CONSANGUINITY TRENDS AND CORRELATES IN THE PALESTINIAN TERRITORIES

SHIREEN ASSAF* AND MARWAN KHAWAJA*†

Department of Epidemiology and Population Health, American University of Beirut, Lebanon and †Center for Research on Population and Health, American University of Beirut, Lebanon

Summary. Secondary analysis of the trends and correlates of consanguinity in the Palestinian Territories was conducted using data from two separate surveys in 1995 and 2004. The analysis was conducted on ever-married women aged 15–54 who were asked about their relation to their husband in both surveys. A total of 16,197 women in 1995 and 4971 women in 2004 were successfully interviewed. Consanguinity was found to be widely practised in the Palestinian Territories with rates of total consanguinity reaching 45% of all marriages in 2004. Analysis was conducted with the data from the two surveys combined and this indicated that consanguinity was significantly decreasing with time after controlling for other variables. Age of the women, their age at marriage, region and locality type they lived in and their standard of living were all found to be significant predictors of consanguinity. The education level of the women was not found to be significant. After controlling for the survey year, women's labour force status was also found to be a non-significant predictor of consanguinity. Although consanguinity was found to be significantly decreasing slowly with time after controlling for other variables, the future trends of consanguinity are not known due to the unstable political situation in the territories, which could have a direct effect on marriage patterns.

Introduction

Consanguineous marriages, or marriages between close relatives, are widely practised in many parts of the world, particularly in the Middle East (Bittles, 2006). Globally the highest rates are found in sub-Saharan Africa, the Middle East and the Gulf, although many countries where consanguineous marriages are expected to occur have no information regarding their rates (Bittles, 2006). Over 60% of marriages are between first cousins in some parts of Egypt, but first cousin marriages can even be found in the countries of the Americas and Europe, mostly at a rate of less than 2% (Bittles, 2006).

There are differences in the types of consanguineous marriages globally. While uncle–niece marriages are practised in some parts of Asia, particularly India where it can reach between 23 and 34% of consanguineous marriages (Verma *et al.*, 1992; Nath & Patil, 2004), this type of marriage is prohibited in Islam and would not be found in Muslim countries (Bittles *et al.*, 1991; Bittles, 2006). The most common type of consanguineous marriage in Muslim countries is first cousin marriage, especially to the father brother's daughter (Barth, 1954; Bittles *et al.*, 1991; Bittles, 2006). Other types include double first cousin, other cousin or marriages of relatives from the same clan or extended family (Bittles *et al.*, 1991; Bittles, 2006).

In the Middle East region, population-based surveys have found total consanguinity rates as high as 65% in Sudan (56% first cousins) (PAPchild, 1995) and 61% in Mauritania (43% first cousins) (PAPchild, 1992) and as low as 25% in Lebanon (15% first cousins) (PAPFAM, 2004). Almost between these two extremes lies the Palestinian Territories of the West Bank and Gaza Strip, where the rate of consanguineous marriages was 45% in 2004, with 28% first cousin marriages.

There are negative and positive aspects to consanguineous marriages. Many studies have found that consanguineous marriages can cause in their offspring increased risk of congenital disorders and certain diseases (Hamamy & Al-Hakkak, 1989; Verma *et al.*, 1992; Abdulrazzaq *et al.*, 1997; Bener & Hussain, 2006), decrease in birthweight of newborns (Mumtaz *et al.*, 2007), increased risk of spontaneous abortions and stillbirths (Hussain, 1998a, b; Yassin, 2000; Mokhtar & Abdel-Fattah, 2001; Banerjee & Roy, 2002) and even increased risk of infant and child mortality (Verma *et al.*, 1992; Tuncbilek & Koc, 1994; Shah *et al.*, 1998; Stoltenberg *et al.*, 1999; Pedersen, 2000). In Palestine, a study on the health effects of consanguineous marriage based on birth history data from the 1995 Demographic and Health Survey indicated a higher risk of child and infant mortality that is increasing over time in consanguineous marriages (Pedersen, 2000). Another study on Palestinians found significantly higher reading disabilities in children with consanguineous parents (Abu-Rabia & Maroun, 2005). However, in countries where consanguineous marriages are commonly practised, this type of marriage may have many advantages, including reduced dowry expenses, maintenance of family property, increased compatibility of the bride with her mother-in-law and also simply because it is seen as the norm (Barth, 1954; Bittles *et al.*, 1991; Raz & Atar, 2004; Bener & Alali, 2006).

