

APPENDICES

APPENDIX - A
EXPERIMENT CONSENT FORM

Date : _____

(To be retained by the investigator)

My signature, on this sheet, by which I volunteer to participate in the
research on _____

conducted by _____ indicates that
I understood that all the subjects in the project are volunteers, that I can withdraw at
any time from the research, that I have been or will be informed as to the nature of
the research, that the data, I provide will be anonymous and my identify will not be
revealed without my permission, and that my performance in the research may be
used for additional approved projects. Finally, I shall be given an opportunity to ask
questions prior to the start of the research and after my participation is completed.

Signature of the subject.

APPENDIX - B

WILMORE AND BEHNKE'S EQUATION USED FOR DETERMINING BODY COMPOSITION

$$\begin{aligned} \text{Lean Body Weight} &= 8.63 + 0.63 \times \text{Weight} \\ &\quad - (0.16 \times \text{Subscapula Skinfold}) \\ &\quad - (0.10 \times \text{Triceps Skinfold}) \\ &\quad - (0.05 \times \text{Thigh Skinfold})^1 \end{aligned}$$

$$\text{Fat Weight} = \text{Total Weight} - \text{Lean Body Weight}$$

$$\text{Percent Fat}^1 = \frac{\text{Total Body Weight} - \text{Lean Body Weight}}{\text{Total Body Weight}} \times 100$$

¹Edward L. Fox, Donald K. Mathews, *The Physiological Basis of Physical Education and Athletics*, (New York : Saunders College Publishing, 1981), P.530.

APPENDIX C HEATH-CARTER SOMATOTYPE RATING FORM

Name _____ Age _____ Sex : M / F No. : _____
 Occupation _____ Ethnic Group _____ Date _____
 Project _____ Measured by : _____

Skinfolds(mm)	Total Skinfolds (mm)																									
Triceps :	Upper Limit:	10.9	14.9	18.9	22.9	26.9	31.2	35.8	40.7	46.2	52.2	58.7	65.7	73.2	81.2	89.7	98.9	108.9	119.7	131.2	143.7	157.2	171.9	187.9	204.0	
	Subscapular:	Mid Point:	9.0	13.0	17.0	21.0	25.0	29.0	33.5	38.0	43.5	49.0	55.5	62.0	69.5	77.0	85.5	94.0	104.0	114.0	125.5	137.0	150.5	164.0	180.0	196.0
	Suprailiac:	Lower Limit:	7.0	11.0	15.0	19.0	23.0	27.0	31.3	35.9	40.8	46.3	52.3	58.8	65.8	73.3	81.3	89.8	99.0	109.0	119.0	131.3	143.8	157.3	172.0	188.0
Total Skinfolds																										
Calf :	First Component:	½	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9	9½	10	10½	11	11½	12	
Height (mm) :	55.0 56.5 58.0 59.5 61.0 62.5 64.0 65.5 67.0 68.5 70.0 71.5 73.0 74.5 76.0 77.5 79.0 80.5 82.0 83.5 85 86.5 88.0 89.5																									
Bone: Humerus:	5.19 5.34 5.49 5.64 5.78 5.93 6.07 6.22 6.37 6.51 6.65 6.80 6.95 7.09 7.24 7.38 7.53 7.67 7.82 7.97 8.11 8.25 8.40 8.55																									
Femur (cm) :	7.41 7.62 7.83 8.04 8.24 8.45 8.66 8.87 9.08 9.28 9.49 9.70 9.91 10.12 10.33 10.53 10.74 10.95 11.16 11.37 11.58 11.79 12.00 12.21																									
Muscle Biceps (cm):	23.7 24.4 25.0 25.7 26.3 27.0 27.7 28.3 29.0 29.7 30.3 31.0 31.6 32.2 33.0 33.6 34.3 35.0 35.6 36.3 37.1 37.8 38.5 39.3																									
Triceps skinfold:	27.7 28.5 29.3 30.1 30.8 31.6 32.4 33.2 33.9 34.7 35.5 36.3 37.1 37.8 38.6 39.4 40.2 41.0 41.8 42.6 43.4 44.2 45.0 45.8																									
Calf : (calf skinfold)	Second Component:	½	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9							
Weight (lb) :	Upper Limit :	11.99 12.32 12.35 12.74 12.95 13.15 13.36 13.56 13.77 13.98 14.19 14.39 14.59 14.80 15.01 15.22 15.42 15.63																								
	Mid-point :	and 12.16 12.43 12.64 12.85 13.05 13.26 13.46 13.67 13.88 14.01 14.29 14.50 14.70 14.10 15.12 15.33 15.53																								
Ht./3 Wt :	Lower Limit	below 12.00 12.33 12.54 12.75 12.96 13.16 13.37 13.56 13.78 13.99 14.20 14.40 14.60 14.81 15.02 15.23 15.43																								
	Third Component:	½	1	1½	2	2½	3	3½	4	4½	5	5½	6	6½	7	7½	8	8½	9							

First component	Second component	Third Component

By : _____
 Rater : _____

Anthropometric Somatotype

APPENDIX - D

PROCEDURES FOR OBTAINING THE SOMATOTYPE RATINGS USING HEATH-CARTER ANTHROPOMETRIC SOMATOTYPE RATING FORM

The information and the measurements were recorded in the space provided on the somatotype rating form.

