The Impact of Union Disruption and Repartnering on Fertility: A Case Study from Mozambique

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Abstract:
Marriage is a primary proximate determinant of fertility, both because marriage strongly affects sexual frequency and because of the symbolic linkages between marriage and childbearing. A large literature examines the relationship between marital disruption and childbearing in low-fertility contexts, finding complex and sometimes contradictory associations. In sub-Saharan Africa, levels of marital instability are high, but relatively little research considers how marital disruption and repartnering shape fertility. This paper will use longitudinal data from Mozambique to analyze the association between marital disruption (divorce, separation, or widowhood) and fertility. This extended abstract provides cross-sectional evidence suggesting that marital disruption slows childbearing, but that women eventually “catch up.” The completed paper will draw upon the longitudinal sample to model the short-term and lagged effects of marital disruption on birth rates over the life course. We discuss the implications of the results for understanding the dynamics of fertility transition in sub-Saharan Africa.

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Marriage is one of the primary proximate determinants of fertility, both because marriage shapes sexual frequency and “exposure to risk” of conception and because of the symbolic linkages between marriage and childbearing in most social systems. A large literature examines the relationship between marital disruption and childbearing in low-fertility contexts, finding complex and sometimes contradictory associations. On the one hand, marital dissolution takes time out of the childbearing years, potentially reducing fertility (Meggiolaro and Ongaro 2010; Van Bavel, Jansen, and Wijckmans 2012). But on the other hand, remarried partners are often motivated to have a child in a new partnership (Griffith, Koo, and Suchindran 1985; Thomson 2004; Vikat et al. 1999), and remarriage can lead to higher completed fertility if a new relationship pushes an individual toward higher parity births. The net impact of marital disruption on fertility depends on the timing of disruption, the speed and dynamics of repartnering, and prevailing fertility levels and desired family size (Thomson, Winkler-Dworak, Spielauer, and Prskawetz 2012).

In sub-Saharan Africa, research on the relationship between marriage and childbearing has largely focused on the macro-level relationship between marriage timing and fertility and secondarily on the impact of polygamy on fertility and contraceptive use (e.g., Doskoch 2013; Garenne 2014; Pebley and Mbugua 1989; Lardoux and van de Walle 2003; Westoff, Bietsch, and Koffman 2013). Relatively little research considers how union disruption and repartnering shape fertility experiences. Yet levels of marital instability are high in much of the region (Agadjanian and Hayford 2015; Clark and Brauner-Otto 2015; Reniers 2003), and some recent research suggests that divorce rates may have increased in response to the HIV epidemic in some areas (Porter et al. 2004; Reniers 2008). For individual women, marital instability likely reduces
fertility in the short term, but the long-term consequences of divorce and widowhood are less clear.

In this paper, we will use longitudinal data from rural southern Mozambique to analyze the association between marital disruption (divorce, separation, or widowhood) and fertility trajectories. This extended abstract provides cross-sectional evidence describing the link between past experience of marital disruption and current parity. The completed paper will draw upon the longitudinal sample to model the short-term and lagged effects of unions disruption on birth rates over the life course, controlling for both characteristics of women and characteristics of unions. We discuss the implications of the results for understanding the dynamics of fertility transition in sub-Saharan Africa.

**The impacts of union dissolution on fertility**

Research in low-fertility contexts finds mixed effects of union dissolution on the quantum of completed fertility, with the impact varying by gender, the timing of dissolution and repartnering, characteristics of new partners, and national context, among other factors (e.g., Beaujouan and Solaz 2013; Brown 2000; Buber and Prskawetz 2000; Meggiolaro and Ongaro 2010; Vikat, Thomson, and Prskawetz 2004). There are also complex effects of dissolution and repartnering on fertility timing. Union dissolution tends to increase the intervals between births through the disruptive effects of time spent out of union. But couples in second and higher order unions experience a more rapid transition from union to birth than couples in first unions, either because of a strong desire to have a child in that union or because of timing constraints due to the older average age of couples in higher-order unions (Holland and Thomson 2011; Li 2006). In a comparative study of the impact of union dissolution on fertility in 23 European countries, Van Bavel and colleagues (2012) summarize these findings by noting that marital dissolution
increases the heterogeneity of fertility outcomes: relatively to stably partnered couples, divorced or separated individuals experience a wider range of potential childbearing trajectories.

Some of these findings are likely to apply to sub-Saharan Africa as well. For example, given the strong normative link between marriage and childbearing, we expect that union disruption increases the intervals between births and that repartnering has a strong impact on childbearing after union disruption. In particular, because of the importance of childbearing to the marital relationship, there are likely to be fewer childless second unions in sub-Saharan Africa than in low-fertility contexts. Thus, the impact of repartnering (relative to staying single) may be stronger in sub-Saharan Africa, and there may be less variation in completed fertility depending on partner characteristics such as age and parity.

