Socio-medical study of consanguineous marriages in riyadh city-saudi arabic

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SummaryThe causation of a wide range of diseases and anomalies can be attributed _wholly or in part - to consanguineous marriages in the parents of the affectedoffspring. Consanguineous marriages are common in the Middle East and the Asiansubcontinent. In Saudi Arabia, although the socio-economic structure haschanged, yet tribal habits of encouragement of consanguineous marrLages arestill prevalent.The present study has been conducted to detect the magnitude of inbreeding andrelated health consequences. A total of 1248 Saudi individuals were included inthe present study which had been conducted in the catchment areas of fiveprimary health care centres randomly selected in Riyadh - Saudi Arabia duringthe period from January 1991 to the end of June 1992.The study included 653 (52.3%) females and 595 (47.7%) males.The majority of respondents (58.7%) had their origin in the central area ofSaudi Arabia which includes the Capital City of Riyadh.The average age for the total sample was 34.94 + 10.5 years. The agedifferences between males and females as well as the consanguineous and nonconsanguineousmarriages were not significant.Non-consanguineous marriages had a prevalence rate: 55.13%, whereasconsanguineous marriages had a prevalence rate of: 44.87%.Study of the level of education of the investigated sample showed thatilliteracy rate was 30.13%. Females were more illiterate than males (38.2%) and21.3% respectively).The higher respondents are educated, the lower the probability to be married toa relative. The occupational distribution has shown that the majority (31.33%)were housewives. 30.7% were students, 18.35% labourers and 5.37% wereprofessionals.96.7% were married individuals.111Classification of respondents according to the year and type of marriage, gavea faint hope that the attitudes towards consanguineous marriages are slowlydeclining by time.Classification of consanguineous marriages had shown that 1.77. were doublefirst cousins, 23.67.were first cousins and 19.67.were relatives (less than{irst cousins).The estimated average inbreeding coefficient for the investigated sample was0.0405.73.177.of respondents who had consanguineous marriages still prefer the sametype of marriage, whereas -26.837.disfavoured consanguineous marriages.27.727. of respondents who had non consanguineous marriages preferred to bemarried to a related spouse. The most frequently mentioned reason (40.97.)forthe preference of consanguineous marriages was that the related spouse was”more tolerant and more patient”.The most frequently mentioned reason (58.17.) for the non-preference

ofconsanguineousmalformations”.marriages was that there were I1greater chances ofAlmost one third (33.77.)of respondents stated that they would encourage theirchildren to get married to a relative. On the other hand, those who woulddiscourage their children to be married to a relative constituted 25.67. ofrespondents.Those who would not interfere in their children’s choice constituted 37.37..55.77.of respondents believed that consanguineous marriages will increase therate of appearance of inherited disorders in their offsprings.71.77.of respondents declared the fact that public health education concerninghealth hazards of consanguineous marriages was almost negligible.However, 46.97.indicated the importance of premarital counseling in preventionof inherited disorders. Out of those, 65.37.had non-consanguineous marriages.11253% admitted that Islam discourages consanguineous marriages and 73.1% of thesehad non-consanguineous marriages. Respondents who had University or higheducation had more belief in the concept that Islam discourages consanl’;llineousmarriages.Study of ·the reproductive aspects of the females in the sample has shown thatthe average number of pregnancies per woman for consanguineous couples was 5.95± 1.2, in comparison to non-consanguineous couples who had an average of 6.25 +1.6 offsprings. The difference was statistically insignificant.The average birth weights of the last baby of the consanguineous couples was3080 + 517 grams, whereas the same average for non-consanguineous couples was3158 + 508 grams. The difference was statistically insignificant.Study of the effect of consanguini ty on the reprodllctIve wastage, had shownthat rate of abortions in consanguineous marriages was 16.49% in contract to8.31% from non-consanguineous couples.Stillbirth rate for consanguineous couples was 3.74% contrasted to 1.11% fornon-consanguineous couples.The total prenatal losses was 19.65% in consanguineous marriages and only 9% innon-consanguineous marriages. The relative risk was 2.11% whereas theattributable risk was 10.65%.The neo-natal -death rate for consanguineous marri ages was 16.95% compared to10.68% for non -consanguineous marriages.The total reproductive wastage rate for non consanguineous marriages was 33.42%in contrast to 19% for non-related marriages.In the consanguineous group sickle cell disease had a rate of 6 per thousand.whereas in the non-consanguineous group the rate was only one per thousand.Congenital heart disease was detected in 3.7 per thousand in the consanguineousgroup and only one per thousand in the non-consanguineous group. Footdeformities were the most prominent in both types of marriages (7.4 and 3 perthousand in consanguineous and non-consanguineous groups respectively).113The total congenital deformity rate in consanguoneous group hi~hly exceeded therate in the non-consanguineous group (24.4 and 8 pcr thousand respectively).Two. disorders which have genetical associations were included. These wereInsulin dependent diabetes mellitus (IDDM) and essential hypertension.The total disorder rate for both conditions in consanguineous offsprings was56.2 per thousand, whereas in non-consanguineous offsprings the rate was 36.2per thousand.For IDDM, in consanguineous marriages the rate was 22 per thousand contrastedto 14 per thousand in non-consanguineous offsprings.For essential hypertension, consanguineous offsprings had a rate of 34.2 perthousand contrasted to 22 per thousand for non-consanguineous offsprings. Theresults for

congenital deformations and genetically associated disordersshould not be generalized due to difficulties of coverage and follow up ofcases. The rates which were calculated in the present study were compared torates in other relevant studies locally, in the Arab area and internationally.Explanations and assumptions for reasons of concordance or disconcordance ofrates were supplied for various items including procedural, socia-economic,ethnic, religious and other predisposing factors.Generally, the study has indicated that marriages of related spouses mayexplain the prevalence of certain autosomal recessive disorders in Riyadh. Themost significant recommendations for prevention of such disorders included theprovision of efficient health education programs which should aim at spread ofinformation about adverse consequencies of consanguineous marriages. Also theimportance of premarital counseling and prenatal diagnosis were emphasized.The legal rights of the unborn-baby to be born normal has been discussed. Thecomplex social and ethical issues were handled in many instances.114The role of primary health care physician. the importance of immunizationsagainst rubella infections. the provision of modern technology for repair ofcertain defects and the encouragement of future research have been stressedwith the aim of reduction of the rate of inbreeding and amelioration of itsadverse morbidity and mortality.