

Divorce and the transition to adulthood in rural Malawi

Estelle McLean^{1,2}, Albert Dube², Emma Slaymaker¹, Maria Sironi³, Amelia Crampin^{1,2}, Rebecca Sear^{1,4}

1. Malawi Epidemiology and Intervention Research Unit, PO Box 46, Chilumba, Karonga District, Malawi
 2. Department of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, Keppel Street, London, WC1E 7HT, United Kingdom
 3. UCL Institute of Education, University College London, 55-59 Gordon Square, London, WC1H 0NU, United Kingdom
 4. Centre for Culture and Evolution, Brunel University London, Kingston Lane, Middlesex, UB8 3PH
- # Author for correspondence

Abstract

Marriage is almost universal in rural Malawi and tends to happen young. It is one of the key markers of adulthood for both men and women. Divorce is also very common, and some research has suggested that early divorce may 'reset' the transition to adulthood, allowing young people to return to school, especially men, as young divorced women may be disadvantaged by child-care responsibilities. We use longitudinal data from the Karonga Health and Demographic Surveillance Site in rural Northern Malawi to investigate how gender and child-bearing are associated with divorce at a young age (under 18 for women and 22 for men) and its impact on markers of transitions to adulthood. Rates of divorce were higher for women than men, but men were more likely than women to remarry following divorce. Compared to their never married contemporaries, divorced men were more likely to marry, less likely to live with family, and less likely to attend school. Divorced women were as likely to live with family and to marry compared to never married women of the same age; divorced women, however, were less likely to attend school. Having children was associated with increased likelihood of divorce for both men and women, however for men there was no evidence of associations between having children

and subsequent outcomes, while for women having children was associated with lower chances of remarriage and attending school. A divorce at a young age did not appear to alter the transition to adulthood, especially for men. While divorced women appeared to have some degree of 'reset' as they returned to live with family, there is no evidence that it was a true 'reset' as they did not return to school.

Introduction

In rural Malawi, marriage is expected and almost universal, often happening at a relatively young age, especially for women: the 2015-2016 Malawi Demographic and Health Survey reported that nearly half of Malawian women were married by age 18 (National Statistical Office, 2016). Young people tend to choose their own partners, however a marriage might be expected by parents in the event of a pregnancy (Ansell et al., 2018; Melnikas et al., 2022). Pre-marital sex is common and increasing: research in the same setting as this analysis found that younger people were more likely to report a boy or girlfriend as their first partner than a spouse (Glynn et al., 2010). Marriage is one of the main traditional markers of moving from adolescence to adulthood, and many young people enjoy the independence and responsibilities it grants them; though some do report feeling a burden especially if the marriage was due to pregnancy (Ansell et al., 2018).

Divorce is also common in Malawi at all ages (Clark and Brauner-Otto, 2015), but often occurring within the first 3 years of the union (Bertrand-Dansereau and Clark, 2016; John, 2022) particularly if the couple are young, have not known each other long or if the marriage was instigated or rushed into due to a pregnancy (Bertrand-Dansereau and Clark, 2016). Pre-marital conception or child-bearing has been found to be associated with divorce in young people (Odimegwu et al., 2017; Smith-Greenaway et al., 2021). Some research has suggested that divorce at a young age may 'reset' the transition to adulthood for some young people in Malawi, allowing them to make different life choices (Grant and Pike, 2019). As marriage and pregnancy are common reasons given for school drop-out, an early divorce may enable the young person to restart school and improve their prospects. Indeed, since the legal marriage age was raised to 18 in 2017 (Daniel, 2017), some communities in Malawi have been annulling marriages involving girls aged under 18 and encouraging them to

return home with the aim of them returning to school (Melnikas et al., 2021). However, it has also been found in Tanzania that lack of education prospects may encourage marriage, rather than the other way around, so divorce may not result in a return to school (Stark, 2018). Returning to the natal home may therefore represent an unhelpful regression for young divorcees: a qualitative study of young people in Zambia found that, while divorce provided relief of escaping a bad relationship, many experienced an undesired reduction in independence following having to return to the parental home (Mweeba and Mann, 2020). It has also been suggested that divorce may be used as a strategic tool, particularly for young women, to gain independence and empowerment: the first marriage being the first stepping stone away from parental control then the divorce to avoid spousal control (Reniers, 2003); this has also been noted in Burkina Faso (Guirkinger et al., 2021). Equally some young people may not have the option of returning to their parents and may struggle with that independence (Grant and Pike, 2019).

In Malawi, divorce tends to be accessible for both men and women and is not heavily stigmatised: anecdotally young people might experience more stigma for getting married early than for getting divorced (personal communications with field-workers living and working within the community from which the data for this analysis is drawn). Though in other areas of Malawi there were reports of negative perceptions in the communities of girls who had been removed from marriages (Melnikas et al., 2021). Couples of any age may be advised and counselled by family and the church elders to work through any marital issues, however after a period of time it is culturally acceptable to part. Young children are expected to stay with the mother following a divorce, potentially leaving her at a disadvantage. The ex-husband is often seen as comparatively unburdened, able to return to school and/or remarry without consequence (same personal communications as above). The lack of consequences of divorce for men has also been suggested in some published research, for example a review of data from some Africa societies which use 'lobola' or bride-price found that divorced women tended to face stigma, while men could divorce and remarry with little or no prejudice (Kgadima and Leburu, 2022). Research on whether divorce is associated with subsequent outcomes for young men in Africa is sparse, but research on young fatherhood has shown, in contrast to the above perspectives, there can be impact on education and remarriage: in Malawi continued schooling

was discouraged by family and community members for boys once they become fathers (Parrot et al., 2015); in South Africa young fathers experienced stigma and performed less well academically (Mukuna, 2020); and negative outcomes of early fatherhood such as school drop-out and health outcomes were also found for young men in a study in Ethiopia, India, Peru & Vietnam (Jeong, 2021).

Objectives

In this analysis we use longitudinal data on young men and women from the Karonga Health and Demographic Surveillance Site (HDSS) in rural Northern Malawi to investigate the associations between gender and child-bearing on divorce at a young age and divorce's impact on markers of transitions to adulthood. While this data resource was not set up to answer this specific question, it provides some unique aspects that make it useful for studying such topics. First, continuous prospective follow-up of participants improves the likelihood of capturing brief marriages. Second, known spouse links and precise information on when household members move in and out of households can not only identify marital breakdown, and differentiate between reconciliation following separation or divorce, and remarriage to another person.

Literature review

In addition to gender and child-bearing, previous research on divorce (at all ages) in sub-Saharan Africa has identified other predictors of divorce which fall into 3 rough, overlapping categories: socio-economic position, factors relating to the marriage and familial/kinship factors.

Socio-economic position

Urbanisation and modernisation has long been associated with marriage instability and divorce (Goode, 1993), though the direction of effects may be variable. Increasing access to education and employment may lead to an increase in divorce if it gives people the confidence and opportunity to leave unsatisfactory marriages, however the same factors could potentially lead to a decrease in divorce if the increased empowerment allows people to choose more

compatible partners and/or gives them improved tools and resources to navigate relationships. Indeed, in a country level examination of predictors of divorce rates, Clark et al found that higher levels of women's employment was associated with higher levels of divorce, but higher levels of women's education was associated with lower divorce rates (Clark and Brauner-Otto, 2015). However, another study in Malawi found no association between education level and divorce (Spell et al., 2012). Low socio-economic position of the marital home has been found to be associated with greater chance of divorce (Porter et al., 2004) and lack of resources was given as a reason for young women to leave, or be removed from a marriage in qualitative work in Zambia (Mweeba and Mann, 2020).

Marital factors

Age at marriage has been shown to be a key risk factor, with younger age at first marriage consistently found to be associated with higher divorce risk (Clark and Brauner-Otto, 2015; Reniers, 2003; Tilson and Larsen, 2000). Polygyny was found to be a risk factor for divorce for women in Malawi (Reniers, 2003), but not in Ghana (Takyi, 2001), and large age difference between the spouses was found to be associated with less chance of divorce in Malawi (Reniers, 2003). A Malawian study found that marriages where partners had not known each other for a long time were more likely to end, potentially due to both lack of family involvement and support, and emotional bond between the pair (Bertrand-Dansereau and Clark, 2016). The Zambian qualitative study suggested that the reasons for unhappiness in marriages between young people were similar to those in older people (infidelity, lack of money/support, violence etc.) but because they are young they lack the resources and experiences to deal with them (Mweeba and Mann, 2020). In countries affected by the HIV pandemic, marriage may be seen as a risk factor, but also as a safe haven from the virus. Actual HIV infection (Porter et al., 2004) and perceived risk of future HIV infection (Grant and Soler-Hampejsek, 2014) have been found to be predictors of divorce.

