Kocatepe Tıp Dergisi
Kocatepe Medical Journal
19:64-68/Nisan/2018

ARAŞTIRMA YAZISI / RESEARCH ARTICLE

KIRIKKALE'DE AKRABA EVLİLİKLERİ SIKLIĞININ, BUNA ETKİ EDEN PARAMETRELERİN VE KALITSAL HASTALIKLARA OLAN ETKİSİNİN SAPTANMASI

EVALUATION OF FREQUENCY, AFFECTING PARAMETERS OF THE CONSANGUINEOUS MARRIAGES AND EFFECT TO HEREDITARY DISORDERS

Solmaz ERDEM[1], Zeynep Aytül ÇAKMAK[2], Meral SAYGUN[1], Derya Beyza SAYIN KOCAKAP[1], Sibel ALYILMAZ BEKMEZ[1], Funda BULUT ARIKAN[1]

[1]Department of Medical Biology, Faculty of Medicine, Kırıkkale University
[2]Department of Public Health, Faculty of Medicine, Ufuk University

ÖZ

AMAÇ: Türkiye yaklaşık 80 milyon nüfusa sahip olup, nüfus gençlerden oluşmaktadır ve doğum hızı orta yüksektir. Yapılan çalışmalara göre 2. kuzen gibi yakın akrabalar arasındaki evlilikler ortalama %20 civarında iken bu oran bölgeler arasında %3 ile %40 arasında değişmektedir. Akraba evliliklerini yerel ve bölgesel düzeyde etkileyen faktörler sosyal, kültürel ve ekonomik değişkenlerdir. Bu çalışmada, bir orta Anadolu şehri olan Kırıkkale'de akraba evliliklerinin oranı, tipleri, evlilik yaşı ve eğitim düzeyi ile ilişkisi ve tıbbi sonuçları incelenmiştir.

GEREÇ VE YÖNTEM: Şehrin farklı sosyo-ekonomik bölgelerini temsil edecek şekilde 5 mahalle belirlendi. 1000 aileye anket formları verilip doldurmaları istendi. 691 hanede anne ya da baba ile yapılan görüşmelerde evlilik yaşı, eğitim düzeyleri, aile üyelerinin sağlık bilgileri sorgulandı.

BULGULAR: Kırıkkale'de akraba evlilik oranı %20.4 olarak bulundu. Bunların içinde %48.9 gibi yüksek bir oranda 1. kuzenler arasındaki evlilikler tespit edildi. Akraba evlilikleri ile evlilik yaşı, eğitim düzeyleri arasında ters korelasyon izlendi. Örneklemimizde kalıtsal hastalık olgusuyla karşılaşılmadı.

SONUÇ: Kırıkkale'de akraba evlilikleri oranı yüksektir. Bu bağlamda, ülkemizde akraba evliliklerini önlemek için ulusal politikalar geliştirilmelidir.

ANAHTAR KELİMELER: Kan yakını, Akraba evlikleri, Kırıkkale

ABSTRACT

OBJECTIVE: Turkey has an estimated population of 80 million, with a young age structure and a moderately high birth rate. Previous reports have shown that marriages between couples related as second cousins or closer accounts for 20% of the total, varying by region from 3% to 40% . Social, cultural and economic variables all appear to be important factors in determining local and regional levels of consanguinity. The present study was undertaken to assess the rates and types of consanguineous marriages and their relationship to age at marriage and education level and medical outcomes in the Kırıkkale city, middle Anatolia.

MATERIAL AND METHODS: Five different districts of the city representing different socio-economic circumstances. Questionnaries were given to 1000 families. Then interwieved with mother or father, with details on characteristics such as marital age, educational level, the degree of biological relatedness of the parents and health status of the memberships of the 691 families.

RESULTS: The overall rate of consanguinity was 20.4% in Kırıkkale. The principal type of consanguineous marriage recorded was between first cousins, which accounted for 48.9% of all unions. For both sexes of parents, a significant negative association was observed between consanguinity and mean age at marriage and level of education. There was not any hereditary disorder in our small sample population.

CONCLUSIONS: Consanguineous marriage frequenciy was higher in Kırıkkale. In this context, it is important to develop national policies and strategies to prevent consanguineous marriagess in Turkey.

KEYWORDS: Consanguinity, Consanguineous marriages, Kırıkkale

Geliş Tarihi / Received: 07.02.2018
Kabul Tarihi / Accepted: 29.03.2018

Yazışma Adresi / Correspondence: Prof. Dr. Solmaz ERDEM
Kırıkkale Üniv. Tıp Fak. Tıbbi Biyoloji AD
solmazerdem57@hotmail.com

INTRODUCTION

People, who have at least one common ancestor, are called as "relatives" (consanguineous), marriages between relatives are called as "consanguineous marriages" (consanguinity) and children, who are born out of consanguinous marriages are called as "children of inbreeding" (inbred). There is an absolute necessity of having a common ancestor in kinship. However if the common ancestor is of the previous or the one before the previous generation, it is called "close kinship" (close relative); if the common ancestor is of the ancient generations, then it is called "distant kinship" (distant relative) (1-5).

