

# Insights into Unmet Need in Senegal

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## Acknowledgement

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## Executive Summary

### Background

Over the past 20 years the DHS data show that current use of modern contraceptives among all married or cohabiting women increased very slowly from 5% to 12% and unmet need remained unchanged at about 30%. The total demand for contraception (unmet need plus use) slightly increased from 36% to 43% over the same period. Any advances in our understanding of the causes of unmet need could have profound implications for programmes.

### Objectives

This study aims to establish the relative importance of lack of access and attitudinal resistance towards use of contraception in different population and geographical strata of Senegal. It is intended to inform policy makers on the priority that should be given to behaviour change communication or improved access/information, and also helpful in the design of interventions to reduce health concerns and fear of side effects, such as provision of broader method mix and better counseling.

### Methods

The data from the Senegal DHS 2010-11 were used for the analysis. All analyses were based on married or cohabiting fecund women who were exposed to risk of pregnancy at the time of the survey. We identified whether women with unmet need have access (defined by knowledge of pills and injectables, and a supply source) and attitudinal acceptance (defined by intention to use in the future). We assessed variations in unmet need across different strata by bivariate and multivariate analyses. Self-reported reasons for unmet need were assessed.

### Results

Among exposed women, 41% had unmet need, 22% were using any modern contraceptive and 36% wanted a child within 2 years. Those with unmet need fell equally into three main groups: had access and positive attitude; had access but lacked positive attitude; and lacked access. Most of those lacking access had no intention to use family planning. The main self-reported reasons for non-use were respondent's opposition (18.6%) and infrequent sex (17.7%) followed by breastfeeding and health concerns. The evidence suggests that infrequent sex results in part from the fact that many women were not living in the same households as their husbands. It may also be regarded by couples as an alternative to contraception. Regional and educational variations were substantial. The least educated, the poorest those living in rural areas, Northern, Central and Southeastern areas were more likely to have unmet need without access or positive attitude than their counterparts. Breastfeeding women had high unmet need.

### Discussion and implications

Over half of women having unmet need for family planning in Senegal did not intend to use family planning in the future and this was consistent across all population strata. Reasons for non-use confirm the existence of widespread opposition to use of modern contraception. Unfamiliarity and lack of information is likely to be a reason for such opposition. In societies with low levels of adult education, as in Senegal, initial suspicion of contraception has also been documented. Positive endorsement of family planning by political, religious and traditional leaders may help alleviate these suspicions. The fact that one-third of

those with unmet need lacked even basic access testifies to the historic weak implementation of family planning programmes in Senegal. Mass media messages, together with community-based informational efforts, may reduce lack of knowledge of methods and sources of supply. The high level of unmet need among breastfeeding women calls for a sharper focus on postpartum contraception.

## Introduction

The majority of unintended pregnancies stem from unmet need for contraception and the prime objective of family planning programmes is to reduce unmet need. According to the Senegal DHS in 2010-11 a third of women of reproductive age reported unmet need. Advances in our understanding of the causes of unmet need could have profound implications for the Government of Senegal's action plan to raise contraceptive prevalence from 12% in 2012 to 27% by 2015.

The main aim of this project is to establish the relative importance of lack of access and attitudinal resistance towards use of family planning in accounting for unmet need among different population strata in Senegal. The results may be useful for policy makers in deciding the priority that should be given to behaviour change communication or improved access/information for different socio-economic strata and different geographic regions, and also helpful for interventions to reduce health concerns and fear of side effects, such as provision of broader method mix and better counseling. This report presents the results of the analysis using the latest DHS data.

## Methods

### Data

The data from the Senegal DHS 2010-11 were used for the analysis. Women who either want no more children or do not want a child in the next two years but are not using any method of contraception are regarded as having an unmet need for contraception. A standard definition of unmet need was used, following Bradley et al.'s report on unmet need in 2012 (Bradley et al. 2012). However, women who were pregnant, or still postpartum abstaining or amenorrhoeic after the most recent birth, were excluded because they were not exposed to the risk of conception at the time of the survey. Women report that they are sterilised are classified as using a modern method for limiting. Women not in union were also excluded because their profile of method-use is very different from that of women married or in union and thus access cannot be measured in the same way for both groups. Specifically condoms are their main method of contraception whereas that method is rarely used by married women. Condom use comprised 44% of modern method use among the unmarried, but only 5% among the currently married women in 2010-11 (Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] and ICF International 2012).

### Unmet need for family planning

The main analysis is to deconstruct unmet need for family planning and to establish the relative importance of lack of access and attitudinal resistance towards use of family planning. Ansley Coale (1973) suggested that fast sustained fertility transition needs a large fraction of population who are 'ready, willing and able' to use contraceptives. Following the modification by Lesthaeghe and Vanderhoeft (2001), Cleland et al.(2011) developed novel measures in order to assess the extent to which populations possess these three preconditions for use and to measure trends. We extended and adapted the approach used in the investigation of progress in family planning need, access and attitude in Africa (Cleland et al. 2011). That study developed a novel measure of physical access: knowledge of the two most popular modern methods in sub-Saharan Africa, i.e. pills and injectables, and knowledge of a family planning supply source. This measure is not ideal for two main reasons. First, knowledge of methods may include



misinformation. Second, the restriction to pills and injectables is obviously a partial measure of knowledge of contraceptive methods but is justified by the fact that they account for three-quarters of all modern method use in Senegal and, among non-users who intend to use in the future, only 15% mentioned long-acting alternatives, such as sterilisation, IUDs or implants, as their preferred method according to the Senegal DHS 2010-11. Awareness of a source is also not an ideal measure because it tells us nothing about travelling time or distance. Nevertheless, awareness of the two dominant methods and where to obtain them captures the two most fundamental components of access.

The 2011 study by Cleland et al. also used answers to questions on approval of family planning as the measure of attitude but these questions were omitted from the most recent round of DHSs. Preliminary analysis showed that a woman's approval was strongly associated with her intention to use in the future. In the 2005 Senegal DHS, 51.3% of Senegalese women who approved of family planning had an intention to use in the future compared with only 3.6% of those who disapproved. Clearly approval and intention are not identical, perhaps in part because some of those who approve do not foresee any future need and thus do not intend to use. Nevertheless, 91% of those who intend to use approved family planning. Therefore it seems valid to interpret intention as an indicator of attitude for the purposes of this report.

Based on these two measures, we identified whether the women having unmet need for family planning also had access to, and attitudinal acceptance of, contraception. We divided the study population into 7 groups: (a) unmet need: has access and positive attitude; (b) unmet need: has access, but not positive attitude; (c) unmet need: has positive attitude, but not access; (d) unmet need: has neither access nor positive attitude, (e) using any modern method for spacing; (f) using any modern method for limiting; and (g) desire to have another child within 2 years and not using a modern method. Categories (e) and (f) represent met need while category (g) denotes no need. The detailed definitions can be found in Table A.1 in Appendix.

The question on knowledge of source of family planning was asked only of women who were not using any type of family planning, including traditional methods. Since traditional method users were not asked whether they knew a family planning source, they were excluded from the analysis. These women accounted for less than 1% of the married or cohabiting fecund women who were exposed to risk of pregnancy in the 2010-11 Senegal DHS data.

Information on prior use of a modern method is useful to distinguish between women who have past experience of contraception but may have abandoned use from those who have no such experience. The 2010-11 DHS in Senegal did collect a contraceptive calendar, which permits derivation of an approximate measure of past use of a modern method<sup>1</sup>. If a woman used any contraceptive method in any month during the period covered by the calendar (between January 2005 and the month of interview), the method they used was recorded. Among women who had unmet need, only 16% had used a modern method in the preceding 5 years.

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<sup>1</sup> Questions on whether a woman had ever used specified methods of family planning were excluded from the DHS Phase 6. Instead, a woman was asked 'Have you ever used anything or tried to delay or avoid getting pregnant?'. But the data on monthly use of family planning in the past 5 years are available in the calendar data.

## Population strata

We assessed variations in unmet need across different geographical and socio-economic population strata (residence, geographical area, respondent's education and age, household wealth, a combined measure of wealth and urban-rural residence, a combined measure of education and residence) and reproductive status (parity, recency of last birth, breastfeeding status, past use of a modern method).

## Analysis

We first assessed associations between unmet need for family planning and various population/geographical strata within Senegal by bivariate analysis using the  $\chi^2$  test. Then multivariate logistic regression and multinomial logistic regression analyses were employed to estimate adjusted probabilities of having unmet need in various population strata. In addition, reasons for non-use of family planning were explored.