Other findings from the low-fertility literature may be less relevant to the sub-Saharan context. The potentially positive effect of union dissolution on completed fertility stems from the possibility that forming a new partnership will lead people to continue having children beyond their initial target family size. In Europe and the United States, desired family sizes average around two children (Hagewen and Morgan 2005; Sobotka and Beaujouan 2015). Given this relatively small number, union dissolution often takes place after this target has been achieved and while women are still young enough to have additional children. But in much of sub-Saharan Africa, desired family sizes continue to be large (Westoff 2010). As a result, proportionally more union dissolutions take place before women have had as many children as they want, and union dissolution and remarriage (relative to remaining in an intact first union) may have a smaller impact on completed family size.

There are also distinctive features of sub-Saharan African fertility and family systems that potentially complicate the relationship between union disruption and fertility. In this high
fertility context, virtually all people want at least one child and infertility may be considered a reason for marital dissolution. Indeed, low fertility has been shown to be a predictor of divorce (Agadjanian and Hayford 2015; Reniers 2003; Takyi 2001). Any analysis of the relationship between union disruption and fertility must account for this potential endogeneity. Polygamy also remains widespread in the region, and higher-order unions are more likely to be polygamous than first unions (Timaeus and Reynar 1998). Because the timing and quantum of fertility differ in polygamous and monogamous marriages (Lesthaeghe 1989; Lardoux and van de Walle 2003), our analyses will account for this variation.

**Research questions**

We propose three main research questions. In this extended abstract, we provide preliminary descriptive answers to the first two research questions. The completed paper will address all three questions using a wider range of descriptive and multivariate statistics.

RQ1. How does the experience of union disruption affect the quantum of completed fertility?

RQ2. How does the experience of union disruption affect the pace of completed fertility, as measured by average birth intervals and age at last birth?

RQ3. How are the above associations shaped by the nature of disruption (divorce/separation vs. widowhood), marriage characteristics (bridewealth payments, polygamy), and timing of repartnering?

**Data and methods**

*Data*

The data used in this analysis come from a longitudinal survey of women of childbearing age in rural areas of Gaza Province in southern Mozambique, a region characterized by patrilineal kinship, bridewealth-based marriage, and high fertility. The first wave of data collection took
place in 2006. The survey sampled 1678 married women of reproductive age (18-40) in 56 villages chosen with probability proportional to size from four contiguous districts in the province. Because the study area has historically experienced high rates of labor migration to neighboring South Africa, the sample was designed to ensure representation of both women married to migrants and women with non-migrant husbands. The second wave of data collection took place in 2009-10. The main data collection was in June-July 2009. Sample refreshment was carried out at this stage; in order to maintain sample size, a woman in the same village was randomly selected to “replace” any woman who could not be located. To maximize retention rates, followup data collection efforts took place in September 2009 and June-July 2010 to try to locate women who were not interviewed during the main data collection. A total of 1868 women were interviewed in wave 2, including 1407 women (84%) of the original wave 1 sample. (The sample size for wave 2 was larger than the sample for wave 1 because of the sequencing of the sample refreshment and followup data collection periods.) A similar process was used for data collection for wave 3, with main data collection taking place in June-July 2011 and followup data collection over the next year. 81% of surviving respondents from wave 1 and 90% of women from wave 2 were reinterviewed in wave 3, which included a total of 2060 women.

At both wave 2 and wave 3, proxy interviews were carried out with household members, neighbors, or local leaders to collect information on women who could not be located and interviewed. These proxy interviews recorded data on whether the woman had moved, died, or experienced marital disruption; thus, reports of divorce or partner’s death are available even for women who were lost to followup. Attrition from the sample was not random – women who experienced marital disruption during the course of the survey were disproportionately likely to move out of the area and be lost to followup. However, given the overall high retention rates, the
sample maintains a substantial proportion of women who experienced marital disruption. Still, the survey captures a potentially biased subset of women who experience disruption during the course of the panel; the completed paper will assess the use of various modeling strategies to account for this bias, including Heckman-style two-stage models and propensity score models (Morgan and Winship 2007; Pearl 2000; Winship and Mare 1992). It is important to note that our initial sample of women at wave 1 is representative of the population of married women, including women in second and higher order marriages. We are thus able to report with some confidence on the trajectories of women who experienced marital dissolution before wave 1 and subsequently repartnered.

The survey collected information on marriage and fertility histories, household economic conditions, women’s own health and the health of their children, perceived HIV risk and interactions with HIV+ individuals, and women’s and husband’s migration histories, among other sociodemographic information. The three survey waves were highly comparable but not identical in content.

