FERTILITY AND CONTRACEPTIVE USE IN RURAL DALLE, SOUTHERN ETHIOPIA

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ABSTRACT: This study was based on data from the 1992 Family Planning Expansion Project base-line survey conducted by the Family Guidance Association of Ethiopia. The findings indicated that the study population was characterized by a persistence of high fertility and an extremely low level of contraceptive use. The mean number of children ever born to women aged 45-49 was about 8, while the total marital fertility rate (TMFR) was arund 11 births per woman. The analysis also suggested that the study women had a strong preference for a large family. On the other hand, only 4.1% of the 664 eligible women reported having used some contraceptive methods at the time of the survery. Thus, it is recommendad that methods of reducing the observed high fertility be introduced so as to alleviate thesocio-econornic problems that it poses. [Ethiop. I. Health Dev. 1994;(8)1:11-21]

INTRODUCTION

Information on levels of fertility and contraceptive use in Ethiopia is incomplete. Few studies, however, give an insight into the fertility behavior of the Ethiopian women or a segment of them (1-7). These studies, unfortunately, fail to provide adequate information on the reproductive performance and contraceptive use of women in different regions and subregions of the country , particularly in its rural areas. Generally, the level of fertility in Ethiopia is high and the use of contraceptive is negligible (2, 3).

The main objective of this study is, therefore, to give a direct evidence on the current level of fertility and contraceptive use in rural areas of Dalle Province, Southern Ethiopia.

THE STUDY AREA

Dalle is a province in the Siadmo Adinistrative Region, of Southern Ethiopia, covering an area of 1411.4 square kilometers.

As of mid-1992, Dalle had a population of 320, 380; out of which 161,923 were males and 158,457 were females (8). With an average density of 227 persons per square kilometer, the province is among the most densely populated ones in Ethiopia. About 94% of the population of Dalle live in rural areas and depend on
subsistence farming for their livelihood. The main economic activities in Dalle are maize production, enset and coffee plantation and livestock keeping. Chat and banana are also produced in the area. Most of the coffee, chat and bananas are for marketing.

Although basic demographic indicators for Dalle could not be obtained, available evidence for the rural Sidamo show that infant and child mortality rates are above 1000 and 140 per 1000 births, respectively, and the average age at first marriage for girls is around 17 years (9).

Dalle has one hospital and health center both situated in Yirgalem, the capital, of the province, and five clinics, distributed in rural areas (8). There are 48 elementary, 6 junior secondary and one

secondary schools in Dalle (8). Dalle has seventy six Peasants' Associations (PA'S) and nineJJrban Dwellers' Associations.

METHODS

The source of data for this study was the Family Planning Expansion pilot project base-line survey, conducted by the Family Guidance Association of Ethiopia (FGAE) in rural Dalle in July 1992 (9).

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A sample of 664 currently married women of age 15 to 49 years and living with their husbands along with their spouses was drawn using a stratified systematic sampling. As the sampling frames were obtained, from (.ach domain one PA was randomly selected. From each of the selected four PA's, a systematic sample of the respondents was selected. The details of the sampling procedure was discussed elsewhere(10). The present study is confined only to the 664 currently married women, because fertility and contraception is most conveniently studied among such women (II). The size of the sample was comparable to other similar studies in Ethiopia (7, 12, 13) and elsewhere (11, 14,15, 16).

The level of achieved or life-time fertility was measured by the mean number of children ever-bom to a woman. The mean number of children ever-born to women aged 45-49 years gives an estimate of the completed feritlity by the end of their reproductive period (17).

Although the mean number of children ever born is a good measure of life-time fertility, it fails to show the pattern of family- building in a population. Parity progression ratios (PPRs), the proportions among the women who have had at least some specified number of births, and who go on having one more birth, are recommended as good indicators of family building patterns (18). These ratios do show a sequential nature of family building; that is, a woman can have a second child if she has already had one, a third if she has already had two and so on. Since PPRS for younger women were too small and hence might not show the true picture of their final fertility, the ratios were calculated only for those aged 20 years or more. Age specific marital fertility rates (ASMFRs) and total marital fertility rate (TMFR) were used to measure current fertility (19). The mean number of additional children desired per woman was used as a measure of preferred family size (20). The indices presented here might be more meaningful measures of fertility because of the following considerations: (i) marriage is universal in the study area and most births take place within wedlock (10); and (ii) if marriage dissolution occurs either by divorce or death of a husband, there is a high probability of remarriage unless the woman is old (personal communication).

