

Some Biological and Reproductive Aspects of Married Women Born in Palestine Over the Period 1920-1969

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ABSTRACT

Objective: Evaluating variations in a number of reproductive aspects among married
Palestinian women, over a period of 50 years.

Method: A questionnaire with the necessary information, was distributed to 1200
married Palestinian women, of whom 1044 responded. Illiterate women were
interviewed by the researchers.

Results: The majority of women (91 %) were younger than their husbands, compared
to 5% where the husband was younger. Spousal age difference at marriage was vast;
over 7 years. The mean age of marriage for men and women was 26.75 and 19.7
years, respectively. The educational level showed major differences between spouses.
Illiteracy rate was 13 % for females, and less than 5 % for males. One quarter of the
husbands and 17.8% of wives achieved primary level education; the ratios for
intermediate and high schooling achievement were 42.2% and 47.7%, respectively.
About 70.3% of marriages were non-consanguineous, 19.2% first cousins-paternal
side, 8.2% first cousins-maternal side, and 2.3% were from the family. The mean age
menarche for all women was 13.5 years.

Conclusion: Palestinian men prefer to wed women considerably younger than their age. The progressive level of education indicates great achievements for women, particularly since the mid-1970s. Contrary to public presumptions, most marriages were non-consanguineous.

Keywords: Age at marriage, educational level, consanguineous marriages, menarche.

INTRODUCTION

The past two decades witnessed dramatic changes in attitudes regarding women issues, particularly in the Arab Countries. There was a special emphasis on matters related to women's health ¹⁻³, educational attainment ^{1,2,4}, fertility rate ^{2,4,5}, population growth and family planning ⁶⁻⁹, as well as the participation of women in politics, economy, and their ratio in working force ^{4,10,11}.

The age at which women marry is influenced by several demographic, social, cultural, educational and economical factors. For example, rural women tend to marry at younger ages than their urban counterparts ¹². Uneducated women tend to marry at an earlier age, and the age gap becomes progressively wider as their educational level becomes higher. In one study, 77% of the illiterate Egyptian women were married by the age of 20, compared with 13% who had obtained more than primary level education ³. Another study in Morocco found the mean marital age for uneducated women to be 17.8 years compared with 24.9 years for women with secondary level education ¹³.

Differences in the age at marriage between men and women have narrowed over the past decades in many countries in Africa, Asia, Latin America, the Caribbean, as well as in Europe and Northern America ¹². For example, two recent studies in the USA showed that girls marry two years younger than their spouses ^{14,15}. On the other hand, although many Arab states witnessed reduction in marital age differences, yet they did not match those reported in the Western States. Studies in the Arab world indicated that on the average, Arab women marries by the age of 22 years, whereas Arab men marry at the age of 27 years ⁹. Nigerian women marry 5 years earlier than men; 18 years and 23 years, respectively ¹⁶.

Regarding the literacy issue, studies suggested that many Arab countries have succeeded in reducing illiteracy rates by 50% during the 1970s and 1980s. For example, in 1971, the illiteracy in Bahrain reached 46.36% and 76.11% in males and females, respectively. However, these rates were reduced to 13% in males and 29% females 1991⁹.

Many studies have discussed the various aspects of consanguineous marriages; their ratios in comparison with other marriages in the society, and the controversy about their adverse effects on health of the off springs ¹⁷⁻²².

The present study aims to examine a number of components that influence the human reproductive biology in Palestine, and the changes that took place over a period of 50 years. These include the following aspects:

1. Average age at marriage and spousal age differences.
2. Time-related changes in educational attainment of husbands and wives.
3. Percentage of consanguineous marriages among Palestinian population.

MATERIALS AND METHODS

Over a twelve month period (mid-1990 until mid-1991), a total of 1200 questionnaires were distributed by fourth year trained female biology students, An-Najah National University, to currently married or ever married Palestinian women. The number of women responded were 1044 (response rate = 87%). Women were living in the city of Nablus, West Bank, or the neighboring villages and refugee camps. The age of women ranged from 20-70 years.

Women were divided into five groups, according to their year of birth. Group I included women who were born during 1920-1929. Group II were born in 1930-1939; Group III were born in 1940-1949; Group IV born in 1950-1959; and Group V comprised women born during the years 1960-1969.

