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SOME ANTHROPOSCOPIC TRAITS AMONG THE ASUR OF BIHAR

ABSTRACT — *The present paper deals with eight anthroposcopic traits among the Asurs (61 males, 47 females) residing in the Netarhat Plateau of the Gumla District in Bihar. Free type (78.70%) of earlobe, handclasping (with equal frequency on both sides), R/L type (52.77%) of armfolding, 'L' type of handedness (with high frequency, 12.83%), R/L type (68.52%) of legfolding, high incidence of tongue rollers (61.11%) and folders (76.85%) and interrupted eyebrow ridge (59.25%) were noted among the Asurs. The above results were compared with the populations reported from Bihar and India as well.*

KEY WORDS: *Eight anthroposcopic traits — Distribution — Asur tribe — Bihar — India.*

INTRODUCTION

Certain parts of the human body show a kind of asymmetry. Numerous scholars have long been trying to study these variations in different populations from India and abroad. In the present paper an attempt has been taken to represent some of these bilateral variations among the Asurs of Bihar.

Dalton (1872) seems to identify Asurs as "the remnants of an earlier race with a similar name who according to the legends were conquered by the Mundas." This small tribal group (pop. 70,026, according to census 1971) traditionally lived almost entirely on iron smelting (Risely, 1891). But these days they have become primarily agriculturists and hunting, collection of forest products constitute subsidiary means of their livelihood. They prefer to locate their villages on sufficiently high table-land (Leuva, 1963). The walls of the houses are constructed of earth and different wooden frames are provided for supporting the tiled roof (Nag, 1957).

The traditional dress of men is known as 'pichouri' and that of women 'paria'. Tatooing among the Asurs is forbidden and considered a taboo. They

still retain their traditional deities e.g. Singbonga and Marangbonga and celebrate different festivals. The internal affairs of the community are regulated through Panchayat (Prasad, 1961).

MATERIAL AND METHOD

The present paper deals with eight anthroposcopic traits collected from Asurs (61 males, 47 females) residing in the Netarhat Plateau of the Gumla District in Bihar. *Fig. 1* shows the location of the area investigated. The age of the subjects range from 5—57 years. Data with respect to earlobe type were collected according to Mohanraju and Mukherjee, 1973 and classified under two groups "attached" and "free" after Martin and Saller (1961). Armfolders and hand-claspers were determined by the standard method suggested by Leguebe (1967). Handedness was recorded according to the method adopted by Collins (1961). Leg folders were determined after Wolanski (1978). The same subjects were asked to roll and fold the tongue as demonstrated by Liu and Hsu (1949). Continuous eye brow ridge was



FIGURE 1. The location (dark portion) of the area investigated

recorded when both the eyebrows were found to join together at glabella and interrupted when a distinct gap or pause between the two eyebrows were seen. All the experiments were repeated three times on every individual to ensure correct results. The data are analysed following the standard method. Sexes have been treated separately. Chi-square test have occasionally been used in comparing the trait frequencies between sexes and groups and the word "significant" is used to mean significant at 5% level of probability.

RESULTS AND DISCUSSION

Earlobe attachment

The distribution of earlobe type among the Asurs is given in Table 1. Both males (72.13%) and females (87.23%) show high incidence of free type

of earlobe. Bisexual difference ($X^2 = 3.6058$, $d.f. = 1$, $.10 > P > .05$) does not show any significant result (Table 2).

Comparing with the available study (Basu, 1966) from Bihar, it is observed that free type of earlobe too have high frequency (74.86%) among the southern Pahira which is in more or less close agreement with our result (78.70%). But statistically they do not show any significant difference ($X^2 = .5512$, $d.f. = 1$, $.50 > P > .30$).

