

Consanguineous Marriages in the Sikh Community of Swat, NWFP, Pakistan

Abdul Wahab and Mahmud Ahmad*

Government Degree College Matta, Swat, NWFP, Pakistan
E-mail: wahaabkhan@hotmail.com

**Department of Biological Sciences, Quaid-i-Azam University, Islamabad, Pakistan*

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ABSTRACT Marriages among the Sikh minority of the Districts of Swat, Bunair and Shangla (NWFP, Pakistan) were studied where the frequency of consanguineous marriages was found to be 21%. Marriages with distant relatives were 29.4% in the population. The inbreeding coefficient for the population was calculated to be 0.0127. Only three types of first cousin marriages (MSD, MBD and FSD) were recorded. Marriage with father's brother's daughter (FBD) was not found in the population studied. Mean inbreeding coefficient was higher for the low socioeconomic group (0.0181) and lower for the high socioeconomic group (0.0125). The trends of marriages of the minority Sikhs and majority Pukhtun populations are mostly similar. An increase in the incidence of consanguineous marriages over the years has been observed. The per cent frequencies of premature mortality and abnormality among the offspring of consanguineously married couples are higher as compared to those among the offspring of non-consanguineously married couples.

INTRODUCTION

Studies on the genetic implications of consanguineous marriages and their sociological correlates abound in Pakistan and other parts of the world. However, demographic studies of consanguineous marriages in religious minority groups are uncommon. The development of culture is a continuous phenomenon influenced by religion beside other variables. Sikh religion was established by Guru Nanak Devji in early sixteenth century (1507), which is influenced both by Islam and Hinduism (Dogra and Mansukhani, 1996). The forefathers of the Sikhs under study migrated to the tribal region on the right bank of River Indus from the present day Hazara Division after the battle fought at Balakot (a town) between the Sikhs and Muslims in 1831 in which the Muslims were defeated. They lived in some villages under the umbrella of some Khans and Religious leaders of the tribal region. After the formation of Swat State in 1917 the Sikh families spread over this region because the state provided security to them and their business. Ninety eight per cent of the Sikh living in the study area belong to Akali Mona sect and their castes are; Aora, Bedi, Bhabal, Chaolla, Chopra, Ghandi, Haroda, Jaggi, Kai, Kakard, Kathola, Khana, Makijai, Makol, Malhotra, Opal, Sethi and Sonia. The total population of the Sikhs in the study area is estimated to be approximately 2,000

persons. Their counterparts live in the Indian Punjab and in many other parts of the world. In the study area their main professions are business and government jobs.

Though, Guru Nanak and the other Gurus of Sikh religion aimed at producing caste-less society unlike those of the Hindu religion but caste system exists among Sikhs, at least for the purpose of arranging marriages (Roberts and Kahlon, 1972). Sikh marriages are regulated by *gotra* avoidance rule. In Punjabi language *gotra* refers to lineage (Raheja and Puri, 1995). According to this rule a man cannot marry a woman belonging to the *gotra* of his father, mother's father and father's mother's father (Singh, 1977). So there is culturally defined lineage exogamy among Sikhs. The different types of marriages, whether allowed or not according to *gotra* avoidance rule and having biological significance, are shown in Figure 1. The term *gotra* is not used by or familiar to the Sikhs of Swat and its adjoining areas but *gotra* avoidance rule exists here with certain modifications.

One of the codes of conduct in Sikh religion is that a Sikh shall marry a Sikh (Mansukhani, 1989) but due to cultural pressure, racial and religious exogamy was a dominant practice in the Sikhs of USA and Canada until immigration policies of these countries were changed in the 1960's (Gonzales Jr., 1987; La Brack, 1988; Kurian, 1991 and Basran, 1993). La Brack (1988) has also