Probing questions were also included in the questionnaire to reduce possible errors in the data, particularly those on fertility. Besides, the general magnitude of levels of fertility and contraceptive use obtained here appeared to be acceptable compared to those from other similar surveys (2, 3, 20, 21).

RESULTS AND DISCUSSION

Characteristics of the Respondent Women Of the 664 respondent women, slightly less than half were between 25-34 years of age, a third were under age 25, and about a quarter aged 35 years or more. The average age of the women was 29 years (Table 1). Ethnically, about 98% were Sidama; Amharas and Gurages constituted 1.2% and 0.6% of the respondents, respectively. About 50% of these women were protestants and a quarter of them were followers of indigenous religions while the rest were Moslems, Catholics and Orthodox Christians. (Table 1).

Occupationally, all of the study women were engaged in housework (Table 1). However , women in this area were also reported to cultivate some food crops around their homes and to be doing some petty trades to generate income for their families (10). Only 20% of the respondents could read and write; this figure was higher than the. literacy rate for rural Sidamo (9%) and rural Ethiopia (11%) reported in 1984 (9). The incidence of marital instability appeared to be relatively high among the study group as nearly one-third of them had been married more than once.

Finally, about a third of the respondents and lost at least one child, while over two-thirds had not experienced any child death. The average number of child death was 0.51 (Table 1).

Achieved Fertility
Mean Number of Children Ever Born

The mean number of children ever born to the women was 4.75; while for those aged 45-49 years 'it was 8.04 (Table 2). The latter figure, which is the completed fertility of the study women, was higher than the 6.6 reported for the whole of Ethiopia (2, 3) and other developing countries, where it ranged from 5.3 to 7.9 (20, 21). The mean numbers of children ever born to the study women in all age groups were substantialiy higher than those previously found in Ethiopia (2, 3) and other developing countries (20, 21). Among the women aged 25-29 years, for example, the mean was in excess of four children; and among those aged 20-24 years,

itwas around three. The mean increased consistently with the age of the women, andreached its peak at the age group 40-45 (Table 2). Thus, the above results suggested that the study population was abnormally high in its fertility .

Parity Progression Ratios (PPRs)

With few exceptions at younger age groups, the PPRs showed an increasing pattern with the age of the respondents. However, they decreased as parity of the women increased (Table 3). The PPRs revealed that a substantially high proportion of women in the younger age groups (i.e 20-24 and 25-29) become mothers. For example, about 95% and 98% of the women aged 20-24 and 25-29 years, respectively, had at least one child at the time of the survey. Moreover, nearly 82% and 94% of the women aged 20-24 and 25-29 years, respectively, continued to have at least one or more children after having at least one child. The proportions
among the older women who stopped at lower number of children were very low (Table 3).

Table 1. Precentage Distribution of Respondents by Some Background Variables, Rural Dalle, 1992.

Variable	%	Variable	%
Age		Occupation	
15-24	34.2	House Wife	
25-34	44.8		
35-49	22.0	Literacy Status	
		Illiterate	80

Ethnicity		Literate	20
Sidama	98.0		
Amhara	1.2	Marital Stability	
Gurage	0.6	Married Only once	67
		Married more than once	33
Religion			
Protestant	49.4	Child Death	
Catgikuc	8.9	0	69.4
Orthodox	5.1	1	17.9
Moslem	11.6	2	7.2
Indigenous	25.0	3+	4.4
		Total	100(664)

Table 2. **Mean Number of Children Ever Born (MNCEB) per Woman by five Years Age-group, Rural Dale, 1992**

Age-group	N	MNCEB
15-19	58	1.03
20-24	172	2.80
25-29	179	4.53
30-34	109	6.43
35-39	83	7.22
40-44	35	7.63
45-49	28	8.04
TOTAL	664	4.75

The pattern observed among the younger women is true in a population where marriages start very early and where modern birth control practices are absent or negligible (3). The overall pattern that a substantially high

proportion of women went on to higher order of births confirmed the earlier suggestion that the study population was characterized by a persistence of high fertility. With the aid of the PPRs for the women aged 40-44 and 45-49 years, the manner in which different family sizes were distributed among the study group was examined in Table

The number of women having one, two, three or four children was higher among those aged 45-49 years than those aged 40-44. But the number of women with five, six, seven or eight children was lower in the former than in the latter age group (Table 4). Assefa (3) also found similar results in Central Ethiopia.