## Results

The analysis is based on 4663 exposed married or cohabiting women who were not using traditional method (see Table A.2). These women comprised 45% of all currently married or cohabiting women. Appreciable proportions of married or cohabiting women were excluded because of current pregnancy (7.4%), postpartum amenorrhea (14.3%) and infecundity (11.5%).

Figure 1: Unmet need, modern method use and fertility desire, Senegal, 2010-11

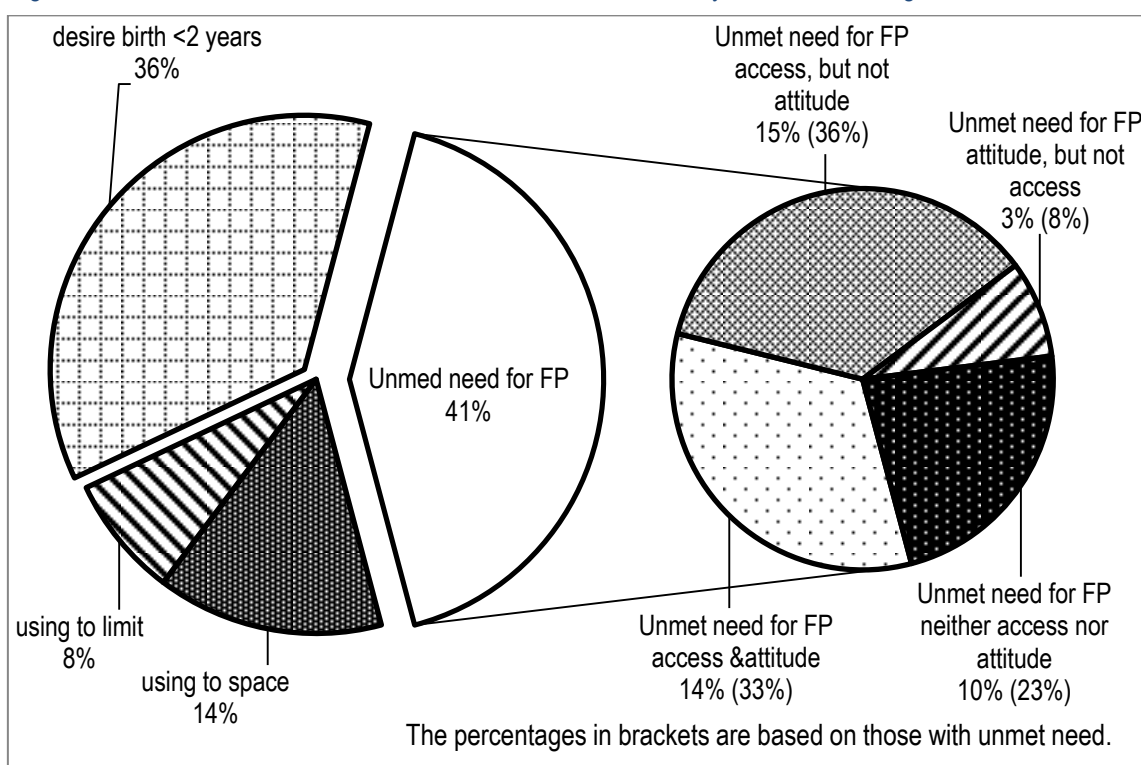
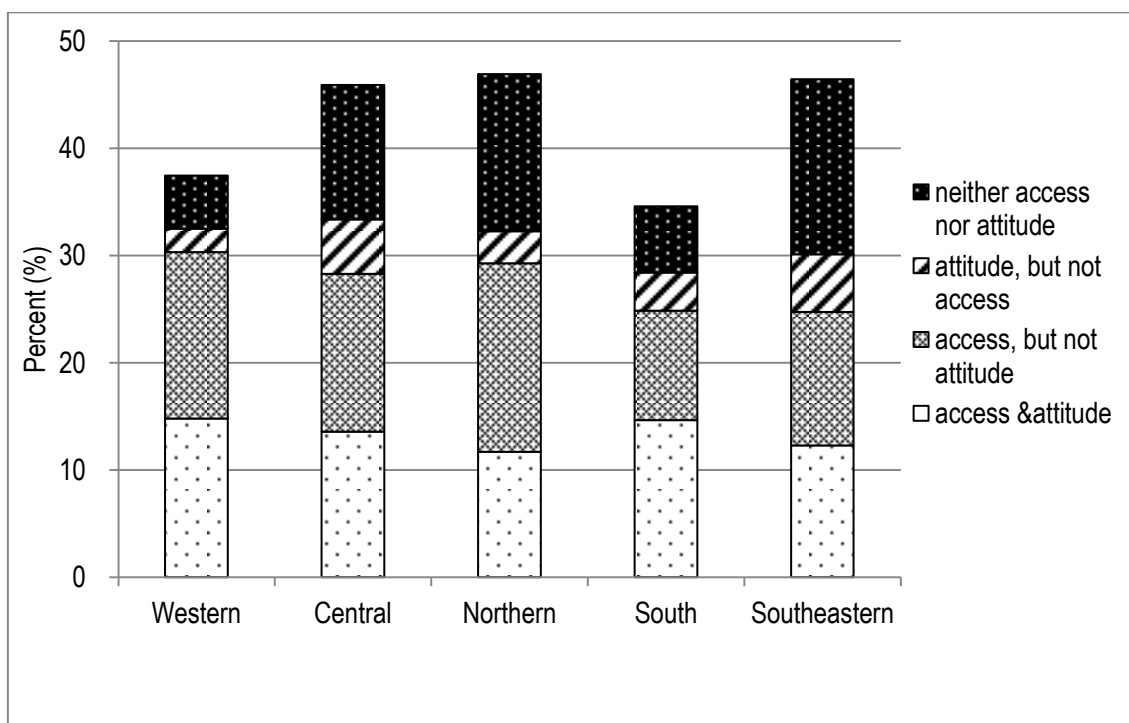


Figure 1 presents proportions of women having unmet need for family planning, using a modern method or desiring a child within the next two years. More than 40% of women had unmet need for family planning, only 22% were using modern contraceptives either for spacing or limiting and 36% wanted a child within 2 years<sup>2</sup>. Among those having unmet need for family planning, 36% were classified as having access but not positive attitude, a third as having access and a positive attitude and another third lacked access. Thus a majority (69%) had access, and about a half of these women had a favorable attitude. Among the 31% without access, the majority had an unfavorable attitude. Resistance to contraception use appears to be widespread.

Inequalities in unmet need across various population and geographical strata were substantial. Table A.3 presents distributions of unmet need, fertility preference, and modern method use by the strata. In particular, unmet need was significantly higher among rural residents, older women, women with no education, and the poorest.

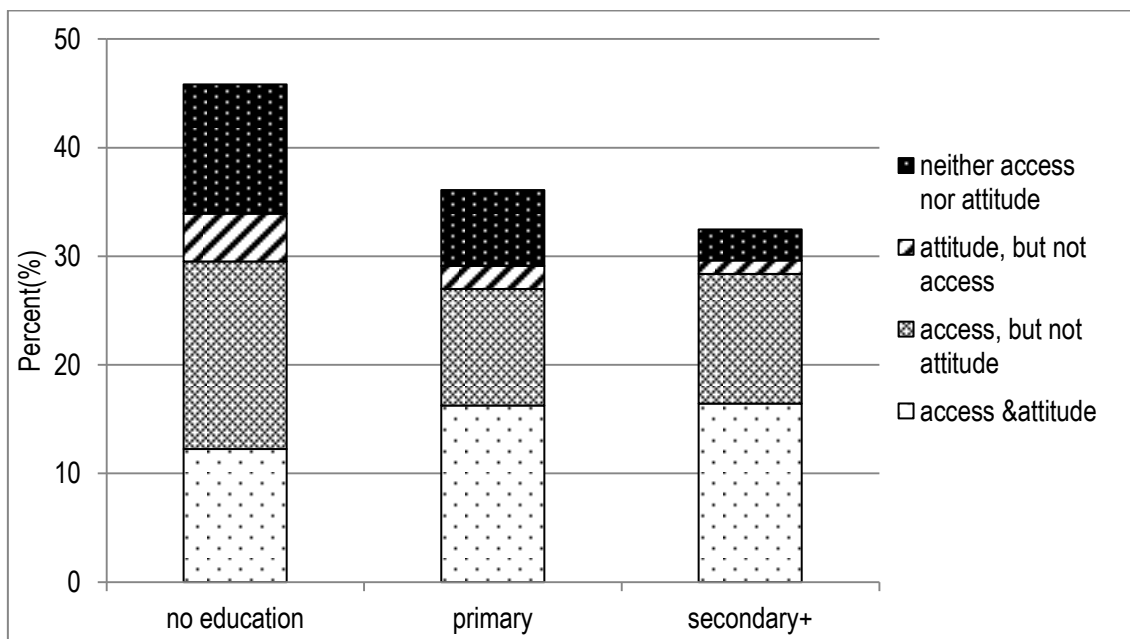
There were also significant regional variations (see Map in Figure A.1 in Appendix). However the dominant impression is that unmet need is high in all regions, including the Western region where the capital city, Dakar, is situated. Unmet need ranges from 35% in the South to 47% in the Northern region (see Table A.3 and Figure 2). Access and attitudinal acceptance varied between regions. Forty-two percent of women with unmet need in the South had access and a favorable attitude. In contrast, only 26% of women in the Southeastern region had both access and attitude and the majority (35%) had neither access nor positive attitude.