pointed out that cousin marriages are prohibited in Indian Punjabi [Sikh], while this rule is vague and fuzzy among Canadian and American Sikhs but here, too, close biological marriages are disapproved. Some Sikh castes in the Indian Punjab show preference for other *gotra* reciprocally (i.e. giving daughters to and marrying daughters from), though this practice is less frequent (Singh, 1977). Pothan (1974) while studying inter-religious marriages in Malwa, Central India has observed inter-religious marriages among the Sikhs. Besides these, other sociological aspects of marriages in Sikh minority communities are extensively studied in different parts of the world (Roberts and Kahlon, 1972; Singh, 1977; Stopes-Roe and Cochrane, 1987; Gonzales Jr., 1987; La Brack, 1988; Stopes-Roe and Cochrane, 1988; Stope-Roe, 1989; Stope-Roe and Cochrane, 1990; Kurian, 1991). None of these studies have hint at the frequency of different types of marriages and the biological implication of such marriages. The present study is an attempt to see the cultural impact on the pattern of marriages in the Sikh minority community of Swat and its neighboring areas, and the genetic impact of cousin marriages on the health and lives of offspring.

METHODS

Data was collected in 1996 from all the married couples who belong to Sikh religion in three Districts; namely Swat, Bunair and Shangla in the North West Frontier Province (NWFP) of Pakistan. These districts formed major part of the Former State of Swat and are inhabited mainly by the Yusufzai tribe of Pukhtun (they are all Muslim). In all 143 couples were traced with the help of a Sikh friend. Information regarding the extent of relationship was sought from each couple as to whether the couple was first cousin (FBD, MBD, FSD or MSD), first cousin once removed, second cousin, distantly related or non-related. Socioeconomic status and educational level of the couple were recorded to see the effect of these parameters on the incidence of consanguineous marriage. Socio-economic status of the husband was recorded to act as a confounder on the health and mortality among the offspring of consanguineously married couples. Date of marriage of the couple was recorded in order to ascertain the changes through time, if any. To assess the genetic impact of consanguineous marriages due to homozygosity of recessive lethal and detrimental alleles the number of non-accidental mortality at

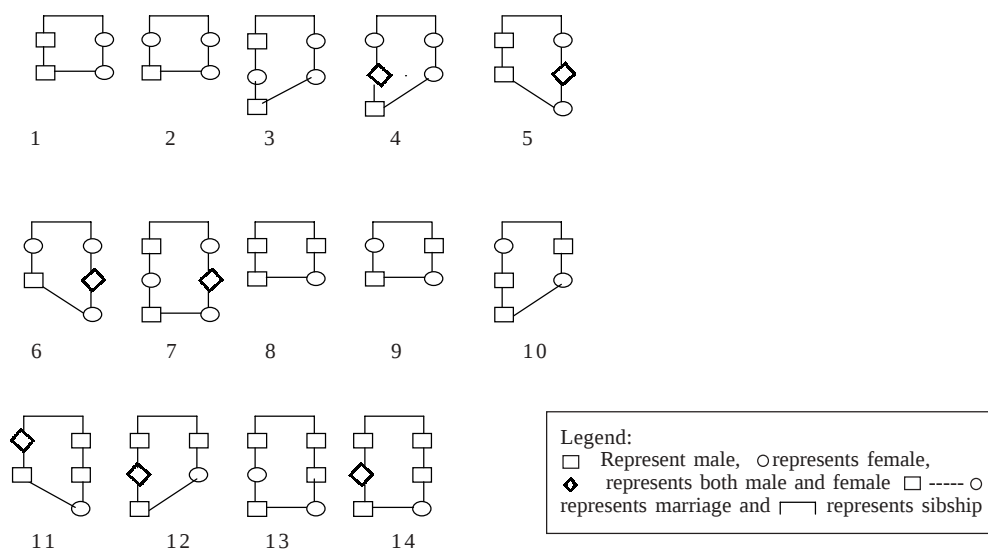


Fig.1. According to *gotra* avoidance rule marriages of the types 1 to 7 are allowed while those from 8 to 14 are prohibited. All these marriages (1-14) have biological significance.

different ages of male and female offspring (three months and one year) and physical/mental abnormalities among the living children were recorded. The criteria of socioeconomic status of a couple were business and official grades of the husband.

Standard procedures of χ^2 and Z test were employed to analyze the data. Coefficient of inbreeding for the population (s) was calculated by the formula $\Sigma P_i F_i$, where 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.

RESULTS

The percent frequency of cousin marriages in the population studied came out to be 21%. Among these 20.3% were between first cousins (MSD, FSD and MBD: Table 1). Marriages contracted between distant relatives were 29.4%. Not a single marriage between a man and the daughter of his father's brother (FBD) was

Table 1: Distribution of different types of marriages in the Sikh community of Swat and adjoining areas.

