The Microeconomic Effects of Family Size in Somalia

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Much research has been directed toward discovering the determinants of fertility in Sub-Saharan Africa. Much less research has attempted to analyze the consequences of high fertility and closely-spaced children. Yet, at the household level, the demand for children should reflect the consequences of family size and child spacing. If the consequences are positive, the demand for children should be high. If they are negative, the demand for children shoud be low.

The consequences of high fertility and closely-spaced children, at the household level in Sub-Saharan Africa, may be divided into two broad categories of: (1) health-related consequences, such as child or maternal malnutrition, morbidity, and mortality, and (2) socioeconomic-related consequences related to household income, saving, labor supply of both children and mothers, occupation, education, land tenure, and migration. In reality, the two categories interact with each other.

Health-Related Consequences

Sub-Saharan Africa

The health-related consequences of high fertility and closely-spaced children are mainly negative throughout Sub-Saharan Africa. Both high fertility and closely-spaced children lead to increased risk of malnutrition, morbidity, and mortality for infants, children, and mothers alike. Age interacts and increases the risks. That is, fetal deaths and stillbirths, as well as prematurity, low birth weight, neonatal and infant mortality, and child mortality are high for primapara mothers, particularly very young ones, under the age of 20. However, there is evidence that there is even greater risk for high parity and older mothers, over the age of 35.

The negative consequences for mothers and children also interact with each other in circular fashion and intensify the effects. That is, a large number of closely-spaced pregnancies will affect the health of the mother, increasing the risk of morbidity and malnutrition, if not death. The consequences to the mother, in turn, affect the children, increasing their risk of malnutrition, morbidity, and mortality. The higher the infant and child mortality, the more likely it is that the mother will become pregnant again in order to attain her desired family size. The earlier the death of the child, the shorter will be the birth interval, causing

even greater risks to the mother and her children. Those negative effects, amplified by the interaction of negative socieconomic consequences, lead to a downward spiral of ever-worsening health for both mother and children, with the risk of mortality, sooner or later.

Somalia

Few specific studies on health-related consequences of high fertility and close child spacing have been conducted in Somalia. However, data show comparatively high birth rates, resulting from regular, and closely-spaced pregnancies beginning early in marriage, and thus high total fertility rates, along with relatively high (though decreasing) infant and child mortality rates, as well as high maternal mortality rates. Malnutrition is also prevalent among both children and mothers. Thus, the data suggest that Somalia fits into the overall pattern for Sub-Saharan Africa.

(World *Demographic characteristics.* The population of Somalia is growing rapidly, at an estimated rate of 2.9-3.2 percent (World Bank 1985a: 210, 212; World Bank 1985b, i: 2-3; Abdi 1981: 19-21). This is a result of certain marital and fertility patterns which prevail. Marriage is nearly universal; only those physically or mentally disabled do not marry (Somalia, Min. of Nat. Plan., 1985a, 14-15). By age 35, nearly all Somali women have been married.

The average age at first marriage ranges from age 18.6 in the rural sector to age 20.4 among the nomadic population (Min. of Nat. Plan. 1985a: 15). Childbearing begins soon after marriage and continues on until the end of the childbearing age. This can be assumed from data on contraceptive use, as contraception directly affects fertility. It is estimated that only 1 percent of Somali women of child-bearing age (or their husbands) are using contraceptives (World Bank 1985a: 212; Min. of Health 1985: 64-67).

Not only is contraceptive use low, but the length of time which women breastfeed each child, a complement to contraceptive use, is not as long as in many African societies where women claim to breast feed at least two years. In the Health Status Study conducted in 1985 in Damme Yassin, Wadajir, Mogadiscio, 171 of the mothers surveyed were still breast-feeding their children (Sibanda 1985: 38-39). Of those mothers, 113 or them (66%) said they would breast feed their children for 1-2 years, and 5 (3%) said they would breast feed until they were pregnant. Yet, of the 131 mothers who had already stopped breast feeding their children, 10 (8%) had never breast fed their children, and 96 (63%) had breast fed for one year or less. Only 35 (27%) had breast fed their children for more than one year. Although data from the 1983 Family Health Survey of Five Cities indicated somewhat longer duration of breast feeding, there is some upward bias in the data (Min. of Health 1985: 45-46).

