J.biosoc.Sci, (2006) **38**, 315–325, © 2005 Cambridge University Press
doi:10.1017/S0021932005026404 First published online 1 June 2005

MIGRATION AS A DETERMINANT OF MARRIAGE PATTERN: PRELIMINARY REPORT ON CONSANGUINITY AMONG AFGHANS

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Summary. Two sample populations, one refugee and one resident, were studied. The frequencies of consanguineous marriages came out to be 49·8% and 55·4%, respectively, for the refugees and the residents. Caste endogamy was dominant both in the residents and the refugees. The mean coefficient of inbreeding was calculated to be 0·0303 for the refugee population and 0·0332 for the resident population samples. First cousin marriage was the dominant type of marriage in both samples; father's brother's daughter (FBD) marriage was more frequent among the refugees while mother's brother's daughter (MBD) marriage was more frequent among the residents. Education has no decreasing effect on the incidence of consanguineous marriages. A significant difference in the pattern of marriages in the refugees is observed after the Saur Revolution of 1979.

Introduction

There have been many studies on the genetic implications of consanguineous marriages and their sociological correlates both in South Asia (e.g. Rao *et al*., 1972; Ahmad *et al.*, 1992; Bittles, 1993; Fikree & Berendes, 1994; Mian & Mushtaq, 1994; Ramesh & Veerraju, 1994; Shami *et al*., 1994; Yaqoob, 1995; Wahab & Ahmad, 1996; Hussain & Bittles, 2000) and other parts of the world (e.g. Hosoda *et al.*, 1983; Hann, 1985; Khlat & Halabi, 1986; Farhud *et al.*, 1991; Khoury & Massad, 1992; Bittles, 1993; Bundey & Alam, 1993; Bittles, 1994; Dobon & Martinez, 1994; Givens & Hirschman, 1994; Tuncbilek & Koc, 1994; Abdulrazzaq *et al*., 1997). Tapper (1991) has extensively studied the marriage systems of the Durrani tribe in Qandahar, but has relied very little on statistical data.

Studies of consanguineous marriages in migrants have also been carried out in the Ashkenazi and Sephardi migrants in Israel (Goldschmidt *et al*., 1960), Pakistanis in Birmingham, UK (Honeyman *et al.,* 1987; Bundey & Alam,1993) and Bradford, UK

https://doi.org/10.1017/S0021932005026404 Published online by Cambridge University Press

(Darr & Modell, 1988). Reniers (1998) observed more consanguinity among Turkish and Moroccan migrants to Belgium when compared with consanguinity in their native lands. Safdar (1997) has documented the marriage pattern of migrant *Mohmand* and compared it with the settled and tribal *Mohmands* of Pakistan but not with those living in Afghanistan. The settled *Mohmands* live within the settled area of Pakistan under regular law while the tribal *Mohmands* live in the tribal belt of *Mohmand* Agency, between Pakistan and Afghanistan. Comparative studies of consanguineous marriages among residents and refugees are not available, especially among Afghan refugees in Pakistan. This preliminary report interprets the data about the pattern of marriages among resident and refugee Afghans.

Pukhtuns represent the biggest tribe of Afghanistan. The code of conduct of Pukhtun, called *Pukhtunwali*, provides standards for interactions among individuals within a tribe (or lower level in the tribe system hierarchy), as well as between tribes. Social and political relations such as marriage, divorce, property disputes, crimes and many other aspects of life are subordinate to *Pukhtunwali* (Lindholm, 1979; Kamalai, 1985).

Methods

The study is based on two samples collected during door-to-door surveys from the Jalozai refugee camp near the city of Peshawar, NWFP, and the villages of Basiud, Darinor, Haida, Shigal and Shumash in Nangarhar and Kunard provinces of Afghanistan. The sample collected from Jalozai camp was restricted to those couples where, at least, the husband originally belonged either to Kunard, Laghman, Logar, Nangarhar or Paktia provinces and migrated after the Saur Revolution of 1979 (when the president of Afghanistan, Sardar Daud, was killed in a bloody takeover by the socialist Afghans and the Red Army subsequently invaded, resulting in widespread bloodshed and mass migration of Afghans to neighbouring countries, especially Pakistan and Iran) and before 1985. This sample is referred to as 'refugees'. The sample collected from the villages of Basiud, Darinor, Haida, Shigal and Shumash is referred to as 'resident'. Only those couples were included in the sample surveys who married before or during 1995.