FIRST COMPONENT (Endomorphy)

To obtain the first component rating sum the three skinfolds, triceps, subscapular and suprailiac, circled the closest value in the scale and then circled the rating value for that column.

SECOND COMPONENT (Mesomorphy)

To obtain the second component rating, marked the point of the subject's height in the height scale. For each bone diameter circled the figure in the proper row which was nearest to the exact measurement. Subtracted the triceps skinfold from the biceps girth and the calf skinfold from the calf girth, before circling the figure in the proper row which was nearest to the measurement. Dealing only with columns, marked the point that was the average of the circled figure for the diameters and girths only. Counted the number of columns by which that average deviated right or left from the marked height, then moved that number of columns right or left from the four in the second component rating and circled the closest rating value.

THIRD COMPONENT (Ectomorphy)

The third component rating was obtained by computing the ponderal index that is by finding the Height divided by $\sqrt[3]{\text{Weight}}$ and recorded it circling the rating value for that column. Finally the values for each component rating scale were recorded after "Anthropometric Somatotype" at the bottom of the form.²

²*Ibid.*,P.516.

APPENDIX I
RAW SCORES ON AGE OF UNIVERSITY MEN FOOTBALL,
BASKETBALL AND VOLLEYBALL PLAYERS
(in years)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	22.00	24.00	25.00
2.	20.00	19.00	20.00
3.	23.00	24.00	23.00
4.	18.00	20.00	23.00
5.	24.00	22.00	18.00
6.	24.00	19.00	24.00
7.	23.00	24.00	24.00
8.	23.00	18.00	24.00
9.	24.00	22.00	24.00
10.	24.00	23.00	23.00
11.	20.00	24.00	24.00
12.	25.00	24.00	20.00
13.	22.00	21.00	23.00
14.	18.00	20.00	18.00
15.	21.00	23.00	22.00
16.	23.00	23.00	24.00
17.	23.00	20.00	20.00
18.	24.00	20.00	23.00
19.	22.00	23.00	24.00
20.	23.00	24.00	21.00
21.	24.00	22.00	
22.	21.00	18.00	
23.	20.00	23.00	
24.	24.00	24.00	
25.	18.00	19.00	
26.	20.00	20.00	
27.	23.00	23.00	
28.	22.00	20.00	
29.	24.00	18.00	
30.	24.00	24.00	
31.	24.00	24.00	
32.	23.00	22.00	
33.	22.00	24.00	
34.	23.00		
35.	23.00		
36.	18.00		
37.	22.00		

APPENDIX II
RAW SCORES ON BODY WEIGHT OF UNIVERSITY MEN FOOTBALL,
BASKETBALL AND VOLLEYBALL PLAYERS
(in kilograms)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	69.00	68.50	62.00
2.	75.00	68.00	62.00
3.	65.00	64.00	64.00
4.	64.00	61.00	64.00
5.	61.00	51.00	55.00
6.	62.00	57.00	62.00
7.	62.00	52.00	64.00
8.	53.00	55.00	60.00
9.	54.00	56.00	60.00
10.	64.00	62.00	61.50
11.	61.00	61.00	62.00
12.	60.00	59.00	62.00
13.	65.00	68.00	64.00
14.	64.00	55.00	55.00
15.	65.00	64.50	60.00
16.	65.00	61.50	63.00
17.	65.00	61.00	62.00
18.	64.00	61.00	64.00
19.	69.00	64.00	64.00
20.	65.00	57.00	61.50
21.	54.00	51.00	
22.	62.00	55.00	
23.	67.00	62.00	
24.	68.00	64.00	
25.	64.00	57.00	
26.	61.00	61.00	
27.	53.00	61.50	
28.	69.00	61.00	
29.	65.00	55.00	
30.	64.00	57.00	
31.	64.00	59.00	
32.	65.00	51.00	
33.	65.00	52.00	
34.	65.00		
35.	63.00		
36.	64.00		
37.	69.00		

