


RESEARCH ARTICLE

Socio-demographic changes in age at first marriage in Malawi: evidence from Malawi Demographic and Health Survey data, 1992–2016

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Abstract

This study aimed to identify the social and demographic correlates of the trend in age at first marriage among women in Malawi, using Malawi Demographic and Health Survey data collected between 1992 and 2016. Employing Cox Proportional Hazard modelling, the results showed that the mean age at first marriage during the 18-year period remained constant at 17.4 years. Furthermore, across all the surveys, younger women married at an early age compared with their older counterparts. The results further showed that having no education, residing in the Northern region, working, belonging to the middle and rich wealth index categories, and belonging to Tumbuka, Lomwe, Yao, Ngoni and Amanganja/Anyanja ethnicities increased the risk of early marriage. The findings suggest that policies such as promoting access to education for women and enforcing the law that restricts the legal age at which a woman can marry (18 years) should be maintained and enforced in Malawi.

Keywords: Malawi; Age at first marriage; Socio-demographic correlates

Introduction

Throughout the world, marriage is regarded as a milestone in a person's life as it is a central family formation event (Agaba *et al.*, 2010). Like every aspect of family life, the timing of marriage is a function of the social, economic, demographic and political conditions prevailing in a society at a given point in time. Consequently, the timing of marriage has important demographic and health implications for both the individual and society at large. For example, early marriage is implicated in various psychological and health risks (Garenne, 2004; Nguyen & Wodon, 2012). For women, marriage marks the beginning of exposure to the risks of pregnancy, childbearing as well as sexual and fertility-related complications (Agaba *et al.*, 2010; Amoo, 2017). Thus, marrying early contributes to women's higher likelihood of acquiring HIV/AIDS and other sexually transmitted diseases because it increases the frequency of intercourse in the absence of the use of condoms (Clark, 2004; Klugman *et al.*, 2014).

Moreover, early marriage increases women's risk of vesicovaginal fistulae, in part because they might not be physically matured for sex (Adebowale *et al.*, 2012; Nguyen & Wodon, 2012). Although the relationship between early marriage and adolescent maternal mortality is complex, research has shown that early marriage endangers adolescent mothers' health and contributes to their relatively high mortality rate (Nove *et al.*, 2014; Marphatia *et al.*, 2017). Conversely, delayed marriage lowers the total fertility rate, and permits women and girls to complete their education, engage in the labour force, acquire parental skills and increase their social status (Manda & Meyer,

2005; Palamuleni, 2011; Adebowale *et al.*, 2012; Ayiga & Rampagane, 2013; Delprato *et al.*, 2015; Aktar *et al.*, 2017).

Since marriage, and therefore the family institution, is an integral part of broader society, the timing of marriage varies within regions and even within countries and across cultures. Generally, early marriage is more common in the developing regions of South Asia and Africa (Singh & Samara, 1996; Mensch *et al.*, 2005; Farooq & Deen, 2016). Global statistics suggest that sub-Saharan Africa has the second largest number of child brides as about 115 million girls marry before their 18th birthday (UNICEF, 2018). Thus regionally, marriages are particularly early for girls in sub-Saharan Africa (Erulkar, 2013), despite their physical and psychological immaturity for the responsibilities that come with marriage (UNICEF, 2011). Despite the fact that Malawi has a constitution that mandates a minimum age of 18 years for marriage, and a conditional cash transfer policy to encourage young females to stay in (or return to) school, among other policies (Baird *et al.*, 2010), country-level evidence indicates that the country has the 11th highest incidence of child marriage globally, and the 9th highest in Africa due to poverty, lack of opportunities and cultural practices (Adebowale *et al.*, 2012; Amoo, 2017; Ministry of Gender, Children, Disability, and Social Welfare & AFIDEP, 2017).

In light of the prevalence of early marriage in the region, and its profound socioeconomic implications, particularly for young women, the timing of first marriage warrants empirical investigation. It is against the backdrop of the grave consequences of early age at first marriage in sub-Saharan Africa that the present study was undertaken. Many studies in the past have examined the problem of early marriage in sub-Saharan Africa, with a few being conducted in Malawi (Garenne, 2004; Palamuleni, 2011; Amoo, 2017). However, these were predominantly cross-sectional in nature.

The aim of this study was to examine the effect of selected socio-demographic factors on changes in the age at first marriage in Malawi. Specifically, the study went beyond existing studies by using five waves of the Demographic and Health Survey (DHS) data on Malawi to examine the changes and trends in age at first marriage in the country.

Review of the literature

In most countries, legal prescripts delineate the minimum age at which individuals are deemed mature enough to enter into a marital union. However, due to variations in national laws, marriage traditions and kinship systems, the timing of first marriage varies significantly across regions and even within countries (Farooq & Deen, 2016; UNICEF, 2018). Generally, research shows that girls in South Asia and sub-Saharan Africa marry much earlier compared with other regions (Singh & Samara, 1996; Mensch *et al.*, 2005). The two regions have the highest incidence of early marriages in the world (UNICEF, 2018). For instance, in Malawi, the median age at first marriage is 18.2 years for women and 23.0 years for men aged 25–49 (NSO & ICF, 2017).