Familia/kinship factors

In Ghana and Malawi it has been found that divorce is more likely for couples from a matrilineal background, or if the couple are living with or near the wife's family (Reniers, 2003; Takyi, 2001). It has been suggested that women are more empowered in the relationship by being near to her family. In patrilineal areas

children traditionally 'belong' to the paternal family (Mwambene, 2012), while in matrilineal areas the opposite is true so a woman may divorce with less fear of losing her children. In patrilineal areas of Malawi (including the area where the present study is set) it is traditional for the groom to pay 'lobola' or bride price to the bride's family which may be expected to be paid back if the marriage fails, leading some families reluctant to support divorce if it had been paid (Bertrand-Dansereau and Clark, 2016). Regardless of the kinship system, a qualitative study found that the young women choosing to leave their marriage always had support from their natal family to move back home, or even were removed from a violent or bad marriage by a member of their family. This same study also noted that couples who divorced tended to be those who had been living independently as a couple/family (Mweeba and Mann, 2020), rather than still attached to one of their families, implying that as well as family factors that assist to dissolve the marriage, other family factors may help to keep the couple together. In Malawi marriages are traditionally negotiated by senior relatives ('ankhoswe') (Chimango, 1977), who may also act as mentors during the marriage. Anecdotally, elopement (marriage without these negotiations or traditional ceremony) is becoming more common, and lack of involvement of ankhoswe has been shown to be associated with higher chance of divorce (Bertrand-Dansereau and Clark, 2016).

Methods

Context

The Karonga Health and Demographic Surveillance Site (HDSS) was established in 2002 in the southern part of the Karonga district in northern Malawi (Crampin et al. 2012). The area is largely rural with one semi-urban trading town, several smaller market villages and one port on Lake Malawi. The majority of the population engage in subsistence farming or fishing. The main ethnic group are Tumbuka, who have followed patrilineal and patrilocal custom since the 19th century: women tend to move to their husband's village when they marry (Malawi Human Rights Commission 2006). In the event of divorce or even paternal death, children considered to be old enough to be away from their mother may be required to live with their father's family (Malawi Human Rights

Commission 2006). Polygyny is widespread: at the end of 2016 about 15% of households in the HDSS were headed by men with more than one wife.

The HDSS covers an area of 150km² and by 2016 had over 40,000 people under surveillance, with very high response rates. Household membership is defined by the participants with guidance from trained fieldworkers: all household members must usually live in the dwelling/compound together and recognise the same household head. Men with more than one wife who do not live in the same location are assigned to be living in each wife's household; all other individuals may only belong to one household. Births and deaths are captured monthly through a system of local 'key informants', while migrations are captured annually through visits to all households. If a whole household moves, then this information is gathered from the key informants. When a new household member is registered, through birth or in-migration, where possible, members of any age are linked to their parents' identification numbers if they have ever been assigned one (even if they are not currently HDSS participants). On an annual basis, participants are asked about their marital status and to provide information about their spouse(s): where possible the identification numbers of the spouses have also been linked. This information was used to identify all family links (by blood and by marriage) between all HDSS participants. GPS coordinates are recorded for each household when they are registered and if they move: this allows for generation of variables to indicate the presence of certain relatives registered as living near each index at any point in time. Annual surveys capture individual and household socio-demographic indicators including schooling, occupation and marital status.

Ethics

Household heads provide written informed consent on behalf of the whole household to participate in the Karonga HDSS, which may be rescinded at any time for any reason. The HDSS is regularly reviewed and approved by the Malawian National Health Sciences Review Committee (approval #419), and the London School of Hygiene and Tropical Medicine Ethics Committee (approval #5081).

Datasets

Data on HDSS participants are gathered as event reports (births, deaths and migrations) and surveys. The event data is used to create continuous episodes, and the survey data assumed to be valid for dates within certain periods before and/or after the survey date (periods depend on the type of data). Due to the complexity of the exposure data used in these analyses, the episodic data were reduced to a panel dataset of one data point per quarter (15th of middle month of each quarter) per person. Marital status was assigned to each quarter based on data from annual surveys (which may have been a self- or proxy- report), from dates of marriage reported in the same surveys and from whether they were living with their reported spouse. Precise dates of marriage and divorce are not always available so the above data sources were used to assign marital status as follows: people were assigned as 'married' if they were reported as such and/or were living with their spouse, and they were assigned as 'divorced' if they were reported as such or were not living with their spouse. Marriage or divorce are common reasons for migration in and out of the area, especially for women. To avoid missing events, the reason for migration was also used to identify marriage and divorce events. The reason for moving may not always relate to the index person (i.e. a young woman moving because her mother divorced would have 'divorce' as the reason for moving) and therefore, only independent moves with reason of marriage or divorce were included (McLean et al., 2023). Variables related to having children were generated from dates of birth of all HDSS members and their links to parent IDs. This means that only parents of children registered in the HDSS are recognised. Also available for each individual for each quarter are household composition (McLean et al., 2021a), current schooling status and highest schooling achieved, parental education, household occupation (a composite variable taking into account the reported occupation of all household members), and distance to the main road. Data from 2004-2017 is included. The markers of adulthood examined in this analysis were marriage, living independently (i.e. with self or spouse as head of household rather than a relative's household) and attending school. These markers were chosen due to data availability and as they are important transitions in this community. Other potential markers, for example working and taking on community roles were not available.

Analyses

All data manipulation and analysis used Stata 16.1. All analyses described below were carried out separated for men and women. As the HDSS is an open cohort, participants may move in and out of the area at any time. This means that some participants will have more complete data than others, some participants will have all their marriage/divorce transitions observed and other will not. Including only participants with full data would introduce bias, as they are likely to be different from those who have moved in or out. For this reason, 4 samples of the data are used to examine each transition, these are described below. The focus of the analyses was on marriages and divorces occurring at a young age so relatively young age cut-offs were used, however it was also necessary to consider the data available. Age cut-offs of 18 for women and 22 for men were used which allowed for large enough samples but still selected those experiencing the transitions at a 'young' age.

Rates and predictors of divorce at young age (sample 1)

We defined early marriages as those that occurred before the age of 18 for women and 22 for men. The ages are different as it is known that women tend to marry earlier than men in the area (McLean et al., 2021b). Participants whose first marriages could be identified (transition from 'never married' to 'married' observed in the dataset), were included in a longitudinal dataset which started at the beginning of the first marriage and ended with divorce, out-migration, death or end of analysis (maximum 3 years). The 3-year time period was chosen as previous literature showed this period to be when most divorces happen (Bertrand-Dansereau and Clark, 2016; John, 2022), and the focus of the analysis was on divorce at a young age. The main explanatory variable was a time-varying variable indicating timing of the first birth with the categories of 'None' (baseline), 'Pre-marital conception' (first child born before or in the first 9 months of the marriage) and 'Conception in marriage' (first child born after first 9 months but before end of marriage or analysis). Other explanatory variables included age at marriage; calendar year; schooling status: left without completing primary (baseline), currently attending (either primary or secondary), completed primary, and left with some/complete secondary; whether mother or father attended any secondary school; composite variable of reported occupation of household members: only farming (baseline), any irregular wage earner, any regular wage earner and none or unknown; and living within 1km of the main

tarmac road; living with only 1 or no parents before marriage [the 2 categories were combined to simplify the model as the effects were the same]; and living arrangements during the marriage: no other family apart from spouse/children (baseline), with or very near own family and with or very near spouse's family; spouse age difference: 5 or more years younger (men only), similar age (baseline), and 5 or more years older (women only); whether spouse was previously married, and if the marriage was polygynous (women only as male first marriages were very unlikely to be polygynous). For each of the main exposure categories, crude divorce rates were estimated and compared and Kaplan-Meier plots run by child status. As the Kaplan Meier plots indicated different effects of child status by year of marriage, piecewise exponential regression models were fitted firstly with child status and year of marriage separately, and then including an interaction between year of marriage and child variable.

