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AGE AT FIRST MARRIAGE IN NEPAL: DIFFERENTIALS AND DETERMINANTS

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Summary. The aim of this paper is to investigate the differentials and determinants of female age at first marriage in rural Nepal. The life table technique was employed to calculate median age at marriage. The proportional hazard model was used to study the effect of various socioeconomic variables, and to identify the magnitude and significance of their effects on the timing of first marriage. The data were taken from a sample survey of Palpa and Rupandehi districts in rural Nepal. Both married and unmarried females of marriageable age were included in the survey. Median age at marriage was about 17 years for data from only married females, whereas it was about 18 years for data from married as well as unmarried females of marriageable age. Median age at marriage was about 16 years for uneducated females and 19 years for females educated up to intermediate or higher level. The analysis underestimates the median age at marriage for married females, probably due to right censoring. The risk of getting married early decreased gradually with increasing year-of-birth cohort. The risk of early marriage was higher among females of high socioeconomic status compared with those of low socioeconomic status. Females engaged in service married earlier than those engaged in household work. High socioeconomic status families are motivated, for religious and prestige reasons, to get their daughters married at an early age, preferably before menarche. Thus, education, occupation and age at menarche are the most powerful factors in deciding the timing of first marriage in Nepal.

Introduction

Female age at marriage is becoming an important demographic variable due to its influence on fertility and population growth, especially in developing countries where contraceptive use rate is very low (Aryal, 2005a). Late age at marriage leads to lower fertility and lengthens the interval between generations, causing plummeting population growth and ultimately a small proportion of grandmothers in the population (United Nations, 1997; Aryal, 2005b). A delayed marriage may affect fertility indirectly due to some contributory factors linked with higher age at marriage, such as women's education, which may relate to family size preferences and use of

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contraception, etc. (Adhakha *et al*., 1991; Isiugo-Abanihe, 1994; Aryal, 2002, 2004a; Leone *et al*., 2003; Choe *et al*., 2004).

Marriage forms the basis of family formation and, as such, is an important determinant of fertility by increasing or decreasing duration of exposure to the risk of childbearing (Aryal, 2005c, 2006). In populations where there is no premarital childbearing, an increase in age at marriage reduces the number of years available for reproduction which may, in turn, reduce the ultimate number of births (Audinarayana, 1990; Acharya, 1998; Aryal, 2005d). A number of studies have been done on differentials and determinants of age at marriage and its relationship with fertility (Audinarayana, 1993; Richard & Rao, 1995, Shakhya, 1997; Leone *et al.,* 2003; Retherford & Thapa, 2003; Aryal, 2004b, 2005a; Choe *et al*., 2004).

Marriage is a formal process for sanctioning sexual gratification in Nepal, which is guided by the Hindu code of conduct (Aryal, 2004a). It is an institutional agreement that ensures the formation, development and continuity of the family. It is indispensable for the maintenance of kinship structure (Aryal, 2002, 2005a). Though in Nepal marriage is universal and everyone sooner or latter gets married, an early age at marriage is observed for both males and females (Choe *et al*., 2004; Aryal, 2005d; MOH, 2001). The Government of Nepal fixed a minimum legal age for marriage in 1971 at 16 and 18 years for girls and boys respectively with the consent of parents, and 18 and 21 years for girls and boys respectively without parental consent (NCP, 1985). There is profound ethnic diversity of Nepalese society, with marriage practices varying in different castes/ethnic groups, each with their own value system (Aryal, 2005a). The female age at marriage in Nepal has increased by about a year, i.e. from 16·8 to 17·8 years, during the five-year period 1991 to 1996 (CBS, 1987). It increased by only about a year, i.e. from 15·4 to 16·8 years, during the previous three decades from 1961 to 1991 (CBS, 1993). Median age at marriage was 16·6 and 19·7 years respectively for females and males in 2001 (MOH, 2001). However, a slight decline in fertility during the period 1961–2000 was noted along with an increase in age at marriage, but fertility remained high among females of 15–19 years (Retherford & Thapa, 2003; Aryal, 2005c). Despite the fact that a steady increase in female age at marriage was observed in Nepal during the 1990s, it is still very low compared with that in other Asian countries: 24·2 years for Sri Lanka, 19·7 years for Pakistan in 1981, 18·9 years for Bangladesh in 1996 and 20 years for India in 1998 (Aryal, 2002, 2005a).