Global trends also suggest that the African region has a bigger gender disparity in the timing of marriage (United Nations, 2000). On average, women marry at relatively younger ages than men (Singh & Samara, 1996; Farooq & Deen, 2016). More women marry in their adolescent years (before 20 years) than men (Mensch *et al.*, 2005). Even within the African region, gender disparity varies across countries. In Malawi, more women marry for the first time in their adolescent years compared with men (NSO & ICF, 2017). Nearly all Malawian women are married by age 25 (NSO & ICF, 2017). Thus, evidence indicates that both younger age and female gender are key determinants of timing of first marriage in sub-Saharan Africa, including Malawi, with a higher prevalence of early marriages predominant among younger women (Garenne, 2004; Kumchulesi *et al.*, 2011; Palamuleni, 2011; Adebowale *et al.*, 2012).

According to the human capital theory, socioeconomic development – increased education, employment and wealth/income – has a positive influence on the timing of marriage as it increases the nuptial age for both males and females (Marphatia *et al.*, 2017; Saadati & Bagheri, 2017). Most studies focusing on the correlation between education and timing of first marriage among women

have consistently found a strong positive effect of educational status on women's age at first marriage. The general conclusion is that because education is a competing activity to family formation, women with greater educational attainment or commitment (at least a secondary level education) tend to delay or postpone marriages compared with those with little to no education (Sheela & Audinarayana, 2000; Ikamari, 2005; Manda & Meyer, 2005; Wong, 2005; Agaba *et al.*, 2010; Kamal, 2011; Raj *et al.*, 2014; Jisun, 2016; Yaya & Amoateng, 2016; Aktar *et al.*, 2017; Wodon *et al.*, 2018). This association between greater education and later age at marriage is also evident in the Malawian context, with women with secondary education having a higher median age at marriage compared with uneducated women (Palamuleni, 2011; NSO & ICF, 2017).

Additionally, parental educational level has been identified as positively influencing timing of marriage, particularly for girls, as it contributes to the delay in early marriage of young girls (Gangadharan & Maitra, 2003; Bates *et al.*, 2007; Smith *et al.*, 2012; Haloi & Limbu, 2013; Nur *et al.*, 2016). Thus, parents with some education are more likely to emphasize the schooling of their children rather than try to marry them off. Although the relationship between education and delayed marriage may be complex, the importance of education in increasing the female age at marriage is widely recognized in the literature as prolonged schooling results in a delay in marital timing. Thus, the longer people, especially women, stay in school, the less likely they are to be married at an early age.

Similarly, the employment and wealth statuses of women have been found to have a significant delaying effect on the age at which they marry. Women who work or have strong employment commitments tend to delay the process of looking for a suitable groom, resulting in substantial postponement in the timing of marriage (Wong, 2005; Kamal, 2011; Aktar *et al.*, 2017).

Wealth status, measured by household income, plays a significant and positive role in the timing of marriage as poverty increases the likelihood for early marriage (Singh & Samara, 1996; Haloi & Limbu, 2013; Klugman *et al.*, 2014; Jisun, 2016; Nur *et al.*, 2016). Thus, women from poor families and those who are unemployed are more prone to early marriage compared with their affluent and employed counterparts.

Other explanatory variables for the variation in female age at first marriage include place of residence, religion and ethnicity. Studies focused on urban–rural differences in marital timing within countries have found urbanization to be an important predictor of female age at first marriage. In general, urban women are less likely to marry early compared with rural women (Singh & Samara, 1996; Ezra, 2003; Ikamari, 2005; Adebowale *et al.*, 2012; Klugman *et al.*, 2014; Jisun, 2016). Urbanization has a similar impact on the timing of marriage in the Malawian context (Kumchulesi *et al.*, 2011; NSO & ICF, 2017). Additionally, there is slight regional variation in the age at marriage in Malawi, with women in the Southern region marrying slightly earlier than women of the same age in the Northern and Central regions (NSO & ICF, 2017). The relationship between urban residence and delayed marriage is predictable as urban residents are often more exposed to more and better education, modern values and attitudes, as well as have access to paid employment than rural residents.

Ethnicity has also been found to be an important predictor of age at first marriage in several studies (Booth, 2010). Ethnic differentials in the timing of marriage have been observed in Bangladesh (Kamal, 2011), Ethiopia (Ezra, 2003), Mozambique (Arnaldo, 2004), as well as in Uganda and South Africa (Ayiga & Rampagane, 2013).

Finally, some studies have shown that religion has a profound impact on age at marriage. Sheela and Audinarayana (2000) found religion to exert a strong influence on age at first marriage of Indian women, where Christian women were more likely to marry later compared with Hindu and Muslim women. Jisun (2016) found Muslim women in Bangladesh got married earlier compared with non-Muslims. Ezra (2003) found that, compared with Protestants, adherents of other Christian sects and traditional religions in Ethiopia were more likely to marry before their 18th birthday. In Nigeria, Muslim women have been found to marry earlier compared with Christian women (Adebowale *et al.*, 2012). Contrary to the protective effect of some religions on early marriage, Ikamari (2005) did not find religion to be an important determinant of the timing of first marriage in Kenya.

Methods

The study data came from the individual files of women of reproductive age (15–49 years) from the Malawi Demographic and Health Surveys (MDHSs) for the periods 1992, 2000, 2004–05, 2010 and 2015–16. In addition to demographic information, including age at first marriage, age at first sexual intercourse, age at cohabitation, age at first birth, marital duration and total number of children ever born, the surveys collected information on background socio-demographic characteristics such as education, ethnicity, religion, place of residence, region of residence, health service providers, communities and household health expenditures of the women. The present analyses were based on women aged 15–49 years who were never-married or ever-married at the time of the surveys: $N=4849$ in 1992; $N=11,698$ in 2000; $N=23,020$ in 2010; and $N=24,562$ in 2015/16.

