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Introduction

The literature on African family formation suggests that age at marriage is rising in many African societies, especially among the better educated and urban segments of the population. At the same time, it is believed that age at menarche is declining (e.g., Rogo, 1986), and that premarital adolescent sexual activity is increasing (Cherlin and Riley, 1986). Clearly, if this change in premarital sexual behavior is not compensated for by an increase in premarital contraceptive use, then it is expected that there will be an increase in the proportion of out-of-wedlock adolescent births, as well as an increase in the prevalence of induced abortion (Gyepi-Garbrah, 1985a, 1985b; National Institute of Development Research and Documentation, University of Botswana, 1988).

In several recent reports, researchers have noted that teenage and premarital pregnancies in sub-Saharan Africa often have undesirable consequences (e.g., Cherlin and Riley, 1986; Kulin, 1988; Njogu et al., 1990). The problems most often noted include dropping out of school (Ferguson, 1991; Ferguson et al., 1988; Gyepi-Garbrah, 1985a; Khasiani, 1985; Ministry of Health, Division of Family Health, GTZ Support Unit, 1988; Mwateba et al., 1988; Njau, 1991; Njau and Lema, 1988), illegal abortion (Ladipo, 1989, Leke, 1989; Mashalaba, 1989; Sanghvi et al., 1983), child abandonment (Dynowski-Smith, 1989), and high mortality among newborns (Adegbola, 1987; Meekers, 1990; Njogu et al., 1990). The literature suggests that teenage childbearing is most likely to be a problem among unmarried girls, especially when they are still in school (Cherlin and Riley, 1986).

Although teenage childbearing has always been common in most sub-Saharan African societies, it is only recently that it has become a social problem. In the past, women would often marry at a very young age, and most teenage childbearing occurred within marriage (Cherlin and Riley, 1986; Ferguson, 1991; Kulin, 1988). More recently, a substantial proportion of adolescent childbearing has occurred among never-married girls (Gage-Brandon and Meekers, 1993; Ferguson, 1991; National Institute of Development Research and Documentation, University of Botswana, 1988:5; Njau, 1991; Njogu et al., 1990; United Nations, 1989).

Two hypotheses have been proposed to explain the sexual and reproductive behavior of unmarried adolescents (Cherlin and Riley, 1986; Kulin, 1988; Nichols et al., 1986, 1987). One theory suggests that unmarried childbearing results from a breakdown of traditional social controls by elders over the sexual behavior of adolescents (Adeokun, 1990; Bauni, 1990:i,20; National Institute of Development Research and Documentation, University of Botswana, 1988:8; Ocholla-Ayayo et al., 1990:28). Bauni phrased the issue very clearly when he wrote that "...the removal of sexuality from the control of the community resulted in individual decisions about when, where, with whom and for what purpose to have sexual intercourse." (1990:i)

This change can be attributed at least in part to the fact that educated youths now obtain knowledge from books which can be used to challenge the wisdom of the older generation. Furthermore, individual decisionmaking has become more

important because individuals are no longer accountable for their behavior directly to the elders or to the community but rather to the judges in the courts (Bauni, 1990:20). This hypothesis of a breakdown of traditional controls over sexuality is supported by a recent Kenyan survey in which over 60 percent of the respondents reported that they believed that the rules and norms restricting premarital and extramarital sex no longer applied today (Ocholla-Ayayo et al., 1990:67). An alternative theory is that unmarried teenagers use sexual relations and pregnancy to accomplish certain goals. For example, sexual relations may have economic benefits or be a step toward marriage. From this perspective, premarital pregnancies are a result of conscious, rational decisions.

So far, few systematic studies of adolescent sexual behavior in sub-Saharan Africa exist, and only scattered literature is available to verify these hypotheses. It is clear, however, that unmarried teenage childbearing is increasingly becoming a social problem in sub-Saharan Africa, especially among schoolgirls, and that policies need to be developed to deal with this problem. It is anticipated that unmarried childbearing will continue to increase, because the period at risk of premarital pregnancy will lengthen as female age at marriage increases. Therefore, a better understanding of teenage sexual and reproductive behavior is needed to guide social policies. The data from the Demographic and Health Surveys provide a unique opportunity to update the body of knowledge on adolescent sexual and reproductive behavior in sub-Saharan Africa (see e.g., Blanc and Rutenberg, 1991; Gage-Brandon and Meekers, 1992, 1993). Adolescent sexual activity and premarital childbearing in seven sub-Saharan African countries are analyzed in this study. In particular, the effects of socioeconomic indicators on adolescent sexual and reproductive behavior are estimated and theories concerning the motivation for different types of adolescent sexual and reproductive behavior are examined.

Data

This paper uses data from DHS surveys conducted between 1986 and 1989 in Burundi, Ghana, Kenya, Liberia, Mali, Togo, and Zimbabwe.[1] In each of these surveys retrospective information on the initiation of sexual activity was asked of both ever-married and never-married respondents.

It is important to keep in mind that sexual behavior may be a sensitive topic for some respondents, and consequently that the quality of this type of data may be poor, especially if derived from standardized surveys. Caraël et al. (1990:5-6) point out that there were similar doubts about the validity of data on family planning three decades ago, and that those concerns were unfounded. It is true that it is probably a good idea to have a healthy sense of skepticism about the quality of the data on sexual relations, but it is reassuring that recent analyses of DHS data quality have shown that response

[1] For a description of these surveys, see Agounké et al., 1989 (TOGO); Central Statistical Office and Institute for Resource Development/Macro Systems Inc., 1989 (ZIMBABWE); Chieh-Johnson et al., 1988 (LIBERIA); Ghana Statistical Service and Institute for Resource Development/Macro Systems Inc., 1989 (GHANA); National Council for Population and Development and Institute for Resource Development/Macro Systems Inc., 1989 (KENYA); Sembaga et al., 1988 (BURUNDI); Traoré et al., 1989 (MALI). Information on sexual behavior was not collected in the Senegal and Ondo State (Nigeria) surveys nor in the husband/male surveys conducted in Burundi, Ghana, Kenya, and Mali. The individual recode files for the DHS surveys in Botswana (Lesetedi et al., 1989) and Uganda (Kaijuka et al., 1989) were not available at the time this report was prepared.

