each country. The survey questionnaires collected individual information from all eligible women on their socioeconomic and demographic background characteristics and on health issues, such as use of primary health care services, including family planning behavior. The study focuses on women in union and their use or nonuse of the family planning services. The independent variables considered include such socioeconomic and demographic variables as educational attainment, household economic status, woman's age, region of residence, urban/rural residence, family planning use discussions with partner, prior exposure to any method, whether partner approves family planning, and partner's educational and occupational background. The dependent variable is the use/nonuse status of modern contraceptives to space or limit births. The dependent variable has five possible categories – unmet need to space, unmet need to limit, met need to space, met need to limit, and those women who have no need. Multinomial logistic regression analyze methods were used to explore the significant distinguishing factors between these categories of need.

Definitions

DHS differentiates the types of family planning needs as met need; unmet need; or no need, either for spacing or limiting births (Figure 1). In this report the *unmet need* types are defined by DHS as follows:

Unmet need for spacing — This includes pregnant women whose pregnancy was mistimed, amenorrheic women who are not using family planning and whose last birth was mistimed, and fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and say they want to wait two or more years for their next birth. Also included in unmet need for spacing are fecund women who are not using any method of family planning and say they are unsure whether they want another child or who want another child but are unsure when to have the birth, unless they say it would not be a problem if they discovered they were pregnant in the next few weeks.

Figure 1: Need for family planning.



Unmet need for limiting — This refers to pregnant women whose pregnancy was unwanted, amenorrheic women whose last child was unwanted, and fecund women who are neither pregnant nor amenorrheic and who are not using any method of family planning and who want no more children. Excluded from the unmet need category are pregnant and amenorrheic women who became pregnant while using a method (these women are in need of a better method of contraception).

Not in need — Women who are infecund or want a birth within the next two years are considered *not in need* of family planning.

Results

Descriptive Statistics of Population Included in the Analysis

Table 2 shows the means for selected variables by family planning needs for married women in Rwanda and Madagascar who were included in the analysis. As expected, limiters (with either unmet need or met need) have higher means of the number of children and are older than spacers in both countries. In addition, those women currently using contraceptives (for spacing or limiting) have a higher frequency of listening to radio per week than their counterparts who have unmet need for either spacing or limiting. Those women currently using contraceptives (for spacing or limiting) have a slightly higher mean number of years of education than nonusers; however, the differences are small in either country. In comparing the two countries, Table 2 shows that, overall, Rwanda has a higher mean number of children, older women, more years of education, and less frequency of listening to radio compared to Madagascar.

Table 2: Descriptive Statistics (Mean) for Selected Variables for Currently Married Women 15-49 Years Old by Need for Family Planning, Rwanda 2000 and Madagascar 2004

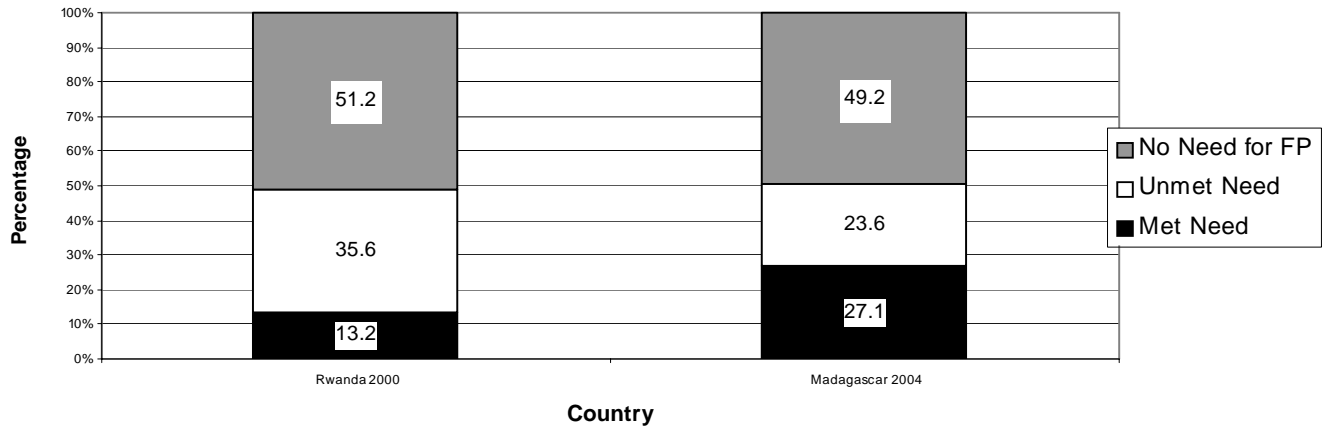
Variables/Country	Unmet Need		Met Need		No Need
	UNS	UNL	MNS	MNL	
Mean number of children ever born					
• Rwanda	3.52	6.81	3.03	6.01	3.59
• Madagascar	3.15	6.39	2.34	4.68	3.25
Age of respondent					
• Rwanda	28.72	38.69	28.44	38.24	31.37
• Madagascar	26.64	36.73	26.69	36.93	30.82
Mean number of years of women's education					
• Rwanda	4.73	4.09	4.79	4.29	4.62
• Madagascar	3.47	3.50	3.89	4.10	3.32
Frequency of listening to radio/week					
• Rwanda	1.25	1.18	1.73	1.91	1.22
• Madagascar	1.50	1.70	2.27	2.43	1.33
<i>Data sources: DHS, Rwanda (2000) & Madagascar (2004); (Rwanda, N=5,052; Madagascar, N=5,140)</i>					

Met Need and Unmet Need for Family Planning by Country

This section presents an overview of the percentage distribution of currently married women of reproductive age (MWRA) by use and need for modern family planning in Rwanda and Madagascar. Overall, about 50% of women in Rwanda and Madagascar (48.8% vs. 50.8%, respectively) need family planning (Figure 2). Furthermore, the percentage of MWRA with an unmet need for family planning (spacing or limiting) is 35.6% in Rwanda and 23.6% for Madagascar, and met need is 13.2% and 27.1%,

respectively (Figure 2). Although, Rwanda has a higher percentage of unmet need for family planning than Madagascar, in both countries these levels of unmet need are exceptionally high compared to those observed in developed countries, such as Belgium, which has an unmet need of about 3% (Klijzing, 2000).

Figure 2: Comparison of the percentage of family planning needs (met, unmet, and no need) among currently married women in Rwanda and Madagascar.



The results (Table 3) further show that in Rwanda, more unmet need is for spacing births (24%) than for limiting (11.6%). However, for Madagascar, the level of unmet need for spacing is similar to that of the unmet need for limiting (11.3% and 12.3%, respectively). This finding suggests that, in Rwanda, the majority of women may need modern contraceptives for spacing rather than for limiting.

Table 3: Comparisons of the Percentage Distribution of Modern Family Planning Needs to Space or Limit among Currently Married Women, Rwanda 2000 and Madagascar 2004

Types of Needs for Family Planning	Rwanda, 2000		Madagascar, 2004	
	Percent	N	Percent	N
Unmet need to space	24.0	1,210	11.3	581
Unmet need to limit	11.6	587	12.3	634
Subtotal unmet need (nonusers)	35.6	1,797	23.6	1,215
Using to space	7.3	371	12.3	630
Using to limit	5.9	299	14.9	764
Subtotal met need (using)	13.2	670	27.1	1,395
Desire birth < 2 yrs	39.9	2,016	33.1	1,702
Infecund or menopausal	11.3	570	16.1	828
Subtotal no need for FP services (nonusers)	51.2	2,586	49.2	2,530
Total women currently in union	100.0	5,052	100.0	5,140

Characteristics of Users and Nonusers of Modern Contraceptives

This section describes the characteristics of family planning users and nonusers according to women's demographic and socioeconomic factors. The focus is to understand the characteristics of users and nonusers with unmet need because this information is critical to informing family planning strategies.

Rwanda

Table 4 presents the met need and unmet need for family planning services for currently married women according to their demographic and socioeconomic characteristics in Rwanda. The results show that the characteristics of those women with unmet need and those with met need for modern contraceptives vary substantially.

Background Characteristics of Current Users (Met Need) in Rwanda — Table 4 shows that, in Rwanda, the use of contraceptives varies significantly across most factors analyzed including woman's economic status, subregion of residence, rural/urban residence, woman's and partner's educational levels, partner's occupation, woman's age, and the total number of children ever born, whether husband approves family planning (FP), as well as by whether family planning discussions occurred between the woman and partner. The results show that the most significant characteristics of MWRA with met need include that these women live in urban areas (70.3%), are rich (62.5%), have FP discussions with their partners (85.2%), have husbands who approves FP (83.7%), and they and their partners at least have primary levels of education. As expected, a greater percentage of women who had previously used any FP method have met need for family planning (61.4%) than those who had not (38.6%). The use of contraceptives also differs across subregions and by partner's occupational category. Although contraception increases with the number of children ever born and woman's age up to certain levels (3-4 children, age 30-44) and then either stagnates or starts to decline (Figures 3-4), the analysis shows that the characteristic of users are only slightly significantly different from those with unmet need in Rwanda.