Figure 2: Unmet need for family planning by geographical area



<sup>2</sup>Traditional and folkloric methods (including lactational amenorrhea method (LAM)) were not regarded as modern methods. LAM is sometimes regarded as a modern method, but in the survey only one exposed woman reported LAM.

Figure 3: Unmet need for family planning by education



Educational inequality was apparent. The majority (63%) of married or cohabiting exposed women had received no schooling, 24% had primary schooling and 13% secondary or higher education. Among the uneducated, 46%, compared with about 33% with primary or more education, had unmet need (Figure 3). Attitudinal resistance was particularly high among women with no education: 64% of women with unmet need and no education compared with 50% with primary education had no intention to use contraception in the future. Lack of access was also appreciably higher among the uneducated than others.

Large urban-rural differences are also apparent (Table A.3 page 24). Nearly one-third (32%) of urban women were using a modern method compared with only 12% of rural women. The difference in unmet need was much narrower (38% versus 45%) because rural women were more likely than their urban counterparts to want another child soon (29.5% versus 42.4%).

On page 26 of this report, distributions of unmet are shown by a joint variable combining education and residence. As expected there was an educational gradient in unmet need in both urban and rural sectors but, even among the small elite of urban women with secondary schooling, 32% had unmet need. Few of this elite had lack of access, but 43% stated no intention to use contraception in the future.

Figure 4: Unmet need for family planning by household wealth

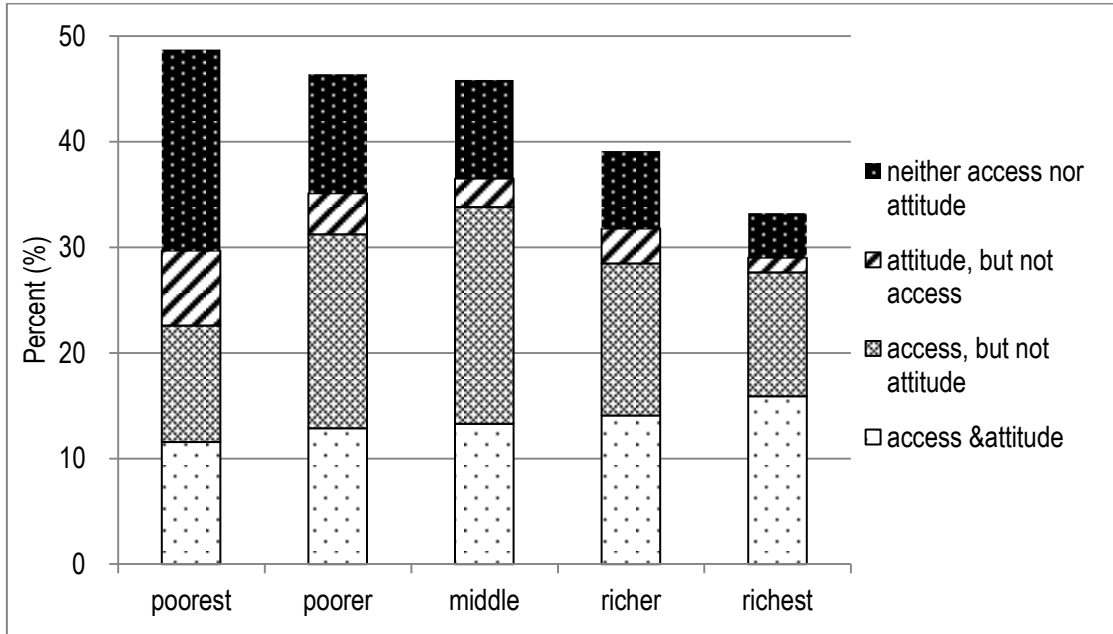
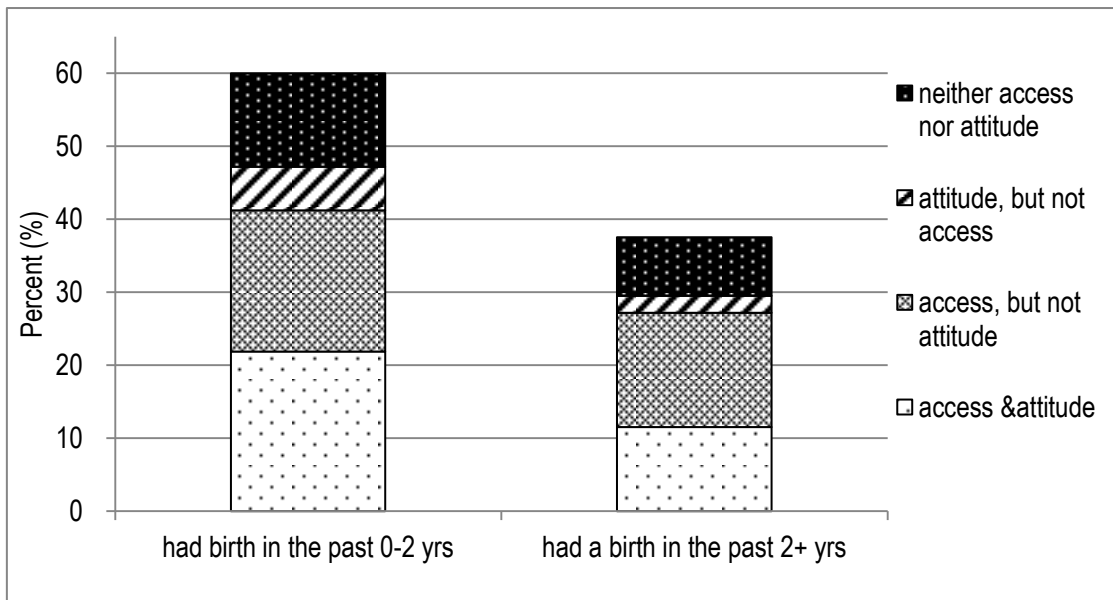


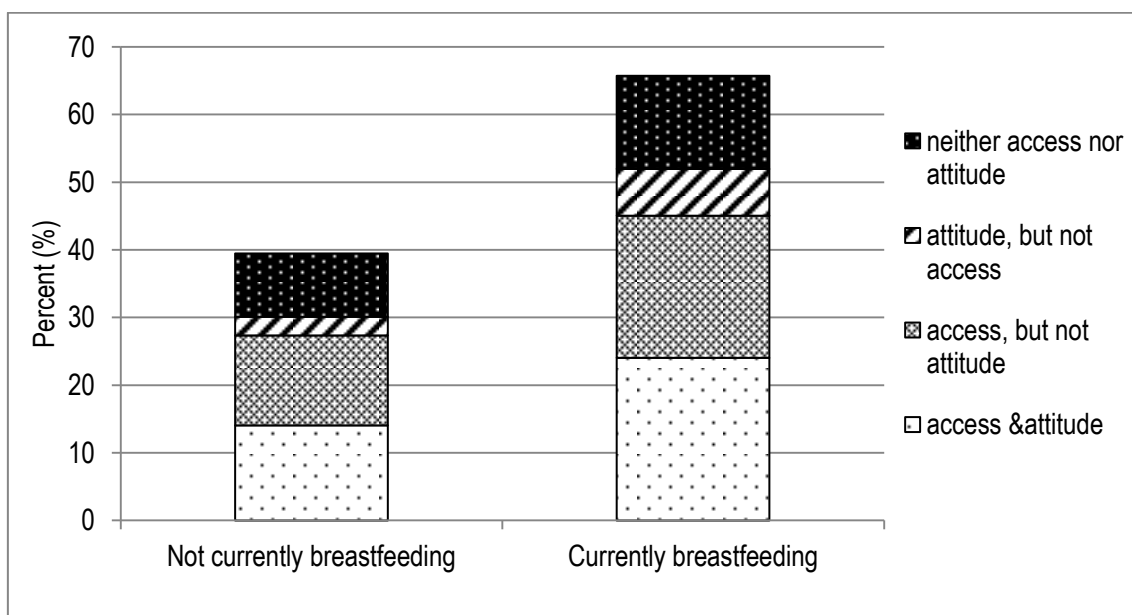
Figure 4 shows clear gradients of unmet need across wealth quintiles. About half of women in the poorest quintile compared with only one-third in the richest quintile had unmet need. Women who had neither access nor attitude were disproportionately concentrated in the poorest quintile. Thirty-nine percent of them had neither access nor favorable attitude towards use of family planning.

