Canadian Studies in Population 38, No. 1–2 (Spring/Summer 2011):61–81.

Currently married women with an unmet need for contraception in Eritrea: Profile and determinants

Gebremariam Woldemicael
Population Studies Centre, Department of Sociology
University of Western Ontario (London, ON)
gebre_wm@yahoo.com

Roderic Beaujot
Population Studies Centre, Department of Sociology
University of Western Ontario

Abstract

Eritrea's contraceptive prevalence rate is one of the lowest in sub-Saharan Africa and its fertility has only started to decline. Using data from the 2002 Eritrea Demographic and Health Survey (EDHS), this study examines the determinants of unmet need for family planning that is the discrepancy between fertility goals and actual contraceptive use. More than one-quarter of currently married women are estimated to have an unmet need, and this has remained unchanged since 1995. The most important reason for unmet need is lack of knowledge of methods or of a source of supply. Currently married women with higher parity, and low autonomy, low or medium household economic status, and who know no method of contraception or source of supply are identified as the most likely to have an unmet need. Addressing the unmet need for family planning entails not merely greater knowledge of or access to contraceptive services, but also the enhancement of the status of women.
Keywords: *Eritrea, family planning use, unmet need, women's autonomy, determinants.*

Résumé

Le taux de prévalence de la contraception en Érythrée est un des plus bas en Afrique subsaharienne et son taux de fécondité ne fait que commencer à baisser. Cette étude s'appuie sur les données de l' Enquête sur la démographie et la santé d'Érythrée (EDHS) de 2002, et examine les déterminants des besoins non-satisfaits de planification familiale qui représentent l'écart entre les objectifs en matière de fécondité et l'utilisation réelle de contraceptifs. Il est estimé que plus d'un quart des femmes mariées ont des besoins non-satisfaits et que cette situation existe depuis 1995. La raison majeure de ces besoins non-satisfaits est le manque d'information au sujet des méthodes contraceptives ou des sources pour s'en procurer. On identifie les femmes mariées qui ont un taux de parité élevé et un bas niveau d'autonomie, qui proviennent de ménages au statut économique faible ou moyen et qui ne sont pas informées quant aux méthodes de contraception ou de sources pour s'en procurer comme étant les femmes le plus susceptibles d'avoir des besoins non-satisfaits. Résoudre le problème de ces besoins non-satisfaits de planification familiale implique plus que de fournir les informations nécessaires et meilleur accès aux services de contraception, mais aussi l'amélioration du statut de la femme.
Mots-clés : *Érythrée, planification familiale, besoins non-satisfaits, autonomie de la femme, déterminants.*

Introduction

The unmet need for family planning is defined as the proportion of married women of reproductive age who are not using any method but would like to postpone the next pregnancy (unmet need for spacing), or who do not want any more children (unmet need for limiting; Westoff 1988). In other words, the concept of unmet need for family planning refers to the discrepancy between individuals' contraceptive use and their stated fertility intentions. In the ideal situation, all women who want to space or limit their births and are exposed to the risk of conception would use some kind of contraception. In practice, however, some women fail to use contraception and are at risk of having mistimed or unwanted births, induced abortion, or maternal death (Sedgh et al. 2007).

During the last two or more decades, especially since the 1994 International Conference on Population and Development held in Cairo (UNFPA 1994), unmet need for family planning has been receiving much attention worldwide. At the same time, in 2006 unmet need for family planning was added to the fifth Millennium Development Goal (MDG) as an indicator for tracking progress on improving maternal health (Bernstein and Edouard 2007). Meeting women's unmet need offers a host of health and socio-economic benefits. For instance, family planning can assure the wellbeing of mothers and women by preventing unwanted pregnancies (Sedgh et al. 2007). It can reduce maternal mortality by reducing the number of pregnancies, the number of abortions, and the proportion of births at risk (UNFP 2008). From the standpoint of women's reproductive health rights, unmet need can be considered as an indicator of the violation of women's rights and absence of empowerment (Ahlburg et al. 1996). Disparities in unmet need violate women's (and men's) fundamental human right to control their own fertility and choose the number and timing of their children, a right endorsed by different countries at the 1994 ICPD. Meeting unmet need for contraception also slows the spread of HIV/AIDS and reduces fertility. A recent study in sub-Saharan Africa suggests that investing in family planning services would prevent 29 per cent more births of children with HIV than spending the same amount on prevention of mother-to-child-transmission programs that offer antiretroviral drugs to pregnant women with HIV (Reynolds et al 2006). Also, if most of the demand for family planning could be met with services, then fertility would decline substantially (Westoff and Bankole 1995).

Thus, the elimination of unmet need would significantly reduce fertility and improve maternal and child health (Sinding et al. 1994; Westoff and Bankole 1995). In order to eliminate or reduce the risk of having unmet need, it is crucial to first understand and identify the causes and underlying factors of unmet need. Some previous studies have indicated that unmet need for family planning is higher among younger women, women who live in rural areas, who are of higher parity, and who have no knowledge of contraceptive methods or sources of supply (e.g., Pasha et al. 2001; Westoff 2006; Ojakaa 2008). Other studies observed significantly lower unmet need among women having a secondary or higher education and who belong to wealthier households (Devis et al. 1996; Stash 1999; Bhandari et al. 2006). Partner communication about family planning is one important aspect of contraceptive decision-making (Oakley and Bogue 1995) and hence may have a direct bearing on unmet need. Women who reported frequent discussion of family planning with their partners were more likely to be using contraception than women who reported they never discussed family planning (Stephenson et al. 2007). Lack of knowledge about contraceptive methods or sources of supply, perceived health side-

effects/concerns regarding contraceptive methods, and opposition to use are important determinants of unmet need (Schuler et al. 1994; Bongaarts and Bruce 1995; Casterline et al. 1997; Casterline and Sinding 2000; Pasha et al. 2001).

Although there is considerable literature on women's autonomy and its link to reproductive health behaviours (e.g., Shaikh et al. 2008), fertility and fertility preferences (e.g., Balk 1994), few studies have examined systematically the effect of women's autonomy on unmet need for family planning in sub-Saharan African countries, particularly in Eritrea. Some studies suggested that women's active participation in domestic decision-making is a reflection of their power within the household, and may increase their chances of making reproductive choices that correspond with their interests (Dharmalingam and Morgan 1996). Understanding the factors associated with unmet need for family planning is particularly important in Eritrea, where the patriarchal family system continues to endanger women's health, where the transition to lower fertility is at its early stage, and where health and other social services are deteriorated by political unrest and military conflict. Failure to understand the linkages between women's position in the household and their met or unmet need for family planning can result in policy formulation which marginalizes women's roles in reproductive health and social changes. Unlike many other studies in sub-Saharan Africa, this study, therefore, attempts to examine the impact of women's autonomy in addition to other socio-demographic factors on unmet need for family planning, and the major reasons for non-use of contraception in Eritrea. Knowledge of the trends and determinants of unmet need for family planning can have important health and demographic implications, including high population growth and unintended pregnancy risks for women and their families in Eritrea.

Determinants of unmet need

The existence of high unmet need for family planning is a primary justification for family planning programs in many developing countries (Freedman 1987). Women with an unmet need for family planning constitute a substantial proportion of all married women of reproductive age in developing countries (Maki 2007). The level of unmet need is particularly prevalent in sub-Saharan Africa (Ross and Winfrey 2002), where the ratio is nearly one in four (UNFPA 2004). In contrast, in the rest of developing countries, less than one in seven of all married women are considered to be potentially at risk of unwanted pregnancy or have an unmet need for contraception (Maki 2007).