Little is known about trends in consanguineous marriage in contexts where this kind of marriage is highly prevalent. Most of the available evidence is descriptive in nature, and relies on evidence from a single survey. This paper examines the trends of consanguinity in the Palestinian Territories as well as the factors that can predict this type of marriage using data from two household surveys conducted in 1995 and 2004. Consistent with the modernization thesis (Givens & Hirschman, 1994), it is expected that women who are older, who married at a young age, who have a lower education level, who live in rural areas and who are out of the labour force are more likely to be in consanguineous marriages. It is also expected that consanguinity decreases over time net of demographic and socioeconomic characteristics of women.

The setting

The Palestinian Territories has extraordinary demographic, economic and political conditions that can have a direct bearing on the social fabric of Palestinian society, including marriage dynamics. The Palestinians have encountered many occupations and conflicts in their history: from being occupied by the Ottoman Empire for centuries, to coming under a British mandate and the current Israeli occupation (Heiberg & Ovensen, 1994). Currently, the increasing Israeli settlement expansion in the West Bank with the Israeli control over the Jordan Valley, and the construction of the Separation Wall which began in July of 2002, have left the Palestinians with 12% of historical Palestine with no geographic continuity (NAD, 2005; PMG, 2005a).

The Palestinian Territories consists of two geographically separate regions – the West Bank and Gaza Strip – and has an area of 6020 square kilometres (PCBS, 2006a) and a projected population of nearly 4 million by the end of 2006 (PCBS, 2006b). The Palestinian population is a very young one with an estimated 45·7% of the population being under 15 years of age by the end of year 2006 (PCBS, 2006b). This young age structure of the Palestinian population is a reflection of the persistently high fertility of Palestinians. Between 1967 and 1987 the total fertility rate (TFR) of Palestinians was about seven children per women on average, but the rate peaked in 1991 at eight children per woman, which was mostly attributed to the rise of fertility especially in the Gaza Strip during the first Intifada (Courbage, 1995; Khawaja, 2000). This was explained by many scholars as a type of resistance to the occupation after the onset of the first Intifada in 1987 (Courbage, 1995). Although fertility has been declining more recently, it remained high at 4·6 births per women in 2003: 4·1 births in the West Bank and 5·8 births in the Gaza Strip (PCBS, 2006b).

In addition to the high fertility rates, early marriage is also common with higher rates in the Gaza Strip than the West Bank; in 2004 14% of 15 to 19-year-olds and 59% of 20 to 24-year-olds in Palestinian Territories were married (Rashad *et al.*, 2005). The median age at first marriage in 1997 was 18 years for women and 23 years for men (PCBS, 1997), which is one of the lowest in the region (Tabutin & Shoumaker, 2005).

Despite the difficult political situation, or perhaps because of it, the Palestinians have been doing well in terms of education, with gross enrolment rates at the basic stage of 92·1% (91·5% for males and 92·8% for females) and 75·8% at the secondary stage (71·4% for males and 80·4% for females) for the 2005–2006 school year (PCBS, 2006a). The literary rates are one of the highest in the Middle East region, and 84% of those aged 15 years and older were literate in the year 2000 (92% for male and 77% for females) (Tabutin & Schoumaker, 2005). However, access to education has become difficult for Palestinians recently because of increasing time to reach schools due to military-imposed checkpoints and the Separation Wall, curfews and school closures (MDM, 2005; PMG, 2005b). The number of school days lost due to curfews and closures as a percentage of the total was 3·3% in the 2002–2003 school year (World Bank, 2004).

The economic situation in the Palestinian Territories has shown an increasing deterioration for years due to continued conflict and restrictions on population movements and market export (World Bank, 2004). The World Bank estimated that

in 2003, 47% of Palestinians (1·7 million people) lived below the official poverty line of $US2·1 per person per day, and that every segment of the Palestinian population, except for the richest 10%, have experienced a deterioration in their financial situation (World Bank, 2004). From the second Intifada alone, which began in September 2000, the *per capita* income declined by 23% in the first fifteen months since the onset of the second Intifada and an estimated 50% of Palestinians required external food assistance (Ajluni, 2003). The unemployment rate increased from 10·2% in 2000 to 24·2% in 2006 and was concentrated mostly in the youth aged 20–24 (PCBS, 2006c). The situation was exacerbated by the construction of the Separation Wall and the presence of checkpoints, which not only made it difficult for Palestinians to conduct business locally and abroad but also restricted their movement to their agriculture lands and places of employment as well as services (World Bank, 2004; OCHA, 2006). Recently the economic situation in Palestine reached a critical stage after the January 25th 2006 elections due to the decline of foreign aid and the difficulty of transferring assistance from Arab countries to the Palestinians (PCBS, 2006b). The full impact of the recent political and economic situation is not felt entirely as of yet and may have profound impacts on the demographic future, marriage dynamics and well-being of Palestinians living in the occupied territories.

