Teenage Childbearing and its Health Consequences on the Mother and Child in Eritrea

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Abstract

Objectives: The central question in this study is to examine the health consequences of early motherhood on the mother and child in Eritrea, and the social and demographic context in which it occurs. It also sheds some light on the level and trend of teenage childbearing in Eritrea.

Methods: The data for this study are mainly the 2002 Eritrea Demographic and Health Surveys (EDHS). A descriptive bivariate analysis is used to estimate the proportion of teenage women becoming pregnant or mothers with their first births and to examine the social groups of teenage mothers who are at higher risk of early childbearing. Logistic and Cox hazard models are employed to examine the health impact of teenage childbearing on mothers and their children.

Findings: Teenage childbearing is still high in Eritrea, where around half of all women aged 19 have been pregnant or mothers with their first child in 2002.The high teenage childbearing is related to adverse health risks on the mother and child. If the mother is a teenager, particularly under 18 at child birth, worse prenatal and delivery medical care, increased risk of low-birth weight and of prolonged labor, and higher infant and child mortality are associated, compared to older mothers.

Conclusion: The significant effect of age of mother demonstrates that the health impact of teenage childbearing is not only due to socio-demographic factors that affect the teenager at different levels, but also due to biological factors. This suggests that, in addressing the most serious health risks of teenage childbearing, maternal age and behavioral factors must both be considered, and further monitoring of trends is desirable.

Keywords: Teenage, childbearing, maternal age, behavioral factors, low-birth weight, child mortality, Eritrea.

Introduction

Teenage childbearing is generally associated with higher rates of maternal morbidity and mortality, greater risks for delivery complications, low-birth weight infants and child mortality. As a result of teenagers' physiological and social immaturity and their lack of adequate prenatal care, health risks associated with their pregnancies and childbearing are more pronounced than are those among older women (NAS, 1996). For example, in Zaria, Nigeria, Harison and Rossiter (1985) found maternal mortality among women younger than 16 to be nearly six times that of women aged 20-24. Anemia and Hemorrhage also occur more frequently among adolescent women. According to the study by Adedoyin and Adetoro (1989) in Nigeria, about 60% of 496 teenage mothers were anemic, compared with 15% of 500 women aged 24-30. In most African countries, many of the problems associated with childbearing are due to lack of timely and appropriate health care during pregnancy. In Kenya, Khasiani (1985) reported that more than one-third of expectant school-age girls received no prenatal care, and 28% attended a clinic for the first time in their eighth or ninth month of pregnancy. Some studies (e.g., Bacci et al., 1993) show that infants born to women younger than 15 were more than two times more likely to be of low birth weight than those born to women aged 24-30. Infants born to teenage women have higher rates of mortality and morbidity than do those born to older women. For example, in Zimbabwe, Mahomed et al. (1989) revealed that teenage girls younger than 14 had a perinatal mortality rate of 73% deaths per 1000 deliveries, compared with the rate of those older than 14 (51 deaths per 1000 deliveries). To the extent that teenagers rarely plan for their pregnancies and to the extent that they may be socially unable to care for their children, the children may experience neglect, abuse, abandonment, and infanticide (Boohene, et al. 1991).

In Eritrea, although the consequences of teenage childbearing raise fundamental concerns about the health and social development of young mothers and their children, they are not well documented. The main objective of this study is to examine the impact of early childbearing on the health risks of the mothers and their children. Such analysis can improve our understanding of early childbearing in Eritrea and the health problems associated with it. It can also help policy-makers to design programs that may equip adolescents with the kind of education and skills they need.

