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Dual Kinship & Cross Cousin Marriage Within Muslim Families

(A Sociological Study with special reference to Muslim Families Organization, Beawar City)

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ABSTRACT: Dual Kinship & Cross cousin marriages have been practiced since the early existence of modern humans. Until now consanguinity is widely practiced in several global communities with variable rates depending on religion, culture, and geography. Muslim populations have a long tradition of consanguinity due to socio-cultural factors. Many Muslim areas display some of the highest rates of consanguineous marriages including Beawar in Rajasthan, India, and specifically first cousin marriages which may reach 25-30% of all marriages. In some cities near Beawar consanguinity rates are increasing in the current generation. Research among Muslims has indicated that consanguinity could have an effect on some reproductive health parameters such as postnatal mortality and rates of congenital malformations. The association of consanguinity with other reproductive health parameters, such as fertility and fetal wastage, is controversial. The main impact of consanguinity, however, is an increase in the rate of homozygotes for autosomal recessive genetic disorders. Various, known dominant disorders are more numerous than known recessive disorders. However, data on genetic disorders in Muslims of Beawar city indicate a relative abundance of recessive disorders in the region that is clearly associated with the practice of consanguinity.

KEYWORDS: cross cousin, dual kinship, muslims, Beawar, genetic, disorders, culture

I.INTRODUCTION

Children born to genetically related people from the same family — so-called consanguineous marriages — face serious health risks. A recent study conducted in Beawar, Rajasthan, where the practice is still common, shows that women there have a higher awareness of these risks compared to men. Consanguineous marriage can result in children with cognitive difficulties, heart defects, and impaired hearing², as well as other genetically inherited diseases. It can also lead to increased chances of a child inheriting two copies of a defective gene from a shared common ancestor, perpetuating otherwise recessive genetic disorders. Muslim Families Organization, Beawar City conducted a cross-sectional study of 386 candidates over the age of 18 to determine their level of knowledge regarding these health risks.¹

Each participant completed two questionnaires. The first aimed to gather social details, including the level of education in their families, and included questions on marriage and known inherited diseases.³ The second questionnaire focused more closely on knowledge of the genetic consequences of consanguineous marriage. Overall,⁴ knowledge of the genetic instability caused by consanguineous marriage was lower among Beawar Muslim adults than in other cities. Around 6% of respondents lacked any knowledge, and a third of those questioned had never received any information related to genetic diseases. Interestingly, there was a strong disparity between the sexes, with women demonstrating significantly greater understanding of medical consequences than men.⁵ “This may be explained by the fact that females in our society tend to accept medical information in an objective manner in contrast to males, who are more likely to reject medical information if it is in conflict with the traditional culture,” the team suggest in their paper. Further, the study revealed that those from a higher educational background, together with those who had received medical information from friends, were more likely to understand the genetic risks and therefore be against consanguineous relationships. Those from backgrounds where families had less education had limited knowledge and were more likely to come from a long-held tradition of consanguineous marriages.⁶ The team urge caution in their results, because a larger, more comprehensive study of adult awareness is required. However, they believe that Beawar City in Rajasthan

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must conduct widespread health awareness on the risks associated with consanguineous marriages in India as a whole through Muslim Families Organization.”⁷

Intracommunity marriage is the norm in Beawar city muslims in Rajasthan where consanguineous marriage is favored, usually contracted within long-established male lineages, e.g., within the tribe or within caste in India, especially Beawar. Because gene flow between communities is highly restricted in most traditional societies,⁸ adjacent villages or even coresident subcommunities may exhibit very different inherited disease profiles, reflecting local founder mutations and genetic drift. These characteristics have been demonstrated in tribe-specific single gene disorders in Beawar muslims, the differential origins and expansion patterns of β -globin mutations in villages nearby Beawar and village- and lineage-specific predisposing genes for visceral leishmaniasis in towns near Beawar city,⁹ Rajasthan. Under these circumstances and whether or not the parents are known to be consanguineous, a recessive founder or de novo mutation of chronic effect can rapidly increase in frequency within a particular community or subcommunity, resulting in the birth of an affected child. In communities with a high level of consanguineous marriage, the diagnosis of a recessive disorder in one or more members of the same family is generally indicative of a recent mutation, whereas the presence of a rare disorder in several families suggests an older mutational event or previous admixture through marriage with a person from another community in Beawar city of Rajasthan.¹⁰