APPENDIX III
RAW SCORES ON HEIGHT OF UNIVERSITY MEN FOOTBALL,
BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	164.00	174.00	173.00
2.	172.00	173.00	172.00
3.	171.00	174.00	179.00
4.	164.00	174.00	175.00
5.	172.00	174.00	173.00
6.	164.00	173.00	172.00
7.	166.00	174.00	174.00
8.	172.00	175.00	196.00
9.	164.00	173.00	176.00
10.	168.00	174.00	173.00
11.	166.00	175.00	174.00
12.	167.00	176.00	196.00
13.	167.00	178.00	172.00
14.	171.00	172.00	176.00
15.	167.00	178.00	174.00
16.	177.00	172.00	173.00
17.	170.00	173.00	173.00
18.	171.00	172.00	179.00
19.	169.00	173.00	175.00
20.	164.00	178.00	174.00
21.	164.00	173.00	
22.	170.00	173.00	
23.	167.00	174.00	
24.	166.00	174.00	
25.	171.00	174.00	
26.	172.00	176.00	
27.	167.00	176.00	
28.	164.00	174.00	
29.	167.00	175.00	
30.	164.00	175.00	
31.	166.00	174.00	
32.	164.00	174.00	
33.	168.00	174.00	
34.	172.00		
35.	177.00		
36.	169.00		
37.	171.00		

APPENDIX IV
RAW SCORES ON SITTING HEIGHT OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	72.00	72.00	74.00
2.	80.00	77.00	74.00
3.	78.00	75.00	83.00
4.	70.00	79.00	81.00
5.	72.00	75.00	76.00
6.	72.00	81.00	76.00
7.	62.00	82.00	75.00
8.	79.00	83.00	70.00
9.	85.00	75.00	81.00
10.	71.00	80.00	80.00
11.	80.00	83.00	64.00
12.	80.00	84.00	70.00
13.	72.00	81.00	76.00
14.	75.00	77.00	81.00
15.	80.00	72.00	85.00
16.	78.00	78.00	80.00
17.	75.00	81.00	76.00
18.	79.00	80.00	83.00
19.	80.00	83.00	81.00
20.	80.00	81.00	64.00
21.	75.00	82.00	
22.	72.00	75.00	
23.	72.00	80.00	
24.	62.00	81.00	
25.	75.00	72.00	
26.	80.00	84.00	
27.	80.00	80.00	
28.	70.00	80.00	
29.	80.00	75.00	
30.	72.00	75.00	
31.	80.00	83.00	
32.	72.00	77.00	
33.	71.00	79.00	
34.	79.00		
35.	78.00		
36.	80.00		
37.	78.00		

APPENDIX V
RAW SCORES ON LOWER LIMB LENGTH OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	80.00	91.00	76.00
2.	74.00	73.00	97.00
3.	80.00	94.00	77.00
4.	80.00	85.00	90.00
5.	85.00	94.00	99.00
6.	85.00	74.00	100.00
7.	72.00	74.00	96.00
8.	90.00	93.00	93.00
9.	90.00	94.00	90.00
10.	80.00	91.00	90.00
11.	85.00	90.00	75.00
12.	80.00	92.00	93.00
13.	80.00	96.00	100.00
14.	85.00	87.00	90.00
15.	85.00	95.00	96.00
16.	90.00	72.00	90.00
17.	95.00	88.00	99.00
18.	75.00	90.00	77.00
19.	85.00	90.00	90.00
20.	80.00	96.00	75.00
21.	90.00	74.00	
22.	90.00	94.00	
23.	80.00	90.00	
24.	74.00	88.00	
25.	75.00	95.00	
26.	75.00	92.00	
27.	85.00	91.00	
28.	84.00	93.00	
29.	85.00	94.00	
30.	85.00	94.00	
31.	80.00	90.00	
32.	85.00	87.00	
33.	84.00	85.00	
34.	90.00		
35.	85.00		
36.	85.00		
37.	89.00		

APPENDIX VI
RAW SCORES ON UPPER LIMB LENGTH OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	72.00	72.00	74.00
2.	86.00	84.00	78.00
3.	70.00	74.00	92.00
4.	74.00	66.00	72.00
5.	76.00	78.00	76.00
6.	73.00	87.00	79.00
7.	80.00	87.00	79.00
8.	72.00	74.00	73.00
9.	72.00	78.00	72.00
10.	70.00	74.00	71.00
11.	69.00	73.00	78.00
12.	73.00	80.00	73.00
13.	74.00	87.00	79.00
14.	72.00	72.00	72.00
15.	73.00	79.00	79.00
16.	73.00	83.00	71.00
17.	72.00	70.00	76.00
18.	86.00	72.00	92.00
19.	70.00	73.00	72.00
20.	74.00	87.00	78.00
21.	72.00	87.00	
22.	76.00	74.00	
23.	72.00	72.00	
24.	80.00	70.00	
25.	70.00	79.00	
26.	86.00	80.00	
27.	70.00	74.00	
28.	74.00	74.00	
29.	70.00	78.00	
30.	72.00	78.00	
31.	68.00	73.00	
32.	85.00	72.00	
33.	70.00	66.00	
34.	71.00		
35.	70.00		
36.	70.00		
37.	70.00		

