

# Sexual stigma and infant mortality in sub-Saharan Africa

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### Introduction

In recent years, policy-makers and international development experts have grown increasingly concerned about “sexual risk behavior,” including early coital debut, non-marital sex and high numbers of partners. In many parts of sub-Saharan Africa, this set of interests aligns policy-makers with local custom that has treated (especially women’s) non-marital sexuality as “sex out of place,” subject to severe social sanction and stigma. In the past, non-marital sex was in many societies shameful, dishonorable, and stigmatizing. Today, it is also the frequent object of intervention by international NGOs seeking to reduce sexually transmitted infections, HIV, and early childbearing. An increasing corpus of data showing that infants born to unmarried mothers face higher risks of morbidity and mortality has contributed to the urgency of policy interventions. This paper examines the relationship between non-marital conception and infant mortality. I will argue that the *stigma* of non-marital sex *itself* accounts for a non-negligible proportion of the heightened mortality risk in twelve sub-Saharan African countries. That is, instead of non-marital sexuality and childbearing being stigmatizing *because* of its harmful effects for children (as political conservatives in the US would have us believe), one important reason that non-marital conception is harmful to children is because it is stigmatized.

### Babies born outside of marriage are more likely to die

Most evidence suggests that, on average and in most societies, infants born to unmarried mothers face higher risks than those born within marriage. Studies in Europe and the US have demonstrated that such children are more likely to experience low birth weight and preterm delivery (Carlson et al. 1999; Koupilova et al. 2000; Olden et al. 1995), and that they face higher risks of infant mortality (Arntzen et al. 1996; Bennett et al. 1994; Bird et al. 2000; Gaudino et al. 1999). Indeed, mother’s marital status is often controlled in regressions estimating infant mortality risks even when the coefficients are not reported; again, this suggests a broad consensus of different, presumably higher, risk.

At the same time, the apparent harm of mother's singlehood on infant mortality risk appears to vary widely across societies and over time. Whereas some studies have found the log-odds of death to a baby born outside of marriage to be *twice* that of babies born to a married couple, other studies have found only minimal difference between the two groups (see e.g. Simpson et al.). This variability suggests that a variety of pathways connect marital status and infant mortality, and that their relative importance shifts across specific social, political, and economic contexts. Despite the large corpus of research on infant mortality in sub-Saharan Africa, relatively little work has examined the role of maternal marital status on the sub-continent. This paper thus seeks to provide some basic estimates of the relative risk of death, in addition to making an argument about its causes.

### **Why should maternal marital status matter for infant mortality?**

There are a number of reasons why the marital status of the parents should be associated with the mortality risk of the infant, some selective, others causal. Selection into the category of "unmarried mother" can occur on relatively time-independent characteristics, such as education or family background, as well as according to time-dependent attributes associated with the risk of infant mortality, such as parity or mother's age. At the limit, the unmarried mother is poor and uneducated, and is bearing a first child at a young age. Each of these is associated with higher mortality for her children, regardless of her marital status. As we will see later, selection on time-invariant characteristics may also go the other way—in Cameroon, for example, it is the more educated who bear children outside of marriage—reducing the apparent association between parent's marital status and infant mortality.

In addition to the selectivity of non-marital parenthood, being born to unmarried parents could *directly* cause increases in mortality, whether through resource deprivation as a result of having only one parent, or through social exclusion resulting from the stigma of non-marital sex, conception, and childbearing. Insofar as young adults are expected or required to fend for themselves (rather than remaining embedded within their natal families), unmarried parents are more likely to face economic hardship. Insofar as non-marital sex, conception, and childbearing are stigmatized, unmarried mothers may be expelled from their kin- and social networks, will be less able to make claims on the time, resources, and support of their natal families, and may hesitate to seek prenatal care out of fear of shame. That is, stigma itself may have significant negative effects on the health and health care of infants.

This point was made clear to me by one of my informants in Cameroon, who explained that even among the sexually liberal Beti, pre-marital childbearing could mean shame severe enough to cause reproductive harm:

You see, when you are a student and you conceive, when your friends leave for school you are ashamed. You are obligated to hide yourself. Even when

you give birth, you even go to the village. You go to give birth in the village so your friends don't see you, because you are so ashamed.