The outcome variable was 'age at first marriage', while the explanatory variables of interest included educational attainment (measured as 0=No education, 1=Primary, 2=Secondary and 3=Higher), religious affiliation (measured as 1=Catholic, 2=Other Christian, 3=Muslim and 4=Other, i.e. other forms of religion and no religion), place of residence (measured as 1=urban and 2=rural), wealth status (1=Poor, 2=Middle and 3=Rich), employment (1=Not working and 2=Working), ethnicity (measured as 1=Chewa, 2=Tumbuka, 3=Lomwe, 4=Tonga, 5=Yao, 6=Sena, 7=Nkonde, 8=Ngoni, 9=Amaganja/Anyanja and 10=Other) and region of residence (measured as 1=Northern, 2=Central and 3=Southern). The 1992 and 2000 surveys did not provide information on wealth status. However, separate information on wealth index provided by the DHS programme was obtained and merged with the MDHS to generate a new wealth index variable. This was done by using a unique identifier (*whhid*) from the wealth index data and the individual recode data. Further, information on religious affiliation and ethnicity were not provided in the 1992 survey.

Survival analysis using Cox Proportional Hazard Regression was employed to model the effects of the socio-demographic factors of interest on the age at which respondents first got married. Specifically, survival functions describing the probability of respondents being married and their age at first marriage were calculated. Reported age at first marriage was the failure of the event, while those who were single at the time of the surveys were censored at their current age. All data were weighted and analysed using Stata Version 14.

Results

Distribution of ever-married women by selected characteristics

Figure 1 shows the distribution of the survey respondent women by marital status over the period 1992 to 2015/16. In 1992, just over four-fifths (82.7%) of the women were ever-married. In 2000, about 83% were ever-married and in 2004/05 five out of six (83.7%) were ever-married. In the 2010 survey four out of five (80.3%) were ever-married, and in 2015/16 about three-quarters (78.3%) were ever-married.

Table 1 shows the percentage distribution of ever-married women over the period 1992 to 2015/16, disaggregated by their socio-demographic characteristics. The proportion of ever-married women who were teenagers decreased steadily over time – from 10.6% in 1992 to 7.1% in 2010 and 2015/16. The distribution by place of residence showed that the proportion of ever-married women who lived in urban areas declined from 25.8% in 1992 to 19.2% in 2015/16. Furthermore, the proportion of ever-married women who had secondary education increased four-fold: from 5.4% in 1992 to 20.1% in 2015/16.

Finally, the proportion of ever-married women who were unemployed declined from 69.8% in 1992 to 31.8% in 2015/16. The proportion of identifying as 'other Christian' increased slightly: from 62.0% in 2000 to 70.9% in 2015/16. The proportion in the poor wealth category increased from 31.8% in 1992 to 38.6% in 2015/16.

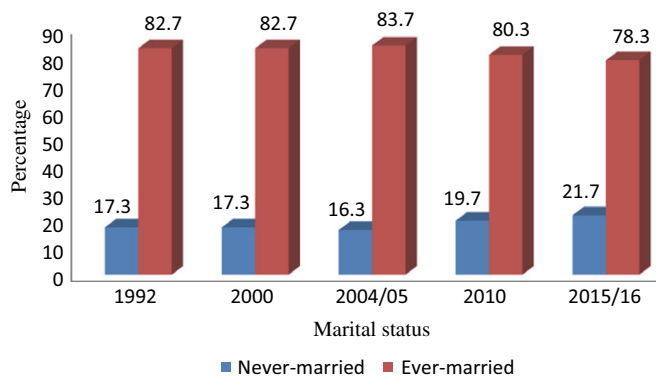


Figure 1. Distribution of women aged 15–49 years in Malawi by marital status from 1992 to 2015/16.

Trends in age at first marriage

Generally, the mean age at first marriage in Malawi remained constant at 17.4 years from 1992, 2000, 2004/05 and 2010 and increased slightly to 17.9 years in 2015/06 (Fig. 2). Furthermore, in all five surveys, the age at first marriage for women between the ages of 15 and 49 years started at 8 years up and extended to over 40 years (Fig. 3). Further examination of the data for various characteristics of women in Malawi revealed that, with a few exceptions, the trends in age at first marriage followed the same general pattern across place of residence, education, religion, and region, wealth index category and employment status (Table 2).

The mean age at first marriage among women aged 15–19 years remained constant at 16 years from 1992 to 2010. However, among women aged 30–34 years it increased from 17.3 years in 1992 to 18.1 years in 2015/16. Similarly, among women aged 45–49 years it increased from 18.1 years in 1992 to 18.9 years in 2015/16. In urban areas, the mean age at first marriage increased from 17.7 years in 1992 to 18.8 years in 2015/16.