The city of Peshawar lies between 34°, 01′ N and 71°, 33′ E and the provinces of Nangarhar and Kunard lie between 34°, 26′ N and 70°, 07′ E (Merriam Webster's Pocket Atlas, 1998). The total population of the Jalozai refugee camp was 19,340 families and 135,200 individuals (Population Statement Afghan Refugees, 2002) while the population for Nangarhar and Kunard provinces could not be ascertained.

Information was sought on each couple regarding the degree of consanguinity (first cousin, i.e. FBD, MBD, FSD and MSD; first cousin once removed; second cousin; and distantly related), year of marriage, age of husband and wife at the time of marriage, education of husband, migration status and caste (not ethnicity, such as Pukhtun, Tajik, Uzbek etc.) of the husband and wife. (The caste system within Afghan society is essentially occupational and also important for formation of political alliances, resource use and contract of marriages. There is no comparison to the Hindu caste system. Marriages are contracted within castes and seldom cross class boundaries. The different castes can eat, sit together and can interact freely with each

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Table 1. Comparison of frequencies of consanguineous marriages among Afghan refugees in Pakistan and the resident population in Afghanistan

Marriage type	Refugee	Resident	Total
Consanguineous	132	93	225
Expected no.	137·70	87·30	
%	49·8	55·4	
Non-consanguineous	133	75	208
Expected no.	127·30	80·70	
%	50·2	44·6	
Total	265	168	433

$\chi_1^2 = 1{\cdot}276$; $p > 0{\cdot}20$.

other). These parameters were recorded for cross-comparison and to see changes in the incidence of consanguineous marriages over the years, and due to refuge in Pakistan. Up to second cousin marriages were considered as consanguineous for the purpose of statistical analyses for different parameters.

The mean coefficient of inbreeding was calculated by the formula $\sigma = \Sigma P_i F_i$ where Σ represents the sum of values, P_i is the proportion of a certain type of consanguineous marriage and F_i is the coefficient of inbreeding of that type of consanguineous marriage. The standard χ^2 procedure was used to analyse the data.

Results

The sample constituted 433 couples, with 265 couples interviewed from the refugee population and 168 couples from the resident population in Afghanistan. The overall frequency of consanguineous marriages among refugees and residents did not differ significantly (Table 1). The frequency and coefficient of inbreeding for each type of marriage among refugees and residents are given in Table 2. The frequency of consanguineous marriages among refugee and resident population samples was found to be 49·8% and 55·4%, respectively. When marriages with distant relatives were counted as consanguineous marriages, the frequencies rose to 59·6% and 75·6% for refugees and residents, respectively. Caste endogamy was the dominant type of marriage (60–75+%) among the couples by cross-tabulating castes of husbands and wives. Values of the mean inbreeding coefficient were calculated to be 0·0303 for the refugee population and 0·0332 for the resident population samples. Overall the coefficient of inbreeding was calculated to be 0·0314.

In both the refugee and resident populations the most frequent type of marriage was between first cousins (Table 2). Among these, father's brother's daughter (FBD) marriages were predominant among the refugees in Pakistan while mother's brother's daughter (MBD) marriages were predominant among the resident population in Afghanistan. Combining both samples, the overall cross-cousin (FSD and MBD)

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Table 2. Distribution of different types of marriages among refugee and resident Afghans

Relation of husband and wife	Refugee		Resident		Total
	n	%	*n*	%	
First cousins, $F=0{\cdot}0625$	126	47·5	86	51·2	212
σ	0·0297		0·0319		0·0306
First cousins once removed, $F=0{\cdot}0313$	3	1·1	7	4·2	10
σ	0·0004		0·0013		0·0007
Second cousins, $F=0{\cdot}0156$	3	1·1	—	—	3
σ	0·0002	—	—	—	0·0001
Distant relatives, $F<0{\cdot}0156$	27	10·2	34	20·2	61
No blood relation	105	39·8	41	24·4	146
Total	265	100	168	100	433