II.DISCUSSION

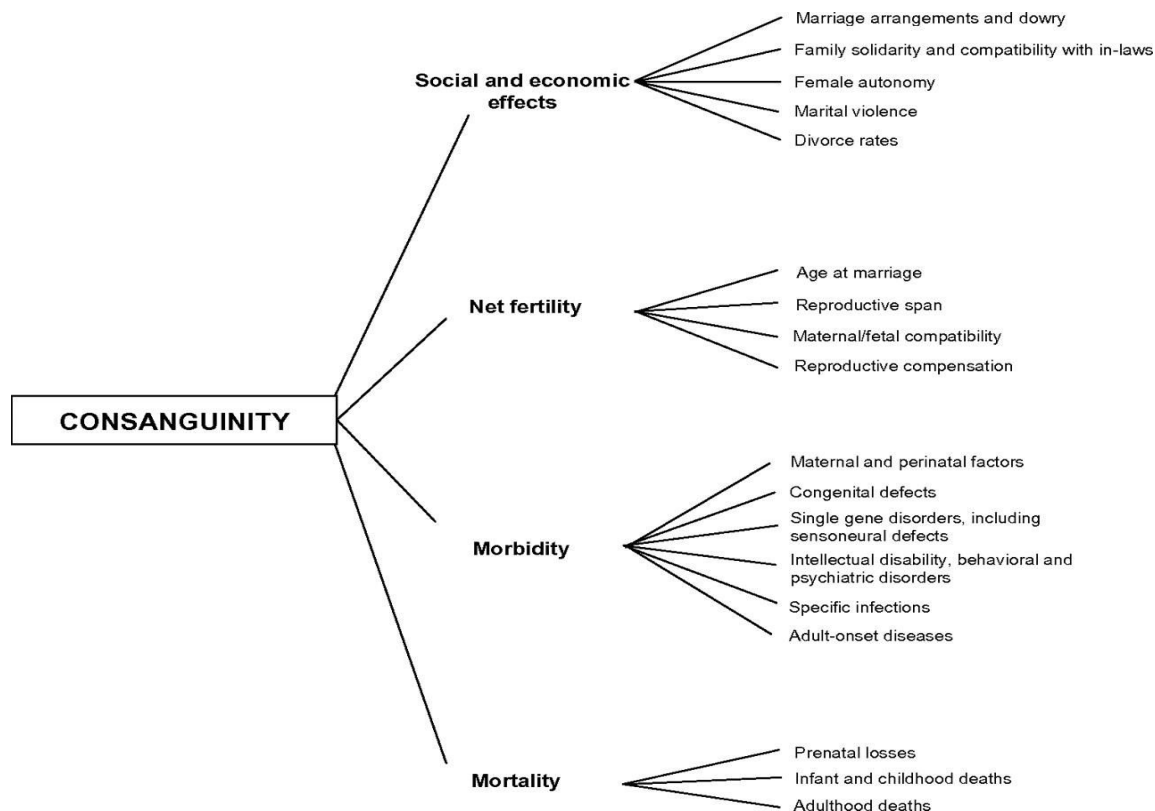
The population stratification may also be of critical importance in the investigation of consanguinity-associated morbidity and mortality, with straightforward comparisons drawn between the progeny of first cousins¹¹ versus unrelated parents of dubious validity unless both sets of parents are known to be members of the same clan, tribe, caste, or biraderi in muslims. For this reason, in many populations the clan or its hereditary social/occupational equivalent may be the most logical unit for genetic screening and genetic counseling programs, as exemplified by the distribution pattern of β -thalassemia in Beawar where >50% of cases were diagnosed in just one of the 185 major tribes and subtribes¹².

Within genetics, contemporary attention on consanguineous marriage continues to be largely focused on the expression and identification of rare autosomal recessive alleles, a recent example being a comparative study in progressive encephalopathy in Beawar muslim and the other city of India population. From an overall health perspective consanguinity is a much wider and more complex topic involving major social, economic, and demographic influences, differential reproductive behavior, and early- and late-onset morbidity and mortality.¹³ A thorough appreciation of the salient non-genetic variables is therefore essential in addressing the concerns of individuals, families, and communities with regard to reproductive choices, and in designing genetic education and genetic counseling programs for consanguineous couples.¹⁴

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Influences and outcomes of consanguineous marriages in Beawar, India

The highest overall prevalence of consanguineous unions is in poor rural communities, which are typified by low levels of maternal education, early age at marriage and first birth, short birth intervals, and longer reproductive spans¹⁵. Each of these factors is independently associated with larger family sizes and higher rates of infant and early childhood mortality, with reproductive compensation for early losses a further complicating issue in assessing the overall health outcomes of consanguinity. Comprehensive genetic education and premarital genetic counseling programs can help to lessen the burden of genetic diseases in such communities, as reported in Beawar. While in other cities of India mainly in Rajasthan, educational programs aimed at high school children, and through them their parents and relatives, have had a marked beneficial effect in reducing the incidence of sickle cell disease¹⁶. There are, however, current limitations to the success of these initiatives in many low-income groups, in particular the lack of clinicians, genetic counselors, nurses, and scientific support staff with appropriate specialist training. Patients referred for genetic counseling may also expect directive advice as to whether or not to proceed with a pregnancy, with failure to provide an opinion interpreted as a lack of knowledge on the part of the clinician, and even when specific rulings have been provided by religious authorities permitting prenatal diagnosis of genetic diseases and selective termination of a pregnancy, this option may remain unacceptable to individual couples¹⁷.

