

CHAPTER-IV

RESULTS - I

ANTHROPOMETRIC CHARACTERISTICS

(WITH 3 TABLES AND 12 FIGURES IN THE TEXT)

IV

RESULTS – I

The overall means, standard deviations and percentile values (5th, 50th and 95th) of different anthropometric characteristics of boys are presented in Table 4.1. Mean HT of the adolescent boys was 144.85 cm (\pm 15.16) and the mean WT was 35.43 kg (\pm 11.96). Mean value of MUAC and CC were 19.65 cm (\pm 3.08) and 71.08 cm (\pm 9.88), respectively. BSF showed the least mean value (5.55 mm, \pm 2.54) whereas CSF exhibited maximum mean value (10.63 mm, \pm 3.07).

The overall means, standard deviations and percentile values (5th, 50th and 95th) of different anthropometric characteristics of girls are presented in Table 4.2. Mean HT of the adolescent girls was 143.83 cm (\pm 10.21) and the mean WT was 35.42 kg (\pm 9.36). Mean value of MUAC and CC were 20.17 cm (\pm 2.82) and 72.19 cm (\pm 7.96), respectively. BSF showed the least mean value (7.82 mm, \pm 2.95) whereas CSF exhibited maximum mean value (13.11 mm, \pm 3.47).

The age-wise distribution of different anthropometric measures of adolescents is presented in Table 4.3. HT of boys and girls increased progressively (37.09 cm and 25.02 cm) from 10 to 16 years (Figure 4.1). WT of boys showed a steady positive age trend from 13 (28.28 kg) to 16 (50.09 kg) years of age (Figure 4.2). WT of girls showed a steady positive age trend from 10 (23.90 kg) to 15 (43.27 kg) years of age (Figure 4.2). MUAC of boys increased gradually with the advancement of age except at 13

years and MUAC of girls increased progressively from 10 to 15 years (Figure 4.3). CC of boys increased gradually with the advancement of age except 13 years and CC of girls increased gradually with the advancement of age except 16 years (Figure 4.4). WC, HC and CFC of boys increased from 10 to 17 years except at 13 and 17 years (Figure 4.5 - 4.7). WC, HC and CFC of girls increased from 10 to 17 years except at 16 years and 17 years (Figure 4.5 - 4.7). BSF of boys a steady positive age trend from 10 (4.82 mm) to 15 (9.39 mm) years of age except 13 years and BSF of girls showed regular positive age trend (Figure 4.8). TSF of boys increased from 10 (8.84 mm) to 12 (9.56 mm) years of age, thereafter decreased from 13 to 17 years except at 15 years and TSF of girls regular positive age trend from 10 to 15 years (Figure 4.9). Similar regular positive age trend was also found in most of the age groups of SUBSF, SUPSF and CSF of the children (Figure 4.10–4.12).

Analysis of variance reveals significant ($p < 0.01$) age variations in all anthropometric characteristics among the adolescent children. Biceps of boys is significant at 0.001 level.

Table 4.1: Mean, SD and Percentiles of Different Anthropometric Characteristics of the Adolescent Muslim Boys (n =522)

Variable	Mean SD	Percentiles		
		5th	50th	95th
Height (cm)	144.85 (15.16)	123.50	140.00	169.84
Weight (kg)	35.43 (11.96)	22.00	31.50	58.43
Circumferences (cm)				
Mid-Upper Arm	19.65 (3.08)	15.90	19.00	25.77
Chest	71.08 (9.88)	58.62	69.00	89.46
Minimum Waist	61.67 (7.85)	51.92	60.00	76.80
Maximum Hip	72.01 (9.45)	60.40	69.20	88.16
Calf	27.26 (4.28)	22.20	26.50	34.09
Skinfolds (mm)				
Biceps	5.55 (2.54)	3.20	4.80	10.97
Triceps	8.84 (3.24)	5.00	8.00	15.40
Subscapular	7.76 (3.55)	4.40	6.80	15.80
Suprailiac	8.08 (4.27)	4.20	6.80	18.20
Medial Calf	10.63 (3.07)	6.80	10.00	16.37

Standard deviations are presented in parentheses

Table 4.2: Mean, SD and Percentiles of Different Anthropometric Characteristics of the Adolescent Muslim Girls (n = 546)