APPENDIX VII
RAW SCORES ON HUMERUS WIDTH OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	7.20	6.80	7.30
2.	8.60	5.53	7.30
3.	6.70	6.20	6.20
4.	7.20	7.30	8.80
5.	6.50	6.30	7.30
6.	7.10	4.63	7.20
7.	5.80	4.53	7.20
8.	6.20	8.50	5.90
9.	6.20	6.30	8.80
10.	7.10	8.92	8.70
11.	8.50	9.00	7.30
12.	8.10	8.80	5.90
13.	7.20	7.60	7.70
14.	6.10	8.00	8.80
15.	8.10	6.40	7.20
16.	6.70	5.63	8.70
17.	6.20	7.70	7.30
18.	8.50	8.80	6.20
19.	8.80	9.00	8.80
20.	7.20	7.60	7.30
21.	6.20	4.53	
22.	6.50	6.20	
23.	7.20	8.80	
24.	5.80	7.70	
25.	6.10	6.40	
26.	8.60	8.80	
27.	8.10	8.92	
28.	7.20	8.50	
29.	8.10	6.30	
30.	7.20	6.30	
31.	8.50	9.00	
32.	7.10	8.00	
33.	7.10	7.30	
34.	6.20		
35.	6.70		
36.	8.80		
37.	6.70		

APPENDIX VIII
RAW SCORES ON FEMUR WIDTH OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	8.00	10.00	9.20
2.	6.10	9.29	8.70
3.	8.20	8.30	10.70
4.	6.90	10.20	5.50
5.	9.20	6.40	8.50
6.	9.01	9.31	9.50
7.	9.20	9.30	8.60
8.	7.20	5.80	9.30
9.	8.30	6.40	5.50
10.	9.10	6.20	5.60
11.	5.90	6.20	7.40
12.	5.60	5.60	9.30
13.	9.20	6.70	9.50
14.	9.00	5.40	5.50
15.	5.60	6.50	8.50
16.	8.20	9.30	5.60
17.	8.30	5.70	8.50
18.	6.60	5.81	10.20
19.	5.80	6.20	5.50
20.	6.90	6.70	7.40
21.	8.30	9.30	
22.	9.20	8.30	
23.	9.20	5.81	
24.	9.20	5.70	
25.	9.00	6.50	
26.	6.10	5.60	
27.	5.60	6.20	
28.	6.90	5.80	
29.	5.60	6.40	
30.	8.00	6.40	
31.	5.90	6.20	
32.	9.01	5.40	
33.	9.10	10.20	
34.	7.20		
35.	8.20		
36.	5.80		
37.	8.20		

APPENDIX IX
RAW SCORES ON CHEST CIRCUMFERENCE OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	85.00	82.00	84.00
2.	82.00	77.00	72.00
3.	82.00	88.00	73.00
4.	83.00	80.00	85.00
5.	76.00	82.00	73.00
6.	79.00	74.00	74.00
7.	82.00	74.00	72.00
8.	85.00	88.00	79.00
9.	88.00	82.00	85.00
10.	79.00	80.00	80.00
11.	82.00	86.00	93.00
12.	80.00	74.00	79.00
13.	80.00	88.00	74.00
14.	82.00	72.00	85.00
15.	80.00	84.00	72.00
16.	82.00	72.00	80.00
17.	88.00	79.00	73.00
18.	81.00	86.00	73.00
19.	86.00	86.00	85.00
20.	83.00	88.00	93.00
21.	88.00	74.00	
22.	76.00	88.00	
23.	80.00	86.00	
24.	82.00	79.00	
25.	82.00	84.00	
26.	82.00	74.00	
27.	80.00	80.00	
28.	83.00	88.00	
29.	80.00	82.00	
30.	85.00	82.00	
31.	82.00	86.00	
32.	79.00	72.00	
33.	79.00	80.00	
34.	85.00		
35.	82.00		
36.	86.00		
37.	82.00		

APPENDIX X
RAW SCORES ON ABDOMINAL CIRCUMFERENCE OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	62.00	63.00	62.00
2.	78.00	61.00	62.00
3.	62.00	87.00	57.00
4.	71.00	66.00	70.00
5.	63.00	70.00	60.00
6.	67.00	62.00	61.00
7.	62.00	67.00	62.00
8.	65.00	82.00	69.00
9.	87.00	70.00	70.00
10.	69.00	71.00	72.00
11.	65.00	74.00	84.00
12.	67.00	63.00	69.00
13.	67.00	67.00	61.00
14.	63.00	62.00	70.00
15.	67.00	72.00	62.00
16.	62.00	62.00	72.00
17.	86.00	68.00	60.00
18.	79.00	72.00	57.00
19.	72.00	74.00	70.00
20.	71.00	67.00	84.00
21.	87.00	67.00	
22.	63.00	87.00	
23.	67.00	72.00	
24.	62.00	68.00	
25.	63.00	72.00	
26.	78.00	63.00	
27.	67.00	71.00	
28.	71.00	82.00	
29.	67.00	70.00	
30.	62.00	70.00	
31.	65.00	74.00	
32.	67.00	62.00	
33.	69.00	66.00	
34.	65.00		
35.	62.00		
36.	72.00		
37.	62.00		

