

MORPHOLOGICAL STUDY OF THE NEPALESE OF SEROU IN THOUBAL DISTRICT, MANIPUR, INDIA

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ABSTRACT

The study was carried out during 2014-2015 at Serou Village under Thoubal District, Manipur. The investigation was conducted using somatometric measurements and somatoscopic observation to appreciate the physical characteristic of the people. Finding revealed that majority of the male are tall with brachycephalic head with a percentage of 48 which is ranges in 81.02 to 85.4. Females are predominated lower medium with mesocephalic head with a percentage of 32 which is ranges on 77.0 to 81.9. Both the sex found mesorrhine type of nose with dark to light brown skin colour.

Keywords:- *somatometric, serou, brachycephalic mesorrhine, mesocephalic.*

INTRODUCTION

Manipur is a fertile place for Anthropological studies. It has various groups of people like the Meitei, Naga, Kuki, Mizo, Manipur Muslim, Nepalese etc. The state has an area of 22,327 sq. Km (statistical year book 2015) and situated at the cross road between southeast asia and mainland India has experienced several waves of human migration since pre-historic time till today. The Nepalese are a group of the latest immigrants in Manipur. They reach Manipur at the flag end of the 19th century (Chetry 1994 and Acharya 1999). The Nepalese are prefer to the "Gorkhas" as thier ethnonym.

Although, physiological study has been well documented as an effective parameter in describing the morphology of man. A good understanding of factors limiting physical characteristic now provides us with an opportunity to identify the waves of human migration since pre-historic time till today. Applying different somatometric measurement and somatoscopic observations to appreciate the physical characteristic of the people. Therefore

these characters can be useful in comparing various kind of man living in different geographical regions.

MATERIALS AND METHODS

Observation was taken under three parts of Serou viz. Part – I, Part – II and Part – III. Serou Part – I has 159 souls out of which 77 are males and 82 are females. Serou Part – II has 395 souls out which 185 are male and 210 are females. Serou Part – III has 691 souls out of which 340 are males and 351 souls are females. The experiments were carried out from 2014 to 2015. For our investigation, somatometric measurements and somatoscopic observation (Das 1958) were taken.

The important parameters of somatometric measurements which are carried out in our investigation includes (i) Maximum head length, (ii) Maximum head breadth, (iii) Nasal height, (iv) Nasal breadth, (v) Total facial length, (vi) Breadth of the Bi-zygomatic, (vii) Bi-gonial breadth, (viii) Standing height vertex, (ix) Sitting height vertex, (x) Body weight index such as a) Cephalic index, b) Facial index, c) Nasal index, (xi) Skin colour it classified as a) Dark brown, b) Light brown and c) Black, (xii) Hair, under this parameter categories as a) Colour, b) Quantity, c) Texture and d) Form Again, under the parameter, (xiii) Nose, observation was carried out as a) Root and b) Bridge, (xiv) Eye in this parameter, eye colour and eye fold were recorded, (xv) Lip, it was carried out as lip size and lip eversion, and (xvi) Prognathism, observation were taken as a) Alveolar and b) Facial.

Table 1. Relative Parameters of Morphological Study of Nepalse of Serou (F * frequency)

