

Trends and determinants of unmet need for family planning in Cameroon: the role of socio-cultural context

Samuel KELODJOUE^{*1*}

1 Ph.D., senior lecturer, researcher, Demography/Population Sciences and Environment and Development at Population Research and Training Centre, University of Dschang Cameroon

***For correspondence:** *E-mail: skelod2013@yahoo.fr; Phone: +237677766156*

This study attempts to investigate and highlights the recent trends of unmet need for Family Planning in Cameroon. Differences for having an unmet need by place of residence, age, marital status, education, living standards are also assessed. It is based on Cameroon Demography and Health Surveys (CDHS) which were conducted in 1991, 1998, 2004 and 2011. It aims at declaring the women's reasons for having an unmet need and identifying the socio-economic and cultural determinants of unmet need. A high proportion of women with unmet need are those who have experienced unwanted pregnancies. This paper finally, outlines the scope for further research offering some perspectives on the nature and socio-cultural dimensions of unmet need.

Keywords: fertility, contraception; family planning; social pressure; Cameroon.

Introduction

During the past four decades, the total fertility rate (TFR) in the developing world has fallen by about half, from around six births per woman to about three. However, a new analysis suggests that in much of Sub-Saharan Africa, the transition from high to low fertility remains too slow. In two-thirds of countries in this region, there was no meaningful change in the TFR during the interval between the two most recent Demographic and Health Surveys. In contrast, fertility has continued to decline in Latin America, Asia and North Africa¹.

Modern contraception is an effective way to control fertility. Despite the development and vulgarization of family planning programs for over 40 years, fertility remains high and contraceptive prevalence is low in many countries of Africa south of the Sahara: (Guinea, Ivory Coast, Senegal, Cameroon etc.).^{1,2} In contrast, some countries such as Maurice, Cape Verde, Rwanda within the same geographical area began their transition and contraceptive prevalence is therefore high.

The statistics indicate that Sub-Saharan Africa has the highest maternal mortality and morbidity in the world with a third of all deaths of women of reproductive age being the result of a complication of pregnancy and/or childbirth. Teenage pregnancy accounts for a significant share of these maternal deaths, whilst complications of abortion, often related to unintended pregnancy, are also one of the main causes for high maternal mortality. Sub-Saharan Africa is confronted by the high levels of HIV infection in the world, particularly among the youth.

That is why; low modern contraceptive use in sub-Saharan Africa remains a challenge to achieve health related Millennium Development Goals (MDGs).

Thus policymakers and planners in all sectors should be greatly concerned about the

consequences of failing to meet unmet need. To reduce the health and development consequences of unintended fertility in Cameroon, they need to be aware of women with a demonstrated unmet need for family planning and use that information to improve policies and programs.

Context:

The socioeconomic context in which Sub-Saharan Africa women live today differs from the experience of the precedents generations. The Family Planning needs of women have been largely ignored by the existing health services a long time ago.

Cameroon is facing the problem of rapid population growth along with the scarcity of resources which is a great hindrance to the economic growth. Increase in adolescent population and reduction in dependency ratio exhibit that phase of population transition has not got started. Cameroon has entered in the early stage of fertility transition from the past two decades. The average of more than six children per women has started to turn down. The total fertility rate declined from 6.0 to 5.1 children in 2011 ^{3,4,5,6,7}

Moreover, adolescent fertility is an important phenomenon in Cameroon because of some customary practices which girls marry at a very young age. ^{8,9,11,12} These girls who are 23% of all women of childbearing age account for almost 14% of the total fertility of women ^{3,13}. Generally in Cameroon, newly young married women, lose independence and mobility when they move into their in-law's home after marriage. This is due to the fact that they become the new, most junior members of their marital family with little, if any, authority or autonomy, and are under strong social pressure to prove that they are a "good" daughter-in-law and wife. In some regions of the Cameroon, there is a high proportion of marriage during adolescence, resulting in a high rate of adolescent childbearing. Motherhood at a very young age entails a risk of maternal mortality that far exceeds the average, and the children of young mothers tend to have higher levels of morbidity and mortality ⁹. The adverse health consequences of adolescent fertility for both mothers and children include the high rate of maternal mortality and infant mortality. The vulnerability of adolescent girls to STDs, including HIV/AIDS, and early childbearing also has a negative impact on the educational prospects of girls, including pregnancy-related school dropout, thereby.