Table 4: Percentage of Currently Married Women Who Are Users and Nonusers with Unmet Need for Family Planning, according to Selected Characteristics, Rwanda 2000

Background Characteristics	% Users (Met Need) N=669	% Nonusers with Unmet Need N=1,797
Economic status		
Poor	21.1	36.2***
Middle	16.4	21.2
Rich	62.5	42.5
Type of residence		
Urban	70.3	86.0***
Rural	29.7	14.0
Educational level		
None/preschool	24.1	36.4***
Primary	49.6	55.8
Secondary/higher	26.3	7.7
Subregion of residence		
Butare	6.3	7.5***
Byumba	10.3	10.4
Cyangugu	6.3	8.2
Gikongoro	5.1	6.1
Gisenyi	11.9	11.8
Gitarama	10.7	9.3
Kibungo	10.0	7.8
Kibuye	3.7	6.6
Kigali Ville (PVK)	9.9	4.0
Kigale rurale	16.4	13.6
Ruhengeri	7.0	11.0
Umutara	2.2	3.7
Age group (years)		
15-19	1.3	2.1*
20-24	15.2	16.5
25-29	23.9	23.2
30-34	17.5	19.2
35-39	17.8	18.9
40-44	15.2	14.4
45-49	9.1	5.6
Number of children ever born		
0-2	26.2	27.0*
3-5	42.9	37.2
6+	30.9	35.7
Partner's education		
None/preschool	20.3	32.6***
Primary	54.7	55.0
Secondary/higher	25.0	12.4
Partner's Occupation		
Professional	20.2	9.8***
Agric-Self- Employed	60.2	76.7
Other	19.6	13.5
Discussed FP with partner		
No	14.8	40.3***
Yes	85.2	59.7
Ever used modern FP		
No	38.6	77.7***
Yes	61.4	22.3
Husband's view of FP		
Disapproves	7.5	21.3***
Approves	83.7	50.9
Do not know	8.8	27.9
<i>Significance levels: * 0.05; **0.01; ***0.001.</i>		

Background Characteristics of Nonusers with Unmet Need in Rwanda — Overall, about 36% of all women in union have an unmet need for family planning in Rwanda (Table 3). Furthermore, the majority of women in need (about 73%) have unmet need. The unmet need also varies significantly by women's demographic and socioeconomic characteristics, such as economic status (Table 4). The analysis shows that the unmet need among married women aged 15-49 years in Rwanda also differs significantly by rural/urban, partners' occupation and economic status. Unlike users, a higher percentage of women with unmet need have never used any family planning method before. But like users, women whose partners' occupation is self-employment in agriculture have the highest unmet need. In addition, the percentage increases with total number of children ever born and woman's age, and then stagnates (Figures 3 and 4). The proportion of women with unmet need ranges from a high of 43.6% for those with more than six children to a low of 27.0% for those with two or fewer children (Figure 4). In addition, the unmet need increases by woman's age to a maximum (age 35-39) and then starts to decrease approximately after age 44. Thus, married women aged 15-19 and those 45-49 years old have the lowest level of unmet need (Figure 3). Table 4 also shows that women with less than primary education, partners with less education, those who are poor, those who had no discussions with their partners about family planning, and those whose husbands disapprove of FP have a relatively high unmet needs.

Figure 3: Woman's age by needs for family planning in Rwanda.

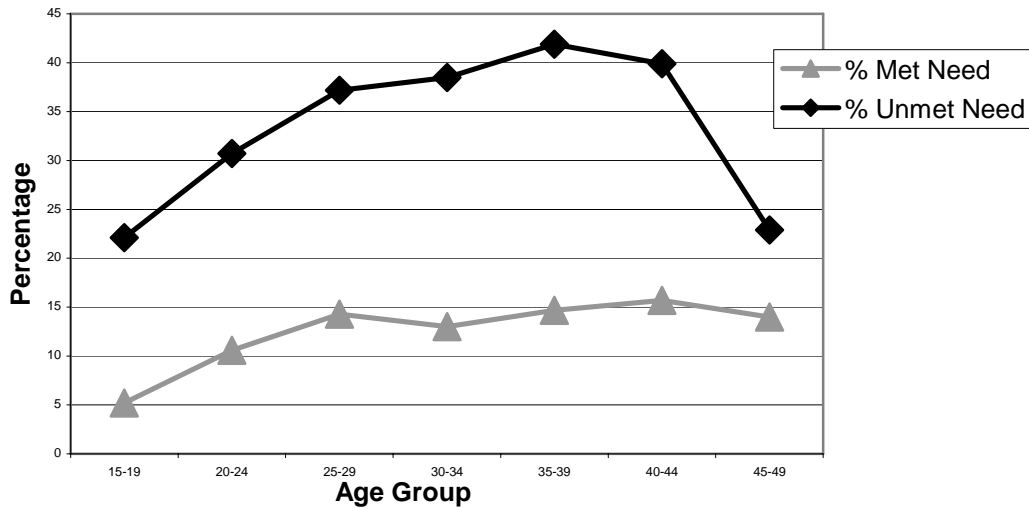
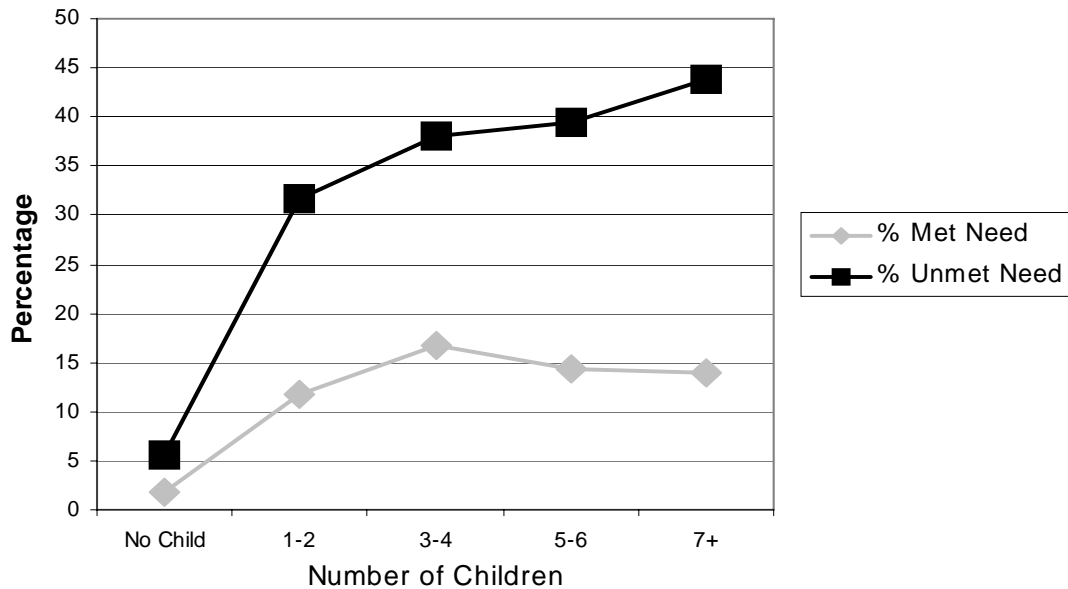


Figure 4: Family size by needs for family planning in Rwanda.



Madagascar

Table 5 presents the percentages of currently married women in Madagascar using modern family planning, those with unmet need, and those with no need according to their background characteristics. However, as mentioned earlier, the focus is on the characteristics of women currently using modern contraceptives and nonusers with unmet need for family planning.

Background Characteristics of Current Users (Met Need) in Madagascar — As previously shown in Table 3, about 51% of all MWRA in Madagascar need family planning services but only about half of them (27.1%) have their needs met. As expected, the percentage of women who are current users of modern family planning differ significantly by a woman’s economic status, subregion and rural/urban residence, the woman’s and her partner’s educational levels, the partner’s occupation, the total number of children ever born, whether her husband approves of FP, as well as by whether family planning discussions occurred between the woman and her partner (Table 5). Table 5 shows that a relatively higher percentage of women with secondary or higher education (50.6%), whose partner’s have secondary or higher education (51.5%), live in urban areas (65.8%), those who are rich (67.8%), have FP discussions with their partners (89.9%), and those whose husbands approve of FP (89.7%) have met needs compared to other categories of these variables. Also significantly higher percentages of women who had previously used any FP method and those that live in Antananarivo region are current users of family planning. In addition, met needs differ slightly by partners’ occupation, with family size (number of children) and woman’s age. Figures 5 and 6 show that FP use increases by number of children and age up to certain levels (family size of 3-4 children, age 40-44) and then either stagnates or starts to decline.

Table 5: Percentage of Currently Married Women Who Are Users and Nonusers with Unmet Need for Family Planning, According to Selected Characteristics, Madagascar 2004

Background Characteristics	% Users (Met Need) N=1,395	% Nonusers with Unmet Need N=1,217
Economic status		
Poor	15.8	43.0***
Middle	16.3	21.0
Rich	67.8	36.0
Type of residence		
Urban	65.8	81.6***
Rural	34.2	18.4
Educational level		
None/preschool	6.5	25.0***
Primary	42.9	52.1
Secondary/higher	50.6	23.0
Subregion of residence		
Antananarivo	51.0	30.8***
Fianarantsoa	9.6	17.5
Toamasina	18.1	15.1
Mahajanga	8.0	17.4
Toliary	7.0	11.2
Antsiranana	6.3	8.1
Age group (years)		
15-19	3.8	6.7**
20-24	15.6	15.8
25-29	21.4	19.5
30-34	20.3	16.9
35-39	16.0	19.0
40-44	16.1	14.8
45-49	7.0	7.3
Number of children ever born		
0-2	37.1	26.5***
3-5	44.1	35.9
6+	18.8	37.6
Partner's education		
None/preschool	7.7	23.0***
Primary	40.9	48.6
Secondary/higher	51.5	28.5
Partner's occupation		
Professional	27.7	12.5***
Agric-Self- Employed	41.6	70.9
Other	30.7	16.5
Discussed FP with partner		
No	10.1	47.2***
Yes	89.9	52.8
Ever used FP		
No	16.2	70.9***
Yes	83.8	29.1
Husband's view of FP		
Disapproves	8.1	28.7***
Approves	89.7	40.0
Do not Know	2.2	27.2
<i>Significance levels: * 0.05; **0.01; ***0.001.</i>		

Figure 5: Woman's age by need for family planning in Madagascar.

