



Genetic Variability Among Mythical Kinnaura Tribe

KEYWORDS

Diversity, fixation, kinnauras, tribal, traits.

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ABSTRACT *The Kinnauras live in the Trans-Sutlej Valley around Kinner Kailash in the frontier district of Kinnaur, the tribal district of Himachal Pradesh. The data was randomly collected on the basis of region from Lower, Middle and Upper Kinnaur comprising of sub-divisions Nichar, Kalpa and Puh of district Kinnaur respectively. In all, 300 individuals in age group of 12-65 years were randomly sampled for the distribution of ten human hereditary traits with sharp contrast between the dominant and recessive phenotypes. The Kinnaura tribe display significant territorial and ethnic diversity which may be due to migration, admixture and confluence of Hinduism and Buddhism. The people of Lower Kinnaur are primarily of the Mediterranean physical type, mostly Hindus though the ethno-historical factors have resulted in some Buddhist influence. The people of Middle Kinnaur are of mixed racial strain with marked Mongoloid and Mediterranean features. The inhabitants are Buddhist as well as Hindus. The people of Upper Kinnaur have predominance of Mongoloid physical type with maximum Mahayana Buddhist influence. The most of the characters among Kinnaura tribe have undergone fixation and are inherited generation after generation, which may be reflected as an overall typical appearance of the Kinnauras.*

INTRODUCTION

The Kinnauras live in the Trans-Sutlej Valley around Kinner Kailash in the frontier district of Kinnaur, the tribal district of Himachal Pradesh. Kinnaur, the land of fairytales and fantasies has a spectacular terrain of lush green valleys, orchards, vineyards, snow clad peaks and cold desert mountains. Kinnauras have deep roots in Indian mythology, legend and literature¹.

Kinnaur called likewise koorpa and pronounced and spelt as Kanawar², Kunawar³, Koonawar⁴ or Kunawur^{5,6} to the local people is Kanauring, the land of Kanauras, the principal community of the region and the most populous scheduled tribe of the Himachal Pradesh.

In the Shimla District Gazetteer of 1904, Kinnaur has been mentioned as the largest subdivision of Bushahr (Rampur) state; which was integrated along with other 21 hill states in the year 1948 to form Himachal Pradesh⁷. Kinnaur was created a district from May 1, 1960. Kinnaur lies on both banks of Satluj from 31°-05'-50" to 32°-05'-15" north latitudes and between 77°-45' to 79°-00'-35" east longitudes⁸.

Kinnaur is one of the remote districts of Himachal Pradesh, situated on the international border with the Tibet region of China. The inhabitants of Kinnaur district are known as Kinnauras, Kinara, Kanawara, Kinner or Kinnaurese (pl. Kanaurya).

Kinnaura tribe ethnologically show both Aryan and non-Aryan features of the Tartar physiognomy. In physique, the Kanauras are tall, athletic, well build, muscular and in stature from 5 feet 5 inches to 5 feet 9 inches⁹. Fraser (1820) observed Kinnauras as brave, hardy, independent, open, courteous, hospitable, honest and sincere. The people along the Tibetan border possess the Mongoloid and Tartar features, the rest of the tribal are of a fair complexion and good looking with Persian features. The people are frank, active, generous and honorable in their dealings. They lead a hard life, their habits are simple, and wants limited. They are enterprising and travel everywhere in pur-

suit of trade and commerce¹⁰.

The Kinnauras are primarily agriculturists and their subsidiary occupations are weaving, spinning, silver smithy, wood carving (carpentry) and artistic metal ware manufacturing¹¹. The Kinnauras are a polyandrous tribe. A fraternal type of polyandry is still in existence though the present generation does not prefer it¹².

The existence of Kinnaura tribe cannot be imagined without god and goddesses. At the village level, the entire socio-economic and religious activity revolves around the village deity. The village devta exercises, executive, judicial and legislative powers¹³.

The kinnaura tribe is divided into two broad occupational groups-peasants and the artisans represented by Scheduled Tribes (Kanets or Rajputs) and Scheduled Castes (Chamangs, Ores and Domangs) respectively. The kanets comprise the main cultivating community of the area and use honorific surname Negi. Among the Kanets there are three grades. Chamangs traditionally make and mend shoes and weave cloth. The Domangs are primarily blacksmiths. The main profession of Ores is carpentry. Domangs and Ores consider themselves superior to Chamangs or kolis¹⁴.

The region-wise study of human hereditary traits¹⁵ provides useful demonstration of Geophysical variability among mythical Kinnaura tribe of Himachal Pradesh.

MATERIALS AND METHODS

The data was collected randomly for ten human hereditary traits (Table-1) on the basis of region from hardcore backward tribal areas of District Kinnaur, Himachal Pradesh (fig.1) inhabited by Kinnaura Tribe.

Regionwise Distribution

About 80 kms in length and 55 kms wide, located in the northeastern part of Himachal Pradesh, Kinnaur runs in a northeast and south-west direction. The habitable part seldom exceeds 13 kms in breadth. It is a rugged and mountainous region. The geographical area of the district

is 6,401 square kilometers, which form 11.50% of the total area of the state. The Kinnaur district, may be classified into three territorial units, for better understanding of region wise distribution of Traits of Kinnaura Tribe.

1. Lower Kinnaur

Comprises area between chora at the boundary of the Kinnaur district with Rampur Bushahr and Kalpa including Nichar and Sangla valley. It is difficult to distinguish the people of Lower Kinnaur from those people residing in the adjoining Shimla district with whom they have some affinity. The people of Lower Kinnaur are mostly Hindus though the ethno-historical factors have resulted in some Buddhist influence. The data was collected from subdivision Nichar of Lower Kinnaur.