Women with secondary and higher education had a higher mean age at first marriage, which reflects the delaying effect of education on age at first marriage (Table 2). For women with tertiary education the mean age at first marriage increased from 20.8 years in 1992 to 22.6 years in 2015/16. For both the Northern and Central regions the mean age at first marriage increased from 17.3 years in 1992 to 18.2 years in 2015/16. In addition, it increased from 17.3 years in 1992 to 17.6 years in 2015/16. There was no information on ethnicity for the 1992 survey. However, the mean age at first marriage increased from 17.4 years in 2000 to 18.2 years in 2015/16 for Tumbuka women, and increased from 17 years in 2000 to 18 years in 2015/16 for those belonging to ‘other’ ethnicities (Table 2).

The mean age at first marriage was fairly consistent for all categories, except for belonging to ‘other Christians’. It increased from 17.3 years in 2000 to 18.2 years in 2015/16 among women in the ‘other Christian’ category. For employment status, the mean age at first marriage was steady among employed and unemployed women across all surveys, with a slight increase from 17.5 years in 1992 to 17.9 years in 2015/16. The mean age at first marriage increased from 17.6 years in 1992 to 18.4 years in 2015/16 among women in the rich wealth index category.

Multivariate analysis

The results of the Cox regression analysis are shown in Table 3. Age and education were the only variables found to be associated with age at first marriage in Malawi in the 1992 survey, while in the 2000 survey it was found to be significantly associated with age at first marriage, age, education, region and ethnicity. For the 2004/05 and 2010 surveys, age, education, region, ethnicity, wealth index and employment status were found to be significantly associated with age at first marriage.

Table 1. Percentage distribution of ever-married women aged 15–49 years in Malawi from 1992 to 2016

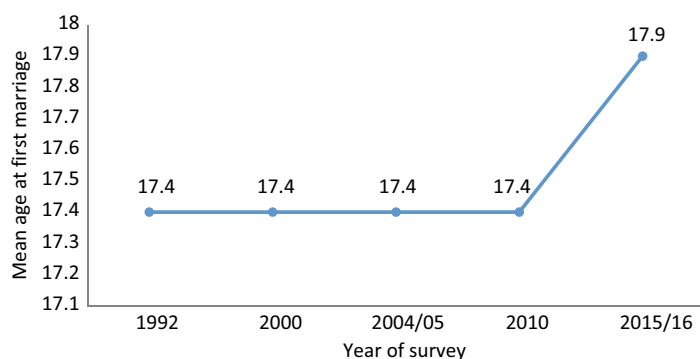
Characteristic	1992 <i>n</i> (%)	2000 <i>n</i> (%)	2004/05 <i>n</i> (%)	2010 <i>n</i> (%)	2015/16 <i>n</i> (%)
Age					
15–19	425 (10.6)	1074 (9.8)	903 (9.2)	1318 (7.1)	1364 (7.1)
20–24	864 (21.5)	2627 (24.0)	2510 (25.6)	3771 (20.4)	4058 (21.1)
25–29	778 (19.4)	2310 (21.1)	2076 (21.2)	4194 (22.7)	3752 (19.5)
30–34	662 (16.5)	1559 (14.3)	1480 (15.1)	3250 (17.6)	3567 (18.5)
35–39	511 (12.7)	1405 (12.8)	1124 (11.5)	2558 (13.8)	2950 (15.3)
40–44	456 (11.4)	1048 (9.6)	936 (9.6)	1773 (9.6)	1997 (10.4)
45–49	314 (7.8)	913 (8.4)	767 (7.8)	1630 (8.8)	1548 (8.1)
Place of residence					
Urban	1035 (25.8)	2164 (19.8)	1219 (12.4)	2221 (12.0)	3693 (19.2)
Rural	2975 (74.2)	8772 (80.2)	8577 (87.6)	16273 (88.0)	15543 (80.8)
Education					
No education	1709 (42.6)	3265 (29.9)	2674 (27.3)	3303 (17.9)	2682 (13.9)
Primary	2074 (51.7)	6689 (61.2)	6096 (62.2)	12483 (67.5)	12244 (63.7)
Secondary	218 (5.4)	966 (8.8)	984 (10.1)	2525 (13.5)	3871 (20.1)
Higher	9 (0.2)	16 (0.1)	42 (0.4)	183 (1.0)	439 (2.3)
Region					
Northern	1158 (28.9)	1815 (16.6)	1265 (12.9)	3389 (18.3)	3760 (19.6)
Central	1319 (32.9)	3679 (33.6)	3470 (35.4)	6234 (33.7)	6525 (33.9)
Southern	1533 (38.2)	5442 (49.8)	5061 (51.7)	8871 (48.0)	8951 (46.5)
Ethnicity					
Chewa	NA	2846 (26.0)	3036 (31.0)	5398 (29.2)	5701 (29.6)
Tumbuka	NA	1036 (9.5)	927 (9.5)	1984 (10.7)	2020 (10.5)
Lomwe	NA	2211 (20.2)	1908 (19.5)	3026 (16.4)	3499 (18.2)
Tonga	NA	232 (2.1)	203 (2.1)	591 (3.2)	714 (3.7)
Yao	NA	1620 (14.8)	1577 (16.1)	2019 (10.9)	2225 (11.6)
Sena	NA	391 (3.6)	337 (3.4)	1032 (5.6)	947 (4.9)
Nkonde	NA	370 (3.4)	87 (0.9)	308 (1.7)	258 (1.3)
Ngoni	NA	1173 (10.7)	943 (9.6)	2443 (13.2)	2394 (12.5)
Amanganja/Anyanja	NA	636 (5.8)	NA	1138 (6.2)	839 (4.4)
Other	NA	413 (3.8)	776 (7.9)	555 (3.0)	639 (3.3)
Religion					
Catholic	NA	2348 (21.5)	2075 (21.2)	3572 (19.3)	3228 (16.8)
Other Christian	NA	6779 (62.0)	5979 (61.1)	12597 (68.1)	13638 (70.9)
Muslim	NA	1626 (14.9)	1619 (16.5)	2136 (11.6)	2233 (11.6)
Other	NA	173 (1.6)	119 (1.2)	189 (1.0)	137 (0.7)