Spousal age differences at the time of marriage, was considered for the sample as a whole, and for each of the five groups. In addition, the percentage of: husband being older, wife being older, or same age spouses, were also evaluated.

Formal education was measured as the highest level of schooling attended by spouses.

Spouses were sorted out into seven educational levels:

- a). Level (0) consists of spouses with no formal education.
- b). Level (1) included spouses with primary education (1-6 years of schooling).
- c). Level (2), those with intermediate education (7-9 years of schooling).
- d). Level (3), high school education (10-12 years).
- e). Level (4), college educated spouses (14 years).
- f). Level (5), university educated mates (16 years of study); and
- g). Level (6) included couples with postgraduate education (Masters or Ph.D.).

The percentages of consanguineous marriages to all marriage were calculated,

and the influence of the area of residence (city, rural area, or refugee camp) on spousal kinship was also evaluated.

RESULTS

Mean Age At Marriage

The mean age at marriage for Palestinian men and women is shown in Table 1. With the exception of Group III husbands and Group IV wives which are significantly higher than all other marital groups ($P < 0.001$), no significant differences were found between the various age groups since the early 1920s. The mean age of marriage for all women in the sample was 19.70 years, compared with 26.75 years for all husbands. The mean marital age ranged from 19.07 to 20.54 years for women, and from 26.32 to 27.88 years for their husbands.

The area of residence seems to have little effect on the marital age of couples living in urban and rural areas. Urban mean marital age was 19.79 years for women and 27.70 years for men, compared with 19.99 years and 26.28 years for women and men in the rural areas, respectively. On the other hand, the mean marital age for spouses in refugee camps was significantly lower ($P < 0.001$) than that reported in the city or the rural areas. It was 18.99 and 24.65 years for women and men, respectively (Table 2).

Spousal Age Differences

The husband-wife age variances at the time of marriage, are shown in Table 1. Men were older in 90.9% of all marriages, whereas women were older in only 5%. Both spouses had the same marital age in 4.1% of the sample. Moreover, significant variations were reported by the five women groups, regarding spousal age differences; with Group IV reporting the lowest age difference (5.90 years), and Group III having the highest (8.12 years). Overall, husbands were older by an average of 7.05 years.

Educational Level

Table (3) shows the mean educational level for Palestinian spouses. As one might expect, women's educational levels were significantly ($P < 0.001$) lower than their male counterparts in all age groups. Overall, husbands attended 1.22 years of study more than their wives, with Group I women reporting the highest educational difference (3.67 years). As time advanced, this educational gap started narrowing, until it reached its lowest value (0.27 years) in Group V. On the other hand, the jump in educational attainment reported by the wives, was significantly higher than that recorded for their male counterparts; 8.26 years versus 5.86 years, respectively.

Large differences were found when the educational level was considered for each marital group separately (Table 3). Whereas 70 % of Group I women were uneducated, only 2% of Group V were so. However, the variations in educational level for the husbands, were much less drastic than their wives. Only 10 % of Group I and 2.5% of Group V males were without education. The highest level of education attended by Group I husbands was the secondary school, compared with primary schooling for the wives. This is contrasted by postgraduate studies and university education for Group V husbands and wives, respectively.

Spousal Consanguinity

The percentages of spousal consanguinity for the various groups and locations of Palestinians are shown in Table 5 and 6. Overall, 70.3 % of the married couples were non-consanguineous, 27.4 % were first cousins, and only 2.3% were from the same family. The percentage of women who were married to their first cousin

(paternal side), was more than double those who got married to their first cousins maternal side.

When husband-wife consanguinity was correlated with the residential area, substantial differences were found between city spouses on one side, and spouses dwelling rural areas and refugee camps on the other side. Our data indicate that 80% of city dwellers were non-consanguineous, contrasted by 61.6% of those dwelling the rural areas, and 54.9% of the spouses living in the refugee camps (Table 6).