Table 3. Distribution of different types of first cousin marriages in the refugee and resident sample populations (expected numbers in parentheses)

Type of first cousin marriage	Refugee		Resident		Total	
	n	%	*n*	%	*n*	%
Father's brother's daughter (FBD)	50 (44·57)	39·7	25 (30·42)	29·1	75	35·38
Mother's sister's daughter (MSD)	21 (17·83)	16·7	9 (12·17)	10·5	30	14·15
Father's sister's daughter (FSD)	8 (9·51)	6·4	8 (6·49)	9·3	16	7·55
Mother's brother's daughter (MBD)	47 (54·08)	37·3	44 (36·92)	51·2	91	42·92
Total	126	100	86	100	212	100

$\chi_3^2 = 5{\cdot}8922$; $p>0{\cdot}10$.

marriages were slightly higher (50·5%) than parallel cousin (FBD and MSD) marriages (49·5%). Table 3 shows that parallel cousin marriages (FBD and MSD) are more common among the refugee population while cross-cousin marriages (FSD and MBD) are more common among the resident population. The FBD and MBD marriages are more frequent among the different types of first cousin marriages in both population samples. The different types of first cousin marriages did not differ significantly from each other in the two samples (Table 3).

No significant difference was observed between the uneducated and the different levels of educated groups among the refugee sample population in relation to consanguineous marriages ($\chi_2^2=2{\cdot}998$; $p>0{\cdot}30$). However, among the resident sample population ($\chi_2^2=7{\cdot}377$; $p<0{\cdot}05$) and the overall sample population ($\chi_2^2=9{\cdot}721$;

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Table 4. Comparison of consanguineous and non-consanguineous marriages and education among refugee and resident Afghans (and between consanguineous marriages among refugees and residents)

Type of residence	Marriage type	Uneducated	Primary to secondary education	Post-secondary to higher education	Total
Refugee	Consanguineous	75	33	23	131
	Expected no.	81·57	30·15	19·28	
	Non-consanguineous	90	28	16	134
	Expected no.	83·43	30·85	19·72	
	Total	165	61	39	265
Significance $\chi_2^2 = 2{\cdot}998$; $p > 0{\cdot}30$					
Resident	Consanguineous	40	32	21	03
	Expected no.	48·71	27·13	17·16	
	Non-consanguineous	48	17	10	75
	Expected no.	39·29	21·88	13·84	
	Total	88	49	31	168
Significance $\chi_2^2 = 7{\cdot}377$; $p < 0{\cdot}05$					
Total consanguineous		115	65	44	224
Expected no.		130·88	56·91	36·21	
Total non-consanguineous		138	45	26	209
Expected no.		122·12	53·09	33·79	
Total of both samples combined		253	110	70	433
Significance $\chi_2^2 = 9{\cdot}721$; $p < 0{\cdot}01$					

$p<0{\cdot}01$) significant differences were found between the uneducated and the different levels of educated groups in relation to consanguineous marriages (see Table 4). Regardless of whether the difference was significant, the trend of consanguineous marriages was higher among the educated group as compared with the uneducated group (Table 4). Similarly, no significant difference was observed between consanguineously married refugees and residents with regard to their levels of education (Table 5).

No significant difference over time was observed in the consanguineous marriages when pooled data from the two samples were analysed (Table 6). Consanguineous marriages among refugees were significantly higher after 1979, the year of the Saur Revolution, when compared with marriages until 1979, while there was no significant change in the marriage pattern of the residents (Table 7).

Discussion

This study found that resident and refugee samples did not differ significantly from each other with respect to consanguineous marriages (Table 1). The frequencies of consanguineous marriages among the refugees and the residents came out to be 49·8%

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Table 5. Comparison of education between consanguineously married refugees and residents

Type of residence	Uneducated	Primary to secondary education	Post-secondary to higher education	Total
Refugee	75	33	23	
Expected no.	67·25	38·01	25·73	
Resident	40	32	21	
Expected no.	47·75	26·99	18·27	
Total	115	65	44	224

$\chi_2^2 = 4{\cdot}4388$; $p > 0{\cdot}10$.

