Persistence and change in early marriage practices among Syrian refugees in Jordan

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This is the submitted version of the following article: Maia Sieverding, Caroline Krafft, Nasma Berri, Caitlyn Keo. 2020. "Persistence and Change in Marriage Practices among Syrian Refugees in Jordan." *Studies in Family Planning*. DOI: 10.1111/sifp.12134, which has been published in final form at https://doi.org/10.1111/sifp.12134.

Abstract

Early marriage, which is associated with a wide range of negative health and socioeconomic outcomes, may be a response to conflict and displacement. Since the onset of the Syrian conflict in 2011, there has been considerable attention to reports of high and potentially increasing rates of early marriage among Syrian refugee women. Using nationally representative survey data from Jordan in 2016 and Syria in 2009, as well as qualitative interviews with Syrian refugee youth in Jordan, we examine changes in age at marriage and drivers of early marriage. We find no evidence of an increase in early marriage rates after refugees' arrival to Jordan. Rates of early marriage among the Syrians now in Jordan were higher than pre-conflict national rates and have remained similar post-displacement, although poverty and security concerns have created additional drivers for early marriage for young women. Yet young refugee men had disincentives to marry due to the challenging economic conditions they encountered. Analysis of early marriage in displacement must be placed within the context of change in marriage practices among refugees more broadly.

Keywords: Early Marriage, Jordan, Refugees

1 Introduction

Early marriage, defined as a formal marriage or an informal union before age 18, is associated with a wide range of negative outcomes for women and their children. Women married early lose their childhood, often taking on adult roles before they are developmentally ready. They have lower levels of education and economic empowerment, which contribute to low decision making authority within the household, restricted mobility, and vulnerability to intimate partner violence (Lee-Rife et al. 2012). Due to the association of early marriage with the early onset of sexual activity and early pregnancy, women married early also suffer from other negative health outcomes, including increased risk of sexually transmitted infections, maternal morbidity and mortality, and depression (Kalamar, Lee-Rife, and Hindin 2016; UNICEF 2017).

The drivers of early marriage globally are multiple, and include poverty, lack of educational opportunities and sociocultural norms that emphasize girls' virginity (Lee-Rife et al. 2012; UNICEF 2017). In the Middle East and North Africa (MENA) region, conflict and instability are also a key factor underlying early marriage practices (UNICEF 2017). In contexts of conflict and forced displacement, the peacetime drivers of early marriage may be exacerbated, and others may emerge. Nevertheless, conflict does not necessarily lead to increases in early marriage rates. A recent systematic review of how age at first marriage among adolescents is affected by exposure to conflict emphasized the contextually specific nature of factors that drive marriage rates in different populations and different types of conflict (Neal, Stone, and Ingham 2016). For example, economic hardship contributed to increased rates of early marriage among some conflict affected populations, as marriage took on a more transactional dimension. Yet in other contexts, economic hardship led to delays in marriage as the costs of marriage became increasingly difficult for men to meet (Neal, Stone, and Ingham 2016). Disruption of social networks, availability of men as spouses, protection from violence, and changing gender norms are all other factors that have been argued to lead to increases or decreases in early marriage in different conflict situations (Neal, Stone, and Ingham 2016; Abbasi-Shavazi, Mahmoudian, and Sadeghi 2018).

During recent and ongoing conflicts in the MENA region, there has been considerable attention to claimed increases in early marriage rates, including among the Syrian refugee populations that have taken refuge in the neighboring countries of Jordan and Lebanon (UNICEF 2014; Save the Children 2014; Cherri et al. 2017; Higher Population Council 2017). However, substantial data challenges have limited efforts to accurately assess *changes* in the rate of early marriage as compared to Syria prior to the conflict. Most studies have relied on non-representative samples (Save the Children 2014; Cherri et al. 2017) or did not account for the selectiveness of the Syrian refugee population (Higher Population Council 2017). At the same time, change in other dynamics of marriage markets that may have important implications both for women's age at first marriage and their long-term wellbeing have not been well studied. This lack of contextualization of early marriage among Syrian refugees within pre-conflict patterns and other post-conflict dynamics of marriage has led to an incomplete and potentially misleading view of the practice. Expanding on the previous literature, in this paper we use a combination of nationally representative survey data from Syria in 2009 and Jordan in 2016, as well as qualitative interviews with Syrian refugee youth, to (1) assess change in the probability of marrying early among Syrian women who are now refugees in Jordan; and (2) analyze change in drivers of early marriage and marriage customs among the refugee population in order to explore potential mechanisms behind any change in marriage ages.

2 Background: Early marriage in the MENA and among Syrian refugees

Early marriage rates vary considerably across the Middle East and North Africa. In the region as a whole, one in five women aged 20-24 were married before the age of 18. Yet this rate ranged from a high in Sudan (34%) and Yemen (32%), to 17% in Egypt, 8% in Jordan, and 6% in Lebanon (among Lebanese, but 41% among Syrians in Lebanon). There is also considerable subnational variation in early marriage rates within the region (UNICEF 2017).

In Syria, the most recent nationally representative data from prior to the conflict, the 2009 Syria Pan Arab Project for Family Health (PAPFAM) survey, found that 11.2% of girls aged 15-19 were married (League of Arab States and Syrian Arab Republic 2011).[1] This was nearly identical to the 2002 PAPFAM rate of 10.8% of girls aged 15-19 married (League of Arab States and Syrian Arab Republic 2002). The PAPFAM survey reports did not calculate the probability of early marriage, but we calculate this statistic below for PAPFAM 2009. The 2006 Syria Multiple Indicator Cluster Survey (MICS) did calculate both the percentage of girls aged 15-19 currently married (9.7%) and the probability of marriage before age 15 (3.4%) and before age 18 (17.7%) (Central Bureau of Statistics et al. 2008). The probability of early marriage (before age 18) was highest in Dara'a (26.2%) (Central Bureau of Statistics et al. 2008), the governorate of origin of 41.2% of Jordan's registered Syrian refugees (UNHCR 2018a). Overall, the population of Syrian refugees in Jordan came from governorates that had on average a 22.1% probability of early marriage prior to the conflict.[2]

Studies that have argued that early marriage among Syrian refugees is increasing often compare these pre-conflict rates to the percentage of new marriages among Syrian refugees that are to girls under age 18. For instance, one estimate from 2013 using data on marriages in *shari'a* courts found that a quarter of registered marriages to Syrians in Jordan were early marriages, which is higher than the early marriage rate in Syria pre-conflict (UNICEF 2014). This also represented an increase from 12% of registered marriages in 2011 and 18% in 2012 that were early (Save the Children 2014). Yet this kind of analysis ignores several types of compositional differences. The Syrians in Jordan are a select group, from areas that had higher rates of early marriage and fertility pre-crisis (Central Bureau of Statistics et al. 2008; UNHCR 2018a). Registered marriages are also only a subset of marriages to refugees.

Jordan Population Census data also indicated that 37% of Syrian marriages in 2011 were early marriages, and 35-36% over 2012 and 2013, rising to 39% in 2014 and 44% in 2015 (Higher Population Council 2017). Thus, the dramatic increase in early marriages from 12% to 25% of *registered* marriages is not reflected at the population level and may be driven by shifts in marriage registration. Previous analyses of the Jordan Labor Market Panel Survey (JLMPS) 2016, the data used in this study, found that among the Syrian refugee population in Jordan marriages formed in Syria in 2005-2008 were actually slightly more likely to be early (33%) than those 2012-2016 after arrival in Jordan (28%) (Sieverding, Berri, and Abdulrahim 2018). However, such studies have not calculated the probability of a girl marrying before age 18, the underlying statistic of concern.

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[1] In Syria, the personal status law of 1953 (and 2009 amendments) set the legal age of marriage at 18 for boys and 17 for girls. However, with the approval of their male legal guardian and judicial permission, boys could marry as early as 15 and girls as early as 13 (UNICEF 2014).

[2] Authors' calculations combining governorate-level probabilities of early marriage from MICS 2006 (Central Bureau of Statistics et al. 2008) weighted by governorates of origin from registered Syrian refugees in Jordan (UNHCR 2018a). Although the PAPFAM 2009 report did not present early marriage rates, it was consistent with the MICS 2006 in that the singulate mean age at marriage among women in Dara'a was the lowest (21.3 years) of any province in Syria (League of Arab States and Syrian Arab Republic 2011).

