



Effect the Consanguinity marriage in increasing recessive inheritance traits

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Abstract:

The aims of study were to , determine the effect of consanguineous marriage to increasing recessive inheritance traits frequencies, in this study we use hair form and hand clasping traits, in Benghazi area Through the study, a total of 1231 individuals from 180 families, ninety families had consanguineous marriage, and ninety families had non consanguineous marriage, Frequency distribution and Chi square were used to detect significant traits using SPSS program version 21, the higher frequency of straight hair was found in Consanguinity (31.9%), than non-Consanguinity (27.1%) and left hand clasping was found a lower in non- consanguinity than consanguinity (15.5%,22.4%) respectively, the test showed a significantly differences on distribution between consanguinity and non-consanguinity ($p < 0.05$). This vital information will be important for population genetics studies and may helpful in planning for future health strategy, particularly planning with regards to genetic disease and genetic counseling program.



INTRODUCTION:

A human population has diversity because of numerous morphological variations among them. Hair morphology is one of the distinctive traits, Curly hair is a dominant trait, straight hair is a recessive trait, and wavy hair is a hetero . (*Rehman et al., 2020*). And the left hand clasp is controlled by recessive genes and the right by dominant genes. (*Singh & Sengupta, 2004*). shall be interesting to analyze the effects / degree of consanguinity and its effects in human populations . mating in large population. We considered how inbreeding leading to decrease in the heterozygosity allele frequency in population One of the consequences of inbreeding is a increase in the chance that an individual will be homozygous for recessive deleterious traits. The present study includes survey of 180 families, ninety families had consanguineous marriage, and ninety families had non consanguineous marriage to see effected the consanguineous marriage in increasing the recessive traits that will increase homozygosis and that will expected to increase genetic diseases It has an important role in the determination of the chance of occurrence of genetic diseases in the society. Chadha and sandhu (2013) reported a distribution of morphological, traits in three endogamous groups of scheduled castes in Jammu and Kashmir , the test showed homogeneous distribution of the characteristic. Mendelian recessive pattern was strength to be due to inter-tribal marriages which encourages inbreeding, In a prospective study, it would be pertinent to include a dense grid of samples from all major small and large populations. It would be very interesting to observe stratification in different Libyan populations and to estimate the loss of heterozygosis, and to explore stratification at other loci. Furthermore, it would be worthwhile to check the homozygosis existing in Libya populations



at the genomic level, particularly in the context of a high inbreeding coefficient.

MATERIAL AND METHOD:

Through the study, a total of 1231 individuals from 180 families, ninety families had consanguineous marriage, and ninety families had non consanguineous marriage. Data on morpho-genetic traits were collected from individuals. By taking previous informed consent from the individuals, taking into consideration the factors like, consanguinity, tribe, was at randomly selected families in the region of study.

RESULT:

Hair Form :

Overall average of hair form frequencies were found on the following order Straight > wavy > curly and there were a significant difference ($p < 0.05$). The higher estimate of curly hair was found in non-Consanguinity (3.7%) than Consanguinity (2.5%). The higher frequency of wavy was found in non-Consanguinity (18.8%), than Consanguinity (16%), and the higher frequency of straight was found in Consanguinity (31.9%), than non-Consanguinity (27.1%). Figure(1)

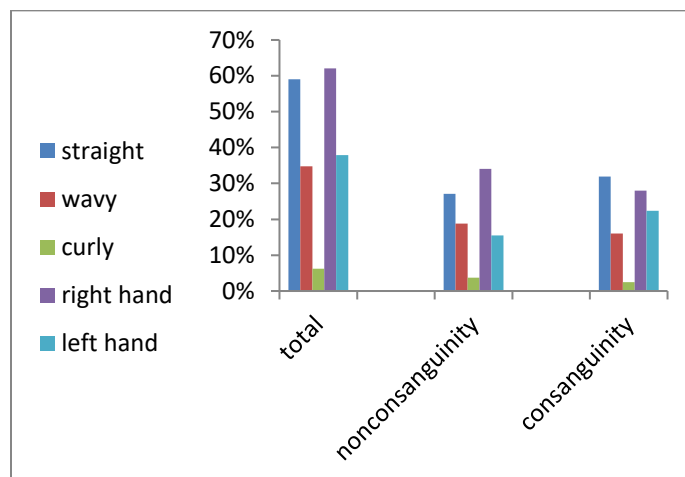
Hand Clasping

The frequency of right hand clasping was found higher in non- consanguinity than consanguinity (34.1%, 28%) respectively and left was found lower in non-consanguinity than consanguinity (15.5%, 22.4%) respectively. There are highly



significant differences ($p < 0.05$) for hand clasping traits between consanguinity and non-consanguinity of study. Figure(1)

$X^2 = 10.919$. $p = 0.001$. for hair form. $X^2 = 19.623$, $p = 0.000$, for hand clasping.



Figure(1) The frequency distribution of hair form and hand clasping for consanguinity and non-consanguineous population in a Benghazi area.

In summary, hair form and hand clasping showed a significant differences in frequencies between consanguineous and non-consanguineous marriage.

References

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