rates on questions on first sexual relations were very good (Blanc and Rutenberg, 1990, 1991). Nevertheless, some respondents provided inconsistent responses on the age at first sexual relations and age at first birth (i.e., first birth preceded first sexual relations). Blanc and Rutenberg (1990, 1991) report that in many countries the age at first sexual intercourse was checked against the age at first birth for consistency during the data editing process. If the age at first intercourse was greater than the age at first birth by more than one year, then the age at first sexual relations was decreased by one year, to make the two dates consistent. Such an adjustment is a relatively common procedure to correct the order of events (see for example, Kahn et al., 1988).

Timing of First Sexual Intercourse

Recent studies indicate that adolescent sexual activity is high and increasing in most African countries (Gyepi-Garbrah, 1985a:19). However, there are large variations in such activity, both between different socioeconomic groups and between countries. For example, a study of girls in teacher training colleges in Kenya suggests that 79.4 percent of all the girls, and 68.2 percent of those who were not married, had sexual experience (Ferguson et al., 1988:10). The median age at first sexual intercourse for this sample of college girls is 18 years. But other studies suggest that age at first sexual intercourse is much lower among nonstudents. For example, a study of a rural area in Machakos district, Kenya, indicates that 26.2 percent of girls and 64.1 percent of boys had first sexual intercourse before age 16 (Ministry of Health, Division of Family Health, GTZ Support Unit, 1988:26; Maggwa, 1987). A 1985 Tanzanian national survey on adolescent fertility, conducted among urban youths aged 12 to 24 years of age, shows that 46 percent of the females and 61 percent of the males surveyed were sexually active (Mwateba et al., 1988:3). In Nigeria, 17 percent of adolescents have had sex by age 15 and 63 percent by age 19 (Centre for Development and Population Activities, 1988:17). In a study of 400 women at PMI centers in Senegal, d'Almeida and Guisse (1990) found that 20 percent of females had sex before age 15 and 46 percent between ages 15 and 18.

One of the problems with the existing literature on sexual behavior is that the data often do not come from random samples, but rather from selected groups, such as school populations. Consequently, it is difficult to compare the findings from different studies and they might not be representative of the entire population. Because the DHS surveys included a question on age at first sexual intercourse these problems can be overcome, and comparable estimates can be obtained. The DHS data show that there is a large variation in the timing of first sexual intercourse across countries. The percentage of all women aged 15 and older who had sexual intercourse by age 15 ranges from 2 percent in Burundi to 36 percent in Liberia (see Appendix, Table A.1).

Table 1 shows the effects of literacy, religion, place of residence, and year of first intercourse on the likelihood that a sexually experienced woman had first sexual intercourse before she reached age 15. The age group of the respondent is included as a control variable. After controlling for the other variables in the model, it appears less likely for liter-

Table 1: Logistic Regression Coefficients Predicting the Relative Odds that a Woman had Sexual Intercourse before Exact Age 15

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Constant	2.42*	2.36**	4.07**	2.92**	1.78**	2.75**	5.74**
Literacy							
Can Read	-.79	-.42**	-.58**	-.09	-.66**	-.58**	-.65**
Cannot Read							
Religion							
Christian	...	.28**	.34*	-.06	.17	-.24*	-.22*
Muslim	...	.21	.67**	-.25*	.45	-.04	...
Other							
Place of Residence							
Urban	2.42**	-.17	.10	.06	.11	-.60**	-.03
Rural							
Age Group							
15-19	2.04**	1.17**	1.44**	1.26**	1.17**	1.25**	1.85**
20+							
Year of First Intercourse	-.09**	-.05**	-.07**	-.05**	-.05**	-.05**	-.10**
N	2973	3948	5665	4945	2760	3028	3280

Source: Demographic and Health Surveys, 1986-89. Weighted data, sexually experienced women only
* $p \leq .05$
** $p \leq .01$

ate women in Ghana, Kenya, Mali, Togo, and Zimbabwe to have started sexual activity before age 15 than illiterate women. In Burundi and Liberia the effect of literacy is in the same direction, but it is not significant. Undoubtedly, this positive effect of literacy on age at first sexual intercourse can largely be attributed to the fact that educated women tend to marry at a later age than uneducated women. The effect of urban residence varies from country to country, and in general it is small and not significant. One exception is Burundi, where urban women have a significantly higher likelihood than rural women of having had sex before age 15; in Togo the reverse is the case. In all countries age at first sexual intercourse has increased over time, even after controlling for other variables.

It is important to keep in mind here that this table does not include age at marriage. Undoubtedly, age at first sexual intercourse is lower in those populations where age at first marriage is also low. In other words, it is likely that the increase in age at first sexual intercourse can be attributed to an increase in age at marriage and, consequently, that premarital sexual intercourse has increased despite a later age at first sexual intercourse. The correlates of premarital sexual intercourse are discussed in the following section.

Premarital Sexual Experience

The norms regarding premarital sexual activity in African societies vary noticeably from society to society. In some societies, such as among the Baganda of Uganda, virginity is no longer considered important. In fact, parents encourage premarital sex by building separate houses for sexually active adolescents (Ntozi and Lubega, 1990:5). In other ethnic groups, premarital sex was, and often still is, strongly disapproved of. Nevertheless, many of the societies that traditionally condemned premarital sexual intercourse have become much more tolerant nowadays. For example, in the past, among the Shona of Zimbabwe, girls who lost their virginity before marriage were required to confess, and the man responsible would be forced to marry her. Today the man is only required to pay a damage payment to her parents (Mutambirwa, 1990). Urban residents often think of premarital sex as an opportunity for the partners to learn about each other (Anarfi, 1990:10). Of course, these social norms concerning premarital sexual intercourse do not necessarily correspond with actual behavior. Even in the past, and in societies that strongly opposed premarital sex, these norms were sometimes violated, e.g., Enel and Pison (1990), on the Joola of Senegal. The literature suggests that premarital sex has become quite common in most societies.