Methods

Sources of data

Two sources of data will be used for the secondary analysis of trends and correlates of consanguinity in the Palestinian Territories, one being the 1995 Demographic Survey (PCBS, 1996a) and the other the 2004 Demographic and Health Survey (PCBS, 2004). Both of these surveys were undertaken by the Palestinian Central Bureau of Statistics and used fairly similar methodologies and items on consanguinity and background characteristics of women.

The 1995 Demographic Survey gathered information on all household members in a sample of 21,222 households (15,013 in the West Bank and 6209 in the Gaza Strip). The sample was selected using a three-stage sampling design, where at the first stage a sample of Primary Sampling Units (PSU) was selected. In the second stage, these PSUs were subdivided into cells and then a random sample of households was selected from these cells in the third stage. The questionnaire consisted of two main parts: a household questionnaire, which included household-level questions such as housing conditions and items related to demographic and socioeconomic character- istics of household members, and a women's schedule, which collected data on ever-married women 15–54 years old of which there were 26,275 eligible women.

The Demographic and Health Survey (DHS) of 2004 gathered information on all household members in a sample of 6574 households (4456 in the West Bank and 2118 in the Gaza Strip) using a sampling frame from the Population and Housing Census of 1997. The sample was selected using a two-stage random sample design, where at the first stage 260 PSUs (or enumeration areas) were selected from all Palestinian territories and in the second stage a random sample of households was selected from each enumeration area. The questionnaire consisted of three main parts: a household

Table 1. Prevalence of consanguinity by type and survey year, Palestinian Territories

Relation to husband	1995		2004	
	n	%	*n*	%
First cousin				
Father's brother's son	2455	15·2	608	12·2
Father's sister's son	815	5·0	255	5·1
Mother's brother's son	645	4·0	182	3·7
Mother's sister's son	809	5·0	223	4·5
Double first cousin	—	—	107	2·2
Total first cousin	**4724**	**29·2**	**1375**	**27·7**
Hamola (or marriages from family clan)	3338	20·6	883	17·8
Total consanguinity (*hamola* + first cousin)	**8062**	**49·8**	**2258**	**45·4**
No relation	8109	50·1	2713	54·6

questionnaire, which included housing questions; a women's health questionnaire, which collected data on ever-married women 15–54 years old; and a child health questionnaire for information on children aged less than 5 years old. Data in both the 1995 and 2004 surveys appear to be of good quality with overall response rates of, respectively, 97·2% and 88·2%.

Data analysis

The consanguinity dependent variable was taken from the question in both surveys of the women's relation to her husband and was categorized as consanguineous (all values of relation to husband were added together except for the 'non-relative' value, see Table 1) and non-consanguineous (non-relative value).

For the analysis, first the prevalence and trends of consanguinity were estimated and then the characteristics of consanguineous versus non-consanguineous married women were described using variables of age, age at marriage, education, region, type of locality, standard of living and women's labour force status. The standard of living was measured by a wealth index generated from the data using the technique of principal components and variables that described dwelling conditions and the presence of durables in the household (Filmer & Pritchett, 1999, 2001). The resulting index was divided into four quartiles with the first quartile being those with the lowest standard of living. To analyse the trends of consanguinity, the percentages of consanguineous marriages by marriage cohort from the 2004 survey were calculated.

For the analysis of the correlates of consanguinity, marriage type was categorized as consanguineous and non-consanguineous and bivariate analysis was performed with each variable using chi-squared tests. Adjusted analysis was also conducted using logistical regression in two ways: first for each survey year separately and then by combining the two surveys and including survey year as a covariate. Combining the surveys for the multivariate analysis was conducted in order to uncover the effect of

Table 2. Trend of consanguinity by marriage cohort, Palestinian Territories

Year of marriage	Total consanguineous marriages (%)	First cousin marriages (%)
1983 and earlier	54·1	32·7
1984–1988	49·2	29·9
1989–1992	43·1	25·0
1993–1996	42·4	26·3
1997–2000	42·1	26·9
2001–2004	36·4	22·2

time on consanguinity after controlling for other variables. For the analysis of the two surveys combined, two models were estimated: Model I which had no interaction terms and Model II which included the interaction term that was found to be significant in the analysis. Analysis was conducted using Stata version 8 (StataCorp, 2003).