Several studies have indicated that the most important reasons for an unmet need are lack of knowledge about contraception (e.g., Sita 2003), health concerns or fear of the side effects of contraception, and opposition of husbands, other relatives, or of women themselves (e.g., Khan et al. 2008; Igwegbe et al. 2009). It is, however, suggested that lack of access to services is not a predominant cause of unmet need (Bongaarts and Bruce 1995). According to these authors, access or distance to a source of contraception has little relationship to the level of unmet need in several countries of Africa. Even if distance to any service site may not be important to unmet need, lack of knowledge of preferred method, and unavailability of method, are still formidable obstacles in sub-Saharan Africa (Sita 2003). Women who are aware of many types of contraceptive methods and who know where those methods can be obtained, and about their side effects, are less likely to have unmet need. For example, unmet need among women who knew three or fewer methods was found to be more than twice as high as among those who knew six or more methods (Robey et al. 1996).

Unmet need and its variation between regions of the world, countries or within countries is influenced by several socio-cultural factors such as attitudes to contraception (Ndaruhuye et al. 2009), by socio-demographic factors such as women's age and number of children surviving, and by socio-economic factors such as work status, educational level, and type of residence of women (Igwegbe et al. 2009). Some studies hypothesized that socio-cultural values such as attitudes toward the use of contraception and the gender power balance in households have a strong effect on both the demand for contraception and unmet need (e.g., Ndaruhuye et al. 2009).

In terms of socio-demographic factors, the unmet need for family planning is typically stronger for younger women (Ahmadi and Iranmahboob 2005). Other studies, however, argued that the effect of age differs by unmet need for spacing and unmet need for limiting (Ojakaa 2008), with unmet need for limiting increasing with age, while that for spacing decreases for older women (Sita 2003). There is a positive relationship between number of children surviving and the probability of having an unmet need. For instance, Pasha et al. (2001) found that women with four or more living children are more likely than women with fewer children to have unmet need. Bhandari et al. (2006) also found that total number of children was among the most significant predictors of unmet need, where unmet need rises with an increase in the number of children.

Turning to socio-economic factors, several studies show that women's work status is related to unmet need. Women who are working outside the home have a lower probability of having unmet need than those who work at home or indoors (Ahmadi and Iranmahboob 2005). The odds of having an unmet need for family planning are negatively and strongly associated with women's educational level (Ndaruhuye et al. 2009). According to Ndaruhuye et al. (2009), women with less than three years of education have higher (69 per cent) unmet need, compared with those who have at least ten or more years of education (27 per cent). Women who live in urban areas are more likely to be using contraception and have lower unmet need compared with their rural counterparts (Sita 2003).

While the above factors associated with unmet need for family planning are widely recognized, women's autonomy is also critical in securing better family planning and health care utilization (Matthews et al. 2005; Babar et al. 2008). Women's autonomy enables them to decide freely and responsibly the number, spacing, and timing of their children (Obermeyer 1995). Some scholars (e.g., Caldwell and Caldwell 1993; Matthews et al. 2005) have theorized that changes in women's status are key factors in the wider diffusion of contraception and utilization of healthcare services. Women's improved autonomy is also likely to result in lower fertility through its negative association with desire for large family size and through effective use of modern contraception (Makinwa and Jensen 1995). Women's limited autonomy is associated with low health-seeking behaviours, especially pertaining to contraception and family planning (Jejeebhoy 1995). Even though there are few studies of the effect of autonomy on unmet need, Sathar (1996) finds for Pakistan that women who believe that they will not be allowed to work outside the home are twice as likely to have an unmet need for family planning as women who believe that they would be allowed to do so if necessary.

The gender power balance in households and husband-wife communication are also important factors. Lack of communication between wives and husbands can create a major barrier to contraceptive use (Casterline and Sinding 2000). A study of demand and unmet need for family planning in Rwanda indicates that the odds of having an unmet need were higher among women whose partners disapproved of family planning and

those who had little or no discussion of family planning issues with their partners (Ndaruhuye et al. 2009). This study shows that talking about family planning is a taboo in many Rwandan households, and the majority of women have never discussed family planning with their husbands, or have done so only once or twice. A study in Kenya also indicates that 12 per cent of women stopped using contraception to limit childbearing because their husbands wanted another child (Ferguson 1992).

The case of Eritrea is also significant given questions of war and conflict. During the struggle for independence (1961–91), Eritrean women who participated in the struggle enjoyed some autonomy in administration, decision-making, and other non-traditional activities. Such experiences, gained during the struggle, coupled with the efforts made to empower women after independence, could have influenced the demands for family planning.

However, it is also to be expected that in countries like Eritrea, with frequent swings between periods of war and peace, access to regular contraceptive supplies will be disrupted by the fighting (McGinn 2000). We are unable to examine the effect of the conflict on unmet need, due to the lack of data. During the war periods, refugees in stable camp settings are the populations most often studied, but the findings from such studies cannot be applied to other war-affected groups (McGinn 2000). Reports from refugee camps in Sierra Leone (1991–2001) and Liberia (1999–2003) indicate that use of family planning is higher, and unmet need is relatively lower, in refugee and displaced camps compared with other groups, because health facilities and information about family planning and sexually transmitted diseases (including HIV/AIDS) are provided by relief and reproductive health agencies (USAID 2007). Outside refugee camps, studies on fertility, desired family size, and contraceptive use reveal inconsistent and mixed evidence. For example, in Ethiopia, an increase in fertility has been observed in times of economic insecurity and where social or public support networks are unavailable or uncertain, and declines in fertility have been observed in response to short-term economic declines, political upheavals, war and marital separation due to forced migration (Lindstrom and Berhanu 1999). Although data for the period immediately following the 1994 genocide in Rwanda are lacking, some studies indicate that the ideal number of children increased and the demand for family limitation decreased during the period 1992–2000 (Ndaruhuye et al. 2009). This is probably due to the pressure to replace deceased children during the conflict. Again, after 2005 the demand for contraceptive use to limit family size increased, and unmet need for family planning (35 per cent) is still one of the highest in sub-Saharan Africa (Ndaruhuye et al. 2009).

In the present study, although it is difficult to examine the war impact on unmet need due lack of data, the trends of unmet need before and after the conflict that we are able to describe give some insights into the indirect effect of the conflict. Another important contribution of this study is the inclusion of women's autonomy, which is rarely researched in many sub-Saharan African countries. To the extent that household decisions and physical mobility are controlled by husbands in Eritrea, particularly in rural areas, women with input on decision-making and access to resources would be more empowered.

Background to Eritrea

Since the early 1960s, Eritrea has suffered from war with Ethiopia, although the intensity of hostilities has varied over time. Particularly between the mid-1970s and the

late 1980s, Eritrea has experienced human tragedy and socio-economic devastation of immense proportions because of the 30 years of war for liberation (1961–91).

Although Eritrea lived through a relative peace between 1992 and mid-1998, it has since suffered from a border conflict with Ethiopia that started in May 1998. Because of the border conflict, its real GDP growth declined from 7 per cent in 1997 to 0.7 per cent in 2002 (UN 2002). Eritrea thus remains one of the poorest countries in the world, with a per capita GDP of about US$130 and a Human Development Index of 0.454, ranking 156th out of 177 countries (APCI 2007). Events such as armed conflicts can force people to migrate, altering their habitual activities and social relations, interrupting their social support systems, and diminishing their access to medical care (Doliashvili and Buckley 2008) and to family planning services. The conflict also resulted in the military mobilization of all Eritreans, but mostly of males aged 18–40 years, resulting in a high proportion of spousal separation. A comparison of the proportions of married women residing with their husbands at the time of the 1995 and 2002 EDHS surveys shows a significant decline in all age groups, and particularly at younger ages. For example, only four in ten married women aged 20–24 were living with their husband in 2002, while the corresponding figure was eight in ten in 1995.