Variable	Mean SD	Percentiles		
		5th	50th	95th
Height (cm)	143.83 (10.21)	125.70	145.90	157.90
Weight (kg)	35.42 (9.36)	22.00	36.00	50.33
Circumferences (cm)				
Mid-Upper Arm	20.17 (2.82)	16.10	20.00	24.90
Chest	72.19 (7.96)	59.90	73.00	84.57
Minimum Waist	61.49 (6.85)	52.50	60.20	74.27
Maximum Hip	74.14 (8.76)	60.74	75.00	88.00
Calf	27.25 (3.15)	22.44	27.40	32.17
Skinfolds (mm)				
Biceps	7.82 (2.96)	4.00	7.40	13.53
Triceps	12.73 (3.88)	7.40	12.20	19.66
Subscapular	11.51 (5.05)	5.67	10.00	21.26
Suprailiac	11.34 (4.77)	5.00	10.80	20.20
Medial Calf	13.11 (3.47)	8.07	12.80	19.40

Standard deviations are presented in parentheses

Table 4.3: Age Variations in Different Anthropometric Characteristics of the 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=(65)	n=(82)
Height (cm)	127.58 (4.70)	127.71 (4.59)	131.55 (6.00)	133.28 (5.34)	135.77 (5.76)	140.95 (6.04)
Weight (kg)	23.66 (2.46)	23.90 (2.89)	26.01 (4.26)	26.34 (4.89)	28.98 (7.99)	30.54 (6.19)
Circumferences (cm)						
Mid-Upper Arm	17.07 (1.17)	17.49 (1.36)	17.54 (1.80)	17.98 (2.10)	18.36 (2.83)	18.82 (2.23)
Chest	61.72 (3.72)	62.81 (3.90)	64.24 (5.24)	65.17 (6.22)	66.04 (7.90)	68.11 (5.89)
Minimum Waist	55.63 (2.78)	56.87 (3.95)	57.26 (6.23)	57.65 (5.77)	58.86 (8.66)	59.16 (6.16)
Maximum Hip	62.93 (3.48)	63.68 (4.04)	64.17 (4.93)	66.05 (6.05)	67.30 (7.29)	70.03 (6.55)
Calf	24.13 (4.52)	23.86 (1.67)	24.52 (2.40)	24.49 (2.23)	25.24 (2.76)	25.88 (2.63)
Skinfolds (mm)						
Biceps	4.82 (1.19)	6.03 (1.84)	5.62 (2.79)	6.70 (2.84)	6.27 (3.36)	6.70 (2.67)
Triceps	8.84 (2.12)	10.91 (2.81)	9.33 (3.03)	11.15 (3.47)	9.56 (3.66)	11.42 (3.87)
Subscapular	5.85 (1.50)	8.03 (2.40)	7.00 (3.79)	8.88 (4.20)	7.17 (3.98)	9.05 (4.33)
Suprailiac	5.61 (1.48)	8.25 (2.84)	7.28 (4.29)	8.35 (4.26)	7.95 (5.09)	8.74 (4.02)
Medial Calf	9.19 (2.31)	10.68 (2.48)	10.30 (3.15)	11.63 (3.38)	10.86 (3.50)	11.65 (3.05)

Standard deviations are presented in parentheses

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Table 4.3 : 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)
Height (cm)	136.09 (6.30)	146.80 (7.45)	145.83 (9.91)	149.45 (5.82)	158.06 (11.05)	150.56 (5.46)
Weight (kg)	28.28 (5.11)	37.09 (6.84)	34.95 (7.87)	39.59 (6.24)	46.09 (10.77)	43.27 (7.88)
Circumferences (cm)						
Mid-Upper Arm	18.05 (2.00)	20.57 (2.20)	19.49 (2.23)	21.49 (2.46)	21.89 (2.92)	22.17 (2.69)
Chest	65.43 (5.26)	73.18 (5.98)	70.40 (7.00)	75.39 (4.80)	78.89 (8.46)	78.86 (6.01)
Minimum Waist	58.09 (5.21)	62.27 (6.00)	62.01 (6.04)	62.89 (5.92)	67.29 (8.74)	65.27 (7.64)
Maximum Hip	66.42 (4.58)	75.93 (6.96)	71.97 (6.47)	78.26 (5.97)	80.35 (7.54)	80.51 (6.21)
Calf	25.15 (2.15)	27.92 (2.46)	27.67 (4.63)	28.74 (2.35)	30.04 (3.74)	29.39 (2.53)
Skinfolds (mm)						
Biceps	5.72 (2.27)	8.22 (2.42)	5.75 (2.29)	8.27 (2.77)	6.12 (3.47)	9.39 (3.24)
Triceps	9.44 (2.94)	12.97 (3.15)	8.99 (2.82)	13.47 (3.79)	9.11 (4.40)	14.61 (4.36)
Subscapular	6.71 (2.95)	11.78 (4.30)	7.25 (2.50)	12.59 (4.53)	9.90 (4.77)	15.36 (5.77)
Suprailiac	7.03 (3.29)	11.80 (4.06)	8.35 (4.11)	12.98 (3.93)	10.42 (5.52)	14.72 (5.35)
Medial Calf	10.60 (2.69)	13.57 (2.83)	11.35 (2.33)	13.92 (3.49)	12.08 (4.02)	15.21 (3.67)