Associations between divorce at young age and markers of transitions to adulthood: remarriage (sample 2 & 3)

Participants who were reported to be divorced before the age of 18 for women and 22 for men were included in a longitudinal dataset which started at the first report of divorce and ended with remarriage, out-migration, death or end of analysis (3 years following first report of divorce) (sample 2). The main explanatory variable was a time-varying variable indicating number of children with the categories of 'None' (baseline), 'at least 1 child', and 'expecting a child' (period 6 months before the birth of a child). The 'expecting' category was defined as 6 months before a birth rather than 9 months as the pregnancy might not be acknowledged in the first trimester. Crude remarriage rates and Kaplan-Meier plots were examined for each category, and piecewise exponential regression models run, controlling for age, year, own schooling, parent's schooling, household occupation and living with parents. For comparison, identical analyses were carried out on a similar dataset including an age/sex frequency matched sample of young people who were never married: for these analyses the outcome was first marriage (sample 3).

Associations between divorce at young age and markers of transitions to adulthood: living arrangements and schooling (sample 4)

Dates of marriage and schooling have to be estimated as they are based on data on current status which are collected annually, or information on ages or years of events (starting/leaving school, first marriage, start/end of marriage to specific spouses). This means that it is inappropriate to study the order of events if they occur in a short time period. The transition between states within the same domain may be studied (i.e. from divorced to remarried) but the transition between a divorce and a return to school, or a return to the family home would be difficult, because the estimated dates of the events may cause them to appear the wrong way around. Additionally, the events of divorce and returning to the family home are likely to coincide exactly. For this reason, the association between divorce and the other markers of adulthood, living with family and attending school, were examined with a cross-sectional approach. One record per participant between age 14 and 18 for women and age 16 and 22 for men was retained, only participants who were currently 'never married' or 'divorced' were kept. If a participant had more than one potential record one was kept at random. To keep the two groups independent, participants in the 'divorced' group had their 'never married' records excluded from the 'never married' group. Two binary outcomes were assessed: living with family and attending school and the main explanatory variable was the interaction between marital status and having at least one child. Following basic tabulations, univariate and multivariate logistic regression models (adjusted for year, parent's schooling, household occupation and the other outcome where appropriate) were run. As well as comparing the odds of each category compared to the baseline (never married, no children), the effect of children on the divorced group was assessed by testing whether the coefficients in the divorced group were significantly different from each other.

Results

Rates and predictors of divorce at young age (sample 1)

The crude rates of divorce in the 3 years from first marriage were 7.8 per 100 person years (95% confidence interval [CI]=6.7-9.0) for men and 10.7 (95% CI=9.5-12.0) for women. For both sexes the crude rates were lowest if their first child was conceived once married (male rate=5.7, 95% CI=4.3-7.5; female rate=9.1, 95% CI=7.2-11.5) and highest for those who conceived a child before marriage (male rate=9.7, 95% CI=7.5-12.6; female rate=13.4, 95% CI=10.6-

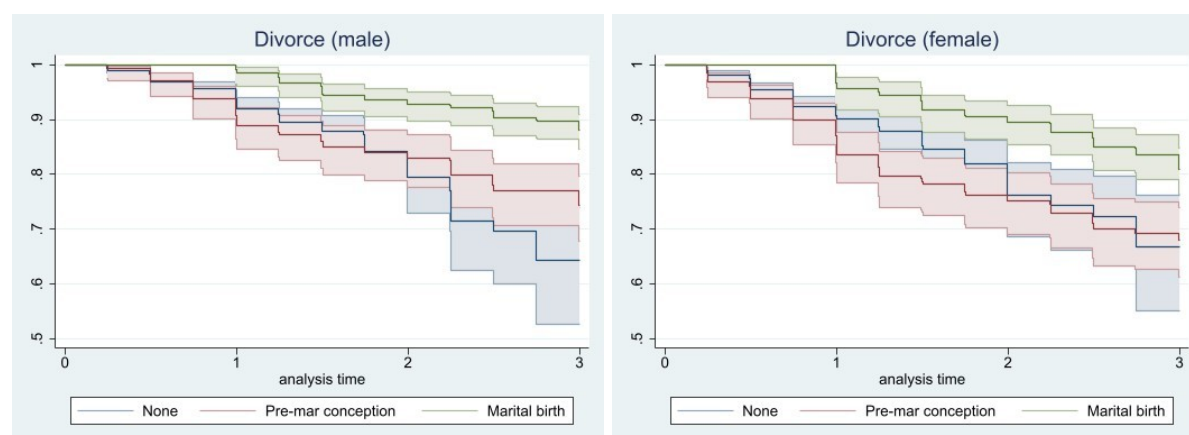
16.9) (table 9.1). Kaplan Meier plots of time to divorce from first marriage are shown in figure 1. For both men and women, those with a birth conceived within the marriage have a slower transition to divorce, though for women the confidence intervals overlap more. For both men and women, the transition appears faster for the 'pre-marital conception' group than the 'no children' group for the first 2 years, in the final year of follow-up for women the rates then appear similar but for men the 'no children' groups appears faster. For this reason, the different effects of the child categories in the 3 follow-up years were examined in the regression modelling.

Table 1. Crude rates by child variable and sex, of 1. divorce within 3 years of a first marriage before the age of 18 (women) or 22 (men) [sample 1]; 2. re-marriage within 3 years of a divorce before the age of 18 (women) or 22 (men) [sample 2], and 3. first marriage within 3 year of age frequency matched to sample 2 [sample 3]

Male						Female					
Rate per 100 py 95% CI						Rate per 100 py 95% CI					
Event s						Event s					
Person- years						Person- years					
Divorce within 3 years of first marriage (sample 1)											
None	77	8.9	8.6	6.9	10.8	83	8.0	10.3	8.3	12.8	
Pre-mar conception	57	5.9	9.7	7.5	12.6	71	5.3	13.4	10.6	16.9	
Marital birth	50	8.8	5.7	4.3	7.5	70	7.7	9.1	7.2	11.5	
Overall	184	23.6	7.8	6.7	9.0	224	21.0	10.7	9.3	12.1	
Remarriage within 3 years of a divorce (sample 2)											
No children	41	1.6	25.8	19.0	35.1	27	1.2	23.2	15.9	33.9	
At least 1 child	36	2.0	18.1	13.1	25.1	62	4.1	15.1	11.8	19.4	
Expectin g a child	5	0.3	19.2	8.0	46.2	3	0.6	5.1	1.6	15.7	
Overall	82	3.8	21.4	17.2	26.6	92	5.9	15.7	12.8	19.3	
First marriage within 3 years of age frequency matched to sample 2 (sample 3)											
No children	204	23.4	8.7	7.6	10.0	350	28.2	12.4	11.2	13.8	
At least 1 child	11	0.4	24.6	13.6	44.4	37	2.3	15.8	11.4	21.8	
Expectin g a child	21	0.2	101.2	66.0	155.1	34	0.7	46.4	33.2	64.9	

<i>Overall</i>	236	24.1	9.8	8.6	11.1	421	31.3	13.5	12. 2	14. 8
----------------	-----	------	-----	-----	------	-----	------	------	----------	----------

Figure 1. Kaplan Meier plots of time to divorce (within 3 years of a first marriage before the age of 18 (women) or 22 (men) [sample 1]) by having own child, separately for males and females. NB. Scale starts from 0.5.



Results of regression analysis are shown in table 2. In the univariate analysis, without the interaction term, a birth conceived within the marriage was associated with lower rates of divorce for men, this effect remained in the adjusted model (adjusted hazard ratio [aHR]=0.6, 95% CI=0.4-0.9). There was very little or no evidence for an effect of duration of marriage for males or females. In the model with the interaction with duration of marriage, men had the highest rate of disruption with no children in year 3 (aHR=3.6, 95% CI=1.7-7.4). Women had a higher rate in the 'pre-marital conception year 1' group (aHR=1.7, 95% CI=1.1-2.6); there was also weak evidence that the rate was higher for men in this group ($p=0.053$). Men had a lower rate of disruption with increasing age at marriage, however there was no effect for women and there was no evidence for an effect of spouse age difference. For both men and women, the spouse being married before was associated with higher rates, however for men the evidence was weak. There was little to no evidence of effects of own or parental schooling; for men the rates were higher for those living in household with any irregular wage-earner and for women living nearer to the tarmac road was associated with lower rates of disruption. For men living with only 1 or no parents before marriage was associated with higher rates of disruption, but for women the effect was the opposite. There was no effect of living very close to own or spouse's family during marriage for either sex.