Results

Trends and types of consanguinity

Table 1 shows the prevalence of women's relation to her husband including all types of consanguinity in the two survey periods of 1995 and 2004. In the table it can be seen that the prevalence of total first cousin marriages decreased by 1·5%, while total consanguinity decreased by 4·4%. When the types of consanguinity are examined, the father's brother's son is the most common type with almost three times higher rates of consanguinity than any other type of first cousin marriage in both surveys. The rate of father's brother's son type marriage decreased from 15·2% of total marriages in 1995 to 12·2% in 2004, while the other types of first cousin marriages remained relatively stable at between 4 and 5%. Double first cousin marriage was found to have the lowest rate at 2·2% of total marriages in 2004, but in 1995 double first cousin marriages were not measured. Therefore, the decreases in consanguinity rates were mostly attributed to decreases in rates of father's brother's son type marriage and in *hamola* marriages (or marriages within the same family clan) as other types of consanguinity are relatively stable in both surveys.

Table 2 presents the trend of consanguinity by marriage cohort using data from the 2004 survey. Here it is also seen that total consanguinity decreased from over 50% in the 1983 and earlier marriage cohorts to 35% in the 2001–2004 marriage cohort, although the total consanguinity rate remained constant from 1989 to 2000 at approximately 43% of all marriages. Also in Table 2, it is seen that first cousin marriages decreased but not as sharply as total consanguinity from 33% to 22% of all marriages. However, there was a slight increase (roughly 2%) in first cousin marriages between 1989 and 2000, before decreasing again in 2001. This indicates that the *hamola* type marriages were decreasing faster than first cousin marriages, since total consanguinity was essentially *hamola* and first cousin marriages combined.

Table 3. Distribution of women aged 15–54 by selected background variables and survey year, Palestinian Territories

Variables	1995		2004	
	n	%	*n*	%
Age				
15–24	4324	26·7	1069	21·5
25–34	5531	34·2	1760	35·4
35–44	3798	23·5	1391	28·0
45–54	2544	15·7	752	15·1
Age at marriage				
<16	2476	15·3	687	13·8
16–19	7966	49·2	2603	52·4
20–24	4376	27·0	1324	26·6
25+	1379	8·5	358	7·2
Women's education				
<Elementary	4492	27·7	622	12·5
Elementary	3927	24·3	1077	21·7
Preparatory	3724	23·0	1658	33·4
Secondary+	4054	25·0	1615	32·5
Region				
West Bank	10,420	64·3	3087	62·1
Gaza Strip	5777	35·7	1885	37·9
Locality type				
Urban	6382	39·4	2805	56·4
Rural	6815	42·1	1346	27·1
Refugee camp	3000	18·5	821	16·5
Wealth index				
First quartile	4045	25·0	1248	25·1
Second quartile	4280	26·5	1241	25·0
Third quartile	3823	23·6	1240	24·9
Fourth quartile	4029	24·9	1243	25·0
Women's labour force status				
In the labour force	938	5·8	530	10·7
Out of the labour force	15,259	94·2	4442	89·3

Description of women

Table 3 presents the distribution of women aged 15–54 by selected background characteristics. The women were generally in the 25–34 age group and were married mostly before the age of 20 in both surveys. Early marriage increased slightly after 1995 with the rate of women marrying over 25 decreasing from 8·5% to 7·2%. A quarter of the women in 1995 had secondary education or more, and this increased considerably to 32·5% in 2004, reflecting an overall increase in the education level of women in the Palestinian Territories. There were more women in the West Bank than the Gaza Strip in both periods but it appears that women became more urbanized

between the two surveys; in 1995, 39·4% of the women lived in urban areas while in 2004 it reached 56·4% of women. Women's labour force participation remained low but increased considerably from 5·8% in 1995 to 10·7% in 2004.

Bivariate analysis

Table 4 shows the bivariate associations between consanguinity and selected background variables for the two surveys. All variables except for age in 1995 show significant associations with consanguinity. For women in 2004, the difference in age was found to be significant, with most women in consanguineous marriages being in the 45–54 age group. The most notable difference between consanguineous and non-consanguineous married women was in their age at marriage, where in both the 1995 and 2004 surveys over 70% of the women who marry over the age of 25 entered non-consanguineous marriages. This indicates that women who married younger were mostly in consanguineous marriages.

Women with at least secondary education had the lowest consanguinity rates in both surveys. In 1995 roughly 44% of women with at least secondary education entered consanguineous marriages compared with 54% of women with less than elementary education; in 2004 it was 42% compared with 49%. The differences in the rates of consanguinity between women with less than elementary education and those with elementary education were similar in the 2004 survey at 50%.