Age At Menarche

Table (7) demonstrates the ratios of women reaching menarche age. The mean age of menarche for women in Group I was higher than all other groups. The vast majority (84.4%) of the women in our sample reached menarche when they were 12 to 15 years of age. A small percentage reached puberty by the age of 11 (6.1%), or after the age of 15 years (9.3%). The mean menarche age was $13.5 \pm \dots$ years for all women. Except for Group I women, the variations between women groups regarding the age of menarche are very small and insignificant.

DISCUSSION

Age At Marriage

The mean age at marriage for Palestinian women (Table 1) was found to be higher than that reported in a number of African and Arab countries. For example, Nigerian and Zimbabwean girls marry by the age of 18^{16,23}, and women in Djibouti and Oman marry when they are 19 years old¹³. On the other hand, the mean marital age for the women in this study, is substantially lower than that reported for women in

many European countries, as well as in a number of Arab countries. A study conducted in 12 Western and Northern European countries in the mid-1980s, indicated that the mean age at marriage ranged from 23.0 to 27.4 years²⁴. Among the Arabs, Tunisian women have the highest age at first marriage among all Arab women (26 years), followed by Lebanese and Qatari women (25 years each)¹³. Kuwaiti women marry by age 23.5²⁵, Jordanians by age 21.5²⁶, Somalian, Mauritanian, Libyan, and Comorosan women by age 20¹³. Among non-Arabs women, the mean age of marriage was 22.8 years in East Germany and Poland²⁴, 21.9 years in Ecuador²⁷, and around 21.6 for women in Bulgaria, Czechoslovakia and Hungary²⁴.

Variations in the mean age at marriage of Palestinian women demonstrated by this study were marginal (Table 1). This is contrasted by a sharp jump in the mean age at marriage among Kuwaiti women, which elevated, from 18.9 years in 1965 to 23.5 years in 1995²⁵. Likewise, Jordanian women aged 15-49 years experienced an increase of marital age in a short period of time, from 19.6 years in 1990 to 21.5 years in 1997²⁶. Among European countries and over a 25 years period (1960-1985), the age at marriage was almost unchanged in six countries, but changed 0.5 to 1.4 years in nine countries, and over 3.0 years in only two countries²⁴.

Spousal Age Differences

The significant age variations exhibited in Table (1) are influenced by regional economical stability. The 1940s witnessed several Arab-Israeli conflicts that lead to mass migration of hundreds of thousands of Palestinians from their homeland (Palestine). This caused severe hardship in the following two decades for all Palestinians, pushing the age of marriage for men to its highest point (27.88 years).

Consequently, Group III spousal age differences jumped to 8.12 years. In contrast, the lowest age difference (5.90 years) was reported for women born in the 1950s (Group IV). Most of these women got married in the 1970s, when the financial condition for most Palestinians improved substantial, as a result of work opportunities in the oil-rich Gulf States.

Spousal age differences for Palestinians is higher than the five year difference reported for most Arab countries, but it is lower than the eight years gap recorded in Djibouti and Mauritania ^{9.13}. Moreover, the average age at marriage for Palestinian males (26.75 years) is slightly lower than their counterparts in the Gulf States (27 years), but quite lower than that found in the North African block (28 years), or that of Sudan, Morocco and Tunisia (29 years each). On the opposite side, it is substantially higher than the mean marital age reported for men in Yemeni (24 years) and Nigeria (23 years) ^{9.13.16}.

Educational Level

As Table (4) shows, 13% of the Palestinian women in our study were illiterate. This is the lowest illiteracy ratio amongst all Arab countries. For example, adult female illiteracy rate were: 19.9 % in Lebanon, 23.0 % in Bahrain, 24.9 % in Jordan, 27.5 % in Qatar, 30.6 % in Kuwait, 31.3 % in ULA, 32.8 % in Saudi Arabia, 34.0 % in Iraq, 45.9 % in Oman, 63 % in Syria, 69.4 % in Egypt, 76.2 % in Yemen ²⁸, and 86 % in Somalia ¹³. Likewise, the illiteracy rate among adult Palestinian males was 4.6%, which is the lowest among prevailing levels of their Arab counterparts. Adult male illiteracy rate was found to be 9.2% in Jordan; 11.4% in Bahrain; 12 % in Saudi Arabia; 12.7% in Lebanon; 13.2% in Kuwait; 21.6% in Oman; 23.2% in Qatar; 23.4%

in Iraq; 26.4 % in Syria; 27.7 % in UIA; 36.5 in Yemen; and 42.5% Egypt ²⁸.