Marriage with	Frequency	Per cent
Mother's Sisters		
Daughter (MSD)	11	7.7
Father's Sister's		
Daughter (FSD)	9	6.3
Mother's Brother's		
Daughter (MBD)	9	6.3
Second Cousin	1	0.7
Distant Relative	42	29.4
Non-related	71	49.7
Total	143	100.0

Table 2: Socioeconomic status of husband and pattern of marriages in the Sikh community of Swat and adjoining area.

Type of marriage	Socioeconomic status of husband						
	I&II			III&IV			Total
	No.	%	F	No.	%	F	
Consanguineous	17	20	0.0125	13	28.9	0.0181	30
Non consanguineous	69			44			113
Total	86			57			143

Table 3: Educational level of husband and pattern of marriages in the Sikh community of Swat and adjoining areas.

Type of marriage	Primary			Secondary to degree			Higher			Total
	No.	%	F	No.	%	F	No.	%	F	
Consanguineous	16	15.84	0.0098	12	35.29	0.0227	2	25	0.0156	30
Non consanguineous	85			22			6			113
Total	101			34			8			143

recorded. Though, some types of first cousin once removed marriages are allowed in the Sikhs of Swat (personal interview) but none was encountered during the survey. The number of marriages of the MSD, FSD and MBD types were very close to each other i.e., 7.7, 6.3 and 6.3% of the total marriages, respectively. The mean inbreeding coefficient (s) for the population was calculated to be 0.0127. Among the higher socioeconomic strata (I & II) the cousin marriages occurred in 20% couples ($F = 0.0125$) while in the lower strata (III & IV) such marriages were 28.88% ($F = 0.0181$; Table 2) which shows an increased coefficient of inbreeding in the lower socioeconomic strata. The trend of cousin marriages in different educational groups was not smooth but it shows that husbands with higher education contract marriages with cousins more frequently than those males with lower education (Table 3). The coefficients of inbreeding for the husbands of "up-to primary education", "secondary to first degree" and "higher education" are 0.0098, 0.0227 and 0.0156 respectively. Cousin marriages have shown an increasing trend over the years. The decrease from 13.33% to 3.85% from "Up-to 1959" to the "1969" may be due to the small size of the population studied (Table 4). The per cent frequencies of caste endogamy and caste exogamy are 25% and 75%.

Deaths within one year after birth among the offspring of consanguineously married couples and non-consanguineously married couples in the higher socioeconomic groups (I & II) were 28.9 and 1.9% while such deaths for these types

of marriages in the lower socioeconomic groups (III & IV) were calculated to be 24.5 and 2.6%, respectively. In overall cousin marriages and non-cousin marriages, the frequencies of deaths of offspring within one year after birth came out to be 26.4% and 2.1%, respectively. When deaths within three months after birth were calculated they came out to be 19.8% for the first cousin marriages and 2.3% for the non-related marriages (Table 6). Significantly higher proportions of abnormal children were recorded in the offspring of first cousin marriages as compared to those born to non-consanguineously married couples ($Z=1.258$; $P<0.001$).

Pukhtun population and minority Sikh population when compared did not differ significantly from each other ($\chi^2 = 0.90$; $P>0.30$: Table 5). Though, when up-to second cousin marriages were compared with cousin marriages in the Sikh community, significant differences were observed ($\chi^2 = 9.54$; $P<0.01$). The small difference between the coefficient of inbreeding and the non-significant difference in the rate of first cousin marriages in Pukhtun majority ($s = 0.0165$) and in Sikh minority ($s = 0.0134$) shows a strong cultural influence of the majority on the minority group. The only difference between the majority Pukhtun and Sikh minority is that the former group

Table 4: Pattern of marriages over the years in the Sikh community of Swat and adjoining areas.

Type of marriage	Upto 1959		1960-69		1970-1979		1980-1989		1990-1996		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
Consanguineous	2	13.33	1	3.85	3	16.67	12	26.09	12	31.58	30
Non-consanguineous	13	86.67	25	96.15	15	83.33	34	73.91	26	68.42	113
Total	15		26		18		46		38		143

Table 5: Comparison of Pukhtun and Sikh marriages from Swat.