Figure 5: Unmet need for family planning by time since the last birth



One of the groups with the highest unmet need was women who had a birth in the 2 years prior to the survey. Among these, 60.0% reported unmet need compared with 37.6% among women who had a birth 2 years or more ago (see Figure 5). Over 36% of the postpartum women with unmet need had no apparent problems of access or attitude.

Figure 6: Unmet need for family planning by breastfeeding status among women who had a birth within last 2 years



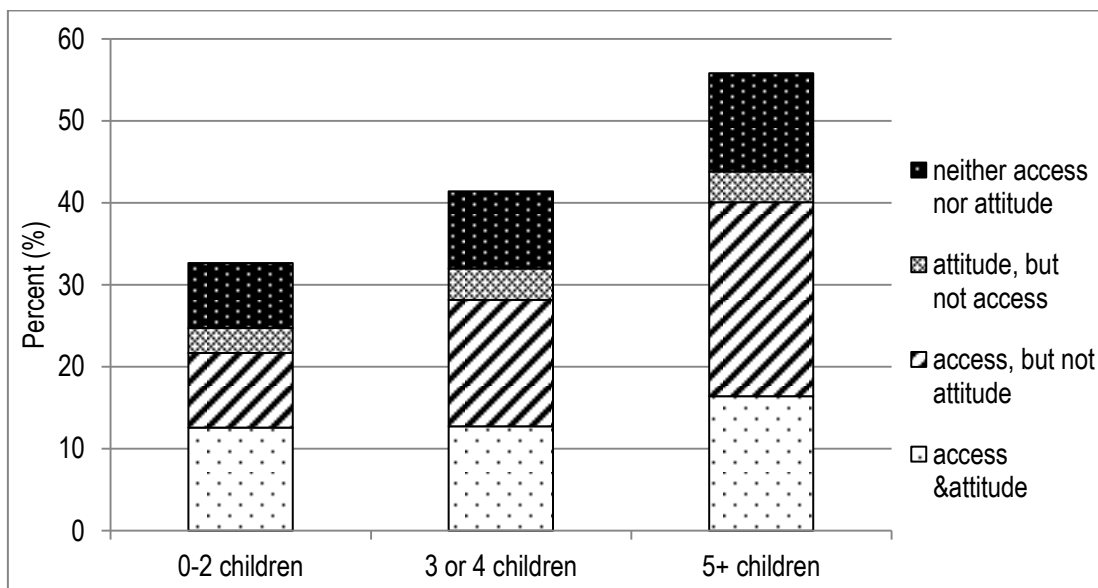
As presented in Figure 6, among women who had a birth within the 2 years prior to the survey, breastfeeding women differed markedly from women who weaned their child in the level of unmet need: 66% of breastfeeding women compared with 40% of women who were not breastfeeding had unmet need. The reason for this difference is that the latter were much more likely to want another child within 2 years (36.4%) than those still breastfeeding (9.5%). Differences between the two groups in current use were negligible (see Table A.3). Among women whose most recent birth was 2 years or more ago, the minority still breastfeeding had higher unmet need than others.

Unmet need differed across parity as well. As shown in Figure 7, 56% of women with 5 children or more had unmet need compared with 33% with 0-2 children. Most of the women with high parity had access, but favourable attitude was lacking. Small differences in unmet need by woman's age group (<30 years old vs 30+ years old) also exist.

Unmet need was exceptionally high (63%) among the relatively small number of women who want no more children (Table A.3). However, because the desire to space or postpone childbearing is much more common than the desire to stop altogether, two-thirds of unmet need in Senegal stems from non-use among women wanting to delay the next birth.

The majority of women with unmet need have no experience of modern method use in the past five years and most of them are probably never users. Past users accounted for only 16% of unmet need (Table A.3).

Figure 7: Unmet need for family planning by parity



#### Multivariate and multinomial logistic regression

The analysis so far has been mainly descriptive. In order to more closely identify the factors that give rise to unmet need, logistic regression was applied and results are shown in Table A.4. The adjusted odds ratios indicate the association between personal characteristics and having unmet need versus being a modern method user, after controlling for other factors.

Geographical differentials were large. Rural women were significantly more likely than urban women to experience unmet need. Women living in Southeast region were 1.9 times more likely to report unmet need than women living in Western region. Women in Central region also had about 1.6 times higher risk of having unmet need compared with those in Western region, after controlling for other factors. Educational inequality was apparent. Women with primary or more education had a half the odds of having unmet need, compared with women who had not gone to school. Women in the poorest quintile had 1.7 times higher risk of having unmet need than the women in middle quintile. Age was not associated with unmet need but parity was. Women with less than 3 children had significantly higher unmet need than those with 3-4 children. Unmet need was also higher among breastfeeding women than others.

The results of a more complex multivariate analysis, using multinomial logistic regression, are shown in Table A.5. Non-users are here divided into five categories based on our four combinations of access and attitude, together with a fifth category of those who want a child in the next two years and thus have little or no unmet need and a convincing reason for non-use. The adjusted relative risk ratios show the ratios of probability of being in each of these five categories of non-use relative to the probability of being a modern method user.

Relative risk ratios show that in comparison to women in urban areas, rural women were more likely to be in each of the four categories of unmet need and to want another child soon. All but one of these differences was significant at the 95% confidence level. The finding indicates that women in rural areas

were more likely to have unmet need and lack of both access and attitudinal acceptance are more common problems than among urban women.

The most pronounced effects in Table A.5 concern education and geographical residence (residence and region). Compared with women with some education, women with no schooling had much less access and, when they did have access, were more likely to have an unfavorable attitude. They were also more likely to want another child soon.

Compared with women in the Western region, women in all regions except the South were over 2.3 times more likely to have unmet need with neither access nor attitude than to be a modern contraceptive users. The results suggest that attitudes were more favorable in the South than elsewhere; these women were significantly less likely to belong to the category of unmet need with access but without positive attitude. Women in the Southeast and, to a lesser extent women in the Central region, were more likely to want another child soon than those in other regions.

Lack of access was more apparent among women in the poorest quintile. Compared with women in the middle quintile, they were over 3.0 times more likely to have unmet need without access than to be modern contraceptive users. The chance of being belong to the group with access and attitude compared to being modern contraceptive user did not differ across different level of education or wealth quintile. As discussed later, the reasons for unmet need among women with access and a positive attitude include breastfeeding or infrequent sex.

Unmet need among breastfeeding women was high. Based on the multinomial regression, the reasons stem from both attitude and access. Unsurprisingly, breastfeeding women were much less likely to want another child soon than other women. Low parity women also have high unmet need but neither attitude nor access appears to be a particular problem.

### Reasons for non-use of family planning

In answer to a question on reasons for unmet need, multiple responses were permitted; about 5% gave more than one reason (Table A.6). The main reasons for non-use of family planning were respondent's opposition (18.6%) and infrequent sex (17.7%); breastfeeding and health concerns were also often mentioned (Table 1).

Table 1 compares the four categories of unmet need, defined in terms of access and attitude, with self-reported reasons. The first three reasons in the table are related to attitudinal resistance and the next two are associated with access problems. The remaining reasons identify other problems. The reasons varied among the four categories. Among women defined as having access and attitude, infrequent sex (22.8%), breastfeeding (19.1%) and health concerns (15.5%) were most commonly mentioned, i.e. reasons not associated with access or attitude. As expected, among the group with attitude but no access the most common reason for non-use was lack of knowledge and opposition was less frequently mentioned.