Table 6. Comparison and percentage frequencies of consanguineous marriages before and after Russian invasion of Afghanistan in the pooled samples

Marriage type	Year of marriage		Total
	Up to 1979	After 1979	
Consanguineous	48	175	223
Expected no.	54·97	168·03	
% within same time period	45·3	54·0	
% between the two time periods	21·5	78·5	
Non-consanguineous	58	149	207
Expected no.	51·03	155·97	
% within same time period	54·7	45·9	
% between the two time periods	28·0	72	
Total	106	324	430

$\chi_1^2 = 2{\cdot}436$; $p > 0{\cdot}10$.

and 55·4%, respectively. Kamalai (1985) has reported that marriages between relatives and cousins are quite common in Afghanistan. While studying the marriage system of the *Mohmand* tribe of Pukhtun, Safdar (1997) observed that inter-*khel* (inter-caste) marriages among *Mohmand* Afghan refugees were frequent as compared with those among the settled and tribal *Mohmand*. Inter-caste marriages in endogamous populations may lead to a decrease in the frequency of consanguineous marriages, but due to the high frequency of caste endogamy (60–75+%) and non-significant difference between the refugee and the resident population samples with respect to consanguineous marriages, the present study does not support the observation of Safdar (1997). Caste endogamy among the refugee and resident population samples is predominant, but marriages cross caste boundaries to varying degrees. No clear-cut

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Table 7. Comparison and percentage frequencies of consanguineous marriages before and after Russian invasion of Afghanistan in the samples of refugees and residents

		Year of marriage		
		Up to 1979	After 1979	Total
Refugee	Consanguineous	27	103	130
	Expected no.	31·76	98·24	
	% within same time period	42·2	52·0	
	% between the two time periods	20·8	79·2	
	Non-consanguineous	37	95	132
	Expected no.	32·24	99·76	
	% within same time period	57·8	48	
	% between the two time periods	28·0	72	
	Total	64	198	262
Significance $\chi_1^2=4{\cdot}310$; $p<0{\cdot}05$				
Resident	Consanguineous	21	72	93
	Expected no.	23·25	69·75	
	% within same time period	50	57·1	
	% between the two time periods	22·6	77·4	
	Non-consanguineous	21	54	75
	Expected no.	18·75	56·25	
	% within same time period	50	42·9	
	% between the two time periods	28	72	
	Total	42	126	168
Significance $\chi_1^2=0{\cdot}6503$; $p>0{\cdot}30$				

pattern of increase or decrease due to refuge in Pakistan is observed. Tapper (1991) also reports lineage endogamy among the Durrani tribe of Afghan citing social, political and economic reasons. Such difference in the pattern of marriages may also occur in different villages of the same region depending on local economic necessities and social and political associations.

The observation that the most frequent type of consanguineous marriage was between first cousins (Table 2) is also true for South Asia (Bittles *et al.,* 1993; Afzal *et al.,* 1994; Mian & Mushtaq, 1994; Ramesh & Veerraju, 1994; Shami *et al.,* 1994; Yaqoob, 1995; Wahab & Ahmad, 1996; Yasmin *et al.,* 1997; Hussain, 1998), the Middle East (Khoury & Massad, 1992; El-Hazimi *et al*., 1995; Al-Ghazali *et al*., 1997; Al-Abdulkareem & Ballal, 1998) and the world in general (Bittles, 1998).