In addition to low contraceptive use and relatively short duration of breast feeding, the number of desired children is high. The data from Damme Yassin revealed that 636 (90%) of the 710 women surveyed desired more than six children, and that 298 of them (42%) wanted as many as possible (Sibanda 1985: 63-64). The 1983 Family Health Survey indicated that among the women surveyed who gave a numerical response to the question about the number of additional children desired, less than 10 percent, in most of the cities, expected families of five children or less, and approximately three-fourths of the women expected family sizes of eight or more children (Min. of Health 1985: 42).

With low contraceptive use, short duration of breast-feeding, and a high desired number of children, there should be an inverse relationship, as found in many developing countries, between age at first marriage and fertility. In fact, Robleh (1984, as cited in Somalia, Min. of Nat. Plan. 1985a: 16) found such a relationship in her research in Mogadishu. That is, the younger the age at first marriage, the longer is the duration of marriage within the child-bearing years, and thus the greater the number of children which can be born by a non-contracepting woman. This very combination of relationships has led to high birth rates in Somalia.

The high average number of children ever born to women, the high Total Fertility Rate, and the high Crude Birth Rate indicate that Somali women have regular, and closely-spaced pregnancies beginning early in marriage and lasting throughout their child-bearing years. The 1980-81 Population Survey found that the average number of children ever born, by the end of the child-bearing years is 7.5, and that the Adjusted Total Fertility Rate is 7.4 (Min. of Nat. Plan. 1985: 18, 22). The Adjusted Crude Birth Rate calculated from these data is 48.4. The World Bank maintains that the Total Fertility Rate (TFR) is somewhat lower because the nomadic population, which in most countries has lower fertility, was not surveyed in 1980-81. Thus, the Bank estimates a TFR of 6.7. However, it still calculates a Crude Birth Rate (CBR) of 49 (World Bank 1985: 4-5).

Birth rates have remained high and constant over the years. Although death rates are still high, they have fallen over time, leading to the high rate of natural increase. The Population Survey of 1980-81 calculated indirectly an Adjusted Crude Death Rate (CDR) of 17 per thousand (Min. of Nat. Plan. 1985a: 27). This is considerably lower than the estimated 30 per thousand in 1940 (Abdi 1985: 23). Subtracting the CDR of 17 from the CBR of 48.4 gives an estimated Rate of Natural Increase (RNI) of 3.1. The World Bank estimated a CDR of 19 which, when combined with their estimated CBR, gives an RNI of 3.0, very close to that found by the Population Survey of 1980-81 (World Bank 1985b: 5).

While overall death rates have fallen over the years, infant and child have been as high as 170 per thousand, with 24 percent of the children dying before the age of five (Abdi 1985: 24). The Population Survey of 1980-81 reports a somewhat lower infant mortality rate (IMR) of 147, although there is some question about the low rate of 119 which was reported for the nomadic population which could make the overall rate unrealistically low (Min. of Nat. Plan., 1985a, 26). However, even the estimated IMR of 147 is high compared to other countries such as Kenya, Uganda, and Ethiopia (World Bank 1985b: 4).

While high infant and child mortality rates are related to high birth rates, high maternal mortality rates are also related to high birth rates. It has been estimated that for every 100 children born in Somalia, one mother will die in childbirth and two others will suffer related morbidity (Abdi 1985: 24).