Furthermore, although the Population Census trend statistics overcome selection into marriage registration, such statistics still suffer from compositional problems. Syrians in Jordan are disproportionately young (Krafft et al. 2018), such that even if the probability of any individual experiencing early marriage remained the same, the proportion of marriages before age 18 would rise simply because there were more individuals under age 18. Additionally, the Population Census statistics, as well as previous analyses of the JLMPS, use new marriages in a particular year as a denominator, rather than the full population of women. If women had a constant probability of early marriage but a falling probability of marrying at older ages, using a denominator of new marriages would lead to a trend of a larger share of new marriages being early. This trend could be interpreted (incorrectly) as a rise in early marriage rather than a fall in later marriage.

Given the high rates of early marriage, by pre-conflict national standards, in some provinces of Syria from which many refugees originate, early marriage among Syrian refugees is likely due in part to a custom of marrying young prior to displacement (UN Women 2013; Cherri et al. 2017). Yet studies have also consistently identified economic factors, including loss of livelihoods, poverty, and limited employment opportunities, as a key driver of early marriage among Syrian refugees in both Jordan and Lebanon (UN Women 2013; UNICEF 2014; Cherri et al. 2017; Mourtada, Schlecht, and DeJong 2017; DeJong et al. 2017; Higher Population Council 2017; Bartels et al. 2018). Another identified driver of early marriage among Syrian refugees is concerns about girls' safety from gender based violence and protection of their honor in the unfamiliar contexts of host countries (UNICEF 2014; Cherri et al. 2017; Higher Population Council 2017; Mourtada, Schlecht, and DeJong 2017). Girls deciding to marry may also chose this path to escape restrictions on their mobility by parents who fear for their daughter's reputation (Bartels et al. 2018).

There are relatively few studies on marriage customs in Syria prior to the conflict or on aspects of marriage other than age among Syrian refugees. Following regional patterns, family support, employment, and the ability to acquire housing all played interlinked and important roles in young men's marriage timing and prospects in Syria (Kabbani and Kamel 2007). By tradition in MENA, the groom or his family must pay a *mahr*, or brideprice, to the bride or her family, as well as establish the conditions necessary for married life, such as housing. The costs of marriage can be very high in the region; it is not uncommon for the groom to need to save the equivalent of several years' salary in order to marry (Krafft and Assaad 2017). How these customs around marriage costs, as well as other dynamics of marriage markets in the region, such as kin marriage (consanguinity), patrilocal residence, and spousal age gaps, may have changed among the Syrian population in displacement have not be well studied.

3 Data and Methods

We rely on a combination of qualitative and quantitative data sources to understand how marriage practices, and particularly age at marriage, may have changed among the population of Syrians who are now refugees in Jordan.

3.1 Quantitative data and analysis

3.1.1 Surveys and sample

We primarily rely on the 2016 Jordan Labor Market Panel Survey (JLMPS) to assess changes in marriage patterns among current Syrian refugees in Jordan over time (Krafft et al. 2018). We compare JLMPS results with the national Syrian population pre-conflict using data from the PAPFAM 2009 survey mentioned above. Both surveys are nationally representative

household surveys with detailed information on individuals' demographics. The data include marital status, age at marriage, and spouse characteristics, allowing for a detailed analysis of marriage outcomes. The JLMPS also includes data about living arrangements upon marriage and expenditures on marriage.

The JLMPS 2016 over-sampled areas with a high proportion of non-Jordanians for its refresher sample in order to be able to provide data on the Syrian population in Jordan. This sampling strategy is incorporated into the sample weights, which are used for descriptive analyses for both data sources.[3] Our JLMPS 2016 sample is limited to this sub-population of Syrians.[4] Moreover, for almost all our analyses, we limit the sample for both surveys to individuals aged 15-49 in the survey year. We do so for comparability, because PAPFAM only includes marriage timing for ever-married women ages 15-49. This gives us a sample size of 31,302 women in PAPFAM 2009 and 667 Syrian women in JLMPS 2016.

3.1.2 Quantitative analysis methods

Our key outcome of interest is age at marriage. Age at marriage is potentially censored for women who have not married by the time of the survey but may or may not marry in the future. We therefore estimate the probability of getting married by a certain age with survival analysis. First, we present descriptive analysis of age at marriage from Kaplan-Meier failure estimates. "Failure" (the event of getting married) in the Kaplan-Meier function is denoted as F_a, where a is a specific age, and T_a is the age at first marriage (the event). We therefore estimate:

$$F_a = \Pr(T_a \leq a) \quad (1)$$

This statistic can be interpreted as the probability of marrying at or before a certain age. We are particularly interested in the probability of early marriage, defined as marriage before age 18, so at or before age 17.

We are interested in how age at marriage has changed over time and with the Syrian conflict and refugees' displacement. Descriptively, we examine age at marriage for each sample by cohort (birth years 1967-1976, 1977-1992, and 1993-2002). This allows us to see, first, if the cohorts in JLMPS have similar marriage rates and timing as the national averages captured in PAPFAM. Second, it allows us to examine how conflict may have affected age at marriage, since those born in 1993-2002 would have been exposed to conflict and displacement starting at age 18 or younger.

To analyze our outcome of interest, age at first marriage, using multivariate survival analysis and including time-varying covariates (such as exposure to conflict and displacement), our data is structured as person-age observations. An individual, *i*, is at risk of becoming

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[3] Weights are not applied to multivariate models. While there is a clear mandate to weight descriptive statistics, use of weights in multivariate regression is less clear-cut (Solon et al. 2013). We did test the sensitivity of our results to including weights; the weights vary substantially given the sampling and led to interactions where a heavily weighted individual drove the results.

[4] Almost all (93%) of Syrians in Jordan in JLMPS 2016 met our definition of being Syrian refugees. Syrian refugees are defined as those who report Syrian nationality and either (1) are currently registered as a refugee and arrived in Jordan in 2011 or later, or (2) left a previous residence in 2011 or later due to violence, persecution, or a lack of security. Our qualitative sample could not be restricted to registered refugees due to ethical approvals. We therefore, in the quantitative analyses, analyze Syrians in Jordan without further restriction and treat Syrian in Jordan as synonymous with Syrian refugee in Jordan.

married, and thus has an observation, each year of age from age 15[5] until the age of marriage (or censoring at their age in the survey year). We analyze the age at marriage using discrete time survival analysis where the hazard, h_{ia}, describes the probability of getting married at a particular age (T_a) for those who are not yet married (Jenkins, 1995):

$$h_{ia} = Pr(T_a | \, T_a \geq a \,) \tag{2}$$

To incorporate multiple and potentially time-varying covariates, X_{iat} (varying over *t*, calendar time), we use a complementary log-log model (Jenkins, 1995):

$$h_{ia} = 1 - \exp\{-\exp[\theta(a) - \beta X_{iat}]\} \tag{3}$$

From this model we present hazard ratios (exponentiated coefficients). We also present, graphically, predicted hazards (the predicted probability of getting married at a particular age, if one has not done so yet).

For our multivariate models, we restrict our analyses to the years 2000-2015. We initially estimate our models with only the baseline hazards (hazards at each year of age, aggregating years of age as follows: 15-17, 18-20, 21-23, 24-26, 27-29, 30+) and time-varying calendar year covariates. Then, we test and aggregate the years with similar baseline hazards (2001-2004, 2005-2010, 2011-2015, where the last period includes exposure to conflict and displacement). Alternatively, we include a covariate for being in Jordan, or in Syria (at each year). These covariates help us discern whether conflict or being a refugee in Jordan impacts marriage timing or if the population of Syrians in Jordan had similar outcomes both pre and post conflict. In some of our models, we control for education level as an important measure of human capital that may affect marriage timing, and the number of older and younger siblings by sex, since these might represent demographic pressures. Educational attainment is operationalized into three categories, less than basic, basic (10th grade), and secondary and above. We additionally control for family background in the form of mother's and father's education, categorized in the same manner as women's own education.