(Continued)

Table 1. (Continued)

Characteristic	1992 <i>n</i> (%)	2000 <i>n</i> (%)	2004/05 <i>n</i> (%)	2010 <i>n</i> (%)	2015/16 <i>n</i> (%)
Employment status					
Not working	2799 (69.8)	4248 (38.9)	3867 (39.5)	7153 (38.7)	6110 (31.8)
Working	1209 (30.2)	6675 (61.1)	5922 (60.5)	11309 (61.3)	13126 (68.2)
Wealth index category					
Poor	1273 (31.8)	4309 (39.4)	3905 (39.9)	7620 (41.2)	7430 (38.6)
Middle	811 (20.2)	2127 (19.5)	2210 (22.6)	3943 (21.3)	3644 (19.0)
Rich	1926 (48.0)	4490 (41.1)	3681 (37.6)	6931 (37.5)	8162 (42.4)

NA: not available.

**Figure 2.** Mean age at first marriage among women aged 15–49 years in Malawi from 1992 to 2015/16.

In the 2015/16 survey, age, place of residence, education, ethnicity, wealth index employment and region were found to be significantly associated with age at first marriage in Malawi.

The only factor that had a consistent effect on age at first marriage in all the surveys was age. Specifically, the risk of marrying early decreased as the age of women increased in all the survey years. For instance, the risk of early marriage was 0.57, 0.52, 0.49, 0.51 and 0.55 times lower among women aged 30–34 years compared with women aged 15–19 years in the 1992, 2000, 2004/05, 2010 and 2015/16 surveys, respectively.

The risk of marrying early was 0.54 times lower among women who had secondary education compared with women with no formal education in 1992. However, secondary education was the only significant category of education in the 1992 survey. In the 2000 survey, the risk of marrying early was 0.96, 0.50 and 0.34 times lower among women who had primary, secondary and tertiary education respectively compared with women with no formal education. In the 2004/05 survey, the risk of marrying early was 0.90, 0.48 and 0.35 times lower among women with primary, secondary and tertiary education, respectively, compared with women with no formal education. In the 2010 survey, the risk of marrying early was 0.94, 0.48 and 0.31 times lower among women with secondary and tertiary education, respectively, compared with women with no formal education. In 2015/16 survey, the risk of marrying early was 0.98, 0.55 and 0.35 times lower among women with secondary and tertiary education, respectively, compared with women with no formal education.