The issue of Family Planning and its consequences is not new in Cameroon. For a number of years, there has been considerable concern about high levels of fertility and their effects on the individual and society. The emergence and rapid spread of the use of contraceptive methods among the country's population has resulted in massive campaigns to sensitise people about the seriousness of large family.

Nevertheless, because abortion law is highly restrictive in Cameroon, it is difficult to ascertain the incidence of abortion and its consequences within population in general. Therefore, there is a need to provide such services and to undertake research in understanding women sexual behaviour and reproductive health ¹⁰. Thus, as the Family Planning is of growing concern today, more information is needed about the factors associated with these behaviours.

If Cameroon was able to identify better the characteristics, preferences, and intentions of these women, the factors including the social cultural norms in terms of childbearing that appear to contribute more; it could make significant strides in expanding and improving family planning services to meet their needs.

Data and methods:

Data on social, demographic, economic characteristics and Family Planning (methods, choice, and use) and reproductive behaviour based CDHS are used. Bivariate and multivariate techniques are used to measure the unmet need for family planning. These surveys data have been reinforced by recent studies specially Calvès AE¹⁰, and Kamdem Kamgho⁹.

In this study, unmet need for family planning is defined as the percentage of married women who want to space their next birth or stop childbearing entirely but are not using contraception and whether or not they have the means to meet that desire.

I- Results

1. 1: Childbearing and contraceptive use

Cameroon had four Demographic and Health Surveys^{3,4,5,6,7}. Between these surveys, the total fertility rate (TFR), or the average number of children per woman, dropped from 5.8 to 5.2 and 5.1 (Table 1). The fertility level remains high, however the trend is downward. Thus, the crude birth rate fell from 41.2 per thousand in 1987 to 39.6 per thousand in 2005. This trend is particularly reversed in rural areas where fertility continues to be higher (from 5.8 in 1991 to 6.5 in 2011). In 1998, the TFR for rural areas (5.6 births) is almost two births higher than the rate for urban areas (3.9 births).

Table 1: Total fertility rate trends in Cameroon (1991-2011)

	Urban area				Rural area				Cameroon			
	1991	1998	2004	2011	1991	1998	2004	2011	1991	1998	2004	2011
TFR	5,2	3,9	4,0	4,0	6,3	5,8	6,1	6,4	5,8	5,2	5,0	5,1

Source: CDHS-MICS 2011, CDHS 2004, CDHS 1998, CDHS 1991

1. 2: Teenage fertility

Adolescent childbearing has potentially negative demographic and social consequences. Births that occur to teenage mothers (less than 20 years) have been found to have the highest under five mortality rate in Cameroon since the past twenty years^{3,4,5,6,7}. This may be due to the fact that teenage mothers are more likely to suffer from pregnancy and delivery complications than older mothers, resulting in higher morbidity and mortality for both themselves and their children. In addition, early childbearing may foreclose a teenager's ability to pursue educational or job opportunities. Table 2 shows the percentage of adolescent women (age 15-19) who are mothers or pregnant with their first child. One in ten teenagers has already had a child (10 percent) and another 4 percent are pregnant with their first child.