Materials and Methods

In this study, data from the 2002 EDHS survey are used. In the trend analysis, data from the 1995 EDHS survey were used for comparative purposes. We first present the descriptive analysis of the key socioeconomic characteristics of teenagers in Eritrea. We then use logistic models to estimate the probability of a teenage woman ever using prenatal care, experiencing the risk of having prolonged labor during delivery, and of low-birth weight infants and neonatal mortality. And Cox regression models are used to estimate the probability of teenagers experiencing the risk of post-neonatal mortality, given the socio-demographic context of Eritrea. The logistic model is appropriate when the dependent variable is dichotomous and when there is no time involved, like mortality during the neonatal

age, while the Cox regression is necessary when there is time dependency (for example, mortality during the post-neonatal period) and time varying covariates. Teenage is defined to include ages 15 to 19 inclusive, which is the criterion most often used by researchers and health planners working on teenage sexuality and reproductive health.

Background characteristics of female teenagers in Eritrea

Overall, teenage women (15-19 years) constitute one-fifth of all women in the reproductive ages (15-49 years) in Eritrea in 2002. The percentage distribution of women under 20 by selected background characteristics is presented in Table 1. Four out of nine female teenagers live in urban areas. One out of every two teenagers has primary education and another 29% has secondary education or higher. Compared to older women, teenagers have higher educational attainment. In Eritrea, teenage women are traditionally expected to give birth only when they are married. 31% of all teenage women were married at the time of the survey. The proportion of married teenage women increases from 12% among women aged 15 to as high as 53% among those aged 19 (see Table 1).

Levels and Trends of Teenage Childbearing in Eritrea

Table 2 shows that about 51% and 36% of teenagers at age 19 were either mothers or pregnant with their first child in 1995 and 2002, respectively. Marriage was the most important factor causing women to initiate early childbearing in Eritrea, where almost all teenage first births (97%) occur within marriage. A decline in teenage childbearing is evident among all social groups, except among women residing in urban areas and those with secondary education. A comparison of the proportions of married teenage women residing with their husbands at the time of the 1995 and 2002 EDHS surveys showed that a significant decline occurred in Eritrea, particularly in rural areas. While 39% of married teenage women in the rural areas were living away from their husbands in 1995, this figure had almost doubled (72%) in 2002. Among urban teenagers, the change was much smaller (from 41% to 56%).

Table 1: Percentage distribution of teenage women by selected background characteristics, Eritrea, 2002

Background Variables	Current Age						
	15	16	17	18	19	15-19	15-49
Urban-rural residence							
Urban	42.6	50.2	49.1	40.3	49.0	45.8	43.3
Rural	57.4	49.8	50.9	59.7	51.0	54.2	56.7
Education							
No education	17.4	15.5	14.0	30.0	28.8	21.3	49.8
Primary	66.5	52.5	46.7	44.8	32.0	49.4	30.1
Secondary+	16.1	32.0	39.3	25.2	39.2	29.3	20.1
Household economic status							
Low	57.0	50.3	46.2	58.8	46.8	53.9	55.2
Middle	163	24.0	25.6	19.1	25.2	18.8	20.0
High	26.7	25.7	28.2	22.1	28.0	27.3	24.8
Marital status							
Never married	69.0	22.7	87.6	82.0	75.5	50.6	48.2
Married	12.4	18.0	24.5	49.1	51.8	31.0	77.3
Total (number)	426	424	326	545a	280	2001	8754

a The high concentration of women at age 18 is likely to be due to shifting of ages from the adjust two ages (i.e., 17 & 18).

Table 2: Levels and Trends in Teenage Childbearing by selected Socio-demographic variables, Eritrea, 1995 and 2002

Socio demographic factors	Percent of teenage women who started childbearing at the survey date	
Current age	**1995**	**2002**
15	3.0	2.1
16	12.8	3.4
17	22.4	7.6
18	40.0	23.5
19	50.7	36.0
Residence		
Rural	34.2	18.5
Urban	6.9	8.1
Education		
No education	41.6	25.0
Primary	19.2	13.7
Secondary+	5.0	7.0
Marital status		
Never married	0.9	0.3
Married	61.4	43.8

The Effect of Early Childbearing on the Use of Prenatal Care

The data showed that teenagers were less likely to seek prenatal medical care during pregnancy, compared with mothers aged 20 years or above, but the difference was not statistically significant. Younger women are also less likely to be supervised by a health professional during delivery than older women. Birth order had a negative and highly significant effect on the likelihood of receiving prenatal care and seeking health attendant at delivery. The effects of mother's education, household economic status, and childhood residence were strongly and significantly associated with prenatal care and attended delivery, where the adjusted odds of receiving prenatal care and attended delivery are much higher among mothers with some education, with better household economic status, and residing in urban areas.