Among Non-Arab countries, the rate of illiteracy for Ecuadorian women was 12.8% in 1983 ²⁷, 14 % for Zimbabwean women in 1982 ²³, and 26 % for Indonesian females aged 10 years or older was in 1985 ²⁹.

We believe that the hardship endured by the Palestinian population caused by several major wars, and the unprecedented mass migrations, were the driving forces behind these very high rates of literacy prevailing among Palestinians.

The very high rate of literacy among Palestinians was matched by very high levels of educational attainment, the highest among all Arab populations. The educational levels were 9.83 years for males and 8.66 years for females (Table 3). These levels were even higher for wives born during the 1930s and their husbands; 10.54 years and 10.81 years, respectively. Among the Kuwaiti population, the educational levels were 8.40 years for the wives and 9.6 years for their husbands ²⁵.

Spousal Consanguinity

The relationship between consanguinity and infant and child mortality has been suggested by a number of studies ³⁰⁻³². Among the Arab communities, reports have indicated that most women in the rural areas, have their husbands chosen for them long before their marriage. Often, parents select a first cousin, deemed to be the most appropriate choice for perpetuating a family's lineage ⁹. Similarly, consanguineous marriages are very common in Pakistan. The practice is deeply rooted in Pakistani culture, dating back several centuries ³².

Contrary to the general conviction, the present study indicates that the rate of consanguinity among Palestinians is low (27.4 %) rather than being high (Table 5),

and that it is substantially lower than the rates reported in several other Arab and developing societies. For instance, 51% of the marriages in Jordan were consanguineous³³. Likewise a study conducted in Dammam city, Eastern Province (Saudi Arabia) found the rate of consanguineous marriage to be 52.0%²². In another study conducted during the early 1990s in urban areas of Punjab Province (Pakistan), 50 % of the marriages were between first and second cousins^{32, 34}. High rate of consanguineous marriages are widespread in India, Israel, Japan, Brazil and the Arab World, whereas very low rate (1-2%) prevail in the USA and in Europe³⁵.

On the other hand, our study shows that consanguinity correlated well with the residential area. Only 20% of the marriages in city were consanguineous, contrasted by 38.4% of the marriages in the rural areas, and 45.1 % in the refugee camps.

Age at Menarche.

The mean age of menarche was found to be 13.5 years for all women in our sample. However, no significant differences in the age at menarche were found between the various age groups of women in our sample. The age at menarche in our study is lower than that reported for Nigerian women (13.60)³⁶, Sri Lankan women (13.78)³⁷, American women athletes (13.81)³⁸, and Sudanese girls (13.91)³⁹, but it was higher than that reported for girls in the USA (12.44)⁴⁰, Italy (12.48)⁴¹, India (12.50)⁴², southern Iran (12.91)⁴³, France (13.02)⁴⁴, or Belgium (13.20)⁴⁵.

REFERENCES

1. United Nations Children's Fund (UNICEF). Women and children in the Arab Maghreb. Amman: United Nations Children's Fund, Regional Office for the Middle East and North Africa. 1993.
2. World Bank. Republic of Yemen, health sector review. A World Bank Country Study. Washington, D.C.: World Bank. 1994.
3. United Nations. The world's women, 1995: Trends and statistics. Social Statistics and Indicators, Series K, No.12. Sales No. E. 95. XVII. 2. 1995; 7-8.
4. United Nations. Economic and Social Commission for Western Asia (ESCWA) and the Center of Arab Women for Training and Research (CAWTAR). Arab Women Statistical Database (E/ESCWA/STAT/ 1995/14). 1995.
5. United Nations. Economic and Social Commission for Western Asia (ESCWA). Population situation in the ESCWA region (E/ESCWA/POP/1992/6). 1990.
6. AL-Sekait, M. A. Prevalence of contraception used among Saudi Arabian women. Saudi Med J 1999, 20(9). 687-690.
7. International Bank for Reconstruction and Development, Effective Family Planning Programs (Washington, D.C.: World Bank). 1993; 2.
8. Mahmoud, F.M.S. Contraceptives used by Palestinian women in the past five decades. *Al-Balqa' J* 1997; 5 (1): 85-104.
9. Arab Women 1995: Trends, Statistics and Indicators. United Nations Publication. (E/ESCWA/STAT/1997/3). Sales No. 97.II.L.12. 1997; 11-13.
10. United Nations. The world's women, 1995: Trends and statistics. Social Statistics and Indicators, Series K, No.12. Sales No. E. 95. XVII. 2. 1995; 108-117.
11. Peterson.J.E. The political status of women in the Gulf States. *Middle East J* 1989; 43: 35-36.
12. Reproductive Rights and Reproductive Health: A Concise Report. United Nation Publication, Sales No. E.96.XIII.11. New York. 1996; 4-11.
13. Arab Women 1995: Trends, Statistics and Indicators. United Nations Publication. (E/ESCWA/STAT/1997/3). Sales No. 97.II.L.12. 1997; 69-89.