Among the Indian populations, high incidence of free earlobe is observed among the Urali (71.2% Chatterjee and Kumar, 1956) Kodithi Kapu (57.4%, Mohanraju and Mukherjee, 1973) from South India, Muslims (79.1%), Brahmins (89.3%), Kehatriya (82.8%) Ahir (85.4%) Pasi (85.3%), Kurmi (86.4%) and Chamar (78.30%) from Uttar Pradesh, reported by Verma (1957) Jat (81.3%), Ahir (68.8%) Chattopadhyay, 1968) from Delhi, Khatri Arora (95.0% Ahuja and Tickoo 1970) and some populations (55.07% Lai and Walsh 1966) from Punjab, Chato-war (69.73%, Basu 1987) from Bihar and Halba (55.07% Datta et. al. 1988) from Madhya Pradesh. Fig. 2a gives a vivid picture of the comparison made. Our data fit in with those of the Muslims and Chamars of Uttar Pradesh. X^2 test between the Asur and Chamar is highly significant but insignificant with the Muslims.

Handclasping

Table 1. displays the pattern of handclasping among the Asurs. It is observed that the trait is distributed with equal frequency in both the sexes. Males show a slight predominance (50.81%) in R/L type while the females in L/R type (51.06%). Sexual difference ($X^2 = .1103$, $d.f. = 1$, $.80 > p > .70$) is statistically insignificant (Table 2).

Comparing with the Oraons from Ranchi (Singh, 1978) in Bihar it is observed that R/L type of clasping is also frequent (65.14%) among them. X^2 difference (4.5816) is highly significant among them too.

A glance (Fig. 2b) at the Indian population studied so far, demonstrates that R/L type of folding varies from 24.8% to 70.0%. The males of the present data agree with those of the Karan (57.7%,

TABLE 2. The value of chi-square (d.f.) for the differences observed between the Asur males and females with respect to eight anthroposcopic traits

| Sl. No. | Traits | Chi-square value (d.f. = 1) | Probability | Remarks |
|---------|--------------------|-----------------------------|----------------|------------------|
| 1. | Earlobe attachment | 3.6058 | .10 > P > .05 | Non-significant. |
| 2. | Handclasping | 0.1103 | .80 > P > .70 | Non-significant |
| 3. | Arm folding | 1.1893 | .30 > P > .20 | Non-significant. |
| 4. | Handedness | 1.9526 | .20 > P > .10 | Non-significant. |
| 5. | Leg folding | 4.7328 | .05 > P > .02 | Significant. |
| 6. | Tongue folding | 3.3643 | .05 > P > .02 | Significant. |
| 7. | Tongue rolling | 0.8203 | .50 > P > .30 | Non-significant. |
| 8. | Eyebrow ridge | 7.9746 | .01 > P > .001 | Significant. |

Mahapatra, 1970) and Oriya Brahmins (57.30%) from Orissa (Mahapatra, 1966). The Asur females show more or less close similarity with the Korku (52.01%) of Maharashtra (Singh and Gulati, 1973).

Arm folding

The pattern of arm folding among the Asur is given in Table 1. It is evident that R/L type of folding is frequent (52.77%) among the Asurs. The females show high incidence (52.19%) of L/R type of folding while the males, the reverse — R/L type (57.37%). Statistically they do not show any significant result (Table 2).

Comparing with the available study (Singh, 1978) from Bihar, it was observed that R/L type of folding is exhibited with low frequency (26.9%) among the Oraons from Ranchi. Intergroup variability (13.42) is highly significant. Though the average frequency of type 'R' as compared to type 'L' is less frequent among all population groups of India (Fig. 2c), the present population group shows similarities with the Korku (53.17%) of Maharashtra (Singh et. al. 1973) and Bagatha (50.47%) of Andhra Pradesh (Rao et. al. 1973).

Handedness

The frequency distribution of handedness is given in Table 1. The highest frequency (12.03%) of 'L' type has been observed among the Asurs. No significant difference was observed when both the sexes were concerned (Table 2).

Studies available on various Indian population groups show an average frequency of 'L' type in 3.3%. In comparison (Fig. 2d), the Asurs show a high frequency. High frequency of 'L' type is also exhibited by the Shia Muslims (13.18%) from Central India (Khan 1984). Our study is in agreement with the systematic studies available from Kamrup (12.5%) and Darrang (12.2%) from Assam by Das et. al. 1986.