Table 3: Logistic regression results (odds ratios) of determinants of prenatal medical care and delivery at health centers

Variable	Prenatal care	Attended delivery
Mother's age		
<18	0.75	0.60**
18-19	0.80	0.88
20-24	1.09	0.66**
≥25	1	1
Birth order		
1	1	1
2-3	0.90	0.52***
4+	0.80*	0.38***
Education		
No education	1	1
Primary	1.90***	1.81***
Secondary	3.80***	4.18***
Household economic status		
Low	1	1
Middle	2.81***	4.72***
High	4.59***	20.86***
Childhood residence		
Rural	1	1
Urban	2.66***	1.93***

Note: The data on prenatal care and attended delivery only refer to children born five years before the survey (2002)

The Effect of Early Childbearing on the Birth Weight of Children and on Delivery

Table 4 presents the results of a logistic regression for the probability of a child weighing less than 2,500 grams at birth (a standard measure of low birth weight). Children born to mothers under age 20 were more likely to weigh less than 2,500 grams at birth compared to children of older women. Although the effect of age of mothers older than 18 on the birth weight of children was significantly reduced after adjusting for birth order, the effect of those younger than 18 remains significant (Model 1). The increased risk of low birth weight among children born to mothers under 18 was consistent with the findings of a study conducted in Mali and Burkina Faso (LeGrand and Mbacke, 1993). Further, we found that first and twin births are significantly at a higher risk of having low birth weight compared with higher order and singleton births. Children born to women with secondary or higher education, with high household economic status, and residing in rural areas are at significantly lower risk of having low birth weight than children born to women with no education, low household economic status, and residing in urban areas. In addition, women are at

higher risk of prolonged labor during twin births than during single births. Mothers with no education and low household economic status were at significantly higher risk of prolonged labor than mothers with some education and middle or high economic status.

Table 4. Logistic regression results (odds ratios) of determinants of low birth weight and prolonged labor during delivery

Variable	Birth weight (<2,500gm)		Prolonged labor (during delivery)	
	Model1	Model 2	Model 1	Model 2
Mother's age				
<18	1.67*	3.08**	1.12	1.64***
18-19	1.06	1.81*	0.81	1.16
20-24	0.82	1.16	0.95	1.12
≥25	1	1	1	1
Birth order				
1	1	-	1	-
2-3	0.61*	-	0.58***	-
4+	0.39**	-	0.55***	-
Multiplicity				
Single	1	1	1	1
Twin	1.98*	1.54	1.71**	1.58*
Education				
No education	1	1	1	1
Primary	0.79	0.85	0.60***	0.61***
Secondary	0.49**	0.60	0.54***	0.61***
Household economic status				
Low	1	1	1	1
Middle	0.85	0.83	0.50***	0.50***
High	0.51**	53**	0.38***	0.39***
Residence				
Rural	1	1	1	1
Urban	1.63*	1.63*	1.17	1.17

Note: The data on birth weight and prolonged labor only refer to children born five years before the survey (2002)

The Effect of Early Childbearing on Infant and Child Mortality

In this study, age of child is limited to under-two years and is subdivided into three segments: neonatal (0 month), post-neonatal (1-11 months), and toddler (12-23 months) periods. The subdivision is due to the fact that the underlying determinants of child mortality and, consequently, the importance and choice of preventive and curative measures vary with age.

