

# PREDICTORS OF TIME TO FIRST BIRTH AFTER FIRST MARRIAGE AMONG WOMEN IN UGANDA

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## Abstract

*The objective of this paper was to investigate the factors associated with time to first birth after first marriage among women in Uganda. The source of data was the 2011 Uganda Demographic and health survey. The analysis was made using a time to event approach involving life tables, log-rank and the Cox Proportional Hazards model. Results indicated that the median time to first birth after first marriage was 2 years with a range between 1-15 years. The most important predicting factors of having a live birth after first marriage was ever lost a pregnancy either spontaneously or induced, knowledge of ovulation cycle by the women and having had late sexual debut ( $p < 0.05$ ). It is recommended that women who have ever lost pregnancy should have proper medical checkup and treatment before getting another child and need to increase knowledge when a woman becomes pregnant in the ovulation circle*

## Introduction

The importance of the first child after marriage is recognized in all human societies. Fertility is the natural capability of giving life (Harms, 1998). Of all the joy, happiness and challenges married couples face in life, there is none which is more extraordinary than the occurrence of a first child (Anuwoje & Albert, 2013). Being pregnant for the first time after marriage creates a lot of expectations in the minds of most married couples (Ronald & Rindfuss, 1983); (Unicef, 2011). The first child after marriage acts as a proof of a woman's fertility and serves as an event of great social and individual significance of a woman (Azad, Mohitul & Mohammad, 2013). On the other hand, it's also a proof of manhood among men (cite). The first birth after marriage plays a significant role in the future life of each individual woman and her family (Azad et al, 2013). It acts as an indicator of output realization after investment; that is after having paid the bride price to have a legal marriage. Baizán, Aassve and Billari (2001) in the study about family formation argued that entering parenthood and forming first unions are closely linked events both in terms of their timing over the life course and in terms of the intentions and life plans of individuals.

The waiting time to first birth from first marriage is defined to be the time between when the couple starts staying together to the occurrence of the first birth. This time is said to be highly influenced by several socio-economic (background), demographic and predisposing (proximate) factors. Anuwoje and Albert (2013) like other demographers argue that age at first marriage is often used as a baseline for the onset of women's exposure to the risk of pregnancy. In some societies and cultures which cherish virginity, it's the age of sexual debut.

Some scholars have showed that the interval from marriage to first birth of a woman can determine the happiness and survival of her marriage (Martin 2002). On the otherhand, delayed births can lead to contention, suspicions, even marriage breakups and disappointment (Dana, 2005). However it should also be noted that very early births especially the unexpected and unwanted ones can do the same or even worse to the couple.

In the Ugandan settings all communities and ethnic groups consider marriage incomplete without children (Otiso, 2006). Everyone is always anxious to know the marriage outcomes of a couple shortly after marriage and women are expected to show signs of pregnancy at least within the first year of marriage as a sign of realization of marriage output. Words like, is the bride having fever are common questions. Delay in having a child, especially among married women who are not using any family planning method is one the leading causes of instability in marriage in Uganda (Nabaitu, Bachengana & Seeley, 1994).

Several factors are said to have an impact on the timing of the first birth for example residence and household wealth status. The place of residence has a great impact on the time to first birth after marriage of a woman, (Nath, Singh, Land & Talukdar, 1993; Gurmu & Etana, 2009, Daury 2012, Zhenzhen, 2000). However, an investigation of the determinants of the time to first birth after marriage by Anuwoje & Albert, (2013) and Chung et al, (2006) revealed that whether a woman stays in an urban area or a rural area her time to first birth after her marriage is not affected. The wealth status of a woman and her religion significantly determine the time to first birth after marriage (Pandey, 2001). This was also in support of results from the study by [Nath, Land & Goswami](#), (1999) about the determinants of the first birth interval where it was noted that a married woman's income group greatly influences the time to first birth after marriage; where by women in higher income groups tend to have longer time to first birth after marriage compared to their counterparts who are from the poorest class.

## Objectives of the study

The objective of this paper was to investigate factors associated with time to first birth after first marriage among women in Uganda. These were divided into demographic, socio-economic and proximate which we have referred to as predisposing factors.

## Methodology

This paper is based on secondary data from the Uganda Demographic and Health Survey (UDHS) of 2011. The UDHS covered a total of 10,089 households. From these 8674 women aged 15-19 years were interviewed. This paper excluded all women who had never married and had never had sex (n=2208), women who had just married that is time since married less than 9 months, women who married when they were already pregnant or had already given birth, those who were using contraception and those who indicated that the current union was not the first one (n=4423). This eventually left a sample size of n=2043. The study variables were: Age at first marriage, Region of residence, Religion, Place of residence, Partner's level of education, Woman's education level, Age at first sexual intercourse, Knowledge of a woman on the Ovulation cycle, Media access (television, newspaper and radio), Number of siblings, Work status after marriage and Ever terminated a pregnancy. The dependent variable was categorized as

It was categorized as:  $Y = \begin{cases} 1 & \text{woman had her first birth after marriage} \\ 0 & \text{otherwise} \end{cases}$

The study used three non-parametric functions as namely the survival function  $S(t)$ , the cumulative distribution function  $F(t)$  and the hazard function  $h(t)$ .