Table 2. Regression model results with outcome of divorce (within 3 years of a first marriage before the age of 18 (women) or 22 (men) [sample 1]

Male (n=1064)							Female (n=964)						
	HR	SD	Z	p	95% CI		HR	SD	Z	p	95% CI		
CRUDE MODEL WITHOUT INTERACTION													
Child													
None	Reference						Reference						
Pre-mar conception	1.0	0.2	0.3	0.800	0.7	1.5	1.4	0.2	2.0	0.048	1.0	1.9	
Marital conception	0.6	0.1	-2.6	0.009	0.4	0.9	1.1	0.2	0.3	0.796	0.7	1.6	
Duration of marriage (years)													
One	Reference						Reference						
Two	1.2	0.2	0.8	0.402	0.8	1.7	0.7	0.1	-1.8	0.075	0.5	1.0	
Three	1.3	0.3	1.2	0.220	0.8	2.0	0.8	0.2	-1.0	0.303	0.5	1.2	
CRUDE MODEL WITH INTERACTION													
Child/duration of marriage													
No children yr1	Reference						Reference						
No children yr2	1.6	0.4	1.8	0.070	1.0	2.7	1.2	0.3	0.8	0.424	0.7	2.1	
No children yr3	3.1	1.1	3.1	0.002	1.5	6.3	1.1	0.6	0.2	0.820	0.4	3.1	
Pre-mar con yr1	1.6	0.4	1.9	0.059	1.0	2.5	1.7	0.3	2.7	0.007	1.2	2.6	
Pre-mar con yr2	1.0	0.3	-0.1	0.937	0.5	1.8	1.1	0.3	0.3	0.766	0.6	1.8	
Pre-mar con yr3	1.6	0.5	1.5	0.130	0.9	2.8	1.0	0.3	0.1	0.947	0.5	1.9	
Mar con yr1	1.0	0.5	0.0	0.987	0.4	2.7	2.0	0.7	1.9	0.059	1.0	4.0	
Mar con yr2	0.9	0.2	-0.6	0.550	0.5	1.4	0.7	0.2	-1.5	0.127	0.4	1.1	
Mar con yr3	0.7	0.0	-1.1	0.194	0.0	1.2	1.1	0.0	0.0	0.945	0.7	1.1	

Male (n=1064)							Female (n=964)						
	HR	SD	Z	p	95% CI		HR	SD	Z	p	95% CI		
	2	3			4		0	2	1			5	
ADJUSTED MODEL WITHOUT INTERACTION													
Child													
<i>None</i>	Reference						Reference						
<i>Pre-mar conception</i>	1.1	0.2	0.4	0.698	0.7	1.6	1.4	0.2	1.9	0.063	1.0	2.0	
<i>Marital birth</i>	0.6	0.1	-2.7	0.008	0.4	0.9	1.1	0.2	0.3	0.776	0.7	1.6	
Duration of marriage													
<i>One</i>	Reference						Reference						
<i>Two</i>	1.3	0.2	1.2	0.236	0.9	1.9	0.7	0.1	-1.6	0.111	0.5	1.1	
<i>Three</i>	1.5	0.3	1.7	0.095	0.9	2.3	0.8	0.2	-0.8	0.408	0.5	1.3	
ADJUSTED MODEL WITH INTERACTION													
Child/follow-up year													
<i>No ch yr1</i>	Reference						Reference						
<i>No ch yr2</i>	1.7	0.5	2.0	0.042	1.0	2.9	1.3	0.3	0.9	0.359	0.8	2.2	
<i>No ch yr3</i>	3.6	1.3	3.5	0.001	1.7	7.4	1.1	0.6	0.2	0.813	0.4	3.2	
<i>Pre-mar con yr1</i>	1.6	0.4	1.9	0.055	1.0	2.6	1.7	0.4	2.5	0.011	1.1	2.6	
<i>Pre-mar con yr2</i>	1.1	0.3	0.3	0.793	0.6	2.0	1.1	0.3	0.4	0.695	0.6	1.9	
<i>Pre-mar con yr3</i>	1.8	0.5	1.9	0.053	1.0	3.3	1.1	0.3	0.2	0.841	0.6	2.0	
<i>Mar con yr1</i>	1.0	0.5	0.0	0.968	0.4	2.8	2.0	0.7	2.0	0.048	1.0	4.1	
<i>Mar con yr2</i>	0.9	0.2	-0.4	0.685	0.6	1.5	0.7	0.2	-1.4	0.175	0.4	1.2	
<i>Mar con yr3</i>	0.8	0.0	-0.0	0.349	0.0	1.3	1.1	0.0	0.0	0.766	0.7	1.0	

Male (n=1064)							Female (n=964)					
	HR	SD	Z	p	95% CI		HR	SD	Z	p	95% CI	
		2	9		5		1	2	3		6	
Calendar year	1.0	0.0	0.08	0.417	1.0	1.1	1.0	0.0	0.08	0.447	1.0	1.1
Married age	0.8	0.0	-3.4	0.001	0.8	0.9	1.0	0.1	-0.2	0.829	0.9	1.1
Spouse age difference												
<i>Younger</i>	1.2	0.3	0.9	0.385	0.8	1.8						
<i>Similar</i>	Reference						Reference					
<i>Older</i>							1.0	0.2	0.2	0.867	0.8	1.4
Spouse prev married	1.8	0.6	1.8	0.071	1.0	3.5	1.7	0.3	3.1	0.002	1.2	2.3
Polygamous							1.0	0.0	0.5	0.603	1.0	1.0
Schooling												
<i>Left prim</i>	Reference						Reference					
<i>Current</i>	1.4	0.3	1.3	0.193	0.8	2.3	1.0	0.2	0.0	0.962	0.7	1.5
<i>Comp prim</i>	0.9	0.2	-0.6	0.548	0.6	1.3	0.8	0.2	-0.9	0.353	0.6	1.2
<i>Some/comp sec</i>	0.7	0.2	-1.4	0.166	0.5	1.1	1.0	0.2	0.1	0.922	0.7	1.5
Father schooling												
<i>No secondary</i>	Reference						Reference					
<i>Secondary</i>	1.0	0.2	0.1	0.889	0.7	1.4	1.0	0.2	0.2	0.876	0.8	1.4
<i>Unknown</i>	0.0	0.0	0.0	0.985	0.0		3.3	1.7	2.3	0.022	1.2	9.2
Mother schooling												
<i>No secondary</i>	Reference						Reference					
<i>Secondary</i>	0.9	0.0	-0.0	0.763	0.0	1.4	1.0	0.0	-0.0	0.826	0.7	1.0