The DHS questionnaires do not include a question on sexual norms, but the question on age at first sexual intercourse can be used to look at actual behavior. Table 2 shows summary statistics for various indicators of sexual behavior. The differences in sexual behavior between the populations of the countries are striking. The percentage of never- married women who admitted being sexually experienced varies from a low of 5.2 percent in Burundi and 5.7 percent in Mali to 81.0 percent in Liberia. Likewise, the percentage of ever-married women who reported that they had sexual inter-

Table 2: Indicators of Sexual Initiation, by Country

	Never-Married Women Who Had Intercourse		Ever-Married Women Who Had Premarital Intercourse		All Women Who Had Premarital Intercourse	
Country	%	N	%	N	%	N
Burundi	5.2	1045	19.7	2890	15.8	3935
Ghana	47.4	888	60.4	3528	57.8	4416
Kenya	49.7	1797	61.2	4701	58.0	6498
Liberia	81.0	1099	59.2	4038	63.9	5137
Mali	5.7	162	13.4	2720	13.0	2882
Togo	61.4	738	65.1	2577	64.3	3319
Zimbabwe	25.8	1127	48.1	2994	42.0	4121

Source: Demographic and Health Surveys, 1986-89. Weighted data.

course before first marriage varies strongly between countries. In Kenya, Liberia and Togo approximately six of ten ever-married women reported having premarital sex, compared with less than two of ten in Burundi and Mali.

The literature suggests that premarital sexual behavior is increasing in sub-Saharan Africa (e.g., Cherlin and Riley, 1986). It is believed that the traditional social controls of adolescent sexual behavior are less effective in urban areas. Modern education exposes adolescents to different value systems, and the school environment enables them to interact more with partners of the opposite sex (Adeokun, 1990; Bauni, 1990, Ocholla-Ayayo et al., 1990). Table 3 shows the results of a logistic regression model predicting the effect of urban residence, literacy, and other background variables on the likelihood that an ever-married woman had sexual intercourse before first marriage. The strongest correlate of the likelihood of having had premarital sexual intercourse is the age at which a woman married. As expected, exposure to the risk of premarital sexual intercourse increases with age at first marriage: in all countries women who married at a later age are significantly more likely to have engaged in premarital sexual relations than women who married at a younger age. Consistent with the strong emphasis on premarital virginity in Islamic societies, Muslim women in Ghana, Liberia and Togo are much less likely to have had sexual intercourse before marriage than women who adhere to tra-

Table 3: Logistic Regression Coefficients Predicting the Relative Risk that an Ever-Married Woman Had Premarital Sex

	Country						
Variable	BU	GH	KE	LI	MA	TO	ZI
Constant	-5.59**	-7.24**	-8.65**	-13.67**	-12.46**	-6.00**	-4.13**
Literacy							
Can Read	-.15	-.14	-.46**	-.13	-.11	.26	-.32**
Cannot Read							
Religion							
Christian	...	.20*	.77**	-.05	-.06	-.11	-.23**
Muslim	...	-.30*	-.00	-.57**	.52	-.31*	...
Other							
Place of Residence							
Urban	1.25**	-.30**	-.11	.04	-.12	-.32**	.11
Rural							
Age Group							
15-19	-.15	-.07	.37*	.13	.48*	-.19	.08
20+							
Year of First Marriage	-.00	.01	.02**	.01*	.03**	.03*	-.01*
Age at First Marriage	.21**	.42**	.42**	.81**	.51**	.28**	.28**
N	2893	3527	4672	3929	2749	2533	2986

Source: Demographic and Health Surveys, 1986-89. Weighted data.
* $p \leq .05$
** $p \leq .01$

ditional religions. In Kenya, Christian women have a higher prevalence of premarital sex, but the difference between Muslim women and those practicing traditional religions is not significant.[2]

In all countries except Zimbabwe, a higher proportion of literate women than illiterate women had premarital sex (see Appendix Table A.2). However, after controlling for the other variables, including age at first marriage, literate women are less likely to have had premarital sexual intercourse than women who cannot read, although the effect is only significant in Kenya and Zimbabwe. These two countries also have the highest levels of female literacy, and it is possible that formal education—especially sex education or family life education—may be replacing the traditional controls over the sexual behavior of unmarried adolescents. The effect of urban residence varies across countries. Urban residence has a positive effect on premarital sexual intercourse in Burundi, but a negative effect in Ghana and Togo.

Table 3 also shows that changes are taking place over time. In Kenya, Liberia, Mali, and Togo, women who married more recently are more likely to have had premarital sexual intercourse, even after controlling for the other variables in the model. In Zimbabwe, there has been a small but significant decline in premarital sexual intercourse over time. In most countries a lower percentage of younger women than older women had premarital sexual intercourse. After controlling for age at marriage and other background variables, this effect becomes insignificant in most countries. Teenagers in Kenya and Mali have a significantly higher likelihood of having had premarital sex than older women.

A similar analysis for never-married women using DHS data has shown that there are large variations between countries in the percentage of never-married teenage girls who are sexually experienced (Njogu et al., 1990). In Burundi and Mali less than 2 percent of never-married teenage girls were sexually experienced. At the other extreme, the percentage of unmarried teenage girls reported to have had sexual intercourse was 37.4 percent in Togo, 45.9 percent in Liberia, and 60.1 percent in Botswana. These contrasts are striking and merit further attention.