A large proportion of Nepalese women get married before the age of 15 and the majority of them give birth before the age of 20; in this Nepal ranks highest among Asian countries (ESCAP, 2001; Aryal, 2005a). There is also a strong sex preference, with 2–3 births per woman being very common in Nepal, and in the following birth, women are most likely to stop childbearing if they already have a son in the previous births (Dalla & Leone, 2001; Aryal, 2004c). The sex ratio at last birth was 146, suggesting a clear tendency toward son-determined stopping behaviour in Nepal (Leone *et al*., 2003). It has been argued that early marriage and childbearing are highly related to a low level of women's autonomy after marriage and high level of health risks among women and their children (Thapa, 1997; Aryal, 2004b; Choe *et al*., 2004). Other studies also argue that communities' and individuals' attitude toward marriage and fertility are likely to have a strong influence and the latter are more

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important than the former for making decisions on the timing of first marriage and motherhood (Barber, 2004; Biddlecom *et al*., 2005).

Nepal is likely to attain a constant fertility level, not only by controlling marital fertility but by increasing the age at marriage as well. A number of factors have been found to be associated with the timing of female age at marriage, such as education, occupation, caste, socioeconomic status, land ownership and age at menarche (Aryal, 2005a, 2006). It is to be noted that in specific sample surveys, the mean or median age at marriage has been determined by actual ages at which the individuals experienced the event (married). Thus, the averages obtained do not include those cases who are yet to be married (termed 'censored cases') despite their full exposure in a particular age group. Such a situation may be tackled by combining the cases who experienced the event and who were censored. This study includes both the cases i.e. censored as well as non-censored.

Hence the present paper is devoted to investigating the differentials and determinants of female age at first marriage in rural Nepal. For this purpose, the life table technique was employed for the computation of median age at marriage according to the different characteristics of females. A multivariate analysis technique was used to study the effect of various socioeconomic variables, and to identify the magnitude and significance of their effects on the timing of first marriage.

Data and Methods

This study is based on data from a sample survey entitled the 'Demographic Survey on Fertility and Mobility in Rural Nepal (DSFM 2000): A Study of Palpa and Rupandehi Districts' conducted between January and June 2000. These districts lie in the Western Development Region and are about 250 km west of Kathmandu, the capital city of Nepal. The data were collected from eight clusters: four clusters from each district and each cluster consisting of wards of the Village Development Committee (VDC), a lowest administrative unit. A VDC consists of nine wards. The clusters were randomly selected and completely enumerated. The survey schedule included questions on the household composition, facilities and belongings. A total of 811 households were surveyed. A sample of 1019 married and 547 unmarried women of marriageable age were obtained. In addition, information on socioeconomic, demographic and cultural variables, and data on age at marriage and menarche were collected from all women. In the survey, each ever-married woman was asked about their parents' education and occupation at the time of their first marriage.

A number of characteristics (both at the household or individual level) are thought to affect the timing of marriage. The variables included in the analysis are: education, occupation, year of birth cohort, residence (Hill/*Tarai*), caste/ethnicity, marriage mediator and age at menarche. The social status, economic status and landholdings of the household are also included in the analysis, since these variables are generally known to have a strong correlation with the timing of marriage. Details of measurement of the variables and their categories are given below (Aryal, 2002, 2005a).

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Previous studies have shown that social status, economic status and land ownership of the household affect marriage behaviour to a great extent (Niraula, 1991; Aryal, 2002, 2005a). Economic status of the household was defined according to monthly income from all possible sources, i.e. from agriculture, services, business, household industries and other. The aggregate monthly income per person of the household was obtained, and this was used to classify the economic status of the household as (1) low (monthly income less than 1200 Rupees (Rs) per person) (Rs72=US$1), (2) middle (monthly income ranging from Rs 1200 to Rs 2000 per person) and (3) high (monthly income Rs 2000 or more per person).