Table 2: Teenager fertility trends in Cameroon (1991-2011)

	Urban area				Rural area				Cameroon			
	1991	1998	2004	2011	1991	1998	2004	2011	1991	1998	2004	2011
% adolescent women (age 15-19) who are mothers or pregnant with their first child	23,7	16,4	18,3	14,8	34,1	30,5	29,0	28,1	29,7	25,0	22,7	20,9
Source: CDHS-MICS 2011, CDHS 2004, C DHS 1998, CDHS 1991												

1.3 Age at first marriage, first sexual intercourse, first birth and birth interval

Information on median age at first marriage; age at first sexual intercourse, age at first birth and birth intervals provides valuable insight into birth spacing patterns. Short birth intervals, that is, births that occur less than 24 months apart, are detrimental to the health of both the mother and her child. Spacing children at least 36 months apart is safest and healthiest for the mother and the child. Then longer birth intervals also contribute to smaller families by affecting reproductive pattern of women ¹⁴

Table 3: Insight into birth spacing patterns in Cameroon (1991-2011)

Date/Period	Median age at first marriage	Age at first sexual intercourse	Age at first birth	Birth Interval (Months)					
				7-17	18-23	24-35	35-48	48-59	60+
1991	16,7	15,9	18,9	7,8	14,8	45,9	15,2	16,3	
1998	17,7	15,9	19,1	9,6	15,3	38,2	19,6	17,4	
2004	17,6	16,4	19	7,6	14,2	39,1	20,0	19,1	
2011	18,5	17,0	19,5	8,3	13,0	37,3	19,9	9,3	12,1
Source: CDHS-MICS 2011, CDHS 2004, CDHS 1998, CDHS 1991									

There has been little change in median age at first marriage over the last twenty years. During the period 1991-2011; the average is 17, 5 years. The 2011 CDHS suggests that women are waiting longer to marry and to have their first births. The age at first sexual intercourse increased from 15, 9 to 17 between 1991 to 2011. However, women in 1991 start sexual activity at the median age 15, 9 compared with a median age of 17 for women in 2011. The findings suggest, however, that younger Cameroonian women are more likely to begin sexual activity before marriage compared with their mothers and grandmothers ^{9,15}

Table 3 shows also the pattern of non-first births in the five years preceding the survey by the number of months since the previous birth. First births are omitted from the table because there is no prior birth with which to measure an interval. There has been little change in birth spacing patterns over the last twenty years. There are no significant differences in the median birth interval by birth order .The median interval between births in 1991 is seven months longer (44 months) than for women in 2011 (37 months). The median birth interval ranges from a low of 34 months in 1991 to 42 months 2004 and 2011.

1.4 Current use of contraceptive methods

Contraceptives are used most commonly by married women between 15 and 49 years in the developing world. The current level of contraceptive use among married women has increased significantly between 1991 and 2011, from 16%.to 19% in 1998 and 26% in 2004. In 2011, he slightly declined and is 23 % .

Table 4: Trends in contraceptive use among currently married women Age 15-49 (%).

	Urban				Rural				Total			
	1991	1998	2004	2011	1991	1998	2004	2011	1991	1998	2004	2011
Any method	24,9	34,6	36,2	33,4	10,5	12,9	16,2	14,4	16,1	19,3	26,0	23,4
Modern ¹ Method	7,1	13,1	19,3	20,8	2,5	4,5	5,9	8,7	4,3	7,1	12,5	14,4
Traditional ² Method	17,9	21,5	16,9	12,6	8,0	8,3	10,3	5,7	11,8	12,3	13,5	8,9
Not Currently use any method	75,1	65,4	63,8	66,6	89,5	87,1	83,8	85,6	83,9	80,7	74,0	76,6

1- Female and male sterilization, pills, DUI, injection, implant, male and female condom (included MAMA in 2011).
2- Rhythm method/redraw except in 2011);MAMA/Periodic abstinence and others
Source: CDHS-MICS 2011, CDHS 2004, CDHS 1998, CDHS 1991

Overall, contraceptive use among married women in Cameroon has nearly doubled in the past 20 years. The survey results indicate there was a large increase in contraceptive use in the late 1990s and 2010s, from 16, 1 to 23,4 percent among married women. However, over the past ten years, increases have been small. The contraceptive prevalence rate increased from 16, 1 percent among currently married women in 1998 to 26 percent in 2004, and has declined in the past five years (23, 4 percent in 2011) a reversal in the trend. Similarly, use of modern methods nearly doubled over the past 15 years from 4 percent in 1991 to 12, 3 percent in 2004, before increased slightly to 14, 4 percent in

