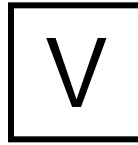


# **CHAPTER-V**

## **RESULTS - II**

**ADIPOSITY AND SUBCUTANEOUS FAT CONTENT MEASURES**

(WITH 3 TABLES AND 10 FIGURES IN THE TEXT)



## **RESULTS – II**

Table 5.1 demonstrates the descriptive statistics and percentile values (5<sup>th</sup>, 50<sup>th</sup> and 95<sup>th</sup>) of different measures of adiposity and subcutaneous fat content of boys. The mean BMI of the adolescent boys was 16.4 kg/m<sup>2</sup> ( $\pm$  2.92). Mean values of three measures of central adiposity, i.e. CI, WHR and WHTR were 1.16 ( $\pm$  0.07), 0.86 ( $\pm$  0.06) and 0.43 ( $\pm$  0.04), respectively. The mean CPF<sub>R</sub> was 16.40 ( $\pm$  8.39). Mean value of SES (25.02 mm,  $\pm$  8.23) was greater than the STS (15.84 mm,  $\pm$  7.57).

Table 5.2 demonstrates the descriptive statistics and percentile values (5<sup>th</sup>, 50<sup>th</sup> and 95<sup>th</sup>) of different measures of adiposity and subcutaneous fat content of girls. The mean BMI of the adolescent girls was 16.83 kg/m<sup>2</sup> ( $\pm$  2.84). Mean values of three measures of central adiposity, i.e. CI, WHR and WHTR were 1.15 ( $\pm$  0.08), 0.83 ( $\pm$  0.07) and 0.43 ( $\pm$  0.04), respectively. The mean CPF<sub>R</sub> was 46.49 ( $\pm$  7.09). Mean value of SES (33.65 mm,  $\pm$  9.39) was greater than the STS (22.85 mm,  $\pm$  9.38).

Age-trend (Table 5.3) in various measures of adiposity and subcutaneous fat content of Muslim adolescents is presented in Figure 5.1--5.10. BMI of boys increased gradually (+3.85 kg/m<sup>2</sup>) from 10 to 17 years with a pause at age 14 and 17 years. BMI of girls increased gradually (+4.42 kg/m<sup>2</sup>) from 10 to 15 years. CI of boys and girls showed an

irregular age-trend. WHR of boys increased at age 11 years, thereafter decreased from 11 to 17 years. WHR of girls decreased from 10 to 14 years, thereafter increased at the age 15 years and again decreased at the age 16 years. WHTR of boys remained stable in the 10 to 11 years and 12 to 15 years of age, slight decreased at the age 16 and 17 years. WHTR of girls decreased from 10 to 12 years, stabled at age 12 to 14 years, thereafter slight increased at age 15 and 17 years with a pause at age 16 years. TEFr of boys increased from 10 to 17 years except at 12 and 13 years. STR and CPFR of boys increased from 10 to 17 years except at 13 years. STR and CPFR of girls increased from 10 to 17 years except at 12 and 16 years. Subcutaneous fat content expressed by the S10S of boys and girls increased with the advancement of age except at 16 and 17 years. STS of boys increased from 10 to 17 years except 13 and 16 years. STS and SES of girls increased from 10 to 17 years except 16 years. SES of boys increased from 10 to 17 years except 13, 16 and 17years.

Analysis of variance reveals significant ( $p < 0.01$ ) age variations in all metric variables among the adolescents. WHTR of boys significant at the 0.006 level and WHTR of girls significant at the 0.002 level.