Needless to say, babies who are born in the village face substantially higher mortality rates.

### **The strength of both selective and causal factors will vary across societies**

Selection effects will be strongest when unmarried mothers differ most dramatically from married ones. A corollary of this is that we should expect the largest differences when non-marital childbearing is rare (because its practitioners are therefore clearly unusual on some set of characteristics). As marriage and childbearing become more and more disarticulated, the selection effects wane. Indeed, the studies finding only very small differences in infant mortality risk based on the marital status of the parents were all conducted in Scandinavia. It is also important to note that selectivity is not unrelated to stigma. Where non-marital sex is most stigmatized, non-marital childbearing is likely to be relatively rare and unmarried mothers relatively different from other mothers.

The direct effects of single parenthood on infant mortality risk will also vary across populations and over time. This variation is associated with specific social structures and cultural forms. The resource disadvantage accruing to non-marital households in contexts where neolocal residence is normative and there is little or no welfare state to protect single-parent households. The social and cultural variation in stigma, by contrast, follows no simple formula. Societies treating non-marital sex as highly stigmatizing are found in a variety of contexts, and neither religion, nor system of descent, nor direction and scale of marriage payments can account for them<sup>1</sup>.

Within sub-Saharan Africa are found societies that celebrate, tolerate, reproach, and prohibit non-marital sexuality, sometimes side by side, but often grouped geographically<sup>2</sup>. Using data from the HRAF, the Ethnographic Atlas of Africa, and 33 ethnographies of African peoples, I have identified societies across the continent as Stigmatizing, Non-stigmatizing, and Indeterminate in their reaction to women's non-marital sexuality, being conservative with the two marked categories. The results are shown in figure 1, where red circles identify Stigmatizing and blue circles Non-

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<sup>1</sup> Goody (1974) has proposed a complex theory on the relationship between productive and reproductive systems. Here, descent and inheritance, horticultural practices, marriage payments, and the cultural value placed on bridal virginity are all seen as part of an interpenetrating whole. However, the exceptions to his classificatory scheme are as numerous as the cases that fit, and particularly patterns of sexual stigma frequently fail to conform to the predictions of his model.

<sup>2</sup> The status of the geographic groupings was an important arena of debate in American anthropology at the beginning of the last century (see e.g. Kroeber 1916), and recent work usually considers them epiphenomenal—differing according to the characteristic used to classify, changing over time, and varying in their causes. I am treating sexual stigma geographically because it is analytically convenient, not as an ontological claim.

stigmatizing societies, and the size of the circles indicates the approximate size of the associated populations. In addition to the dramatic variation in density across the continent (some places are simply far better described than others), two things stand out. First, there is a strong concentration of Non-stigmatizing societies along the Atlantic coast, and second, Stigmatizing societies are found throughout the Sahel, the Sahara, and grassland East. The South is mixed—whereas the ethnographies of the southern Kingdoms, such as the Swazi, emphasize the importance of women’s pre-marital chastity and bridal pregnancy, recent analyses from Botswana and South Africa stress individual sexual autonomy.

*Figure 1 about here*

The differences between Stigmatizing and Non-stigmatizing societies can be quite marked. The Beti of southern Cameroon have been known for more than a century as belonging to the latter type. Descriptions of their social forms published throughout the 20<sup>th</sup> century discuss a casual tolerance for pre-marital sexuality:

[Among the unmarried] free love reigns in the boldest sense of the word. The young woman may give her favor without constraint to whomever and whenever she wishes, and must only hold herself to the religious regulations that forbid sexual intercourse during the day, and to the social ones that forbid it between blood relatives. Otherwise there are no boundaries” (Tessman, 1913, vol. II:253 [my translation]).

By contrast, in other societies, the sanctions against such premarital sexual freedom can be severe. The Mada and Mouyeng reside in northern Cameroon, along the Chadian border.

Sexual games are prohibited by the Mada and Mouyeng societies... The rigor of the sanctions applied in the case of infraction underlines the esteem that the two societies have for virginity. The young girl, reclined, arms and legs in the shape of a cross, and firmly attached to stakes, undergoes the burning of hot pepper placed on the eyes and the pelvic region (Richard, 1977:180-181 [my translation]).