Social status of the household was measured by taking into account the availability of certain items in the household. Previous studies have shown that the level of availability/access to the following items in the household generally characterizes the social status of the household (Aryal, 2002, 2005a). The score is given on a five-point scale with 1=very low or no availability/access to the item to 5=very high availability/access. The items and their scores are: (1) use of milk (never=1, …, daily=5), (2) use of vegetables and fruits (never=1, …, daily=5), (3) use of meat (never=1, …, frequently=5), (4) drinking water facilities (no facility=1, surface – dhara/pond/kuwa/spring/river=2, dug/tube-well=3, public piped water=4, piped water into the household=5), (5) computer, TV, VCR, radio, telephone, motorcycle, cycle (none of these items=1, …, at least five items=5), (6) kitchen (traditional firewood/charcoal/dung=1, improved smokeless *chulo*=2, kerosene=3, biogas/LPGas=4, electricity=5), (7) educational attainment of the member of the household (uneducated=1, [at least one member] primary & secondary level education=2, high school or 10 years of education=3, IA (Intermediate in Arts) or 10+2education=4, BA or graduate & above education=5), (8) structure of house (do not have own house=1, *phush*=2, stone=3, tin=4, cemented=5), (9) household member(s) engaged in socially prestigious occupations such as white collar jobs/services, managers, professionals, etc. (none=1, [at least one member] non-officer level=2, middle level officer=3, high level officer/manager=4, academic/professional=5), (10) toilet facility (bush/field/jungle=1, latrine=2, traditional pit toilet=3, ventilated improved pit=4, flush=5), (11) member of household involved in community organizations or social activities (no=1, [at least one member] very few=1, occasionally=3, partly=4, full time=5). The total score of the items for each household was obtained. On the basis of this, the social status of the household was classified as (1) low, (2) middle and (3) high.

Ownership of land by the household was categorized by considering the productive land and is classified as: (1) landless (less than 00·015 ha=12 *dhur*), (2) marginal landholding (00·015–01·10 ha), (3) small landholding (01·11–01·50 ha) and (4) big landholding (01·51 ha and above).

Year of birth is included in the analysis to assess the secular trend in the timing of marriage. Year-of-birth cohort is classified as born (1) before 1965, (2) between 1965 and 1969, (3) between 1969 and 1974, (4) between 1975 and 1980 and (5) in 1981 or later. Father's education and occupation are generally known to be strong correlates of the timing of marriage. A higher level of female's and her father's education are expected to be associated with lower risk of early marriage. The education variable is classified as (1) no education, (2) primary (1–4 years of

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education), (3) lower secondary (5–7 years of education) and (4) secondary (8–10 years of education) and higher education. Employment status such as white collar jobs/services is also likely to be associated with lower risk of early marriage. Female's occupation is classified as (1) household work, (2) agriculture and labourer, (3) white collar job/service and (4) student. Similarly, father's occupation is classified as (1) agriculture and labourer, (2) white collar job/service and (3) other (business/abroad/industry, etc.). Marriage mediators and age at menarche have been shown to play a significant role in the timing of marriage (Aryal, 2005a). Female autonomy regarding the decision of marriage is likely to be associated with late marriage. The marriage mediator variable is classified as marriage arranged by (1) relatives, (2) parents and (3) herself (love marriage). Female's age at menarche is classified as menarche before (1) 13 years of age, (2) 13–14 years, (3) 15–16 years and (4) 17 years and above. Previous studies have found that caste/ethnicity and residential background affect marriage behaviour in Nepal strongly (Thapa, 1989, 1997; Aryal, 2005a). The caste/ethnicity variable has been categorized into six groups: (1) Brahmin, (2) Chhetri, (3) Gurung/Magar, (4) Tharu/Choudhary, (5) Newar and (6) Kami/Damai (including occupational caste). The residential variable is included in the analysis as (1) Hill (hilly and mountainous region) and (2) *Tarai* (plains).

Results

Differentials of age at marriage

The mean or median age at marriage is usually computed by reporting the actual age at which a female experienced the event (marriage). However, age at marriage can be studied by incorporating both married as well as unmarried females of marriageable age. For such cases, the life table technique may be an appropriate tool to estimate the median age at marriage. A brief description of this technique is given below.