**Table 5.1: Mean, SD and Percentiles of Different Measures of Adiposity and Subcutaneous Fat Content of the Adolescent Muslim Boys (n= 522)**

Variable	Mean SD	Percentiles		
		5th	50th	95th
<b>Generalised Adiposity</b>				
Body Mass Index (kg/m <sup>2</sup> )	<b>16.41</b> (2.92)	13.24	15.76	22.06
<b>Central Adiposity</b>				
Conicity Index	<b>1.16</b> (0.07)	1.07	1.16	1.29
Waist-Hip Ratio	<b>0.86</b> (0.06)	0.77	0.86	0.95
Waist-Height Ratio	<b>0.43</b> (0.04)	0.37	0.42	0.50
<b>Regional Adiposity</b>				
Subscapular-Triceps Ratio	<b>0.92</b> (0.34)	0.53	0.81	1.55
Truncal-Extremity Fat Ratio	<b>0.63</b> (0.18)	0.40	0.60	0.98
Centripetal Fat Ratio	<b>46.40</b> (8.39)	34.48	44.87	60.70
<b>Subcutaneous Fat Content (mm)</b>				
Sum of 5 Skinfolts (mm)	<b>40.86</b> (14.96)	26.03	37.00	72.97
Sum of Trunk Skinfolts (mm)	<b>15.84</b> (7.57)	9.00	13.40	34.00
Sum of Extremity Skinfolts (mm)	<b>25.02</b> (8.23)	16.20	23.00	42.11

Standard deviations are presented in parentheses

**Table 5.2: Mean, SD and Percentiles of Different Measures of Adiposity and Subcutaneous Fat Content of the Adolescent Muslim Girls (n= 546)**

Variable	Mean SD	Percentiles		
		5th	50th	95th
<b>Generalised Adiposity</b>				
Body Mass Index (kg/m <sup>2</sup> )	<b>16.83</b> (2.84)	12.93	16.49	22.33
<b>Central Adiposity</b>				
Conicity Index	<b>1.15</b> (0.08)	1.04	1.15	1.29
Waist-Hip Ratio	<b>0.83</b> (0.07)	0.75	0.83	0.94
Waist-Height Ratio	<b>0.43</b> (0.04)	0.37	0.42	0.50
<b>Regional Adiposity</b>				
Subscapular-Triceps Ratio	<b>0.91</b> (0.31)	0.55	0.85	1.33
Truncal-Extremity Fat Ratio	<b>0.67</b> (0.16)	0.44	0.65	0.95
Centripetal Fat Ratio	<b>46.49</b> (7.09)	35.35	45.79	57.03
<b>Subcutaneous Fat Content (mm)</b>				
Sum of 5 Skinfolts (mm)	<b>56.50</b> (18.02)	32.20	54.35	91.12
Sum of Trunk Skinfolts (mm)	<b>22.85</b> (9.38)	10.87	21.20	42.12
Sum of Extremity Skinfolts (mm)	<b>33.65</b> (9.39)	20.67	32.60	51.05

Standard deviations are presented in parentheses

**Table 5.3: Age Variations in Different Measures of adiposity and Subcutaneous fat Content of the adolescent Muslim Adolescents**