2011. Over the past 20 years, there has been a slight decrease in the use of traditional methods. While initially there was a small increase in the use of traditional methods from 11, 8 to 13, 5 percent between 1991 and 2004, use of these methods decreased to almost 9 percent in 2011. Married women in urban areas are more than twice as likely to use a modern contraceptive method as women in rural areas (Table 4). If the level of use of modern contraception is lower in rural areas (9%) than urban areas (21%), the pace of increase is everywhere the same between 1991 and 2011 (67%).

II Level and trend of unmet needs for family planning

2.1 Potential users of family planning services

The potential demand for family planning has increased steadily in Cameroon since 1991.

Compared to the previous four CDHS, the percentage of women who want to stop childbearing increased by 2 percentage points between 1991 and 2011 (from 38% to 40%), remained almost stable between 1998 and 2004 (18% and 20%) and then increased by 6 percentage points (from 20% to 26%) between 2004 and 2011 (Table 6).

Table 5: Total potential demand for family planning

	Urban				Rural				Cameroon			
	1991	1998	2004	2011	1991	1998	2004	2011	1991	1998	2004	2011
Space	31,5	28,9	38,4	36,4	18,4	14,4	25,7	25,5	23,4	23,0	29,9	28,6
Limit	17,2	18,8	17,3	19,6	13,0	11,5	11,4	13,7	14,6	10,6	10,7	11,6
Total	48,7	47,6	55,7	56,1	31,4	25,9	37,1	38,7	38,0	33,6	40,6	40,3

Source: **DHSC 2004, DHSC 1998, DHSC 1991**

The desire to stop childbearing varies among Cameroonian women. Overall, slightly more urban women than rural women want no more children.

Likewise, the total demand for family planning did not show any substantial change. There was, however, a decrease of the three percentage points in the level of demand satisfied: from 5 percent in 1998 to 33, 6 percent.

A comparison of the findings from the four CDHS surveys shows that the desire to limit births among currently married Cameroonian women in rural area has declined while the desire to space births has risen. Over the past 20 years, the desire to space births has

increased from 45 percent in 1991 to 36 percent in 2011; however, this change has been minimal in the past ten years. Over the same period, the desire to limit births (excluding sterilised women) has increased from 23 percent in 1991 to 35 percent in 2004. Again this change has been minimal over the past 10 years.

2.2 Unmet need for family planning trend

According to table 6 the unmet need for family planning among married women has hardly dropped down (changed) during the period (22% in 1991 and 16, 6% in 2011).

Table 6: Unmet need for family planning

	Urban				Rural				Cameroon			
	1991	1998	2004	2011	1991	1998	2004	2011	1991	1998	2004	2011
Space	14,3	6,6	12,9	14,6	11,2	6,7	15,4	16,4	12,4	5,1	10,3	11,2
Limit	9,5	6,5	6,6	8,1	9,7	6,4	5,5	7,9	9,6	4,5	4,2	5,3
Totale	23,7	13,1	19,5	22,7	20,9	13,0	20,9	24,7	22,0	9,6	14,5	16,6

Source: CDHS-MICS 2011, CDHS 2004, CDHS 1998, CDHS 1991

Comparison of data from the 1991 and 2011 CDHS surveys suggests that there has been little change in the unmet need among currently married women over the past twenty years. Likewise, the total demand for family planning did not show any substantial change. There was, however, a decrease of the three percentage points in the level of demand: from 22 percent in 1991 to 9, 6 percent (Table 6). Unmet need is somewhat higher in rural areas (20.9%) than in urban areas (19.5%), but is high in both. It is also interesting to note that rural women have higher unmet need for both spacing and limiting than their urban counterparts.