| | Class | Range (cm) | Male | | Range (cm) | Female | | Total | |
|---------------------|-----------------------|------------|------|-----|------------|--------|-----|-------|-----|
| | | | F | PC. | | F. | PC. | F. | PC. |
| Maximum Head Length | Very Short | X-16.1 | 5 | 10 | X 16.9 | 17 | 34 | 22 | 22 |
| | Short | 16.2-16.9 | 14 | 28 | 17.0-17.7 | 19 | 38 | 33 | 33 |
| | Medium | 17.2-17.7 | 17 | 34 | 17.8-18.5 | 9 | 18 | 26 | 26 |
| | Long | 17.8-18.5 | 6 | 12 | 18.6-19.3 | 2 | 4 | 8 | 8 |
| | Very Long | 18.6-above | 8 | 16 | 19.4-above | 3 | 6 | 11 | 11 |
| Maximum Head | Very Narrow | X-13.9 | 10 | 20 | X-13.4 | 6 | 12 | 16 | 16 |
| | Narrow | 14.0-14.7 | 21 | 42 | 13.5-14.1 | 14 | 28 | 35 | 35 |
| | Medium | 14.8-15.5 | 16 | 32 | 14.2-14.9 | 23 | 46 | 39 | 39 |
| | Broad | 15.6-16.3 | 3 | 6 | 15.0-15.7 | 7 | 14 | 10 | 10 |
| | Very Broad | 16.4-above | | | 15.8-above | | | | |
| Cephalic index | Hyperdolicho cephalic | X-70.9 | 0 | 0 | X-71.9 | 1 | 2 | 1 | 1 |
| | Dolicho cephalic | 71.0-75.9 | 0 | 0 | 72.0-76.9 | 7 | 14 | 7 | 7 |
| | Meso cephalic | 76.0-80.9 | 14 | 28 | 77.0-81.9 | 16 | 32 | 30 | 30 |
| | Brachy cephalic | 81.0-85.4 | 24 | 48 | 82.0-86.9 | 14 | 28 | 38 | 38 |
| | Hyperbrachy cephalic | 85.5-90.4 | 12 | 24 | 87.0-91.0 | 12 | 24 | 24 | 24 |
| Nasal Height | Short | 4.0-4.4 | 2 | 4 | 4.0-4.4 | 12 | 24 | 14 | 14 |
| | Below Short | 4.5-4.9 | 17 | 34 | 4.5-4.9 | 29 | 58 | 46 | 46 |
| | Medium | 5.0-5.4 | 26 | 52 | 5.0-5.4 | 8 | 16 | 34 | 34 |
| | Above Medium | 5.5-5.9 | 4 | 8 | 5.5-5.9 | 1 | 2 | 5 | 5 |
| | High | 6.0-6.4 | 1 | 2 | 6.0-6.4 | | | 1 | 1 |
| Nasal | Short | 0-2.4 | 2 | 4 | 0-2.4 | 2 | 4 | 4 | 4 |
| | Below Short | 2.5-2.9 | 1 | 2 | 2.5-2.9 | 2 | 4 | 3 | 3 |