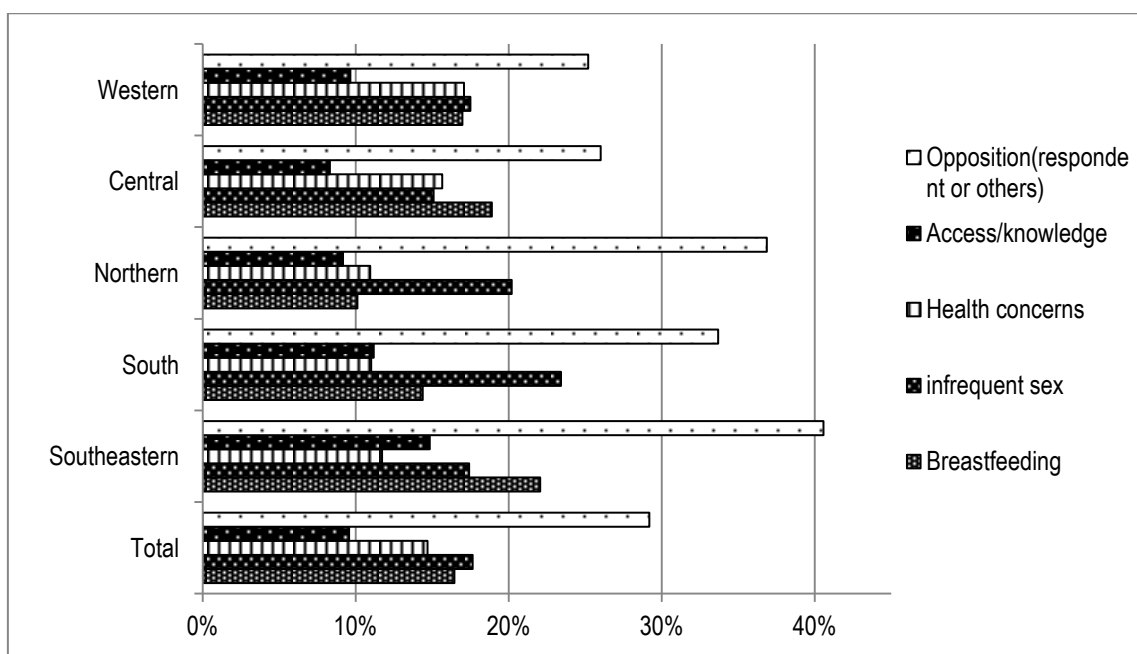


Table 1: Reasons for non-use of family planning by categories of unmet need<sup>3</sup>

	access and attitude	access, but not attitude	attitude, but not access	neither access nor attitude	TOTAL
Respondent's opposition	7.5	25.3	10.4	27.8	18.6
Partner's/ others' opposition	10.1	14.4	9.2	10.3	11.7
Religion	1.0	4.4	1.8	5.2	3.2
Lack of knowledge	4.8	2.3	15.8	6.0	5.1
Access/cost	7.8	2.3	12.7	1.1	4.8
Infrequent or no sex	22.8	14.9	15.7	15.3	17.7
Breastfeeding	19.1	14.5	17.4	15.6	16.5
Health concerns/side effect/interfere with body	15.5	15.9	13.8	11.8	14.7
Fatalist	0.4	1.2	0.8	0.7	0.8
Others/don't know	12.3	4.8	3.5	5.5	7.3
N	550	630	142	337	1660

In contrast, among both groups of women with an unfavourable attitude, respondent's opposition was the most commonly cited reason. Partner's opposition was also the fifth most cited reason. Women with neither access nor attitude had a similar profile, but the proportion citing partner's opposition was relatively smaller and lack of knowledge was higher.

Figure 8: Reason for non-use by geographical area



<sup>3</sup>286 women with unmet need did not have information about reasons for not using family planning: 213 women were not asked as they provided non-numeric answer to the question on preferred waiting time and 73 women were not asked because they have undecided about having a/another child.

Figure 8 further shows major reasons for non-use by geographical areas. In the Southeastern area, the proportion of women who mentioned opposition from respondent, husband or others was particularly high (40.6%), followed by breastfeeding and infrequent sex. In the Northern and South region, infrequent sex and opposition were also common. Western and Central area had similar profiles. But in addition to opposition, health concerns, breastfeeding and infrequent sex were mentioned more often, and problems related to access or knowledge were much less commonly mentioned.

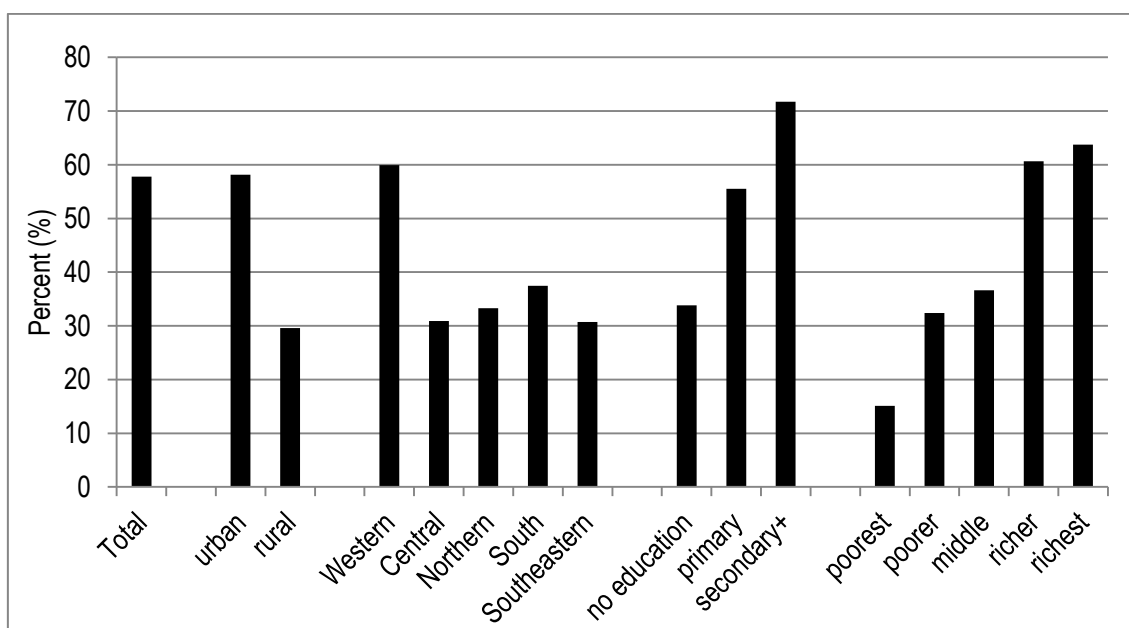
Variations in self-reported reasons across other population strata were examined (data not shown). Respondent's opposition varied significantly by level of education, wealth and postpartum status: higher proportions of less educated women and women who had a birth 2 or more years ago mentioned opposition. Infrequent sex differed by residence, education, wealth and postpartum status. It was more commonly cited by richer, more educated and urban women than their counterparts. It was mentioned more among women who had a birth 2 or more years ago than those who gave a birth within 2 years prior to the survey.

### Opposition to use

Respondent's opposition was one of the major reasons for non-use in Senegal. It may stem from personal belief, or partner's or relative's opposition. Religion was rarely mentioned. Opposition by husbands or others was less frequently cited than respondent's own opposition but a clear distinction between the two is difficult to draw because of the probability that the views of partners influence each other. One potential reason could be low exposure to family planning message. Indeed, only 58% of the women reported that they have heard or read family planning messages on TV, radio or newspaper in the preceding month. Among those exposed to the family planning messages, 26.7% mentioned opposition as a reason for non-use compared with 31.1% among those not exposed to the messages. Although the difference was not significantly different, women who received the family planning message appear to have a less negative attitude towards family planning.

Figure 9 presents proportions of women who had heard family planning messages in the preceding month. There were substantial differences across population strata. Less than one-third of rural women had heard messages compared with nearly 60% of urban women. Exposure in the Western area is twice as high as elsewhere. Inequalities by level of education and wealth quintile were substantial. Only 15.0% of the women in the poorest quintile had heard messages in the preceding month.

Figure 9: Proportion of women who had heard family planning messages from either TV, radio or newspaper in the preceding month by various population strata



### Infrequent Sex

Infrequent sex was often mentioned as a reason for non-use. As a partial check on the validity of this response, answers to an independent question on recency of last sex were examined. This does not measure average frequency of sex a year, but this is the only available information in the DHS survey and can be regarded as a proxy for coital frequency. Women citing infrequent sex were indeed much less likely than others to report sex in the preceding 4 weeks (Table 2). Nevertheless one-third did report sex in the recent past though coital frequency may have been low.