Suppose n' is the number of individuals exposed to the risk of marriage at the beginning of the interval (t_i, t_{i+1}), where t_i and t_{i+1} are the lower and upper limits of marriage. If d_i is the number of individuals experiencing marriage, and c is the number of women remaining single in the interval (t_i, t_{i+1}), then the conditional probability q_i (say) of being married in the above interval is given by $q_i = d_i/n$, where $n = n' - c/2$ (Aryal & Yadava, 2005). The proportion surviving (not getting married) at the start of each interval can be defined by $S_0 = 1$ for the first interval and the proportion surviving to next interval is estimated as:

$$S_{j+1} = S_j(1 - q_j)$$

or

$$S_{j+1} = S_j p_j$$

In general, the proportion surviving (not getting married) from the beginning of the interval (t_0) to the j^{th} interval can be expressed as:

$$S_j = \Pi\ p_i \text{ for } i = 0,\ 1,\ \ldots j.$$

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Finally the median age at marriage can be defined as

$$\text{Median} = t_j + \frac{(S_j - 0.5)}{(S_j - S_{j+1})} \times h,$$

where h is the width of the j^{th} class interval (t_i, t_{i+h}). Here j is chosen such that (S_j>0·5) and (S_{j+1}<0·5) (Nombodiri & Suchindran, 1987).

Table 1 shows the median age at marriage for both type A (based only on married females) and type B (based on both married and censored cases) data according to different characteristics of females. The median age at marriage based on data of type B was found to be higher (about 18 years) than that for the data of type A (about 17 years) for all categories. For example, the median age at marriage was found to be slightly higher among Gurung/Magar (17·7 years) and Newar (17·2 years) castes than among Brahmin (16·7 years), Chhetri (16·9 years), Tharu/Choudhary (15·6 years) and Kami/Damain (16·5 years) castes for data of type A. The median age at marriage was found to be about 18, 17, 19 and 18 years for females belonging to Brahmin, Chhetri, Gurung/Magar and Kami/Damain castes respectively for data of type B. A difference of about two years in the median age at marriage was found to be significant (z=3·87; p<0·01) among the caste groups. A lower median age at marriage among Tharu/Choudhary and Kami/Damain may be due to the low literacy, labourer classes and backwardness of females belonging to these castes, whereas a lower age at marriage among the Brahmin caste community may be due to Hindu marriage customs, which are more rigidly observed and where girls are usually married before menarche (Niraula, 1991; Aryal, 2002, 2004a).

The median age at marriage was about 16 years among illiterate females and 19 years among educated females for the data of type A, while it was about 17 years among illiterates and 21 years among educated females for the data of type B. A significant difference of about three years was found in the median age at marriage between illiterate females and females with education up to higher level (z=5·15; p<0·01). Similarly, the median age at marriage among females according to their fathers' education indicated that females with an illiterate father have a lower (16·2 years) age at marriage than those with educated fathers, i.e. primary (16·8 years), lower secondary (17·7 years) and secondary and above (17·9 years). A strong association was found between the fathers' level of education and the median age at marriage of their daughters (z=2·76; p<0·01).

A significant difference of about two years was found in the median age at marriage between females who engaged in government/private jobs and household work (housewife) (z=2·86; p<0·01). Similarly, father's occupation also has a strong influence on the decision of their daughter's first marriage. Those fathers who engaged in white collar jobs/services are likely to delay arranging their daughter's first marriage. An increasing trend in the median age at marriage was found with increasing year-of-birth cohort. A significant difference of more than two years was reported in the median age at marriage between the birth cohort below 1965 (15·4 years) and 1975–80 (17·8 years) (z=4·03; p<0·01). A higher age at marriage in the recent birth cohort may be due to increased rate of literacy and modernization in society. The median age at marriage was found to increase with increased age at

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Table 1. Median age at first marriage according to different characteristics of females, rural Nepal, 2000