The effects of literacy, religion, urban residence, and age on the likelihood that a never-married woman is sexually experienced are shown in Table 4. As expected, the likelihood that a never-married woman is sexually experienced increases with age. In Ghana and Liberia unmarried Muslim women are less likely to have had sexual intercourse than Christian women and those adhering to traditional religions. In Kenya and Togo, Christian women are significantly more likely to be sexually experienced than women of other religions. Descriptive statistics show that in Burundi, Ghana, Liberia, Mali and Togo the percentage of never-married sexually experienced women is larger among literate women than among illiterate women, but in Kenya and Zimbabwe the reverse is the case (see Appendix Table A.3). After controlling for the other variables in the model, literacy has no significant effects on the likelihood that an unmarried woman is sexually experienced. In all countries except Ghana, a higher proportion of never-married women in urban areas are sexually experienced than is the case in rural areas. After controlling, urban residence has a positive effect on sexual experience only in Burundi and Kenya.

[2] In Mali, religion has no significant effect on premarital sex because virtually all women in Mali are Muslim.

Table 4: Logistic Regression Coefficients Predicting the Relative Risk that a Never-Married Woman is Sexually Experienced

	Country						
Variable	BU	GH	KE	LI	MA	TO	ZI
Constant	-3.48**	.78**	-.92*	2.63**	...	1.11**	-.56
Literacy							
Can Read	-.15	.10	.11	-.05	...	-.00	-.36
Cannot Read							
Religion							
Christian	...	.11	2.49**	.36	...	.79**	.27
Muslim	...	-1.18*	1.55	-.72*	...	.27	...
Other							
Place of Residence							
Urban	2.64**	.02	.59**	.09	...	.22	.15
Rural							
Age Group							
15-19	-1.24**	-2.06**	-1.43**	-2.42**	...	-1.38**	-1.23**
20+							
N	999	796	1309	629	170	649	997

Source: Demographic and Health Surveys, 1986-89. Weighted data.
* $p \leq .05$
** $p \leq .01$

Premarital Childbearing

Given that the level of adolescent contraceptive use has remained extremely low in most African countries (e.g., Gyepi-Garbrah, 1985a; Mwateba, Paxman and Weil, 1988), it is expected that these differentials in premarital sexual activity will be reflected in the level of premarital childbearing. Table 5 shows the results of a logistic regression model estimating the effect of background variables on the likelihood that a woman had a premarital birth.[3] Because year of first marriage and age at first marriage are used as control variables, this model excludes single mothers. As expected, the strongest correlate of premarital childbearing is age at marriage. Women who marry late are exposed to the risk of premarital pregnancy for a longer period of time than women who marry early, and they are much more likely to have a child before marriage than women who marry at a younger age. In all countries, except Zimbabwe, premarital childbearing is more common among literate women than among those who cannot read (see Appendix Table A.4). The differential is especially pronounced in Liberia where 32 percent of literate women had a premarital birth, as opposed to 15 percent for illiterate women. Liberia is the only country where literacy has a significant effect on the likelihood of having a premarital birth after controlling for the other variables. In Ghana, Kenya, and Mali, urban residence has

[3] The prevalence of premarital childbearing depends on the definition of marriage (Meekers, 1992). In these calculations a woman's first birth is considered to be premarital if her age at first birth is less than her age at first cohabitation, or if she had a child but was never married. Both age at first birth and age at first cohabitation are measured in completed years, which implies that the level of premarital childbearing presented here is a conservative estimate. Using completed years, rather than exact dates, has the benefit that it reduces the effect of imputation biases (see Meekers, 1991).

Table 5: Logistic Regression Coefficients Predicting the Relative Odds that a Woman Had Her First Child Before First Marriage

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Constant	-5.44**	-5.47**	-10.97**	-6.54**	-6.87**	-4.72**	-7.49**
Literacy							
Can Read	-.15	.09	-.10	.72**	.10	-.22	-.26
Cannot Read							
Religion							
Christian	...	.02	.33	.34**	-.85	.50**	-.15
Muslim	...	-.33	.13	-.32	-.05	.54**	...
Other							
Place of Residence							
Urban	1.45**	-.64**	-.64**	.02	-.58**	-.06	.17
Rural							
Age Group							
15-19	.32	-1.07	.22	-.47	-.28	-.29	-.01
20+							
Year of First Marriage	-.02	-.01	.06**	.01	.00	-.01	.02*
Age at First Marriage	.16**	.21**	.29**	.22**	.26**	.20**	.23**
N	2734	3362	4963	3759	2685	2441	2867

Source: Demographic and Health Surveys, 1986-89. Weighted data.
* $p \leq .05$
** $p \leq .01$

of having a premarital birth after controlling for the other variables. In Ghana, Kenya, and Mali, urban residence has a negative effect on premarital childbearing, while it has a strong positive effect in Burundi. In Kenya and Zimbabwe there has been a significant increase over time in the prevalence of premarital childbearing.

These findings are only partly consistent with the literature, which suggested that premarital childbearing is a modern phenomenon that is likely to increase with socioeconomic development (Cherlin and Riley, 1986; Kulin, 1988). While it is true that premarital childbearing is more common (and hence more visible) among literate than illiterate women, this does not imply that education per se is the cause of this high level of premarital childbearing. As pointed out earlier, literacy has a positive rather than a negative effect on age at first sexual intercourse (see Table 1). But it is because literate women also tend to marry later, that they have a higher incidence of premarital childbearing. After controlling for age at marriage and other background variables, literacy has no significant effect on premarital childbearing. Similarly, urban residence tends to lower one's likelihood of having a premarital birth rather than increase it.

