

Incidence of Colour-Blindness in Eleven Endogamous Groups of Haryana, India

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ABSTRACT Prevalence of colour-blindness in eleven endogamous groups of Haryana viz. Jat, Ahir, Ror, Saini, Kamboj, Kumhar, Chamar, Brahmin, Bania, Rajput and Gujjar has been studied. The incidence of this trait was found to vary from nil in Brahmin to as high as 10.13% in Kamboj. Overall, it showed a heterogeneous distribution in the present material.

INTRODUCTION

Data on the prevalence of colour-blindness among Indian populations have recently been compiled by Bhasin et al. (1992) which showed that so far no study has been conducted on this trait in Haryana populations. It is, therefore, that the present study on the incidence of colour-blindness on 11 endogamous groups of Haryana was planned.

MATERIAL AND METHODS

The present study was performed on a total of 1,461 male subjects belonging to 11 main endogamous groups of Haryana viz., Jat, Ahir, Ror, Saini, Kamboj, Kumhar, Chamar, Brahmin, Bania, Rajput and Gujjar (Table 1). Colour-blindness tests were performed on male subjects only using a series of plates designed as a "Test for colour-blindness" (38 plates edition) by Ishihara (1960), and diagnosed according to its instruction manual. When a colour-blind subject was detected, utmost care was taken by repeating the readings by the same observer and confirmation by another independent observer.

RESULTS AND DISCUSSION

The incidence of colour-blindness in Haryana populations varied from nil in the Brahmin to as high as 10.13% in the Kamboj (Table 1). Disregarding these two extremes, the incidence of colour-blindness was found to be quite low in the Jat, Ror, Kumhar, Chamar, Bania, Rajput and Gujjar (range 1.0-2.0%).

The Ahir and Saini on the other hand, showed comparatively higher values (range 3.80-6.80%). The overall incidence of the trait was found to be 2.6%. The protan type of colour-blindness was lacking among Jat, Kamboj, Kumhar, Chamar and Gujjar, while deutan type colour-blindness was lacking among the Bania, Rajput and Gujjar. In the distribution of colour-blindness, the Kamboj differed significantly from the Jat, Ahir, Ror, Kumhar, Chamar, Bania, Brahmin, Rajput and Gujjar, whereas the Saini differed significantly from the Jat, Brahmin, Rajput, Gujjar, Kumhar and Chamar. Overall, the trait showed heterogeneous distribution in the present study material from Haryana ($\chi^2 = 38.288$, $df = 10$, $p < 0.001$).

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Table 1: Distribution of colour-blindness in 11 population groups of Haryana

Group	Area	n	Normal		Protan		Deutan		Total colour blind	Colour blind	
			No.	%	Strong	Mild	Strong	Mild		No.	%
Jat	Mahendergarh Jind, Hisar Kurukshetra	182	180	98.90	—	—	—	2	—	2	1.10
Ahir	Gurgaon Mahendergarh	184	177	96.20	1	—	3	3	—	7	3.80
Ror	Kurukshetra	160	157	98.13	—	1	2	—	—	3	1.88
Saini	Mahendergarh Kurukshetra	147	137	93.20	—	1	—	4	5	10	6.80
Kamboj	Yamunanagar	79	71	89.87	—	—	—	7	1	8	10.13
Kumhar	Sirsa	152	150	98.68	—	—	—	2	—	2	1.32
Chamar	Sirsa	157	155	98.73	—	—	—	2	—	2	1.27
Brahmin	Kamal, Kurukshetra Sonapat	100	100	100.00	—	—	—	—	—	—	—
Bania	Ambala Yamunanagar, Kamal, Kurukshetra	100	98	98.00	—	1	—	—	1	2	2.00
Rajput	Lukhi (Kaithal)	100	99	99.00	—	—	—	—	1	1	1.00
Gujjar	Thana (Kurukshetra)	100	99	99.00	—	—	—	—	1	1	1.00

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