Table 2: Recency of last sex by whether infrequent sex was given as a reason for non-use

Recency of last sex	Reason for non-use: infrequent sex		Total
	No (%)	Yes (%)	
in last 4 weeks	81.7	34.7	72.9
in last 3 months	13.2	36.7	16.8
4 or more months ago	5.0	28.2	8.6
before last birth	0.2	0.4	0.2
Total	100.0	100.0	100

N = 1581 (79 women did not report time since the last sex)

To test the hypothesis that infrequent sex is used as an alternative to contraception, we examined the correlates of sexual abstinence in the preceding month by logistic regression (Table A.7). After adjustment for contraceptive use, residential status, marriage type (polygynous or monogamous),

breastfeeding, parity and age, significant associations were found between desire for, and timing of, another child and abstinence. Residential status was a strong predictor of not having sex in the past 4 weeks. Women reporting that their husband was staying elsewhere, in answer to the question “*is your husband/partner living with you now or is he staying elsewhere?*”, were 12.5 times more likely to have abstained from sex in the last 28 days than others. Among the exposed married or cohabiting women, 35% reported that their husband was staying elsewhere at the time of survey. Nonetheless, after adjustment for residential status, contraceptive use, type of marriage, education, parity, postpartum status and other factors, significant associations were found between abstinence and desire to stop childbearing. Women who wanted no more children were 1.5 times more likely to have abstained in the past 4 weeks. Moreover, non-users of contraception were 1.8 times more likely to report abstinence than users. Women with less than 3 children were significantly more likely than others to report no sex. Perhaps couples with 0-2 children may have stronger resistance to using a modern method since they have not reached their desired family size or the number of children expected by society. While the residential arrangement is a strong determinant, these results provide some support for the view that reduced coital frequency is deployed in Senegal as an alternative to contraceptive methods.

## Discussion and Implications

Unmet need for contraception is high in Senegal. Among married or cohabiting women exposed to the risk of pregnancy at the time of the survey but wanting to postpone future childbearing for at least two years, 41% reported they were using no modern method, an estimate of unmet need higher than that given in the Senegal DHS 2010-11 Main report which included unexposed women.

The dominant impression from this analysis is perhaps typical of an African country at an early stage of reproductive change. Mean desired family size remains high at 5.2 children, which matches the actual fertility rate. In the sample of 4663 exposed women, over one-third (36%) wanted another child within two years and 79% wanted another child either soon or later. Most unmet need stems from the desire to space or delay the next pregnancy. Postpartum abstinence is short (3.5 months). Traditional restraints on conception are insufficient. Median durations of breastfeeding and amenorrhoea are much longer, at 21 and 12 months, respectively (Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] and ICF International 2012), but still inadequate to achieve desired intervals between births. Moreover, the length of lactational protection has shortened by several months over the past two decades. In 2005, the mean preferred interval length was estimated to be 36 months compared with a mean actual interval of 32 months and 56% of women experienced an interval shorter than preferred (Rutstein 2011). In 2010-11, 24% of recent births were reported as unintended but 20% were mistimed and only 4% unwanted (Agence Nationale de la Statistique et de la Démographie (ANSD) [Sénégal] and ICF International 2012). The need for contraception to space births is clear.

One of the main objectives of this analysis was to ascertain the relative importance of lack of access and attitudinal resistance as origins of unmet need. Attitudinal resistance was found to be more widespread than lack of access. Among women with unmet need, 61% did not intend to use in the future and were therefore classified as possessing an unfavourable attitude, whereas 31% were unaware of pills and injectables and/or did not know of a supply source and were therefore classified as lacking access. A positive attitude was associated with access; about half of those with access had a favourable attitude

compared with less than one quarter of those without access. Resistance to contraception thus stems partly from unfamiliarity and lack of knowledge. Few women with unmet need have ever tried a modern method.

Widespread attitudinal resistance is confirmed by answers given to a direct question on reasons for non-use. The single most common reason, given by 19%, was respondent's opposition to contraception and 12% cited the opposition of the husband or others. Respondent's opposition was cited much more often by women with no intention to use in the future than those with an intention but the opposition of others was an equally common answer in both groups. The evidence does not permit assessment of the strength of resistance but it is relevant to note that initial disquiet about, and suspicion of, the idea of contraception and of specific methods is common in countries with low levels of adult education. It may take time, and effort in terms of communication, for contraception to become an accepted and uncontroversial part of everyday married life but, judging by the experience of other poor countries over the past 50 years, this shift is inevitable.

A common reason for non-use is infrequent sex. The proportion giving this response does not vary greatly across the four main categories of unmet need, defined in terms of attitude and access, though it is the most common reason given by women with access and a positive attitude. This reason is printed uppermost in the list of reasons in the questionnaire, giving rise to suspicions that this placement may have inflated responses. However comparison with an independent question on recency of last sex suggests that infrequent sex is not merely an artefact of questionnaire design or a misleading answer. Only 32.5% of women giving this reason for non-use reported sex in the past month compared with 81% of other women. Multivariate analysis of the correlates of recent sexual abstinence showed that abstinence was strongly associated with whether their husbands were living with respondents in the same household at the time of the survey. In the Senegalese traditional family model, a couple does not necessarily live together in the same household. Based on Findley's estimation, between 43% and 68% of couples live separately for a few years at some point in their lives in Senegal (Findley 1997). Increasing number of women in Senegal reported that their husband was staying elsewhere at the time of the survey. In the Senegal DHS 2010-11, 35% of the exposed women in union were not staying with their husband or partners. Nevertheless, even after adjustment for cohabitation, abstinence was more common among those wishing to stop childbearing than among those wanting another child soon and also much higher among non-users than users of contraception. These results suggest that abstinence, or reduced coital frequency, may be deployed as a partial substitute for contraception. This behaviour does not appear to take the form of periodic abstinence; this method was explicitly introduced to respondents as a possible method in that part of the questionnaire dealing with contraceptive knowledge, but very few women reported use. However, abstinence, other than avoidance of sex at particular times of the menstrual cycle, was not identified as a method in the questionnaire and thus would remain unreported. In the first DHS of 1986, abstinence was accepted as a method of avoiding pregnancy and was the most commonly reported method used at that time. However, abstinence has been not been a pre-specified method in the Questionnaire since the second round of DHS, and only periodic abstinence and withdrawal are specified. Therefore, with DHS data, no further progress can be made in elucidating the possible role of abstinence within marriage as a means of reducing pregnancy-risk. Ethnographic research might pay dividends.

Unmet need was found to be particularly high among breastfeeding women. The main reason was that women nursing a child aged two years or less were much less likely to want another child soon than women who had weaned their child but were no more likely to be using contraception. Breastfeeding was a common reason given for non-use in all four categories of unmet need. Clearly, concerns exist about the compatibility of contraception and breastfeeding.

Geographical and socio-economic differences in current use of a modern method were very pronounced. For instance, over 30% of urban and of educated women were users compared with 12% of rural women and 16% of those with no schooling. Contraceptive prevalence was 32% in the Western region but only 10% in the Southeastern part of the country. Differences in unmet need were also substantial but not as large as those for use, because desire for another child in the near future tends to be more prevalent among the low use groups. It is also true that unmet need and unfavourable attitudes are common in all population strata examined. Even in the small elite of urban women with secondary schooling, 32% had unmet need and, among these, 42% had no intention to use in the future.

The historic weak implementation of family planning programmes in Senegal is evidenced by the fact that, in 2010-11, nearly one-third of married or cohabiting women were either unaware of the two main methods of contraception and/or did not know a source where they could be obtained. This lack of access is particularly common in Central, Northern and Southeastern parts of the country. Thus a first policy priority, and one that is relatively easy to achieve, is to increasing knowledge through the mass media and localised awareness-raising activities. An equally important, but more difficult objective, is to improve the climate of opinion about contraception. In urban areas, considerable progress has already been made: 32% are using a modern method and an additional 17% intend to do so in the future. In rural areas, use and positive attitudes are at a much lower level. Active advocacy of family planning by political, religious and traditional leaders, at both national and local levels, may be needed to achieve social legitimation. In addition, efforts to address the high unmet need of breastfeeding women constitute a more focused priority.

The Senegal government has recently repositioned family planning policy, and is committed to double the overall budget for the management of the family planning programmes. The above two recommendations are clearly stated as two of the six fundamental pillars in the National 2011-2015 Family Planning Action Plan. The strong policy is now in place, and awaits effective implementation.