In other words, there is only modest support for the argument that premarital childbearing is a result of a degradation of sexual morals. If anything, adolescents are now exercising more restraint than was the case in the past, especially among the modern segments of the population (i.e., among the better educated). These findings confirm the claims that what has changed is not adolescent sexual behavior and childbearing itself, but rather the social context in which this occurs (e.g., Njau and Lema, 1988). Even though adolescents start having sexual intercourse at a later age, they are more likely to have children before marriage.

Premarital Sexuality and Pregnancy: Rational Adaptation or Social Disorganization?

The questions have been raised (e.g., Cherlin and Riley, 1986) "What does it mean to be an unwed adolescent mother?" "Do these teenage mothers want to have these births?" Initial analyses of DHS data suggest that more than 40 percent of teenage births were unwanted in Botswana, Ghana, Kenya, Liberia and Togo (Njogu et al., 1990). By contrast, in Mali, where teenage sexual activity is limited almost exclusively to married teenagers, less than 17 percent of the births to teenage mothers were unwanted. Hence, it is possible that these pregnancies were not unwanted because of the young age of the mother, but rather because of the stage in the life cycle that she was in.

Cherlin and Riley (1986) remark that different motivations exist for sexual activity among unmarried teenagers. For one group of females, sexual activity is spontaneous and is not geared toward a specific goal. In this case, sexual activity is believed to result from a breakdown of social controls by the elders over the youths (see Ministy of Health, Division of Family Health, GTZ Support Unit, 1988:4; Kulin, 1988; Nichols et al., 1986, 1987). Cherlin and Riley call this the "social disorganization" model of sexual activity.

Another model, that of "rational adaptation," suggests that adolescent sexual activity and pregnancy may be the means to a specific end. In many cases, there may be economic advantages to having a sexual relationship or to bearing children for a man. Examples include girls having relationships with teachers (Bleek, 1976:55) or with "sugar-daddies" who financially support them and help them pay their school fees (Adeokun, 1990; Dynowski-Smith, 1989:vi; National Institute of Development Research and Documentation, University of Botswana, 1988:12-13; Ntozi and Lubega, 1990:17; Obbo, 1990:6; Ocholla-Ayayo, 1990:47-50).

In a recent survey of sexual practices in Kenya, respondents were asked why girls engage in sexual relations. Almost sixty percent of the respondents (of both sexes) stated that girls have sex for money and gifts, while the remaining respondents believed it was for the sexual experience, leisure, or love (Ocholla-Ayayo, et al., 1990:74). Although it appears that girls like lover relationships because of the economic benefits, having children with a lover is not necessarily rational. But Obbo (1990:7) notes that having children with a lover may be advantageous because lovers may help to place children in good schools. Another example of rational adaptation would be if the girl believed that a pregnancy would lead to marriage. A girl may deliberately become pregnant to prove her fertility to a man she is

seeing or to force her parents to approve of her marriage to a certain man (Mwateba, Paxman and Weil, 1988). In these cases, premarital pregnancies are wanted.

Only scattered support exists for each hypothesis, and there is no information on the relative importance of each type of behavior in different socioeconomic and cultural groups. The DHS data are limited in how well these hypothesis can be tested, but as mentioned earlier they do allow differentiation between wanted and unwanted births. All parous women were asked whether they wanted to have their last child at that particular time or whether they would have preferred to wait or to have no more children at all.[4] The dependent variable examined here is a dummy variable that equals one if a woman reported that she did not want to have a child at that particular time (i.e., if she wanted to have the child at a later point in time or not at all) or zero otherwise. Because this question refers to the last birth while the information on the life course refers to the timing of the first birth relative to first marriage, the discussion is restricted to women of parity one.

It is important to keep in mind that the question about the wantedness of the birth refers to an event that has already happened (i.e., the birth of the child), and that women may not be willing to admit that they did not want to have a child. In other words, it is expected that the normative response is that the birth was wanted. Consequently, the data presented here should be interpreted as a conservative estimate of the percentage of unwanted births. If sexual activity among unmarried girls is the result of social disorganization, then it is expected that girls in those groups where social controls by the elders have deteriorated most (i.e., among urban and educated women) will have a higher likelihood of having an unwanted birth. Alternatively, the rational adaptation hypothesis will be supported by a low prevalence of unwanted births.

Table 6 shows the effects of the marital status of the parents at the time of birth, age at birth, literacy, and other background variables on the likelihood of having an unwanted birth.

In Ghana, Kenya, and Togo, more than a third of the women stated that they did not want to have their first birth at that particular time (see Appendix, Table A.5). In Burundi and Mali less than 15 percent of the women admitted being unhappy about the timing of their first birth. In all countries a higher percentage of literate women claim to be unhappy with the timing of their first birth than is the case for illiterate women. Table 6 indicates that literate women have a greater likelihood of being displeased with the timing of their first birth than illiterate women, even after introducing controls for the background variables. The bivariate analysis further shows that the percentage of women who are unhappy about the timing of their first birth is higher among those women who had their first birth as a teenager than

[4] This question refers to the last child born in the five years prior to the survey. The question was not asked in the Zimbabwe DHS survey.

Table 6: Logistic Regression Coefficients Predicting the Relative Risk that a Woman Did Not Like the Timing of Her First Child

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Constant	-.64	3.19*	1.75	-1.59	-2.16	2.05	...
Literacy							
Can Read	1.14*	.56*	.26	1.54**	1.45**	.72*	...
Cannot Read							
Religion							
Christian	...	.35	1.29*	.06	...	.40	...
Muslim	...	-.20	.59	-1.42**	...	-.40	...
Other							
Place of Residence							
Urban	.11	-.47*	-.36	-.41	.71	.54*	...
Rural							
Age Group							
15-19	1.04	-.27	-.08	.86**	.28	-.19	...
20+							
Age at First Birth	-.11	-.26**	-.13**	-.05	-.05	-.17**	...
Sex of Child							
Female	-.10	.49*	-.58**	.11	.32	-.08	...
Male							
Birth Status							
Premarital	3.16**	.87**	1.62**	.74**	1.88*	1.28**	...
Marital							
N	342	511	730	650	333	370	...