Empirical studies. The demographic characteristics described above suggest that conditions exist in Somalia which would lead to the negative health-related consequences which have been confirmed by studies conducted elsewhere in Sub-Saharan Africa. That is, high fertility and closely-spaced children lead to high infant, child, and maternal mortality, morbidity, and malnutrition, and that the consequences to children and mothers interact with each other and magnify the individual effects. That rates of infant, child, and maternal mortality remain high while overall

death rates have declined rapidly in recent years further suggests the validity of the argument. Yet, very few empirical studies have been conducted in Somalia to actually test the hypothesis.

One of the first studies to document the negative, health-related consequences of high fertility and closely-spaced children was conducted at Banadir Hospital in Mogadishu, in October 1984 (Abdirashid and McDevitt, 1985). Data were collected for 1,280 deliveries. Similar to the findings throughout Sub-Saharan Africa, the study found a U-shaped relationship between birth order and stillbirths. That is, 7.5 percent of first births were stillbirths. The percentage dropped to 5.3 percent for second births, before beginning to rise again to 6.3 percent for third births, and 6.6 percent for fourth and fifth births. The percentage then rose steeply to 10 percent for sixth and higher order births.

A similar U-shaped relationship occured between age of mother and stillbirths. That is, over 8 percent of the births of very young mothers (under age 20) ended in stillbirths. The percentage was lower for women in the 20-24 (6.7%), 25-29 (7,2%), and 30-34 age groups. It was significantly higher, approximately 11 percent, for women from age 35 and older.

Low birth weights affect an infant's health, and contributes to infant and child morbidity and mortality. The data from the Banadir Hospital study showed a relationship between birth interval and low birth weight (2,500 grams or less). That is, the percentage of low birth weights was highest (8.7%) for birth intervals of less than 18 months. It decreased to about half of that percentage for birth intervals of 18-23 months and was lowest (3%) for intervals of 24-29 months. There was an increase in the percentage for intervals longer than 30 months, but this may be the result of not controlling for other important variables such as economic class or maternal age.

The data from Banadir Hospital also indicated a relationship between mother's age and low birth weight. Younger mothers had a greater percentage of low birth weights than older mothers.

The consequences of high fertility and closely-spaced children affect mothers as well as children. The Banadir Hospital study confirms these conclusions from data on birth order. The international data shows that complications at the time of delivery tend to occur most often in first births and in fourth and higher order births. Of the 1,269 deliveries at Banadir Hospital there were 83 complications. Although the total numbers are small for statistical purposes, a pattern still emerged. First order births showed the highest percentage of complications (7.8%). The percentage decreased for second-order births (4.2%), and was lowest for third-order births (2.8%). It began to rise again for fourth-and higher-order births (5.9%).

The Health Status Study of Damme Yassin provided a great deal of related data. It indicated that 34 percent of the women surveyed exhibited evidence of nutrional deficiency (Sibanda 1985: 51). It also indicated that 16 percent of the children up to age 5 surveyed exhibited moderate protein-energy malnutrition (PEM) and 4 percent exhibited severe PEM. This is somewhat higher than the percentages found in the RHU nutritional surveys in the refugee camps. However, it is lower than Ministry of Health estimates for all of Somalia, which are 19 percent and 7 percent respectively (Sibanda 1985: 73-75). When the Damme Yassin data on malnutrition are broken down by age, it can be seen that the children were born malnourished, as a result of malnourished mothers and poor nutrition during pregnancy, and that thire malnourished status worsened, for those who survived (Si-

banda 1985: 76). The study recommends that «Child spacing is one way of reducing malnutrition in young children as it gives the mother's body time to recover between pregnancies and the child receives the mother's full attention and proper care» (Sibanda, 1985, 78).

In sum, the few empirical studies conducted in Somalia confirm the negative consequences of high fertility and close-spacing of children upon both children and mothers. They confirmed the negative effects of fertility, as well age of mother, upon children, measured in terms of stillbirths. They also confirmed the negative effects of short birth intervals, as well as age of mother, upon children, measured in terms of low birth weights. Not only do children suffer negative consequences, but so do mothers. The studies found negative effects of fertility upon mothers, in the form of complications at the time of delivery. Such complications often cause maternal mortality. But, they may also affect children, causing stillbirths or child morbidity. Finally, several studies showed a high incidence of malnutrition among children and mothers alike. There can be many reasons for malnutrition, but high fertility and short birth intervals can be an important cause for children and mothers alike.