Consanguinity was significantly higher for women in the Gaza Strip compared with those in the West Bank, as well as for women living in rural areas compared with those in urban areas in both surveys. The lowest consanguinity rates were in urban areas but rates of consanguinity in refugee camps followed a close second.

Consanguinity is also being affected by women's standard of living as measured by the wealth index. The highest consanguinity rates were found in women with the lowest standard of living (or the first quartile of the wealth index) at 53·4% in 1995 and 50·2% in 2004. Lastly, women who were in the labour force had significantly lower consanguinity rates than other women.

Multivariate analysis

In the adjusted logistical regression of consanguinity for the two survey periods it is found that most variables retained their significance with some differences between the two surveys (see Table 5). Age shows a trend towards higher odds of consanguinity with increasing age in both surveys; however, the 25–34 age group in 2004 is not significant. It was also found that while age was non-significant in the bivariate analysis in 1995, it became significant in the multivariate analysis. Further analysis of this finding has shown that age at marriage is interacting with the age variable and causing it to be significant in the multivariate analysis. Age at marriage is found to be significant at all levels in both surveys, showing a trend of higher odds of consanguinity with decreasing age at marriage. This variable also has the highest odds ratios compared with all other variables with those marrying under 16 years of age having three times higher odds of being in consanguineous marriages in 1995 and almost four times higher odds in 2004 compared with those marrying at 25 years and above.

Table 4. Association of consanguinity with women's background characteristics across two time periods, Palestinian Territories

	1995			2004		
Variable	C (n=8062) (%)	NC (n=8135) (%)	p*	C (n=2258) (%)	NC (n=2713) (%)	p*
Age			0·696			0·001
15–24	49·4	50·6		43·0	57·0	
25–34	49·4	50·6		43·0	57·0	
35–44	50·1	49·9		48·2	51·8	
45–54	50·6	49·4		49·3	50·7	
Age at marriage			<0·001			<0·001
<16	56·9	43·1		53·9	46·1	
16–19	52·7	47·3		47·5	52·5	
20–24	47·0	53·0		42·5	57·5	
25+	29·0	71·0		24·6	75·4	
Women's education			<0·001			<0·001
<Elementary	54·3	45·7		49·2	50·8	
Elementary	51·6	48·4		50·0	50·1	
Preparatory	49·2	50·8		44·7	55·3	
Secondary+	43·6	57·4		41·7	58·3	
Region			<0·001			<0·001
West Bank	48·4	51·6		41·9	58·1	
Gaza Strip	52·2	47·8		51·2	48·8	
Locality type			<0·001			<0·001
Urban	46·7	53·3		42·5	57·5	
Rural	53·8	46·3		51·3	48·7	
Refugee camp	47·3	52·7		45·9	54·1	
Wealth index			<0·001			<0·001
First quartile	53·4	46·6		50·2	49·8	
Second quartile	52·3	47·7		46·3	53·8	
Third quartile	50·5	49·5		45·4	54·6	
Fourth quartile	42·7	57·3		39·8	60·2	
Women's labour force status			<0·001			0·014
In the labour force	35·2	64·8		40·4	59·6	
Out of the labour force	50·7	49·3		46·0	54·0	

*p values are for two-tailed χ^2 test.
C, consanguineous; NC, non-consanguineous

The education level of the women is generally not found to be a significant predictor of consanguinity in both surveys. Almost all levels of education except for less than elementary in 1995 (odds ratio 1·2 compared with secondary and more) are found to be non-significant. For region and type of locality in both surveys, there are roughly 1·5 times higher odds of women in consanguineous marriages in the Gaza

Table 5. Adjusted logistical regression of consanguinity for each survey year, Palestinian Territories

	1995		2004	
Variable	OR	*p*	OR	*p*
Age (ref.=15–24)				
25–34	1·2	<0·001	1·1	0·178
35–44	1·3	<0·001	1·6	<0·001
45–54	1·3	<0·001	1·7	<0·001
Age at marriage (ref.=25+)				
<16	3·0	<0·001	4·0	<0·001
16–19	2·8	<0·001	3·1	<0·001
20–24	2·2	<0·001	2·5	<0·001
Wife's education (ref.=secondary+)				
Less than elementary	1·2	0·012	0·9	0·358
Elementary	1·1	0·172	1·0	0·718
Preparatory	1·0	0·680	1·0	0·554
Region (ref.=West Bank)				
Gaza Strip	1·4	<0·001	1·7	<0·001
Locality type (ref.=urban)				
Rural	1·4	<0·001	1·6	<0·001
Refugee camp	1·0	0·450	1·0	0·724
Wealth index (ref.=fourth quartile)				
First quartile	1·3	<0·001	1·5	<0·001
Second quartile	1·3	<0·001	1·2	0·051
Third quartile	1·3	<0·001	1·2	0·067
Women's labour force status (ref.=in labour force)				
Out of the labour force	1·3	0·001	0·9	0·485
Wald χ^2	418·2	<0·001	209·0	<0·001
Log pseudo-likelihood	−10,880·5	—	−3304·2	<0·001
df	16	—	16	—
N	16,171	—	4971	—

Note: base category non-consanguineous.