III.RESULTS

Initial estimates of the adverse effects of consanguineous marriage in a study, expressed as lethal gene equivalents, had produced significantly higher values for consanguinity-associated mortality, mainly because of lack of control for the negative correlation between consanguinity and socioeconomic status in Beawar muslims.¹⁸ The influence of first-cousin marriage on the prevalence of autosomal recessive single-gene disorders was examined as part of an investigation into consanguinity-associated morbidity in a muslim community in the Beawar city. From the results of this 5-year prospective study it was calculated that there would be a $\approx 7/1,000$ increase in autosomal recessive disorders

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per 0.01 increase in the mean coefficient of inbreeding . Thus, in a City population such as Beawar where $\approx 50\%$ of marriages were between first cousins ($F = 0.0625$) some 22/1,000 extra single-gene disorders would be expected.

Unfortunately, the original study omitted control for population subdivision, which has been shown to be a notable feature of muslim populations , and as previously noted is typical of many more traditional populations¹⁹. The subdivided populations characteristically exhibit higher than predicted levels of homozygosity. Given the known levels of population substructure associated with biraderi membership in Beawar and the Muslim community in Beawar, non-consanguineous couples are at higher risk of sharing the same recessive disease mutation than counterparts in populations where limited or no substructure exists. The consequent random consanguinity effect on the distribution and expression patterns of recessive disease genes means that in populations with significant subdivision the beneficial health outcomes that have been claimed through simply avoiding consanguineous marriage are almost certainly exaggerated and require reassessment²⁰ .

There has been extended debate on the nature of the genetic contribution to complex diseases, i.e., whether the common disease/common variant or the common disease/rare variant hypothesis is more applicable ,with the role of copy number variants also proposed .Consanguinity would be expected to exert a greater influence on the etiology of complex diseases if rare autosomal recessive alleles were causally implicated, whereas if disease alleles that are common in the gene pool are involved then intrafamilial marriage would have a proportionately lesser effect. However, because both gene–gene interactions and numerous nongenetic factors in prenatal and postnatal life also contribute to the disease phenotype, a single all-embracing solution to the genetics of complex diseases is highly improbable.²¹ Major genomewide analyses of diseases with onset primarily in childhood and adulthood have identified associations with specific chromosomal regions, e.g., for type 1 and type 2 diabetes although these studies have emphasized the large numbers of genes involved and the small increased risk that appears to be associated with most individual variants. Concern also has been expressed that concentration on the identification of gene variants via patients with the disease under study rather than full genome sequencing of randomly ascertained samples could lead to significantly inflated rates of false positives .²²

Investigations into the effects of consanguinity on congenital defects have produced quite varied results, in large part because of a lack of standardized assessment protocols and the different environmental and socioeconomic circumstances of the study populations. Using non-consanguineous progeny as controls, estimates of the excess level of congenital defects in first-cousin offspring have ranged from 0.7% to 7.5% , but the Muslim Families Organization based on many newborns found a significant association with consanguinity only for hydrocephalus, postaxial polydactyly, and bilateral oral and facial clefts in Beawar .²³

IV.CONCLUSIONS

Having largely been ignored for many years, the specific roles of population bottlenecks and consanguinity in influencing variation between and within populations are now receiving due attention, with special focus on homozygosity in identifying recent common ancestry via ROH analysis .²³The potential complexity of the interrelationships between consanguinity and human health and disease was highlighted by the reported association between consanguinity and predisposition to major infectious diseases. If these findings are substantiated, by ameliorating the risk of exposure to infectious agents a decline in consanguinity could also providentially reduce the risk of inflammatory disease and hence the development of coronary disease in middle and old age .²⁴ Time will tell whether these as yet tenuous epidemiological connections can be sustained. In the interim, it is important to emphasize that in assessing the impact of consanguinity on any aspect of health a clear causal relationship needs to be established, rather than reliance on speculation driven solely by the presence of a close kin union in the family pedigree. At the same time, rigorous control for community stratification should be a prerequisite in the many tribes where community subdivisions exist if confused and confusing conclusions are to be avoided.²⁵

REFERENCES

1. "19 Texas Administrative Code §100.1113". texreg.sos.state.tx.us. State of Texas. Retrieved 5 May 2017. Many other US states have the same definition.