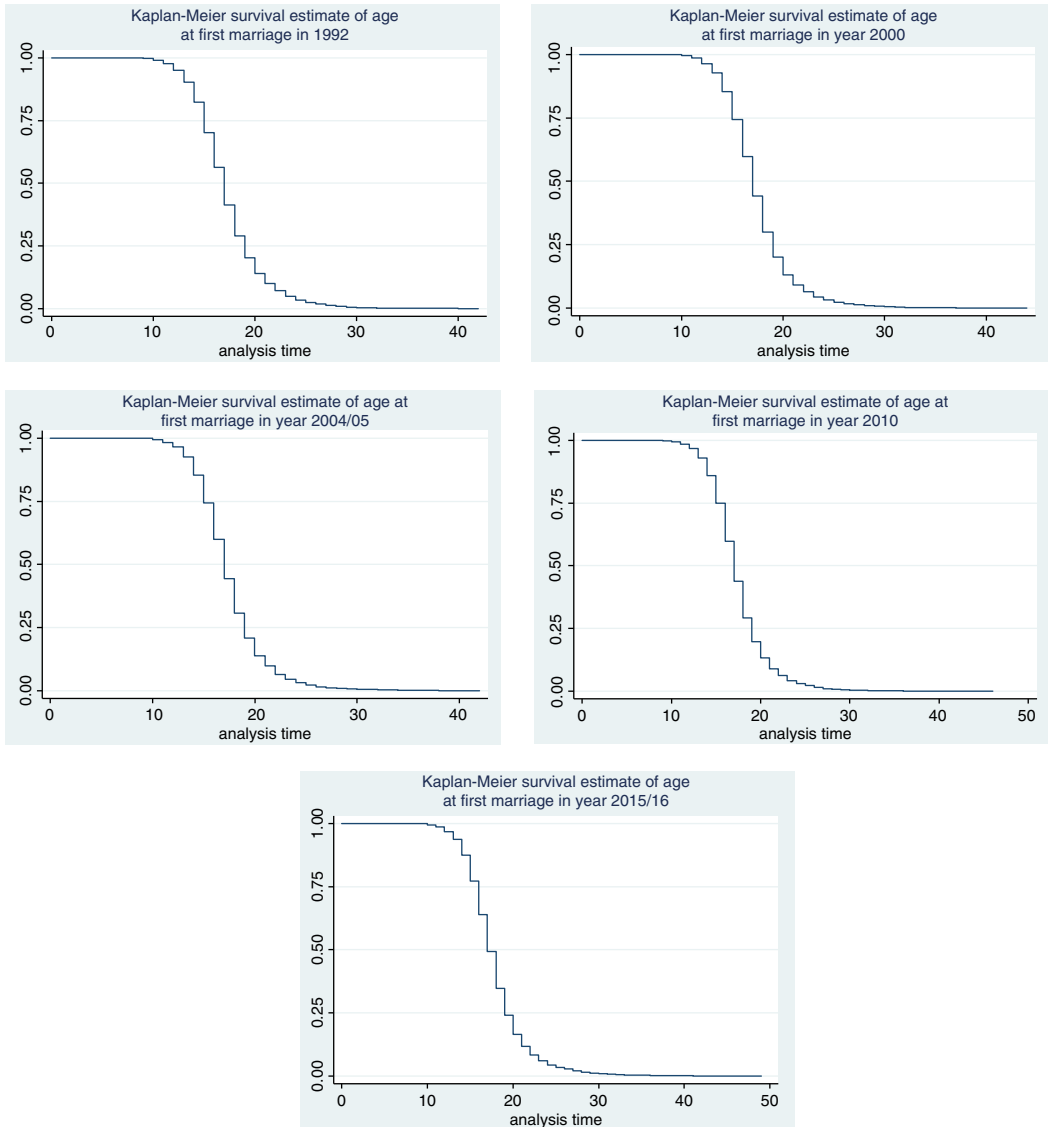


Figure 3. Kaplan–Meier survival estimate of time to age at first marriage among women of reproductive age from 1992 to 2015/16 in Malawi.

The 2015/16 survey was the only one where the association between place of residence and age at first marriage was significant. For example, the risk of marrying early was 1.09 times higher among women residing in rural areas compared with those residing in urban areas. The risk of early marriage was 0.91 lower among women living in the Central region compared with women living in the Northern region in the 2000 survey. In the 2004/05 survey, the risk of marrying early was 0.85 and 0.93 times lower among women residing in the Central and Southern regions, respectively, compared with women residing in the Northern region. The risk of early marriage was 0.93 times lower among women living in the Central region in the 2010 survey compared with women living in the Northern region. Contrary to other surveys, the risk of marrying early was 1.09 times higher among women residing in the Southern region compared with women residing in the Northern region in the 2015/16 survey.

Table 2. Trends and differentials in mean age at first marriage by socio-demographic characteristics among ever-married women aged 15–49 years in Malawi, 1992 to 2015/16

Characteristic	1992		2000		2004/05		2010		2015/16	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age										
15–19	16.0	1.6	16.0	1.5	16.0	1.6	16.0	1.5	16.3	1.6
20–24	17.0	2.5	17.3	2.3	17.0	2.3	16.9	2.3	17.3	2.4
25–29	17.5	3.1	17.6	3.0	17.5	2.9	17.5	2.8	17.8	3.2
30–34	17.3	3.5	17.5	3.5	17.7	3.5	17.7	3.3	18.1	3.6
35–39	17.8	3.7	17.8	4.0	17.7	4.1	17.9	3.6	18.2	4.0
40–44	18.1	4.2	17.5	4.0	17.7	4.0	17.5	4.1	18.6	4.6
45–49	18.1	4.1	18.1	4.4	18.1	4.5	17.8	4.3	18.9	5.1
Place of residence										
Urban	17.7	3.2	17.8	3.2	18.1	3.4	18.2	3.4	18.8	3.9
Rural	17.2	3.4	17.3	3.2	17.3	3.2	17.3	3.2	17.7	3.5
Education										
No education	17.2	3.8	17.3	3.7	17.1	3.8	17.0	3.8	17.6	4.3
Primary	17.2	2.7	17.1	2.8	17.2	2.9	17.0	2.8	17.3	3.2
Secondary	20.1	3.5	19.6	3.2	19.5	3.1	19.5	3.0	19.5	3.3
Higher	20.8	4.8	22.4	3.2	22.6	3.9	22.4	3.3	22.6	3.7
Region										
Northern	17.3	2.9	17.2	2.9	17.4	2.9	17.5	3.0	18.2	3.7
Central	17.3	3.3	17.7	3.2	17.7	3.2	17.7	3.0	18.2	3.3
Southern	17.3	3.7	17.3	3.4	17.2	3.3	17.2	3.4	17.6	3.8
Ethnicity										
Chewa	NA		17.8	3.2	17.6	3.2	17.6	3.0	18.1	3.3
Tumbuka	NA		17.4	3.0	17.4	2.8	17.7	3.1	18.2	3.6
Lomwe	NA		17.0	3.2	17.2	3.3	17.0	3.4	17.5	3.8
Tonga	NA		17.5	3.1	17.8	3.3	17.7	3.3	18.1	3.8
Yao	NA		17.3	3.7	17.1	3.5	17.0	3.3	17.6	3.6
Sena	NA		17.5	3.2	17.4	3.4	17.2	3.2	17.7	3.8
Nkonde	NA		17.2	2.9	17.1	2.4	17.0	2.9	18.5	4.0
Ngoni	NA		17.6	3.1	17.8	3.3	17.6	3.5	18.1	3.7
Amanganja/Anyanja	NA		17.1	3.3	17.2	3.3	17.1	3.0	18.0	4.0
Other	NA		17.0	3.0	17.2	3.3	17.2	2.9	18.0	3.8
Religion										
Catholic	NA		17.5	3.1	17.4	3.0	17.6	3.1	18.0	3.4
Other Christian	NA		17.4	3.2	17.4	3.2	17.4	3.2	17.9	3.6
Muslim	NA		17.4	3.7	17.1	3.5	16.9	3.3	17.5	3.5
Other	NA		17.3	3.8	17.5	2.1	17.5	3.6	18.2	4.9