Added to these situations, Eritrea faces challenges in improving women's reproductive health. For instance, only 27 per cent of women receive medically trained assistance at delivery, under-five mortality is over 70 per 1,000 live births (NSEO 2003), and the maternal mortality ratio, at 581 maternal deaths per 100,000 live births, remains high (MND and UN [Eritrea] 2005). These figures show that major challenges remain in achieving the objectives of the Millennium Development Goals. According to the Eritrean Ministry of National Development, the health policy outlined a goal to reduce under-five child mortality to below 45 per 1,000 live births by 2015, and maternal mortality ratio to 246 by that year (MND and UN [Eritrea] 2005).

Since 1995, fertility has started to decline in Eritrea. Between 1995 and 2002, fertility declined from 6.1 to 4.8 children per woman (NSEO 2003). However, the prevalence of contraception remained unchanged during that period. Among the factors that have been posited as causes of this decline are increases in the proportions of never-married women and of spousal separation caused by the 1998–2000 border conflict with Ethiopia (Blanc 2004). Woldemicael (2008) has also demonstrated a fertility decline in Eritrea, and this decline was partly attributed to the cessation of childbearing after families reached their desired family size. For countries, like Eritrea, which have been affected severely by military conflict and economic crises, the conditions of warfare and the associated atmosphere of uncertainty may discourage couples from having children, or at least make them postpone the next birth, even in the absence of an enduring preference for longer birth intervals or smaller families (Agadjanian and Prata 2002). Although the DHS data do not allow for the examination of war-induced change in contraceptive use or fertility preferences, the border war is likely to have had some impacts on the level of unmet need by influencing the availability of and access to family planning services.

Despite the documented existence of a demand for family planning services expressed by Eritrean women (NSEO 2003), war and economic crises and lack of government commitment have contributed to the unavailability of and limited access to family planning services. Family planning programs do not exist in Eritrea. In 1999, a Family Reproductive Health Association of Eritrea was established under the Ministry of Health, and its main focus was on assisting families to solve problems related to infertility

and sub-fertility, and to provide information on child feeding and child rearing practices (NSEO 2003). This Reproductive Health Association did not provide information on contraceptive methods and since 2003 its operations have ceased.

Data and method

Data used in this study are taken from two consecutive rounds of the Eritrea Demographic and Health surveys (EDHS), conducted in 1995 and 2002. The 1995 EDHS survey was used for comparison purposes in the analysis of trends. We were not able to use the 1995 EDHS data in our unmet need analyses, because the datafile with the unmet need variable of this survey was not accessible. In all our analyses, weights are used that adjust for the sampling design of the EDHS surveys.

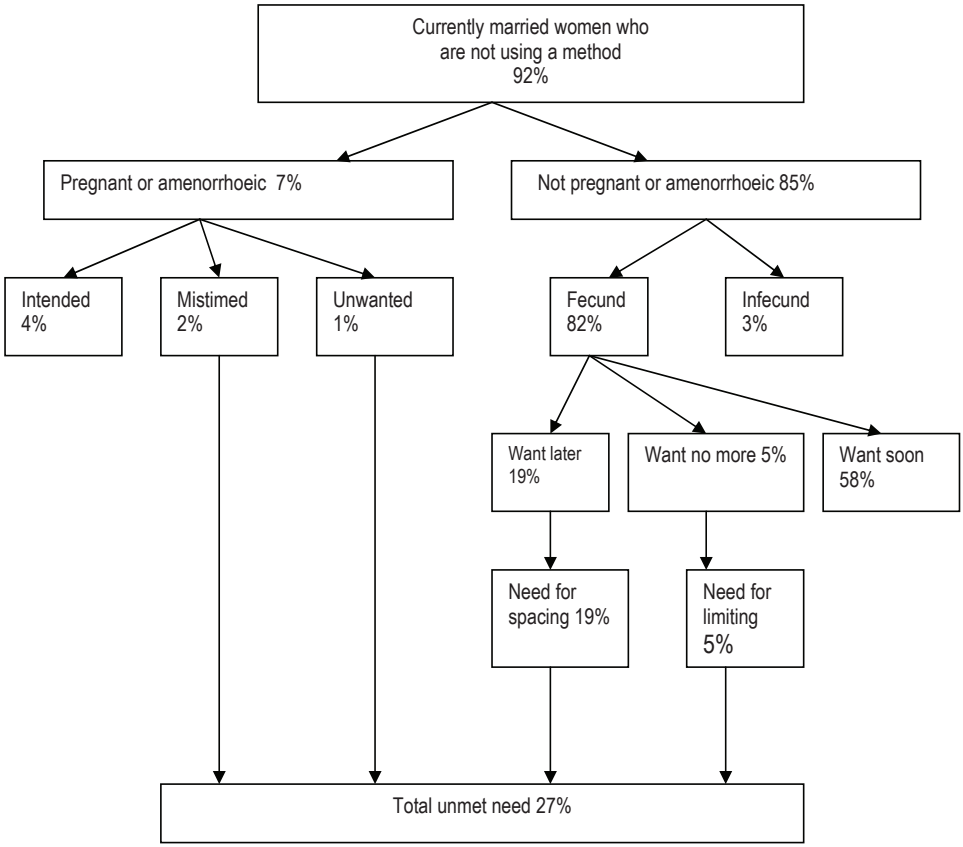
All sexually active women should theoretically be included, but since information on spacing preferences and partner communication about family planning is not applicable for never-married women, the present analysis deals only with the childbearing age women living in stable sexual unions. For convenience, the term *currently married* is used to refer to all such unions. This definition of the population also allows us to examine the impact of women's autonomy or position within the household on unmet need.

The analysis for this study uses descriptive bivariate and multivariate logistic methods. The descriptive analysis includes calculating the proportions of currently married women who want to space or limit childbearing, the proportion of contraceptive users, and the proportion of unmet need for family planning. We use both multinomial and binary models to examine the factors associated with unmet need. Multinomial regression models have theoretical relevance when the response variable is a polychotomous outcome or has multiple outcomes. In this study, we used a multinomial model in addition to the binary model, primarily because we expect that the effects of some variables can operate differently for unmet need for spacing and for limiting. The response variable for the multinomial regression analysis consists of three outcomes: unmet need for spacing (coded as 1), unmet need for limiting (coded as 2), and all other women (coded as 0). In the binary model, the response variable is dichotomized, with all currently married women with an unmet need (unmet need for spacing plus unmet need for limiting) coded as 1 and all other women as 0.

Dependent variable

Following previous studies (e.g., Westoff 2006; Ojakaa 2008), the unmet need for family planning methods is measured as the proportion of currently married women who are not currently using a method of family planning but want to postpone (space) or stop (limit) childbearing. Total unmet need is the sum of unmet need for spacing and limiting. Currently married women who are not currently using a method of contraception, are fecund, and want to wait for two or more years before having another child are considered to have an unmet need for spacing. Similarly, married women are considered to have an unmet need for spacing if they are not currently using a method, are pregnant or amenorrhoeic, and the current pregnancy or previous birth was mistimed. Women have an unmet need for limiting if they are not using a method of contraception, are pregnant or amenorrhoeic, and have an unwanted pregnancy or previous birth. The unmet need for limiting among currently married women also includes women who are not using a method, who

Figure 1. Categories of unmet need among currently married women, Eritrea 2002.



Note: the base for all percentages is total currently married women aged 15 to 49 years.

are not pregnant or amenorrhoeic, and who are fecund and want no more children. Based on the above definition of unmet need for family planning, the categorization of unmet need among currently married Eritrean women is presented in Figure 1 (the details of total unmet need and its components are discussed in detail in later sections).

Independent variables

The independent variables include demographic variables (age of women and number of living children), socio-economic factors (household economic status, women's education, urban/rural, and region of residence), and women's position within the household (women's decision-making autonomy and spousal communication on family planning). Knowledge of contraceptive methods or source of supply is also included in the analysis to assess the effect on unmet need.