Strip compared with the West Bank and in rural areas compared with urban. Women living in refugee camps do not have significantly higher odds of consanguinity compared with women living in urban areas in both surveys. For the wealth index, both surveys show a trend for higher odds of consanguinity with a decrease in wealth index or standard of living. The lowest standard of living, represented by the first quartile of the wealth index, has the highest significant odds of consanguinity with 1·5 higher odds in 2004 compared with the fourth quartile. However, the second and third quartiles of the wealth index in 2004 are not found to be significant. In 1995, the first, second and third quartiles of the wealth index all have an equal and significant odds ratio of 1·3 compared with the fourth quartile. For women's labour

force participation, in 1995 there is 1·3 times higher odds of consanguinity for women out of the labour force compared with those in the labour force. However, in 2004 women's occupation lost its significance ($p=0·485$). Overall, the logistic regression analysis correctly classified about 58% of the individuals.

Table 6 presents the adjusted logistical regression for consanguinity but with both surveys combined in order to uncover the effect of time on consanguinity. Generally the results remained the same as compared with those obtained from the analysis of both surveys separately, and especially compared with the 1995 survey. Here it was also found that age, age at marriage, region, rural residence, wealth index and women's labour force status were significant in Model I with the same trends as well. For the year variable, Model I indicates a 1·1 higher significant odds of consanguinity in 1995 compared with 2004. Model II includes the interaction term that is found to be significant, and that is the interaction between year and women's labour force participation. The difference between this model and Model I is that women's occupation loses its significance. More importantly, however, is that year remains significant with a 1·2 higher significant odds of consanguinity in 1995 compared with 2004 indicating that consanguinity appears to be decreasing with time. Overall, the logistic regression analysis correctly classified about 58% of the individuals.

Discussion

Traditionally, cousin marriage and particularly 'marriage with the father's brother's son is preferred to any other marriage' (Granqvist, 1931, p. 78) in Palestinian society. In fact, 'common-law' practices (known as *urf* in Arabic) give the father's brother's son the right to his first paternal cousin, and can revoke the marriage of his cousin to another man even on wedding nights, and such practices still persist in some Palestinian villages today. The results reported in this paper show that consanguinity remains a common form of marriage in the Palestinian Territories with almost half of the women aged 15–54 in both surveys having some kin relation to their husbands. However, this practice appears to be on the decline, especially for *hamola* relation marriages and father's brother's son marriages. Furthermore, women in the more recent marriage cohorts have lower rates of consanguinity indicating that the high prevalence of consanguinity is perhaps due to the older aged women that have higher rates of consanguineous marriage than younger or more recently married women.

The findings also show an interesting trend in that the decrease of marriages to distant relatives was occurring more rapidly than the decrease of marriages to first cousins. The same trend was found in Lebanon, and was explained by the weakening of ties with distant relatives (Khalat & Khudr, 1986; Khlat, 1988). Such weakening of familial ties, especially those pertaining to more distant family members, could also be occurring in the Palestinian Territories, owing to increased urbanization and movement restrictions. Furthermore, if Palestinian fertility continues to decrease, this can also have an effect on decreasing consanguinity rates and particularly first cousin marriages through a decline in the number of cousins to choose from.

In the multivariate analysis of the surveys combined, it was found that consanguinity decreased slightly with time between the two surveys. Apparently, the decrease observed in Table 2 was significant after controlling for other variables.

Table 6. Adjusted logistical regression of consanguinity with the two surveys combined, Palestinian Territories