A consanguineous marriage or also referred to as a marriage between same blood, is risky because of its property of bringing individuals, who carry autosomal recessive mutant genes, together. If there is an unwanted feature or a gene which generates the diseases in the family and if husband and wife are relatives, the possibility of their becoming heterozygotes will be much higher when compared to general society. And this may medically cause undesirable results. Consanguineous marriage in Turkey still conserves its property for being a health problem due to the complications that it causes (6-12).

Turkey has an estimated population of 80 million, with a young age structure and a moderately high birth rate. Previous reports have shown that marriages between couples related as second cousins or closer accounts for 20% of the total, varying by region from 3% to 40%. Social, cultural and economic variables all appear to be important factors in determining local and regional levels of consanguinity. The present study was undertaken to assess the rates and types of consanguineous marriages and their relationship to age at marriage and education level in the Kırıkkale city, middle Anatolia (13-16).

MATERIALS AND METHODS

Five different districts of the city representing different socio-economic circumstances. Questionnaries were given to 1000 families. Then interwieved with mother or father, with details on characteristics such as marital age, educational level, the degree of biological relatedness of the parents and health status of the memberships of the 691 families. The others didn't accept participate to study. Data were analyzed using SPSS software (statistical package for social sciences, USA).

The information concerning the age at first marriage, educational levels of couples, relation with husband, and reasons of the consanguinity were obtained by questionnaire administration. In addition, the number of spontaneous abortus, stillbirth, infant mortality and of the children with birth defects (physically or mentally) were recorded for the investigation of effects of consanguinity. In the study, completed education was assessed and only first marriages were included. The rates and types of consanguineous marriages and the relationships between consanguinity and mean age at marriage, consanguinity and parental educational level and health status of the memberships of the families were investigated. Both parents (mother and father) if alive, they were included to study. For the statistical analysis, levels of significance were determined by student t-test and Pearson chi-square test.

Ethics Commitee Approval: This study was approved by the Kırıkkale University Ethical Committee. 2010/B078

RESULTS

In our study we determined 141 couples had consanguineous marriages and the overall prevalence of consanguineous marriages in the study sample was 20.4%. Of the consanguineous marriages recorded, 48.9 % were between first cousins and 14.2% between second cousins and 36.9% others (**Tables 1,2**). The mean age at marriage is significantly lower especially for women, in all populations where consanguineous marriages are traditional, younger maternal marriage in first cousins union is typical. The average marriage age was found as 20.79 ± 0.13 for women and 22.13 ± 0.61 for men in consanguineous marriages and as 23.42 ± 0.23 for women and 26.01 ± 0.77 for men in non-consanguineous

Table 1: Frequency of consanguinity in Kırıkkale

Consanguinity	n	%
Consanguinious marriages	141	20.4
Non Consanguinious marriages	550	79.6
Total	691	100

Table 2: Consanguinity degrees of consanguinious marriaged couples.

Consanguinity degree	n	%
First cousin marriages	69	48.9
Second cousin marriages	20	14.2
Distant relatives	52	36.9
Total	141	100

marriages. Their ages were less than 20 years, there was a tendency toward consanguineous marriage. It was observed that the average marriage age of men and women who had consanguineous marriages were lower than the average marriage of men and women who had non-consanguineous marriages and also a very significant statistical difference was found among these groups ($p<0.05$) (**Table 3**). There was a significant negative association between consanguinity and level of education both for women and men our participant parents ($p<0.001$). Analysis of the results showed that when the educational level of either men or women was at high school level or above, consanguineous marriage rates were little. On the other hand, when their completed education levels were below that of high school also there was a tendency toward consanguineous marriage (**Table 4**). There were no hereditary disorders in our study sample, we didn't meet with these anomalies. The incidence of the non-hereditary diseases in the children or the family was found as 13.6 % among the people who had consanguineous marriages and as 10.8% among the people who had non-consanguineous marriages and it was statistically not significant (**Table 5**) ($p>0.05$).