Characteristic	No. cases (N=1019)	Type A[a] median (years)	Type B[b] median (years)
Social status			
Low	359	17·16	18·92
Middle	338	17·04	18·39
High	322	16·30	18·13
Economic status			
Low	315	17·33	18·36
Middle	445	16·93	18·21
High	259	16·03	17·47
Landholding size			
Landless	123	17·04	18·32
Marginal	291	17·05	18·29
Small	345	16·82	17·83
Big	260	16·53	17·90
Female's education			
None	539	16·12	17·13
Primary	201	17·05	18·24
Lower secondary	82	17·06	19·16
Secondary & higher	197	18·15	20·16
Caste/ethnicity			
Brahmin	410	16·66	17·96
Chhetri	294	16·89	17·18
Gurung/Magar	118	17·73	19·13
Tharu/Choudhary	43	15·59	17·73
Kami/Damain	115	16·54	17·65
Newar	39	17·18	18·94
Residence			
Hill	470	17·04	18·92
Tarai	549	16·68	17·89
Father's education			
None	295	16·21	
Primary	522	16·79	
Lower secondary	68	17·71	
Secondary & higher	134	17·95	
Father's occupation			
Agriculture & labourer	779	16·53	
Service	118	17·38	
Other (business/abroad/industry, etc.)	122	17·75	
Female's occupation			
Household work	418	15·88	
Agriculture & labourer	113	16·65	
Service	103	17·12	
Student	385	16·77	

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Table 1. *Continued*

Characteristic	No. cases (N=1019)	Type A[a] median (years)	Type B[b] median (years)
Female's age at menarche			
<13 years	76	16·04	
13–14	523	16·66	
15–16	335	17·07	
17+	85	17·95	
Marriage mediators			
Relative	93	17·11	
Father/mother	825	16·78	
Herself	101	16·96	
Year-of-birth cohort			
Before 1965	231	15·40	
1965–1969	198	16·43	
1969–1974	199	17·46	
1975–1980	210	17·82	
1981+	181	16·87	
Total	1019	16·83	

[a]Median computed from married sample only.
[b]Median computed from completed as well as censored cases.

menarche, being about 16, 17, 17 and 18 years for females whose age at menarche was less than 13, 13–14, 15–16 and 17 years and above respectively.

Those females belonging in the landless and marginal landholding categories are more likely to delay their marriage than those of the large and small landholding categories. A significant difference was found in the median age at marriage among females from low and high social status groups (z=3·58: p<0·01). A similar pattern was found in the economic status groups. These findings are consistent with many previous studies (Niraula, 1991; Aryal, 2002, 2004c, 2005a). A lower age at marriage was found among females whose marriage was organized by their parents (16·8 years) as compared with those whose marriages were organized by themselves (17·1 years) or by their relatives (17·0 years). Age at marriage was found to be slightly higher among females residing in the Hills (17·1 years) as compared with those living in *Tarai* (16·7 years). This small difference may be due to ecological and climatic effects. These results are consistent with previous findings (Thapa, 1996; Retherford & Thapa, 2003; Choe *et al*., 2004; Aryal, 2005d).

Determinants of age at marriage

A multivariate proportional hazard model technique of Cox (1972) is utilized to examine the effect of each category of each variable on hazard function while controlling for the effects of other variables along with their categories included in the model. Survival time is treated as the dependent variable and the associated variables

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Table 2. Univariate hazard model analysis for female's age at first marriage

Characteristic	− 2 log	χ^2	df	*p* value
Social status	12333·95	14·57	2	0·0007*
Economic status	12323·73	24·79	2	0·0000*
Landholding size	12342·32	6·20	3	0·1022
Female's education	12310·90	37·62	3	0·0000*
Father's education	12319·02	29·50	3	0·0000*
Female's occupation	12334·90	13·94	2	0·0175*
Father's occupation	12343·11	5·39	2	0·0821
Caste/ethnicity	12315·80	33·44	5	0·0000*
Female's age at menarche	12331·97	16·55	3	0·0009*
Marriage mediators	12343·23	5·29	2	0·0710
Year-of-birth cohort	12326·10	22·42	4	0·0002*
Residence	12336·53	11·99	1	0·0005*

*Significant.

as independent variables. In brief the Cox proportional hazard model technique is given below:

$$h(t,x)=h_0(t,x)\ \exp(\beta' X)$$

where h_0 $(t,\ x)$ is the baseline hazard, t is the survival time, $X=(x_1,\ x_2\ ,\ ...,\ x_p)$ is a vector of covariates values, $\beta'=(\beta,\ \beta_2,\ \ldots,\ \beta_p)$ is a vector of regression parameters.