14. Darroch, J.E., Landry, D.J., and Oslak, S. Age Differences Between Sexual Partners In the United States. *Fam Plann Perspec* 1999; 31(4):160-167.
15. National Center for Health Statistics (NCHS), Vital Statistics of the United States, 1987: Vol. III--Marriage and Divorce, Washington, DC: U.S. Government Printing Office. 1991; Table 1-10.
16. Goody, J. Futures of the Family in Rural Africa. In "Rural Development and Population: Institutions and Policy". G. McNicoll and M. Cain (eds.). A Supplement to Vol. 15, 1989. Population and Development Review. 1990; 127.
17. Magnus, P., Berg, K., and Bjerkedal, T. Association of parental consanguinity with decreased birth weight and increased rate of early death and congenital malformations. *Clin Genet* 1985; 28: 335-42.
18. Devi, A.P.R., Rao, N.A., and Bittles, A.H. Inbreeding and the incidence of childhood genetic disorders in Karnataka, South India. *J Med Genet* 1987;24: 362-5.
19. Khat, K., and Khoury, M. Inbreeding and Diseases: Demographic, Genetic and Epidemiologic Perspectives. *Epidemiol Reviews* 1991; 13: 28-41.
20. Martinez-Frias, M.L., and Bermejo, E. Prevalence of congenital anomaly syndromes in a Spanish gypsy population. *J Med Genet* 1992; 29: 483-6.
21. Bittles, A., Grant, J., and Shami, S. Consanguinity as a determinant of reproductive behaviour and mortality in Pakistan. *Int J Epidemiol* 1993; 22: 463-7.
22. al-Abdulkareem, A.A., and Ballal, S.G. Consanguineous marriage in an urban area of Saudi Arabia: rates and adverse health effects on the offspring. *J Commun Health* 1998; 23(1): 75-83.
23. Child Survival, Health and Family Planning Programmes and Fertility. UNITED NATIONS PUBLICATION. Sales No. E.96.XIII.9. 1996; 71-88.
24. Macura, M., Adams, E., and Holzer-Zetazewska, D. Changing patterns of first marriage, divorce and remarriage in Europe and North America. In "Aging and the Family". United Nations Publications. Sales No. E.94.XIII.4. 1994.