Variable	Age Groups (years)					
	10.0-10.9		11.0-11.9		12.0-12.9	
	Boys	Girls	Boys	Girls	Boys	Girls
	n=(56)	n=(62)	n=(63)	n=(73)	n=(63)	n=(73)
<b>Generalised Adiposity</b>						
Body Mass Index (kg/m <sup>2</sup> )	<b>14.51</b> (1.00)	<b>14.63</b> (1.26)	<b>14.98</b> (1.87)	<b>14.78</b> (2.28)	<b>15.56</b> (3.17)	<b>15.30</b> (2.42)
<b>Central Adiposity</b>						
Conicity Index	<b>1.19</b> (0.05)	<b>1.21</b> (0.08)	<b>1.18</b> (0.07)	<b>1.17</b> (0.15)	<b>1.18</b> (0.06)	<b>1.17</b> (0.09)
Waist-Hip Ratio	<b>0.88</b> (0.04)	<b>0.90</b> (0.07)	<b>0.89</b> (0.07)	<b>0.86</b> (0.11)	<b>0.87</b> (0.04)	<b>0.85</b> (0.06)
Waist-Height Ratio	<b>0.44</b> (0.02)	<b>0.45</b> (0.03)	<b>0.44</b> (0.04)	<b>0.43</b> (0.06)	<b>0.43</b> (0.05)	<b>0.42</b> (0.04)
<b>Regional Adiposity</b>						
Subscapular-Triceps Ratio	<b>0.68</b> (0.14)	<b>0.75</b> (0.19)	<b>0.74</b> (0.17)	<b>0.81</b> (0.30)	<b>0.75</b> (0.20)	<b>0.78</b> (0.18)
Truncal-Extremity Fat Ratio	<b>0.51</b> (0.09)	<b>0.59</b> (0.11)	<b>0.55</b> (0.11)	<b>0.58</b> (0.13)	<b>0.55</b> (0.12)	<b>0.59</b> (0.12)
Centripetal Fat Ratio	<b>39.96</b> (4.94)	<b>42.32</b> (5.83)	<b>42.00</b> (5.18)	<b>43.70</b> (7.46)	<b>42.11</b> (6.01)	<b>43.40</b> (5.73)
<b>Subcutaneous Fat Content</b>						
Sum of 5 Skinfolds (mm)	<b>34.31</b> (7.10)	<b>43.91</b> (10.39)	<b>39.52</b> (15.85)	<b>46.70</b> (16.40)	<b>41.82</b> (18.68)	<b>47.48</b> (16.41)
Sum of Trunk Skinfolds (mm)	<b>11.46</b> (2.79)	<b>16.28</b> (4.78)	<b>14.28</b> (7.83)	<b>17.23</b> (8.05)	<b>15.13</b> (8.95)	<b>17.79</b> (7.94)
Sum of Extremity Skinfolds (mm)	<b>22.84</b> (4.84)	<b>27.63</b> (6.24)	<b>25.25</b> (8.41)	<b>29.47</b> (8.90)	<b>26.70</b> (10.13)	<b>29.69</b> (8.95)

Standard deviation are presented in Parentheses

Continued .....

**Table 5.3: Continuation ....**

Variable	Age Groups (years)					
	13.0-13.9		14.0-14.9		15.0-15.9	
	Boys	Girls	Boys	Girls	Boys	Girls
	n=(77)	n=(79)	n=(84)	n=(78)	n=(71)	n=(70)
<b>Generalised Adiposity</b>						
Body Mass Index (kg/m <sup>2</sup> )	<b>15.18</b> (1.81)	<b>17.09</b> (2.19)	<b>16.27</b> (2.19)	<b>17.68</b> (2.33)	<b>18.43</b> (4.15)	<b>19.05</b> (3.07)
<b>Central Adiposity</b>						
Conicity Index	<b>1.17</b> (0.07)	<b>1.14</b> (0.08)	<b>1.17</b> (0.06)	<b>1.12</b> (0.06)	<b>1.15</b> (0.07)	<b>1.12</b> (0.07)
Waist-Hip Ratio	<b>0.87</b> (0.05)	<b>0.82</b> (0.05)	<b>0.86</b> (0.05)	<b>0.80</b> (0.05)	<b>0.84</b> (0.05)	<b>0.81</b> (0.06)
Waist-Height Ratio	<b>0.43</b> (0.03)	<b>0.42</b> (0.04)	<b>0.43</b> (0.03)	<b>0.42</b> (0.04)	<b>0.43</b> (0.06)	<b>0.43</b> (0.05)
<b>Regional Adiposity</b>						
Subscapular-Triceps Ratio	<b>0.73</b> (0.19)	<b>0.91</b> (0.24)	<b>0.83</b> (0.23)	<b>0.95</b> (0.27)	<b>1.13</b> (0.29)	<b>1.08</b> (0.43)
Truncal-Extremity Fat Ratio	<b>0.53</b> (0.11)	<b>0.67</b> (0.13)	<b>0.59</b> (0.15)	<b>0.72</b> (0.15)	<b>0.74</b> (0.15)	<b>0.76</b> (0.15)
Centripetal Fat Ratio	<b>41.47</b> (5.64)	<b>46.88</b> (6.24)	<b>44.65</b> (6.46)	<b>47.80</b> (6.72)	<b>52.18</b> (6.46)	<b>50.71</b> (6.66)
<b>Subcutaneous Fat Content</b>						
Sum of 5 Skinfolds (mm)	<b>39.50</b> (12.57)	<b>58.34</b> (14.37)	<b>41.69</b> (12.33)	<b>61.24</b> (16.17)	<b>47.63</b> (21.04)	<b>69.29</b> (19.60)
Sum of Trunk Skinfolds (mm)	<b>13.75</b> (5.82)	<b>23.58</b> (7.79)	<b>15.61</b> (6.42)	<b>25.58</b> (7.89)	<b>20.32</b> (10.01)	<b>30.08</b> (10.51)
Sum of Extremity Skinfolds (mm)	<b>25.76</b> (7.34)	<b>34.76</b> (7.28)	<b>26.08</b> (6.74)	<b>35.66</b> (9.18)	<b>27.31</b> (11.46)	<b>39.21</b> (9.85)