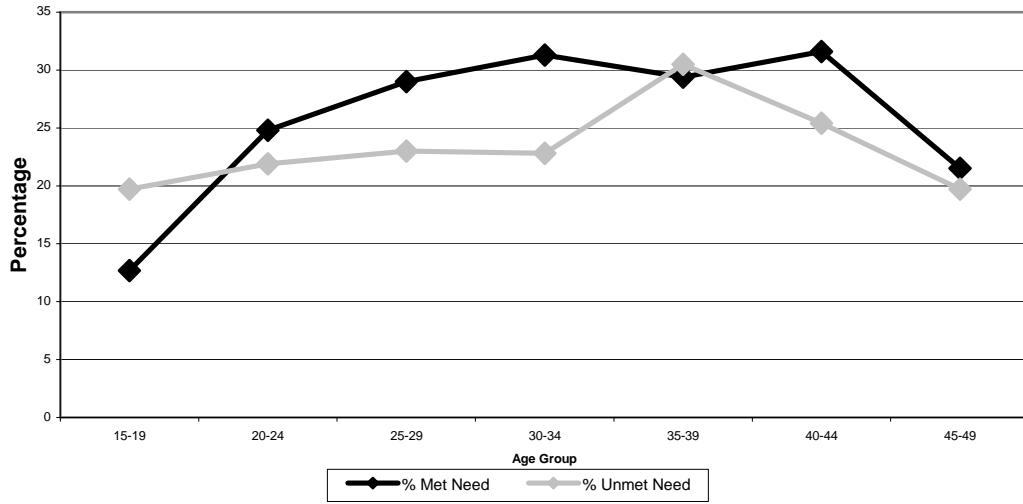
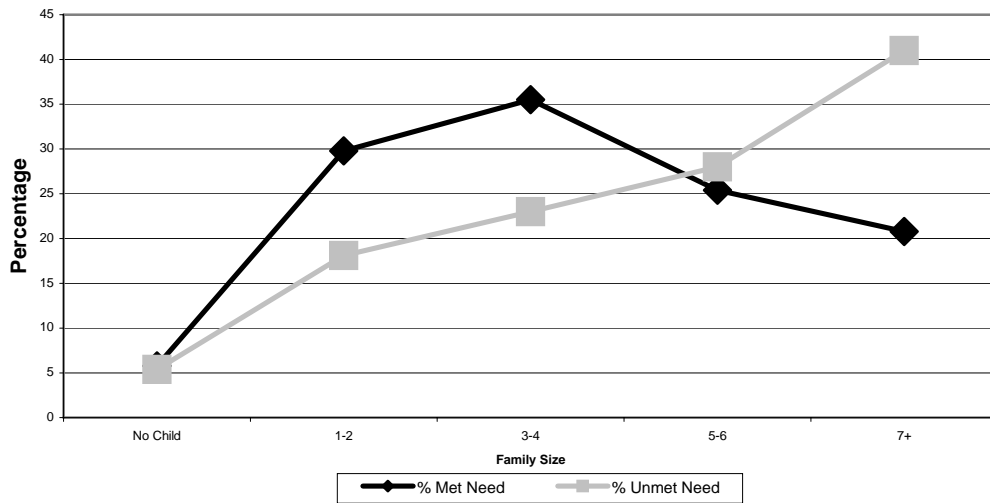


Figure 6: Family size by need for family planning in Madagascar.



Background Characteristics of Nonusers with Unmet Need in Madagascar — About 24% of married women in Madagascar have an unmet need for family planning, which is slightly lower than the levels of met need (27.1%). The unmet need for family planning differs significantly by socioeconomic factors including woman's and partner's education, economic status, type of occupation, and rural/urban residence (Table 5). The major differentiating characteristics of women with unmet need from those with met need include that most of them have husbands working in agriculture (70.9%), have never used any method (70.9%), are poor (43.0%), and have primary or lower levels of education (77.1%). There are also slight variations by the number of children ever born, subregion, age, and whether husband approves FP. Nevertheless, the results shows that unmet need increases slightly by age but starts to decrease after approximately age 40 (Figure 5). Furthermore, unmet need increases with family size (number of children ever born) (Figure 6). Unlike Rwanda, where the overall percentages of unmet need across all ages and family sizes are consistently higher than met needs, in Madagascar the percentages of unmet and met need are almost at similar levels of distribution.

Taken as a whole, the relationship between women's use of contraception across all background characteristics shown is very strong for both countries (Tables 4 and 5). However, in both countries it appears that the relationship of the unmet need and different variables is also different for those with met need (users). This finding reflects the fundamental difference between users and nonusers with unmet need, suggesting that the unmet need for family planning is perhaps influenced largely by other socio-cultural factors that inhibit women from using a modern family planning method and is less influenced by factors that affect service accessibility, such as economic status. In addition, unlike for Rwanda, the unmet need and met need graphs for Madagascar intersect at age group 35-39 and at 5-6 children (Figures 5 and 6), also suggesting that whatever factors that make this possible in Madagascar could perhaps be useful in Rwanda as well.

Characteristics of Birth Spacers and Birth Limiters

The analysis below examines the similarities and differences between birth limiters and spacers for women with unmet need and among those currently using modern contraceptives. Understanding the characteristics of spacers and limiters can help in decisions about contraceptive method mix and other program strategies in each country.

Rwanda

For Rwanda, most of the unmet need is for spacing (67.4%), compared with 32.6% for limiting births (Table 6). In addition, Table 6 shows that a slightly higher percentage of women using modern contraceptives are spacers than limiters (55.3% versus 44.7%) in Rwanda. Thus, for Rwanda, the majority of currently married women are interested in spacing births than to limiting. These findings are consistent with previous studies showing that the unmet needs in most sub-Saharan African countries are predominated by unmet need for spacing births than limiting (Westoff & Bankole, 1995).

Table 6 shows that spacers differ from limiters regardless of whether they are users or nonusers with unmet need. The unmet need status (for spacing or limiting) differs significantly by women's educational level, subregion, women's age, total number of children, partner education, partner's occupation, and whether the woman has ever used any family planning. As expected, a large percentage of older women (40+) and those with six or more children have unmet need for limiting births than for spacing. In addition, a significantly higher proportion of women with unmet need to limit births in Rwanda live in Gitarama subregion (44.6%), are less educated (none/preschool), have less educated partners, and have partners who are self-employed in agriculture.

Table 6 also shows the characteristics of users (those who space and users who limit births) in Rwanda. Overall, users (who are spacers and limiters) differ significantly by woman's educational level, woman's age, total number of children, and ever use of any method. For example, spacers are younger and have fewer children than limiters.

Table 6: Percentage Distribution of Currently Married Women by Unmet Need for Family Planning to Space or Limit, and Met Need to Space or Limit Births According to Background Characteristics, Rwanda, 2000

Background Characteristics	% Unmet Need N=1,797		% Users (Met Need) N=669	
	UNS (N=1,210)	UNL (N=587)	MNS (N=371)	MNL (N=299)
Economic status		NS		NS
Poor	67.8	32.2	55.0	45.0
Middle	68.0	32.0	59.4	39.6
Rich	66.6	33.4	54.2	45.8
Type of residence		NS		NS
Urban	68.5	31.5	54.5	45.5
Rural	67.2	32.8	55.7	44.3
Woman's educational level				
None/preschool	57.5	42.5***	41.6	58.4***
Primary	72.3	27.7	60.8	39.2
Secondary/higher	77.7	22.3	57.4	42.6
Subregion of Residence				NS
Butare	70.1	29.9**	64.3	35.7
Byumba	66.3	33.7	54.3	45.7
Cyangugu	70.1	29.9	52.4	47.6
Gikongoro	75.2	24.8	55.9	44.1
Gisenyi	75.9	24.1	68.7	31.3
Gitarama	55.4	44.6	40.3	59.7
Kibungo	63.6	36.4	58.8	41.2
Kibuye	69.5	30.5	56.0	44.0
Kigali Ville (PVK)	69.0	31.0	59.1	40.9
Kigale rurale	62.4	37.6	50.5	49.5
Ruhengeri	68.2	31.8	51.1	48.9
Umutara	67.2	32.8	53.3	46.7
Age group (years)				
15-24	96.4	3.6***	90.0	10.0***
25-39	74.4	25.6	64.1	35.9
40+	18.7	81.3	11.0	89.0
Total number of children ever born				
0-2	95.3	4.7***	93.1	6.9***
3-5	78.9	21.1	58.5	41.5
6+	34.2	65.8	18.8	81.2
Partner's Education				NS
None/Preschool	63.5	36.5**	48.5	51.5
Primary	67.9	32.1	66.0	44.0
Secondary/Higher	74.8	25.2	59.9	40.1
Partner's occupation				NS
Professional	77.3	22.7**	53.7	46.3
Agric-self-employed	66.9	33.1	54.5	45.5
Other	62.6	37.4	59.5	40.5
Discussed FP with partner		NS		NS
No	65.7	34.3	48.0	52.0
Yes	68.5	31.5	56.7	43.3
Ever used any FP				
No	73.0	27.0***	65.7	34.5***
Yes	47.6	52.4	49.9	51.1
Husband's view of FP		NS		NS
Disapproves	69.3	30.7	48.0	52.0
Approves	66.9	33.1	56.1	43.9
Do not know	67.5	32.5	56.1	43.9

Significance levels: * 0.05; **0.01; ***0.001; NS=not significant.

Madagascar

Table 7 presents the characteristics in Madagascar of currently married women users and nonusers with unmet needs for family planning to space or limit. The overall results indicate that, in Madagascar, a slightly higher percentage of women are interested in limiting births than spacing. A higher percentage of users are limiters compared to that of spacers (54.8% versus 45.2%, respectively). Similarly, a slightly higher percentage of unmet need is for limiting births (52.2%) than for spacing (47.8%). These findings are contrary to previous studies, which have shown that most of the unmet needs in sub-Saharan African countries are for spacing births rather than limiting (Westoff & Bankole, 1995; Edwards, 1995). This finding suggests that unlike other countries, Madagascar may have high-quality family planning programs that have reduced obstacles against limiting childbirths such as socio-cultural factors. In addition, the results show that there are noticeable differences in the characteristics of women spacers and limiters regardless of whether they are users or nonusers with unmet need, as shown in Table 7. Spacers and limiters differ significantly by subregion, woman's age, and family size in Madagascar. A higher percentage of limiters are older and have more than five children while most spacers (users or those with an unmet need to space) are younger (less than 40 years) and have fewer children (0-2). Furthermore, unlike current users, nonusers with unmet need to space and to limit births differ significantly by economic status, partner's occupation, and by whether a woman had previously used any family planning method.