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2. ^ O'Sullivan, Kathryn (2018). "Access to marriage: consanguinity and affinity prohibitions in national and international context". *Irish Journal of Family Law*. 22 (2): 8–12.
3. ^ Ritchie, Herbert (1940). "Methods of Intestate Succession". *University of Cincinnati Law Review*. 14: 508.
4. ^ "Table of Consanguinity". *Sleepy Hollow Cemetery*.
5. ^ Højrup, Knud, "The Knot System: A Numeric Notation of Relationship", *National Genealogical Society Quarterly*, Vol. 84, Numb. 2, p. 115, June 1996, ISSN 0027-934X.
6. ^ "RCW 26.04.020: Prohibited marriages". app.leg.wa.gov. Retrieved 2018-10-01.
7. ^ Farrow, Michael G.; Juberg, Richard C. (1969-07-28). "Genetics and Laws Prohibiting Marriage in the United States". *JAMA*. 209 (4): 534–538. doi:10.1001/jama.1969.03160170030006. ISSN 0098-7484. PMID 5819418.
8. ^ Ohio, for example, bars from juries in civil cases persons within the fourth degree of consanguinity to either party or their counsel (Ohio Revised Code §2313.17 (2012)); and persons within the fifth degree of consanguinity "to the person alleged to be injured or attempted to be injured by the offense charged, or to the person on whose complaint the prosecution was instituted, or to the defendant". Ohio Revised Code §2945.25 (1981).
9. ^ Constance Brittain Bouchard (24 November 2010). *Those of My Blood: Creating Noble Families in Medieval Francia*. University of Pennsylvania Press. p. 40. ISBN 978-0-8122-0140-6.
10. ^ James A. Brundage (15 February 2009). *Law, Sex, and Christian Society in Medieval Europe*. University of Chicago Press. p. 356. ISBN 978-0-226-07789-5.
11. ^ "Fourth Lateran Council: Canon 50. Prohibition of marriage is now perpetually restricted to the fourth degree". 1215. Archived from the original on 2016-08-20.
12. ^ John W. Baldwin (28 May 1994). *The Language of Sex: Five Voices from Northern France Around 1200*. University of Chicago Press. p. 78. ISBN 978-0-226-03613-7.
13. ^ R. H. Helmholz (26 March 2007). *Marriage Litigation in Medieval England*. Cambridge University Press. p. 86. ISBN 978-0-521-03562-0.
14. ^ Dvornik, Francis (1970). *Byzantine mission among the Slavs*. Rutgers University Press. p. 241. ISBN 0813506131.
15. ^ Wolbert Smidt, "Genealogy" in Siegbert Uhlig, ed., *Encyclopaedia Aethiopica: D-Ha*, (Wiesbaden: Harrassowitz Verlag, 2005), p. 743.
16. ^ "Surah An-Nisa [4:22–25]". Quran.com. Retrieved 16 June 2018.
17. ^ "The Qur'an". *Quran Surah An-Nisaa (Verse 23)*
18. ^ "Islam's Women". unknown. n.d.
19. ^ Consanguineous marriage: Should it be discouraged? Archived 2017-10-10 at the Wayback Machine June 2012, MiddleEastHealthMag.com, retrieved 28 Nov 2018
20. ^ "Average percent DNA shared between relatives". [23andme](http://23andme.com). Archived from the original on 2018-05-05. Retrieved 2018-05-06.
21. ^ Jorde, Lynn B; Wooding, Stephen P (2004). "Genetic variation, classification and 'race'". *Nature Genetics*. 36 (11s): S28–S33. doi:10.1038/ng1435. PMID 15508000.
22. ^ Wright, Sewall (1922). "Coefficients of inbreeding and relationship". *American Naturalist*. 56 (645): 330–338. doi:10.1086/279872. S2CID 83865141.
23. ^ Darr, Aamra (14 October 2010). "Consanguineous Marriage and Inherited Disorders" (PDF). University of Bradford: City of Bradford. Retrieved 31 August 2016.
24. ^ Hamamy, H. (2011). "Consanguineous marriages: Preconception consultation in primary health care settings". *Journal of Community Genetics*. 3 (3): 185–192. doi:10.1007/s12687-011-0072-y. PMC 3419292. PMID 22109912.
25. ^ "Ask a Geneticist" – Understanding Genetics: Human Health and the Genome, Erin Cline Davis, [23andMe](http://23andMe.com). Edited by DB Starr, Stanford University (10 October 2008)



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