When unmet need is so high, there is a demand for services throughout society. There is a need to expand and improve family planning services in both urban and rural areas¹⁶

III- Characteristics of women with unmet need in cameroon.

Critical examination of married women by their reproductive health characteristics showed that that the proportion of individuals with an unmet need for family planning (i.e., who have a current unwanted pregnancy or who are fecund, are sexually active, want no more births but are not using contraceptives) is as high as 16%. Considerable within regions, place of residence, education, living standards and children ever born

variations are seen during the twenty last years. Moreover, unmet need increases with age, suggesting an unmet need for limiting rather than for spacing births.

Most of these results are confirmed by bi-variate and multivariate association of various background characteristics of married women with the unmet need in family planning during the last twenty years. The odds of current use of family planning was 2.3 (95% CI: 1.66, 3.18) times higher in 2011 compared to 1991. However, the odds of the unmet need in family planning services between 2004 and 2011 were eliminated when other background characteristics of women were included in the model. There was also positive association between with the unmet need in family planning and educational status of women. Women with primary and secondary level of education were about 1.32 (95% CI: 1.12, 1.56) and 1.99 (95% CI: 1.38, 2.88) times respectively more likely to use family planning compared to their uneducated counterparts.

IV- Role of socio-cultural context

Social and cultural background of reproduction in Africa tends to promote the existence of large families. In the ancient cultural model in Cameroon, education strategies to life in general and sexual transmission standards in the major ethnic groups were much the work of seniors in homogeneous and unisexual groups than those of parents/guardians.

In Cameroon; normative referents and sociocultural form of transmission vary by ethnic group and sex of individuals. For example, for Bamiléke peoples (Western Region, Cameroon), sexual permissiveness and premarital sexual earliness behaviours traditionally were subject to social sanction. For fear of reprisals, young (especially the girl), received a very rigid education, where education the subject of men and sexuality were taboo subjects. This in contrast with some others ethnic groups like Beti/Fang (Centre and Southern regions).^{9,17}

These different socio-cultural practices to facilitate the transmission of information about life in general and about sex and its consequences in particular, however, lost their relevance with the modernization of society and the breakdown of community stress. Socialization of sexual life has become mostly the work of smaller family. However, parents find it difficult to fill this education. Due to family pressures couples start planning the child soon after marriage irrespective of their education, work status and wealth index. Couples appear to be under social pressure to prove their fertility by bearing a child within a short time after marriage.¹⁷

For most women in Cameroon, the use of a modern method of contraception is first and all a social act which implies the approval or the support of the partner and other

influential members of the family (mothers in law). For women in the rural communities or those who are not economically independent, the approval or the consent of the partner (spouse) is unavoidable. This situation has to be understood within the social and cultural context of reproduction in Africa and the impact of this background on Family Planning needs.^{9,17}

Surveys have proven that when women participate in decisions in the home, they are more likely to use contraceptives. In Cameroun there is evidence of not using contraceptives at the start of marriage (Table 3). A woman has to prove her fecundability so couples start planning the child soon after marriage irrespective of their education, work status and wealth index status. When women earn income and contribute financially to the management the home; they also participate in decision making.

First birth interval is inconsistent and irregular due to cultural norms and bans of society¹⁸ Marriage to first birth interval is not governed by urbanization and modernization factors but depends on social norms and taboos. For example, even presence of mother-in-law at home and joint family system effect length of birth interval ^{17, 18}. Same is the case of marriage to first birth interval for current data.

But age at marriage is difficult to increase due to effect of strong social customs on it.

There is need of effective family planning policies to increase the length of first birth interval along with delayed marriages to get a significant control over rapid population growth. Age of women at marriage and age of women at the birth of first child has played vital role in its determination. Modernization factors have not affected negatively the length of first birth interval.

Education of husband is important factor particularly in those societies where woman takes her reproductive decision with the consent of her husband. Gender composition also influences birth interval¹⁹.