In sum, there are differences among spacers and limiters, which also vary between the two countries. For example, most women in Rwanda have unmet need for spacing compared to Madagascar, where unmet need for limiting is relatively higher than for spacing. Furthermore, when compared within the country, the analysis shows that several factors play a major role in family planning decisions (Tables 6 and 7).

Table 7: Percentage Distribution of Currently Married Women by Unmet Need for Family Planning to Space or Limit, and Met Need to Space or Limit Births According to Background Characteristics, Madagascar, 2004

Background Characteristics	% Unmet Need N=1,215		% Users (Met Need) N=1,395	
	UNS (N=581)	UNL (N=634)	MNS (N=630)	MNL (N=764)
Economic status				NS
Poor	53.2	46.8**	44.5	55.5
Middle	46.9	53.1	44.7	55.3
Rich	42.1	57.9	48.9	51.1
Type of residence		NS		NS
Urban	45.5	54.5	45.4	54.6
Rural	46.4	51.6	45.1	54.9
Woman's educational level		NS		NS
None/preschool	44.9	55.1	43.3	56.7
Primary	50.9	49.1	48.5	51.5
Secondary/higher	44.1	55.9	42.6	57.4
Subregion of residence				
Antananarivo	42.8	57.2**	38.8	61.2**
Fianarantsoa	49.3	50.7	43.3	56.7
Toamasina	47.5	52.5	54.9	45.1
Mahajanga	55.5	44.5	45.9	54.1
Toliary	53.7	46.3	54.1	45.9
Antsiranana	39.8	60.2	60.2	39.8
Age group (years)				
15-24	88.3	11.7***	91.5	8.5***
25-39	46.3	53.7	46.0	54.0
40+	10.8	89.2	4.1	95.9
Number of children ever born				
0-2	87.0	13.0***	79.3	20.7***
3-5	49.0	51.0	29.8	70.2
6+	19.3	80.7	14.1	85.9
Partner's education		NS		NS
None/preschool	48.4	51.6	42.1	57.9
Primary	49.8	50.2	44.7	55.3
Secondary/higher	43.9	56.1	46.0	54.0
Partner's occupation		NS		NS
Professional	39.5	60.5**	43.4	56.6
Agric-Self- Employed	51.2	48.8	47.1	52.9
Other	40.3	59.7	44.3	55.7
Discussed FP with partner		NS		NS
No	48.9	51.1	39.7	60.3
Yes	46.9	53.1	45.9	54.1
Ever used FP				NS
No	50.0	50.0*	42.5	57.5
Yes	42.7	57.3	45.8	54.2
Husband's view of FP		NS		NS
Disapproves	48.1	51.9	55.8	44.2
Approves	45.9	54.1	44.4	55.6
Do not know	50.3	49.7	40.6	59.4

Significance levels: * 0.05; **0.01; ***0.001; NS=not significant.

Reasons Why MWRA with Unmet Need Are Not Intending to Use a Family Planning Method in the Future

As noted previously, there are major differences among women users and nonusers with unmet needs for contraceptives in Rwanda and Madagascar. Although both countries are in sub-Saharan Africa and have low contraceptive prevalence rates, the factors that influence the demand and use of family planning are different. For example, a higher percentage of women (41.2%) in Rwanda want to limit births compared to about 34% for Madagascar (Table 1); however, the findings that in Rwanda the majority of women in union have unmet needs to space births rather than to limit, and vice versa for Madagascar, were paradoxical and surprising. Hence, further analysis to understand the main reasons why women are currently not using family planning even when they want to limit or space births in these countries was undertaken. This section explores the main reasons why current nonusers with unmet need do not intend to use any modern method in future.

Tables 8 and 9, and Figures 7 and 8 present the main reasons in Rwanda and Madagascar why currently married women who have unmet need for family planning do not intend to use a method in the future.

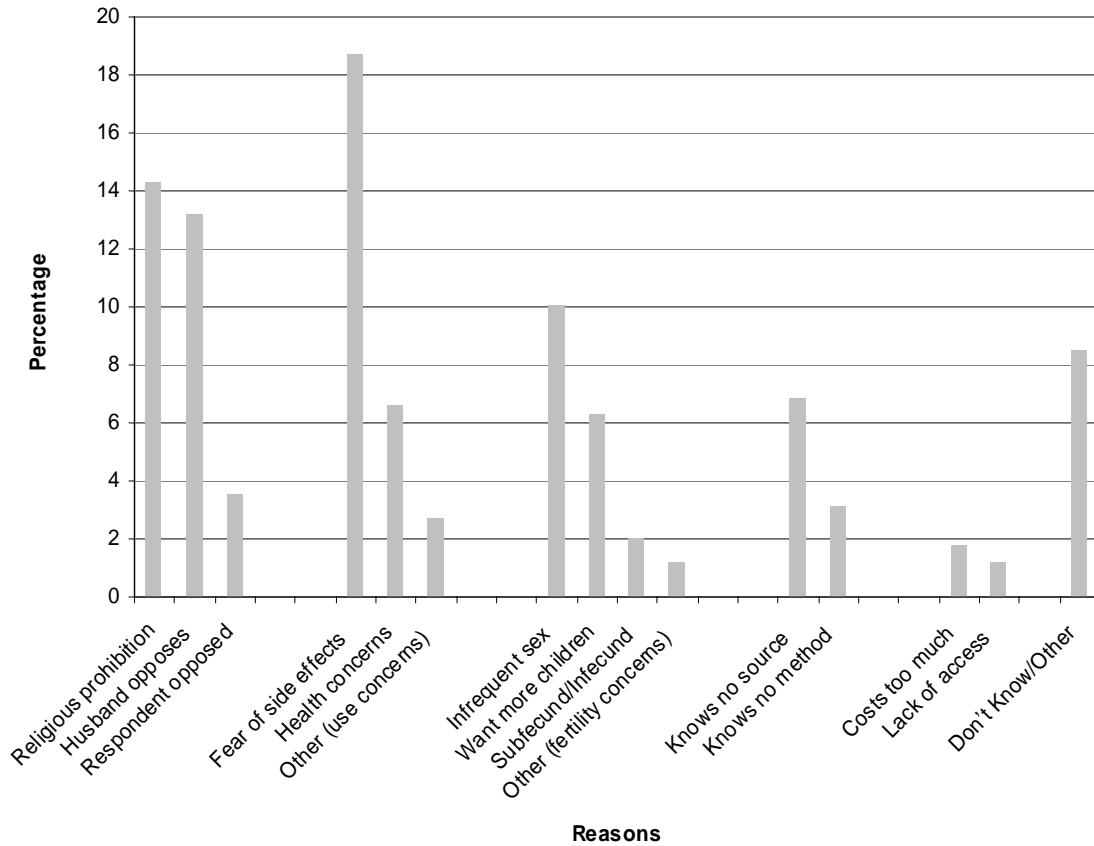
Rwanda

Table 8 and Figure 7 show that social or cultural related factors mainly religious prohibition and other opposing forces in the community are the most important reasons for women with unmet need not to use a method in future in Rwanda (31.0%). Religious prohibition and husband's oppositions are the main socio-cultural factors that affect women's decisions for family planning (14.3% and 13.2%, respectively). The next most important reasons why women do not intend to use contraceptives in Rwanda is method safety, especially fears concerning side effects (18.7%) and other health concerns. Fertility related concerns accounted for about 20% of the reasons for not intending to use a method. Surprisingly, the main fertility-related factors were infrequent sex (10.1%) and desire for more children (6.3%). Further analysis revealed that most women with unmet need and who do not intend to use any contraception in the future have also never used any modern method before (almost 78%, not shown). This confirms that their fear of side effects may be unfounded, since this fear is not due to any bad experiences they have encountered with family planning methods but lack of adequate information. Therefore, this finding is a reflection of lack of accurate or complete information on the benefits and side effects of various family planning methods. Lack of knowledge (knows no method or source) accounted for about 10% and accessibility issues (including cost and lack of access) accounted for a small proportion of women who will not use any contraceptives in the future in Rwanda (3.0%).

Table 8: Percentage of Currently Married Women by Principal Reason Why Nonusers with Unmet Need Do Not Intend to Use Any Method of Contraception in the Future in Rwanda (2000)

Reason	Rwanda 2000 (N= 693) (%)
Socio-cultural influence related	
1. Religious prohibition	14.3
2. Husband opposes	13.2
3. Respondent opposed	3.5
Subtotal	31.0
Method safety related	
1. Fear of side effects	18.7
2. Health concerns	6.6
3. Other (interferes with body/inconvenient to use)	2.7
Subtotal	28.0
Fertility related	
1. Infrequent sex	10.1
2. Want more children	6.3
3. Subfecund/Infecund	2.0
4. Other (menopausal/hysterectomy)	1.2
Subtotal	19.6
Knowledge related	
1. Knows no source	6.8
2. Knows no method	3.1
Subtotal	9.9
Access related	
1. Costs too much	1.8
2. Lack of access	1.2
Subtotal	3.0
Do not know/other	8.5
Total	100.0

Figure 7: Main reasons why women with unmet need do not intend to use a family planning method in future, Rwanda 2000.



Madagascar

Table 9 and Figure 8 present the key reasons why MWRA with unmet need in Madagascar do not intend to use a method in future. Method safety-related factors accounted for almost half of the reasons why women with unmet need do not intend to use a method in future in Madagascar (45%). This is a large number of people worried about the side effects of methods as a reason for not intending to use them, suggesting that family planning programs in this country need to expand their efforts in providing the facts about various methods to women who need them. Fear of side effects was the leading reason for not intending to use a method, and it accounted for 25% of all the women with unmet need in Madagascar. The second most important group of reasons for not intending to use a method are knowledge related (14.8%), especially lack of knowing of any method. Social or cultural inhibitions for not intending to use a method accounted for 13.1%, mainly the woman's own opposition. Other factors influencing future intentions to use a method were fertility related (11.4%), especially infrequent sex and access related factors (2.1%).