Table 3. **Parity Progression Ratios (PRRs) per 1000 Women, Rural Dalle, 1992**

	Age Group					
PPRs	20-24	25-29	30-34	35-39	40-44	45-49
A(0)	959	978	1000	1000	1000	1000
A(1)	818	937	991	988	986	994
A(2)	674	890	972	976	980	946
A(3)	582	822	951	962	968	923
A(4)	472	758	871	896	938	917
A(5)	412	62	831	868	871	886
A(6)	400	589	739	886	852	864
A(7)		432	648	704	800	812
A(8)			600	658	750	769

Table 4. **Distribution of 1000 currently Married Women Aged 40-44 and 45-49 by Number of Children. Rural Dalle, 1992.**

No. of Women With

No. of Children	At least i Children		Exactly i Children	
(i)	40-44	45-49	40-44	45-49
0	1000	1000	0	0
1	1000	1000	14	36
2	986	964	20	52
3	966	912	31	70
4	935	842	58	70
5	877	772	113	88
6	764	684	113	93
7	651	591	130	106
8	521	485	130	112

Current Fertility

The ASMFRs (per a thousand currently married women) ranged from as low as 36 for those aged 45-49 to a peak of 453 for women aged 20-24 years. The ASMFRs were markedly high in all age groups, except in the last two, (i.e 40-44 & 45-49), indicating a considerable high fertility pattern over a broad age range. The first five age groups were the key marital fertility groups which contributed more than 90% of the total births. Such a pattern of marital fertility having peak at early ages (20-24) was also observed in the whole of Ethiopia (3) and other developing countries (19, 20). The total marital fertility rate (TMFR) for all women estimated from these ASMFRs was 10.80 births per woman. Exclusion of the youngest (15-19) and the oldest (45-49) age groups (Table 5) reduced the TMFRby about 2.2 births; while exclusion of the youngest age group only reduced it by two births.

The TMFR is difficult to interpret particularly in the context of rapidly changing marriage patterns (19). It could, however, be said that this synthetic measure, constructed from the fertility of different cohorts at successive ages, is extraordinarily high. Indeed, the TMFR was substantially higher than the average completed family size (8.04) of the study women. This discrepancy between the two measures might be attributed, among other things, to recall-Iapse usually associated with retrospective data (17, 19, 20). In general, the pattern of marital fertility presented here could be considered natural. Comparison of the reported age pattern of marital fertility with the Coale- Trussell (22) natural fertility model schedule showed that the rates presented here were slightly lower than those of the model schedule at all ages, except at the two oldest age groups (40-44 & 45-49), where the differences were higher by 2.4% and 50% than those of the model in the former and latter age groups, respectively.

The deviations of the reported ASMFRs From those of the Coale- Trussell model might be due to misplacement or under-reporting of births (17). It might also be due to real differences in the pattern of marital fertility between the study population and those from which the Coale- Trussell model schedule was
derived.

Variations in the patterns as well as levels of marital fertility have been reported even among populations where there are no or little deliberate birth control practices (23, 24). It was, thus, concluded that the Coale-Trussell model schedule may not be the best for describing the pattern of marital fertility for developing countries and another schedules (Robinson model schedule) was recommended to be used as a bench mark of natural fertility (24).

For a further comparison of the age pattern of marital fertility presented here with a schedule of natural fertility, indices were computed by setting the ASMFR for ages 20-24 at 1 and expressing the ASMFR for each subsequent age group as a ratio of that rate. This was done for the reported ASMFRs as well as for both the Coale- Trussell and Robinson model schedules (Figure 1).

Knodel (25) argued that the most important feature that distinguishes the age pattern of natural marital fertility from controlled fertility is the rate at which marital fertility rates decrease as age increases. The age pattern of marital fertility shown in Figure 1 has a convex shape with fertility declining most sharply after the age group 35-39. Evidence from western European countries, however , revealed a gradual transition of the age pattern of marital fertility to a concave shape as fertility declines sharper at progressively younger ages (25) Moreover, the rate of decline with age did not seem much more rapid than that of the Coale- Trussell mode schedule. The curve of the marital fertility also closely approximated the pattern of the Coale- Trussell natural fertility model and there was no sign of fertility control with age.

Thus, the profile of the marital fertility schedule that the study population exhibited (Figure 1) suggested that a pattern of natural fertility has continued to prevail in this area. In addition, the reported age pattern of marital fertility appeared to be in close agreeement with the Coale-Trussellrather than with the Robinson model schedule. Similar results wre found in some African and Asian countries (19).