(Continued)

Table 2. (Continued)

Characteristic	1992		2000		2004/05		2010		2015/16	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Employment status										
Not working	17.3	3.3	17.4	3.1	17.4	3.3	17.4	3.3	17.8	3.6
Working	17.5	3.4	17.4	3.3	17.4	3.3	17.3	4.0	17.9	3.6
Wealth index category										
Poor	17.0	3.2	17.3	3.3	17.2	3.3	17.1	3.2	17.5	3.5
Middle	17.4	3.5	17.2	3.0	17.2	3.1	17.2	3.1	17.5	3.3
Rich	17.6	3.3	17.7	3.3	17.8	3.3	17.8	3.2	18.4	3.7

NA: not available.

Women who belonged to the Chewa ethnic group tended to delay marriage compared with all other ethnic groups. For instance, in the 2000 survey, the risk of early marriage was 1.16, 1.18, 1.08 and 1.17 times higher among women who belong to Tumbuka, Lomwe, Ngoni and Amanganja/Ayanga ethnic groups, respectively, compared with those from the Chewa ethnic group. Furthermore, in the 2015/16 survey, the risk of early marriage was 1.10 and 1.07 times higher among Tumbuka and Lomwe women compared with Chewa women.

Surprisingly, employment status and wealth index had negative effects on age at first marriage. For example, the risk of early marriage was 1.07 times higher among women in the labour force in the 2000 survey, 1.06 times higher in 2010 and 1.08 times higher in 2016 compared with unemployed women.

Lastly, wealth index did not have any significant association with age at first marriage in the 1992, 2000 and 2004/5 surveys, respectively. However, wealth index became significant in the 2010 and 2015/6 surveys. In the 2010 survey, the risk of marrying early was 1.04 and 1.05 times higher among women who were in the middle and rich wealth index categories compared with women in the poor wealth index category. Also, in the 2015/16 survey, the risk of marrying early was 1.07 and 1.09 times higher among women in the middle and rich wealth index categories compared with women in the poor wealth index category.

Discussion

The study showed that age, education, place of residence, region, religion, employment status and wealth index were all significant predictors of changes in age at first marriage in Malawi over the period 1992–2016. A significant finding of the study was that, despite a government policy mandating a minimum age at marriage, age at first marriage in Malawi was still very low in 2016 and had remained stagnant from 1992 to 2010, although a slight increase was observed in 2015/16. Moreover, the mean age at first marriage in the country (17.4 years) did not change over the 18-year span of the study. This study finding of an association between women's age and age at first marriage is corroborated by existing studies in Malawi and in other contexts (Garenne, 2004; Kumchulesi *et al.*, 2011; Palamuleni, 2011; Adebowale *et al.*, 2012). This could be because young girls are being married off by their parents or families on or before the onset of puberty as a result of the inertia of culture or due to poverty.

The positive association between educational attainment and age at first marriage provides empirical evidence that education has a delaying effect on age at first marriage among women, therefore acting as a protective factor (Jisun, 2016). The finding that women with primary, secondary and higher education had a lower risk of early marriage is consistent with the findings of previous studies

Table 3. Cox proportional hazard regression of age at first marriage among women in Malawi by socio-demographic characteristics, 1992 to 2015/16