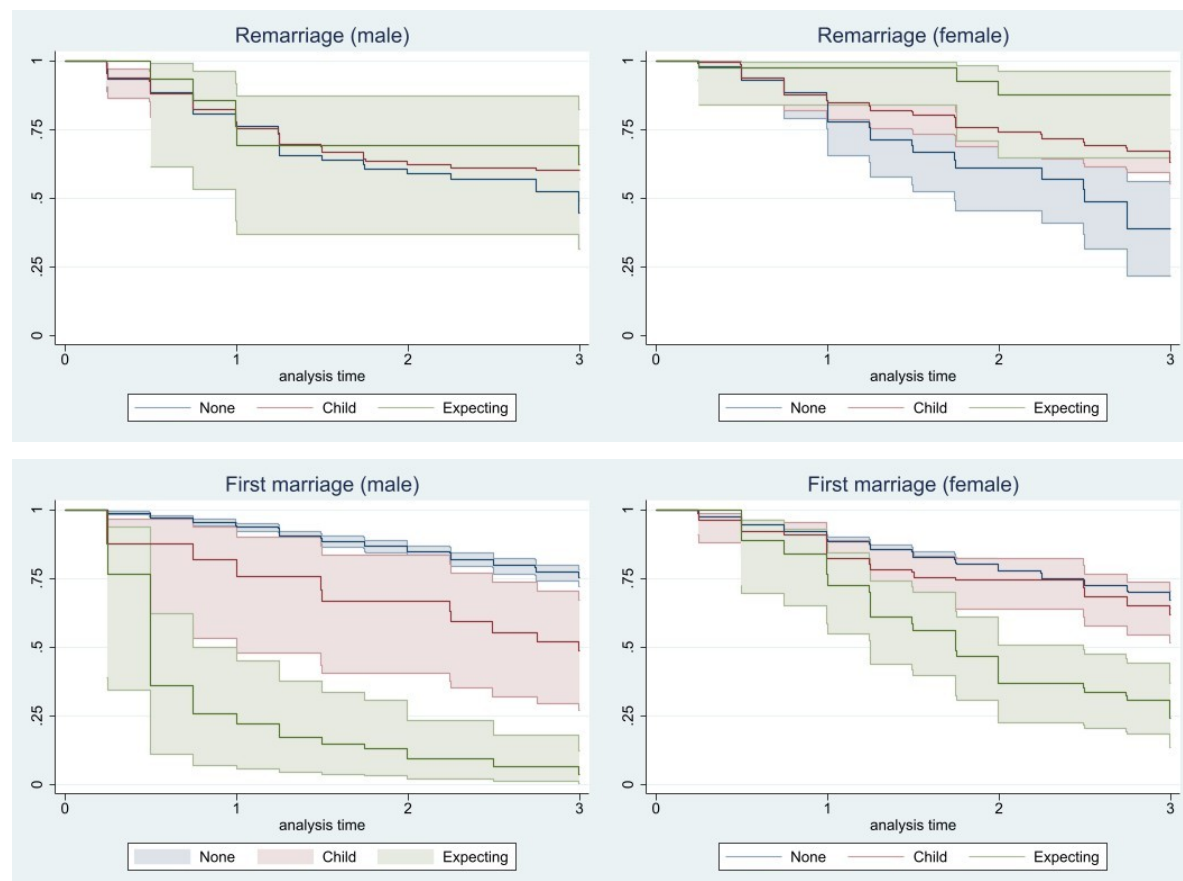
Male (n=1064)							Female (n=964)					
	HR	SD	Z	p	95% CI		HR	SD	Z	p	95% CI	
		2	3		7		0	2	2		3	
<i>Unknown</i>	0.0	0.	0.	0.988	0.	0.	0.	0.	-0.	0.453	0.1	2.
		0	0		0		5	5	8		8	
Household occupation												
<i>Only farming</i>	Reference						Reference					
<i>Any irregular wage</i>	1.9	0.	2.	0.004	1.	2.9	1.	0.	0.	0.491	0.8	1.
		4	8		2		2	3	7		8	
<i>Any regular wage</i>	0.8	0.	-0.	0.466	0.	1.5	0.	0.	-0.	0.726	0.6	1.
		3	7		4		9	2	3		5	
<i>None/NK</i>	0.6	0.	-1.	0.287	0.	1.4	0.	0.	-1.	0.272	0.3	1.
		3	1		3		7	2	1		4	
Within 1km of road	1.1	0.	0.	0.430	0.	1.6	0.	0.	-2.	0.028	0.5	1.
		2	8		8		7	1	2		0	
Living with single or no parent before marriage												
	1.5	0.	2.	0.012	1.	2.1	0.	0.	-2.	0.036	0.6	1.
		2	5		1		7	1	1		0	
Current living arrangements												
<i>Spouse</i>	Reference						Reference					
<i>Spouse & own fam</i>	1.0	0.	0.	0.829	0.	1.4	1.	1.	0.	0.575	0.2	13
		2	2		7		8	8	6		.0	
<i>Spouse & inlaws</i>	1.1	0.	0.	0.871	0.	3.5	1.	0.	0.	0.552	0.8	1.
		7	2		3		1	2	6		5	

Effect of divorce at young age on the transition to adulthood: remarriage (sample 2 & 3)

The rate of remarriage within 3 years of divorce that occurred before the age of 22 for men was 21.4 per 100 person years (95% CI 17.2-26.6) and before the age of 18 for women was 15.7 (95% CI 12.8-19.3); in comparison the rates of first marriage in the age-group frequency matched sample were much lower for men (rate=9.8, 95% CI=8.6-11.1) but more similar for women (rate=13.5, 95% CI=12.2-14.8). The rates of first marriage were highest in the 'expecting a child' category, however the number of remarriages in this group was low (table 1). Kaplan Meier plots of the time to first marriage and to remarriage are shown in

figure 2. For both males and females, those expecting a child have the fastest transition into first marriage, while for remarriage this group have the slowest transition (women) or are similar to the other groups (men).

Figure 2. Kaplan Meier plots of time to a. remarriage from divorce before age 18 (women) or 22 (men) (sample 2) and b. first marriage from age frequency matched to sample 2 (sample 3) by having own child, separately for males and females.



Results of regression analyses are shown in table 3. In the univariate analysis having and expecting a child were associated with high rates of first marriage for men while only expecting a child was associated with high rates for women, these effects remained in the fully adjusted model however the effect sizes were reduced (for men 'at least one child' aHR=2.5, 95% CI=1.3-4.6 and 'expecting' aHR=10.0, 95% CI 6.3-15.9; for women 'expecting' aHR=3.0, 95% CI=2.1-4.3). For remarriage, there was no evidence of an effect of children for men, while for women both having at least 1 child and expecting a child were associated with lower rates of remarriage (at least one child aHR=0.5, 95% CI=0.3-0.8; expecting aHR=0.2, 95% CI=0.1-0.6).

Table 3. Regression model results with outcomes of from a. remarriage from divorce before age 18 (women) or 22 (men) (sample 2) and b. first marriage from age frequency matched to sample 2 (sample 3), separately for males and females.

Male (n*=215; 1024)							Female (n*=300; 1418)						
							H						
	HR	SD	Z	p	95% CI		R	SD	Z	p	95% CI		
Remarriage													
e													
UNIVARIATE ANALYSIS													
Child													
	Reference						Reference						
<i>None</i>							<i>e</i>						
		0.1	-1.		0.		0.		-1.		0.	1.	
<i>Child</i>	0.7	6	5	0.121	4	1.1	7	0.15	9	0.063	4	0	
		0.3	-0.		0.		0.		-2.		0.	0.	
<i>Expecting</i>	0.7	5	6	0.535	3	1.9	2	0.13	5	0.012	1	7	
FULLY ADJUSTED MODEL**													
Child													
	Reference						Reference						
<i>None</i>							<i>e</i>						
		0.2	-1.		0.		0.		-2.		0.	0.	
<i>Child</i>	0.8	0	0	0.332	5	1.3	5	0.13	6	0.009	3	8	
		0.3	-0.		0.		0.		-2.		0.	0.	
<i>Expecting</i>	0.8	7	5	0.594	3	2.0	2	0.11	8	0.004	1	6	
First marriage													
UNIVARIATE ANALYSIS													
Child													
	Reference						Reference						
<i>None</i>							<i>e</i>						
		0.8			1.		1.				0.	1.	
<i>Child</i>	2.8	7	3.4	0.001	5	5.2	3	0.22	1.4	0.165	9	8	
	11.	2.6	10.	<0.00	7.	18.	3.				2.	5.	
<i>Expecting</i>	6	6	7	1	4	2	7	0.67	7.3	<0.001	6	3	
FULLY ADJUSTED MODEL**													
Child													
	Reference						Reference						
<i>None</i>							<i>e</i>						

		0.7			1.		0.		-0.		0.	1.
<i>Child</i>	2.5	8	2.9	0.004	3	4.6	8	0.16	9	0.364	6	2
	10.	2.3		<0.00	6.	15.	3.				2.	4.
<i>Expecting</i>	0	5	9.8	1	3	9	0	0.56	5.8	<0.001	1	3

*First figure for 'remarriage' outcome (sample 2), second for 'first marriage' (sample 3); **adjusted for age, year, household occupation, distance to road, schooling, parents' schooling and living with parents

Effect of divorce at young age on the transition to adulthood: living arrangements and schooling (sample 4)

The number and proportion of never married and divorced women aged 14-18 and men aged 16-22 according to whether they are living with family or attending school, along with results from univariate and multivariate logistic regression models and interaction tests is shown in table 4. A high proportion of never married men and women lived with family (85.5% and 86.3% of 'never married, no children' men and women respectively) and there was no evidence of a difference by child status. For divorced men the percentages were lower, and divorced men with children had the lowest proportion (45.2%), and there was some evidence of an effect of child status on divorced men, however, after adjustment the evidence disappears (p-value for interaction test in adjusted model=0.276). For divorced women the proportion living with family was similar to those never married, and there was no effect of children.