Among residents, the predominant type of consanguineous marriage is to mother's brother's daughter (51·2% of the total first cousin marriages), which are substantially more frequent than marriages to father's brother's daughter (29·1%), the former being preferred among Hindus of south India and the latter among Muslim societies (Bittles, 1994). On the other hand, Yaqoob (1995), while studying Muslim subgroups in Lahore, Pakistan, has observed the MBD type of marriages as the most common (35%) followed by MSD (25·4%) and FBD (21·3%) and the different subgroups

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Table 8. Pattern of overall consanguinity and first cousin marriages among Afghans and Afghan-origin Pukhtuns in different parts of Pakistan

Population studied	% consanguinity	% first cousin	Sample size	Study
Afghans				
Resident	55·4	51·2	168	Present
Refugee	49·8	47·6	265	Present
Swat, NWFP, Pakistan	34·12	21·99	2037	Wahab & Ahmad (1996)
Quetta, Balochistan, Pakistan	21·41	16·33	49	Mian & Mushtaq (1994)
All NWFP, Pakistan	38·8	—	—	Afzal *et al.* (1994)
Punjab, Pakistan*	46·45	42·52	127	Shami *et al.* (1994)

*Data are from Pathans (Pukhtuns) living in different cities of the Punjab, Pakistan. Data about Punjabis are not included.

studied by him also differ as to the frequency of different types of first cousin marriages. The increase in frequency of MBD marriages in Afghanistan may be due to the greater interaction of children with their mother agnates, as discussed by Tapper (1991). Among refugees the frequencies of FBD (39·7%) and MBD (37·3%) marriages are about the same (Table 3), but the latter type are still higher when compared with those from a comparable Pukhtun area in Swat, NWFP, Pakistan (25·74%; Wahab & Ahmad, 1996). The increased frequency of marriage with FBD among the refugees (39·7% as compared with MBD, which are 37·3%) as compared with the residents (FBD=29·07% and MBD=51·2%) may be to strengthen the existing bond between the patriline because of feelings of insecurity and also out of economic necessity in the new environment. *Tarburwali* (the system that regulates the behaviour of patrilineal cousins) has opposing connotations: during normal conditions patrilineal cousins are at constant struggle against each other for superiority while at times of crisis from outside, the patrilineal cousin unite for collective action (Lindholm, 1979). This may be one of the possible reasons for increase in the incidence of FBD marriages among refugees. Furthermore, the migration of brothers (and other relatives) to Pakistan and their living together in refugee camp (Wulf, 1993) would have increased the interaction between the families in the strange setting for sociopolitical and economic reasons, which would have increased interactions among cousins and consequently caused an increase in marriages with FBD. Another possible reason is that the trend among the local population to marry FBD might have influenced the marriage pattern among Afghan refugees. Stronger kin ties among Vietnamese refugees in America due to economic necessity is also reported by Kibria (1993).

The frequencies of consanguineous marriages among both the refugee and resident Afghans are substantially higher than those of other Pukhtun populations (Table 8). Though the code of life (*Pukhtunwali*) for all Pukhtun living either in Afghanistan or the provinces of NWFP and Balochistan, Pakistan, is the same, the difference in marriage patterns may, in part, be due to the prevalence of *walwer* (bride-price)

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among Afghans. The overall frequencies of first cousin marriages among refugees (47·5%) and residents (51·2%) are very high compared with those of Pukhtun from Quetta (16·33%: Mian & Mushtaq, 1994) and Swat, Pakistan (21·99%: Wahab & Ahmad, 1996). This pattern may be due to the fact that this type of marriage does not entail the payment of a large bride-price (Kamalai, 1985; Tapper, 1991), which is a common practice in Afghanistan. The forgoing assertion is also supported by the observation that marriage payment was less common in consanguineous than in non-consanguineous marriages among the Muslims of Aligarh, North India (Badaruddoza, 1995).

Educated people as compared to uneducated more frequently contract consanguineous marriages (Table 4). It is generally believed that education has a decreasing effect on the frequency of consanguineous marriages. But in societies where a significant change in the social system has not occurred, education does not have a decreasing effect but may have an increasing effect in contracting consanguineous marriages (e.g. Wahab & Ahmad, 1996) because of social pressure and political and economic imperatives.

A comprehensive comparative social and biological study of refugee and resident Afghans needs to be carried out, with special reference to reproductive health. The underlying determinants of changes in marriage patterns and pregnancy outcomes should be explored. Such a study should result in recommendations for policy guidelines within the social fabric of both the refugee and resident populations about marriage and healthcare facilities, with special reference to consanguinity.