| | | | | | | | | | |
|--------------------------|---------------------|------------|----|----|------------|----|----|----|----|
| | Medium | 3.0-3.4 | 9 | 18 | 3.0-3.4 | 25 | 50 | 34 | 34 |
| | Above Medium | 3.5-3.9 | 16 | 32 | 3.5-3.9 | 16 | 32 | 32 | 32 |
| | Larger | 4.0-above | 22 | 44 | 4.0-above | 5 | 10 | 27 | 27 |
| Nasal index | Leptorrhine | 55-69.0 | 11 | 22 | 55-69.0 | 21 | 42 | 32 | 32 |
| | Mesorrhine | 70.0-84.9 | 37 | 74 | 70.0-84.9 | 25 | 50 | 62 | 62 |
| | Platyrrhine | 85.0-99.9 | 2 | 4 | 85.0-99.9 | 4 | 8 | 6 | 6 |
| Total Facial Height | Very Short | X-11.1 | 11 | 22 | X-10.2 | 3 | 6 | 14 | 14 |
| | Short | 11.2-11.7 | 8 | 16 | 10.3-10.7 | 4 | 8 | 12 | 12 |
| | Medium | 11.8-12.3 | 11 | 22 | 10.8-11.3 | 20 | 40 | 31 | 31 |
| | Long | 12.4-12.9 | 6 | 12 | 11.4-11.9 | 11 | 22 | 17 | 17 |
| | Very Long | 13.0-above | 14 | 28 | 12.0-above | 12 | 24 | 26 | 26 |
| Bi-Zygomatic | Very Narrow | X-12.7 | 6 | 12 | X-12.0 | 2 | 4 | 8 | 8 |
| | Narrow | 12.8-13.5 | 23 | 46 | 12.1-12.4 | 6 | 12 | 29 | 29 |
| | Medium | 13.6-14.3 | 16 | 32 | 12.5-13.4 | 22 | 44 | 38 | 38 |
| | Broad | 14.4-15.1 | 3 | 6 | 13.5-14.1 | 13 | 26 | 16 | 16 |
| | Very Broad | 15.2-above | 2 | 4 | 14.2-above | 7 | 14 | 9 | 9 |
| Bi-gonial breadth | Hypercurry Prosopic | 8.1-9.0 | 2 | 4 | X-10.2 | 5 | 10 | 7 | 7 |
| | Euryprosopic | 9.1-10.0 | 8 | 16 | 10.3-10.7 | 14 | 28 | 22 | 22 |
| | Mesoprosopic | 10.1-11.0 | 24 | 48 | 10.8-11.3 | 26 | 52 | 50 | 50 |
| | Leptoprosopic | 11.1-12.0 | 12 | 24 | 11.4-11.9 | 4 | 8 | 16 | 16 |
| | Hyperlepto Prosopic | 12.1-13.0 | 4 | 8 | 12.0-above | 1 | 2 | 5 | 5 |
| Height Vertex (Standing) | Very Short | 130-149.9 | 1 | 2 | 121-139.9 | 3 | 6 | 4 | 4 |
| | Short | 150-159.9 | 12 | 24 | 140-148.9 | 5 | 10 | 17 | 17 |
| | Lower Medium | 160-163.9 | 3 | 6 | 149-152.9 | 14 | 28 | 17 | 17 |
| | Medium | 164-166.9 | 7 | 14 | 153-155.9 | 8 | 16 | 15 | 15 |
| | Upper Medium | 167-169.9 | 5 | 10 | 156-158.9 | 5 | 10 | 10 | 10 |
| | Tail | 170-179.9 | 22 | 44 | 159-167.9 | 15 | 30 | 37 | 37 |

Note : All the Parameters are taken 50 frequencies.

Table. 2 Relative frequency observations of different parameters of morphological study of Nepalese, Serou.

| | Classification | Male | | Female | | Total | |
|--------------|----------------|------|-----|--------|-----|-------|-----|
| | | F | PC. | F. | PC. | F. | PC. |
| Skin Color | Dark Brown | 18 | 36 | 14 | 28 | 32 | 32 |
| | Black | 3 | 6 | 0 | 0 | 3 | 3 |
| | Light Brown | 29 | 58 | 36 | 72 | 65 | 65 |
| | | | | | | | |
| Hair Color | Dark Brown | 23 | 46 | 30 | 60 | 53 | 53 |
| | Black | 27 | 54 | 20 | 40 | 47 | 47 |
| | Red | 0 | 0 | 0 | 0 | 0 | 0 |
| Hair Quality | Thick | 8 | 16 | 8 | 16 | 16 | 16 |
| | Medium | 38 | 76 | 42 | 84 | 80 | 80 |
| | Thin | 4 | 8 | 0 | 0 | 4 | 4 |
| Hair Texture | Fine | 12 | 24 | 11 | 22 | 23 | 23 |
| | Medium | 38 | 76 | 39 | 78 | 77 | 77 |
| | Coarse | 0 | 0 | 0 | 0 | 0 | 0 |
| Hair Form | Straight | 28 | 56 | 27 | 54 | 55 | 55 |
| | Broad Wary | 15 | 30 | 23 | 46 | 38 | 38 |
| | Narrow wary | 4 | 8 | 0 | 0 | 4 | 4 |
| | Curly | 3 | 6 | 0 | 0 | 3 | 3 |
| Nasal Root | Shallow | 17 | 34 | 18 | 36 | 35 | 35 |
| | Medium | 30 | 60 | 28 | 56 | 58 | 58 |
| | Deep | 3 | 6 | 4 | 8 | 7 | 7 |
| Nasal Bridge | Straight | 11 | 22 | 10 | 20 | 21 | 21 |
| | Concave | 22 | 44 | 28 | 56 | 50 | 50 |
| | Convex | 15 | 30 | 12 | 24 | 27 | 27 |
| | Concavo-Convex | 2 | 4 | 0 | 0 | 2 | 2 |
| Eye Color | Dark Brown | 28 | 56 | 30 | 60 | 58 | 58 |
| | Light Brown | 21 | 42 | 18 | 36 | 39 | 39 |