Where;

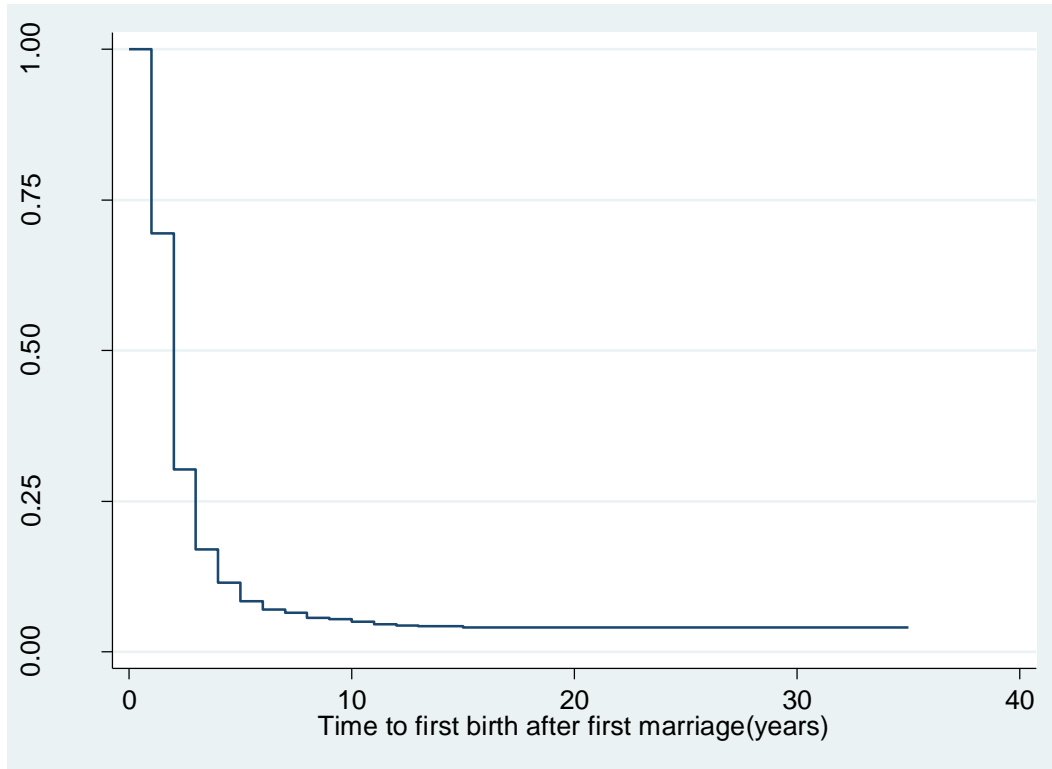
$S(t) = P(\text{a married woman waits longer than } t \text{ years to have her first child})$

$F(t) = P(\text{a married woman has her first child before time } t)$

$h(t) = P(\text{a married woman has her first child in the interval } (t, t + \Delta t) \text{ given that she had not given birth before time } t)$

A life table technique was used to estimate the survival function using the Kaplan Meier product limit estimate of the survival function (Kaplan & Meier, 1958), Where the proportion of women that delivers in a particular  $i^{th}$  year after marriage in Uganda were estimated. This was done using the following expression,  $S_i = \prod_{j=1}^{i-1} (1 - q_j)$

## Results



**Kaplan-Meier survival plot for time to first birth after first marriage**

From the graph it is seen that the chance of a woman not giving birth is very high in the first year of marriage, and as it comes to the second year many women get their first births. The risk of surviving from producing in the subsequent years goes on reducing up to the 14<sup>th</sup> year beyond which the chance of a woman surviving from giving birth tends to be constant.