Leg folding

High incidence (68.52) of 'R' type Legfolding is observed among the Asurs (Table 1). Both the sexes show a tendency to fold their legs in 'R/L' manner and they are statistically significant (Table 2).

Very few studies on this trait are available from the Indian population: Transhumant and settled Gaddis from Himachal Pradesh (Bhasin et. al. 1986), Rajputs and Bodhs of Manali, Himachal Pradesh (Bhasin and Asha, 1982), Sugalis of Andhra Pradesh (Narahari et. al. 1979), Muria, Bison-horn Maria and Halba from Bastar (Datta, et. al. 1988) and 14 Sikkim populations by Bhasin et. al. 1987. The frequency of 'R' type in the Indian population is high (Fig. 2e) and it is in agreement with our observations too.

Tongue rolling

The incidence of tongue rolling among the Asurs is given in Table 1. Sexual difference (Table 2) is insignificant ($X^2 = .8203$, $d.f. = 1$, $.50 > P > .30$) at least for the sizes of the samples used. Tongue rollers are frequent (61.11%) among the Asurs.

Both males (57.37%) and females (65.95%) show high frequency of tongue rolling ability.

The frequency of tongue rolling is highest among the Halba (90.57%) followed by Bison horn Maria (86.40%) and Muria (82.63%) of Bastar (Datta et. al. 1988). The lowest frequency is observed among the Bhoksa (35.70%) of Uttar Pradesh (Garg 1986) (Fig. 2f). The Asurs show similarity with the Chaturtha Jain (60.30%) of Maharashtra (Gandhi, 1976). When compared statistically, they do not show any significant result ($X^2 = .9197$, $d.f. = 1$, $.90 > P > .80$).

Tongue folding

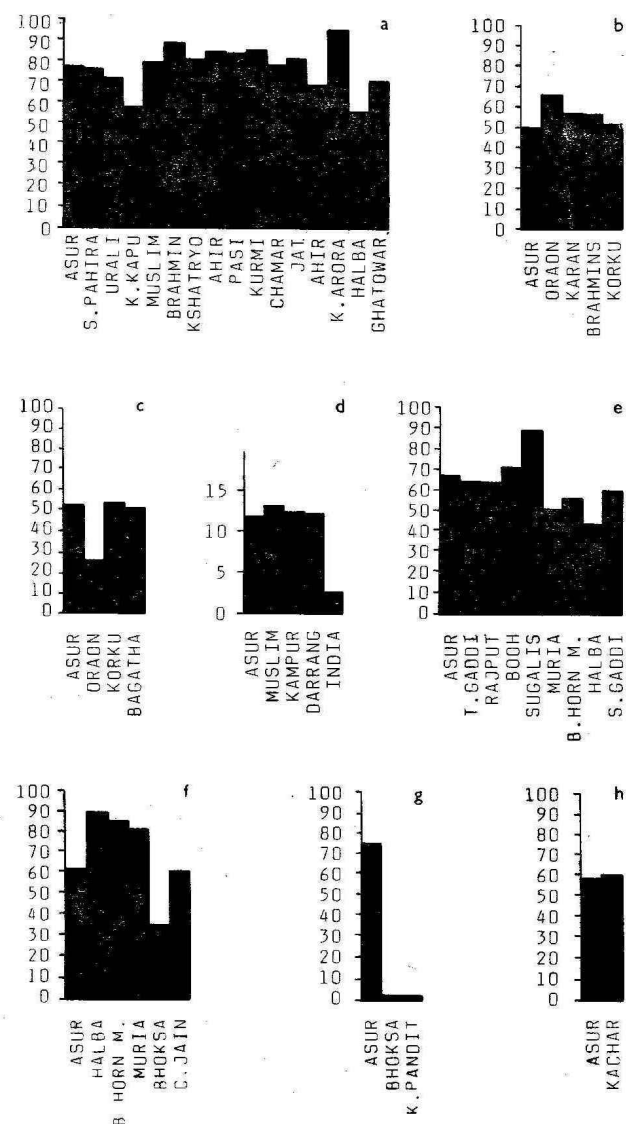
Tab. 1 shows the distribution of tongue folding among the Asurs. A remarkably high incidence (76.85%) of tongue folding is observed among the Asurs from Bihar. Sexual difference ($X^2 = 3.3643$, $d.f. = 1$, $.10 > P > .05$) does not reveal any significant difference (Table 2).