[In northern Sudan,] should [a woman] become pregnant out of wedlock, whether before marriage or through adultery, her male kin have the right—even the duty—to kill her for so dishonoring her family (Boddy 1989:76).

As dramatic as these quotes sound, the importance of sexual stigma to demographic rates is by no means unique to Africa, nor is even the relationship between sexual shame and infant mortality. According to Kertzer, shame led 19<sup>th</sup> century Italian women who became pregnant outside of marriage to surrender their infants to foundling homes, some of which saw 100% of the entrusted children die<sup>3</sup>.

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<sup>3</sup> “Much of the terminology used to describe unwed pregnancies [in 19<sup>th</sup> century Italy] was that of honor and shame. Illegitimate children themselves were referred to as *figli di colpa*, children of guilt. Protecting

## Is it possible to quantify the effects of sexual stigma?

In order to estimate the importance of sexual stigma for infant mortality, and particularly for the difference in infant mortality rates between the children of married- and unmarried women, it is necessary first to address the problem of selectivity bias and second to distinguish between the causal force of resources *per se* and the causal force of stigma. In the absence of experimental data, the selectivity bias can be only partially controlled, by limiting the sample to the most comparable births in the bivariate analysis (by parity and mother's age) and further controlling for the likely factors (education, urban residence) in the multivariate analysis.

To distinguish between the economic effects of singlehood and the stigma of a non-marital conception, I use bridal pregnancy (of so-called "shot-gun weddings"). In particular, I distinguish between first babies conceived within marriage or less than two months before marriage, babies whose parents married between the third month gestation and the birth, and babies whose parents were unmarried at the time of birth<sup>4</sup>. *Women who marry during the pregnancy—especially after the pregnancy becomes visible—will suffer at least some of the stigma associated with a non-marital birth. However, they will not confront the same resource constraints as a single mother. Therefore, the mortality experience of their babies should differ according to the local degree of stigma.* In societies where stigma is high, we should expect that all babies *conceived* outside of marriage will fare poorly: babies born after bridal pregnancy should have infant mortality rates similar to babies born outside of marriage. By contrast, where stigma is low, we should see that infant mortality rates are more strongly associated with paternal presence than with the parent's marital status at conception, and babies born after bridal pregnancy should have infant mortality rates either as low as those of babies conceived within marriage, or at least intermediate between the babies of married and single women.

## Data

The data come from the Demographic and Health Surveys for twelve sub-Saharan African countries: Benin (2001), Burkina Faso (1998/9), Cameroon (1998), Centre Afrique, Chad (1996/7), Ethiopia (2000), Kenya (1999), Senegal (1999), Tanzania (1999), Uganda, and Zambia (1996). These countries represent a wide range of economic, political, and social situations, and all regions of the sub-continent. The data used here all come from the women's individual recode files, particularly including the birth registers. As is well known, these are nationally representative surveys of women 15-49, conducted as collaborations between Macro International and local (national) statistical agencies;

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the honor of such women and their families meant placing tremendous emphasis on secrecy... If marriage was not possible, an affront to a woman's and her family's honor could best be expunged by keeping the pregnancy secret and then disposing of the baby anonymously" (Kertzer 1993:26-27).

<sup>4</sup> The main results are not very sensitive to the details of this formalization. If we reclassify births to women married in the first two months of gestation or babies whose parents married within the first two months post-partum as "bridal pregnancy" the results do not substantively change.

sample sizes vary from 5501 for Cameroon to 15,367 for Ethiopia. It would be optimal to use regional data from each country to distinguish specific societies by their degree of stigma. However, as the DHS sampling strategy produces data that are not necessarily representative at the regional level, and because of the geographical clustering shown in Figure 1, the analysis here is at the country level in each of the 12 countries.

## Results

Limiting the sample to first births among women 17 to 25 years old, I first examine the infant mortality rates for each country and marital status, as shown in Figure 2. Three things are striking here. First, the countries cluster into three groups: (1) those in which infant mortality rates are similar for the three groups, (2) those in which infant mortality is moderately and comparably higher among the infants of the two groups of women who conceived before marriage than among infants conceived within marriage, and (3) those in which infant mortality following bridal pregnancy is somewhat higher than after a marital conception, but where the mortality of infants born *hors de mariage* is substantially higher yet.