A high proportion of 'never married, no children' men (72.9%) and women (89.4%) were attending school and the proportions were lower for those with children (51.1% for men and 29.4% for women). However, the evidence for this effect reduces for men in the adjusted model, though remains strong for women. Divorced men are much less likely to be in school compared to never married men, and while the proportion was higher for divorced men with children compared to without (17.7% vs. 11.1%) there was no evidence for this effect (p-value for interaction test in adjusted model=0.144). Divorced women are also less likely to be in school and having children reduces their chance even further (8.7% vs. 21.5%, p-value for interaction test in adjusted model=0.002).

Table 4. Univariate and multivariate analyses testing the interaction between marital status and having children or living with parents on the outcomes of living with parents and currently in school if never married or divorced between age 14 & 18 (female) or 16 & 22 (male) (sample 4).

Outcome				Crude						Adjusted					
	n	y	%y	OR	SD	z	p	95% CI		OR	SD	z	p	95% CI	
Outcome: Living with family; Interaction: any child															
Male															
Model results															
	117	689	85.5												
Never mar, no ch	1	6	%	Reference						Reference					
			87.5												
Never mar, ch	6	42	%	1.2	0.52	0.4	0.693	0.5	2.8	1.7	0.82	1.1	0.254	0.7	4.4
			57.6												
Divorced, no ch	70	95	%	0.2	0.04	-9.1	1	0.2	0.3	0.2	0.04	-8.3	1	0.2	0.3
			45.2												
Divorced, ch	68	56	%	0.1	0.03	7	1	0.1	0.2	0.2	0.03	-8.8	1	0.1	0.3
Test: Div no ch = div ch				1.6	0.39	2.1	0.037	1.0	2.6	1.3	0.34	1.1	0.276	0.8	2.2
Female															
Model results															
	101	637	86.3												
Never mar, no ch	5	5	%	Reference						Reference					

	Outcome			Crude						Adjusted					
	n	y	%y	OR	SD	z	p	95% CI		OR	SD	z	p	95% CI	
			90.6												
<i>Never mar, ch</i>	8	77	%	1.5	0.57	1.1	0.252	0.7	3.2	1.3	0.52	0.7	0.471	0.6	2.9
			88.9												
<i>Divorced, no ch</i>	18	144	%	1.3	0.32	1.0	0.338	0.8	2.1	1.0	0.29	0.0	0.978	0.6	1.8
			88.6												
<i>Divorced, ch</i>	34	265	%	1.2	0.23	1.2	0.244	0.9	1.8	1.0	0.23	-0.1	0.946	0.6	1.6
Test: Div no ch = div ch				1.0	0.32	0.1	0.933	0.6	1.9	1.0	0.33	0.1	0.943	0.5	1.9

**Outcome: attending school; Interaction:
any child**

Male

Model results

	209	564	72.9												
<i>Never mar, no ch</i>	6	1	%	Reference						Reference					
			51.1			-3.1									
<i>Never mar, ch</i>	22	23	%	0.4	0.12	6	0.002	0.2	0.7	0.6	0.20	-1.5	0.136	0.3	1.2
<i>Divorced, no ch</i>	136	17	11.1	0.0	0.01	-11.	<0.00	0.0	0.1	0.1	0.02	-9.6	<0.00	0.0	0.1

Outcome				Crude						Adjusted					
	n	y	%y	OR	SD	z	p	95% CI		OR	SD	z	p	95% CI	
			%			9	1						1		
			17.7			-10.	<0.00						<0.00		
<i>Divorced, ch</i>	93	20	%	0.1	0.02	2	1	0.0	0.1	0.1	0.03	-7.9	1	0.1	0.2
Test: Div no ch = div ch				0.6	0.21	-1.5	0.128	0.3	1.2	0.6	0.21	-1.5	0.144	0.3	1.2
Female															
Model results															
		663	89.4												
<i>Never mar, no ch</i>	789	3	%	Reference						Reference					
			29.4			-12.	<0.00	0.0				-12.	<0.00		
<i>Never mar, ch</i>	60	25	%	0.0	0.01	5	1	3	0.1	0.0	0.01	1	1	0.0	0.1
			21.5			-17.	<0.00					-16.	<0.00		
<i>Divorced, no ch</i>	128	35	%	0.0	0.01	6	1	0.0	0.0	0.0	0.01	7	1	0.0	0.0
				0.0	0.00	-21.	<0.00	0.0	0.0	0.0	0.00	-19.	<0.00	0.0	0.0
<i>Divorced, ch</i>	272	26	8.7%	1	2	5	1	1	2	1	3	4	1	1	2
Test: Div no ch = div ch							<0.00								
				2.9	0.80	3.8	1	1.7	5.0	2.5	0.70	3.1	0.002	1.4	4.3

*Living with parents/child model adjusted for calendar year, household occupation, living within 1km of main road, current schooling, parental schooling; Attending school/child model adjusted for calendar year, household occupation, living within 1km of main road, living with parent(s) & parental schooling; Attending school/living with parents model adjusted for calendar year, household occupation, living within 1km of main road & parental schooling

Discussion

Summary

Overall rates of divorce were higher for women compared to men. Having children affected the chance of divorce in different ways: for men a birth conceived in marriage seemed to be protective while not having children was a risk factor after the first 2 years of marriage. For women, pre-marital conception was a risk factor, mostly in the first year of marriage. There were few other independent predictors of divorce for either sex. For men, there was little evidence that divorce at a young age ‘reset’ the transition to adulthood: divorced men were more likely to remarry, less likely to live with family, and less likely to attend school compared to their never married contemporaries. There was also little effect of children on the outcomes of divorced men. Evidence for a ‘reset’ was more mixed for women: they were likely to return to family following a divorce and had similar rates of remarriage compared to never married women of the same age; divorced women, however, were not likely to attend school, and having children made their chances of remarriage and attending school much lower.

Rate of divorce and remarriage

Several studies have reported on the rates of dissolution of first marriage in Malawi: Bertrand-Dansereau et al found that 16.5% of their sample of rural Malawian women experienced divorce within 3 years of their first marriage (Bertrand-Dansereau and Clark, 2016); a study of DHS data which included Malawi found that about 23% of first unions dissolved in the first 4 years of marriage (John, 2022), and a study of young Malawians found that only 58% of first unions were intact by the 5th year of marriage (Grant and Soler-Hampejsek, 2014). Our rates suggest lower likelihood of dissolution (7.8 per 100 person years for men and 10.7 for women) but are not directly comparable as we include person-time for people who leave the area and thus may be an underestimate if we have missed marriages that occurred elsewhere; also the other studies included older people and covered time periods not included in our study.

Remarriage has been found to be common and often rapid, with an average time between union dissolution and remarriage in Malawi of 1.9 years (this included

all unions at all ages, not just first unions) (John, 2022), so it is not surprising that we found high rates of remarriage following divorce. Our finding that men had higher rates of remarriage than women also confirms previous findings that in general remarriage has been found to be more common for men than women (de Walque and Kline, 2012). It has also been found chance of remarriage for women decreases after age 19 while remaining stable for men at all ages (Reniers, 2008), which further explains the sex differences. Other factors previously found to inhibit remarriage are widowhood (Reniers, 2008), HIV status and living children (Anglewicz and Reniers, 2014): very few of the young people in our sample were widowed and we do not have HIV status data, but we demonstrated that having children was associated with lower rate of remarriage for women.

Predictors of divorce

The association between pre-marital conception and a higher chance of divorce for women has been found previously (Odimegwu et al., 2017; Smith-Greenaway et al., 2021) and maybe due to the pregnancy ‘forcing’ the marriage in young people who perhaps have not known each other very long or are not otherwise ready for marriage, as was found in a qualitative study of young people in Zambia (Mweeba and Mann, 2020). It has also been found that pre-marital conception was associated with higher likelihood of experiencing a violent marriage, regardless of whether it ended in divorce or not (Smith-Greenaway et al., 2021).