Standard deviations are presented in parentheses

Continued...

Table 4.3: Continuation...

Variable	Age Groups (years)				F Ratio	
	16.0-16.9		17.0-17.9		Boys n=(522)	Girls n=546)
	Boys	Girls	Boys	Girls		
	n=(60)	n=(55)	n=(46)	n=(47)		
Height (cm)	164.67 (5.97)	152.73 (4.76)	163.51 (5.10)	151.82 (5.98)	234.37*	163.40*
Weight (kg)	50.09 (7.00)	42.65 (5.85)	49.06 (5.47)	43.31 (6.21)	145.36*	107.82*
Circumferences (cm)						
Mid-Upper Arm	22.80 (2.18)	21.51 (2.34)	22.91 (1.81)	22.12 (2.07)	69.73*	47.59*
Chest	82.52 (5.48)	77.95 (5.61)	82.63 (4.95)	78.97 (4.27)	108.51*	87.71*
Minimum Waist	68.54 (5.81)	63.83 (6.64)	66.76 (4.79)	65.56 (6.84)	38.48*	19.20*
Maximum Hip	83.08 (4.86)	80.34 (6.28)	82.61 (3.90)	81.06 (6.09)	131.07*	82.99*
Calf	31.34 (2.20)	29.02 (2.45)	30.81 (3.04)	29.53 (2.48)	47.97*	60.10*
Skinfolds (mm)						
Biceps	4.90 (1.83)	8.41 (3.04)	4.62 (1.14)	9.44 (2.92)	3.62**	14.02*
Triceps	7.72 (3.35)	14.11 (3.80)	6.90 (1.67)	13.81 (3.83)	4.75*	10.49*
Subscapular	9.32 (3.23)	13.33 (4.33)	9.30 (2.17)	14.33 (4.59)	12.36*	25.34*
Suprailiac	9.20 (3.91)	13.47 (3.98)	8.54 (2.87)	13.57 (3.81)	8.15*	28.02*
Medial Calf	10.40 (2.84)	14.25 (3.04)	9.32 (2.12)	14.64 (2.80)	6.54*	18.21*