*Measures*

The main independent and dependent variables are taken from the marriage and fertility history sections of the survey. These sections were nearly identical at all three waves. The first wave of data collection was limited to married women. At other survey waves, women were asked whether they were married or in a permanent partnership. Women who were currently married at the time of data collection were asked what year they began living with their partner and a short set of questions about the relationship, including whether bridewealth had been paid and whether the relationship was polygamous. All women, including currently unpartnered women, were then asked if they had ever had a husband or long-term partner in the past. Women
who responded “yes” to this question were then asked how many previous partners they had had and, for the first three partners, the marriage dates and whether the married ended by death, divorce, or abandonment. In this extended abstract, we categorize women according to whether they had ever experienced marital dissolution (i.e., had ever been previously married) or whether they were still in an intact first marriage. The completed paper will use more fine-grained measures of marital history, including the number of previous marriages, whether women are currently married, the time elapsed between marriages for women who have repartnered, duration of current marriage, whether bridewealth was paid for past or current marriages, and whether the current marriage is polygamous.

In the study site, very few marriages are formalized either through a religious celebration or through a civil ceremony. In theory, marriages are marked by the exchange of bridewealth payments, but in practice bridewealth payments are increasingly delayed long past the start of the marriage or foregone altogether. In this setting, then, the distinction between marriage and informal partnership is not always clear and may be in part subjective. We therefore combine both types of relationship and refer to “marriage” and “partnership” interchangeably. Similarly, we refer to both divorce and separation as “marital dissolution” and do not attempt to distinguish between the two processes. As noted above, the completed paper will control for key correlates of marital stability including bridewealth and polygamy status.

As with all retrospective data, survey reports of past marital history are subject to recall errors and deliberate misreporting. In our longitudinal survey, women were asked to provide a marriage history at each survey wave. We use these (up to) three reports to harmonize respondents’ marriage histories. This harmonization process does not completely resolve issues related to the quality of marriage reports – most notably, if a marriage is not reported at any of
the three surveys it also does not appear in the harmonized history. Still, using multiple reports reduces the random recall error in the data and increases confidence in the reported marriage history.

The survey fertility history collects the dates of all pregnancies, including those that ended in miscarriage or stillbirth; information on whether the child is still alive; and death dates for children who had died by the time of the interview. As with the marriage histories, we harmonized fertility reports across the three survey waves in order to increase consistency of reporting. Completed parity is calculated based on these harmonized birth histories.

The descriptive tabulations presented here categorize women by age. Multivariate models in the final paper will control for other factors related to both fertility and marital stability, including household wealth; previous childbearing; education; marriage characteristics including duration, whether bridewealth was paid, and whether the marriage is polygamous; perceived HIV risk; women’s autonomy; and husband’s migration experience.

Methods

In this extended abstract, we present bivariate descriptive statistics comparing current parity for women in first unions and women with previous unions. The completed paper will add descriptive analyses including (1) a comparison of average birth intervals for women who have experienced marital disruption and stably married women; (2) true cohort analyses using the longitudinal data to track fertility in 2006 and fertility over the course of the study for women who experienced marital disruption before the start of the study; (3) tables showing completed fertility according to the number of marriages a woman has had and the time spent outside of a coresidential partnership (i.e., time between marital dissolution and repartnering).
We will also add two types of multivariate analyses to describe the impact of union disruption on fertility. The first approach will estimate completed fertility at the time of the last survey wave as a function of individual characteristics and union history. (We will estimate separate models for surviving children and children ever born.) Women will be defined to have achieved completed fertility if they have reached age 45 or if they report wanting no more children – slightly over half the sample by wave 3. Basic models will include time spent in union, number of unions, and time spent out of union. We will explore other relevant characteristics of union history, including time spent with a migrant husband, time spent in polygamous vs. monogamous unions, and type of disruption (divorce/separation vs. widowhood). We will use OLS regression to estimate these models.

The second approach will use event history models to estimate birth hazards. Because marriage dates are measured to the nearest year, we will use person-years as the unit of analysis. We will treat each union as a distinct spell and include a woman-specific random intercept to account for the impact of unmeasured woman-specific characteristics on fertility (Teachman 2011). In particular, if long-term subfecundity is cause of both low fertility and marital instability, these models will account for these effects. These models will control for both characteristics of the current union (duration, polygamous vs. monogamous, payment of bridewealth) and characteristics of a woman’s union history (number of previous unions). Basic demographic controls, including parity, will also be included in all models. Exposure will be measured as time since union formation in these models; interactions between union duration and union order will test whether the pace of fertility is different in second and higher order unions than in first unions.
Preliminary descriptive results

Table 1 provides basic descriptive information on the level of marital disruption observed in the sample. Of women interviewed at wave 1 in 2006, 14.3% were in a second or higher order marriage. (Recall that the sample was designed to include only currently married women.) This proportion increases with age (not shown). Some women experienced marital dissolution over the course of the study. By wave 2, 8.8% of women in the sample were unmarried, and this proportion increased to 15.1% by wave 3. Since women who experienced marital dissolution during the study were disproportionately lost to followup, these proportions understate the true level of marital instability in the study population. Altogether, Table 1 shows relatively high levels of marital disruption.