APPENDIX XI
RAW SCORES ON RELAXED ARM CIRCUMFERENCE OF UNIVERSITY
MEN FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	25.00	28.00	26.00
2.	26.00	25.00	24.00
3.	24.00	33.00	26.00
4.	31.00	29.00	29.00
5.	24.00	26.00	23.00
6.	27.00	27.00	25.00
7.	24.00	29.00	25.00
8.	26.00	31.00	30.00
9.	31.00	28.00	29.00
10.	27.00	28.00	27.00
11.	29.00	29.00	24.00
12.	26.00	25.00	30.00
13.	27.00	33.00	25.00
14.	23.00	25.00	29.00
15.	26.00	25.00	29.00
16.	24.00	26.00	27.00
17.	32.00	27.00	23.00
18.	26.00	30.00	26.00
19.	30.00	27.00	29.00
20.	31.00	33.00	24.00
21.	31.00	29.00	
22.	24.00	33.00	
23.	27.00	30.00	
24.	24.00	27.00	
25.	23.00	29.00	
26.	26.00	25.00	
27.	26.00	28.00	
28.	31.00	31.00	
29.	26.00	26.00	
30.	25.00	28.00	
31.	29.00	27.00	
32.	27.00	25.00	
33.	27.00	80.00	
34.	26.00		
35.	24.00		
36.	30.00		
37.	24.00		

APPENDIX XII
RAW SCORES ON FLEXED ARM CIRCUMFERENCE OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	22.00	25.00	28.00
2.	25.00	23.00	26.00
3.	22.00	27.00	26.00
4.	26.00	24.00	28.00
5.	23.00	26.00	26.00
6.	24.00	23.00	26.00
7.	22.00	24.00	26.00
8.	23.00	27.00	27.00
9.	26.00	26.00	27.00
10.	24.00	27.00	27.00
11.	25.00	27.00	28.00
12.	25.00	22.00	27.00
13.	24.00	30.00	28.00
14.	21.00	22.00	28.00
15.	25.00	27.00	27.00
16.	22.00	24.00	27.00
17.	29.00	24.00	27.00
18.	25.00	27.0	28.00
19.	27.00	28.00	28.00
20.	26.00	30.00	25.00
21.	26.00	24.00	
22.	23.00	27.00	
23.	24.00	27.00	
24.	22.00	24.00	
25.	21.00	27.00	
26.	25.00	22.00	
27.	25.00	22.00	
28.	26.00	27.00	
29.	25.00	28.00	
30.	22.00	26.00	
31.	25.00	28.00	
32.	24.00	22.00	
33.	24.00	24.00	
34.	23.00		
35.	22.00		
36.	27.00		
37.	22.00		

APPENDIX XIII
 RAW SCORES ON CALF CIRCUMFERENCE OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in centimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	30.00	32.00	31.00
2.	31.00	29.00	30.00
3.	30.00	35.00	31.00
4.	30.00	31.00	33.00
5.	25.00	32.00	28.00
6.	33.00	31.00	30.00
7.	30.00	30.00	31.00
8.	31.00	32.00	31.00
9.	30.00	32.00	33.00
10.	33.00	31.00	30.00
11.	31.00	34.00	27.00
12.	31.00	32.00	31.00
13.	33.00	34.00	30.00
14.	30.00	29.00	33.00
15.	31.00	33.00	31.00
16.	30.00	30.00	30.00
17.	35.00	32.00	28.00
18.	31.00	32.00	31.00
19.	32.00	33.00	33.00
20.	30.00	24.00	27.00
21.	30.00	30.00	
22.	25.00	35.00	
23.	33.00	32.00	
24.	30.00	32.00	
25.	30.00	33.00	
26.	31.00	32.00	
27.	31.00	31.00	
28.	30.00	32.00	
29.	31.00	32.00	
30.	30.00	32.00	
31.	31.00	33.00	
32.	33.00	29.00	
33.	33.00	31.00	
34.	31.00		
35.	30.00		
36.	32.00		
37.	30.00		

APPENDIX XIV
 RAW SCORES ON SUM OF SIX SKINFOLDS OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in millimetres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	33.00	44.00	45.00
2.	36.00	32.00	42.00
3.	55.00	25.00	32.00
4.	32.00	32.00	32.00
5.	25.00	33.00	38.00
6.	44.00	49.00	38.00
7.	64.00	37.00	33.00
8.	30.00	34.00	33.00
9.	44.00	45.00	47.00
10.	62.00	77.00	38.00
11.	33.00	38.00	35.00
12.	41.00	34.00	38.00
13.	32.00	49.00	38.00
14.	44.00	35.00	33.00
15.	31.00	48.00	45.00
16.	39.00	33.00	32.00
17.	27.00	35.00	47.00
18.	40.00	34.00	32.00
19.	34.00	45.00	38.00
20.	33.00	77.00	35.00
21.	55.00	32.00	
22.	33.00	34.00	
23.	31.00	32.00	
24.	32.00	49.00	
25.	30.00	49.00	
26.	33.00	44.00	
27.	34.00	32.00	
28.	44.00	34.00	
29.	44.00	48.00	
30.	64.0	35.00	
31.	36.00	25.00	
32.	27.00	34.00	
33.	33.00	37.00	
34.	62.00		
35.	41.00		
36.	40.00		
37.	25.00		