Source: Demographic and Health Surveys, 1986-89. Weighted data, women of parity one only.
* $p \leq .05$
** $p \leq .01$

among those started childbearing at a later age. This differential holds for all countries, except Mali. The multivariate results indicate that in Ghana, Kenya and Togo women who had their first child at a young age are significantly more likely to be dissatisfied with the timing of their firstborn than women who gave birth at a later age.

Scattered information on induced abortion in Africa suggests that pregnancy termination among adolescents is common in most countries, despite legislation prohibiting it (Gyepi-Garbrah, 1985a: 13-16). The evidence suggests that unmarried adolescents in particular often elect to abort their pregnancy. For example, a survey of unmarried adolescents aged 14 to 25 in Ibadan, Nigeria, showed that nine of ten respondents had aborted their first pregnancy (Ladipo et al., 1983).

The DHS data also show that unmarried mothers and women who had their first birth before first marriage are most likely to be unhappy with the timing of the birth. The strong effect of the timing of first birth relative to first marriage does not disappear after controlling for the other variables. In all countries, women who had started childbearing before

marriage are much more likely to be unhappy with the timing of their first birth than women who had their first child within wedlock. Hence, despite the fact that men may increasingly want women to prove their fertility before marriage (Agounké et al., 1990; Dynowski-Smith, 1989; Ocholla-Ayayo et al., 1990) women do not necessarily share this sentiment. Although it has been suggested that women may use pregnancy to get the husband of their liking (Karanja, 1987; Locoh, 1988; Obbo, 1987), the data strongly suggest that women who become pregnant before marriage still expect to get married before the birth of the child.

As stated earlier, it is possible that women are reluctant to admit that they would rather not have had their first child at that particular time. This problem is less likely to occur for events that have not yet happened. Therefore, it may be useful to look at adolescents' preferences with respect to the timing of their next child. In the DHS surveys, respondents were asked how they would feel if they were to become pregnant in the next few weeks (happy, unhappy, it would not matter).[5] This question has been used to compute a dummy variable that equals one if the woman responded that she would be unhappy if she became pregnant and zero otherwise. Of course, women may still provide normative responses to this question, and preferences most likely do not correspond with actual behavior. Nevertheless, information about ideal-type situations is useful because it may help us understand the motivations for different types of behavior.

In each country, at least 40 percent of women aged 15-24 reported that they would be unhappy if they were to become pregnant (see Appendix Table A.6). In Burundi and Liberia, approximately two of three women reported that they would be unhappy with a pregnancy. Table 7 shows the effect of literacy, place of residence, religion, age, parity, and marital status on the likelihood that a woman would be unhappy if she became pregnant. The results confirm the strong effect of marital status and parity on the desire to avoid a pregnancy. In all countries, women who already have children are significantly more likely than childless women to report they would be unhappy if they became pregnant. Similarly, never-married women are more likely than ever-married women to indicate that they would rather not become pregnant.[6] The effects of literacy, place of residence, and religion tend to be relatively small. In Ghana, Liberia, and Mali, literate women are more likely than illiterate women to be unhappy about the prospect of becoming pregnant. Likewise, Christian women are more likely to be displeased about becoming pregnant than Muslim women and women adhering to traditional religions.

The effect of urban residence varies from country to country. In Burundi urban residence reduces the likelihood that a young woman wants to avoid a pregnancy, while in Ghana and Togo the opposite is true.

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[5] This question was restricted to nonpregnant women who were not using contraception and who had had sexual intercourse since the last birth. This question was not included in the Togo and Zimbabwe DHS surveys.

[6] In Mali, there were only six never-married women in this age group, hence the effect of marital status is not significant (although in the expected direction).

Table 7: Logistic Regression Coefficients Predicting the Relative Odds that a Woman Aged 15-24 Would Be Unhappy if She Became Pregnant

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Constant	1.35**	-.51*	.23	-.66**	.53	...	...
Literacy							
Can Read	.32	.75**	.10	.79**	1.23**	...	...
Cannot Read							
Religion							
Christian	...	.37*	.24	.21*	1.00*	...	...
Muslim	...	-.33	-.09	-.16	-.45	...	...
Other							
Place of Residence							
Urban	-1.25*	.50**	-.26	.08	.56*	...	...
Rural							
Age Group							
15-19	.90	.93**	.15	.29*	-.01	...	...
20-24							
Parity							
Childless	-4.68**	-2.20**	-1.71**	-1.45**	-1.11**	...	...
Parous							
Marital Status							
Never Married	4.15**	1.45**	1.93**	.79**	.79	...	...
Ever Married							
N	362	635	1064	1457	516	...	...

Source: Demographic and Health Surveys, 1986-89. Weighted data.
* $p \leq .05$
** $p \leq .01$

These data show support for the social disorganization hypothesis, but do not fully exclude the possibility that premarital pregnancies may be the result of rational behavior for some women. The finding that literacy, low age at birth, and premarital childbearing are associated with greater dissatisfaction about the timing of their first birth is consistent with the argument that adolescent childbearing results from a breakdown of social controls over adolescent sexuality and premarital childbearing. However, it is important to keep in mind that the timing of sexual behavior itself has not changed (if anything, age at first intercourse is increasing). Consequently, social controls governing adolescent sexual behavior have not really deteriorated. Rather the increase in age at marriage has increased the population at risk of premarital sexual intercourse.