| | | | | | | | |
|------------------|-------------|----|----|----|----|----|----|
| | Light Brown | 0 | 0 | 1 | 2 | 1 | 1 |
| | Black | 1 | 2 | 1 | 2 | 2 | 2 |
| Eye Fold | Absent | 11 | 22 | 10 | 20 | 21 | 58 |
| | Present | | | | | | |
| | a. External | 20 | 40 | 22 | 44 | 42 | 42 |
| | b. Medium | 5 | 10 | 2 | 4 | 7 | 7 |
| | c. Internal | 14 | 28 | 16 | 32 | 30 | 30 |
| Lip Size | Thin | 20 | 40 | 20 | 40 | 40 | 40 |
| | Medium | 28 | 56 | 30 | 60 | 58 | 58 |
| | Thick | 2 | 4 | 0 | 0 | 2 | 2 |
| Body Weight (kg) | 30-39 | 4 | 8 | 2 | 4 | 6 | 6 |
| | 40-49 | 17 | 34 | 30 | 60 | 47 | 47 |
| | 50-59 | 21 | 42 | 16 | 32 | 37 | 37 |
| | 60-69 | 8 | 16 | 2 | 4 | 10 | 10 |

Note : All the parameters are taken 50 frequencies.

RESULTS AND DISCUSSION

Table 1.

It shows that the majority of male have medium head length with a percentage of 34.0 while female have short head length with the percentage of 38.0 in male it is followed by short head length with a 28.0% and in female, it is followed by very short head length with 34%. In case of maximum head breadth, the majority of male have narrow head breadth (range of 14.0 – 14.7) with 42% and in female (range of 14.2 – 14.9) have medium head breadth with 39%. In male it is followed by medium head breadth with 16% and in female it is followed by narrow head breadth with 28% under cephalic index parameter, the majority of male have Brachycephalic type of head with 48.0% and range of 81.0 – 85.4 and followed by 28.0% and range of 76.0 – 80.9 while female have 32% and range of 77.0 – 81.9 and followed by 28% and range of 82.0 – 86.9. In nasal height parameter, the maximum numbers of male Nepalese falls under medium nasal height with a percentage of 52 while the female fall under below short type nasal height with a percentage of 58. In relation to nasal breadth, the majority of male had large nasal breadth (range of 4.0 above) with 44% while the female have medium nasal breadth (range of 3.0 – 3.4) with 50% and it is followed by above medium of nasal breadth both the sex with range of (3.5 – 3.9) with 32% in male and 32% in female respectively.

In case of nasal index it is found that the Nepalese of Serou Village have Mesorrhine type of nasal index in both sex with a percentage of 74 in male and 50 in female respectively.