Table 3: Marriage ages of participant parents

Marriage ages (MA) (year)	Consanguinious marriaged couples			Non consanguinious marriaged couples		
	n		%	n		%
	F	M		F	M	
< - 16	11	3	4.96	21	2	2.09
17 - 25	82	94	62.41	188	150	30.72
26 - 30	46	44	31.92	346	397	67.55
31 - >	2	-	0.71	5	1	0.54
Total	141	141	100	550	550	100
Mean MA±SD	20.79 ± 0.13†	22.13 ± 0.61†		23.42 ± 0.23†	26.01 ± 0.77†	

† : p<0.05

Table 4: Education levels of participant parents

Education levels of of parents	Consanguinious marriaged couples			Non consanguinious marriaged couples		
	n		%	n		%
	F	M		F	M	
Illiterate	10	-	3.54	21	3	2.18
Reader-writer only	19	3	7.80‡	33	15	4.36‡
Primary/Middle school	63	61	43.97‡	149	101	22.72‡
High school	49	65	40.42‡	310	378	62.54‡
University	-	12	4.25‡	37	53	8.18‡
Total	141	141	100	550	550	100

‡ : p<0.01

Table 5: Medical outcomes of study population

	Consanguinious marriaged couples		Non consanguinious marriaged couples	
Children with Non herediter diseases	n	%	n	%
Children with Acute diseases	13	9.2†	42	7.8†
Children with Chronic diseases	6	4.4†	17	3.0†
Total		13.6		10.8

† : p<0.05

DISCUSSION

Consanguinity is very common in Turkey. There is a strong preference for this traditional form of marital status. Studies to date indicate that the prevalence of consanguineous marriage is highest in middle Anatolia. Kırıkkale is a city in the this region of our country. Thus the present findings of a frequency of consanguinity for Kırıkkale of 20.4% corresponds well with other reports (17-21).

So many studies were done in our country on the rate and the medical effects of the consanguineous marriages concerning various cities and regions. According to these studies, the rate of the consanguineous marriage was found as: 37.2% in Diyarbakır, 16.8% in Eskişehir, 47% in one of the villages of İstanbul and Rize, 6.59% in a study done by the students of Ankara University Faculty of Medicine, 35.2% in Antalya, 23.3% in Konya, 15.45% in İstanbul among 4240 families living in slums, 29.96% in Samsun, 18.2% in Eskişehir and 30.56% in Elazığ. Diyarbakır was identified as the city in which the consanguineous marriages took place with the highest rate (37.2%) and İzmir was identified as the city in which the consanguineous marriages took place with the lowest rate among the cities examined in our country (2.67%) . Examining the rate of the consanguineous marriages in terms of the regions, the rate was found in the level of 12.8% in the studies of Tunçbilek and Koç including 1910 families in Western Anatolia region. Nevertheless in our study including 7100 families the same rate came out as 7.34%. However, once again in our study if we take the findings of Manisa (11.21%) and Denizli (12.4%)

into consideration, they seem to be in line with the findings of Tuncbilek and Koc; whereas the rate which has been acquired concerning the city of Izmir decreases the general rate. The rate of the consanguineous marriages in Turkey was announced as 28.4% according to Sayli, 21.1% according to Tuncbilek and 21.21% according to Basaran. Concerning all findings which have been acquired from all these studies, one can see that the rate of the consanguineous marriages, in our country, varies significantly between the regions and it decreases from east to West (2, 14, 22-35).

In our study, significant differences were not observed in terms of child death at early age and the disabilities seen in the children and the family among the couples who had consanguineous marriages or the ones who did not have. These findings are in line with the findings for the population of Konya, that the consanguineous marriages had no effect on spontaneous abortion, stillbirth and sterility; on the other hand it was also indicated that it significantly increased the number of child death at early age (0-12 months) and inborn defects. In the study of Okten and Elbistan, however, no relationship could have been established between the consanguineous marriages and spontaneous abortion, stillbirth, various death risks, the congenital anomalies seen in the parents of the couples, the marriage age of the couples and polygamy (36, 37).

We observed that the average marriage age of men and women who had consanguineous marriages was lower than the average marriage of men and women who had non-consanguineous marriages and also significant statistical difference was found among these groups; and determined that there was a sinificant negative association between consanguinity and level of education both for women and men. These findings are in line with the findings a lot of studies (1-37).

On examining the rate of kindred among the parents of the people in the research population, it is seen that the rate of the parental consanguinity in the group of the people who have had consanguineous marriages is higher than the group of the people who have had non-consanguineous marriages. It is also seen, according to this data, that the consanguineous marriages among the parents are to increase the incidence of the consanguineous marriages that the children of that family will have in the future.

In conclusion, the consanguineous marriages take place at a specific rate in our country although the rate varies regionally. Thus, it is concluded that making the society aware of the risks of the consanguineous marriages by the health institutions at any level, moreover giving necessary information to the couples, who have decided to have consanguineous marriages, on having healthy children by carrying out carrier screening tests are going to be very useful and it is also concluded that for the middle Anatolia region this study is going to contribute to commentate the consanguineous marriages in our country.

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