<Table 1 about here>

In this extended abstract, we present cross-sectional descriptions of the association between marital disruption and fertility (measured as number of surviving children). We draw on data from the third wave of data collection, where women are oldest, in order to allow us to analyze a larger number of women who have completed childbearing. Tabulations from wave 3 data indicate that women who have been previously married have lower fertility than women who are still in their first marriage at all ages (Table 2). The gap in fertility is largest among women age 35-39 and narrows among women age 40-44 and women age 45 and over. (This gap would likely be even smaller if we limited the comparison to only repartnered women.) Among the oldest age group, women who have experienced marital disruption are also more likely to want more children than women who are in an intact first marriage (not shown). If we interpret these cross-sectional distributions in terms of an artificial cohort, they suggest that women who experience marital disruption also experience disruption in their childbearing patterns, but “catch
up” in their forties to stably married women. These patterns also imply that women who experience marital dissolution may have longer birth intervals and later age at last birth than stably married women. These patterns likely depend on the rate and timing of repartnering after marital dissolution; the completed paper will examine these associations in more detail.

<Table 2 about here>

**Discussion**

Findings from this paper will contribute to the body of literature on the impact of marital dissolution and repartnering on fertility. Much of the research on this subject has been conducted in low-fertility contexts; despite the high levels of marital instability in many parts of sub-Saharan Africa, little is known about the association between marital dissolution, repartnering, and fertility there. Results will also shed light on the potential role of marital instability and repartnering in African fertility transitions. Several features that have been identified as distinctive of fertility decline in sub-Saharan Africa are consistent with an important influence of marital instability (see, e.g., Caldwell, Orubuloye, and Caldwell 1992; Cohen 1998; Timaeus and Moultrie 2008 for discussions of African fertility transitions). For instance, the long birth intervals found in some parts of the continent may be attributable in part to relationship dissolution and reformation between births. Furthermore, the limited role of parity-specific stopping and spacing behavior in sub-Saharan Africa may be explained by features of the marriage system. If marital dissolution and repartnering are common, the relevant measure of parity may be at the level of the couple rather than the woman, and therefore standard, woman-focused measures of parity-specific behavior will miscategorize parity. The implications of these possible linkages for future patterns of fertility decline depend on trends in rates of marital dissolution and repartnering. Still, marital instability is an important feature of family systems,
and analyzing the relationship between marital transitions and fertility is important for understanding childbearing behavior.
References


Doskoch, P. (2013). In Malawi, polygamy is associated with reduced contraceptive use. *International Perspectives on Sexual and Reproductive Health, 39*(1)


Table 1. Levels of marital disruption recorded in the survey

<table>
<thead>
<tr>
<th></th>
<th>% of women in intact first marriage</th>
<th>% of women in 2+ marriage</th>
<th>% of women unmarried</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wave 1</td>
<td>85.7</td>
<td>14.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Wave 2</td>
<td>78.9</td>
<td>12.3</td>
<td>8.8</td>
</tr>
<tr>
<td>Wave 3</td>
<td>73.9</td>
<td>11.0</td>
<td>15.1</td>
</tr>
</tbody>
</table>

Data: All survey waves. Women with non-missing data for marriage and fertility histories.

Table 2. Marital instability and fertility

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Average number of living children</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>In intact first marriage</td>
<td>Unmarried or in 2+ marriage</td>
<td></td>
</tr>
<tr>
<td>All women</td>
<td>2043</td>
<td>3.63</td>
<td>3.55</td>
<td></td>
</tr>
<tr>
<td>By age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-24</td>
<td>202</td>
<td>2.15</td>
<td>1.89</td>
<td></td>
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<tr>
<td>25-29</td>
<td>547</td>
<td>2.80</td>
<td>2.38</td>
<td></td>
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<tr>
<td>30-34</td>
<td>556</td>
<td>3.81</td>
<td>3.33</td>
<td></td>
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<tr>
<td>35-39</td>
<td>407</td>
<td>4.63</td>
<td>3.78</td>
<td></td>
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<tr>
<td>40-44</td>
<td>260</td>
<td>4.81</td>
<td>4.74</td>
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<td>45+</td>
<td>72</td>
<td>5.37</td>
<td>5.23</td>
<td></td>
</tr>
</tbody>
</table>

Data: Wave 3 survey. Women with non-missing data for marriage and fertility histories.