	1992		2000		2004/05		2010		2015/16	
	HR	CI	HR	CI	HR	CI	HR	CI	HR	CI
Age										
15–19 (Ref.)										
20–24	0.66	0.58–0.74*	0.63	0.58–0.67*	0.68	0.63–0.73*	0.68	0.64–0.73*	0.69	0.65–0.73*
25–29	0.55	0.49–0.62*	0.54	0.51–0.59*	0.55	0.50–0.59*	0.58	0.54–0.61*	0.60	0.57–0.64*
30–34	0.57	0.51–0.65*	0.52	0.48–0.56*	0.49	0.45–0.53*	0.52	0.48–0.55*	0.54	0.51–0.58*
35–39	0.47	0.41–0.54*	0.47	0.43–0.51*	0.47	0.43–0.52*	0.45	0.42–0.48*	0.49	0.46–0.52*
40–44	0.42	0.35–0.46*	0.49	0.45–0.54*	0.46	0.42–0.50*	0.46	0.42–0.49*	0.42	0.39–0.45*
45–49	0.40	0.35–0.46*	0.40	0.37–0.44*	0.39	0.35–0.43*	0.43	0.40–0.47*	0.37	0.34–0.40*
Residence										
Urban (Ref.)										
Rural	1.03	0.93–1.15	0.98	0.93–1.04	1.04	0.98–1.11	1.01	0.97–1.01	1.09	1.04–1.14*
Education										
No education (Ref.)										
Primary	0.97	0.90–1.03	0.95	0.91–0.99*	0.90	0.86–0.95*	0.94	0.90–0.98*	0.98	0.94–1.02
Secondary	0.54	0.44–0.66*	0.50	0.46–0.55*	0.48	0.44–0.52*	0.48	0.45–0.51*	0.55	0.52–0.58*
Higher	0.50	0.21–1.19	0.34	0.19–0.62*	0.35	0.27–0.47*	0.31	0.27–0.35*	0.35	0.31–0.39*
Region										
Northern (Ref.)										
Central	0.94	0.85–1.05	0.90	0.82–0.99*	0.85	0.77–0.94*	0.93	0.87–0.99*	0.98	0.91–1.05
Southern	0.96	0.87–1.07	0.95	0.86–1.05	0.93	0.84–1.02*	0.98	0.91–1.05	1.09	1.01–1.17*
Ethnicity										
Chewa (Ref.)	NA									
Tumbuka			1.16	1.05–1.28*	1.09	0.98–1.21	1.08	1.00–1.17*	1.10	1.02–1.19*
Lomwe			1.18	1.09–1.27*	1.10	1.02–1.19*	1.16	1.09–1.22*	1.07	1.02–1.13*
Tonga			1.10	0.94–1.28	0.92	0.79–1.08	1.03	0.91–1.16	1.04	0.93–1.18
Yao			1.11	1.01–1.22*	1.09	0.99–1.20	1.08	1.01–1.16*	0.96	0.90–1.03
Sena			1.02	0.91–1.13	0.93	0.83–1.04	1.01	0.93–1.10	0.97	0.89–1.05
Nkonde			1.12	0.93–1.35	1.20	0.98–1.48	1.17	1.00–1.37*	0.97	0.82–1.15
Ngoni			1.08	1.01–1.15*	1.00	0.93–1.07	1.03	0.98–1.08	1.02	0.97–1.08
Amanganja/Anyanja			1.17	1.06–1.29*	NA	NA	1.17	1.09–1.26*	1.08	0.99–1.18
Other			1.14	0.99–1.30	1.04	0.95–1.14	1.09	0.98–1.23	1.09	0.97–1.22
Religion										
Catholic (Ref.)	NA									
Other Christian			1.01	0.97–1.06	0.98	0.93–1.03	1.01	0.97–1.05	1.00	0.96–1.04
Muslim			0.94	0.86–1.03	0.94	0.85–1.03	1.06	0.99–1.14	1.03	0.96–1.10
Other			0.99	0.86–1.15	0.86	0.72–1.02	1.09	0.96–1.24	0.98	0.83–1.16

(Continued)

Table 3. (Continued)

	1992		2000		2004/05		2010		2015/16	
	HR	CI	HR	CI	HR	CI	HR	CI	HR	CI
Employment										
Not working (Ref.)										
Working	1.04	0.97–1.11	1.07	1.03–1.12*	1.04	0.99–1.08	1.06	1.02–1.09*	1.08	1.05–1.12*
Wealth index category										
Poor (Ref.)										
Middle	0.95	0.88–1.03	1.02	0.97–1.07	1.00	0.95–1.06	1.04	1.00–1.08*	1.07	1.03–1.11*
Rich	0.97	0.90–1.05	1.02	0.97–1.07	1.02	0.97–1.07	1.05	1.01–1.09*	1.09	1.05–1.13*

NA: not available.

* $p < 0.05$.

from Malawi (Palamuleni, 2011), Uganda (Agaba *et al.*, 2010) and Bangladesh (Jisun, 2016). This confirms the theory that schooling is a competing activity to family formation through marriage.

This study's findings with regard to the significant association between place of residence (although only significant in the 2015/16 DHS survey), region and ethnicity on the one hand, and age at first marriage on the other, is in line with studies by Adebawale and colleagues (2012), Haloi and Limbu (2013) and Amoo (2017). A possible explanation for this is that marriage, culture and religion in most sub-Saharan African settings are interwoven and a higher price is placed on bride price for procuring good honour to the family (Adebawale *et al.*, 2012). Another possible explanation is that some ethnicities and regions still support the norms of men seeking younger women's hand in marriage, while young women will most likely want to marry men that are older with better incomes and occupations.

The effect of employment status and wealth index on age at first marriage was noted in the study. However, the finding that women in the labour force and those in the middle and rich wealth index categories had a higher risk of early marriage contradicts findings of previous studies, which suggest that an increase in wealth and being employed reduce the tendency for early marriage (Haloi & Limbu, 2013; Jisun, 2016; Nur *et al.*, 2016). A possible explanation may be that early marriage may not always be a financial transaction or a substitute for poverty. It may also be the result of strengthening relationships between the families involved in the transaction.

In conclusion, this study has shown that despite the socioeconomic changes that are sweeping Malawi in the form of fee-free primary and secondary education for girls and restriction on the legal age at marriage, the age at first marriage in the country remains relatively low. The study observed no change in the timing of marriage over the 24 years of the study. However, all indications are that access to influences like formal education is slowly but surely transforming the social structure of the society to the extent that Malawi is changing from a pattern of early marriage to late marriage.

The findings of the study have implications for policy interventions that are worth mentioning. First, while as indicated, Malawi has enacted legislation to restrict the legal age at which a girl can marry at 18 years, the study has underscored the need to enforce the law vigorously. Secondly, the state has made primary and secondary schooling free for girls, which is a commendable policy. However, this effort needs to be strengthened and perhaps extended to include boys, so as to address the early marriage phenomenon in the country holistically.

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