Despite the fact that premarital childbearing is a relatively frequent occurrence in most countries, dissatisfaction about the timing of the birth is much greater for premarital births than for children born within wedlock. Clearly, premarital childbearing is generally not a result of a desire to "prove" fertility, at least not for females. It may be argued that a

premarital pregnancy is sufficient to prove a woman's fertility, and that women who become pregnant hope to marry before the birth of the child. In this case, one would expect that women would be happy with a premarital *pregnancy* (in an effort to get married), but not necessarily with a premarital *birth*. However, the finding that single women are significantly more likely to be unhappy with a pregnancy than married women does not appear to support this. Despite the arguments supporting the social disorganization hypothesis for literate women and for women with a premarital birth, it cannot be ruled out that some groups of unmarried adolescents really want to have children. A substantial proportion of women who had a premarital birth had no objection to the timing of that birth. Similarly, there is a fairly large group of never-married women who do not oppose the idea of becoming pregnant. Childless adolescents in particular express a strong desire for having a child, although this does not necessarily imply that they anticipate being unmarried at the time of birth.

Discussion

Data from the Demographic and Health Surveys confirm that the proportion of women who have a child before marriage is increasing in a number of countries in sub-Saharan Africa. This increase in the prevalence of childbearing before marriage does not appear to be a result of earlier sexual initiation, but rather of later marriage. Although first sexual intercourse tends to occur at a later age than was the case in the past, first sexual intercourse now increasingly occurs before marriage. Because adolescent contraceptive use has remained low, this increase in premarital sexual intercourse is reflected in an increase in premarital childbearing.

The increase in premarital childbearing may have important social consequences. Despite legal provisions in most countries to ensure that there is no discrimination of children born out of wedlock, there is no guarantee that these so-called "illegitimate" children have the same resources as those born within wedlock (Gueye and van de Walle, 1988; Meekers, 1990). Children born out of wedlock to adolescent mothers generally are severely disadvantaged because their mothers tend to be illiterate, poor, and in poor health (Gyepi-Garbrah, 1985a:23-24). Furthermore, the extended family system, which used to take care of the needs of these children, has sharply declined in influence. It has been noted that problems are especially apparent in urban areas, where many illegitimate children are now suffering neglect and abandonment.[7]

Despite these negative consequences of premarital childbearing, it is important to keep in mind that for many young women premarital childbearing may be a rational decision (Cherlin and Riley, 1986). The onset of motherhood is an important marker of social transition in most African societies, and young women who are childless generally have a strong desire to have a child. It is likely that many women believe that the social status associated with motherhood, or perhaps the disrespect of childlessness, will outweigh or at least counterbalance any disadvantages associated with early motherhood.

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[7] For example, in Zimbabwe the problem of abandoned babies became so acute that the Council for the Welfare of Children formed an Abandoned Babies Committee in 1983 to deal with the situation.

It has been noted that education authorities are often hesitant to introduce family life or sex education because of fear of parental resistance, whereas parents often feel that the educational system should assume the responsibility of preparing adolescents for adult life (National Institute of Development Research and Documentation, University of Botswana, 1988:17). The DHS data indicate that adolescent sexual activity and premarital sexual activity are a fact of life in most African countries, as is the case in many Western societies. In such a situation, it is necessary to educate youths about the responsibilities associated with sexual activity and the potential consequences. Given that the DHS data show that childbearing is considered undesirable by at least some groups of adolescents (i.e., among the literate and among the never married), it seems appropriate to make the necessary provisions to enable them to avoid unwanted pregnancies. It is these groups of young women that are most likely to adopt modern methods of family planning.

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APPENDIX

Table A.1: Percentage of All Women Who Had Sexual Intercourse by Exact Age 15, by Background Characteristics

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	1.6	12.2	14.7	32.0	13.5	11.6	10.3
Cannot Read	2.2	21.9	33.1	37.5	25.0	28.1	29.7
Religion							
Christian	...	17.3	22.7	36.5	20.2	18.0	12.1
Muslim	...	18.4	29.2	31.6	24.6	25.3	...
Other	...	18.1	19.9	36.2	16.8	29.4	16.9
Place of Residence							
Urban	13.3	19.0	20.4	35.6	24.0	14.8	10.7
Rural	1.6	15.0	23.3	37.0	24.2	29.9	15.2
Age							
15-24	1.3	14.4	16.1	37.3	24.2	23.0	7.8
25-34	2.5	20.7	27.1	34.0	23.9	28.2	15.6
35-49	2.8	18.4	28.1	38.0	24.4	22.5	21.7
Year of First Sexual Intercourse[1]							
Before 1980	3.7	23.1	32.2	39.6	27.6	31.4	21.7
1980 or later	.8	12.3	16.5	33.4	21.1	19.1	8.7
Total	2.1	17.6	22.8	36.4	24.1	24.6	13.7

Source: Demographic and Health Surveys, 1986-89. Weighted data.
[1]Sexually experienced women only

Table A.2: Percentage of Ever-Married Women for Whom Age at First Sexual Intercourse is at Least One Year Less Than Age at First Marriage, by Background Characteristics

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	22.1	63.7	65.0	69.0	21.7	76.8	47.5
Cannot Read	19.3	58.3	58.1	57.5	12.8	63.0	50.0
Religion							
Christian	...	62.7	62.8	61.9	12.1	68.9	47.6
Muslim	...	48.4	40.8	53.4	13.6	56.6	...
Other	...	59.2	45.9	58.3	10.8	64.7	49.1
Place of Residence							
Urban	37.0	57.9	63.4	63.2	14.7	65.7	50.9
Rural	19.0	61.6	60.7	56.7	13.0	64.8	46.8
Age							
15-24	15.7	56.2	64.1	54.9	14.8	63.1	42.7
25-34	20.7	64.5	62.8	63.4	15.0	68.9	48.3
35-49	20.6	58.6	57.5	58.1	10.4	62.1	52.0
Year of Marriage							
Before 1980	18.8	57.1	55.0	54.5	10.4	61.8	45.3
1980 or later	21.7	66.5	71.1	71.3	21.8	70.6	52.7
Age at First Marriage							
<20	12.3	51.2	51.2	49.4	9.4	59.5	39.3
20+	30.9	88.7	86.3	95.6	60.3	83.1	71.1
Total	19.7	60.4	61.2	59.2	13.4	65.1	8.1

Source: Demographic and Health Surveys, 1986-89. Weighted data.