Studies in Indian population show that the trait varies from 3.9% — 55.9% (Bhasin et. al. 1987). Comparatively the Asurs show high incidence (fig. 2g). The lowest frequency of tongue folding is observed among the Bhoksas (2.3%) of Dehradun (Garg, 1986) and Kashmiri Pandits (2.3%) of Shrinagar (Kaul, 1968).

TABLE 1. Percentile frequency of eight anthroposcopic traits among the Asurs of Bihar

| Population | Sex | N | Earlobe attachment | Handclasping | Arm folding | Handedness | Leg folding | Tongue rolling | Tongue folding | Eyebrow ridge |
|------------|-----|-----|--------------------|---------------|---------------|---------------|---------------|----------------|----------------|---------------|
| | | | Free-type | R/L type | R/L type | 'L' type | R/L type | Positive | Positive | Interrupted |
| Asur | M | 61 | 44 (72.13) | 31 (50.81) | 35 (57.37) | 5 (8.19) | 47 (77.5) | 35 (57.37) | 52 (85.24) | 29 (47.54) |
| | F | 47 | 41 (87.23) | 23 (48.93) | 22 (46.80) | 8 (17.02) | 27 (57.44) | 31 (65.95) | 31 (63.95) | 35 (74.46) |
| | M+F | 108 | 85 (78.70) | 54 (50.00) | 57 (52.77) | 13 (12.03) | 74 (68.52) | 66 (61.11) | 83 (76.85) | 64 (59.25) |
| | | | | | | | | | | |

Figures in parentheses indicate percentage.



Eyebrow ridge

Eyebrow ridges frequency among the Asurs is given in Table 1. Interrupted type of eyebrow is the common feature (59.25%) among the Asurs. The females show high frequency (74.76%), different from their male counterparts (47.54%). Continued type of eyebrow ridge is predominant among the males (52.45%). Bisexual difference is significant.

Compared with the studies available from various population groups of India, the Asurs are more or less closer to the Kachari (60.0%) from Assam (Huq, 1975) Fig. 2h. Other populations too show high incidence of interrupted type of eyebrows. Chi-square tests applied do not show any significant difference between the Asurs and the Kachari.

CONCLUSION

The above study reveals that the frequency distribution of the various anthroposcopic traits studied among the Asurs shows similarity with other Indian

FIGURE 2a-h The frequency (in percent) of light anthroposcopic traits among the Asurs and some populations of India

a — earlobe attachment (free type), b — handclasping (R-type), c — armfolding (R-type), d — handedness (L-type), e — legfolding (R-type), f — tongue rolling (positive), g — tongue folding (positive), h — eyebrow ridge (interrupted)

population groups. Though the biological bases of these traits are unknown till today, yet some authors are of the opinion that earlobe attachment (Hilden, 1922, Carriere 1937, Quelprud 1934), handclasping, armfolding, handedness (Ferreira Maia and Almeida, 1966, Gavrilovic and Bozic 1972, Downey 1926, Beckman et al. 1962, Pelecanos 1969), tongue rolling and folding (Hsu 1948, Lai and Walsh 1965) in man is mostly influenced by heredity. A remarkable feature observed in this study is that the females show a very high incidence (17.02%) of 'L' type of handedness and the males show a high frequency (82.24%) of tongue rolling ability. It is difficult to give a proper explanation for this. It may be due to selective forces operating or locally acting factors such as drift or founder effects. A comparative study on the Oraons from Ranchi and twenty four Parganas (Mitra et al. 1986) shows that these traits do not follow any general rule and may vary from place to place. Either of the traits may dominate the other. So, it is wise to collect more population data as well as family studies before arriving to a definite conclusion. However it is true that the overall frequencies of these anthroposcopic traits are useful in noting the geographical, ethnic and social hierarchical lines.

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