APPENDIX XV
 RAW SCORES ON PONDERAL INDEX OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in points)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	39.98	39.84	43.71
2.	40.79	39.44	43.46
3.	42.53	43.00	44.75
4.	41.00	41.92	43.75
5.	43.69	46.38	45.49
6.	41.44	42.61	43.45
7.	41.94	42.38	43.50
8.	45.79	45.69	50.07
9.	43.39	44.70	44.96
10.	42.00	42.95	43.83
11.	42.17	43.69	43.96
12.	42.66	45.21	49.52
13.	41.53	43.61	43.00
14.	42.75	43.91	46.28
15.	43.91	44.38	44.45
16.	44.02	41.04	43.48
17.	42.28	42.68	43.41
18.	42.75	42.93	44.75
19.	41.20	42.75	43.75
20.	40.79	46.25	44.08
21.	43.39	45.57	
22.	42.95	45.23	
23.	41.12	42.70	
24.	40.67	42.00	
25.	42.75	44.69	
26.	43.69	44.71	
27.	44.46	43.07	
28.	39.98	43.95	
29.	41.53	45.23	
30.	41.00	44.42	
31.	41.50	43.93	
32.	40.79	45.03	
33.	41.78	44.21	
34.	42.78		
35.	44.48		
36.	42.25		
37.	41.69		

APPENDIX XVI
 RAW SCORES ON SKELIC INDEX OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in points)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	122.22	126.39	192.70
2.	93.75	94.81	131.08
3.	115.38	125.33	92.77
4.	120.00	107.60	111.11
5.	127.78	125.33	130.26
6.	122.22	91.36	131.58
7.	119.35	90.24	128.00
8.	116.45	112.05	132.86
9.	119.72	125.33	111.11
10.	112.50	113.75	112.50
11.	110.00	108.43	117.19
12.	116.67	118.52	132.86
13.	116.67	118.52	131.58
14.	120.00	112.99	111.11
15.	110.00	131.94	128.00
16.	115.38	92.31	112.50
17.	129.33	108.64	130.26
18.	94.94	112.50	92.77
19.	112.50	108.43	111.11
20.	120.00	118.52	117.19
21.	125.33	90.24	
22.	25.00	35.00	
23.	116.67	112.50	
24.	119.35	108.64	
25.	120.00	131.94	
26.	93.75	109.52	
27.	110.00	113.75	
28.	120.00	112.05	
29.	110.00	125.33	
30.	122.22	112.99	
31.	110.00	108.43	
32.	122.22	112.99	
33.	119.72	107.59	
34.	116.49		
35.	115.38		
36.	112.50		
37.	115.38		

APPENDIX XVII
RAW SCORES ON ENDOMORPHY OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in points)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	3.00	3.00	2.00
2.	2.50	1.50	2.50
3.	1.50	1.50	1.50
4.	2.00	2.50	1.50
5.	0.50	0.50	3.00
6.	1.00	2.50	1.50
7.	1.50	1.50	2.00
8.	2.00	1.50	1.50
9.	2.50	3.00	2.00
10.	2.50	3.00	1.50
11.	3.00	1.50	2.50
12.	1.00	2.00	2.00
13.	1.50	2.00	2.00
14.	4.00	2.50	1.50
15.	1.50	1.00	1.50
16.	1.00	1.50	2.50
17.	2.00	3.00	3.00
18.	1.00	1.50	2.50
19.	3.00	3.50	2.00
20.	1.00	2.00	2.50
21.	2.50	2.00	
22.	3.00	2.00	
23.	1.50	2.50	
24.	1.50	1.50	
25.	1.00	1.50	
26.	0.50	1.50	
27.	2.50	2.00	
28.	1.50	2.50	
29.	1.00	1.00	
30.	1.00	3.00	
31.	1.00	2.50	
32.	3.00	1.50	
33.	2.00	3.00	
34.	4.00		
35.	1.00		
36.	1.00		
37.	2.50		