Overall, the main reasons why MWRA with unmet need do not intend to use a family planning method in future are different for Rwanda and Madagascar. In Rwanda, the main reason why women would not like to use contraceptives in the future is because of religious prohibitions and other socio-cultural factors, followed by method safety concerns (fear of side effects). However, information about religion in Rwanda was not collected to help determine what in particular about family planning is prohibited. The reasons are different in Madagascar, with method safety as a major reason for almost half of these women, followed by lack of family planning knowledge. Fertility-related factors accounted for about 20% and 11.4% in Rwanda and Madagascar, respectively. These results were unexpected, especially in Rwanda, which has previously been shown to have a high desire for more children. In both countries, family planning accessibility-related reasons (including cost and lack of access) accounted for only a small proportion of women who will not use any contraceptives in the future. This finding is consistent with previous studies showing that accessibility is not a significant reason for not using family planning in sub-Saharan African countries (Casterline & Sinding, 2000).

Figure 8: Main reason why MWRA with unmet need do not intend to use a family planning method, Madagascar 2004.

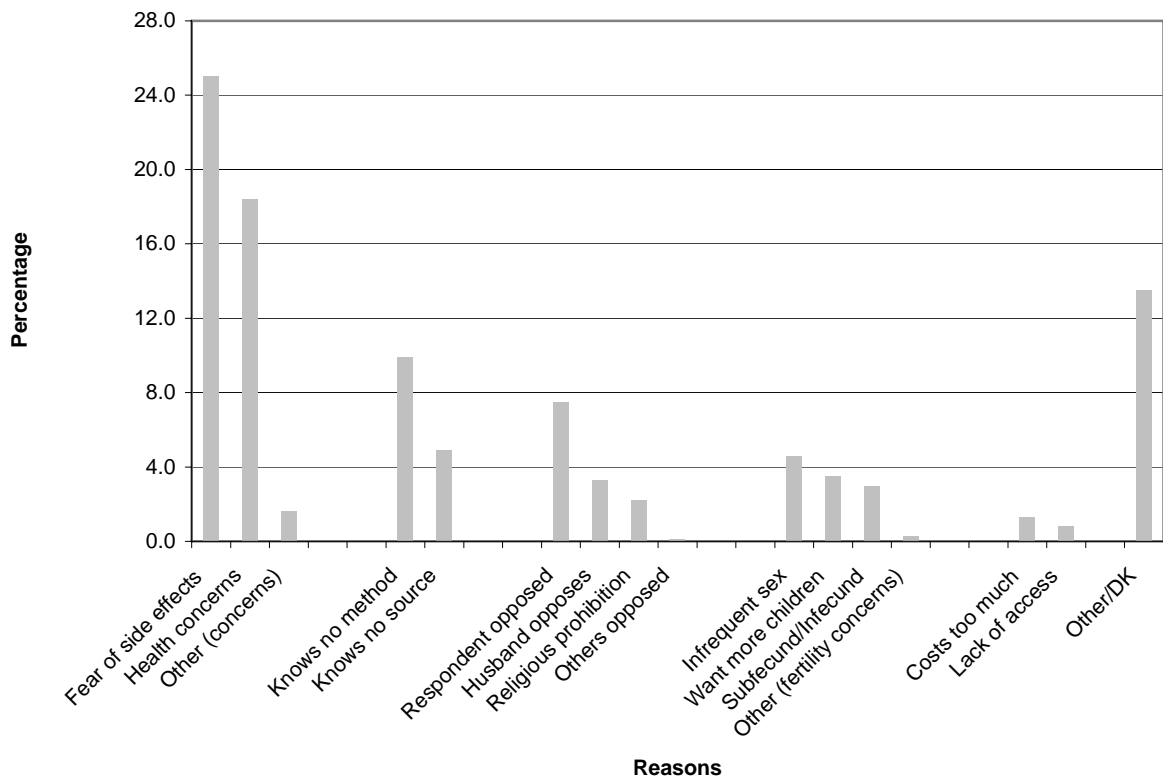


Table 9: Percentage of Currently Married Women by Principal Reason Why Nonusers with Unmet Need Do Not Intend to Use any Method of Contraception in the Future in Madagascar, 2004

Reason	Madagascar 2004 (N=679) (%)
Method safety related	
1. Fear of side effects	25.0
2. Health concerns	18.4
3. Other (interferes with body/inconvenient to use)	1.6
Subtotal	45.0
Knowledge related	
1. Knows no method	9.9
2. Knows no source	4.9
Subtotal	14.8
Socio-cultural influence related	
1. Respondent opposed	7.5
2. Husband opposes	3.3
3. Religious prohibition	2.2
4. Others opposed	0.1
Subtotal	13.1
Fertility related	
1. Infrequent sex	4.6
2. Want more children	3.5
3. Subfecund/Infecund	3.0
4. Other (menopausal/hysterectomy)	0.3
Subtotal	11.4
Access related	
1. Costs too much	1.3
2. Lack of access	0.8
Subtotal	2.1
Do not know/other	13.5
Total	100.0

The Determinants of Unmet Need and Met Need for Family Planning

Multivariate analysis was used to explore the significant determinants for each group and also to examine whether reported country differentials in family planning needs can be attributed to other characteristics that distinguish the five groups of modern contraception needs among currently married women in each country. Both binomial and multinomial logistic regressions were conducted, but only multinomial results are discussed. Results from binomial logistic regression analysis are presented in the appendix.

Specifically, multinomial logistic regression analysis was used to examine the differences in the types of family planning needs for women in union in Rwanda and Madagascar. The analysis compares each of the four types of women's needs (UNS, UNL, MNS, and MNL) to that of married women with no need for family planning (NN), controlling for other confounding factors. The results are presented separately for each country in Tables 11 and 12 (found in the appendix), and Table 10 presents a summary of the results on the factors expected to explain the differences in use and unmet need for family planning for either spacing or limiting births for Rwanda and Madagascar, everything else being equal. Some of the independent variables used in the multinomial logistic regression analysis were recoded to combine them differently from those used in the bivariate analysis, to reduce the zero frequencies for some subpopulations. For example, woman's age was reduced to two categories (15-29 and 30-49 years) which split the population into about 50% each (young and older). In addition, number of children was recoded into "0-2," "3-5," and "6 or more," also based on the population distribution (about one third each). Subregion, education, and partners' occupation variables were also recoded into two groups. The selected comparative groups were significantly different from other groups in the same variables. For example, categories "secondary and higher education" and "self-employed in agriculture" were very different from other groups. Thus, understanding these differences is key to targeting the subgroups of women with interventions that meet their needs.

Rwanda

Overall, the results show that family planning need differentials by use/nonuse status is accounted for by differences in socioeconomic and demographic characteristics of these women. The findings show that there is a statistically significant relationship among the variables for age, education level, total number of children ever born, rural/urban residence, discussing family planning with partner, economic status, previous use of any method, and the dependent variable (contraception needs). As well, these variables are significant in distinguishing each of the four types of need (UNS, UNL, MNS, and MNL) from the NN category. However, there was no significant relationship between partner's education or occupation, and subregion of residence with the dependent variable – modern contraceptive needs.

The significant distinguishing factors of the group of women having unmet needs to space from those who have no need for family planning are presented in Table 11, in the

appendix. The results show that women who were older (30+ years) were 50.6% less likely (likelihood = 0.494) to be in the UNS group, rather than in the NN group. In addition, women with three or more children, those who had discussed family planning with their partners, and those who had previously used any method were more likely to have unmet need for spacing. This suggests that, in addition to the number of children and the women's age, discussing family planning with a spouse and also having exposure to any method have led to the demand for modern contraception in Rwanda.

The factors that significantly distinguish those women who have unmet need to limit births (UNL group) in Rwanda from those women who have no need for family planning include the number of children born, woman's age, residence (rural/urban), discussing family planning with the partner, and previous use of any method. Women who belong to this group (UNL) are more likely to be older (30+), to have three or more children, to live in the urban area, to have discussed with a partner, and to have been previously exposed to any method (see Table 9). Unlike for the UNS group, rural/urban residence is an important factor for the UNL group, suggesting that methods for limiting are more in demand by urban women in Rwanda.

The results presented in Table 11 in the appendix also show the significant factors that differentiate those women with met need to space (MNS) births from those with no need (NN) for family planning in Rwanda. Total number of children and a woman's age continue to be significant distinguishing characteristics for women using family planning to space from those in NN. The MNS group of women are less likely (0.481) to be older (30+), more likely to have six or more children, more likely to have secondary or higher educational level, more likely to have discussed family planning with partner, more likely to have been exposed to a method before, and more likely to be rich ("middle" or "rich" economic status). Unlike for the other groups of women, having a high economic status is an important factor for women who are currently using modern contraceptives to space.

The significant factors for women currently using a modern family planning method to limit births in Rwanda include number of children, maternal age, maternal education, rural/urban residence, discussion with partner, and previous exposure to any family planning method. The results show that the women who belong to this group (using to limit) are about twice as likely to be 30 years of age or older, more likely to have three or more children (more than 10 times), more likely to have secondary education, more likely to discuss family planning with their partners, and more likely to have used a method before.

Overall, in Rwanda women who were older (30+ years) were twice as likely to be in the two groups of limiters (UNL and MNL) and less likely to be in the other groups of spacers (UNS and MNS), rather than in the NN group. Similarly, the women with three or more children are more likely to belong to any of the four groups (more so in the limiters groups, UNL and MNL) rather than in the NN group. Both results suggest that woman's age (30+ years) and having three or more children are important characteristics to consider for family planning strategies in Rwanda. In addition, those women who discussed family planning with their partner and those with previous exposure to any

method are several times more likely to be users (MNS and MNL) than being in the NN group. However, these factors were also significant for those in the unmet need groups (UNS and UNL), but their differences with the NN group were not large (range 1.270 – 1.615). Women with secondary education were more likely to be in the user groups (MNS and MNL), rather than in the NN group. These results suggest that a woman’s educational level is not an important characteristic in identifying those with unmet needs from those with no need. Women who live in the urban areas are more likely to be users to limit or have unmet need to limit compared to those with no need. These findings suggest that there is a demand for methods to limit births in urban areas more so than in rural areas.

