Child marriage, defined as marriage before age 18 (UNICEF 2014) remains a reality for young women in many parts of the developing world despite recent declines. An estimated 720 million women alive today were married as children (UNICEF 2014) and another 142 million girls will be married before the age of 18 over the next decade should current trends continue (UNFPA 2012). Research has strongly linked early age at marriage to several negative health and social outcomes for the woman and her family. Specifically, in the realm of reproductive health, studies have found a positive association between child marriage and contraceptive use outcomes such as lack of contraceptive use before first birth, high fertility, unwanted pregnancy, repeat childbirth in less than 24 months, as well as intimate partner violence (e.g., Godha, 2012; Raj et al, 2009). Moreover, studies have also linked women's socio-economic status, women's disempowerment such as reduced opportunities for decision-making and participation, lack of spousal communication, inequitable gender attitudes, all of which are exacerbated for child brides, as key factors associated with a range of reproductive health outcomes (e.g., Gage, 1997; Mason 1987; Dyson & Moore, 1983).

However, a larger share of the existing evidence on child brides and its relationship with women’s empowerment and reproductive health outcomes comes from South Asia. This is despite the region including several countries with some of the highest rates of child marriage in the world, including Niger (76.3% of women aged 20-24 married by 18), the Central African Republic (67.9%), Chad (68.2%) and Ethiopia (63%) (UNICEF 2013). Moreover, a large share of our current empirical evidence on child brides comes from the Demographic and Health Surveys (DHS). While the DHS is a very rich source of information on child brides, it has limited variables measuring different dimensions of women’s empowerment such as access to economic resources, women’s decision-making abilities,
social participation, spousal relationship and gender attitudes, and hence a comprehensive analysis of the women’s empowerment pathways that link age at marriage with key reproductive health outcomes is not feasible.

To fill this gap, we will use a unique nationally representative data set from Ethiopia, collected as a part of a multi-country study examining the economic costs of child marriage. Nationally representative data will be collected in Ethiopia in December 2015, making these data the most recent available in the region. We will take advantage of uniquely detailed measures on women’s economic empowerment, decision-making, spousal relationship, gender attitudes and reproductive coercion collected as a part of this process to examine the following research questions:

1. Does a woman who enters into an early marriage more likely to be coerced by her husband on reproductive decision-making and use of contraception as opposed to her counterpart who marries later?
2. Does a woman who enters into an early marriage more likely to not use a modern method of contraception as opposed to her counterpart who marries later?
3. Does women’s empowerment mediate the relationship between age at marriage and the reproductive health outcomes such as reproductive coercion and modern method use?

**Study context**

Ethiopia is located in eastern Africa and is the second most populated country in Sub-Saharan Africa after Nigeria, and has a population of 87.5 million (World Bank 2014). Ethiopia is also one of the world’s poorest countries, with a per capita income of US $470, which is significantly lower than the regional average of US $1,257 (World Bank 2014). Ethiopia was ranked in the low human development category in 2012, positioned at 173 out of 187 countries and territories (United Nations Human Development Report 2013). The average life expectancy at birth for an average Ethiopian is 63 years (Population Reference Bureau 2013).

Sixty-three percent of women in Ethiopia are married by age 18, compared with just 14% of men. The median age at first marriage is 16.5 for women age 25–49 compared with men who marry later, at a median age of 23.2. Age at first marriage greatly increases with
education, wealth and urban residence (Ethiopia Demographic and Health Survey (EDHS) 2011). Contraceptive prevalence is very low (5.2%) among currently married women aged 15-19 years (EDHS, 2011). While on average the percentage of currently married women who are employed increases with age, the employment status of men does not vary by age (EDHS, 2011).

Majority of Ethiopian marriages are monogamous, only 11% of the females reported living in polygynous unions (EDHS 2011). Although, there is variation in marriage customs across religious and ethnic groups, in most cases, marriages are traditionally arranged by families with very brief engagement periods (Tilson & Larson 2000). The bride joins the groom’s house until the couple establishes their own household (Ezra 2003). Divorce is prevalent, and as per one estimate as many as 45% of first marriages end in divorce within the first 30 years (Tilson & Larson 2000). Traditionally, Ethiopian men and women have distinct roles and responsibilities within marriage. Males are viewed as the breadwinners, who work outside the home (Ezra 2003). Females, on the other hand, primarily have household responsibilities, with childbearing and child rearing culturally seen as their most significant roles (Ezra 2003).

