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Article in *Indian Journal of Public Health Research and Development* · April 2019

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Prevalence and Perception of Women about Consanguineous Marriage in Al-Ramadi City

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Abstract

Background: Consanguineous marriage is a common phenomenon in many communities and often related to several of undesirable health consequences. This study aims to study the prevalence and determinants of consanguinity and the perception and knowledge of women about the risk associated with it.

Methodology: A cross-sectional study was carried out at the outpatient (OP) clinic in the Teaching Hospital of Maternity and Childhood, Al-Ramadi city, Anbar province, Iraq. A convenient sample of one hundred fifty married women who were interviewed over the period from 1st February to 30th March 2018.

Results: The mean age (\pm SD) was 39.0 (\pm 12.8) years. About two third (64.6) of marriages were consanguineous and 36.6% of which were between first cousins and 14.7% had a child with genetic disease or disability. Consanguinity has a negative and significant association with women's education. Positive attitude towards inbreeding was 64.7%, however only 34.3% knew that it leads to genetic diseases. About 77.0% preferred to receive information about the risks of inbreeding and 94.7% to have medical examination before getting married.

Conclusion: Although consanguinity is commonly practiced and accepted in Iraq, the awareness of mothers towards the related health consequences to their offspring remains low.

Keywords: Consanguineous Marriage, Prevalence, knowledge, Perception, Iraq

Background

Consanguineous marriage (inbreeding) is a customary practice among wide variety of societies all over the World. Consanguinity is defined as marriage between blood relatives¹. Inbreeding is most likely related to significant increase in the prevalence of childhood disability rate and the reproductive mortality rate^{2,3}. Several of inherited and gene-related disorders and adult-related diseases have been reported among births of consanguineous marriages⁴. The impact of consanguinity is directly proportional to the degree of

kinship, and the possibility of transferring the defective gene becomes more liable between close relatives⁵. However, such marriages considered a social behavior represented in the desire of nearly one billion of current world populations to marry relatives⁶. Reasons behind such behavior have been widely discussed. Religion and the economic situation were the main reasons pushing family toward the consanguinity^{6,7}. Factors that determine the consanguinity may vary and change according to the change of society, but generally are revolving around "the socio-economic levels, education and rural versus urban setup"⁷. In the Arab countries including Iraq, the society tends towards tribal grouping even within the large cities, and therefore the rate of consanguineous marriage is relatively high compare to other regions of the world⁸.

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Indeed, during the last two decades, many valuable studies have been conducted in the Arab region, but

some countries, including Iraq, still lacking information or even recent data to assess the development of society towards this subject. This study aims to estimate the prevalence and the determinants of consanguineous marriage in Al-Ramadi city in Iraq, and the perception and knowledge of women about the risk associated with it.

Method

Study Design

A cross-sectional study was conducted at the outpatient (OP) clinic of the Teaching Hospital of Maternity and Childhood in the Ramadi city, Anbar province, Iraq. A convenient sampling technique was recruited to collect sample of one hundred and fifty women over the period from 1st of February to 31st March 2018. All the Iraqi citizens, married women who were visiting the OP clinic (prenatal, gynecologic, neonatal and pediatrics clinics) and willing to participate were included. However unmarried women and medical staff were excluded as well.

Data Collection

A well trained data-collection team was recruited to interview the eligible participants using a specially designed questionnaire. The questionnaire was in Arabic language and was pilot tested with 15 women out of the used sample. The questionnaire included three parts; part one was socio-demographic and reproductive data; part two included the degree of consanguinity; part three included knowledge and attitude of women towards consanguineous marriage.

Statistical analysis

Statistical analysis was performed with SPSS 16.0 (Statistical Package for Scientific Studies) for windows. Data was presented in the form of percentages, mean, standard deviation (SD) values. Chi-square (χ^2) analysis was used for rate comparison. Statistical significance at level $p < 0.05$ was used when required.

Results

Descriptive analyses

The mean age (\pm SD) was 39 (\pm 12.8) years and the age at marriage was 21.5 (\pm 4.1) years. Half of the women (75, 50.0%) were married at the age group of 15-19 years. About two third (64.0%) of women had low education (illiterate and primary), while the highest proportion of husbands (30.7%) were at a higher education level (university). The vast majority (87.3%) of women were housewives, compare to 44.7% of husbands were self-employed. About 67 (44.7%) women were having 5 children or more, however 42.0% experienced abortion at least once. History of child deaths were reported among 34% of the participants. About two third (97, 64.6%) of marriages were consanguineous; 58 (38.6%) of which were between first cousins. The degree of consanguinity for wife parents and for husband parents were 57.3% and 62.0% respectively. There was no significant association between all measured variables and the state of consanguinity, except for the level of education of the surveyed women which was significantly higher ($p=0.000$) among the non-consanguineous marriage group compare to the consanguineous marriages (Table 1).