Variable	Model I		Model II	
	OR	p	OR	p
Age (ref.=15–24)				
25–34	1·2	<0·001	1·2	<0·001
35–44	1·3	<0·001	1·3	<0·001
45–54	1·4	<0·001	1·4	<0·001
Age at marriage (ref.=25+)				
<16	3·2	<0·001	3·2	<0·001
16–19	2·8	<0·001	2·8	<0·001
20–24	2·2	<0·001	2·2	<0·001
Wife's education (ref.=secondary+)				
Less than elementary	1·1	0·055	1·1	0·071
Elementary	1·1	0·140	1·1	0·164
Preparatory	1·0	0·900	1·0	0·927
Region (ref.=West Bank)				
Gaza Strip	1·5	<0·001	1·5	<0·001
Locality type (ref.=urban)				
Rural	1·5	<0·001	1·5	<0·001
Refugee camp	1·0	0·528	1·0	0·495
Wealth index (ref.=fourth quartile)				
First quartile	1·4	<0·001	1·4	<0·001
Second quartile	1·3	<0·001	1·3	<0·001
Third quartile	1·2	<0·001	1·2	<0·001
Women's labour force status (ref.=in labour force)				
Out of the labour force	1·2	0·009	0·9	0·478
Year (ref.=2004)				
1995	1·1	0·001	1·2	<0·001
Interactions				
Out of the labour force × year	—	—	1·0	—
1995 × in labour force	—	—	0·7	<0·001
2004 × in labour force	—	—	1·1	0·478
Wald χ^2	600·8	<0·001	601·3	<0·001
Log pseudo-likelihood	−14,204·3	—	−14,199·7	—
df	17	—	18	—
N	21142	—	21142	—

Note: base category non-consanguineous.

Similar decreases in consanguinity, and particularly in first cousin marriages, have also been found in Egypt, Jordan and Turkey (Tfaily, 2005). However, increases in total consanguinity rates in the Arab region have been reported in the United Arab Emirates (Al-Gazali et al., 1997), Yemen (Jurdi & Saxena, 2003) and Iran (Givens & Hirschman, 1994).

Givens & Hirschman (1994) tested Goode's hypothesis of a decrease of consanguinity with modernization in the context of Iran. The hypothesis explains that modernization, measured by the increase in women's education, women's participation in the labour force, as well as increase in urbanization, will decrease rates of consanguineous marriages because women will become more exposed to men outside their family and also will have more freedom to choose their partners (Givens & Hirschman, 1994). Some of the findings in Iran supported Goode's hypothesis in that women who are considered more modern due to higher levels of education, working before marriage and marrying at a later age, have decreased their rates of consanguineous marriages with time (Givens & Hirschman, 1994). However, more traditional women (i.e. with low education, marrying early and living in rural areas) have shown increases in consanguineous rates with time (Givens & Hirschman, 1994).

This study's findings from the multivariate regressions give mixed support to the expectations regarding the modernization thesis. Consistent with this theory and findings from other similar studies, it was found that within each survey the lowest consanguineous marriage rates were among women who married later (Bittles, 1990, 1994; Givens & Hirschman, 1994; Jurdi & Saxena, 2003; Hussain & Bittles, 2004), lived in urban areas (Khoury & Massad, 1992; Hussain & Bittles, 2004; Tfaily, 2005), had the highest standard of living and were in the labour force (Khlat & Khudr, 1986; Givens & Hirschman, 1994; Jurdi & Saxena, 2003; Wahab & Ahmad, 2005). However, education level was not found to be a significant predictor of consanguinity, as found in many other studies (Khlat & Khudr, 1986; Khoury & Massad, 1992; Givens & Hirschman, 1994; Jurdi & Saxena, 2003; Hussain & Bittles, 2004; Tfaily, 2005; Bener & Hussain, 2006).

In this analysis the factors that remained to show a trend for lower consanguinity rates after controlling for time as a variable were later age at marriage, living in urban areas and having a higher wealth index. These factors, and especially later age at marriage and living in an urban setting, are again consistent with Goode's modernization thesis and appear to be important factors for the decrease in consanguinity. However, as before, the effects of education and labour force participation were either non-significant or mixed. Education level remained unimportant in decreasing consanguinity after controlling for time, and women's labour force participation was also non-significant when including the interaction term with the year variable. These two factors were found to be non-significant, even though the rates of women labour participation and secondary level education increased between 1995 and 2004, as shown in Table 3. The decrease of consanguineous marriages with increases in wealth index could be due to the relation of this variable with locality type. In fact cross-tabulation with these two variables shows that most women in the first quartile of the wealth index (lowest standard of living) live in rural areas. Consanguinity in rural areas is generally high, perhaps due to the desire to keep land in the family, something that is of less concern in urban areas.

Such findings are also consistent with the so-called 'standard explanation' (Barth, 1954, p. 170) of the preference for father's brother's son marriage as advanced, for example, in Grangvist's classis study of the Palestinian marriage system; to wit, 'in order to prevent a stranger taking possession of the property and inheritance of the family' (Grangvist, 1931, p. 78). According to Islamic law or *Sharia'a*, a female can

claim a share of her parent's property, and the family (lineage) property can then be transferred to another family (lineage) in case a woman is married to a stranger or distant relative. Although our study lacked data on land or property ownership, the fact that consanguinity was related to rural residence seems to give some support to this 'standard explanation'.