**Methods**

**Data**

Data for this study will be derived from an ongoing larger multi-country study aimed at estimating the economic cost of child marriage. In Ethiopia, the survey will interview a nationally representative sample of 4300 married women 18-45 years of age. The enumeration areas (EAs) will be selected probability proportional to size (PPS) and the number of households with eligible women per EA targeted for each will also be determined with PPS. A household census will be conducted within each EA, followed by systematic selection of households. Occupants will be enumerated and eligible women identified. If a woman does not consent to participate, the field team will select another eligible woman from the same household or an adjacent household. In cases where a family head had multiple wives, only one randomly selected wife will be interviewed.
In addition to the women’s survey, the household heads will also be interviewed and a household survey will be administered that captures information on household composition, socio-economic conditions, gender attitudes as well as broader community characteristics. We will also have qualitative data in the form of focus group discussion and in-depth interviews to complement information from the quantitative surveys.

**Measures**

**Key Predictor**

1. Age at Marriage will be defined as a categorical variable and measured as women married before 15 years, 15-19, 20-24, and 25 and older. In addition, if the sample power allows, we will also treat the age at marriage variable as a continuous measure to assess the impact of each additional year of delayed marriage on our outcomes of interest.

2. The women’s empowerment measure will capture multiple domains such as: (1) Economic power and access to funds that will consist of a series of questions that captures women’s income generating abilities, ownership and control of assets and investments (2) Household decision-making that will consist of questions that measure a woman’s level of involvement in important household decisions such as major household purchases, decisions around children’s schooling and participation in income generating activities (3) Social capital will be measured with a range of questions on woman’s freedom of movement and connectivity with social networks such as relationship with blood kin and participation in community groups (4) Gender attitudes, adapted from the GEM scale will assess gender equitable attitudes with a series of statements (5) Spousal relationship will be measured through a series of statements on couple communication and relationship.

**Key Outcomes**

1. Reproductive coercion will be measured with a series of statements: (1) In the past 3 months, has your current husband/partner told you not to use any birth control (2) In the past 3 months, has your current husband/partner said he would leave you if you did not get pregnant? (3) In the past 3 months, has your current
husband/partner hurt you physically because you did not agree to get pregnant? (4) In the past 3 months, has your current husband/partner taken your birth control (such as pills) away from you or kept you from going to the clinic to get birth control so that you would get pregnant?” (5) Does your partner support your decision about when or if you want to become pregnant? A positive response on any of these responses will be treated as presence of reproductive coercion.

2. Modern method use will assess if the woman or her spouse reported currently using a modern method of contraception to avoid becoming pregnant.

Other Variables
A range of socio-demographic, household and couple level measures, including rare information on conditions of the natal household, characteristics of the woman’s parents and siblings as well as childhood experiences known to influence early marriage as well as reproductive health outcomes will also be measured and available for the multivariate analysis.

Statistical Analysis

The women’s empowerment measure will be treated as a multidimensional latent variable and factor analysis will be used to generate scores for the multivariate analysis. This will account for measurement errors inherent in such a measure, while allowing for the examination of the relationship of different domains of women’s empowerment with key outcomes of interest.

Multivariate logistic regression analysis will then be used to estimate the association between age at marriage and the binary outcomes – reproductive coercion and modern method use. Finally, structural equation models will be estimated to examine the mediating relationship between age at marriage, women’s empowerment domains and the reproductive health outcomes. The structural equation model will allow for the examination of different domains of women’s empowerment and their relationship with age at marriage and the reproductive health outcomes.
Contribution of the Study

This study is uniquely positioned to understand how child marriage influences gendered relationships within households in a non-South Asian context. In addition, it extends any existing work by using more nuanced measures of women’s empowerment to understand the pathways that link child marriage to adverse reproductive health outcomes, which in turn can potentially be used by program managers and policy makers to mitigate some the negative consequences of child marriage in the lives of women and their families.

References


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