3.2 Qualitative data and analysis

We complement the quantitative analysis with analysis of 71 in-depth interviews conducted in late 2017 with Syrian refugee youth living in host (Jordanian) communities in Mafraq and Amman, the two governorates with the largest number of registered Syrian refugees (UNHCR 2018b). Mafraq is close to the Syrian border and contains the Zaatari refugee camp, through which most refugees entered the country. In Amman, the capital of Jordan, interviews were held in a part of Eastern Amman where there is a high concentration of refugees.

3.2.1 Data collection and sample

The inclusion criteria for the interviews were that respondents be aged 15-29, Syrian, and have arrived in Jordan since 2011. We adopted a purposive sampling strategy based on education, employment status and marital status. In particular, given our interest in early marriage, among 15-19 year-olds we sampled for variation in marital status among young women. It proved not possible to find young men in this age group who were married.

[5] To ensure estimable hazards and interactions, we treat marriages that happened before age 15 as happening at age 15 in the multivariate models.

The interviews were conducted by local interviewers trained on the study protocol and interview guide by the authors. Recruitment was conducted through a combination of contacting potential respondents who received services from a local community service organization (CSO) in Mafraq, going door-to-door in neighborhoods of Eastern Amman, and snowball sampling. In all cases, the interview team contacted potential respondents using a recruitment script and screened them for eligibility. Interested respondents were interviewed in private rooms on the CSO's premises or in their homes. Verbal consent to participate was obtained from respondents aged 18-29 and assent for those aged 15-17. Written consent from a parent or legal guardian was obtained for respondents aged 15-17. Interviewers offered to read the consent form if literacy was a barrier. Permission to tape record the interview was sought and all respondents and parents consented. In appreciation for their time, participants were given approximately 10 USD equivalent of phone credits, and transportation costs were covered as applicable. Ethical approval for the qualitative study was obtained from the Institutional Review Board (IRB) at the American University of Beirut.

A total of 71 young people were interviewed, of whom 35 resided in East Amman and 36 in Mafraq. The large majority arrived in Jordan in 2012 or 2013. The qualitative sample included 35 young women and 36 young men. About half (33) were in the 15-18 age group, followed by the 19-23 (24) and 24-29 (14) age groups. Only four of the men were married but 19 of the women had ever been married; five were widowed by the time of the interview. About half of those in the 19-23 age group were married and six of the 17 in the 15-18 year old age group. Only 15 respondents were still in school at the time of the interview although 23 had previously attended school in Jordan; the number of young men and women who were or had been in school in Jordan was about equal.

3.2.2 Interview guide and data analysis

Interviews followed a modified life history approach. We began with questions eliciting a brief description of the respondent's life in Syria before and after the conflict, including family situation and marital status. For each location of residence in Jordan, in chronological order, respondents were then asked about key life transitions. For those who had married since their arrival to Jordan, the questions covered the decision-making process around marriage, how the respondent met their spouse and the process of agreeing on the marriage, and the respondent's reflections on the decision to marry. Those who had not yet married were asked about their desired age at marriage and why. All respondents were also posed a set of more general questions about change in marriage customs among Syrians due to conflict and displacement.

The interviewers transcribed the interviews verbatim in the Syrian and Jordanian dialects of Arabic after which all transcripts were back-checked completely for accuracy by the authors. We took two approaches to the analysis simultaneously in order to capture the longitudinal nature of the post-migration narratives while also analyzing themes across interviews. For each interview, we wrote detailed memos summarizing the life story of each respondent. In order to compare transitions and trajectories across respondents, we also kept an Excel sheet tracking details of respondents' school, work, and marriage experiences in Syria pre-arrival and then in each location of residence since arrival to Jordan. We rely on this more narrative approach to the analysis for our discussion of the cases of young women who married in Jordan.

We also coded interviews thematically in Dedoose. To develop the thematic codebook, we independently coded a small subset of interviews using an open coding approach in which codes were derived from the data. We then met to identify common codes across the interviews and group codes into families, developing an initial codebook from this list. We revised the codebook continuously as we coded additional interviews, meeting during the earlier stages of

coding to review the codebook, confirm common understandings of codes and revise when needed. Our thematic analysis in this paper focuses on code groups related to decisions about marriage, drivers of early marriage, feelings about marriage, desired age at marriage, customs around marriage in Syria, change in marriage customs after displacement, and challenges in getting married faced by Syrian refugees in Jordan. We also conducted this analysis for subgroups of respondents by gender and age group.

4 Results

4.1 Patterns of marriage age

The proportion of Syrian women in Jordan in 2016 who were married early was very similar to the proportion who married early in the national Syrian population in 2009 (Figure 1) For both PAPFAM 2009 and JLMPS 2016, the 25th percentile of age at marriage was age 18. In PAPFAM 2009, 21% of women married before age 18 and 5% before age 15. In JLMPS 2016, 24% married before age 18 and 4% before age 15. Yet although rates of early marriage were similar in the two surveys, in JLMPS 2016 the median age of marriage was younger (20 vs. 22 in PAPFAM 2009) and the 75th percentile was much younger (24 vs. 30 in PAPFAM 2009). This indicates a compressed period of transition to marriage among the population of Syrian women now in Jordan, with large proportions marrying in their late teens and early twenties. It is important to keep in mind that this analysis does not account for the timing of entry into Jordan, and many of the refugees were married prior to their arrival.

[Figure 1 here]

Figure 1 also shows the proportion of Syrian men married by each age among those aged 15-49 in the JLMPS 2016 (PAPFAM 2009 did not include age at marriage for men). At the median, Syrian men in Jordan were married five years later than their female counterparts (age 25 versus 20) and there was generally a 5-year age gap throughout the distribution. Thus, very few Syrian men marry before the age of 20, but the proportion married increases rapidly through men's 20s.[6]

As an initial investigation into the evolution of age at marriage among the refugee population, Figure 2 shows the Kaplan-Meier failure estimates by (aggregated) birth cohorts for those aged 15-49 at the time of survey. Women in the 1967-1976 birth cohort, whose age at marriage was unlikely to be affected by the conflict, had the same 25th percentile, median, and 75th percentile of age at marriage across the two surveys (ages 18, 21, and 27, respectively). Among this oldest cohort of women, patterns of marriage among current refugees were thus similar to the national pattern in Syria. However, the 1977-1992 birth cohort (most of whom would have been likely to marry before the conflict) did not have similar ages of marriage comparing the PAPFAM 2009 and the JLMPS 2016. While the median age at marriage went up from 21 to 23 between the 1967-1976 and 1977-1992 birth cohorts in the PAPFAM, in the JLMPS, the median age of marriage went down from 21 to 20 over the same cohorts.

[6] Previous analyses of the JLMPS found that over 90% of marriages to Syrian women in Jordan were to Syrian men (Sieverding, Berri, and Abdulrahim 2018). Due to the low rate of intermarriage with Jordanians, we focus our discussion of marriage markets on the refugee population only.

[Figure 2 here]

Among the youngest cohort of women (born 1993-2002) in JLMPS 2016, whose marriage timing would most likely be disrupted by conflict and displacement, the 25th percentile was age 18, very similar to older cohorts.[7] Although purely descriptive, and with diminishing sample sizes towards latter ages across cohorts, the results nonetheless suggest that there has not been any structural change in marriage or early marriage among Syrian women in Jordan over time, but that the Syrian refugee population in Jordan is a selected group, who had earlier ages at marriage among women prior to the Syrian conflict as compared to the national population.

The patterns for men (Figure 2) are only available in the JLMPS 2016. Very few men married before age 20, and this remained true across cohorts. Slightly more men were married by age 21 or 22 in the 1993-2002 cohorts than in previous cohorts. However, a similar share were married by age 24 as in the 1967-1976 cohort. Because men marry later, there are few observations at later ages for the 1993-2002 cohort, which likely contributes to noisy patterns.

Differences in marriage patterns between PAPFAM 2009 and JLMPS 2016 could be due to selective movements into Jordan among Syrians, or to increased (or decreased) pressure over when to marry and whom to marry as consequences of war and displacement. To investigate these possibilities, and the role of calculation methods in obtaining different rates of early marriage for women, Table 1 shows two panels; the panel A examines *all* women in the 1977-1992 and 1993-2002 birth cohorts and accounts for censoring, and panel B examines only *ever-married* women in these birth cohorts (and thus does not account for censoring).