Some anthropological literature tends to downplay the classical explanation based on wealth or property as a cause for cousin marriage. Barth (1954), for example, explicitly disagrees with the wealth or economic hypothesis. Although he recognized 'the importance of endogamy in maintaining family property' in his case study of Hamawands in Kurdistan, he observed that female descendants do not in practice inherit fractions of the land as stipulated by Islamic law. He advances, instead, an essentially exchange/political explanation for cousin marriage. By agreeing to giving one's daughter to a brother's son on apparently a reduced bride-price, a man 'creates an obligation on the part of his brother's son to give him political support' (Barth, 1954, p. 168), thus reinforcing and maintaining 'lineage solidarity'. It is a form of 'delayed exchange' argues Barth, in that 'the father receives political allegiances in his lifetime from his brother's son in return for the daughter which he gives him' (Barth, 1954, p. 168). He does not explicitly explain as to why this lineage solidarity is important, but he seems to suggest that the answer lies in clan-based factional struggle for political power. To him, in Kurdistan 'the lineage was, and still is potentially, also a military unit' (Barth, 1954, p. 166) often engaged in conflicts with other clans over territorial rights. Thus one could argue that lineage solidarity and clan-based political power have an important bearing on wealth or economic interests, namely property.

It is not possible to discount the importance of Barth's thesis in the context of Palestine. Recent developments in the Palestinian territories seem to indicate that the clan (*Hamula*) has indeed become an important 'political' and 'defensive' unit, owing to the deteriorating security situation and the apparent retreat of a central Palestinian authority from providing essential security protection to its citizens. There is anecdotal evidence that some of the factional infighting between Hamas and Fatah in the Gaza Strip, for example, is also *Hamula*-based. Such political developments can have important bearing on the Palestinian marriage market, and the continued significance of consanguinity. The period effects in these findings, specifically those relating to the first Intifada in 1989–2000, are the only ones with relevance to the political explanation of the Barth variety.

From the factors that were found to be significant with consanguinity, later age at marriage could, on the other hand, be the driving force for the continued decrease in consanguinity. Other factors, such as region and locality type, do not have much room for change. Later age at marriage can be the result of increases in opportunities for women, which may be indicated by the wealth index. Due to the constantly changing and unstable socioeconomic and political situation in the Palestinian Territories, the continuation of these opportunities for increasing age at marriage and therefore decreasing consanguinity rates are not yet known. It would be interesting to see what the future course of consanguinity would be, and whether or not it will continue to decrease.

In the Palestinian areas, the marriage market is known to be responsive to the larger political and socioeconomic environment (Khawaja, 2000; Khawaja & Randall,

2005). It is possible that with the recent increase in restrictions on mobility and in political strife, consanguineous marriages could actually increase again due to lack of exposure to men outside the family caused by restricted mobility and also for reasons of strengthening the family unit (Khawaja, 2000; MDM, 2002). This possible increase would most likely occur in first cousin marriages because this is seen as a closer and stronger relation, and first cousins would more likely be living in the same area than more distant relatives. The possible effect of political strife on consanguinity was reflected in the increase of first cousin marriages between 1989 and 2000 (see Table 2), a time that partly corresponds to the onset of the first Intifada in December 1987. In addition, the deteriorating economic situation caused by the political situation could increase consanguinity rates as marrying within the family could imply reduced dowry and would keep family wealth and land within the family. The findings reported here show that the wealth index was significantly associated with the odds of consanguineous marriage.

This study has some limitations. As with other similar studies on consanguinity, the study is based on a cross-sectional survey design, and hence it was not possible to infer causation based on such data. Also, the study lacked information on potentially important factors behind the persistence of consanguinity, including land or property ownership, husband–wife relations, and socioeconomic background variables for women's parents. Furthermore, the background covariates, including labour force status, were measured at the time of the survey, rather than at the time of marriage, limiting our ability to assess changes over time in these covariates. Future studies based on complete marriage history data or cohort study design are needed, especially in the context of developing countries, if we are to arrive at firm conclusions concerning the importance of such variables as wealth or labour force status in decreased consanguinity.

Further research is also needed to understand why the education level of women is not affecting whether or not they are in consanguineous marriages in this context. Education has been found to greatly affect consanguinity rates in other settings and is also known to be associated with age at marriage. In depth research is perhaps needed to understand the extent to which education is a valid measure of modernization in the Palestinian context. It is unclear, for example, if quality or place of education rather than simply the level could be behind the lack of associations between education and consanguinity.

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