References

Abdulrazzaq, Y. M., Bener, A., Al-Ghazali, L. I., Al-Khayat, A. I., Micallef, R. & Gabar, T. (1997) A study of possible deleterious effects of consanguinity. *Clinical Genetics* **15**, 167–173.

Afzal, M., Ali, S. M. & Siyal, H. B. (1994) Consanguineous marriages in Pakistan. *Pakistan Development Review* **33**, 663–674.

Ahmad, T., Ali, S. M., Aliaga, A., Arnold, F., Ayub, M., Bhatti, M. H. *et al.* (1992) *Pakistan Demographic and Health Survey 1990/91.* Pakistan National Institute of Population Studies and Macro International, Islamabad and Columbia, MD.

Al-Abdulkareem & Ballal, S. G. (1998) Consanguineous marriage in an urban area of Saudi Arabia: rates and adverse health effects on the offspring. *Journal of Community Health* **23**, 75–83.

Al-Ghazali, L. I., Bener, A., Abdulrazzaq, Y. M., Micallef, R., Al-Khayat A. I. & Gabar. T. (1997) Consanguineous marriages in the United Arab Emirates. *Journal of Biosocial Science* **29**, 491–497.

Badaruddoza & Afzal, M. (1995) Effects of inbreeding on marriage payment in North India. *Journal of Biosocial Science* **27**, 333–337.

Bittles, A. H. (1993) Inbreeding in human populations and its influence on fertility and health. *Journal of Biological Education* **27**, 260–266.

Bittles, A. H. (1994) The role and significance of consanguinity as a demographic variable. *Population and Development Review* **20**, 561–584.

Bittles, A. H. (1998) *Empirical Estimates of the Global Prevalence of Consanguineous Marriages in Contemporary Societies.* Paper No. 0074. Center for Human Genetics, Edith Cowen University, Perth, Western Australia.

https://doi.org/10.1017/S0021932005026404 Published online by Cambridge University Press

Bundey, S. & Alam, H. (1993) A five year prospective study of the health of children in different ethnic groups, with particular reference to the effect of inbreeding. *European Journal of Human Genetics* **1**, 206–219.

Darr, A. & Modell, B. (1988) The frequency of consanguineous marriage among British Pakistani. *Journal of Medical Genetics* **25**, 186–190.

Dobon, L. C. & Martinez, J. S. T. (1994) Inbreeding in Ojada and Pernia, 1875–1985, province of Palencia, Spain. *Journal of Biosocial Science* **26**, 327–340.

El-Hazimi, M. A. F., Al-Swailem, A. R., Warsy, A. S., Al-Swailem, A. M., Sulaimani, R. & Al-Meshari, A. A. (1995) Consanguinity among the Saudi Arabian population. *Journal of Medical Genetics* **52**, 623–626.

Farhud, D. D., Mahmoudi, M., Kamali, M. S., Marzban, M., Andonian, L. & Saffart, R. (1991) Consanguinity in Iran. *Iranian Journal of Public Health* **20**, 1–13.

Fikree, F. F. & Berendes, H. W. (1994) Risk factors for term intrauterine growth retardation: a community-based study in Karachi. *Bulletin of the World Health Organization* **72**, 581–587.

Givens, B. P. & Hirschman, C. (1994) Modernization and consanguineous marriages in Iran. *Journal of Marriage and the Family* **56**, 820–834.

Goldschmidt, E., Ronen, A. & Ronen, I. (1960) Changing marriage pattern systems in the Jewish communities of Israel. *Annals of Human Genetics* **24**, 191–204.

Hann, K. L. (1985) Inbreeding and fertility in a South Indian population. *Annals of Human Biology* **12**, 267–274.

Honeyman, M. M., Bahal, L., Marshal, T. & Warton, B. A. (1987) Consanguinity and fetal growth in Pakistani Moslims. *Archives of Disease in Children* **62**, 212–215.

Hosoda, Y., Fuijiki, K. & Nakajima, A. (1983) A research of consanguinity in Japanese young couples. *Japan Journal of Human Genetics* **28**, 205–207.