The increased risk of mortality remains unchanged even when we control for other socio-demographic factors. In the case of neonatal and post-neonatal ages, children born to 20-24 are also at higher risk of death than are children of 25 years or above, suggesting that the effect of early motherhood continues beyond the teenage years.

Table 5: Logistic and Hazard Cox regression results on determinants of mortality for Neonatal, Post-neonatal, and Toddler periods, Eritrea

Variable	NeonatalL	Post-neonatalC	ToddlerC
	(Odds ratios)	(Relative risks)	(Relative risks)
Mother's age at child birth			
<18	1.74***	2.21***	1.59***
18-19	1.86***	1.67***	1.62***
20-24	1.29***	1.52***	1.02
≥25	1	1	1
Birth order			
1	1	1	1
2-3	0.71***	1.09	1.07
4+	0.72***	1.43***	1.17
Multiplicity			
Single	1	1	1
Twin	7.45***	2.09***	1.24
Education			
No education	1	1	1
Primary	0.74***	0.65***	0.54***
Secondary	0.60**	0.48***	0.37***
Wealth index			
Lowest	1	1	1
Middle	0.66***	0.86*	0.91
Highest	0.80*	1.00	0.90
Residence			
Rural	1	1	1
Urban	0.95	1.31**	1.30**

L=Logistic regression model is used, C=Cox regression model is used

Discussion

In Eritrea, teenage women (15-19 years) constitute 23% of all women at reproductive ages (15-49 years). More than half of teenage women live in rural areas. Marriage is the most important factor causing women to initiate early childbearing, where about 97% of teenage first births occur within marriage. More than 90% of teenagers reported that they know at least one way to avert pregnancy. Nevertheless, only 3.5% of all married teenagers stated that they had ever practiced any method.

Low prevalence of contraceptive use in conjunction with high demand for children may be one of the potential reasons for high teenage childbearing in Eritrea, particularly in the rural areas. However, attitudes, beliefs, and social norms that encourage large family size may be more important for the high teenage childbearing than low prevalence of contraceptive use. Existing norms and values seem to inhibit conversations about reproductive health issues within relationships and with friends. For example, open discussions with partners, parents, or friends about the subject of teenage pregnancy and how to protect or avoid problems like unwanted or unplanned pregnancy are not common in Eritrea. This holds, particularly for the rural societies where the subject is not socially or culturally accepted and where pregnant school girls and unmarried teenagers are considered outcasts. Old customs that encourage forced marriage and early childbearing still exist, although being weakened in recent years. Parents still require their daughters to marry and have children very early.

The findings from the analysis of the effects of early childbearing on the mother and child show that teenagers, especially under age 18, are less likely to seek prenatal medical care during pregnancy and to be attended by health professionals during delivery, compared to older mothers. Concerning the impact of teenage childbearing on the child's health, children of mothers under 18 are observed to be at significantly greater risk of having low birth weight (less than 2,500 grams), compared with children of older mothers. Children of mothers under 20 face significantly higher risk of mortality during their first two years of life than children of older mothers. This holds true even when other important socio-economic variables are held constant.

In conclusion, the increased health risks on the mother and children found in this study seem to be the consequences of a combination of physiological and behavioral circumstances of teenage mothers. Physiological immaturity at childbirth in combination with her poor nutritional status and poor health care facilities in a country like Eritrea is indeed likely to have adverse effects on child's health. It has been suggested that in situations of economic hardship and social disruption, teenage girls are less likely to mature physiologically and more likely to remain unaware or ambivalent with respect to reproductive behaviors (Singh, 1986; Wulf, 1986; Garenne et al., 2000). It is likely that female Eritrean teenagers already disadvantaged by reproductive immaturity are more vulnerable to the unfavorable socio-economic conditions caused by the war and drought crises than older women. The observed higher and statistically significant risks of low birth weight and of mortality among infants born to younger women (especially younger than 20), highlight that much of the effects of early motherhood are related to young age. Thus, policies designed to reduce the health effects of teenage childbearing should address both biological (maternal age) and behavioral factors.

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