**Table 1: Life table for time to first birth after marriage**

Time intervals (years)	Total	Number that give birth	Number censored (never gave birth) )	s(t)	h(t)	F(t)	SE for s(t) & F(t)	SE for h(t)
0-2	2043	625	117	0.685	0.187	0.315	0.010	0.007
2-4	1301	951	107	0.163	0.616	0.837	0.009	0.016
4-6	243	119	27	0.078	0.350	0.922	0.007	0.030
6-8	97	22	9	0.060	0.135	0.940	0.006	0.029
8-10	66	11	5	0.049	0.095	0.951	0.006	0.029
10-12	50	7	8	0.042	0.082	0.958	0.006	0.031
12-14	35	3	4	0.038	0.048	0.962	0.006	0.028
14-16	28	1	3	0.037	0.019	0.963	0.006	0.019
16-18	24	0	4	0.037	0.000	0.963	0.006	0.000
18-20	20	0	2	0.037	0.000	0.963	0.006	0.000
20-22	18	0	1	0.037	0.000	0.963	0.006	0.000
22-24	17	0	4	0.037	0.000	0.963	0.006	0.000

24-26	13	0	3	0.037	0.000	0.963	0.006	0.000
26-28	10	0	3	0.037	0.000	0.963	0.006	0.000
30-32	7	0	5	0.037	0.000	0.963	0.006	0.000
32-34	2	0	1	0.037	0.000	0.963	0.006	0.000
34-36	1	0	1	0.037	0.000	0.963	0.006	0.000

The results in Table 1 show that at least 30% of married women give birth in their first year of marriage ( $F(t)=0.315$ ). And a very big number of almost 70% fail to deliver ( $s(t)=0.685$ ). This may represent the proportion of the few women who get pregnant with in the first three months of their marriage. By the end of the second year of marriage up to 84% of the married women had their first birth (probability=0.837).

From the hazard distribution, the chances of a woman having her first birth is very high within the second, third fourth and fifth years of marriage after which they become fluctuating declining until the fifteenth year in marriage beyond which the chances of a married woman having her first child after marriage tend to zero this may imply that it is seen as a surprise for a married woman to get live birth after the thirteenth year in marriage, and beyond this time (fifteenth years' duration in marriage, married couples and their relatives lose hopes of having a child). The married woman's high chances of

giving birth after her marriage is in between the second and third year where the chances of a woman, who has never given birth before is about 61% , followed by the fourth and fifth year which is at least 35%. All these high chances with in these years may be attributed to the pressure put onto the couples by the society as well as the relatives for them to bear children.

**Table 2: Regression estimates of time to first birth after first marriage**

Variable	HR	Std. Err	p-value
<b>Religion</b>			
Catholic <sup>†</sup>	1.000	-	-
Protestant	0.898	0.054	0.073
Muslim	0.884	0.075	0.145
Others	0.953	0.075	0.539
<b>Residence</b>			
Urban <sup>†</sup>	1.000	-	-
Rural	1.062	0.090	0.477
<b>Woman's occupation</b>			
Not working <sup>†</sup>	1.000	-	-
Professional/technical/managerial	0.994	0.191	0.973
Agriculture-self employed	1.151	0.081	<b>0.046</b>
Agriculture-employee	1.012	0.122	0.922
Sales and services	0.956	0.075	0.565
<b>Partners education</b>			
No education	1.000	-	-
Primary	1.044	0.080	0.573
Secondary	0.988	0.089	0.897
Tertiary	0.936	0.116	0.594
<b>Age at first sexual intercourse</b>	0.912	0.018	<b>0.000</b>
<b>Woman's Education level</b>			

	No education <sup>†</sup>		-	-
	Primary	1.100	0.075	0.158
	Secondary	1.130	0.115	0.230
	Tertiary	0.891	0.188	0.583
<b>Ever terminated a pregnancy</b>				
	No <sup>†</sup>	1.000	-	-
	Yes	0.447	0.027	<b>0.001</b>
<b>Wealth index</b>				
	Poorest <sup>†</sup>	1.000	-	-
	Poorer	1.052	0.082	0.512
	Middle	1.210	0.123	0.061
	Richer	1.013	0.144	0.926
	Richest	1.091	0.168	0.572
<b>Region</b>				
	Central	1.000	-	-
	Eastern	1.044	0.090	0.613
	Northern	1.064	0.099	0.503
	Western	1.015	0.080	0.855
<b>Age at first marriage</b>		1.095	0.021	<b>0.001</b>
<b>Knowledge on ovulation cycle</b>				
	Don't know <sup>†</sup>	1.000	-	-
	Knows	1.174	0.066	<b>0.004</b>

Women who get married at a relatively higher age are more likely to have a relatively short time to first birth after marriage as compared to women who marry at a relatively an early age. Therefore increasing age at first marriage increases the chance of having a child by 9.5%. High or increasing age at first sex reduces the chances of bearing a child for the first time by about 5%. The chance of bearing a child after marriage was almost 16% higher in women who have knowledge on the ovulation cycle as compared to women who are ignorant about the ovulation cycle after controlling for other factors. Loss of pregnancy lowers the chance of bearing a child after marriage there by widening the time to first birth after marriage. The chance of giving birth to a live baby for women who lost pregnancy either spontaneously or not was 56% lower than women who had no pregnancy termination. Women who were self-employed in the agriculture sector had at least 15% higher chance of bearing a child earlier after their first marriage compared to women who were not working.