Table A.3: Percentage of Never-Married Women Who Are Sexually Experienced, by Background Characteristics

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	7.7	48.8	48.6	84.7	(13.6)	70.3	25.2
Cannot Read	4.3	44.4	55.9	78.2	4.0	55.0	47.1
Religion							
Christian	...	50.0	50.7	84.1	...	70.2	27.5
Muslim	...	20.6	33.0	65.9	6.0	58.9	...
Other	...	46.0	30.2	83.8	...	44.9	21.2
Place of Residence							
Urban	24.0	47.2	60.9	82.3	11.7	67.3	29.7
Rural	4.5	47.6	46.9	79.0	2.4	54.2	23.2
Age							
15-24	1.8	33.7	32.1	71.6	2.8	51.3	15.5
20+	11.6	83.0	83.8	98.5	(28.5)	86.3	52.9
Total	5.2	47.4	49.7	81.0	5.7	61.4	25.8

Source: Demographic and Health Surveys, 1986-89. Weighted data.
( ) Less than 30 cases

Table A.4: Percentage of Respondents Who Had Their First Birth Before First Marriage, by Background Characteristics

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	3.4	8.6	24.7	32.3	11.3	18.3	12.7
Cannot Read	2.5	7.9	17.0	15.0	9.6	14.6	14.0
Religion							
Christian	...	8.3	20.8	22.1	5.6	19.7	12.7
Muslim	...	5.0	13.1	11.0	9.7	17.6	...
Other	...	9.2	15.5	14.2	12.0	12.0	13.4
Place of Residence							
Urban	7.9	5.8	18.2	20.4	7.4	17.8	14.9
Rural	2.4	9.3	20.7	15.9	10.5	14.0	12.1
Age							
15-24	2.3	5.7	23.1	15.8	9.1	10.7	10.3
25-34	2.2	8.4	22.9	17.8	8.7	14.9	14.2
35-49	3.2	9.3	16.1	18.6	11.3	18.4	13.3
Year of Marriage							
Before 1980	2.6	7.7	14.7	15.0	9.5	14.7	10.7
1980 or later	2.7	9.3	31.7	26.3	10.7	16.0	17.3
Age at First Marriage							
<20	1.8	5.5	11.5	11.8	8.2	11.3	7.4
20+	3.9	16.9	45.4	41.1	33.7	28.2	27.4
Total	2.6	8.2	20.3	17.6	9.7	15.1	13.0

Source: Demographic and Health Surveys, 1986-89. Weighted data.

Table A.5: Percentage of Respondents Who Had Their First Birth Before First Marriage, by Background Characteristics

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	21.3	38.5	48.8	51.0	44.1	54.6	...
Cannot Read	7.8	29.0	39.3	18.7	10.7	31.3	...
Religion							
Christian	...	37.6	48.6	36.0	(32.0	48.4	...
Muslim	...	21.2	(29.4)	6.8	14.6	31.3	...
Other	...	27.8	14.3	22.3	(0.0	29.9	...
Place of Residence							
Urban	(31.7)	26.7	36.7	28.8	25.5	46.9	...
Rural	9.6	37.8	49.7	26.4	9.8	33.3	...
Age							
15-19	(35.2)	45.8	55.1	37.3	16.9	44.2	...
20-24	8.9	29.4	42.2	18.3	11.7	34.9	...
Age at First Birth							
<19	12.7	41.7	52.9	24.4	11.8	48.9	...
20+	7.9	22.6	34.7	14.8	11.6	26.2	...
Sex of the First Childild							
Male	11.0	30.1	52.9	27.1	12.6	39.5	...
Female	9.8	37.8	40.2	27.9	15.7	36.8	...
Birth Status							
Marital	6.1	30.0	25.9	16.2	13.6	30.2	...
Premarital or Never Married	(57.7)	57.1	66.9	45.3	(46.0	70.8	...
Total	10.5	34.1	46.6	27.5	14.2	38.1	...

Source: Demographic and Health Surveys, 1986-89. Weighted data.
( ) Less than 30 cases

Table A.6: Percentage of Women Aged 15-24 Who Report That They Would Be Unhappy If They Were to Become Pregnant

Variable	Country						
	BU	GH	KE	LI	MA	TO	ZI
Literacy							
Can Read	69.7	64.3	64.6	59.0	77.5	...	...
Cannot Read	65.5	41.6	57.2	35.7	48.0	...	...
Religion							
Christian	...	58.7	63.1	48.6	(69.9	...	...
Muslim	...	35.0	48.2	31.3	50.6	...	...
Other	...	38.5	(49.6)	35.8	(45.3	...	...
Place of Residence							
Urban	(55.8)	60.9	55.4	44.6	62.8	...	...
Rural	67.0	50.6	64.6	38.6	45.5	...	...
Age							
15-19	(47.8)	59.7	64.2	42.0	46.4	...	...
20-24	67.8	51.2	61.0	40.6	53.6	...	...
Parity							
Parous	80.0	62.8	65.5	48.1	57.4	...	...
Childless	10.0	46.3	57.1	28.1	35.6	...	...
Marital Status							
Currently Married	66.0	48.5	52.8	35.8	50.4	...	...
Never Married	(71.5)	61.8	74.2	49.4	(70.1	...	...
Previously Married	(68.5)	55.2	76.5	38.9	(51.2	...	...
Total	66.2	54.3	62.2	41.3	50.6	...	...
N	347	635	982	463	495	...	...

Source: Demographic and Health Surveys, 1986-89. Weighted data.
( ) Less than 30 cases