Table 1: Association of consanguineous marriage with socio-demographic and reproductive variable

variable	Categories	Consanguineous marriage N (%)	Non-Consanguineous marriage N (%)	p-value
Age of sample	< 20- 29	20(21.3)	9(16.1)	0.58
	30-39	30(31.9)	22(39.3)	
	40 +	44(46.8)	25(44.6)	
Age at marriage	<15- 19	61(64.9)	32(57.1)	0.60
	20- 29	31(33.0)	22(39.3)	
	30+	2(2.1)	2(3.6)	
Education of women	Low	58(61.7)	37(66.1)	0.000
	Intermediate	24(25.5)	2(3.5)	
	High	12(12.8)	17(30.4)	

Cont... Table 1: Association of consanguineous marriage with socio-demographic and reproductive variable

Education of husband	Low	35(37.2)	21(37.5)	0.35
	Intermediate	22(23.4)	8(14.3)	
	High	37(39.4)	27(48.2)	
Occupation of women	Housewife	85(90.4)	49(87.5)	0.57
	Employed	9(9.6)	7(12.5)	
Occupation of husband	Employed	26(27.6)	17(30.4)	0.60
	Self employed	39(41.5)	26(46.4)	
	Unemployed	21(22.3)	9(16.1)	
	Dead	8(8.5)	4(7.1)	
Parity	0-2	20(21.3)	17(30.4)	0.40
	3-4	34(36.2)	16(28.5)	
	5+	40(42.5)	23(41.1)	
Abortion		43(45.7)	20(35.7)	0.23
Child death		35(37.2)	16(28.6)	0.28
Having children with disabilities or genetic diseases		16(17.0)	6(10.7)	0.29
Total		94(100)	56(100)	

Twenty two (14.7%) had at least one child with disability or genetic disease. The highest percent (16, 72.7%) of children with disability or genetic disease was among consanguineous marriages compare to 6 (27.3%) among the non- consanguineous marriages. Diseases associated with consanguinity as reported by women included epilepsy, congenital heart disease, diabetes mellitus, asthma, speech impairment, Down syndrome, hydrocephalus, thalassemia, psychological disturbance. About two third (97, 64.7%) had a positive attitude towards consanguineous marriage, however 37.3% of them knew that consanguineous marriage leads to genetic diseases, and 62.7% thought it does

not lead to diseases. Twenty three congenital diseases and disabilities have been mentioned by 56 women. Thalassemia and congenital malformation were reported by 14 (25.0%) and 12 (21.4%) of respondents respectively. In table 2, the highest percent (116, 77.0%) of surveyed women preferred to receive information about the risk of consanguineous marriage before they got married. Family and relatives (66, 44.0%) were the main preferred source of information. Table 3 showed that the vast majority of the respondents (94.7%) realized the importance of having a medical examination before getting married, however only 72.0% of them had performed it.

Table 2: Perception of women about preferred time and source for receiving information regarding risks of consanguineous marriage.

Preferred time for providing information regarding risks of consanguineous marriage:	Before marriage	116	77.4
	Before first pregnancy	14	9.3
	During pregnancy	2	1.3
	Any time	18	12.0
Preferred source for receiving this information:	Family doctors	26	17.3

Cont... Table 2: Perception of women about preferred time and source for receiving information regarding risks of consanguineous marriage.

	Gynecologists	44	29.3
	Family and relatives	66	44.0
	Media and internet	13	8.7
	Other	1	0.7
Do you support dissemination of information about the risk of consanguinity to the public:	Yes	117	78.0
	No	33	22.0
Suggested sites for dissemination (n=117, 78.0%)	Health centers	36	30.8
	School Curriculum	28	23.9
	Internet	24	20.5
	TV	24	20.5
	Families and relatives	5	3.4

Table 3: Perception of women about premarital examination, and their acceptance of consanguineous marriage in the future

Variables	Categories	N	%
Agree about the importance of premarital examination	Yes	142	94.7
	No	8	5.3
Had a Premarital examination	Yes	108	72.0
	No	42	28.0
Opinion if their sons prefer consanguineous marriage in the future	Strongly accept	90	60.0
	Hesitate	33	22.0
	Don't agree	27	18.0
Reasons for accepting consanguineous marriage (n=98)	Knowing the personality of the mate before marriage	42	42.8
	Strengthen family relations	25	25.5
	Arranged marriage	25	25.5
	Personal desire	4	4.1
	Avoiding problems within families	1	1.0
	Stay near relatives	1	1.0
Reasons for rejecting consanguineous marriage (n=52)	Avoid genetic disease	29	55.8
	Avoid family problems	20	38.5
	Personal desire	3	5.8

Discussion

In this study, the overall frequency of inbreeding in Al-Ramadi city (Anbar province, Iraq) found to be 64.7% and the first cousin marriage was 38.6%. This

rate is high when compare to findings of earlier studies in range of 47-60%^{9,10}. This rate also was higher than the neighboring countries of Iraq such as Saudi Arabia (29.7%)¹¹, Jordan (35.0%)¹², Syria (35.4%)¹³, Iran (32.5%)¹⁴, Kuwait (54.3%)¹⁵, and Turkey (18.5%)¹⁶.