Lack of children in a marriage has previously been shown to be associated with higher chance of divorce for women (Bertrand-Dansereau and Clark, 2016; Reniers, 2003; Takyi, 2001; Tilson and Larsen, 2000). We only found an association between divorce and lack of children for men, not women. This is somewhat surprising as many of the same couples are likely to be in each group, however some of the women maybe marrying older men who may be in more of a position to marry another woman, if infertility is suspected, rather than initiating divorce (Hemmings, 2007). The young men in our analysis may not yet be financially stable enough to attract a second wife.

The evidence on the associations between socio-economic position and divorce were not totally clear in our analysis. We did not find an effect of education, however the findings in previous literature have not been consistent with

increased education in women associated with lower chance of divorce in Southern Malawi (Grant and Pike, 2019; Grant and Soler-Hampejsek, 2014) and also higher chance of divorce in Ghana (Takyi and Broughton, 2006). We found that for men living in a household in the 'any irregular wage' category was associated with higher rates of divorce. Having to rely on irregular work could be an indicator of lower household wealth: other research has shown that low household wealth in the marital household was associated with higher chance of divorce in Uganda (Porter et al., 2004), and qualitative accounts in Zambia described how marriages may be disrupted in young people if the husband did not have the resources to take care of his wife (Mweeba and Mann, 2020). We found an association between older age at marriage and lower chance of divorce for men, but no evidence of this in women, which is somewhat surprising as this has been found to be a risk factor for divorce for women in other studies (Clark and Brauner-Otto, 2015; Reniers, 2003; Tilson and Larsen, 2000). We also did not find effect of spousal age difference, while it has been found previously that women who married men older than them were less likely to experience divorce (Grant and Pike, 2019; Porter et al., 2004; Reniers, 2003). We were not able to examine different age differences do to relative small sample size: the associations may have been different for larger age gaps. All of our index young people were married for the first time in this analysis, but the increased chance of divorce if their spouse had previously been married confirms that prior divorce is a predictor of future divorce (Porter et al., 2004; Takyi, 2001). It has been should previously that polygyny is associated with higher chance of divorce for Malawian women (Reniers, 2003), however we did not find any evidence of this in our data.

Living with only 1 or no parents prior to marriage was associated with lower rate of disruption for women, which might be expected if the decision to leave a marriage depends on the home that a young woman has to go back to, and that certain household types might be more receptive to accepting the woman back. Mweeba and colleagues in Zambia found that young women who left a marriage always had relatives to go back to (Mweeba and Mann, 2020), however a Malawian study suggested that it was the payment of the lobola (bride price) from the husband to the wife's family that influenced whether or not the family would accept her back (Bertrand-Dansereau and Clark, 2016). We did not have information on the payment of lobola in our data. This same study however

found that the couples that separated tended to be those who lived independently from their families following marriage, (Bertrand-Dansereau and Clark, 2016) however we found no association between divorce and living near own or spouse's family. For men, the association with pre-marital living arrangements was opposite: they were more likely to divorce if they had not been living with both parents. It has previously been found that parent's death and divorce was associated with their child's later chance of divorce, though this study was only in women (Grant and Pike, 2019).

Effect of divorce on transition to adulthood

Studies on the effect of divorce on young people's transition to adulthood in Africa are rare and not directly comparable to the present analysis. A study in Malawi found 20% of young women following a divorce were living independently and that they were at a disadvantage in terms of material well-being, however they did not compare to a never married group. Although the authors suggested that those returned to their parents may be able to 'reset' the transition to adulthood, they did not look at attending school (Grant and Pike, 2019). Another Malawian qualitative study on implementation of marriage age laws and marriage withdrawal reported that while often there were negative connotations of being withdrawn from marriage some people said that girls could potentially go back to school, but there was no evidence presented that people did actually return to school (Melnikas et al., 2021).

We have shown that divorced men and women are different from never married men and women of similar ages, according to 3 common measures of the transition to adulthood: moving away from home, leaving school and getting married. Individual's transition to adulthood may be complex and vary by order and timing of events, for simplicity's sake however consider 2 extremes: an early marriage route and an extended education and later marriage route. The never married group in our analysis have the potential to follow either route (plus other routes), while the divorced group have started on the early marriage route. If the levels of schooling and marriage in the divorced group were more similar to the never married group it could mean that some had switched the route they were taking following the divorce to get more education before remarrying. Removing the effect of children initially by only considering divorced men and women without children: their higher rates of marriage compared to their never married

counterparts and relatively lower likelihood of school attendance implies that most are not deviating from the pathway (early marriage) that they began at an earlier age. The lack of the association between expecting a child and remarriage rates compared to the very clear association with marriage rates, however, may show that the societal/family pressure to marry in this situation has disappeared, or possibly that divorced people may be more careful to avoid pregnancy. Divorced women with children have lower rates of remarriage and of school attendance which may mean that both continuing on their existing adulthood trajectory or switching to an extended education one is more difficult for them. Without information on the intentions and desires of the participants the interpretation can only be speculative: the women with children may neither want to remarry, live independently or finish school, however in Zambia, divorced men and women expressed desires and hopes of finishing education and many young women resented the loss of independence after returning home following divorce (Mweeba and Mann, 2020). Finally, divorce may not 'reset' the transition to adulthood, because those who marry early may have different characteristics than those who continue in education. Individuals from less wealthy households, who may not be able to capitalise on any opportunities which may arise from extended education are likely to be those who marry early.

Limitations

Our secondary longitudinal data allow for detailed analyses of the early marital experiences of young people in rural Malawi, it is valuable firstly as data are available for both women and men, as quantitative data on divorce in men are limited; and secondly as studies often use retrospective data gathered from older people: a study using data from Malawi Longitudinal Study of Families and Health found that marriage likely to be missed or incorrect dates reported in retrospective data collection, this was more likely for short marriages or those a long time ago (Chae, 2016);

However, the data were not specifically collected for this purpose, which has resulted in lack of data which might have informed this analysis, and having to make some assumptions which may have weakened the associations observed. The HDSS maintains surveillances over households and participants in a particular area: no data are available on people when they are outside of the area. As marriage and divorce are common reasons for moving in and out of the area, especially for women, we have attempted to include these outcomes. However,

due to the way the data are collected the reason for moving may refer to another person (i.e. an adolescent may move due to their parents' divorce): to reduce this effect only independent moves were classed as marriage or divorce outcomes, however there is still the possibility of misclassification.

Data that would have been useful to include but was not available include HIV status: this has been found to be important for both divorce and re-marriage (Anglewicz and Reniers, 2014; Porter et al., 2004), while the Karonga HDSS has carried out HIV sero-surveys (finding an adult [18+] prevalence of 7.5% in 2007-8 (Molesworth et al., 2010)), these tended to include only adults, and there was not enough data on all of our young people to assign HIV status; type of marriage: traditionally in Malawi marriages are negotiated by 'ankhoswe' who are senior relatives on either side, involve a traditional ceremony and the payment of 'lobola' or bride price from the husband to the wife's family. It has been previously found that elopement (where some or all of these traditional aspects are avoided) is associated with higher chance of divorce (Bertrand-Dansereau and Clark, 2016; Grant and Pike, 2019), however this information is not available in our dataset. The annual nature of household and individual surveys means that it is necessary to assume that a report of, for example, occupation, is true for a certain time after it is made. This also meant that we assumed that the absence of the spouse in the household meant that they were separated, even if they were still assigned the status of married, as marital status is only gathered annually. Absence of spouse may mean that they are working elsewhere or living away for a reason other than divorce: this has been shown to be relatively common in other parts of rural Malawi (Reniers, 2003), however qualitative studies have shown that temporary separations regardless of the initial reason can lead to divorce in young people (Bertrand-Dansereau and Clark, 2016). Our main explanatory variables of child status were deliberately kept as simple as possible due to the relatively small numbers in some of the groups: it has been suggested number and sex of children can affect divorce in Africa (Odimegwu et al., 2017), however as our timescales were relatively short it seems unlikely that child sex would have a big impact.

The focus of the analysis was on divorce at a young age: in choosing the age ranges for the inclusion criteria it was necessary to balance trying to look at the youngest age groups with having enough data to have statistical power in the analyses. It may have been preferable to use younger age cut-offs for the divorce

analysis, i.e. include only women married by age 16 and men by age 20, to truly focus on those marrying very young. This group was much smaller but the estimates from the models were similar to those using the expanded sample but the evidence was weaker, so it was decided to use the same age restrictions for all the analyses. It was necessary to use different age criteria for men and women, as women tend to marry earlier than men in the area. This makes it harder to compare the results between the sexes.