In columns 1 and 2 in Table 1, we compare women in the 1977-1992 birth cohort across the two surveys. It is among this cohort (all of whom would have turned 18 prior to the Syrian conflict) where, in Figure 2, we saw a diverging trend between the national Syrian population, which experienced rising median ages at marriage, and the population of Syrian refugees now in Jordan, which did not. Correspondingly, we see in panel A that a higher percentage of women in the 1977-1992 cohort in JLMPS 2016 were married before the age of 18 (31%) compared to the national population in Syria in 2009 (19%). Turning to the younger cohort, which is observed only in the JLMPS, Column 3 shows that early marriage was less common among the Syrians in Jordan who were born in 1993-2002, who would have been exposed to the conflict starting at age 16, with 18% married before age 18 (compared to 31% for those born in 1977-1992). This suggests, descriptively, that early marriage has been falling during the conflict period among those Syrians who fled to Jordan.

[Table 1 here]

In panel B of Table 1 we analyze the data akin to how other studies have typically assessed early marriage rates, calculating the percentage of early marriages among ever-married Syrian women. In columns 1 and 2, we return to the 1977-1992 cohort, for whom we see that in the PAPFAM and JLMPS there was a similar average age at marriage (age 19) and percentage married before age 18 (34-38% among the ever married). Looking at the cohort born 1993-2002 in the JLMPS (age 15 to 23 at the time of the survey), we see a substantially higher percentage of ever-married women who married before 18 relative to the previous cohort (34% compared to 47%).

[7] We cannot assess median age at marriage for this cohort in the PAPFAM due to censoring.

Comparing the results from panels A and B thus emphasizes the importance of calculating statistics that *do* account for censoring (including those not yet married, as in panel A) to understand trends in early marriage, because the probability of getting married before 18 is different than the percentage of existing marriages (i.e. among ever married women) that occurred before age 18. Those who marry at early ages are over-represented among ever-married women, since they are in the married state for longer. The more accurate method used in panel A indicated a decrease in the chance of marrying early among the Syrian population in Jordan, even though more of the marriages that do happen are to women under age 18, as shown in panel B.

The experiences of the qualitative sample were consistent with the JLMPS in indicating that early marriage was a common practice among much of the current Syrian refugee population in Jordan from the time prior to the conflict. All of the marriages that occurred among young women while they were still in Syria were at or prior to the age of 18. The qualitative sample is not representative, and early marriage in Jordan (although not while still in Syria) was one of the factors we sampled for, so this pattern should be interpreted with caution. However, it is indicative of the degree to which early marriage was seen as a common practice among some of the respondents, driven by customs in their communities.

"I married young. Being married at 15, 16, or 17 is very usual in our customs; there is no problem in a girl marrying early." 25-year-old young woman married at age 16 in Syria

Many of the respondents also mentioned that for men, typical ages at marriage were in the early 20s.

"*Men should be married by the age of 25, after which they would be too old for marriage… and girls by 18 maximum*." 15-year-old single young man

Although some respondents saw early marriage as a widespread or accepted practice, their views on the customary age at marriage in their communities are not generalizable to the Syrian population as a whole, or even to the refugee population as a whole. Within our sample there was diversity in views on early marriage; other young men and women, as discussed further below, said that they preferred to delay marriage until their late 20s. One respondent specifically mentioned that early marriage is not practiced in all areas of Syria, and is different between regions in Syria, whereas others criticized early marriage and described it as a practice driven by ignorance.

4.2 Marriage timing in relation to conflict and displacement

In this section, we present multivariate models that allow us to statistically test for different patterns of marriage over time and by country of residence at the time of marriage, thereby disentangling the effects of selection of particular Syrians into Jordan and the effects of conflict and displacement. To disentangle these effects, we estimate models that control for both baseline hazards (which capture different probabilities for the reference group, which is pre-conflict) and calendar time effects. Figure 3 shows a model of predicted hazard ratios with complete interactions between age groups and grouped calendar years after testing and aggregating periods with similar hazards (results available upon request). Figure 3 (and Appendix Table A1) allows us to see if there were different time trends in marriage at different ages, for example, higher hazards of early marriage. The model in Figure 3 controls for education only, to be comparable with PAPFAM.

Focusing first on the results for women, in PAPFAM 2009, there was a clear shift to reduced hazards, leading to later ages at marriage, from 2000-2004 to 2005-2008. Results for women from the JLMPS are noisy, but suggest very similar hazards of early marriage over time, a rising hazard of marriage over time at 18-20, a similar or lower hazard in 2011-2015 as in other years at ages 21-23, 24-26, and 27-29, and slightly higher hazards in 2011-2015 at ages 30+ compared to earlier periods. However, none of the JLMPS 2016 predicted hazards are significantly different over time. Results for men from JLMPS 2016 follow a similar pattern over time, with low hazards at 15-17 and 18-20 in all periods. There are slightly higher hazards of marriage at age 21-23 over time, but then identical hazards at ages 24-26. At older ages, there were higher hazards of marriage at age 27-29 in 2011-2015 than in preceding years, but lower hazards at age 30+. None of the predicted hazards for men are significantly different over time.

[Figure 3 here]

As an alternative approach to examining the effects of conflict and displacement, we next use the JLMPS and disaggregate the hazards of marriage by the time-varying country of residence while controlling for education, parent's education, and the number of older and younger siblings by sex (Figure 4). For women at ages 15-17, we see a slightly higher hazard in Jordan than Syria, but this difference is not significantly different. At ages 18-20 and 30+, we do see a significantly higher hazard of marriage for those who were in Jordan in comparison to those who were in Syria. Over the rest of the distribution hazards are similar or not significantly different. Results for men (not shown) show no significant differences by location.

Although the quantitative results do not indicate a structural change in early marriage patterns among the Syrian refugee population in Jordan, the qualitative results did suggest additional drivers for early marriage in a displacement context. Among young women who had married after arrival to Jordan, all of whom had also married at or below the age of 18, the drivers for marrying at young ages stemmed in part from customs continued from Syria. However, difficult economic conditions, exacerbated by displacement and lack of security, were more prominent in these young women's decisions about marriage in Jordan. In a context of displacement, parents, and in some cases young women themselves, sought financial and physical protection from hardship, referred to as *sutra*,[8] through marriage.

"*I do not regret marrying early. It is ordinary. It could be a responsibility but it is sutra for us Syrians. A woman will only have her husband for support*." 16-year-old young woman married at 16 in Jordan

"If I were in Syria I wouldn't have married, but my dad said that here [in Jordan] it was a foreign country and he was protecting us through marriage. That is what he told me, otherwise he wouldn't oblige me to marry." 16-year-old young woman married at 14 in Jordan

Young women recounting the process of their marriage arrangements illustrate some of the ways in which insecurity in a displacement context created additional drivers for early marriage. One 19-year-old young woman was married at the age of 17, after she arrived in Jordan. The groom's parents spotted her at a wedding and inquired about her parents and their address. This was typical of the marriages of women who married early in Jordan. In their

[8] In general terms, *sutra* means acquiring security in life and protection from adversity (UNICEF 2014).

experiences, the potential groom's family saw the girl at a common occasion, the families were neighbors, or the future couples' parents were related by kinship or an old friendship, but in none of the cases did the respondent know her eventual husband prior to this introduction.

As in most other cases among our sample, shortly after, the prospective groom's family visited the young woman's parents' house and proposed. This young woman expressly did not want to get married and favored continuing school since she had passed the 9th grade and was moving on to the 10th. However, she knew that her parents were facing financial hardship, and her mother influenced her decision, saying that marriage was for *sutra*.

"I agreed because our financial situation was not good, it was very hard. We did not know anyone here [in Jordan], so my parents were worried I would not marry, so they agreed to the proposal." 19-year-old young woman married at 17 in Jordan

This young woman said that if she had been in Syria, her parents would not have married her at that age and she would have continued her education. As in the case of other respondents, it was the parents' decision for their daughter to get married, although the girl's consent was sought in all of the marriages that occurred among our study participants. In some cases, respondents noted that their parents did not pressure them into marrying, but they also did not oppose the idea of their daughter marrying at this age.