25. Shah, N.M., Shah, M.A., and Radovanovic, Z. Patterns of Desired Fertility and Contraceptive Use in Kuwait. *Internat Fam Plann Perspec* 1998; 24(3): 133-138.
26. Jordan Population and Family Health Survey (1997). Department of Statistics (DOS). Jordan and Macro International Inc. (MI). 1998. Summary Report. Calverton, Maryland: DOS and MI.
27. United Nations. Child Survival, Health and Family Planning Programmes and Fertility. (Sales No. E.96.XIII.9). New York. 1996; 12-19.
28. United Nations Economic and Social Commission for Western Asia (ESCWA). Youth in the urban environment in the ESCWA region (E/ESCWA/HS/1997/7). New York, 1998.
29. Child Survival, Health and Family Planning Programmes and Fertility. UNITED NATIONS PUBLICATION. Sales No. E.96.XIII.9. 1996; 43-53.
30. Bittles, A.H., Grant, J.C. and Shami, S.A. An evaluation of consanguinity as a determinant of reproductive behaviour and mortality in Pakistan. *Internat J Epidemiol* 1993; 22: 463-467.
31. Khan, S.R., Jalil, F., Zaman, S., Lindblad, B.S. and Karlberg, J. Early child health in Lahore, Pakistan: X, mortality. *Acta Paediat* 1993; 390 (Suppl.) 109-17.
32. Shami, S.A., Grant, J.D. and Bittles, A.H. Consanguineous marriage within social/occupational class boundaries in Pakistan. *J Biosoc Sci* 1994; 26: 91-96.
33. Khoury, S. A. and Massad, D. F. Consanguinity, fertility, reproductive wastage, infant mortality and congenital malformations in Jordan. *Saudi Med J* 2000; 21(2): 150-154.
34. Bittles, A.H. The role and significance of consanguinity as a demographic variable, *Pop Develop Review* 1994; 20: 561-84.
35. Pillai P. G., and Kariavattam P.O. Risk in consanguineous marriages. *The Hindu* 16-07-1998; 26.
36. Fakeye, O. The interrelationships between age, physical measurements and body composition. *Int J Gynaecol Obstetr* 1985; 23: 55-8.

37. Prakash, S., and Pathmanathan, G. Age at menarche in Srilankan Tamil girls in Jaffna. *Ann Hum Biol* 1984; 11: 463-6.
38. Malina RM, Ryan RC, Bonci CM: Age at menarche in athletes and their mothers and sisters. *Ann Hum Biol* 1994; 21: 417-22.
39. Attallah, N.L., Matta, W.M., and El-Mankoushi, M. Age at menarche of schoolgirls in Khartoum. *Ann Hum Biol* 1983; 10: 185-8.
40. Hediger M, Stine RA: Age at menarche based on recall information. *Ann Hum Biol* 1987; 14: 133-42.
41. Gueresi P: Monthly distribution of menarche in three provinces of North Italy. *Ann Hum Biol* 1997; 24: 157-68.
42. Ckakraborti, I., and Kumarsinha, A. Declining age at menarche in West Bengal. *J Ind Med Assoc* 1991; 89: 10-13.
43. Ayatollahi S.M.T., Dowlatabadi, E., and Ayatollahi S.A.R. Age at menarche and its correlates in Shiraz, southern Iran. *Iran J Med Sci* 1999; 24(1&2): 20-25.
44. Crognier, E., Tavares, D.M. Age at menarche in rural France. *Ann Hum Biol* 1979; 6: 167-9.
45. Wellens, R., Malina, R.M., Beunen, G., and Lefevre, J. Age a menarche in Flemish girls: Current status and secular change in the 20th century. *Ann Hum Biol* 1990; 17: 145-52.

Table (1). Husband/wife age difference at marriage.

Women age groups (year of birth)	Sample No.	Husband older (%)	Wife older (%)	Same age (%)	Husband older (years) Mean \pm SD	Mean marital age (years)	
						Wife	Husband
Group I (1920-9)	40	75.0	25.0	0.0	7.00 \pm 7.20	19.75	26.75
Group II (1930-9)	94	85.1	4.3	10.6	6.70 \pm 5.34	19.53	26.32
Group III (1940-9)	214	90.7	3.7	5.6	8.12 \pm 5.96	19.76	27.88
Group IV (1950-9)	298	88.6	6.7	4.7	5.90 \pm 4.77	20.54	26.44
Group V (1960-9)	398	95.5	2.5	2.0	7.41 \pm 15.13	19.07	26.48
Total	1044	90.9	5.0	4.1	7.05\pm7.67	19.70	26.75

Table 2. Mean age at marriage and spousal age differences between urban and rural areas.

Location	Sample No. (%)	Husband age (Mean \pm SD)	Wife age (Mean \pm SD)	Mean Spousal age difference in years
City	560 (53.6)	27.70 \pm 5.49	19.79 \pm 4.52	7.91
Village	298(28.5)	26.28 \pm 6.71	19.99 \pm 4.82	6.29
Refugee camp	186(17.9)	24.65 \pm 4.68	18.99 \pm 3.98	5.66
All locations	1044 (100)	26.75 \pm 5.63	19.70 \pm 4.73	7.05

Table 3. Mean educational level and educational gap between Palestinian spouses by the number of years studied.