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## Appendix

Figure A.1: Map of Senegal



**Western:** Dakar and Thiès Régions

**Central:** Diourbel, Fatick, Kaolack and Kaffrine Régions

**Northern:** Saint-Louis, Louga and Matam Régions,

**South:** Ziguinchor, Sédhiou and Kolda Régions

**Southeast:** Tambacounda and Kédougou Régions

*Source: Senegal DHS 2010-11 final report.*



Table A.1: Definition of indicators used for the analysis (All indicators are confined to fecund/non-pregnant, non-abstaining currently married or co-habiting women)

	Indicator	Definition
1	Unmet need for FP (access & attitude)	% of all women who have access (knowledge of pills and injectables, and a supply source) and attitude (intention to use in the future) to FP use and want to delay next child for at least 2+ year, but NOT using modern method among all women
2	Unmet need for FP (access & but not attitude)	% of all women who have access, but do not have attitude to FP use and want to delay next child for at least 2+ year, but NOT using modern method among all women
3	Unmet need for FP (attitude, but not access)	% of all women who have attitude, but do not have access to FP use and want to delay next child for at least 2+ year, but NOT using modern method among all women
4	Unmet need for FP (neither access nor attitude)	% of all women who have neither access nor attitude to FP use and want to delay next child for at least 2+ year, but NOT using modern method among all women
5	Want another child and using modern method	% of all women who want another child using modern method among all women
6	Want no more children and using any modern method for limiting	% of all women who want no more child and using modern method among all women
7	Desire a birth within 2 years	% of all women who want another child within 2 years among all women (excluding modern contraceptive current users)

Table A.2: Distributions of women, Senegal DHS 2010-11

		Weighted N	%
Currently married/cohabiting	Exposed to pregnancy risk at survey <sup>a</sup>	4,663	29.7
	Fecund & not postpartum abstaining & had unmet need, but data on knowledge of a supply source and intention were not collected or missing <sup>b</sup>	76	0.48
	Fecund & postpartum abstaining	400	2.55
	Pregnant	1159	7.39
	Amenorrhic	2,242	14.3
	Infecund, menopausal	1,807	11.5
Never/formerly married		5,341	34.0
Total		15,688	100.0

<sup>a</sup> Women who were not pregnant, or still postpartum abstaining or amenorrhic after the most recent birth.

<sup>b</sup> These were using a traditional method.

Table A.3: Distribution of unmet need for family planning, modern method use and fertility desire in next 2 years

		Total		Residence		Geographical area				
		Weighted N	%	urban	rural	Western	Central	Northern	South	Southeastern
<b>Percentages</b>										
Unmet need for FP	access &attitude	642	13.8	15.3	12.3	14.8	13.6	11.7	14.7	12.3
	access, but not attitude	700	15.0	14.3	15.6	15.5	14.7	17.6	10.2	12.5
	attitude, but not access	160	3.4	2.6	4.3	2.2	5.1	3.0	3.6	5.4
	neither access nor attitude	444	9.5	5.8	13.0	5.0	12.6	14.6	6.2	16.3
using to space		671	14.4	21.8	7.4	21.3	8.1	11.5	13.8	6.9
using to limit		360	7.7	10.6	5.0	11.0	5.2	5.1	9.0	3.1
desire birth <2 years		1686	36.2	29.5	42.4	30.3	40.7	36.5	42.6	43.6
Total		4663	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Total unmet need</i>			<i>41.7</i>	<i>38.0</i>	<i>45.2</i>	<i>37.5</i>	<i>45.9</i>	<i>46.9</i>	<i>34.6</i>	<i>46.5</i>
p-value for $\chi^2$ test		1946			<0.001					<0.001
<b>Weighted N</b>										
Unmet need for FP	access &attitude	642		347	295	275	179	94	62	33
	access, but not attitude	700		324	376	288	195	141	43	33
	attitude, but not access	160		58	103	40	67	24	15	14
	neither access nor attitude	444		131	313	92	166	117	26	43
using to space		671		494	178	396	107	92	58	18
using to limit		360		241	119	204	69	41	38	8
desire birth <2 years		1686		667	1019	562	537	292	179	116
Total		4663	0.41	2261	2402	1857	1320	801	420	265

		Mother's age		Mother's education			Household wealth				
		<30 yrs	30+ yrs	no education	primary	secondary+	poorest	poorer	middle	richer	richest
<b>Percentages</b>											
Unmet need for FP	access & attitude	13.2	14.3	12.3	16.3	16.4	11.6	12.9	13.3	14.1	15.9
	access, but not attitude	11.0	19.0	17.3	10.7	12.0	11.0	18.3	20.5	14.4	11.7
	attitude, but not access	4.1	2.8	4.4	2.1	1.2	7.1	3.9	2.7	3.3	1.4
	neither access nor attitude	10.4	8.6	11.9	7.0	2.9	19.0	11.3	9.3	7.3	4.2
using to space		15.2	13.6	9.4	20.4	27.2	4.0	8.3	12.6	18.2	23.3
using to limit		0.9	14.5	6.8	10.0	8.1	4.9	5.7	8.3	8.7	9.6
desire birth <2 yrs		45.2	27.1	38.0	33.4	32.3	42.4	39.6	33.3	34.0	33.9
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Total unmet need</i>		<i>38.7</i>	<i>44.8</i>	<i>45.8</i>	<i>36.1</i>	<i>32.5</i>	<i>48.7</i>	<i>46.4</i>	<i>45.8</i>	<i>39.1</i>	<i>33.2</i>
p-value for $\chi^2$ test			<0.001			<0.001					<0.001

<b>Weighted N</b>											
Unmet need for FP	access & attitude	308	334	359	182	102	89	102	117	151	184
	access, but not attitude	257	443	506	120	74	85	145	181	154	136
	attitude, but not access	96	65	129	24	8	54	31	24	35	16
	neither access nor attitude	243	201	348	78	18	146	89	82	79	49
using to space		354	318	275	229	168	31	66	111	195	269
using to limit		22	338	198	112	50	37	45	73	93	111
desire birth <2 years		1056	630	1113	374	199	325	312	293	365	391
Total		2335	2328	2927	1118	618	766	789	881	1072	1156

		Wealth + Residence				Education + residence				
		urban/ poor	urban/ rich	rural/ poor	rural/ rich	urban/ no education	urban/ primary education	urban/ secondary+	rural/ no education	rural/ primary+
<b>Percentages</b>										
Unmet need for FP	access &attitude	12.6	16.1	12.5	12.0	13.2	17.0	17.0	11.8	14.4
	access, but not attitude	22.1	12.3	13.4	18.9	19.3	9.8	11.8	16.3	12.9
	attitude, but not access	4.3	2.1	5.4	2.7	4.3	1.3	1.2	4.5	3.4
	neither access nor attitude	9.0	5.0	15.6	9.3	6.8	7.2	2.0	14.4	6.8
using to space		15.2	23.6	5.8	9.7	17.2	22.6	29.3	5.5	15.6
using to limit		10.3	10.7	5.3	4.5	9.8	12.5	9.5	5.3	3.7
desire birth <2 years		26.6	30.3	42.1	42.9	29.5	29.7	29.3	42.2	43.3
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Total unmet need</i>		<i>47.9</i>	<i>35.4</i>	<i>46.9</i>	<i>42.9</i>	<i>43.5</i>	<i>35.2</i>	<i>32.0</i>	<i>47.0</i>	<i>37.5</i>
p-value for $\chi^2$ test					<0.001					<0.001

<b>Weighted N</b>										
Unmet need for FP	access &attitude	60	287	177	118	128	131	89	231	64
	access, but not attitude	104	220	190	186	187	75	62	319	57
	attitude, but not access	20	38	76	27	41	10	6	88	15
	neither access nor attitude	42	89	221	92	66	55	11	283	30
using to space		72	422	82	96	167	174	153	108	69
using to limit		49	192	75	45	95	96	49	103	16
desire birth <2 years		125	542	597	422	286	229	153	827	192
Total		472	1790	1417	985	969	770	522	1958	444

		Time since the last birth			Breastfeeding (last birth <2 yrs)		Breastfeeding (last birth ≥2 yrs)	
		no children	had birth in the past 0-2 yrs	had a birth in the past 2+ yrs	Not currently breastfeeding	Currently breastfeeding	Not currently breastfeeding	Currently breastfeeding
<b>Percentages</b>								
Unmet need for FP	access & attitude	3.7	21.9	11.5	14.0	24.1	11.5	11.9
	access, but not attitude	2.8	19.4	15.7	13.3	21.0	15.3	21.2
	attitude, but not access	1.9	6.0	2.3	2.7	6.9	1.9	8.9
	neither access nor attitude	7.6	12.8	8.0	9.4	13.8	7.5	16.2
using to space		5.2	19.6	13.7	18.7	19.9	13.6	14.8
using to limit		0.0	5.0	11.5	5.4	4.9	12.0	3.2
desire birth <2 years		78.8	15.3	37.2	36.4	9.5	38.1	23.8
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Total unmet need</i>		<i>16.0</i>	<i>60.0</i>	<i>37.6</i>	<i>39.5</i>	<i>65.7</i>	<i>36.3</i>	<i>58.3</i>
p-value for $\chi^2$ test				<0.001		<0.001		0.004

<b>Weighted N</b>								
Unmet need for FP	access & attitude	25	331	286	46	285	268	18
	access, but not attitude	19	293	388	44	249	357	31
	attitude, but not access	13	90	57	9	81	44	13
	neither access nor attitude	51	194	199	31	163	175	24
using to space		35	297	339	62	235	318	22
using to limit		0	76	284	18	58	279	5
desire birth <2 years		532	232	922	120	112	887	35
Total		675	1514	2475	329	1184	2,328	147