The results of univariate hazard model analysis indicate that variables such as socioeconomic status, education, occupation, caste/ethnicity, age at menarche, year-of-birth cohort and residence have a significant effect on the timing of first marriage (Table 2). While carrying out the multivariate analysis, insignificant variables are excluded. The results of the multivariate analysis are presented in Table 3. A relative risk of 1·000 indicates the base line or reference category for each variable. A relative risk greater (or less) than 1·000 indicates high (or low) risk of getting married early in that category as compared with that of the reference category (Aryal, 2002; Aryal & Yadava, 2005).

The proportional hazard model analysis suggests that the variables socioeconomic status, education, caste/ethnicity, year-of-birth cohort and age at menarche are significant determinants of age at first marriage. The estimated regression coefficients for all education categories of females were found to be significant except for the 'lower secondary' category, and thus the risk of getting married decreases as level of education increases. Lower secondary and secondary and higher level educated females respectively have a 15% and 35% lower risk of getting married early than uneducated females. A lower risk of getting married early for educated female may be due to waiting time for schooling, finding an appropriate match and for getting white collar/service jobs. A similar risk of early marriage was found for the illiterate fathers category: about a 37% and 39% lower risk of getting married early was found for lower secondary and secondary and higher father's education categories,

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Table 3. Results of Cox's proportional hazard model analysis for female's age at first marriage according to characteristics of female

Characteristics	Estimated coefficient (*B*)	SE	*p* value	Relative risk Exp (*B*)
Social status				
Low (Ref.)	—	—	—	1·0000
Middle	0·0537	0·0779	0·4907	1·0551
Higher	0·3116	0·0804	0·0001*	1·3656
Economic status				
Low (Ref.)	—	—	—	1·0000
Middle	0·1563	0·0772	0·0429	1·1692
Higher	0·4179	0·0889	0·0000*	1·5188
Female's education				
None (Ref.)	—	—	—	1·0000
Primary	− 0·2357	0·0910	0·0096*	0·7900
Lower secondary	− 0·1528	0·1283	0·2338	0·8583
Secondary & higher	− 0·4156	0·1072	0·0001*	0·6599
Father's education				
None (Ref.)	—	—	—	1·0000
Primary	− 0·1819	0·0757	0·0162*	0·8337
Lower secondary	− 0·4584	0·1438	0·0014*	0·6323
Secondary & higher	− 0·4848	0·1136	0·0000*	0·6158
Female's occupation				
Household work (Ref.)	—	—	—	1·0000
Agriculture & labourer	− 0·1487	0·1133	0·1895	0·8618
Service	− 0·5684	0·2382	0·0170*	0·5664
Student	− 0·1222	0·0742	0·0997	0·8850
Caste/ethnicity				
Brahmin (Ref.)	—	—	—	1·00000
Chhetri	− 0·1429	0·0824	0·0828	0·8669
Gurung/Magar	− 0·4601	0·1177	0·0001*	0·6312
Tharu/Choudhary	0·2097	0·1769	0·2360	1·2333
Kami/Damain	− 0·2943	0·1185	0·0130*	0·7451
Newar	− 0·3312	0·1728	0·0553*	0·7180
Female's age at menarche				
<13 years (Ref.)	—	—	—	1·0000
13–14	− 0·1575	0·1274	0·2164	0·8543
15–16	− 0·2608	0·1335	0·0507	0·7704
17+	− 0·5726	0·1649	0·0005*	0·5641
Year-of-birth cohort				
Before 1965 (Ref.)	—	—	—	1·0000
1965–1969	− 0·2695	0·1016	0·0080*	0·7637
1970–1974	− 0·3066	0·1041	0·0032*	0·7359
1975–1980	− 0·4058	0·1068	0·0001*	0·6664
1981+	− 0·1287	0·1081	0·2337	0·8792
Residence				
Hills (Ref.)	—	—	—	1·0000
Tarai	− 0·0118	0·0745	0·8744	0·9883
− 2 log likelihood = 12348·52; model $\chi^2 = 193·66$, df = 26				

Ref.: reference category.
*Significant.

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respectively, as compared with uneducated fathers. Education showed an inverse association with the decision of first marriage, which is consistent with the results of other studies (Aryal, 2005d, 2006).