Conclusion

We find evidence that both men and women are affected by having children with regard to first marriage and divorce, and that a divorce at a young age did not appear to change the transition to adulthood trajectory for men, or women without children. However, divorced women with children may be at more of a disadvantage for both remarrying or returning to school.

References

- Anglewicz, P., Reniers, G., 2014. HIV status, gender, and marriage dynamics among adults in Rural Malawi. *Stud. Fam. Plann.* 45, 415–28.
- Ansell, N., Hajdu, F., van Blerk, L., Robson, E., 2018. “My happiest time” or “my saddest time”? The spatial and generational construction of marriage among youth in rural Malawi and Lesotho. *Trans. Inst. Br. Geogr.* 43, 184–199.
- Bertrand-Dansereau, A., Clark, S., 2016. Pragmatic tradition or romantic aspiration? The causes of impulsive marriage and early divorce among women in rural Malawi. *Demogr. Res.* 35, 47–80.
- Chae, S., 2016. Forgotten marriages? Measuring the reliability of marriage histories. *Demogr. Res.* 34, 525–562.
- Chimango, L.J., 1977. Woman without “ankhoswe” in malawi: A discussion of the legal position of women who enter into informal marital relations. *J. Leg. Plur. Unoff. Law* 9, 54–61.
- Clark, S., Brauner-Otto, S., 2015. Divorce in sub-Saharan Africa: Are Unions Becoming Less Stable? *Popul. Dev. Rev.* 41, 583–605.
- Daniel, A., 2017. Malawi Amends Constitution to Remove Child Marriage Loophole | Human Rights Watch [WWW Document]. Hum. Rights Watch. URL <https://www.hrw.org/news/2017/02/23/malawi-amends-constitution-remove->

child-marriage-loop-hole (accessed 2.12.20).

de Walque, D., Kline, R., 2012. The Association Between Remarriage and HIV Infection in 13 Sub-Saharan African Countries. *Stud. Fam. Plann.* 43, 1–10.

Glynn, J.R., Kayuni, N., Floyd, S., Banda, E., Francis-Chizororo, M., Tanton, C., Molesworth, A., Hemmings, J., Crampin, A.C., French, N., 2010. Age at menarche, schooling, and sexual debut in northern Malawi. *PLoS One* 5, e15334.

Goode, W., 1993. *World Changes in Divorce Patterns*. Yale University Press, New Haven.

Grant, M.J., Pike, I., 2019. Divorce, living arrangements, and material well-being during the transition to adulthood in rural Malawi. *Popul. Stud. (NY)*. 73, 261–275.

Grant, M.J., Soler-Hampejsek, E., 2014. HIV Risk Perceptions, the Transition to Marriage, and Divorce in Southern Malawi. *Stud. Fam. Plann.* 45, 315–337.

Guirking, C., Gross, J., Platteau, J.P., 2021. Are women emancipating? Evidence from marriage, divorce and remarriage in Rural Northern Burkina Faso☆. *World Dev.* 146, 105512.

Hemmings, J., 2007. *Infertility and Women's Life Courses in Northern Malawi*. London School of Hygiene and Tropical Medicine.

Jeong, J., 2021. Determinants and Consequences of Adolescent Fatherhood: A Longitudinal Study in Ethiopia, India, Peru, and Vietnam. *J. Adolesc. Heal.* 68, 906–913.

John, B.M., 2022. *Marital Life Courses in sub-Saharan Africa: All Cause Union Dissolution, Its Timing, and Time Spent Outside Marriage*. Max Planck Inst. Demogr. Res. Work. Pap.

Kgadima, N.P., Leburu, G.E., 2022. Attitude Toward Lobola in Remarriage Following Divorce in African Communities. *Fudan J. Humanit. Soc. Sci.* 16, 89–103.

McLean, E., Dube, A., Kalobekamo, F., Slaymaker, E., Crampin, A.C., Sear, R., 2023. Local and long-distance migration among young people in rural Malawi: importance of age, sex and family. *Wellcome Open Res.* 8, 211.

McLean, E., Price, A.J., Palla, L., Slaymaker, E., Amoah, A., Crampin, A.C., Dube, A., Kalobekamo, F., Sear, R., 2021a. Data-driven versus traditional definitions of household membership and household composition in demographic studies: does latent class analysis produce meaningful groupings? In: *International Population Conference*. Hyderabad, India.

- McLean, E., Sironi, M., Crampin, A.C., Slaymaker, E., Dube, A., Sear, R., 2021b. Transitions to adulthood in rural Malawi in the 21st century using sequence analysis. In: International Population Conference. Hyderabad, India.
- Melnikas, A.J., Mulauzi, N., Mkandawire, J., Amin, S., 2021. Perceptions of minimum age at marriage laws and their enforcement: qualitative evidence from Malawi. *BMC Public Health* 21, 1–12.
- Melnikas, A.J., Mulauzi, N., Mkandawire, J., Saul, G., Amin, S., 2022. “Then I will say that we have to marry each other”: A qualitative view of premarital pregnancy as a driver of child marriage in Malawi. *Afr. J. Reprod. Health* 26, 55–63.
- Molesworth, A.M., Ndhlovu, R., Banda, E., Saul, J., Ngwira, B., Glynn, J.R., Crampin, A.C., French, N., 2010. High accuracy of home-based community rapid HIV testing in rural Malawi. *J. Acquir. Immune Defic. Syndr.* 55, 625–30.
- Mukuna, R.K., 2020. Exploring Basotho teenage fathers’ experiences of early fatherhood at South African rural high schools. *J. Psychol. Africa* 30, 348–353.
- Mwambene, L., 2012. Custody Disputes Under African Customary Family Law in Malawi: Adaptability to Change? *Int. J. Law Policy Fam.* 26, 127–142.
- Mweeba, O., Mann, G., 2020. Young marriage, parenthood and divorce in Zambia. Research Report. Oxford: Young Lives.
- National Statistical Office, 2016. National Statistical Office, Zomba. Malawi Demographic and Health Survey 2015-16 Key Indicators Report.
- Odimegwu, C.O., Akinyemi, J.O., De Wet, N., 2017. Premarital birth, children’s sex composition and marital instability among women in sub-Saharan Africa. *J. Popul. Res.* 34, 327–346.
- Parrot, F., Nkhata, M., Mwandosya, B., Kapira, G., Ndovi, A., Makoka, D., Gondwe, L., Crampin, A.C., 2015. Portraying fathers : reproductive journeys in Malawi 2, 154–167.
- Porter, L., Hao, L., Bishai, D., Serwadda, D., Wawer, M.J., Lutalo, T., Gray, R., 2004. HIV status and union dissolution in sub-Saharan Africa: The case of Rakai, Uganda. *Demography* 41, 465–482.
- Reniers, G., 2003. Divorce and remarriage in rural Malawi. *Demogr. Res.*
- Reniers, G., 2008. Marital strategies for regulating exposure to HIV. *Demography* 45, 417–438.
- Smith-Greenaway, E., Koski, A., Clark, S., 2021. Women’s Marital Experiences Following Premarital Fertility in Sub-Saharan Africa. *J. Marriage Fam.* 83, 394–408.

- Spell, S., Anglewicz, P., Kohler, H.-P., 2012. Marriage as a Mechanism: Women's Education and Wealth in Malawi. PSC Work. Pap. Ser.
- Stark, L., 2018. Poverty, Consent, and Choice in Early Marriage: Ethnographic Perspectives from Urban Tanzania. *Marriage Fam. Rev.* 54, 565-581.
- Takyi, B.K., 2001. Marital instability in an african society: Exploring the factors that influence divorce processes in ghana. *Sociol. Focus* 34, 77-96.
- Takyi, B.K., Broughton, C.L., 2006. Marital stability in Sub-Saharan Africa: Do women's autonomy and socioeconomic situation matter? In: *Journal of Family and Economic Issues*. Springer, pp. 113-132.
- Tilson, D., Larsen, U., 2000. Divorce in Ethiopia: The impact of early marriage and childlessness. *J. Biosoc. Sci.* 32, 355-372.