Table 10: Summary of the Relationships between Types of Need for Family Planning (Met and Unmet to Space or Limit) and Selected Background Characteristics of Currently Married Women in Rwanda and Madagascar*

Background Factors	Rwanda, 2000				Madagascar, 2004			
	Unmet Need N=1,797		Met Need N=669		Unmet Need N=1,215		Met Need N=1,395	
	UNS	UNL	MNS	MNL	UNS	UNL	MNS	MNL
Woman’s age	√-	√+	√-	√+	√-	√+	√-	√+
Total number of children ever born	√+	√+	√+	√+	√+	√+	√-	√+
Woman’s education	-	-	√+	√+	-	-	-	√+
Economic status	-	-	√+	-	-	-	-	√+
Discussed FP with partner	√+	√+	√+	√+	√+	√+	√+	√+
Woman has ever used any FP method	√+	√+	√+	√+	√+	√+	√+	√+
Rural-urban residence	-	√+	-	√+	-	-	-	-
Subregion	-	-	-	-	√+	√+	√+	-
Partner education	-	-	-	-	√+	√+	√+	-
Partner occupation (other vs. agriculture)	-	-	-	-	-	√-	-	√-

NN is the reference group.
* For details, see appendix.
√+ = Significant and positive relationship; significant levels (<= 0.05 or 0.01 or 0.001).
√- = Significant and negative relationship; significant levels (<= 0.05 or 0.01 or 0.001) (See Tables 11 and 12 for more detailed results).
- = Not statistically significant at 0.05 level.

Madagascar

Table 12 in the appendix presents the multivariate results on the distinguishing characteristics of currently married women in Madagascar with UNS or UNL, those with MNS or MNL, and those with NN for family planning methods.

The overall model shows that there is a significant relationship between woman's age, total number of children ever born, discussing family planning with partner, previous use of any method, subregion of residence, education, economic status, partner's education and occupation, and the dependent variable (family planning needs). As well, these variables are significant in distinguishing each of the four types of family planning needs (UNS, UNL, MNS, and MNL) from the NN category. For Madagascar, rural/urban residence is not a significant distinguishing factor for any of the four groups from NN group.

The significant distinguishing factors of the group of women having an unmet need to space from those who have no need for family planning show that older women (30+ years) were about 64% less likely (likelihood = 0.362) to be in the UNS group, rather than in the NN group. In addition, women with three or more children, those who had discussed family planning with their partners, those who had previously used any method, and those with partners' whose education is secondary or higher were more likely to have unmet need for spacing. Woman's education, economic status, subregional and rural/urban residence, and partner's occupation were not significant factors for women with unmet need for spacing in Madagascar.

The characteristics of women in the UNL group in Madagascar that significantly distinguished them from those women with no need for a family planning method include woman's age, total number of children born, discussing family planning with partner, subregion of residence, previous use of any method, partners education, and occupation. Women in the UNL group are more likely to be older (30+), have three or more children, live in the Antananarivo subregion, and have discussed family planning with their partners. In addition, they have previous exposure to a method, they have partners with secondary or higher education, and their partners are about 44% less likely to be working in agriculture (Table 12). Unlike for the UNS group, subregion of residence and partner's occupation were significant distinguishing factors for the UNL group. This suggests that demand for limiting births varies by subregion in Madagascar and different subregions will require different method mixes.

The results also show that there are significant factors that differentiate MNS births from those in other groups and in the NN group in Madagascar. Total number of children and a woman's age continue to be significant distinguishing characteristics for women using family planning to space from those in NN. The MNS group of women is less likely (0.485) to be older (30+), less likely to have three to five children, but more likely to discuss family planning with partners or have prior exposure, and more likely to have educated partners.

The significant factors for women currently using a modern family planning method to limit births in Madagascar include their age and education, total number of children ever born, discussions with partner, previous exposure to any method, subregion of residence, economic status, and partner's occupation. The results show that the women who belong to this group are about 3.4 times as likely to be 30 years and older and more likely to; have three or more children, have secondary education, have high economic status ("middle" or "rich"), discuss family planning with their partners, have used any method before, and less likely to have a partner who is self-employed in agriculture.

In Madagascar, older women as in Rwanda are more likely to be limiters (UNL and MNL) and less likely to be spacers (UNS and MNS). Similarly, the women with three or more children are more likely to have unmet need to limit or space or use to limit births but less likely to use for spacing. These results suggest that woman's age (30+ years) and having three or more children are important characteristics to consider for developing family planning strategies in Madagascar particularly in meeting the unmet needs for most women. In addition, those women who discussed family planning with their partner and those with previous exposure to any method are several times more likely to be users (MNS and MNL) and about twice as likely to have unmet needs (UNS and UNL). Unlike for Rwanda, women's education was only significant for one group (using to limit). Unlike Rwanda, partner's education and occupation in Madagascar play a major role in identifying those with unmet need to space or limit. Overall, the women who are likely to have unmet need include those that live in urban areas, those with partners who are self-employed in agriculture, and those that have never been exposed to any family planning services before (ever used any method) in both Rwanda and Madagascar.

Conclusions and Recommendations

This report provides evidence that the differentials in contraceptive needs (met or unmet to space or limit) is accounted for by differences in socioeconomic and demographic characteristics of women in each of these groups. Indeed, after the necessary controls, the key distinguishing factors of women who are using or who have unmet needs for family planning to space or limit births include economic status, discussions with partner (partner participation in FP), woman's previous exposure to any method, woman's age and education, total number of children, and other demographic factors. In addition, these relationships are different for Rwanda and Madagascar. This variability between countries and among need groups suggest that before any policy decisions are made including funding decisions, an analysis should be conducted for each country geared towards supporting these plans.

Based on these findings, the following recommendations are offered.

1. The unmet needs in Rwanda (35.6%) and Madagascar (23.6%) remain high. In Rwanda, more women have unmet need for spacing (two out of three women with unmet need) than for limiting (32.6%), while in Madagascar the unmet need is evenly distributed between spacing and limiting (about 48% and 52%, respectively). For repositioning plans, this information is useful in making decisions about the method choices that can be made available in each country and in setting program priorities. For example, as part of the solution to the high unmet need for spacing births in Rwanda, urgent investment is needed to develop strategies that make family planning methods for spacing births available.
2. In either country, the main reason why MWRA with unmet need do not intend to use family planning in future is their fear of side effects. This suggests that concerted efforts are needed through family planning programs to provide accurate and timely information on various contraceptive methods, to help women develop confidence and enable them to make informed decisions about their family planning needs. Indeed, previous studies have shown that many couples in developing countries have insufficient information on family planning methods (Potts, 2000). Perhaps if information is provided to women about contraception methods during their regular visits for other primary health care services, this information could expose them to key details and may help to demystify family planning. Consequently, the use of the services would increase and unmet needs for either spacing or limiting births would be reduced.
3. In Rwanda, social and cultural factors (mainly religious prohibition and husband opposition) are the main reasons for about 26% of women with unmet need for not intending to use a method. Therefore, programs in this country should consider involving religious leaders and men in the family planning programming decisions. This is an important dimension that could lead to increased use of contraceptives in Rwanda, where there is a relatively high unmet need and yet very few women discuss

these issues with their husbands and many are prohibited from using family planning due to religious beliefs.

4. In addition, women's age and number of children born are key distinguishing characteristics that differentiate spacers and limiters (with unmet or met needs) in either country. These findings provide information that can be used to argue that new family planning program strategies should be designed to address specific needs, including the methods that are suitable for the needs of each group of women. For example, in Rwanda, women aged 30 years and older or with a family size of three or more children should be given information on the availability and safety of methods for both spacing and limiting births. Similarly in Madagascar, the target for limiting methods should include those women aged 35 years or older and those with two or more children for they have the greatest need.
5. The analysis also shows other factors that influence the use of family planning for each country. Foremost, in Madagascar, subregion and partner education are significant predictors for distinguishing three groups (UNS, UNL, and MNS) from the NN group. In addition, if partners are self-employed in agriculture, the women are less likely to use or have unmet need for limiting births. In Rwanda however, urban/rural residence is a significant predictor for using or having unmet need for family planning to limit births in addition to predictors previously mentioned. These findings have program implications, including targeting services to specific subgroups and areas within each country. For example, in Madagascar, targeting some subregions and agricultural people will help increase the use of family planning to limit births in particular. Similarly in Rwanda, targeting the rural areas and young women especially with family planning methods for limiting will also reduce the existing unmet need to limit births.
6. Everything else equal, a woman discussing family planning with a partner is a significant determinant of using or having unmet needs for the services in both countries to space or limit births. Since the use of modern family planning methods is low in both Madagascar (27.1%) and Rwanda (13.2%), programmatically women should be encouraged to talk about family planning with their partners by coaching women to sharpen their negotiating skills with their partners.

In conclusion, these findings are important for repositioning family planning initiatives in Rwanda and Madagascar because they provide evidence that unmet or met needs to space or limit are influence by many factors that go beyond the access to services, such as location and method choices and desire for more children. In addition, demand for these services can be promoted by providing services that are relevant to the client's needs, providing enough information, and addressing the socio-cultural factors (husband-wife relationships). The factors that were shown to be significant through this analysis include those related to lack of adequate knowledge (e.g. previous use of any method helps increase likelihood of using and decreased unmet need). Making family planning services available is not enough and therefore concerted efforts should be made to create programs that address barriers directly affecting women. Short-term investments in

campaign programs can help expose and increase knowledge among women that will influence their negative attitudes and cultural barriers including communications among couples. They can also contribute towards addressing the fears about side effects by these women. For immediate plans women need exposure to family planning through seminars for them and their spouses, and integrating these programs with other health services that can be cost-effective in reducing unmet needs. For instance, maternal and paternal education were not significant distinguishing factors for most groups, except for MNS and MNL in Rwanda and for the MNL group for Madagascar but they should be supported as long-term strategies.