In another case, one 18-year-old young woman was married at 16 after arriving in Jordan. She explained how her father's relative visited her parents for coffee and unexpectedly proposed. She was still in secondary school at the time and was hesitant to marry because she would have to leave school. Although her parents did not oblige her to marry, she overheard their conversations about how the potential groom was from an excellent family, and that he had other positive attributes. Eventually, she decided that a girl's fate is to be with a husband. Although she said that no one pressured her to get married at the time, as with the respondent quoted above this young woman situated her decision to marry within the context of being outside her home country.

"*Many things have changed from Syria to Jordan, if the girl wanted to pursue her education and get a job later, it was normal in Syria. Unlike here, she stays idle at home for one, two, or three years maybe…So better to get married. It was not the case in Syria; we were not forced to get married.*" 18-year-old young woman married at 16 in Jordan

This young woman expressed her regret at having married and said that if she could make the decision again, she would have continued school instead. Several of the other young women who married before age 18 in Jordan similarly expressed some sort of regret for having to make this choice and said they would have preferred to postpone marriage until their 20s. In addition to leaving school, girls who regretted early marriage mentioned the responsibilities of marriage, including housework, and taking care of children, their husband and sometimes their in-laws. A couple of girls were also not physiologically ready to bear children.

"*I suffered a lot in the beginning. I consulted many doctors, all of whom did not allow me to have a relationship with my husband. They said my internal organs were not in full shape. Even when I got pregnant I bled throughout the whole pregnancy*." 20-year-old young woman married at 18 in Jordan

On the other hand, a few of the respondents who had gotten married in Jordan were content with their decision, which they explained in terms of having a good relationship with their husbands.

4.3 Other marriage outcomes and patterns

In addition to affecting drivers of marriage age, conflict and displacement may affect other marriage outcomes such as consanguinity, spousal age gaps, and expenditures on marriage. In this section, we turn to some of these other outcomes in an effort to understand how marriage markets among Syrian refugees may be changing in ways that influence marriage ages as well as women's long-term wellbeing. To do so, we compare marriages formed in the immediate pre-conflict (2006 – 2009/10) period in PAPFAM 2009 and JLMPS 2016 to those formed during conflict and displacement (2011-2016) in JLMPS 2016.

There were fairly similar outcomes over 2006-2010 for the two marriage outcomes – consanguinity and spousal age gap – available in both surveys, suggesting that the refugee population was similar to the national population with respect to these aspects of marriage. Around 40% (37% PAPFAM 2009, 42% JLMPS 2016) of marriages were consanguineous and age gaps favored older husbands (Table 2). In contrast, there were some clear shifts in marriage characteristics comparing marriages pre-conflict and post-conflict in the JLMPS. While 42% of marriages in 2006-2010 were consanguineous, this dropped to 23% in 2011-2016. This is likely due to the disruption and displacement of kin networks. The husband-wife age gap rose from four years on average to six years, although the six years is similar to the age gap at the national level in PAPFAM 2009.

[Table 2 here]

The percentage of newly married couples that lived in nuclear households was 64% for marriages formed in Syria in 2006-2010, and fell to 56% in 2011-2016; this may be a function of families' ability to afford independent housing in Jordan post-conflict. In fact, although total costs of marriage dropped between 2006-2010 and 2011-2016, the reported cost of housing increased slightly, likely due to higher housing costs in Jordan. Housing was also an important theme in the qualitative respondents' discussions of marriage costs and expenditures pre- and post-conflict. On the one hand, most of the young women who had married in Jordan were residing with their in-laws after marriage. Respondents said that co-residence was common in Syria as well, where newly married couples would reside with the groom's parents or build a story above the groom's parents' house.

On the other hand, young men in the qualitative sample – nearly all of whom were still single – discussed housing as one of the costs that made marriage difficult in their situation in Jordan. Many young men were working to support their parents and siblings, and noted that marriage expenses become more cumbersome when a man is also responsible for his natal household. With such expenses to meet, and given the difficult financial situation in Jordan and limited employment opportunities, many said they could not afford marriage related costs such as brideprice (*mahr*) or an additional household to support.

"*Currently, supporting my parents is my priority. Nowadays, girls have many demands that I cannot fulfill. It would be a burden on me. I would like to get married but from a financial perspective, it is very hard. I would need to wait until I establish myself*." 22-year-old single young man

All of the young men wanted to marry before 30, but some of those in their 20s said they were postponing marriage due to lack of resources.

Thus, although the JLMPS 2016 indicates that marriage costs have declined for the Syrian refugee population, these figures must be interpreted within the context of the precarious livelihoods refugee youth faced. Among the qualitative respondents, opinions were mixed about how customs around marriage costs had changed among Syrians since their arrival to Jordan. Whereas many young men complained of their inability to meet high marriage costs, and sometimes what they saw as unrealistic financial demands by young women's families despite their displacement, other respondents said that marriage costs had gone down and noted that refugee families made concessions for the difficult economic situation of potential grooms.

"*We Syrians are cooperative when it comes to marriage…. My marriage expenses here were less than they would have been in Syria, it was much curtailed because we did not have the means*." 29-year-old man married in Jordan at 27

"*We [girl's family] did not ask for much. Even the* mahr *was small, clothing was just the necessary, in total around 300 Jordanian Dinars. Whenever I wanted to buy something, I used to take from my own resources."* 19-year-old young woman married at 17 in Jordan

Although there was considerable disagreement among the qualitative respondents about trends in marriage costs, the fact that the JLMPS 2016 shows declines in the brideprice and jewelry costs may also reflect changes in the bargaining power of women's households, as these components of marriage costs are often seen as a form of security for the bride.

5 Discussion and conclusions

The impact of conflict on adolescents' exposure to early marriage and other negative sexual and reproductive health outcomes is context specific and often difficult to assess empirically due to challenges with data availability and comprehensiveness (Neal, Stone, and Ingham 2016; Abbasi-Shavazi, Mahmoudian, and Sadeghi 2018). In situations of forced migration, data challenges are compounded by the selectiveness of refugee populations relative to their countries of origin (Abbasi-Shavazi, Mahmoudian, and Sadeghi 2018). Yet accurate estimates of (change in) early marriage rates among conflict-affected populations are critical for planning the humanitarian response for sexual and reproductive health and maternal health services. Particularly among refugees, such as the Syrians in Jordan, in situations of increasingly protracted displacement, understanding early marriage rates and practices also has long-term implications for girls' education and intergenerational impacts on children.

A number of previous studies have reported high rates of early marriage among Syrian refugees in Jordan (UN Women 2013; UNICEF 2014; Save the Children 2014; Higher Population Council 2017), as well as in Lebanon (Cherri et al. 2017; Mourtada, Schlecht, and DeJong 2017; Abdulrahim et al. 2017). However, our results caution against interpretations of high early marriage rates among Syrian refugees that equate these with *rising* rates of early marriage, particularly in studies that rely on unrepresentative data, do not account for selection of refugees, and calculate early marriage with a denominator of ever-married women or newly-formed marriages rather than the population at risk.

To the best of our knowledge, ours is the first paper to directly assess *change* in early marriage and age at marriage for Syrian refugees taking into consideration the selectiveness of the population. Our paper is also the first to calculate the probability of early marriage using

survival analysis and accounting for censoring. Our results suggest that previous studies have, in the case of Jordan, overestimated the degree to which early marriage practices have changed among the population of Syrians who are now refugees in the country. Syrians in Jordan are a selected group that had earlier ages at marriage among women prior to the Syrian conflict as compared to the national population. Our results do not indicate any significant difference in the hazard of early marriage over time or comparing when refugees were still in Syria to the time after their arrival in Jordan. We do find an increase in the hazard of marrying between ages 18-20, which indicates a compression of marriage ages for women towards the late teens.