Women's position within the household includes women's decision-making autonomy and the degree of communication of family planning between spouses. Most studies have documented the effects of five key aspects of women's autonomy on various reproductive health–related outcomes (Bloom et al. 2001; Jejeebhoy and Sathar 2001; Ghuman 2003). These include women's freedom of movement, decision making related to health-

care, decision making related to household economic matters (such as making household purchases), discretion over earned income, and violence or intimidation by husbands.

Given the complexity of measuring some of these dimensions, we have selected four dimensions of women's autonomy for which adequate information was collected in the 2002 EDHS: their involvement in decision making on large household purchases, daily household purchases, in their own healthcare, and freedom of movement. Four questions in the EDHS that may capture the above autonomy dimensions were asked:

> Who in your family usually has the final say on: (1) making large household purchases; (2) household purchases for daily needs; (3) obtaining own healthcare; and (4) visiting relatives or friends? The response categories for these variables were: respondent alone; respondent and husband jointly; respondent and someone else; husband; and someone else in the household.

Thus, for the purpose of this study, women's autonomy is constructed using the Principal Component Analysis (PCA) from these four decision-making aspects. It is re-coded into three categories, labeled as *low*, *moderate*, and *high autonomy*.

The closeness of the husband-wife bond and the degree of communication between spouses have also been suggested to be important aspects of women's household position (Jejeebhoy 1995). The EDHS asked women how often they talked to their husbands about family planning in the past year, and answers were dichotomized as *never* and *once or more*.

Given that the EDHS survey does not collect direct measures of income, an index of wealth was created based on the ownership of household goods and durables (NSEO 2003). The index divides households into three categories in this study: *low, middle*, and *high*. Women's education is incorporated in the study in three categories: *no education, primary,* and *secondary or higher education*. We measured the knowledge of methods or source of family planning through responses to a question on knowledge of any method or source of family planning.

Results

Demand for family planning and contraceptive use in Eritrea

As a first step towards examining the link between unmet need for family planning and the different socio-demographic factors listed above, it is important to look at the extent of fertility preferences (i.e., demand for postponement and limiting childbearing) and contraceptive use among currently married women. Our primary focus in this part of the paper is therefore to make preliminary assessments of women's preferences to postpone and stop childbearing, and of contraceptive use, according to the demographic, socio-economic, and women's status indicators.

Table 1 shows the percentage distribution of currently married women who desire to postpone and stop childbearing and who used contraception, by socio-demographic factors. The proportion of women wanting to delay the next birth is higher among younger and lower parity women than among their older and higher parity counterparts. The reverse is, however, true for wanting to limit family size; women at older ages and with higher parity are more likely to wish to have no more children. This supports the hypothesis that traditional populations in the initial phase of their demographic transition resort to stopping childbearing when they have reached a desired number of children, rather

Table 1. Demand for spacing and limiting births, and contraceptive use among currently married women by selected socio-demographic variables, Eritrea 2002.

Variables	Preferences for spacing and limiting births		Use of contraception
	Spacing	Limiting	
Age			
15–19	55.1	2.8	2.4
20–24	53.1	3.8	5.9
25–29	50.7	5.3	10.0
30–34	46.3	14.0	9.1
35+	17.3	36.4	9.0
No. of living children			
0–1	39.2	1.6	3.7
2–3	50.1	7.6	9.9
4–5	38.1	23.9	10.6
6+	20.6	49.9	9.0
Women's autonomy			
Low	39.8	15.7	5.2
Moderate	39.2	20.8	11.2
High	36.6	17.0	10.0
Partner communication on family planning			
Never	38.1	16.4	5.7
Once or more	43.9	27.5	28.5
Household economic status			
Low	37.2	15.7	2.1
Middle	40.9	16.6	8.5
High	37.3	23.4	20.4
Women's education			
No education	34.4	18.3	3.5
Primary	45.3	15.2	12.4
Secondary or higher	46.6	17.8	21.7
Type of place of residence			
Urban	36.9	22.1	16.5
Rural	39.6	15.0	3.6
Region of residence			
Anseba & GashBarka	35.6	15.5	2.9.
Northern & Southern Red Sea	32.4	12.3	5.5
Central	42.7	24.4	19.6
Southern	43.5	18.4	7.9
Knowledge of method or source of supply			
Knows method or source	37.9	14.5	9.3
Knows no method or source	39.5	26.4	0.7
Total	**38.7**	**17.5**	**8.0**

than spacing births (Varea et al. 1996). Women with primary or higher education who live in the central and southern regions and who discuss family planning with their partner are also more likely to wish to space their births. The remaining factors—household economic status; women's autonomy, urban-rural residence, and knowledge of method or sources of supply—have no substantial association with women's desire to space births.

On the other hand, all these variables are associated with women's desire to limit childbearing, and the associations are mostly in the expected direction. That is, women

with moderate or high autonomy, who discuss family planning, with high household economic status, residing in urban areas and in central and southern regions, and who know no methods or sources of contraceptive services, are more likely to want no more children. The above results suggest that although women in Eritrea have a low desire to limit childbearing, they are more likely to do so if they have achieved a desired number of children (4 or more), have more autonomy, discuss family planning with their partner, have a higher economic status, and reside in areas where more resources are available.

In terms of contraceptive use, the prevalence is relatively higher among older women (25 or older) and women with higher parity (2 or more children). It is also clear from Table 1 that all the other variables have some predictive character on contraceptive use. The proportion of current contraceptive use is higher among more autonomous women who discuss family planning, with high economic status and secondary or higher education, who reside in urban areas and the central region (where the capital city is located), and who know methods or sources of services.

Overall, the unadjusted results indicate that the number of living children, women's autonomy level, communication with partner, household economic status, education, urban-rural residence, and knowledge of method or sources of supply have important associations with women's desire to both limit family planning and to practice contraception.

Table 2: Unmet need and current use for spacing and for limiting and total demand of currently married women, Eritrea 1995 and 2002.

	Year	
	1995*	2002
Total demand	35.4	35.1
Components of unmet need and current use		
Total unmet need	27.5	27.1
Spacing	21.4	21.1
Limiting	6.1	6.0
Total current use	8.0	8.0
Spacing	5.7	5.0
limiting	2.2	3.0
Using a modern method	4.0	5.1
Unmet need for modern methods	31.5	29.9
Per cent of total demand satisfied[1]	22.4	22.8
Per cent of total demand satisfied by modern methods[2]	11.3	14.5

* Extracted, with some calculations from NSEO & ORC Macro Inc. (1997), 1995 EDHS.

[1] Per cent of total demand satisfied is obtained by dividing total current use by total demand.

[2] Per cent of total demand satisfied by modern methods is obtained by dividing the current use for modern methods by the total demand.