Women age groups (year of birth)	Sample No.	Husband educational level (Mean \pm SD)	Wife educational level (Mean \pm SD)	Mean educational gap (years)
Group I (1920-9)	40	4.95 \pm 2.82	1.28 \pm 2.16	3.67
Group II (1930-9)	94	6.43 \pm 4.24	4.04 \pm 3.81	2.39
Group III (1940-9)	214	8.30 \pm 4.62	6.79 \pm 4.56	1.51
Group IV (1950-9)	298	11.50 \pm 4.74	9.93 \pm 4.60	1.57
Group V (1960-9)	398	10.81 \pm 4.01	10.54 \pm 3.50	0.27
All Groups	1044	9.83 \pm 4.23	8.61 \pm 4.14	1.22

Table 4. Percent distribution of educational levels for both spouses by birth groups of the wives.

Educational Level*	Group I**		Group II		Group III		Group IV		Group V		All Groups	
	% H	%W	% H	%W	% H	%W	% H	%W	% H	%W	% H	%W
0	10.0	70.0	12.8	38.3	6.5	16.8	2.7	8.1	2.5	2.0	4.6	13.0
1	75.0	30.0	51.1	38.3	43.0	34.6	14.7	10.7	12.6	9.0	25.3	17.8
2	5.0	0.0	14.9	17.0	14.9	22.4	24.8	25.5	25.6	28.2	21.5	23.8
3	10.0	0.0	12.8	4.2	16.8	12.1	17.5	24.2	28.1	37.2	20.7	23.9
4	0.0	0.0	4.2	2.1	10.3	13.1	9.4	18.8	15.1	11.5	10.9	12.6
5	0.0	0.0	4.2	0.0	6.5	0.9	26.8	12.8	14.1	13.1	14.9	8.8
6	0.0	0.0	0.0	0.0	1.8	0.0	4.0	0.0	2.0	0.0	2.3	0.0
Sample No.	40		94		214		298		398		1044	

* Educational Level : (0) without formal education; (1) Primary schooling; (2) Intermediate schooling; (3) Secondary schooling; (4) College; (5) University; and (6) Postgraduate.

** H and W are abbreviations for husbands and wives, respectively.

Table 5. Percentage of spousal consanguinity indicated by age groups.

Women age groups (Year of birth)	% non- consanguineous	(%) First cousins		(%) From the family
		Father side	Mother side	
Group I (1920-9)	60	30	10.0	0.0
Group II (1930-9)	70.2	19.1	8.5	2.2
Group III (1940-9)	70.1	21.5	5.6	2.8
Group IV (1950-9)	73.1	14.8	8.7	3.4
Group V (1960-9)	69.3	20.1	9.0	1.5
All groups	70.3	19.2	8.2	2.3

Table 6. Regional distribution of marriages at different degrees of consanguinity.

Location	Sample No.	% of Non – consanguineous marriages	% First cousins		% From the family
			Father side	Mother side	
City	560	80.0	12.1	6.1	1.6
Village	298	61.6	24.2	10.7	3.5
Refugee camp	186	54.9	32.5	10.3	2.3
All locations	1044	70.3	19.2	8.2	2.3

Table 7. Percentage of women reaching puberty expressed as menarche age and women age groups.

Women age groups	Percentage of women reaching puberty by age							Mean age at menarche (Mean \pm SD)
	11 yr	12 yr	13 yr	14 yr	15 yr	16 yr	17 yr	
Group I	5.0	15.0	25.0	20.0	20.0	15.0	0.0	13.8 \pm 1.45
Group II	6.4	25.5	23.4	27.7	8.5	8.5	0.0	13.3 \pm 1.35
Group III	8.4	26.1	18.7	20.6	18.7	6.5	0.9	13.4 \pm 1.47
Group IV	8.1	20.1	21.5	24.1	15.4	8.1	2.6	13.5 \pm 1.50
Group V	3.5	15.1	31.6	27.1	13.6	8.0	1.0	13.6 \pm 1.27
All groups	6.1	19.7	25.1	24.7	14.9	8.0	1.3	13.5 \pm 1.32