Discussions

Strong evidence exists that there is a high level of unmet need for Family Planning in Cameroon. Family Planning seems to be one of the cardinal ingredients in the battle for survival as the cost is minimal and it saves lives and contributes to a significant reduction in poverty and deprivation.

This study also established the influence of social pressure on women to prove their fertility.

On the consequence of unmet need individual and family levels are the most obvious

result of unmet need for FP, represented by a high rate of unwanted, unplanned, or unintended pregnancies. Many of these must have ended in unsafe abortion, and contributed to maternal mortality. Africa has the highest maternal mortality ratios in the world. Such ratios reflect a measure of unwanted pregnancy.

The “unmet need for FP” is narrowly defined in DHS surveys as to assess the number of potential clients. It is defined as the percentage of women of reproductive age who claim they do not want any more children, or that they want to wait a certain number of years before having the next child and who are however not using any contraception to support their wish.¹⁵

The benefits of meeting the needs include the level of current use of contraceptive methods is one of the indicators most frequently used to assess the success of family planning programme activities. It is also widely used as a measure in analysing the determinants of fertility.

Health concerns about contraceptives and social disapprovals are other important reasons. Interestingly, inadequate access to services and lack of knowledge about methods and outlets are not among the predominant causes of unmet need.

Because abortion law is highly restrictive in Cameroon, it is difficult to ascertain the incidence of abortion and its consequences in within population in general.¹⁰

Data on unmet need, supplemented with information on induced abortion and related issues, could provide countries with useful inputs for formulating and implemented responsive reproductive health policies and programs.

Conclusions

In conclusion current family planning use among married women in Cameroon is still low though the unmet need was very high. Thus the commitment of the Cameroon government to achieve an 50% contraceptive demand satisfaction by 2015 is far to reach since about 71% of married women who have 4 surviving children desire to have more children and the desire is even higher in rural areas.

Considerable information exists about the characteristics, intentions, and preferences of women with an unmet need for Family Planning services. These characteristics differ from region to region and socialization area.

Some key points emerge from this study.

First, there is a very high level of unmet need for family planning services in Cameroon.

(b) The continuing prevalence of adolescent marriage and low contraceptive use during adolescence, resulting in a high rate of adolescent fertility. The adverse health consequences of Family Planning for both mothers and children include the high rate of maternal mortality and infant mortality;

Second, failing to respond to unmet need has serious consequences. By addressing unmet need the country can improve the health of mothers and their children and families provide couples with the ways and means to decide the size and spacing of their families, and contribute to the overall social and economic development effort. Conversely, the failure to address unmet need would forfeit these advantages. In a context where, abortion is highly restricted and uncommon among young women with regard to abortion practices, decision-making processes, health risk and motivations.

Third, policymakers and program managers need to use available information to develop appropriate policies, strategies and programs that will improve services and remove obstacles to family planning use by women with a demonstrated unmet to develop appropriate policies, strategies and programs that will improve services and remove.

Expanding and improving family planning services would help respond to the expressed desires of Cameroonian women and would be good public policy.

From the preceding socio-cultural analysis, many obstacles related to unmet need can be removed with appropriate policies, strategies and programmes using the available information on unmet need.

These strategies and programs should include:

- adopting a participatory approach for the implementation of FP programs;

- soliciting the support of the community, the husband and the leaders as a product of all FP programs, men should be specifically targeted
- giving high priority to social mobilization of the leaders and members of the community especially regarding teenagers who have unmet need
- improving the social status of women and young girls by integrating their economic activities and incorporate the gender dimension in FP programs the social status of women;
- focusing the interventions on the post-natal period and suggest to them appropriate methods of contraception;
- developing the messages to promote the use of contraception and the resumption of sexual relations during the post-partum and breastfeeding periods.