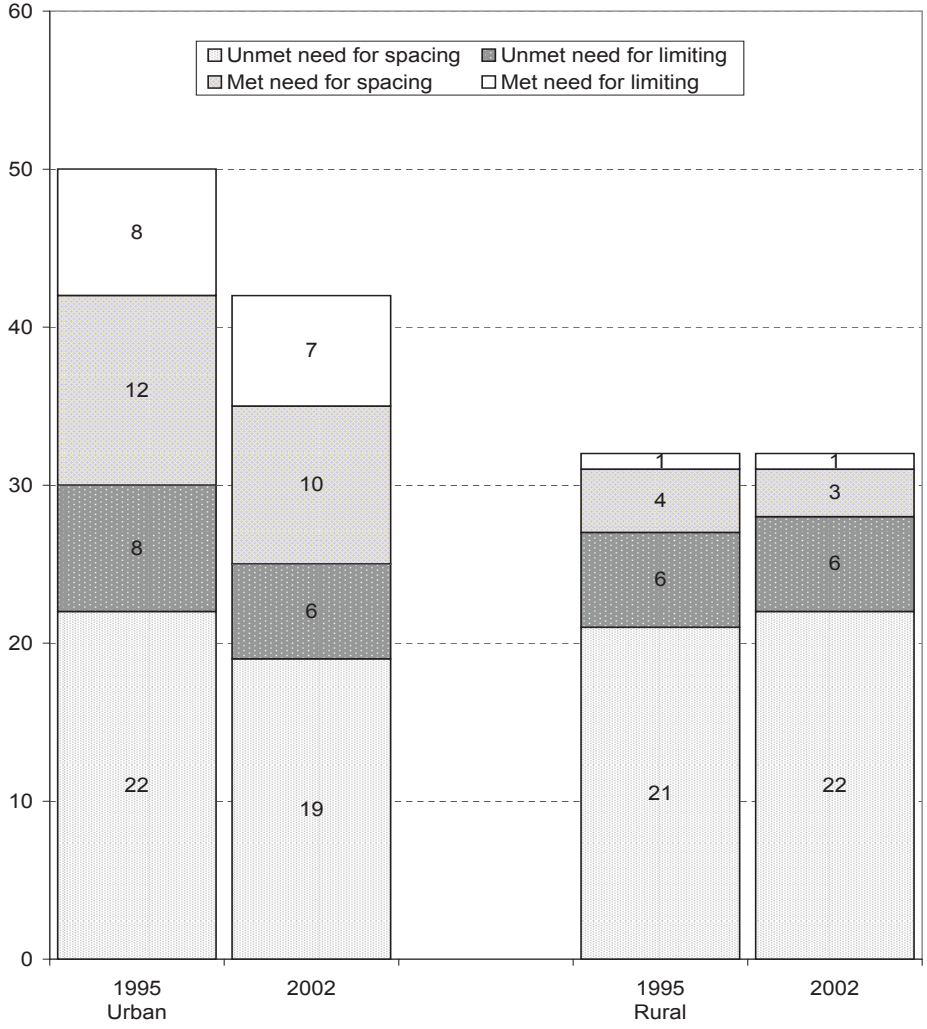
Trends in unmet need and reasons for non-use of contraception in Eritrea

Trends in the components of unmet need for currently married women are shown in Table 2. Total unmet need remained virtually constant between 1995 and 2002 at about 27 per cent. In each of the surveys, currently married women in Eritrea have a much greater unmet need for spacing than limiting (21 per cent for spacing and 6 per cent for limiting). Total current use of contraceptive methods has remained unchanged at 8 per cent since 1995. Trends in current use for spacing and limiting, however, show that use for spacing decreased slightly, while that for limiting increased. As Table 2 shows, total

demand and total demand satisfied remained constant over time, at about 35 and 23 per cent, respectively. Unmet need for modern methods decreased only marginally between 1995 and 2002, while using a modern method very slightly increased during this period (by 1 per cent). The percentage of total potential demand satisfied by modern methods has also increased by about 3 percentage points since 1995. Such a change may be due to the small increase in modern contraceptives during the period.

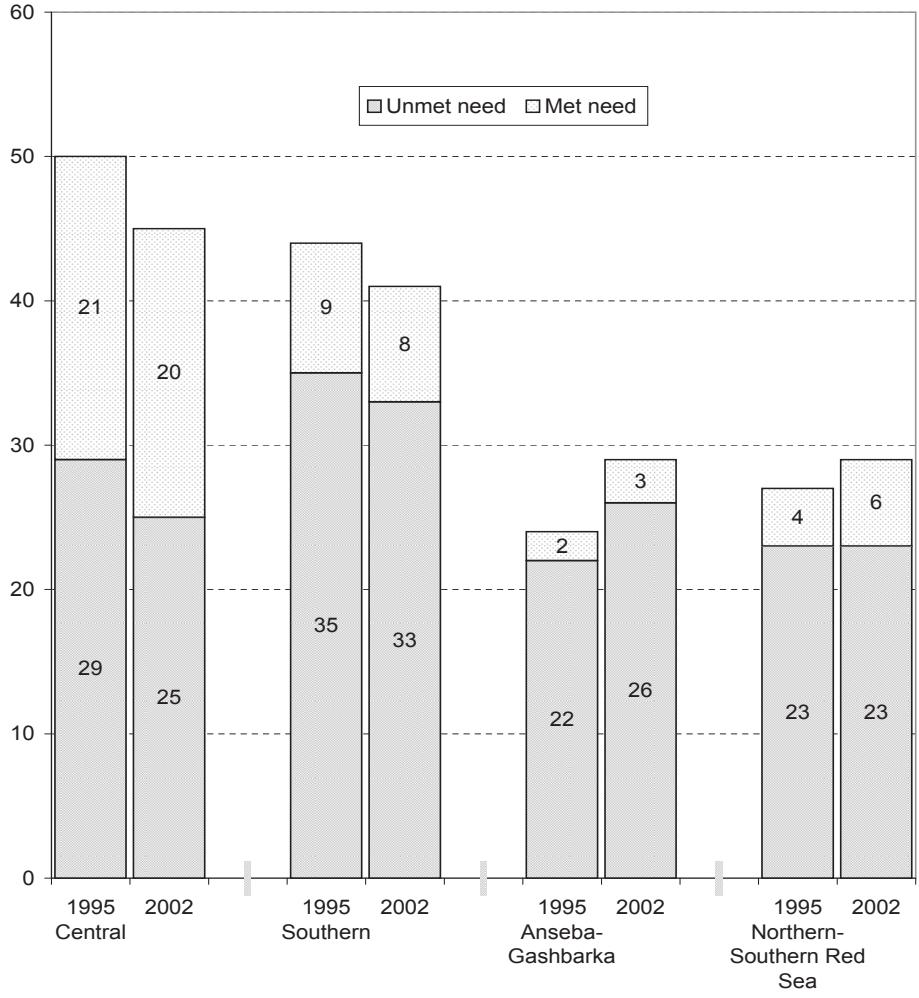
Figure 2 shows the components of unmet need by survey year and place of residence. In both spacing and limiting, unmet need has marginally declined in urban areas but remained unchanged in rural areas between 1995 and 2002. Compared to rural areas, in each survey urban areas have much higher levels of total current use of a method (met need), use for spacing, and use for limiting. From 1995 to 2002, total use declined in ur-

Figure 2. Unmet and met need for spacing and limiting of currently married women by urban-rural residence, Eritrea, 1995* and 2002.



* Extracted, with some calculations from NSEO & ORC Macro Inc. (1997), 1995 EDHS.

Figure 3. Unmet and met need of currently married women by region of residence, Eritrea, 1995* and 2002.



ban areas, but the magnitude of the decline is very small. On the other hand, current use remained constant in rural areas during that period (Fig. 2).

In Figure 3, total unmet need and met need for contraceptive methods are shown by survey year and geographical region. In terms of trends between 1995 and 2002, very little change is evident in both unmet and met need for family planning in the given regions. Eritrea's Southern region has the highest level of total unmet need in the country (33 per cent), whereas the Northern and Southern Red Sea region has the lowest (23 per cent) as of 2002. Current use (met need) of any method is highest in the Central region (20 per cent), whereas the Anseba-Gash Barka region has the lowest level of contraceptive use (3 per cent). The levels of use of a method for spacing and limiting by region are similar to the levels for total use (not presented here). The relatively higher levels of contraceptive use in the Central region may be due to the fact that the capital city, which has relatively better resources for health services, is located in that region.

Table 3. Reasons for current non-use among currently married women, Eritrea, 1995 and 2002.