Hussain, R. (1998) The impact of consanguinity and inbreeding on perinatal mortality in Karachi, Pakistan. *Paediatric and Perinatal Epidimiology* **12**, 370–382.

Hussain, R. & Bittles, A. H. (2000) Sociodemographic correlates of consanguineous marriage in the Muslim population of India. *Journal of Biosocial Science* **32**, 433–442.

Kamalai, M. H. (1985) *Law in Afghanistan: A Study of the Constitutions, Matrimonial Law and the Judiciary.* E. J. Brill, Netherlands.

Khlat, M. & Halabi, S. (1986) Modernization and consanguineous marriage in Beirut. *Journal of Biosocial Science* **18**, 489–495.

Khoury, S. A. & Massad, D. (1992) Consanguineous marriages in Jordan. *American Journal of Medical Genetics* **43**, 767–775.

Kibria, N. (1994) Household structure and family ideologies: the dynamics of immigrant economic adaptation among Vietnamese refugees. *Social Problems* **41**, 81–95.

Lindholm, C. (1979) Contemporary politics in swat Pakistan. *Asian Survey* **XIX**, 485–505.

Merriam Webster's Pocket Atlas (1998) *Merriam Webster's Pocket Atlas.* Merriam–Webster, Incorporated, Springfield, Massachusetts, pp. 193, 228.

Mian, A. & Mushtaq, R. (1994) Consanguinity in population of Quetta (Pakistan): a preliminary study. *Journal of Human Ecology* **5**, 49–53.

Population Statement Afghan Refugees (2002) *Population Statement Afghan Refugees*. Afghan Commissionerate, Peshawar, NWFP, Pakistan.

Ramesh, M. & Veerraju, P. (1994) Consanguinity among Rellis of Visakhapatnam, Andhra Pradesh. *Journal of Human Ecology* **5**, 137–138.

Rao, P. S. S., Inbaraj, S. G. & Jesudian, G. (1972) Rural–urban differentials in consanguinity. *Journal of Medical Genetics* **9**, 174–178.

Reniers, G. (1998) *Post-Migration Survival of Traditional Marriage Patterns: Consanguineous Marriage among Turkish and Moroccan Immigrants in Belgium.* Interuniversity Papers in

https://doi.org/10.1017/S0021932005026404 Published online by Cambridge University Press

Demography. IPD – Working Paper 1998-1. Interface Demography, Vrije Universiteit Brussels, Brussels, Belgium.

Safdar, S. (1997) *Kinship and Marriage in Pukhtoon Society*. Pak Book Empire, Lahore, Pakistan.

Shami, S. A., Grant, J. C. & Bittles, A. H. (1994) Consanguineous marriages within social/occupational class boundaries in Pakistan. *Journal of Biosocial Science* **26**, 91–96.

Tapper, N. (1991) *Bartered Brides: Politics, Gender and Marriage in an Afghan Tribal Society*. Cambridge University Press, Cambridge.

Tuncbilek, E. & Koc, I. (1994) Consanguineous marriages in Turkey and its impact on fertility and mortality. *Annals of Human Genetics* **58**, 321–329.

Wahab, A. & Ahmad, M. (1996) Biosocial perspective of consanguineous marriages in rural and urban Swat, Pakistan. *Journal of Biosocial Science* **28**, 305–313.

Wulf, D. (1993) Afghan refugees in Pakistan. In *Refugee Women and Reproductive Health Care: Reassessing Priorities*. Women Commission for Refugee Women and Children, 1994, New York, pp. 37–46.

Yaqoob, M. (1995) Early child health in Lahore, Pakistan: psychomotor development, influence of inbreeding and social class on birth defects, severe mental retardation, anthropometric measures and mortality. *Acta Universitatis Upsaliensis* **629**, 1–71.

Yasmin, Naidu, J. M. & Mascie-Taylor, C. G. N. (1997) Consanguinity and its relationship to differential fertility and mortality in the Kotia: a tribal population of Andhra Pradesh, India. *Journal of Biosocial Science* **29**, 171–180.

https://doi.org/10.1017/S0021932005026404 Published online by Cambridge University Press