The majority of male nepalese have observed very long total facial height with 28% and female have medium total facial height with 40% and it is followed by medium total facial height in male with 22% and very long facial height in female with 24% under bi-zygomatic breadth, result shows that the majority of male have narrow type of bi-zygomatic breadth (range of 12.8

– 13.8) with 46 percent and female (range of 12.5 – 13.4) have medium bi-zygomatic breadth with 44 percent. It is followed by medium bi-zygomatic breadth with 32 percent in male and female have bi-zygomatic breadth with 26 percent respectively. In bi-gonial breadth, the maximum numbers of Nepalese of both sex falls within the range of 10.1 –11.0 with a percentage of 48 in male and 52 in female respectively. From the above frequency table 1 reveals that, the highest frequency of standing height vertex has been observed in the class of tall (range of 170 – 179.9 and 159 – 167.9) in both the sex with the percentage of 44 in male and 30 in female respectively. It is followed by short in male with the percentage of 24 whereas in female it is followed by lower medium standing height vertex with 28 percent.

Table 2.

The highest frequency of sitting height vertex is observed in the medium height vertex (range of 85.0 – 89.9) for male with 34 percent while in female, it is seen in the short height vertex (range of 75.0 – 79.9) with 46 percent. It is followed by lower medium with the percentage of 26 in male whereas in female it is followed by very short sitting height vertex with 30 percent.

The body weight of male lies in the range of 50 – 59 with 42 percent and followed by 34 percent and range of 40 – 49. The females lie in the range of 40 – 49 with 60 percent and followed by 32 percent of range 50 – 59.

It is also observed that the majority of both sex have light brown skin colour with 58 percent in male and 72 percent in female respectively, and it is followed by dark brown skin colour of both the sex with the percentage of 36 in male and 28 in females. In the parameter hair colour the result shows that the majority of hair colour of male have black colour of hair with 54 percent and followed by dark brown with 46 percent. In females it falls in the class of dark brown with 60 percent and followed by black colour of hair with 40 percent. It is observed that the Nepalese of this village in both the sex have medium hair quantity with 76 percent in male and 84 percent in females. It is followed by thick hair quantity in both the sexes with 16 percent in male and female respectively. In hair texture it is recorded as generally of medium type in both the sex with 76 percent in males and 78 percent in females, and it is followed by fine type of hair in both sex with 24 percent in male and 22 percent in females. Coarse type of hair is totally absent among Nepalese of Serou Village. The straight hair is predominant hair form of the Nepalese of Serou Village in both the sex. The percentage of straight hair among male is recorded 56 percent and 54 percent in female. It is followed by broad wavy form of hair with 30 percent and 46 percent in male and female respectively. It is observed that medium type of nasal root is predominant in both the sex with percentage of 60 in male and 56 in female

respectively. It is followed by shallow type of nasal root in both the sex with a percentage of 34 in male and 36 in female. The concave type of nasal bridge is predominant in both the sex with a percentage of 44 in male and 56 in female. It is followed by convex type of nasal bridge in both the sex with the percentage of 30 and 24 in male and female respectively. The dark brown eye colour is seen in both the sex with a percentage of 56 and 60 in male and female respectively.

The majority of the both sex have eye fold External and internal type of eye fold is predominant in both sex with a percentage of 40 and 28 in male and 44 and 32 in female respectively. The medium type of lip form is predominantly found in both sex with 56 percent in male and 60 percent in female. It is followed by thin lip form with a percentage of 40 in male and female respectively.

From the above observation it is found that the male Nepalese of Serou village fall under the tall category and brachycephalic type of head is predominant with a percentage of 48 which is ranges in 81.02 to 85.4 and followed by mesosephalic type of head with a percentage of 28 which in ranges in 79.0 to 80.9 while the female lies in lower medium category and mesocephalic type of head with a percentage of 32 ranges with 77.0 to 81.9 and followed by brachycephalic type of head with percentage of 28. Regarding the facial character mesocephalic type of face are found in majority in both sex and mesorrhine type of nose are also found majority in both sex. The skin colour ranges from dark to light brown though light brown in predominantly found in both sex. Lip eversion is very rare and prognathism is totally absent.

CONCLUSION :

There is an indicative that somatoscopic operate the body structure of Nepalese in Serou Village, Manipur.

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