Socioeconomic-Related Consequences

Although the health-related consequences are mainly negative, it was found that the socioeconomic-related consequences, throughout Sub-Saharan Africa, are less clear cut. For examples, in different countries, high fertility may increase total income yet decrease per capita income (DeLancey, 1983). Also, it may have either no effect or a negative effect upon savings. And, it may have various effects upon expenditures such as food, housing, clothing, and education.

Thus, food purchases may decrease in quantity or quality, particularly per capita, but total food production on the family farm may increase. There may also be transfers of expenditures from other categories, such as from clothing or housing to food. The effect of fertility and closely-spaced children upon education is particularly surprising. Although some studies show that it may not be possible to educate all children in large families, other studies reveal a positive relationship between fertility and education at the primary level.

The socioeconomic consequences upon the supply of labor and upon population pressure on the land and migration are also elusive (DeLancey, 1983). For examples, studies throughout Sub-Saharan Africa show that high fertility may be related to decreased employment of women, increased labor force participation of women, or no relationship between fertility and labor force participation of women. It has also led to land fragmentation, and even landlessness, to intensification or diversification of cultivation, «labor circulation», migration, or off-farm employment.

It was not possible to find any studies which had examined the socioeconomic consequences in Somalia. Yet, the socioeconomic consequences can only be determined by country-specific studies, since they vary greatly from country to country, and even within countries. Thus, it is important to begin to conduct such research in Somalia to complement the research on health issues.

In sum, unlike the health-related consequences, it is difficult to determine the net effect of the socioeconomic consequences of high fertility and closely-spaced

children. Moreover, the concept of the «value of children» must be more fully explored. For example, in addition to their contribution of labor and their assistance in educating their siblings, children are also highly valued in Sub-Saharan Africa for their social security role. Thus, another consequence of high fertility may be a parental sense of security that the greater the number of children they have, the better off they will be in old age or when trouble strikes.

Conclusions

In conclusion, the health-related consequences of high fertility and closely-spaced children are mainly negative, while the socioeconomic consequences are more indeterminate, especially in Somalia where they have not yet been researched. But, the positive socioeconomic consequences, in combinaton with the generally positive perception of the value of children, continue to outweigh the negative socieconomic consequences for many families in Sub-Saharan Africa. Therefore, at the household level, the demand for children remains high, rationally high, because when families consider the consequences of high fertility, they do not calculate, at present, a negative net balance. This may be true for Somalia, as well.

The following message was sent to the Second African Population Conference in early 1984 in Arusha, Tanzania, by Mohamed Siyaad Barre, President of the Somali Democratic Republic:

> The Government of the Somali Democratic Republic is determined to improve the standard of living of its people and improve their health and nutrition in order to reduce infant and child morbidity and mortality and thus to increase life expectancy in both rural and urban areas. The maternal and child health programmes will stress child spacing among other aspects of health in order to ensure good health of the mother and the child. Although the Somali Democratic Republic is sparsely populated efforts will be made to promote a pattern of population distribution consistent with the national development goals.

This represents a challenge to the people of Somalia, especially to those working to develop the country. It recognizes the negative consequences of closely-spaced children, if not high fertility, on the health of mothers and children. It stresses determination to improve the standard of living of the people and improve their health and nutrition, and it stresses efforts to promote population distribution consistent with national development goals. Success in reaching those goals may depend upon population dynamics, as well. Therefore, it might be fruitful to begin to research the socieoeconomic consequences of fertility and child spacing to determine their effect. In the long run, they may affect the health of mothers and children, through their effects upon their general standard of living, and could eventually change the net balance of effects from positive to negative. Monitoring all changes will assist in the continued evolvement of development-oriented policies for Somalia.

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