Reason	Per cent current non-use among women	
	1995	2002
Fertility related		
Infrequent sex or no sex	6.3	15.7
Menopausal or had a hysterectomy	2.8	4.9
Sub-fecund or in-fecund	2.0	5.4
Postpartum, breastfeeding	4.8	7.4
Opposition to use		
Respondent opposed	2.3	14.6
Husband opposed	1.2	2.6
Religious prohibition	1.0	6.2
Lack of knowledge		
Knows no method	28.4	18.6
Knows no source	22.5	16.7
Method related		
Health concerns	3.2	2.4
Fear side effects	0.8	2.7
Lack of access	0.7	1.5
Other	2.0	1.2
Do not know	21.9	1.1
Total	100.0	100.0

With high rates of unmet need in Eritrea, particularly for spacing, it is important to know why currently married women who want to delay a birth or limit childbearing are not using contraception. Two important observations can be deduced (Table 3). First, among currently married women, the most frequently cited reason for not currently using a method is lack of knowledge of a method (19 per cent) and lack of source of service (17 per cent), followed by infrequent or no sex (15 per cent). A considerable proportion of currently married women (14 per cent) also said that they were not using a method because they are opposed to this use. Second, in terms of trends, there is a change in some of the percentages between 1995 and 2002. For instance, the proportion citing infrequent or no sex as a reason for not using a method increased from 6 per cent in 1995 to 15 per cent in 2002. This is probably the result of spousal separation caused by the 1998–2000 border conflict. The proportion citing opposition to use also rose substantially. Although there has been a decrease in the proportion of currently married women citing lack of knowledge of method or source of supply as a reason for not using contraceptive methods since 1995, it was still highest in 2002.

Determinants of unmet need for family planning in Eritrea

Table 4 shows the results from the Multinomial and Binary logistic regression models. Our findings clearly show that it is very useful to apply a multinomial model in addition to the binary model, because the effects of some of the variables considered in the multinomial model operate differently for unmet need for spacing and limiting.

The model results indicate that women's age is a strong indicator of the likelihood of having unmet need, particularly for spacing and total unmet need. The odds of having unmet need for spacing decrease as age increases, but for limiting the odds ratios rise as

Table 4. Standardized effects of selected variables on unmet need for spacing, limiting and total unmet need among currently married women, Eritrea 2002.

Variables	Unmet need[1] for spacing	Unmet need[1] for limiting	Total[2] unmet need
Age	0.90***	1.02*	0.93***
Number of living children			
0–1	0.18***	0.04***	0.14***
2–3	0.34***	0.07***	0.22***
4–5	0.67***	0.39***	0.50***
6+	1	1	1
Women's autonomy			
Low	1	1	1
Moderate	0.77***	0.73**	0.75***
High	0.68***	1.10	0.72***
Partner communication on family planning			
Never	1	1	1
Once or more	1.41***	1.87***	1.50***
Household economic status			
Low	1	1	1
Medium	1.02*	1.37	1.09
High	0.64***	1.14	0.75*
Education			
No education	1	1	1
Primary	1.38*	1.45**	1.41***
Secondary or higher	1.31*	2.59***	1.40**
Type of residence			
Rural	1	1	1
Urban	1.35***	1.42*	1.34***
Region			
Anseba & Gashbarka	1	1	1
Northern & Southern Red Sea	1.08	0.70***	0.98
Central	1.61***	1.03*	1.46***
Southern	1.40***	1.68***	1.49***
Knowledge of method/source of supply			
Knows method or source	1	1	1
Knows no method or source	2.28***	3.17***	2.48 ***

* Factor level significant at <10%, ** significant at <5%, *** significant at <1%

[1] Results from multinomial logistic model of unmet need for spacing and limiting, with 'no need' as reference category.

[2] Results from binary logistic model for total unmet need (spacing + limiting), with 'no need' as reference category.

age increases. However, since the odds for spacing and for limiting do not cancel each other out, younger women have more total unmet need. The likelihood of having total unmet need and unmet need for spacing and limiting rise significantly as the number of living children increases. Unmet need is stronger after the fourth child. Currently married women with moderate or high autonomy are less likely to have unmet need for spacing compared with their lower-autonomy counterparts. But for unmet need for limiting, it is women with moderate autonomy who have lower unmet need. Partner communication regarding family planning is significantly associated with total unmet need in general, and with unmet need for spacing and limiting in particular; women who discussed family plan-

ning at least once are 50 per cent more likely to have total unmet need, compared with those who never communicated. Household income, particularly high economic status, is related with lower total unmet need and unmet need for spacing. If a woman belongs to the wealthiest of households, the likelihood of having unmet need is smaller by 25–36 per cent compared to a woman who belongs to the poorest of households.

Interestingly, unmet need for family planning is positively associated with women's level of education. Women with primary or higher education are about 40 per cent more likely to have a total unmet need for family planning, compared with those who have no education. This may indicate that unmet need rises when women become more aware and literate, especially in the context of lack of contraceptive availability. This finding is consistent with other studies that found higher unmet need among educated women (Bhandari et al. 2006). Noticeably, there are large differentials in unmet need by the urban/rural residence factor, with urban women about 35 per cent more likely to have unmet need for spacing, and 40 per cent more likely to do so for limiting, compared to rural women. The higher levels of unmet need among educated and urban residents, compared with their uneducated and rural counterparts, may reflect that the former have higher demands for family planning, but due to lack of supply or access to family planning services they are not using a method. Consistent with the descriptive analysis, currently married women residing in the southern region are significantly more likely to have unmet need. Similarly, women residing in the central region have a significantly higher total unmet need and unmet need for spacing, but not for limiting. Despite the fact that these regions are more urbanized than the other regions, women residing in these two regions are more likely to have higher unmet need. However, given the unavailability of family planning services in Eritrea, this finding is not surprising. Knowledge of a source of a modern method is significantly associated with unmet need for family planning. Women who know no method or source of family planning are two and half times more likely to have unmet need than women who know any method or source of family planning.

Discussion

Over the past decade, rising rates of contraceptive use have reduced unmet need for family planning in most developing countries. In Eritrea, however, contraceptive use has remained constant at low levels (8 per cent) and fertility is still high, with some decline since 1995. Presumably, if most of the potential demand for family planning could be met with services and supplies, then contraceptive use would rise and fertility would fall further. In this case, understanding the factors that affect unmet need for family planning is necessary if the barriers to contraceptive use are to be delineated and effective family planning services are to be provided. The main objective of this study is to examine the reasons for non-use of contraception among currently married Eritrean women, and to identify the factors that influence unmet need for family planning, identification of which may help reduce barriers to contraceptive use.

The findings from the descriptive analysis of this study can be recapitulated in three observations. First, the number of women who are currently married and who either want to wait for at least two years before another child (spacing) or want to stop childbearing (limiting) but are not using contraception is 27 per cent (with 21 per cent for spacing and 6 per cent for limiting) and has remained unchanged since 1995. This is higher than the average rate (25 per cent) for sub-Saharan Africa during the period 2000–05 and close to

the level in Ethiopia and other countries in the east (35 per cent), which is the highest level in sub-Saharan Africa (Sonfield 2006). The results also indicate that only 15 per cent of the total potential demand for family planning is being satisfied by use of modern methods. Second, the preference for spacing births is more evident among younger women and women with fewer children, while preference for limiting childbearing is higher among older women (35 or older) and women who already have four or more children. A comparison between urban and rural areas and among regions also indicates that total demand for family planning is higher in urban than in rural areas and in the Central and Southern regions, suggesting a greater gap between fertility preference and contraceptive use in urban than in rural areas, and in the two more urbanized regions.

Thirdly, in both surveys lack of knowledge about methods or sources of supply appears to be the most important reason for not using contraception. Such a finding is not common, except in very few countries where family planning programs are limited or do not exist. In his study of 13 developing countries, Westoff (2000) found that a lack of knowledge of method or sources of family planning was the most important reason only in Ethiopia among the 13 countries compared. In Eritrea, infrequent or no sex was another prominent reason for non-use of contraception. The increase from 2 per cent in 1995 to 15 per cent in 2002 in the proportion of infrequent or no sex cited as a reason for non-use of a method is probably due to the high proportion of spousal separation caused by the 1998–2002 border conflict.