Standard deviation re presented in Parentheses

Continued .....

**Table 5.3: Continuation ....**

Variable	Age Groups (years)				F Ratio	
	16.0-16.9		17.0-17.9		Boys	Girls
	Boys	Girls	Boys	Girls		
	n=(60)	n=(55)	n=(46)	n=(47)	n=(522)	n=(546)
<b>Generalised Adiposity</b>						
Body Mass Index (kg/m <sup>2</sup> )	<b>18.45</b> (2.22)	<b>18.27</b> (2.30)	<b>18.36</b> (1.97)	<b>18.76</b> (2.22)	27.47*	39.74*
<b>Central Adiposity</b>						
Conicity Index	<b>1.14</b> (0.06)	<b>1.11</b> (0.08)	<b>1.12</b> (0.06)	<b>1.13</b> (0.08)	7.24*	15.19*
Waist-Hip Ratio	<b>0.82</b> (0.04)	<b>0.80</b> (0.08)	<b>0.81</b> (0.05)	<b>0.81</b> (0.05)	21.71*	24.08*
Waist-Height Ratio	<b>0.42</b> (0.03)	<b>0.42</b> (0.04)	<b>0.41</b> (0.03)	<b>0.43</b> (0.04)	2.86**	3.33***
<b>Regional Adiposity</b>						
Subscapular-Triceps Ratio	<b>1.27</b> (0.27)	<b>0.95</b> (0.23)	<b>1.39</b> (0.33)	<b>1.09</b> (0.44)	83.36*	12.17*
Truncal-Extremity Fat Ratio	<b>0.81</b> (0.15)	<b>0.73</b> (0.15)	<b>0.86</b> (0.19)	<b>0.74</b> (0.20)	59.78*	20.70*
Centripetal Fat Ratio	<b>55.24</b> (5.53)	<b>48.21</b> (5.55)	<b>57.37</b> (5.46)	<b>50.58</b> (7.63)	82.75*	16.19*
<b>Subcutaneous Fat Content</b>						
Sum of 5 Skinfolds (mm)	<b>41.55</b> (13.83)	<b>63.58</b> (15.52)	<b>38.67</b> (7.82)	<b>65.79</b> (14.54)	4.18*	25.26*
Sum of Trunk Skinfolds (mm)	<b>18.52</b> (6.97)	<b>26.80</b> (7.80)	<b>17.84</b> (4.72)	<b>27.90</b> (8.04)	10.19*	29.84*
Sum of Extremity Skinfolds (mm)	<b>23.03</b> (7.45)	<b>36.77</b> (8.77)	<b>20.83</b> (4.04)	<b>37.89</b> (8.37)	4.42*	17.17*

Standard Deviation are presented in parentheses

\* - significant at the 0.01 level

\* \* - significant at the 0.006 level

\* \* \* - significant at the 0.002 level