It is important to note that our results differ from previous studies' findings of rising rates of early marriage due to the methods used, not due to our different data source. In addition to the fact that the JLMPS 2016 is nationally representative, we can see marriage rates change over time even within our sample. We also demonstrated how calculating early marriage among ever-married women using our sample provides statistics that are more in line with those estimated by previous studies that did not account for censoring. Furthermore, our results are corroborated by the recent Jordan Population and Family Health Survey report, part of the global Demographic and Health Survey program, which found that the percentage of Syrian women married by age 18 across cohorts was highest (40.9%) among those aged 25-29 in 2017-18, among whom marriage before age 18 would have taken place pre-conflict. Among women aged 20-24 in 2017-18, 36.6% married before age 18, a slight decrease (Department of Statistics [Jordan] and ICF International 2018).

Although the rate of early marriage among Syrian refugees in Jordan has not increased since their displacement, it is still high compared to many other countries in MENA, including the host country population in Jordan (UNICEF 2017; Department of Statistics [Jordan] and ICF International 2018). Consistent with studies in both Jordan (UN Women 2013) and Lebanon (Cherri et al. 2017; Mourtada, Schlecht, and DeJong 2017), our qualitative findings suggest that while early marriage has been seen as customary among the Syrian refugee population since prior to the conflict, economic insecurity and gendered concerns about girls' security have created additional drivers for early marriage in a context of displacement. The finding that concerns over girls' honor and safety are a driver of early marriage is consistent with studies among conflict-affected populations in other countries, including Iraq (Cetorelli 2014) and Tajikistan (Shemyakina 2013). A key question raised by our results is thus why these additional drivers for early marriage have not, as of 2017, led to an increase in early marriage rates among Syrian women in Jordan.

A possible explanation for the stability in early marriage rates lies in the broader dynamics of the marriage market among Syrians in displacement. We find no significant differences over time in age at marriage among Syrian men or the age gap between spouses that might indicate a marriage squeeze due to unavailability of men. The economic insecurity affecting Syrian refugees may also have multiple impacts on marriage markets. While refugees' precarious economic situation creates an incentive for parents to marry their daughters earlier, for young refugee men the burden of supporting their natal families and lack of job opportunities in a context of displacement also created a sense that marriage was more difficult to achieve. Studies of marriage and fertility patterns during the Lebanese civil war (Saxena, Kulczycki, and Jurdi 2004) and second Intifada (Khawaja, Assaf, and Jarallah 2009) found decreases in early marriage rates, which the authors attributed to young couples' inability to meet the costs of marriage in a context of instability, particularly in the Lebanese case. It is possible that similar dynamics affect the Syrian refugee population in Jordan, counteracting to some degree the economic incentives for households to marry their daughters young.

One potential outcome of these countervailing forces for earlier and delayed marriage is diminished standards of living at marriage, for example through lower expenditures on marriage

and increased rates of co-residence with parents. Our quantitative and qualitative results suggest that some of this adjustment is already occurring, with falling total expenditures on marriage and reductions in components such as brideprice. A qualitative study from Lebanon similarly found that Syrian refugees said that marriage expenditures and expectations had declined after displacement (DeJong et al. 2017). There is also evidence from our data in Jordan of more extended family residence at marriage and fewer consanguineous marriages. Such changes in marriage practices are particularly important because brideprice and other marriage expenditures, as well as nuclear family residence upon marriage, are often associated with women's autonomy and economic resources within the household (Salem and Shah 2016; Nazier and Ramadan 2017). How these incentives and barriers to (early) marriage continue to evolve as Syrians' presence in Jordan is prolonged or refugees begin to return home will be an important area for future research, particularly as the global literature shows that the dynamics of marriage and family formation are likely to change during different stages of refugees' displacement and resettlement (Abbasi-Shavazi, Mahmoudian, and Sadeghi 2018).

Although it overcomes some of the analytical challenges faced by previous studies of early marriage rates among Syrian refugees in MENA host countries, our study has other limitations. The sample size of Syrians at risk of marriage (age 15 and above) in the JLMPS leads to some noise in our estimates, particularly for men. Similarly, the sample of young women in the qualitative component who married after arrival in Jordan is small, and was selected based on early marriage, so we cannot generalize from their experiences to the refugee population as a whole. We were not able to capture the marriage experiences of refugee youth who married at older ages, which may be quite different.

Nevertheless, our study makes an important contribution to the literature on early marriage practices among populations affected by conflict, and particularly the Syrian refugee populations in neighboring host countries. Our findings call for a more careful approach to claims of rising rates of early marriage among Syrian refugees and highlight the need to contextualize interventions and policies that aim to reduce rates of early marriage not only in terms of refugees' displacement but also long-standing sociocultural practices that may be very difficult to change. The results of our study also highlight the importance of expanding research on early marriage among Syrian refugees to include change in marriage practices more broadly, as well as to include more perspectives from young men. Other economic and social changes in how marriages are formed in displacement – beyond age – may have important consequences for the long-term wellbeing of women and their children in ways about which we have very little understanding. Consequently, there is a need for longitudinal research to understand how changes in marriage customs, as well as marriage ages, may continue to evolve and impact refugee women and their families. As this paper illustrated, having sufficient longitudinal or retrospective data from a representative population will be a critical prerequisite to such research.

Acknowledgments
Research supported by a grant from the Ford Foundation on "Youth and Vulnerability in the Middle East" to the Economic Research Forum. The authors appreciate research assistance from Mariam Sharpless and comments from participants in the Population Association of America 2019 Annual Meeting.