The study also identified several important differentials in unmet need for family planning. The results show that unmet need for spacing and total unmet need are higher for younger women. The odds of having unmet need for limiting increases with age. Thus, family planning services should address younger women's unmet need for spacing and older women's unmet need for limiting. Unmet need increases as the number of living children increases, and the difference is more noticeable particularly after parity four. It is possible that women in Eritrea start thinking of spacing or limiting after the fifth or more births. If we consider a family size of five children (the present average number of children per woman in Eritrea) as ideal, then although women with fewer children may profess to want no more children, they may not hold those fertility goals as strongly as women who have achieved the ideal family size. They may also be under external pressure to have more children, which is the case especially in rural areas. Thus, the higher preference for limiting at older ages, and higher unmet need for limiting among women with higher parity, suggest that family planning services may be most efficient if they give more priority for couples who have completed their desired family size.

One important finding is that unmet need is strongly related to measures of the woman's position within the household. Women with low autonomy are more likely to have had higher unmet need for family planning than women with moderate or high autonomy. This suggests that differences in women's input in freedom of movement, ability to make decisions on obtaining health care, or on household budgetary matters, are related to important and measureable differences in their reproductive and fertility control behaviours. This relationship indicates that Eritrean women's fertility preferences and contraceptive use are not independent of their autonomy within the household and society. This also suggests that demographic and socio-economic factors may not be enough to explain the differences in unmet need among women, as women's autonomy plays a salient role in accounting for the differences. Consequently, one of the most important interventions for addressing contraceptive needs may be actually to improve

women's autonomy in household decision-making and freedom of movement. The Millennium Declaration clearly acknowledges women's empowerment and gender equality as pillars of social justice in any society (UNDP 2003). In order to reduce unmet need, it is important not only to invest in the delivery of family planning services, but also to increase women's participation in all spheres of development, including economic, social, and political decision-making powers. The degree of spousal discussion about family planning is another important indicator of women's household position, and is used as a measure of the most intimate kind of communication in a society where discussions about sex are taboo (Jejeebhoy 1995). The results from this study show that women who had such discussions at least once are more likely to have unmet need than those who did not. This supports previous studies (e.g., DeRose et al. 2004; Khan et al. 2008) showing that partner communication about family planning does not necessarily lead to declines in unmet need. Gerrand et al. (1990) also suggested that talking about contraception is uncomfortable for many couples, thus limiting the probability of effective joint decision making on the use of family planning. However, given the non-existence of family planning programs in Eritrea, our results may also be interpreted as women who discussed family planning with their partner having a strong desire to postpone or stop childbearing but not using contraception because of lack of access or unavailability of services.

This study further shows that total unmet need and unmet need for spacing are significantly lower for women at the highest level of household income. This finding shows that household wealth is important for utilization of family planning services, and concurs with other studies (Khan et al. 2008; Ojakaa 2008) which show that women who are poorer tend to have higher unmet need. Perhaps most interestingly, this study identifies that women's education and urban residence as being positively related with having unmet need for family planning. In other words, unmet need is higher in urban than in rural areas, and it rises as education increases; this holds true for both components of unmet need. These findings are in conflict with the commonly held view that higher education and urban residence are important factors in the utilization of family planning services and hence reduce unmet need (e.g., see Westoff and Ochoa 1991; Khan et al. 2008). However, this does not mean that more educated and urban women are less likely to want to limit childbearing and use contraception than their uneducated and rural counterparts. It may suggest a gap between increasing desire and ability to control fertility, leading to a higher unmet need for more educated and urban women, given the lack of access to contraceptive services. The stronger desire for smaller family size and use of contraception among more educated and urban women might be a sign of the discordance between desire to control fertility and actual accessing of services. A similar argument can be made for the higher unmet need among women who ever discussed family planning with their husband. The implication is that if there were more family planning information and services, contraceptive prevalence would rise and unmet need would fall among these groups.

Our study further indicates that the lack of knowledge about methods or sources of supply is an important predictor of unmet need among currently married Eritrean women. This variable is associated with significantly higher levels of total unmet need, and unmet need for spacing and limiting. The descriptive analysis also showed that lack of knowledge of method or source of supply was the most important reason for non-use of contraception in Eritrea. The higher unmet need, for women who lack knowledge of methods and sources of supply, highlights the need for efforts to improve women's knowledge and access to family planning services.

References

APCI (Advisory Panel on Country Information). 2007. *Country of Origin Information Report: Eritrea*. London: Country of Origin Information Service.

Agadjanian, V. and N. Prata. 2002. War, peace and fertility in Angola. *Demography* 39:215–31.

Ahmadi, A. and J. Iranmahboob. 2005. Unmet need for family planning in Iran. Paper presented at the XXV IUSSP International Population Conference. Tours, France (July 18–23).

Ahlburg, D., A. Kelley, and K. Oppenheim Mason (eds.). 1996. *The Impact of Population Growth on Well-being in Developing Countries*. New York: Springer.

Babar, T., H. David, and H. Juanita. 2008. Women's social position and health-seeking behaviors: Is the health care system accessible and responsive in Pakistan? *Healthcare for Women International* 29:945–59.

Balk, D. 1994. Individual and community aspects of women's status and fertility in rural Bangladesh. *Population Studies* 48:21–45.

Bernstein, S. and L. Edouard. 2007. Targeting access to reproductive health: Giving contraception more prominence and using indicators to monitor progress. *Reproductive Health Matters* 15(29):186–91.

Bhandari, G., K. Premarajan, N. Jha, B. Yadav, I. Paudel, and S. Nagesh. 2006. Prevalence and determinants of unmet need for family planning in a district of eastern region of Nepal. *Kathmandu University Medical Journal* 4(2):203–10.

Blanc, A. 2004. The role of conflict in the rapid fertility decline in Eritrea and prospects for the future. *Studies in Family Planning* 35(4):236–45.

Bloom, S., D. Wypij, and M. Gupta. 2001. Dimensions of women's autonomy and the influence on maternal health care utilization in a North Indian city. *Demography* 38(1):67–78.

Bongaarts, J. and J. Bruce. 1995. The causes of unmet need for contraception and the social content of services. *Studies in Family Planning* 26(2):57–75.

Caldwell, J. and P. Caldwell. 1993. Women's position and child mortality and morbidity in less developed countries, in *Women's Position and Demographic Change*, edited by K. Mason. Oxford: Clarendon Press.

Casterline, J.B. and S.W. Sinding. 2000. Unmet need for family planning in developing countries and implications for population policy. *Population and Development Review* 26(4):691–723.

Casterline, J., A.E. Perez, and A.E. Biddlecom. 1997. Factors underlying unmet need for family planning in the Philippines. *Studies in Family Planning* 28(3):173–91.

Devis, D.R., S.R. Rastogi, and R.D. Retherford. 1996. *Unmet need for family planning in Uttar Pradesh*. National Family Health Survey Subject Reports No. 1 (May 1996). Mumbai: International Institute for Population Sciences.

Dharmalingam, A. and S. Morgan. 1996. Women's work, autonomy and birth control: Evidence from two south Indian villages. *Population Studies* 50:187–201.

Doliashvili, K. and C. Buckley. 2008. Women's sexual and reproductive health in post-socialist Georgia: Does internal displacement matter? *International Family Planning Perspectives* 34(1):21–9.

Ferguson, A. 1992. Fertility and contraception adoption and discontinuation in rural Kenya. *Studies in Family Planning* 23[4]:257–67.

Freedman, R. 1987. The contribution of social science research to population policy and family planning program effectiveness. *Studies in Family Planning* 18(2):57–82.

Gerrand, M., C. Breda, and F. Gibbons. 1990. Gender effects of couples' sexual decision-making and contraceptive use. *Journal of Applied Social Psychology* 20:449–64.