APPENDIX XVIII
RAW SCORES ON MESOMORPHY OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in points)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	2.50	1.50	4.50
2.	2.50	1.50	3.00
3.	2.50	2.50	3.50
4.	3.50	1.50	1.00
5.	2.50	1.50	3.00
6.	3.00	1.50	2.00
7.	2.00	2.00	3.00
8.	1.50	2.50	1.50
9.	2.50	2.50	1.50
10.	3.00	1.50	2.50
11.	2.50	1.00	3.00
12.	2.00	2.50	2.00
13.	2.50	2.50	4.50
14.	3.50	2.00	2.50
15.	2.50	1.00	3.50
16.	2.50	1.00	3.00
17.	3.50	3.00	3.00
18.	2.50	2.50	3.00
19.	3.50	1.50	3.00
20.	2.50	1.50	3.00
21.	2.50	2.50	
22.	2.50	1.50	
23.	2.50	2.50	
24.	2.50	2.50	
25.	3.50	1.00	
26.	2.50	2.00	
27.	2.50	1.50	
28.	2.50	1.50	
29.	3.00	1.00	
30.	2.50	1.50	
31.	2.00	1.50	
32.	2.50	2.50	
33.	3.50	2.50	
34.	3.50		
35.	2.50		
36.	2.50		
37.	3.00		

APPENDIX XIX
 RAW SCORES ON ECTOMORPHY OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in points)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	1.00	3.00	6.50
2.	1.00	3.00	8.00
3.	1.50	3.00	4.00
4.	0.50	1.50	7.00
5.	1.50	3.00	4.50
6.	2.00	3.00	5.50
7.	2.50	3.50	3.50
8.	2.00	2.50	3.00
9.	2.00	3.50	5.00
10.	0.50	3.50	3.50
11.	2.00	3.50	4.00
12.	2.50	3.00	5.50
13.	4.00	3.50	6.50
14.	9.00	3.50	3.50
15.	3.50	5.00	4.00
16.	1.50	2.50	4.00
17.	1.00	8.00	4.50
18.	2.00	3.00	3.00
19.	1.50	3.00	3.50
20.	2.50	3.50	8.00
21.	2.00	4.00	
22.	2.00	3.00	
23.	4.00	2.50	
24.	3.50	3.00	
25.	1.00	2.00	
26.	1.50	3.50	
27.	1.00	3.50	
28.	1.50	3.00	
29.	2.00	5.00	
30.	2.50	3.50	
31.	2.50	1.50	
32.	1.00	3.00	
33.	0.50	3.50	
34.	9.00		
35.	1.50		
36.	2.00		
37.	0.50		

APPENDIX XX
RAW SCORES ON PERCENT FAT OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in percentage)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	24.81	24.91	24.39
2.	26.27	24.31	23.00
3.	24.27	23.75	24.31
4.	26.27	23.03	23.59
5.	23.46	20.71	22.18
6.	23.20	22.30	23.18
7.	24.31	21.10	23.89
8.	21.53	22.62	22.98
9.	21.50	23.14	22.95
10.	24.25	24.47	23.30
11.	23.56	22.85	23.42
12.	22.28	23.27	23.77
13.	24.43	25.41	23.84
14.	23.66	23.04	21.82
15.	21.71	24.03	21.82
16.	23.86	23.50	24.56
17.	23.80	24.41	24.05
18.	24.59	23.18	23.59
19.	24.80	25.02	23.84
20.	23.86	22.93	23.30
21.	22.28	20.29	
22.	23.77	22.73	
23.	25.92	23.85	
24.	25.22	24.69	
25.	24.19	22.05	
26.	23.21	23.26	
27.	21.11	23.14	
28.	26.22	23.18	
29.	23.86	12.62	
30.	24.70	23.53	
31.	24.28	22.46	
32.	24.28	22.46	
33.	23.86	20.90	
34.	24.60		
35.	24.00		
36.	24.59		
37.	25.03		

APPENDI X XXI
RAW SCORES ON ABSOLUTE FAT OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in milligram)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	17.12	17.06	15.12
2.	19.70	16.53	14.26
3.	16.10	15.20	15.56
4.	16.83	14.05	15.10
5.	14.31	10.56	12.20
6.	14.39	12.71	14.37
7.	15.07	10.97	15.29
8.	11.41	12.44	13.79
9.	11.61	12.95	13.77
10.	15.58	15.17	14.33
11.	14.37	13.93	14.52
12.	13.37	13.73	14.74
13.	15.82	17.78	15.26
14.	15.16	12.67	12.00
15.	11.95	15.50	14.28
16.	15.51	14.45	15.47
17.	15.47	14.89	14.91
18.	15.74	14.14	15.10
19.	17.11	16.01	15.26
20.	15.51	13.07	14.33
21.	12.03	10.35	
22.	14.74	12.50	
23.	16.59	14.79	
24.	17.15	15.80	
25.	15.48	12.57	
26.	14.16	14.19	
27.	11.19	14.23	
28.	18.09	14.14	
29.	15.51	6.94	
30.	15.81	13.41	
31.	15.67	13.25	
32.	15.52	10.54	
33.	15.51	10.87	
34.	15.99		
35.	15.12		
36.	15.74		
37.	17.27		