Desired Fertility
The mean number of additional children desired by the study women was four (Table 6). The mean, however, decreased as age of the women increased, ranging from 4.85 in the 15- 19 age group to 3.25 in the 45-49. The mean also declined as the number of living children increased. Among the women who had no living children, for example, the mean was around five; while among those with at least four living children, it was 3.5 (Table 6). The desired fertility indices obtained here were higher than those found in most of developing countries (20).

Considering the fact that the mean number of children ever born to these women was 4.75 (Table 2), it would mean that the study women desired to have a family of size eight or more before they reached menopause. The study group may, thus, be characterized as a natural fertility population.

Table 5. **Age- Specific Maritals Fertility Rates Per Woman, Rural Dalle, 1992**

Age Group	Marital Fertility Rates	
	Age-Specific	Cumulatives
15-19	0.397	1.985
20-24	0.453	4.250
25-29	0.419	6.345
30-34	0.394	8.315
35-39	0.289	9.760
40-44	0.171	10.615
45-49	0.036	10.795
TMFR (15-49) 10.80		
TMFR (20-49) 8.81		
TMFR (20-44) 8.63		

TABLE 6. **Mumber of Additional Children Desired by Age Group and Number of Living Children, Rular Dalle, 1992.**

Age Group Mean No. of Additional Children Desired	
15.10	4.85
20.24	4.15
25.29	4.07
30.34	3.50
35.39	3.43
40.44	3.28
45.49	3.25
No. of Living Children	
0	4.96
1	4.79
2	4.69
3	3.83
4+	3.54
Total	4.00

Contraceptive Knowledge

The study women had varying knowledge about the different contraceptive methods, and a larger proportion (28.3%) of them were familiar with oral contraceptives (Pills). Overall, about 33% of these women were aware of at least one contraceptive method (Table 7). The relatively high knowledge of contraceptives in such a remote area might be due to the impact of the out-reach Family Planning service by the Yirgalem Health Center . However, the level of knowledge of contraceptives obtained here was substantially lower than the corresponding national figure (62%) and mach lower when compared with 93.6% in Urban Ethiopia (2). This substantial difference might suggest the need for diffusing family planning programs in the study area. The result that Pill was a relatively better known birth control method was consistent with earlier studies in Ethiopia (2).

Contraceptive Use

Although the knowledge of contraceptives in the study area seemed to be relatively wide-spread, in practice only 28 Women(4.2%) of the eligible women had ever used some methods of contraceptive some time in the past and 27(4.1%) reported having used some methods at the time of the survey (Table 7). Among the twenty seven current users, twenty were using Pill and six were using Traditional methods. While female sterilization was practiced by only one woman, use of other methods was reported by none. The fmding that Pill was a more frequently used birth control method was in line with that found for the whole of Ethiopia (2).

The reported ever use rate of contraceptives was comparable with the corresponding rate for rural Ethiopia (4.2%)and lower than that for Sidama women (7.1 %) in 1990; but the current use rate was slightly higher that of rural Ethiopia (2.6%) and the Sidama women (3.1 %) (2) .Both the ever use and current use rates were, however, considerably low compared with that of urban Ethiopia in 1990 (26.2% & 24.5%) respectively (2) and other developing countries. In 1987, for instance, the ever use rates of contraceptives for Africa, and Asia averaged, respectively, 30% and 37%; and the current use rates were 10%, and 23% in that order (211 The result that the use of contraceptives was very low in the study area both by African and world standards is probably unexpected given the relatively high level of knowledge. This might, however, be attributed, among other things, to the fact that the out-reach service family planning program of the Yirgalem Health Center has been initiated only quite recently and hence the service is not yet strong enough to raise the current rate of contraceptive

use. It might also be attributed to the limited capacity of the existing health institutions, in Dalle Province, in providing FP services.

Table 7**. Distribution of Respondents by knowledge and Current Use of Contraceptive Methods, Rural Dalle, 1992.**

Method	Knowledge %	Ever Use %	Current use %
Pill	28.5(189)	71.4 (20)	71.4 (20)
IUD	5.3(35)	-	-
Injectable	14.0(93)	-	-
Foam/Jelly/Diaphragm	3.6(24)	-	-
Condom	9.0(60)	-	-
Female Sterilization	5.3(35)	4.0 (1)	4.0 (1)
Male Sterilization	1.1(7)	-	-
Traditional	10.0(66)	25.0 (7)	22.2 (6)
Total	32.8(218)	4.2 (28)	4.1 (27)n