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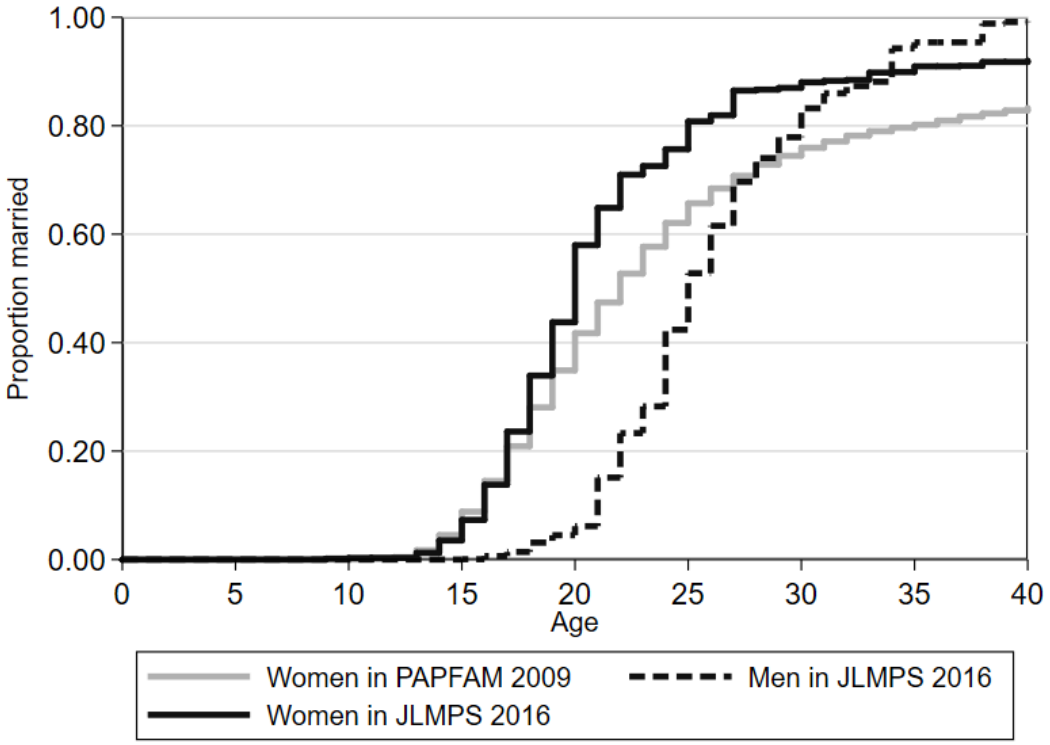
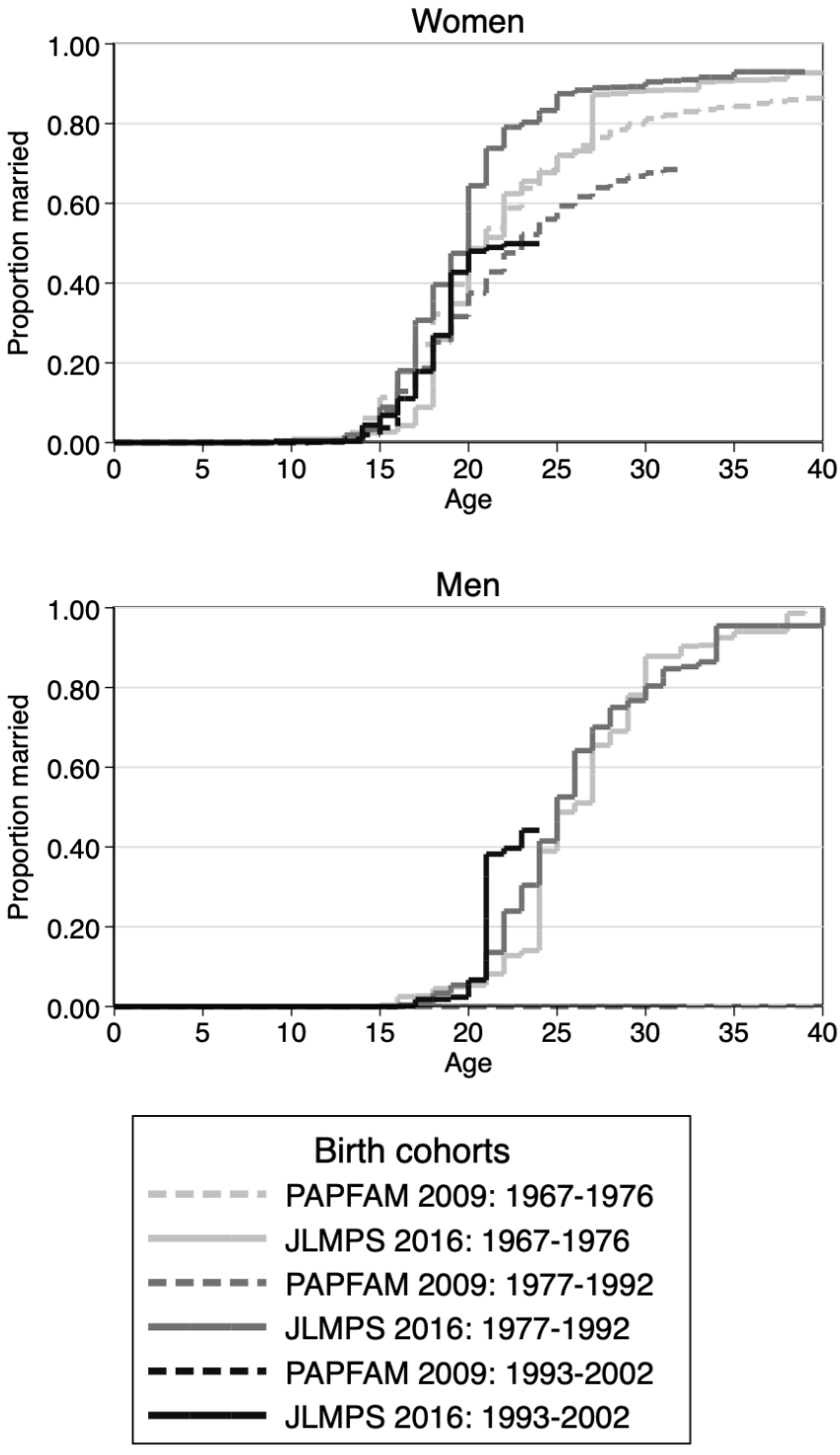
Figure 1. Proportion married by age and sex, aged 15-49 at time of survey



Notes: Showing through age 40 based on sample 15-49. Based on Kaplan-Meier failure estimate.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Figure 2. Proportion married by age, sex, and cohort, aged 15-49 at time of survey



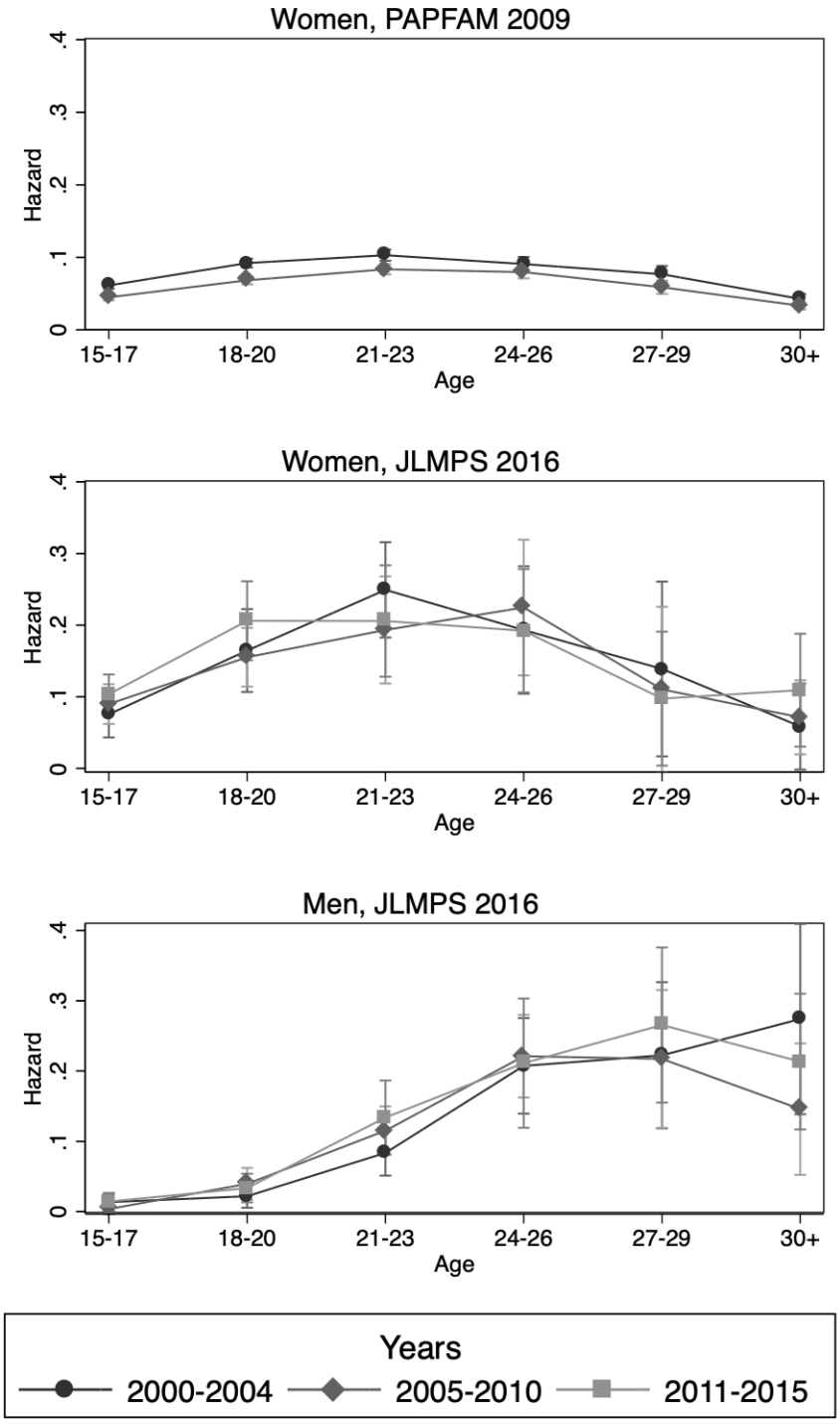
Notes: Showing through age 40 based on sample aged 15-49. Based on Kaplan-Meier failure estimate.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Table 1. Marriage age statistics by birth years, women aged 15-39 at time of survey

	PAPFAM 2009	JLMPS 2016	
	(1)	**(2)**	**(3)**
A. All women	**1977-1992**	**1977-1992**	**1993-2002**
(age at time of survey)	*19-34*	*24-39*	*15-23*
Married before age 18, percent	19	31	18
Married before age 16, percent	8	9	7
N	17490	337	227
B. Ever-married women	**1977-1992**	**1977-1992**	**1993-2002**
Age at marriage, average	19	19	17
Married before age 18, percent	38	34	47
Married before age 16, percent	16	10	20
N	8,505	314	110