		Parity			Want another child		Used modern method in the past 5 years	
		0-2 children	3 or 4 children	5+ children	Yes	No	No <sup>a</sup>	Yes
<b>Percentages</b>								
Unmet need for FP	access & attitude	12.6	12.7	16.4	12.9	17.1	14.1	13.1
	access, but not attitude	9.1	15.4	23.7	11.4	28.8	19.9	5.4
	attitude, but not access	3.0	3.8	3.8	3.2	4.3	5.0	0.3
	neither access nor attitude	7.9	9.4	12.0	8.7	12.7	14.0	0.8
using to space		14.8	21.6	8.4	18.2	0.0	0.0	42.7
using to limit		0.7	5.5	20.1	0.0	37.1	0.0	22.9
desire birth <2 years		51.8	31.6	15.7	45.7	0.0	46.9	15.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Total unmet need</i>		<i>32.7</i>	<i>41.4</i>	<i>55.8</i>	<i>36.2</i>	<i>63.0</i>	<i>53.1</i>	<i>19.5</i>
p-value for $\chi^2$ test				<0.001		<0.001		<0.001

<b>Weighted N</b>								
Unmet need for FP	access & attitude	272	137	233	475	167	437	205
	access, but not attitude	198	166	336	420	280	615	85
	attitude, but not access	66	41	53	118	42	156	4
	neither access nor attitude	172	101	171	321	124	432	12
using to space		321	232	119	671	0	0	671
using to limit		15	59	286	0	360	0	360
desire birth <2 years		1124	339	223	1686	0	1450	235
Total		2167	1075	1421	3692	972	3090	1573

<sup>a</sup> 'No' includes women who had never tried to delay or avoid pregnancy, women who did not use modern method for 5 years prior to the survey, and those who had used traditional method but not modern method for 5 years prior to the survey.

Table A.4: Adjusted odds ratio for unmet need versus using a modern method

		SENEGAL			
		Adjusted OR	95% CI		
Residence (ref. urban)	Rural	1.57	1.15	2.13	**
Area (ref. Western)	Central	1.57	1.10	2.24	*
	Northern	1.41	0.99	2.03	
	South	0.76	0.50	1.15	
	Southeast	1.88	1.16	3.04	**
Wealth (ref. Middle)	Poorest	1.70	1.18	2.47	**
	Poor	1.19	0.86	1.66	
	Rich	0.86	0.64	1.15	
	Richest	0.76	0.52	1.11	
Education (ref. no education)	Primary	0.60	0.45	0.79	***
	Secondary +	0.53	0.35	0.82	**
Breastfeeding (ref. not breastfeeding at survey)	Breastfeeding	1.47	1.15	1.89	**
Parity (ref. 3-4 children)	0-2 children	1.51	1.08	2.10	*
	5+ children	1.17	0.91	1.50	
Mother's age (ref. <30 yrs)	30+ years old	0.83	0.59	1.16	
Weighted N <sup>a</sup>		2977			

<sup>a</sup> Women who desired another child within 2 years and were not using any modern method were excluded from this analysis.

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

Table A.5. Adjusted relative risk ratios of belonging to specified categories of unmet need or wanting a child soon versus being a modern method users

	Unmet need for FP vs using a modern method																					
	Access & attitude				Access, no attitude				Attitude, no access				Neither access nor attitude				Desire birth within 2 yrs					
	Adjusted RRR <sup>a</sup>	95% CI			Adjusted RRR	95% CI			Adjusted RRR	95% CI			Adjusted RRR	95% CI			Adjusted RRR	95% CI				
Residence (ref. urban)																						
Rural	1.43	1.02	2.03	*	1.60	1.1	2.31	*	1.11	0.59	2.10	1.81	1.12	2.93	*	2.68	1.96	3.67	***			
Area (ref. Western)																						
Central	1.57	1.03	2.41	*	1.18	0.79	1.78		2.45	1.22	4.91	*	2.38	1.35	4.2	**	1.62	1.13	2.32	**		
Northern	1.17	0.77	1.79		1.24	0.84	1.83		1.17	0.50	2.70		2.37	1.33	4.24	**	1.21	0.84	1.74			
South	1.11	0.70	1.76		0.53	0.32	0.88	*	1.03	0.45	2.36		0.71	0.37	1.35		1.34	0.85	2.09			
Southeast	1.83	1.00	3.35		1.35	0.74	2.47		2.38	0.82	6.89		3.14	1.53	6.41	**	2.50	1.64	3.81	***		
Wealth (ref. middle)																						
Poorest	1.48	0.94	2.33		0.91	0.59	1.39		3.98	2.03	7.83	***	2.96	1.76	4.97	***	2.19	1.51	3.19	***		
Poor	1.17	0.78	1.76		1.07	0.72	1.6		1.56	0.77	3.20		1.35	0.85	2.16		1.35	0.99	1.82			
Rich	0.98	0.68	1.40		0.70	0.46	1.07		1.14	0.46	2.82		0.96	0.59	1.56		1.14	0.81	1.60			
Richest	1.05	0.68	1.62		0.59	0.35	0.99	*	0.57	0.21	1.55		0.71	0.29	1.71		1.18	0.76	1.84			
Education (ref. no education)																						
Primary	0.85	0.61	1.18		0.46	0.33	0.65	***	0.39	0.22	0.70	**	0.54	0.32	0.9	*	0.51	0.39	0.66	***		
Secondary +	0.78	0.49	1.22		0.53	0.3	0.95	*	0.24	0.09	0.66	**	0.24	0.12	0.48	***	0.34	0.2	0.57	***		
Breastfeeding (ref. not breastfeeding at survey)																						
Breastfeeding	1.69	1.25	2.28	**	1.35	1.02	1.77	*	2.20	1.33	3.65	**	1.12	0.79	1.59		0.14	0.1	0.19	***		
Parity (ref 3-4 children)																						
0-2 children	1.75	1.24	2.49	**	1.23	0.83	1.82		1.70	0.86	3.36		1.73	0.97	3.09		3.64	2.53	5.24	***		
5+ children	1.18	0.83	1.69		1.15	0.84	1.57		0.84	0.49	1.44		1.02	0.71	1.46		0.27	0.19	0.38	***		
Mother's age (ref. <30 yrs)																						
30 +years old	0.89	0.61	1.31		1.11	0.76	1.62		0.70	0.41	1.19		0.69	0.45	1.07		1.05	0.74	1.48			
N	642				700				160				444				1686					

<sup>a</sup>RRR=relative risk ratio. \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001



Table A.6: Number of reasons for non-use per woman

	Unmet need for family planning				Total
	access & attitude	access, but not attitude	attitude, but not access	neither access nor attitude	
0	14.4	9.9	11.2	24.0	14.7
1	80.3	83.0	82.7	71.4	79.4
2	5.1	6.7	5.7	3.8	5.4
3	0.3	0.4	0.5	0.9	0.5
Total	100.0	100.0	100.0	100.0	100.0

Table A.7: Adjusted odds ratios for not having sex in the last 4 weeks versus having sex in the last 4 weeks

		Adjusted OR	95% CI	
Fertility preference and preferred waiting time (ref. want a/another child soon, now)				
	want no more child	1.53	1.07	2.18 *
	undecided about having a/another child	1.33	0.65	2.75
want a/another child	< 12 months	1.23	0.30	5.10
	1 year	1.09	0.68	1.73
	2 years	1.32	0.95	1.84
	>=3 yrs	1.17	0.85	1.62
	do not know about the timing or reported non-numeric answer	1.75	1.19	2.58 **
	Living arrangement (living with husband now)			
	staying elsewhere	12.30	9.85	15.36 ***
Using a modern method (ref. users)				
	Non-user	1.86	1.38	2.52 ***
Polygynous (ref. monogamous)				
	Polygynous	1.25	0.98	1.60
Education (ref. no education)				
	primary	1.07	0.85	1.35
	secondary+	0.74	0.54	1.03
Parity (ref. 0-2 children)				
	3 or 4 children	0.72	0.54	0.96 *
	5+ children	0.84	0.56	1.26
Breastfeeding (ref. currently not breastfeeding)				
	Breastfeeding	0.86	0.67	1.11
Age group (< 30 years old)				
	30 years old or older	1.19	0.91	1.55
	N	4659		

<sup>a</sup> 4 women reported they didn't know number of other wives.

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

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**The STEP UP (Strengthening Evidence for Programming on Unintended Pregnancy) Research Programme**

**Consortium** generates policy-relevant research to promote an evidence-based approach for improving access to family planning and safe abortion. STEP UP focuses its activities in five countries: Bangladesh, Ghana, India, Kenya, and Senegal.

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