Type of marriage	Pukhtun	Sikh	Total
First cousin	448 (441.94)	29 (35.06)	477
Non consanguineous	1342 (1348.06)	113 (106.94)	1455
Total	1790	142	1932

$\chi^2_1 = 0.09$; $P > 0.30$

Table 6: Comparison of deaths within a year after birth among the offspring of consanguineous and non-consanguineous marriages in different socioeconomic strata of the Sikh community of Swat and adjoining areas.

Children	Socioeconomic status of husband								Total
	Consanguineous marriages				Non-consanguineous marriages				
	I&II		III&IV		I&II		III&IV		
	No.	%	No.	%	No.	%	No.	%	
Living	27	71.1	40	75.5	265	98.1	229	97.4	562
Died within a year after birth	11	28.9	12	24.5	5	1.9	6	2.6	35
Total	38		53		270		235		597

DISCUSSION

The inbreeding coefficient (0.0127) is not much smaller than for the majority population (0.0168 for rural and 0.0162 for urban Swat) studied by Wahab and Ahmad (1996). The difference seems to be due to the absence of marriages with Father's Brother's Daughters (FBD) and between first cousin once removed in the present study. The first cousin marriages among the majority

predominantly marries Father's Brother's daughters (Wahab and Ahmad, 1996) while in the later group such marriages are strictly prohibited (personal interviews). Like the increase observed in the frequency of consanguineous marriages over the years among the Sikh minority the increase was also observed in the majority Muslim population of the same area in a previous study (Wahab and Ahmad, 1996). This observation suggests that both the Muslim and

the Sikh marriages are controlled partially, if not totally, by the same type of cultural forces and not exclusively by religious beliefs. Exception to this conclusion are the marriages with father's brother's daughter (FBD). Among the higher socioeconomic strata (I & II) the cousin marriages occurred in 20% couples while in the lower strata (III & IV) these were 28.88% (Table 2). The observation is on the contrary to the trend for the majority population as observed by Wahab and Ahmad (1996). This may be due to the feeling of security by the lower socio-economic groups in marriages with relatives.

Due to the non-availability of literature on the pattern of Sikh marriages in the Indian Punjab and other parts of the world comparative analyses of the results of this study could not be done comprehensively. The idea one gets from the literature on sociological aspects of marriages in minority Sikh communities in the US and Canada (Roberts and Kahlon, 1972; Singh, 1977; Gonzales Jr. 1987; Stopes-Roe and Cochrane, 1987; La Brack, 1988; Stop-Roe and Cochrane, 1988; Stope-Roe, 1989; Stopes-Roe and Cochrane, 1990 and Kurian, 1991) some comparison could be made. The observation of La Brack (1988) in USA and Canada regarding the disapproval of cousin marriages in the minority Sikhs may be partly due to the cultural disapproval of such marriages besides religious norms. Also, that from early 1900's till mid 1960's the Sikh immigrants were under cultural pressure to practice racial and religious exogamy (Gonzales Jr., 1987; La Brack, 1988; Kurian, 1991 and Basran, 1993). This seems to be one of the reasons behind avoidance of marriages between close biological kin. According to the *gotra* avoidance rule mentioned by Singh (1977), marriages between a man and his Mother's Brother's Daughter (*gotra* of mother's father) are not allowed but such marriages (MBD type) are 6.3% of the total marriages and 30% of the cousin marriages in the Sikh minority population studied. The trend of cost endogamy (25%) and exogamy (75%) may be explained on the grounds of non-availability of marriage partner of the same age group from among the same caste because of the small size of population. Furthermore, the Sikhs would like to make relations with other co-religious castes of the area for sociopolitical reasons. This also shows that caste system among the Sikhs, at least in Swat, is not applied in contracting marriages.

The observation that the percent frequencies of deaths of offspring within one year after birth in the high socioeconomic strata of consanguineous marriages (28.9%) and the significantly higher proportions of abnormal children in the offspring of first cousin marriages ($Z = 1.258$; $P < .001$) clearly show the negative effect of consanguineous marriages on progeny (Table 6).

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