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Appendix: Multivariate Analysis

I: Multinomial Logistic Regression Results

Table 11: Results of Multinomial Logistic Regression (Exp (B) Coefficients): Currently-Married Women Having Unmet Need to Space, Unmet Need to Limit, Met Need to Space, and Met Need to Limit Births in Rwanda, 2000

Background Characteristics	Unmet Need N=1,797		Users (Met Need) N=669	
	UNS (N=1210)	UNL (N=587)	MNS (N=371)	MNL (N=299)
Woman's age group (years)				
15-29 (ref)	-	-	-	-
30+	0.494*** (0.095)	2.248*** (0.194)	0.481*** (0.159)	1.755*** (0.229)
Number of children ever born				
0-2 (ref)	-	-	-	-
3-5	1.560*** (0.129)	18.211*** (0.263)	0.638+ (0.246)	19.375*** (0.368)
6+	2.092*** (0.090)	5.613*** (0.252)	1.589** (0.151)	9.636*** (0.340)
Woman's educational level				
Primary and Lower (ref)	-	-	-	-
Secondary/Higher	0.886 (0.147)	0.722 (0.246)	1.600* (0.187)	2.442*** (0.232)
Type of residence				
Rural (ref)	-	-	-	-
Urban	1.184 (0.133)	1.860*** (0.185)	1.316 (0.194)	2.353*** (0.220)
Discussed FP with partner				
No (ref)	-	-	-	-
Yes	1.615*** (0.073)	1.570*** (0.101)	5.576*** (0.166)	4.530*** (0.170)
Ever used any method				
No (ref)	-	-	-	-
Yes	1.377** (0.105)	2.384*** (0.114)	7.987*** (0.136)	8.834*** (0.149)
Subregion of residence				
All other regions (ref)	-	-	-	-
Kigali Ville (PVK)	1.080 (0.133)	0.968 (0.197)	1.176 (0.232)	0.826 (0.303)
Wealth				
Poor (ref)	-	-	-	-
Rich	1.066 (0.077)	0.922 (0.108)	1.444* (0.151)	1.326+ (0.170)
Partner's education				
Primary and lower (ref)	-	-	-	-
Secondary/higher	1.240+ (0.120)	1.416+ (0.189)	1.197 (0.182)	1.185 (0.226)
Partner's occupation				
All other (ref)	-	-	-	-
Agriculture self-employed	1.073 (0.106)	0.955 (0.196)	1.101 (0.174)	0.965 (0.197)
Intercept	-1.240***	-4.513***	-4.042***	-7.077***
SD error	(0.131)	(0.275)	(0.260)	(0.414)

Significant levels: *** <=0.001; ** <=0.01; * <=0.05. NN is the comparison group.

Table 12: Results of Multinomial Logistic Regression (Exp (B) Coefficients): Currently Married Women Having Unmet Need to Space, Unmet Need to Limit, Met Need to Space, and Met Need to Limit Births in Madagascar, 2004

Background Characteristics	Unmet Need N=1,215		Users (Met Need) N=1,395	
	UNS (N=581)	UNL (N=634)	MNS (N=630)	MNL(N=764)
Age group (years)				
15-29 (ref)	-	-	-	-
30+	0.362*** (0.117)	1.521*** (0.134)	0.485*** (0.130)	3.416*** (0.142)
Number of children ever born				
0-2 (ref)	-	-	-	-
3-5	1.612** (0.162)	29.408*** (0.201)	0.591* (0.225)	8.687*** (0.189)
6+	1.492*** (0.109)	9.395*** (0.184)	0.921 (0.129)	6.649*** (0.151)
Woman's educational level				
Primary and lower (ref)	-	-	-	-
Secondary/higher	1.043 (0.146)	1.150 (0.142)	1.265 (0.144)	1.978*** (0.141)
Type of residence				
Rural (ref)	-	-	-	-
Urban	0.893 (0.138)	0.812 (0.139)	1.023 (0.131)	1.019 (0.131)
Discussed FP with partner				
No (ref)	-	-	-	-
Yes	1.474*** (0.100)	1.687*** (0.105)	6.229*** (0.158)	6.520*** (0.143)
Ever used of any method				
No (ref)	-	-	-	-
Yes	1.270* (0.118)	1.450*** (0.117)	11.930*** (0.132)	9.153*** (0.124)
Subregion of residence				
All other regions (Ref)	-	-	-	-
Antananarivo	1.209 (0.118)	1.486*** (0.117)	1.075 (0.123)	2.312*** (0.120)
Wealth				
Poor (ref)	-	-	-	-
Rich	0.868 (0.113)	1.232+ (0.118)	1.338+ (0.152)	1.578** (0.153)
Partner's education				
Primary and less (ref)	-	-	-	-
Secondary/higher	1.620*** (0.131)	1.517** (0.132)	1.333* (0.141)	1.000 (0.140)
Partner's occupation				
Other occupation (ref)	-	-	-	-
Agriculture self-Employed	1.272 (0.153)	0.563*** (0.146)	0.927 (0.150)	0.578*** (0.150)
Intercept (SD Error)	-1.786 *** (0.184)	-4.122*** (0.240)	-3.995*** (0.244)	-6.531*** (0.279)

Significant levels; *** <=0.001; ** <=0.01; * <=0.05. . NN is the comparison group.

II: Binomial Logistic Regression Results

Presented below are further multivariate analyses conducted but were not discussed in the report. Only significant explanatory variables are presented in the following graphics for unmet need and met need in each country (Figures 9-11) and detailed analysis (in Tables 13-14).

Figure 9. Likelihood of unmet need to space births in Rwanda.

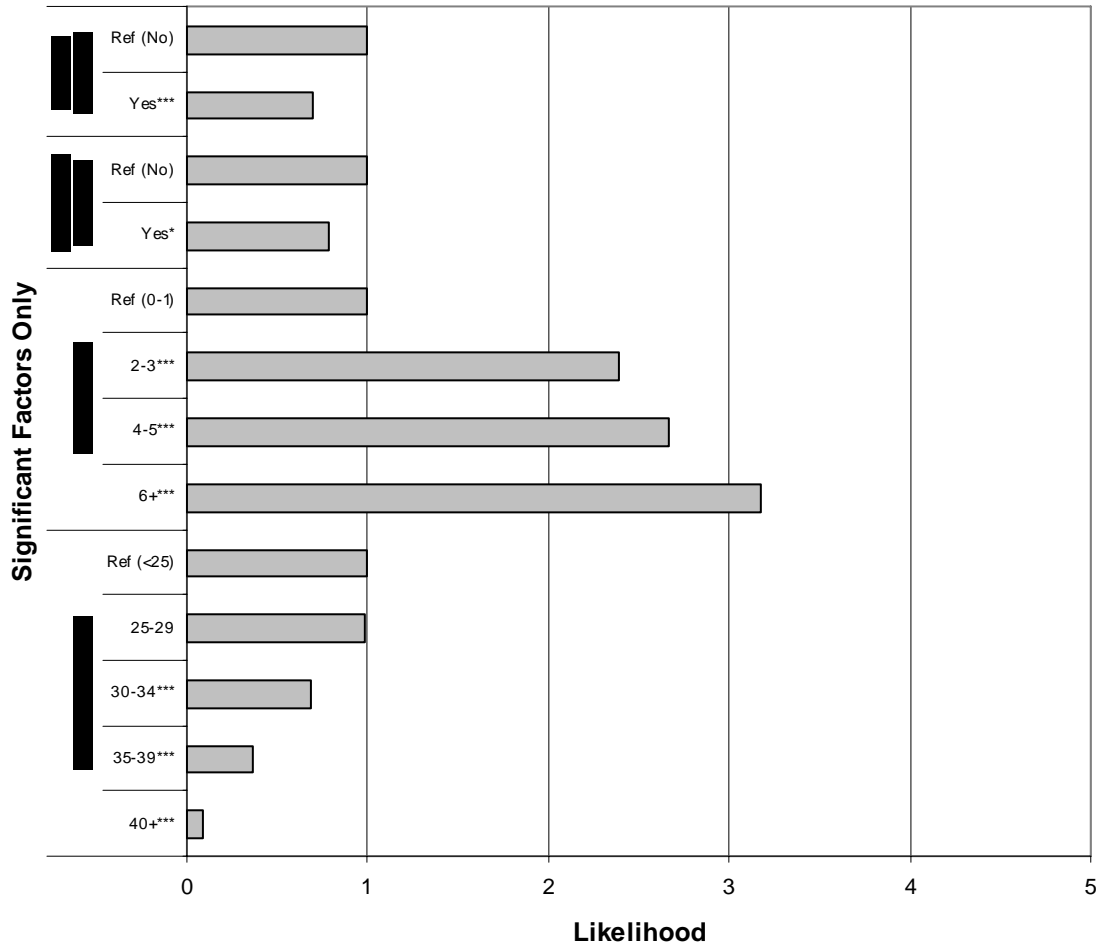


Figure 10: Likelihood of unmet need to limit births in Rwanda.

