

DISTRIBUTION OF MORPHOLOGICAL AND BEHAVIOURAL TRAITS AMONG FOUR ENDOGAMOUS GROUPS OF HARYANA

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ABSTRACT

In the present study, three morphological and four behavioural traits have been reported among four endogamous groups viz. Mallah, Kumhar, Banjara and Saini of Haryana. Data of 800 individuals were collected by conducting a survey. All the traits showed significant variations and heterogenous distribution except for R type handedness trait.

KEYWORDS: Morphological, Behavioural, Endogamous Groups, Haryana

INTRODUCTION

Indian population consists of around 4000 endogamous groups which are divided into castes and tribes providing excellent scope for genetic studies (Bhasin *et al.* 1992). Singh (1994) has identified 82 communities in Haryana. Although these communities are quite widely distributed yet only sporadic studies are available with regard to the distribution of ABO and Rh (D) blood groups in different endogamous groups of Haryana (Malik *et al.* 1998, Yadav *et al.* 1992, 1994a,b, 1997a,b,c, 1998, 2000, 2001, Yadav *et al.* 1992, Yadav *et al.* 2002, Yadav *et al.* 2008, Chhikara *et al.* 2011, Jain *et al.* 2013a,b, Yadav *et al.* 2013a,b, Jaggi *et al.* 2014). In the present investigation, an attempt has been made to study distribution of morphological and behavioural traits among five endogamous groups viz. Mallah, Kumhar, Banjara and Saini of Haryana as there was limited systematic study on them.

MATERIAL AND METHODS

Subjects

Mallah are the traditional boatmen caste and belong to backward class. This community is found along the banks of Yamuna river. The Kumhar are also called Prajapati. They are spread all over the state. They are traditionally engaged in pottery and belong to backward class. Banjara are called Gypsies and described as nomadic people. They are also called Vanjara and belong to backward class. Saini is a community of traditional agriculturists spread all over Haryana. They belong to backward class.

During the present study, a total of 800 individuals (200 for each caste group) were examined for various morphological and behavioural traits. Data for 4 endogamous groups viz. Mallah, Kumhar, Banjara and Saini were obtained by approaching to their basti, dera and local families of Haryana.

Methods

Investigations were carried out following the standard technique of Wiener & Lourie (1969). The following traits were studied:-

Morphological Traits: Ear Lobe, Eye colour and Hair colour.

Behavioural traits: Hand Clasping, Arm Folding, Leg Folding and Handedness.

Statistical Analysis

The observations were recorded on a standard proforma. Chi-square test was used to test the homogeneity.

RESULTS

The percentage frequency distribution of various morphological and behavioural traits in 4 endogamous groups is depicted in Table 1. The chi-square values for total group differences are presented in Table 2.

Table 1: Percentage Frequency Distribution of Various Traits among Four Endogamous Groups

Caste	Ear Lobe	Eye Colour	Hair Colour	Hand Clasping	Arm Folding	Leg Folding	Handedness
Mallah	88	89	79	92	98	94	90
Kumhar	67	51	65	40	60	67	88
Banjara	58	42	45	63	64	63	76
Saini	46	36	90	64	48	86	96

Table 2: Chi-Square Values for Total Group Differences in Traits Studied

Trait	χ^2	D.f.	Significant/ Non-Significant	Distribution
Ear lobe	136.780	3	Significant	Heterogenous
Eye colour	124.605	3	Significant	Heterogenous
Hair colour	147.606	3	Significant	Heterogenous
Hand clasping	139.992	3	Significant	Heterogenous
Arm folding	145.216	3	Significant	Heterogenous
Leg folding	8.581	3	Significant	Heterogenous
Handedness	2.411	3	Non-significant	Homogenous

Morphological Traits

The frequency of free ear lobes was found to be highest in Mallah (88%) and lowest in Saini (46%). For black eye colour, the highest frequency was recorded in Mallah (89%) and lowest in Saini (36%). The frequency distribution of dark hair colour was found to be highest in Saini (90%) and lowest in Banjara (45%). All 3 morphological traits showed significant variations and heterogenous distribution.

Behavioural Traits

The frequency distribution of R-type hand clasping was highest in Mallah (92%), almost equal in Banjara (63%) and Saini (64%) and lowest in Kumhar (40%). For R-type arm folding, Mallah (98%) possessed highest frequency distribution followed by Banjara (64%), Kumhar (60%) and Saini (48%). For leg folding, the frequency distribution of R-type was found to be highest in Mallah (94%) and lowest in Banjara (63%). For handedness, the frequency of R-type was highest in Mallah (90%) and lowest in Banjara (76%). After calculating chi-square value for all four behavioural traits, significant variations and heterogenous distribution was found for 3 traits (hand clasping, arm folding and leg folding) but non-significant variation and homogenous distribution was reported for R-type handedness among the total group.

DISCUSSIONS AND CONCLUSIONS

Morphological Traits

The frequency of free ear lobe was found to be in the range of 56% to 74% in five endogamous groups of Haryana by Yadav *et al.* (2000). But the present investigation findings did not fit well in this range. The frequency of dark eye colour ranges from 89% to 36% in the present study. The frequency of dark hair colour ranges from 15.33% in Banjara

(Jain *et al.* 2013) to 92.5% in Baris (Ravikiran 2004). Thus, the observed frequency range fitted well within the range of previously recorded data.

Behavioural Traits

The frequency range of R-type hand clasping has been reported from 40% in Rajput (Bhasin *et al.* 1992) to 79% in Jain (Yadav *et al.* 2000). Thus, the frequency range observed in the present study fitted well within the lower maxima but showed remarkable difference in upper maxima with earlier studies. For arm folding, range of frequency of R-type for different North-West populations has been reported from 31.90% in Gaddi schedule castes (Bhasin *et al.* 1986) to 78% in Jain (Yadav *et al.* 2000). Frequency distribution range in the present study showed a remarkable difference in upper maxima as compared to earlier studies but fits well for lower minima. R-type le folding frequency distribution range has been reported from 53% in Sunar (Yadav *et al.* 1997b) to 97% in Rajput (Jain *et al.* 2013b). The results of the present study fitted well within the range of previous data. The frequency of R-type handedness ranged from 74.74% in Sunni Muslims (Yadav *et al.* 2002) to 100% in Ahir and Chamar (Malhotra 1976) among various North-Indian populations. The frequency range of the present study lied well within th e earlier reported data.

ACKNOWLEDGEMENTS

The authors are grateful to the authorities of Kurukshetra University, Kurukshetra for providing the laboratory facilities and to all the subjects who cooperated during the study.

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