*Figure 2 about here*

Two of these three groups of countries are, further, regionally distributed. The first group lies all along the Atlantic coast (Benin, Cote d'Ivoire, Nigeria and Senegal), while the third group consists of the former settler colonies of East Africa and southern Africa (Kenya, Tanzania, Uganda, Zambia). The middle category includes the countries of interior West Africa (Burkina Faso, Chad, Centre Afrique), plus Cameroon. Comparing these regional concentrations to those of the Stigmatizing and Non-stigmatizing societies shown in figure 1, we see that the Atlantic coastal region is well-identified as both non-Stigmatizing and showing little infant mortality differences by marital status, whereas the other two groups are generally associated with more Stigmatizing societies, although far less tightly.

In a second mode of analysis, I use logistic regression to estimate the association between mother's marital status and infant mortality within each country, controlling for a common set of covariates (mother's education, age at first birth, urban residence, etc.). The results are shown in table 1. Each column shows the estimated coefficients for one country; thus, reading rows across shows the variability in the estimates for the parameters across countries.

*Table 1 about here*

Four things are important to note here. First is the fact that infant mortality is not well predicted by any of the covariates included in this regression, that is, by the usual suspects of parity, mother's age, education, urban status, index of household possessions, and maternal marital status at birth. None of the pseudo- $R^2$ s are large, and some are disconcertingly small. Second, none of the estimates are very certain: most have broad confidence intervals, and a substantial number of those confidence intervals include 1 (no

effect). Third, the estimates on our two key variables—bridal pregnancy and single mother (where married at conception is the reference category)—generally conform to the bivariate results shown in figure 2, with two notable exceptions: Cameroon and Zambia. Finally, the estimates for many of the other parameters, particularly education, are also quite variable across countries. These results suggest that infant mortality should really be modeled at the aggregate level, as the individual-level variations between babies of different women predict death poorly.

## **Discussion and conclusion**

Across sub-Saharan Africa, practices and cultural norms regarding premarital sexuality vary widely. Whereas some groups place high value on bridal virginity, others tolerate—or even expect—premarital sexual relationships. These local attitudes often translate into practices regarding children borne outside of marriage: the social consequences of being born to unmarried parents are stronger in populations less tolerant of the sex that leads to such births (see Laslett et al. 1980). This paper has examined the degree to which the health and mortality consequences of premarital conception follow the pattern identified ethnographically for social opprobrium. The results of this exercise are mixed. On the one hand, I do find that children conceived outside of marriage suffer a greater mortality disadvantage in African societies where premarital sexuality is more stigmatized: In those societies along the Atlantic coast that tolerate premarital sexuality, the mortality differential between infants based on the marital status of their mothers is small or non-existent, and countries show strong regional—and therefore perhaps cultural—clustering regarding the effects of bridal pregnancy on infant mortality. On the other hand, the estimates of the coefficients are highly uncertain and vary widely across countries.

Yet, uncertain as the regression results may be, the point estimates nonetheless indicate differences in the mortality experience of infants in high sexual stigma and low sexual stigma countries. By way of conclusion, it is to this point that I wish to return. While the many pathways linking single parenthood and infant mortality are clear and have been analyzed at length, for children whose mothers married between conception and birth, the pathways linking conception status and mortality risk are somewhat more complex, interesting, and poorly understood.

Pregnant women may be constrained to marry less desirable men, to accept less desirable structural positions in polygynous households, to marry without bridewealth or with a decreased bridewealth. Within their new households, they may be marginalized, and the needs of their infants given less regard than the needs of other women's children, and they be more likely to experience stress or bouts of ill-health during the pregnancy. For all of these reasons, children born after a bridal pregnancy would be hypothesized to have increased mortality risk, similar to children of unmarried mothers. However, most of *these* reasons for mortality differentials are tied to the social acceptability of premarital sexuality and premarital pregnancy, rather than the structural difficulty of singlehood in a

society oriented toward marriage. That is, the negative effect of premarital conception *should* be attenuated in societies where premarital sexuality is widely accepted.

And so, a puzzle of interpretation. The point estimates concur with theory, but the uncertainty is substantial. I conclude that the results are suggestive, and that more research is necessary.

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