APPENDIX XXII
 RAW SCORES ON LEAN BODY WEIGHT OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in kilogram)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	51.88	51.84	46.88
2.	55.30	51.47	47.74
3.	48.90	48.80	48.44
4.	47.17	46.95	48.90
5.	46.69	40.44	42.80
6.	47.61	44.29	47.63
7.	46.93	41.03	48.71
8.	41.59	42.56	46.21
9.	42.39	43.05	46.23
10.	48.48	46.83	47.17
11.	46.63	45.27	47.26
12.	46.63	45.27	47.26
13.	49.12	50.22	48.74
14.	48.86	42.33	43.00
15.	43.05	49.00	45.72
16.	49.49	47.05	47.53
17.	49.53	46.11	47.09
18.	48.26	46.86	48.90
19.	51.89	47.99	48.74
20.	49.49	43.93	47.17
21.	41.97	40.65	
22.	47.26	42.50	
23.	50.41	47.21	
24.	50.85	48.20	
25.	48.52	44.43	
26.	46.84	46.81	
27.	41.81	47.27	
28.	50.91	46.86	
29.	49.49	48.06	
30.	48.19	43.57	
31.	48.33	45.75	
32.	49.48	40.46	
33.	49.49	41.13	
34.	49.01		
35.	47.88		
36.	48.26		
37.	51.73		

APPENDIX XXIII
RAW SCORES ON ANAEROBIC POWER OF UNIVERSITY MEN
FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
(in watts (kg-m/sec))

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	101.30	173.21	107.20
2.	110.48	120.34	106.50
3.	105.20	125.87	106.42
4.	101.20	107.10	106.42
5.	110.40	104.53	105.20
6.	111.20	104.42	104.42
7.	110.20	105.43	108.20
8.	100.48	173.01	107.94
9.	115.87	106.20	106.20
10.	105.97	121.01	103.23
11.	100.20	106.30	104.42
12.	104.17	104.43	106.50
13.	97.35	120.34	108.20
14.	110.30	106.94	105.20
15.	115.87	126.10	106.20
16.	100.80	108.40	107.20
17.	100.10	107.90	106.50
18.	109.48	104.43	106.42
19.	110.40	197.35	108.20
20.	109.49	104.43	103.20
21.	96.20	104.43	
22.	110.25	173.01	
23.	100.97	121.01	
24.	107.20	125.87	
25.	103.20	104.43	
26.	103.30	107.10	
27.	115.87	108.40	
28.	115.86	106.30	
29.	97.35	173.01	
30.	105.17	104.43	
31.	105.80	104.43	
32.	105.10	104.43	
33.	105.20	105.43	
34.	103.20		
35.	105.80		
36.	110.25		
37.	97.53		

APPENDIX XXIV
 RAW SCORES ON RESTING PULSE RATE OF UNIVERSITY MEN
 FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in per minutes)

S.No.	Foot-ball players	Basket ball Players	Volleyball players
1.	69	67	72
2.	65	59	68
3.	61	63	64
4.	62	62	68
5.	61	55	71
6.	65	60	70
7.	69	59	69
8.	64	66	68
9.	66	68	64
10.	65	63	65
11.	61	64	72
12.	68	67	70
13.	69	66	67
14.	67	63	67
15.	66	67	69
16.	61	66	72
17.	65	64	71
18.	62	63	71
19.	67	67	70
20.	69	60	72
21.	66	62	
22.	67	61	
23.	63	60	
24.	64	63	
25.	67	65	
26.	63	67	
27.	66	60	
28.	69	59	
29.	61	61	
30.	62	66	
31.	65	65	
32.	64	61	
33.	69	59	
34.	67		
35.	63		
36.	66		
37.	68		

APPENDIX XXV
 RAW SCORES ON CARDIORESPIRATORY ENDURANCE OF UNIVERSITY
 MEN FOOTBALL, BASKETBALL AND VOLLEYBALL PLAYERS
 (in metres)

S.No.	Foot ball players	Basket ball Players	Volleyball players
1.	3775	3875	3650
2.	4230	4330	4100
3.	3800	3890	3600
4.	3850	3950	3590
5.	3820	3860	3750
6.	4100	4200	3805
7.	4050	4250	4025
8.	3780	3885	4000
9.	3980	4150	3980
10.	4200	4125	4100
11.	4150	4005	4000
12.	3860	3815	4010
13.	3930	3815	3500
14.	3920	3950	3300
15.	3935	3920	3500
16.	4225	3920	3850
17.	4155	4155	3970
18.	4150	4315	2960
19.	3850	4005	4000
20.	3815	4025	4100
21.	3850	4005	
22.	3775	3875	
23.	4230	3890	
24.	4155	3875	
25.	4165	3955	
26.	3955	3960	
27.	3850	3960	
28.	3780	3900	
29.	3925	4007	
30.	4140	4305	
31.	4155	4325	
32.	4225	4120	
33.	3875	4110	
34.	3720		
35.	3975		
36.	3975		
37.	3995		