REFERENCES

1. Bongaarts, J. (1981): The impact on fertility of traditional and changing child-spacing practices. In Page H. J. and Lesthaeghe R. (DHS): Child-spacing in Tropical Africa. Traditions and change. New York, pp. 111-132.
2. Ashford, L., (2003): Unmet need for family planning: recent trends and their implications for programs. Washington, D.C.: Population Reference Bureau.
3. CAMEROUN. (1983) : Enquête Nationale sur la fécondité du Cameroun 1978. Rapport principal. Direction de la Statistique et de la Comptabilité Nationale. Yaoundé ; 300 p
4. Fotso, M. & Barrere, B. (1999) : Enquête Démographique et de Santé, Cameroun, 1998. Calverton, MD: Bureau Central des Recensements et des Etudes de Population and Macro International, Inc.
5. CAMEROUN. (1992) : Enquête Nationale sur la fécondité du Cameroun 1991. Rapport principal. Direction Nationale du Deuxième Recensement Général de la population et de l'Habitat/DHS, Yaoundé 285p
6. CAMEROUN. (2005) : Enquête Nationale sur la fécondité du Cameroun 2004. Rapport principal. DHS WorkingPapers, Macro International Inc.
7. CAMEROUN (2011): Enquête Démographique et de Santé Cameroun et indicateurs multiples 2011. DHS WorkingPapers, Macro International Inc.
8. Bella, N. (1995) : La fécondité au Cameroun: niveaux et tendances. In Population. Vol. 50, n° 1, INED, pp. 35-60.
9. Kamdem, H. (2009): Knowledge, attitudes and practices of young people in relation to abortion in large towns in Cameroon: evaluation based on survey data. Communication, XXVIème congrès de la population organisé par L'Union Internationale pour l'étude de la Population (UIESP), Marrakech (Maroc), du 23 au 27 Novembre 2009
10. Calves, A.E. (2002): Abortion risk and decision-making among young people in urban Cameroon. Studies in Family Planning, , 33(3):249-260.
11. Bongaarts, J. & al. (1984) : The proximate determinants of fertility in sub-Saharan Africa. Population and Development Review, vol. 10, n° 3, pp.511-537.
12. Bldhsoe, C. & Barney, H. C. (1993): Social Dynamics of Adolescent Fertility in Sub-Saharan Africa. Washington D.C., National Academic Press, 208 p.
12. Kuate-Defo, B. (1998) : Sexualité et santé reproductive durant l'adolescence en Afrique avec une attention particulière sur le Cameroun. Ediconseil, Montréal 394 p.
13. Evina Akam (1991) : Vie féconde des adolescentes en milieu urbain camerounais.

14. Trussell, J., Martin, L., Feldman, R., Palmore, J., Concepcion, M. and Noor Laily Bt. Dato Abu Bakar, D. (1985): Determinants of birth-interval length in the Philippines, Malaysia, and Indonesia: A hazard-model analysis. *Demography*, 22 (2), 145-168
15. USAID (2005): Perspectives on Unmet Need for Family Planning in West Africa : Cameroun . Conference in Responding Family Planning in West Africa , Accra (Policy Project Briefing Paper) 15-18 fev 2005;
16. Khan H.T & Raeside, R. (1998): The determinants of first and subsequent births in urban and rural areas of Bangladesh. *Asia-Pacific Population Journal* 13; (2), 39-72, 10,
- 17 Yana, S. (1995) : A la recherche des modèles culturels de la fécondité au Cameroun : une étude exploratoire auprès des Bamiléké et Béti de la ville et de la campagne, Institut de Démographie de l'Université Catholique de Louvain, Louvain-la-Neuve, Académia, l'Harmattan, 329 p
18. Singh, S. N, Singh, S. N. & Narendra R. K. (2011): Demographic and socio-economic determinants of birth interval dynamics in Manipur: A survival analysis. *Online Journal of Health and Allied Sciences*, 6(4). Retrieved from <http://www.ojhas.org/issue36/2010-4-3.htm>
19. Maitra, P. & Pal, S. (2004): Birth spacing and child survival: Comparative evidence from India and Pakistan. *Labor and Demography series*, n° 0509010, 62 p.