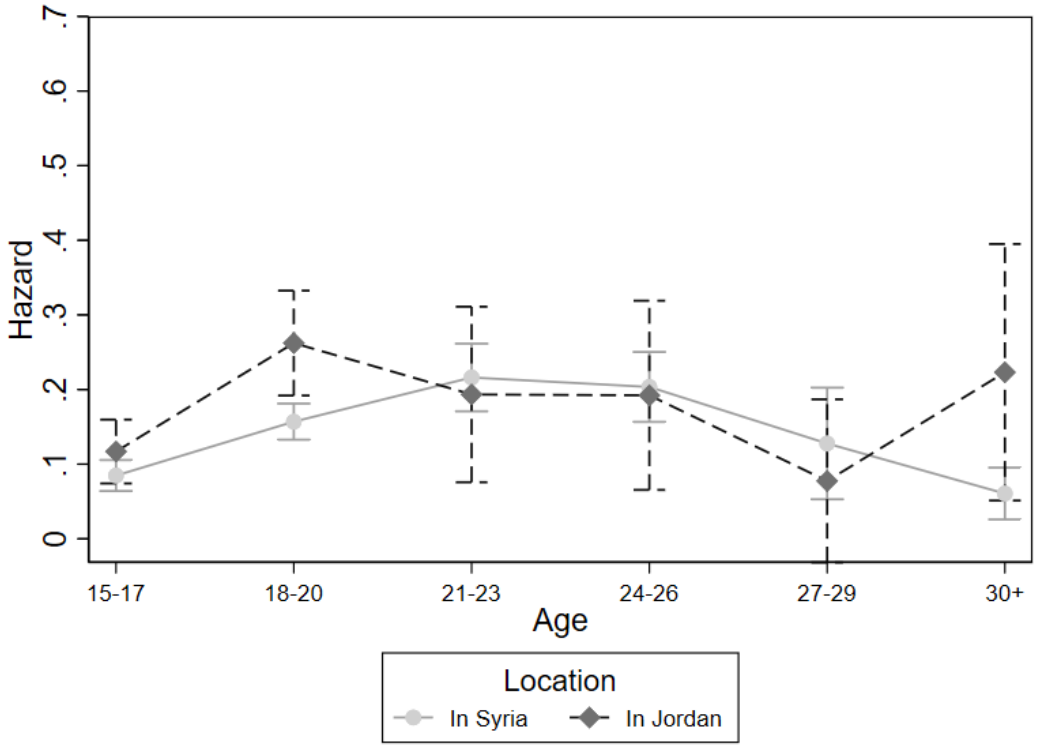
Note: In PAPFAM 2009, year married is missing from 775 ever-married women. In JLMPS 2016, year married is missing for one ever-married women. Panel A based on Kaplan-Meier failure estimate.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Figure 3. Hazards of marriage, differences over time and by sex, aged 15-49 at time of survey



Notes: Bars indicate 95% confidence intervals. See Appendix Table A1, specification 1 for the coefficients. Model controls for education.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Figure 4. Hazards of marriage, differences by country of residence (time-varying), women aged 15-49 at time of survey



Notes: Bars indicate 95% confidence intervals. Model controls for education, mother's and father's education, and the number of older and younger siblings by sex. See Appendix Table A1, specification 2 for the coefficients.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Table 2. Other marriage outcomes and marriage costs (in nominal Jordanian Dinar) by year of marriage, ever-married women aged 15-39

	PAPFAM 2009	JLMPS 2016	
Year of marriage	**2006-2009**	**2006-2010**	**2011-2016**
Percentage			
Consanguineous marriage	37	42	23
Nuclear household at marriage		64	56
Mean			
Husband-wife age gap (years)	6	4	6
Brideprice (mahr)		1869	1532
Jewelry cost		979	558
Furniture cost		902	427
Housing cost		378	422
Marriage celebration cost		891	461
Total marriage cost		4630	3422
N	2,519	111	141

Note: In PAPFAM 2009, age of spouse for husband-wife age gap is missing from 43 women married in 2006-2009. In JLMPS 2016, age of spouse for husband-wife age gap is missing for 10 women married in 2006-2010 and 21 women married in 2011-2016.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016

Appendix

Table A1. Discrete time hazard models of marriage, aged 15-49 at time of survey

	Spec. 1			Spec. 2
	Women in PAFAM 2009	**Women in JLMPS 2016**	**Men in JLMPS 2016**	**Women in JLMPS 2016**
Ages 15-17 omit.				
18-20	1.529***	2.258**	1.585	2.258**
	(0.072)	(0.695)	(1.029)	(0.695)
21-23	1.703***	3.472***	6.076***	3.472***
	(0.092)	(0.907)	(3.318)	(0.907)
24-26	1.483***	2.507*	16.780***	2.507*
	(0.100)	(0.961)	(8.704)	(0.961)
27-29	1.244*	1.749	19.107***	1.749
	(0.111)	(0.906)	(10.587)	(0.906)
30+	0.673***	0.724	27.379***	0.724
	(0.060)	(0.469)	(16.167)	(0.469)
Ed. (illit omit.)				
Basic	0.904**	0.909	0.948	0.970
	(0.035)	(0.162)	(0.237)	(0.170)
Secondary+	0.517***	0.597***	0.509***	0.566***
	(0.018)	(0.090)	(0.071)	(0.091)
Years (2000-2004 omit.)				
2005-2010	0.686***	1.189	0.271	
	(0.039)	(0.298)	(0.308)	
2011-2015		1.349	0.991	
		(0.372)	(0.587)	
Age and years int.				
18-20 # 2005-2010	1.129	0.813	6.974	
	(0.084)	(0.330)	(8.314)	
21-23 # 2005-2010	1.245**	0.682	5.572	
	(0.099)	(0.262)	(6.555)	
24-26 # 2005-2010	1.300**	1.063	4.036	
	(0.128)	(0.570)	(4.763)	
27-29 # 2005-2010	1.091	0.657	3.435	
	(0.135)	(0.551)	(4.119)	
30+ # 2005-2010	1.126	0.993	1.629	

	Spec. 1			Spec. 2
	Women in PAFAM 2009	**Women in JLMPS 2016**	**Men in JLMPS 2016**	**Women in JLMPS 2016**
	(0.137)	(0.717)	(2.038)	
18-20 # 2011-2015		0.974	1.561	
		(0.354)	(1.161)	
21-23 # 2011-2015		0.645	1.857	
		(0.210)	(1.171)	
24-26 # 2011-2015		0.853	1.150	
		(0.439)	(0.820)	
27-29 # 2011-2015		0.568	1.359	
		(0.407)	(0.963)	
30+ # 2011-2015		1.372	0.641	
		(0.987)	(0.482)	
In Jordan				
15-17 # In Jordan				1.447
				(0.350)
Age and in Jordan int.				
18-20 # In Jordan				1.932***
				(0.363)
21-23 # In Jordan				1.071
				(0.392)
24-26 # In Jordan				1.073
				(0.443)
27-29 # In Jordan				0.607
				(0.494)
30+ # In Jordan				4.083*
				(2.244)
Mother ed. (illit omit.)				
Basic				1.574*
				(0.296)
Secondary+				1.146
				(0.351)
Father ed. (illit. omit.)				
Basic				1.129
				(0.158)
Secondary+				0.700
				(0.169)

	Spec. 1			Spec. 2
	Women in PAFAM 2009	**Women in JLMPS 2016**	**Men in JLMPS 2016**	**Women in JLMPS 2016**
Siblings main effects				
Have older brother				1.372*
				(0.196)
Have older sister				1.287
				(0.205)
Have younger sisters				1.254*
				(0.142)
Have younger brother				0.993
				(0.123)
N obs.	83977	2636	3213	2610

Notes: *p<0.05; **p<0.01; ***p<0.001.
Cells are hazard ratios, standard errors in parentheses. Standard errors clustered on the primary sampling unit (PSU) level.
Source: Authors' calculations based on PAPFAM 2009 and JLMPS 2016