2. Middle Kinnaur

Middle Kinnaur is the area between Kalpa and Kanam including Moorang tehsil. The people of Middle Kinnaur are of mixed racial strain. The inhabitants of Middle Kinnaur are Buddhist as well as Hindus. The study area was subdivision Kalpa of Middle Kinnaur.

3. Upper Kinnaur

Comprises of remaining north eastern part of the district i.e. the area between Puh and Hangrang valley extending up to international border with Tibet. The people of Upper Kinnaur show close resemblance with the Tibetans. In this region, the people mostly follow Mahayana Buddhist religion. The data was collected from subdivision Puh of Upper Kinnaur.

In all 300 individuals in age group of 12-65 years were randomly sampled for the distribution of ten human hereditary traits with sharp contrast between the dominant and recessive phenotypes.

**Table – 1
TEN HUMAN HEREDITARY TRAITS**

S.No.	Human Traits	Dominant (Heterozygous/Homozygous)	Recessive (Homozygous)
1	Hair Color	Dark hair HH or Hh	Light hair hh
2	Hair Form	Curly SS or Ss	Straight ss
3	Widow's peak	Long line in the middle of the head WW or Ww	No, such, lineww
4	Hair on mid-digit	Hair present on mid-digits MM or Mm	Hair absent on mid-digits mm
5	Eye Color	Black BB or Bb	Brown bb
6	Ear lobe attachment	Free ear lobes EE or Ee	Attached ear lobes ee
7	Nose tip	Straight tip NN or Nn	Upturned tip nn
8	Hand clasping	If left thumb comes over right thumb RR or Rr	If right thumb comes over left thumb rr
9	Handedness	Right handedness GG or Gg	Left handedness gg
10	Tongue Rolling	Ability to roll tongue into 'U' shape TT or Tt	Inability to roll tongue tt



Fig.1

RESULT AND DISCUSSION

The result for the present study (Table -2) reveals that the traits like hair colour, eye colour and handedness are uniformly distributed and are near fixation whereas rest of the traits exhibit regionwise variability. Dark hair colour is dominant. Curly hair form is less abundant. The %age distribution of straight hair is 84% in Upper Kinnaur. Widow's peak is more prominent(60%) in Lower Kinnaur. The absence of mid digit hair increases to 92% in Upper Kinnaur. Black eye colour shows equitable distribution. Free ear lobe attachment is dominant and is maximum 79% in Upper Kinnaur. Upturned nose-tip is less prominent(23%) in Upper Kinnaur. Left on right type of handclasp is maximum 43% in Lower Kinnaur. Right handedness is maximum 81% in Middle Kinnaur. The presence of tongue rolling is maximum 73% in lower Kinnaur where as minimum 25% in Upper Kinnaur.

Verma reported homogeneous distribution of hair color in the Shimla (Himachal Pradesh) population.¹⁶ Ormerod et al. found 20-38 % of the hair were wooly or curly in several family members.¹⁷ Nath et al. studied the widow's peak of Kaibartas of Assam.¹⁸ Malik et al. studied mid-phalangeal hair among Jats of Haryana (India).¹⁹ Rufer et al. reported eye color to be as polygenic trait.²⁰ Various studies were reported from Assam by Das and Ghosh.²¹ Mishima et al. reported anthropometric analysis of the nose in the Japanese.²² Singh and Goel noticed right type of hand clasping to be more frequent among Khatris of Patiala, India.²³ Zheng et al. revealed the high frequency of right handedness(94.39%) in the Daur population of Molidawa Banner, Inner Mongolia.²⁴ Parvatheesam and Babu studied the ability of tongue rolling among Rajaka caste residing in Vishakhapatnam, Andhra Pradesh.²⁵

**Table-2
PERCENTAGE REGIONWISE DISTRIBUTION OF TRAITS**

Human Hereditary Traits	Lower Kinnaur		Middle Kinnaur		Upper Kinnaur	
	Dark	light	Dark	light	Dark	light
Hair colour!	74	26	74	26	72	28
Hair form*	Curly 25	Straight 75	Curly 20	Straight 80	Curly 16	Straight 84
Widow's peak*	Present 60	Absent 40	Present 37	Absent 63	Present 30	Absent 70
Hair on mid-digit*	Present 40	Absent 60	Present 28	Absent 72	Present 8	Absent 92
Eye colour!	Black 72	Brown 28	Black 73	Brown 27	Black 81	Brown 19

Ear-lobe attachment*	Free	At-tached	Free	At-tached	Free	At-tached
	71	29	64	36	79	21
Nose-tip*	Straight	Up-turned	Straight	Up-turned	Straight	Up-turned
	68	32	72	28	77	23
Hand clasping*	Left on right	Right on left	Left on right	Right on left	Left on right	Right on left
	43	57	32	68	21	79
Hand-edness!	Right	Left	Right	Left	Right	Left
	79	21	81	19	76	24
Tongue rolling*	Present	Absent	Present	Absent	Present	Absent
	73	27	55	45	25	75

- ! Represents Traits near regionwise fixation
- * Represents Traits exhibiting regionwise variability

CONCLUSION

The present study reveals that the geographical (region-wise) distribution plays vital and significant role in genetic variability of morphogenetic traits among mythical Kinnaura tribe. The Kinnaura tribe display significant territorial and ethnic diversity which may be due to migration, admixture and confluence of Hinduism and Buddhism. The most of the characters among Kinnaura tribe have undergone fixation and are inherited generation after generation, which may be reflected as an overall typical appearance of the Kinnauras.

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