Ghuman, S. 2003. Women's autonomy and child survival: A comparison of Muslims and non-Muslims in four Asian countries. *Demography* 40(3):419–36.

Igwegbe, A., J. Ugboaja, and E. Monago. 2009. Prevalence and determinants of unmet need for family planning in Nnewi, South-east Nigeria. *International Journal of Medicine and Medical Sciences* 1(8):325–9.

Jejeebhoy, S. 1995. *Women's education, autonomy and reproductive behavior*: *Experience from developing countries*. Oxford: Clarendon Press.

Jejeebhoy, S. and Z. Sathar. 2001. Women's autonomy in India and Pakistan: The influence of religion and region. *Population and Development Review* 27(4):687–712.

Khan, S., S. Bradley, J. Fishel, and V. Mishra. 2008. *Unmet Need and the Demand for Family Planning in Uganda: Further Analysis of the Uganda Demographic and Health Surveys, 1995–2006*. Calverton, MD: Macro International Inc.

Lindstrom, D. and B. Berhanu. 1999. The impact of war, famine, and economic decline on marital fertility in Ethiopia. *Demography* 36(2):247–61.

Maki, S. 2007. Unmet need for family planning persists in developing countries. *Population Reference Bureau* (October). http://www.prb.org/Articles/2007/UnmetNeed.aspx.

Makinwa, P. and A.-M. Jensen (eds.). 1995. *Women's Position and Demographic Change in sub-Saharan Africa*. Liege: IUSSP.

Matthews, Z., M. Brookes, R. Stones, and M. Hossain. 2005. Autonomy and maternal health-seeking among slum populations of Mumbai. *Focus on Gender: Collected Papers on Gender Using DHS Data*, edited by S. Kishor. Calverton, MD: Macro International, Inc.

McGinn, T. 2000. Reproductive health of war-affected populations: What do we know? *International Family Planning Perspectives* 26(4):174–80.

MND and UN (Ministry of National Development [Eritrea] and UN [Eritrea]). 2005. *The State of Eritrea: Millennium Development Goals Report*. Asmara, Eritrea: Ministry of National Development and UN.

Ndaruhuye, D., A. Broekhuis, and P. Hooimeijer. 2009. Demand and unmet need for means of family limitation in Rwanda. *International Perspectives on Sexual and Reproductive Health* 35(3):122–30.

NSEO (National Statistics & Evaluation Office [Eritrea]) & ORC Macro Inc. 1997. *Eritrea Demographic and Health Survey 1995*. Calverton, MD: Macro International, Inc.

NSEO (National Statistics & Evaluation Office [Eritrea]) & ORC Macro Inc. 2003. *Eritrea Demographic and Health Survey 2002*. Calverton, MD: Macro International, Inc.

Oakley, D. and E. Bogue. 1995. Quality of condom use as reported by female clients of a family planning clinic. *American Journal of Public Health* 85:1526–30.

Obermeyer, C. 1995. Reproductive rights in the West and in the Middle East: A cross-cultural perspective, in *Family, Gender and Population in the Middle East: Policies in Context*, edited by C. Obermeyer. Cairo: American University Press.

Ojakaa, D. 2008. *Trends and Determinants of Unmet Need for Family Planning in Kenya*. DHS Working Papers No. 56. Calverton, MD: Macro International, Inc.

Pasha, O., F. Fikree, and S. Vermund. 2001. Determinants of unmet need for family planning in squatter settlements in Karachi, Pakistan. *Asia-Pacific Population Journal* 16(2):93–108.

Reynolds, H., B. Janowitz, R. Homan, and L. Johnson. 2006. The value of contraception to prevent perinatal HIV transmission. *Sexually Transmitted Diseases* 33(6):350–6.

Robey, B., J. Ross, and I. Bhushan. 1996. Meeting unmet need: New strategies, in *Population Reports*. Vol. 43. Series J Family Planning Programs. Baltimore, MD: Population Information Program, Johns Hopkins School of Hygiene and Public Health, pp. 1–35.

Ross, J. and W. Winfrey. 2002. Unmet need for contraception in the developing world and the former Soviet Union: An updated estimate. *International Family Planning Perspectives* 28(3):138–43.

Sathar, Z. 1996. Women's schooling and autonomy as factors in fertility change in Pakistan: Some empirical evidence, in *Girls' Schooling, Women's Autonomy and Fertility Change in South Asia*, edited by R. Jeffery and A.M. Basu. New Delhi: Sage Publications.

Sedgh, G., R. Hussain, A. Bankole, and S. Singh. 2007. *Women with an Unmet Need for Contraception in Developing Countries and Their Reasons for Not Using a Method*. Occasional Report No. 37. New York: Guttmacher Institute.

Schuler, S., M. Choque, and S. Rance. 1994. Misinformation, mistrust and mistreatment: Family planning among Bolivian market women. *Studies in Family Planning* 25(4):211–21.

Shaikh, B., D. Haran, and J. Hatcher. 2008. Women's social position and health seeking behaviors: Is the healthcare system accessible and responsive in Pakistan? *Health Care for Women International* 29:945–1059.

Sinding, S., J. Ross, and A. Rosenfield. 1994. Seeking common ground: Unmet needs and demographic goals. *International Family Planning Perspectives* 20(1):23–7.

Sita, S. 2003. Assessment of the Magnitude and Determinants of Unmet Need for Family Planning Among Currently Married Women in Urban and Peri-urban Community in Awasa, Southern Ethiopia. Master's Thesis. Department of Public Health, Addis Ababa University.

Sonfield, A. 2006. Working to eliminate the world's unmet need for contraception. *Guttmacher Policy Review* 9(1):10–13.

Stash, S. 1999. Explanation of unmet need for contraception in Chitwan, Nepal. *Studies in Family Planning* 30(4):267–87.

Stephenson, R., A. Baschieri, S. Clements, M. Hennink, and N. Madise. 2007. Contextual influences on modern contraceptive use in sub-Saharan Africa. *American Journal of Public Health* 97(7):1–7.

UN. 2002. *United Nations Development Assistance Framework 2002–2006*. Asmara (Eritrea): Government of Eritrea and the United Nations.

UNFPA. 1995. *Program of Action: Adopted at the International Conference on Population and Development, Cairo, 5–13 September 1994*. A/CONF.171/13/Rev.1 (available at http://www.unfpa.org/public/home/sitemap/icpd/International-Conference-on-Population-and-Development/ICPD-Programme).

UNFPA. 2004. UNFPA State of the World 2004: *Reproductive Health and Family Planning*. http://www.unfpa.org/swp/2004/english/ch6/index.htm.

UNFPA. 2008. Reducing unmet need for family planning: Evidence-based strategies and approaches. *Outlook* 25(1):1–7.

USAID. 2007.Understanding operational barriers to family planning services in conflict-affected countries: experiences from Sierra Leone. *Health Policy Initiative*. Task Order 1, pp.1–26.

Varea C., E. Crognier, D. Bley, and G. Boetsch. 1996. Determinants of contraceptive use in Morocco: Stopping behavior in traditional population. *Journal of Biosocial Science* 28(1):1–13.

Westoff, C.F. 2000. *Unmet Need at the End of the Century: DHS Comparative Reports*. Calverton, MD: Macro International Inc.

———. 2006. *New Estimates of Unmet Need and the Demand for Family Planning*. DHS Comparative Report No.14. Calverton, MD: Macro International, Inc.

Westoff, C.F. and A. Bankole. 1995. *Unmet Need: 1990–1994*. DHS Comparative Report No. 16. Calverton, MD: Macro International, Inc.

Westoff, C.F. and L.H. Ochoa. 1991. *Unmet need and the demand for family planning*. DHS Comparative Report No. 5. Calverton, MD: Macro International, Inc.

Woldemicael, G. 2008. Recent fertility decline in Eritrea: Is it a conflict-led transition? *Demographic Research* 18(2):27–58.