The coefficient for the Magar/Gurung and Kami/Damai caste categories was found to be significant and indicates that females from these categories have, respectively, about 37% and 25% less risk of getting married early than those from the Brahmin caste. The higher risk of getting married early for Tharu/Choudhary caste females may be due to illiteracy and belonging to the labourering class, as well as enjoying the *Kamaiya* occupation (working throughout life in the landlord's house); to fulfil the demands of this work females get married at an early age (Aryal, 2002, 2004a). The lower risk of getting married early among Gurung/Magar caste females may be due to a lack of cultural restriction to marriage, increasing economic activities and greater access to cities and towns. Society is likely to modernize with greater female autonomy in choosing partners compared with Brahmin caste females. However, cultural and societal functions (such as *rodhi-ghar* and *dhan-nach* where young boys and girls enjoy singing and dancing) are generally declining (Macfarlane, 2003), so the traditional of early marriage practices are changing drastically over time (Aryal, 2005a).

The relative risk ratio decreased with increasing age at menarche. Females whose menarche occurred at the ages of 13–14, 15–16 and 17 years and above had, respectively, 15%, 23% and 44% less risk of getting married early than those whose menarche occurred at the age of less than 13 years. The risk of getting married early decreased gradually with increasing year-of-birth cohort, except for the birth cohort 1981+. This may perhaps be due to heavy censoring of cases in this cohort. However, about 23% less risk of getting married early was found for females of birth cohort 1981+. The decreases over time in the risk of early marriage may be due to the spread of female education, increasing awareness and female autonomy, and the greater knowledge of the disadvantages of early marriage among the younger generation than among the older generation. Further, younger females are marrying at later ages and some are contributing to the decision of when and whom to marry (Choe *et al.*, 2004). Modernization, such as residing in urban/towns or greater access to the towns/cities and higher levels of education and occupation, are associated with a lower risk of early marriage for the younger generations than for the older generation (Aryal, 2005a).

The risk of getting married early was found to be higher for high socioeconomic status females compared with low socioeconomic status females. This may be due to the fact that marriage customs are more rigid in the high caste community, i.e. in Brahmin castes, where girls are supposed to marry before menarche (Aryal, 2004a). After menarche, a girl ceases to be a *Kanya* (virgin) and according to the Hindu code of conduct to acquire *Punya* (merit), i.e. to have a place in heaven after death, one should give *Kanya-Daan* (donation of virgin). The search for partners starts at an early age among high socioeconomic status families as the marriage market is limited due to rigid cultural and social practices of marriage, especially among Brahmin castes (Aryal, 2002). Some caste/ethnic groups have a *Daijo* system where property is given to a married daughter by their parents (also known as a *Dowry* system). There are no such problems for arranging a marriage at any time for girls belonging to high

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socioeconomic status group. The religious and prestige motivation of high socioeconomic status families to get their daughters married at an early age – preferably before menarche – also matters (Aryal, 2004a, 2006). A 43% lower risk of getting married early was found for females engaged in service compared with those engaged in household work.

Conclusions

The median age at marriage based on all females (married as well as unmarried, i.e. censored cases) was found to be higher than that based on married females only for all categories. The variables education, caste, socioeconomic status, year-of-birth cohort and age at menarche were found to be significant determinants of female's age at first marriage. The risk of getting married early decreased with increased level of education. A lower risk of getting married early was found among females belonging to the Magar/Gurung and Kami/Damain caste/ethnicity than those of the Brahmin caste. The risk of getting married early decreased gradually with increasing year-of-birth cohort. It was found to be higher among females of high socioeconomic status compared with those of low socioeconomic status. Females engaged in service are likely to be married later than those engaged in household work. High socioeconomic status families are motivated, for religious and prestige reasons, to get their daughters married at an early age, preferably before menarche. Education, occupation and age at menarche are the most powerful factors in deciding the timing of first marriage.

This study implies that the best way to raise the female age at first marriage is to increase the level of education among girls. It is suggested, therefore, that special programmes should be formulated and implemented to improve the literacy and educational status of rural people. In addition to formal education, programmes of informal education may also be helpful to make people aware of the risks and consequences of early marriage. Besides these, females should be encouraged to participate in economically productive activities, which will help them to generate income, as well as increase autonomy and empowerment. To lessen the rigid religious and cultural values regarding early marriage, a mobilization programme through the mass media might also be helpful.

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