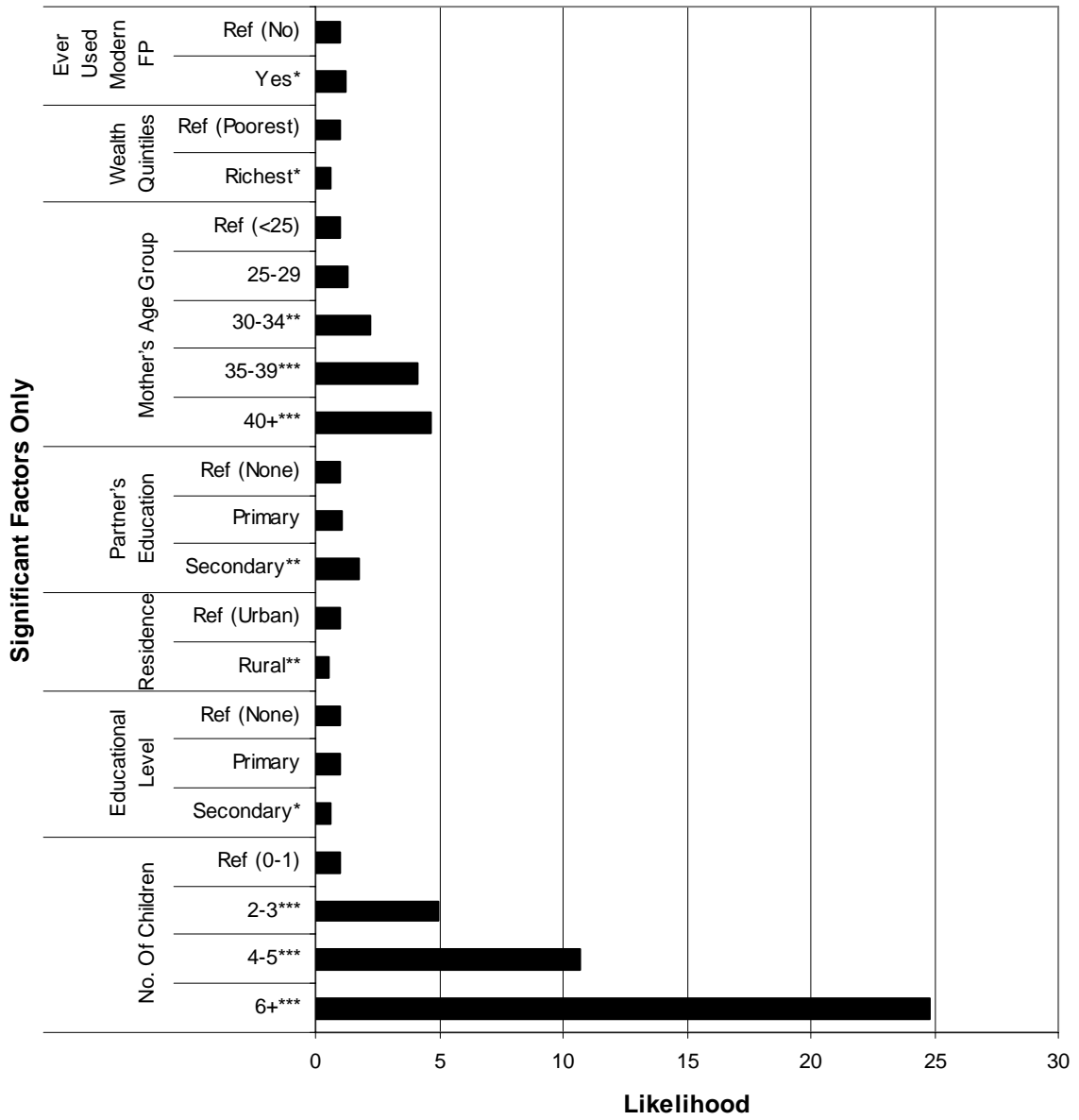


Figure 11: Likelihood of unmet need to limit births in Madagascar.

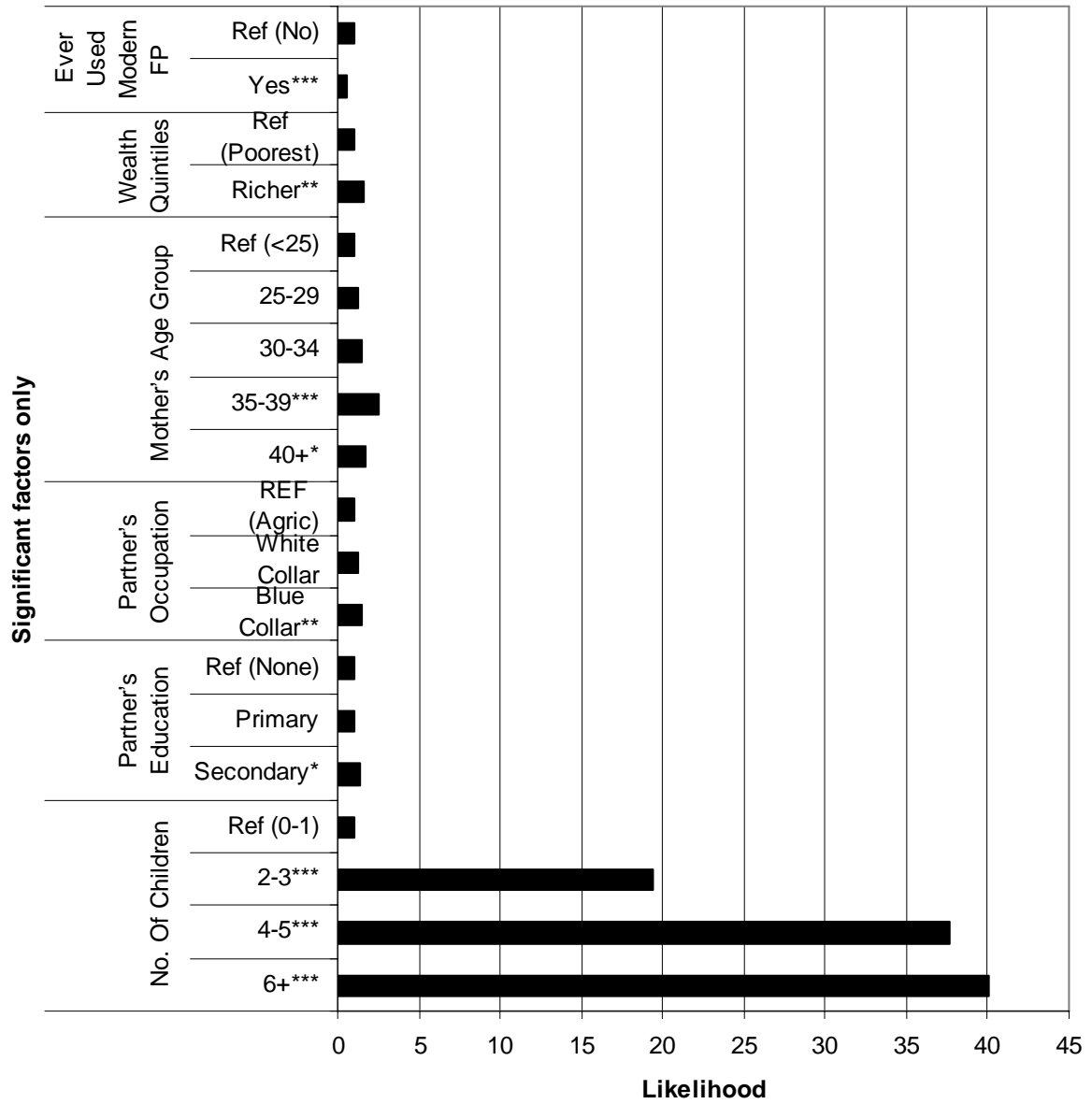


Table 13: Odds Ratios for Logistic Regressions on Unmet Need to Space, Unmet Need to Limit, Using to Space, and Using to Limit in Rwanda

Factors	Model 1 Unmet Need to Space Births	Model 2 Unmet Need to Limit Births
Economic Status		
Poorest (ref.)		
Poorer	0.999	0.931
Middle	1.112	0.849
Richer	1.057	0.778
Richest	0.869	0.589*
Type of residence		
Urban (ref.)		
Rural	0.920	0.560**
Educational level		
None/preschool (ref.)		
Primary	1.079	0.994
Secondary/higher	0.833	0.604*
Subregion		
Butare ref.		
Byumba	0.810	1.258
Cyangugu	1.090	1.043
Gikongoro	1.021	0.691
Gisenyi	0.888	0.771
Gitarama	0.733+	1.544+
Kibungo	0.709+	1.360
Kibuye	1.034	1.022
Kigali Ville (PVK)	0.929	1.067
Kigale rurale	0.914	1.383
Ruhengeri	0.731+	0.876
Umutara	0.842	1.189
Age group (years)		
< 25 (ref.)		
25-29	0.968	1.273
30-34	0.685**	2.197*
35-39	0.366***	4.110***
40+	0.088***	4.631***
Number of children ever born		
0-1ref.		
2-3	2.392***	4.989***
4-5	2.661***	10.694***
6+	3.171***	24.841***
Partner's education		
None/preschool (ref.)		
Primary	1.082	1.061
Secondary/higher	1.243	1.729**
Partner's occupation		
Agric. self employed (ref.)		
White collar	1.024	0.772
Others (blue collar)	0.839	1.361+
Discussed FP with partner		
No (ref.)		
Yes	0.784*	0.969
Ever used modern FP		
No (ref.)		
Yes	0.698***	1.247*
Constant	-1.623***	-2.729***
-2(log Likelihood)	4,974.617	2,782.309
Chi-square	464.583***	752.587***
Weighted N	4,738	4,738

Significant levels: *** <=0.001; ** <=0.01; * <=0.05.

Table 14: Odds Ratios for Logistic Regressions on Unmet Need to Space or Limit in Madagascar

Factors	Model 1 Unmet Need to Space Births	Model 2 Unmet Need to Limit Births
Economic Status		
Poorest (ref.)		
Poorer	0.856	1.106
Middle	0.756+	1.219
Richer	0.658*	1.657**
Richest	0.708	1.111
Type of residence		
Urban (ref.)		
Rural	1.024	1.147
Educational level		
None/preschool (ref.)		
Primary	1.504**	0.881
Secondary/higher	1.270	0.874
Subregion		
Antananarivo (ref.)		
Fianarantsoa	0.767+	0.865
Toamasina	0.931	0.761+
Mahajanga	1.307+	0.909
Toliary	0.956	0.773
Antsiranana	0.738	1.266
Age group (years)		
< 25 (ref.)		
25-29	0.754*	1.320
30-34	0.445***	1.465
35-39	0.322***	2.488***
40+	0.086***	1.687*
Number of children ever born		
0-1 (ref.)		
2-3	1.632***	19.406***
4-5	1.556**	37.688***
6+	1.689**	102.014***
Partner's education		
None/preschool (ref.)		
Primary	1.285	1.028
Secondary/higher	1.633**	1.417*
Partner's Occupation		
Agriculture self employed (ref.)		
White collar	0.945	1.228
Blue collar	0.692*	1.495**
Discussed FP with partner		
No (ref.)		
Yes	0.904	1.134
Ever used modern FP		
No (ref.)		
Yes	0.536***	0.528***
Constant	-2.645***	-2.804***
-2(log Likelihood)	3,117.717	2,964.240
Chi-square	304.003***	648.771***
Weighted N	4,663	4,663

Significant levels: *** <=0.001; ** <=0.01; * <=0.05.