Note : 1. Figures in Brackets are number of women,
2. Traditional includes: Sexual and Periodic Abstinence, and withdrawal

Age group
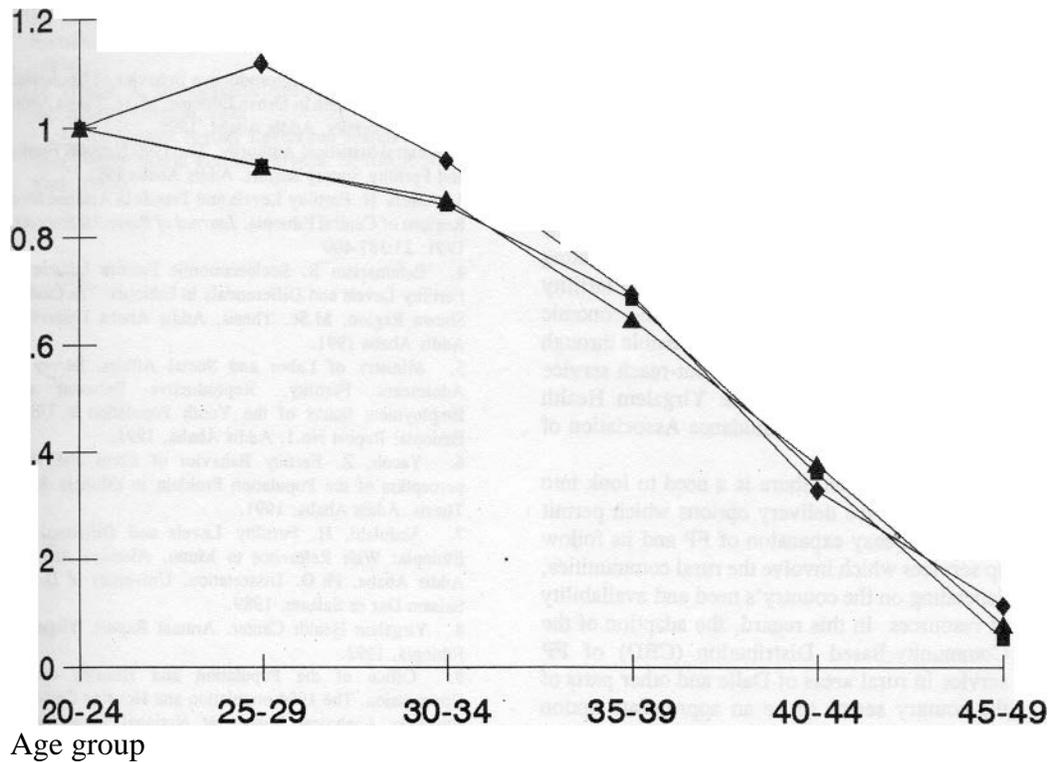
Figure 1. Age Patterns of Marital Fertility (20- 24 = I) "Fertility and Contraceptive in Dalle"

CONCLUSION

This study addressed itself to assess the current status of fertility and contraceptive use in rural areas of Dalle Province, Southern Ethiopia. The results revealed that the study population was chracterized by a persistence of a very high level of fertility and an extremely low level of contracepiive use. There was also a big gap between contraceptive knowledge and use. as is well known, high fertility has severe consequences on the socio-economic development of a country .It also affects the general well-being of the population, particularly the health of mothers and children. .Therefore, concerted efforts should be made to greatly increase the number of contraceptive users, by educating and motivating the public, in order to reduce this high fertility and thereby to alleviate the socio-economic problems it poses. This may be possible through strengthening the on-going FP out-reach service programs, conducted by the Yirgalem Health Center and the Family Guidance Association of Ethiopa.

In addition, there is a need to look into other FP service delivery options which permit a wide and easy expansion of FP and its follow up services which involve the rural communities, depending on the country's need and availability of resources. In this regard, the adaption of the Community-Based Distribution (CBD) of FP service in rural areas of Dalle and other parts of the country seems to be an appropriate option given the present situation.

Finally, this study, unlike the others in the country , considered predominantly one ethnic group, which has its own beliefs and outlooks regarding reproduction .and contraception. This fact might probably explain some of the differences from observations made in other parts of Ethiopia. More detailed and systematic studies that examine reproductive norms and behaviour of women in Dalle province. in particular , and in Sidamo region, in general, may give a better picture of the fertility behaviour of the Sidama women.

ACKNOWLEDGEMENTS

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