In Iraq, the tribal community, and traditional beliefs to keep strong family ties produced the positive attitude of parents towards consanguinity as showed by the high rates of inbreeding among them. Indeed, the past decade witnessed evidence of contradiction among the human groups living in semi-homogeneous societies, for example, the rate of consanguinity in Jordan and Saudi Arabia recorded a marked decline, however UAE and Qatar reported a significant increase in the rate of consanguinity^{11,12}. Results of present study found younger age at marriage was associated with consanguinity. Several studies from Pakistan¹⁷, Oman¹⁸, and Egypt¹⁹ confirmed the association of consanguinity with younger age at marriage. About 30% of highly educated husbands who preferred consanguineous marriages were self-employed, probably due to less chance for employment in our country even after graduation. Part of our findings showed that 64.7% of respondents support inbreeding, which is higher than that reported by Iran (38.8%)²⁰. However, women who know that inbreeding lead to genetic disease were only 34.3% which indicated low awareness and less health education. Sandridge et al. (2010) reported that knowledge was imperfect with high proportions of participants not knowing that consanguinity has been implicated in autosomal recessive diseases and other genetic diseases²¹. Majority of interviewed women (77.3%) recognized the danger of inbreeding and preferred receiving information about the risk of consanguinity before getting married. This finding was better than results provided earlier by Teeuw et al. (2012)²². Family and relatives were the most preferred sources for receiving such information in about 44.0% of women. Similarly was reported in Pakistan²³, but was lower than taht reportedn in Oman²⁴. Medical examination before marriage was important in about 94.7% of repondents, however only 72% of them had perform it. Similar results were reported among sample of undergraduate students in Oman, the vast majority (92.0%) believed that premarital screening test is important and half of them favored to perform it as an obligatory procedure before marriage²⁴. Hamamy (2012) pointed out that wife's parents preferred consanguineous marriage to keep them living close and to enjoy seeing their grandchildren²⁵. In our study about 60% of women accepted thier offspring marrying within the family. This results were supported by study of Qidwai et al. (2003) in pakistan²⁶. The main reasons in favor of consanguineous marriages were quoted as having more information about the mate before marriage (43%).

Similar findings were reported in the study conducted in Saudi Arabia²⁷. In term of discussing the reasons for rejecting consanguineous marriages for their offspring, the opinion of most of women was to avoid genetic diseases and interfamilial troubles and problems. It was noted that the received health information about the risk of consanguinity may contribute more to the negative attitude towards the consanguineous marriage^{26,27,28}. This study is limited by the convenient sampling technique and the security situation in Iraq. Being a cross-sectional study, it couldn't be possible to build a causal relationship among the variables. Because the sample was collected from one city, the results cannot be generalized to whole country.

Conclusion

A very high rate (64.6%) of consanguineous marriage was reported among sample of married women in Al-Ramadi city, Anbar Province, Iraq. Two third of these marriages were first cousin marriage. Consanguinity has inverse association with women education. Genetic diseases and disability were reported more among consanguineous married group than non-consanguineous marriages. Although consanguinity is widely practiced and accepted, the awareness of women towards the health consequences to their offspring remain low. Most of the respondents preferred to receive information regarding the risks of consanguineous marriage before they are getting married. About 60% of women do not mind if their sons or daughters want to marry relatives in the future.

Declarations

Acknowledgement : We render our thanks to all medical staff working at Teaching Hospital of Maternity and Childhood in Al-Ramadi city for their time and unlimited support during the data collection process.

Funding : The author (s) received no financial support for the research, authorship, and/or publication of this article.

Availability of data and materials

Data will be available by emailing Drbth63@gmail.com

Ethics approval and consent to participate

We conducted the research following the Declaration

of Helsinki, and the protocol was approved by the Ethic Committee of the Scientific Issues and Postgraduate Studies Unit (PSU), College of Medicine, University of Anbar (Ref: SR/90 at 01-Mart -2018). Moreover, written informed consent and oral consent was obtained from each mother willing to participate after explanation of the study objectives and guarantee of secrecy.

Competing Interest : The authors declare that they have no competing interests

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