Standard deviations are presented in parentheses

* - significant at the 0.01 level

** - significant at the 0.001 level

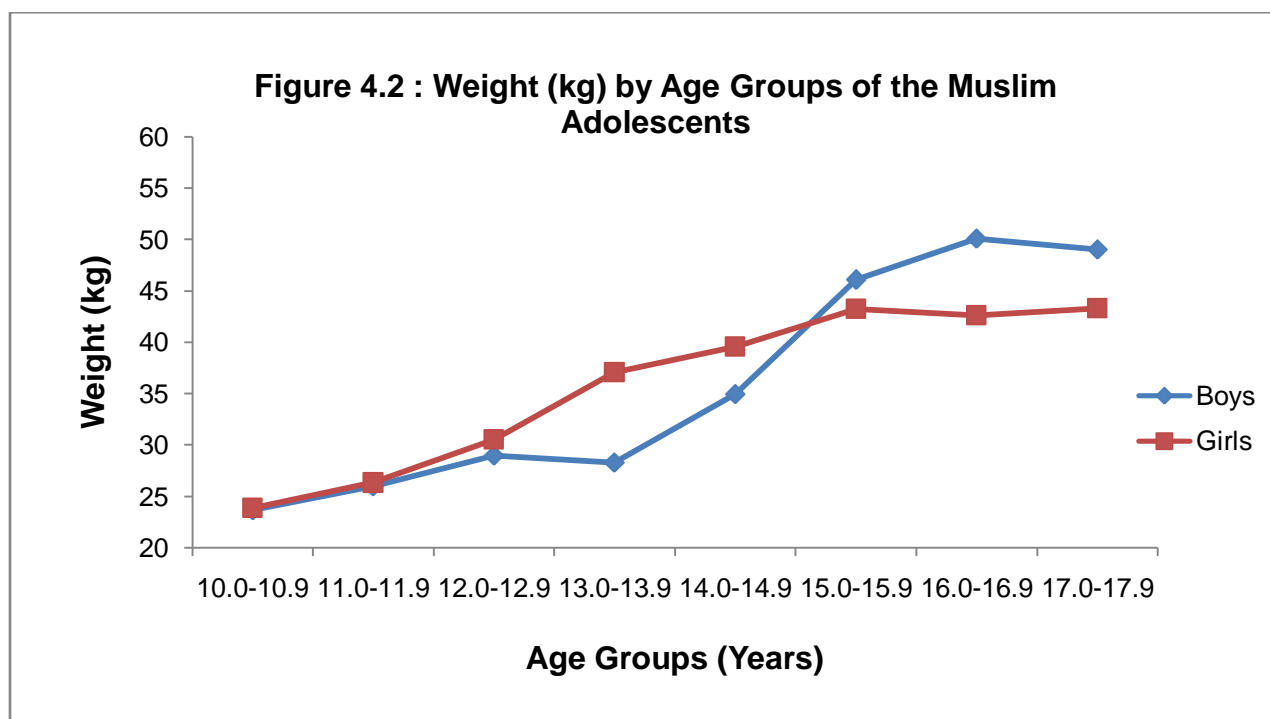
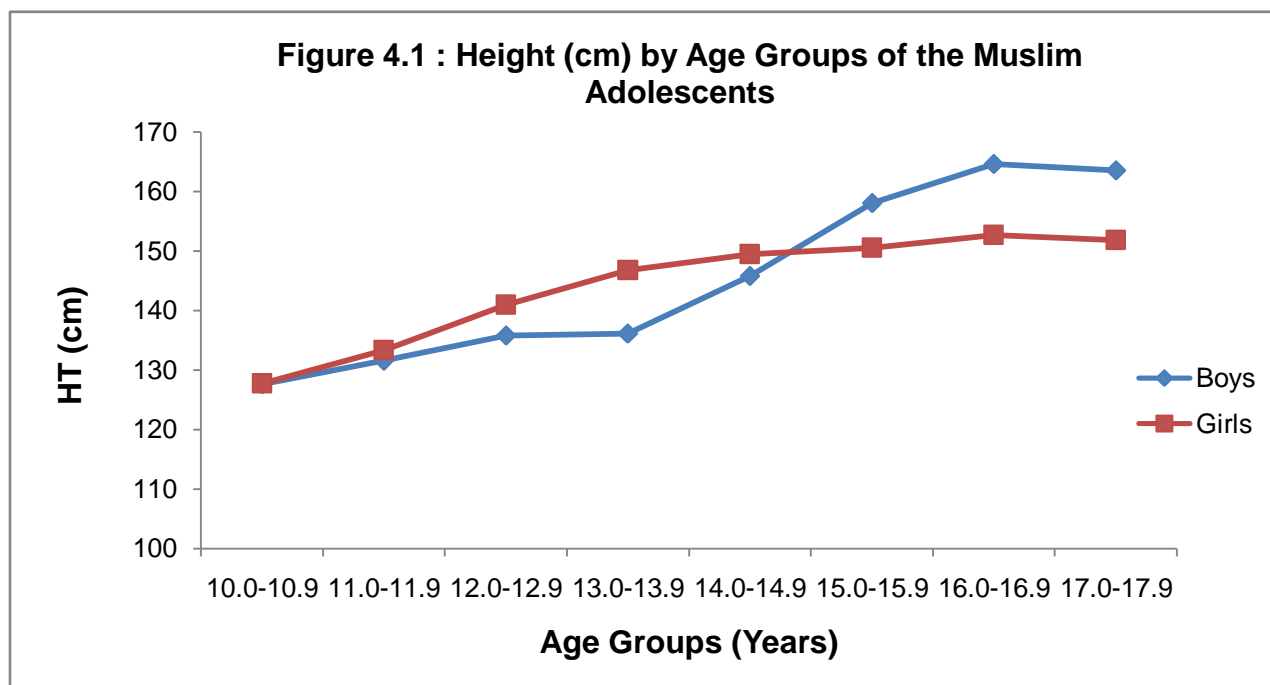


Figure 4.3 : Mid- Upper Arm Circumference MUAC (cm) by Age Groups of the Muslim Adolescents

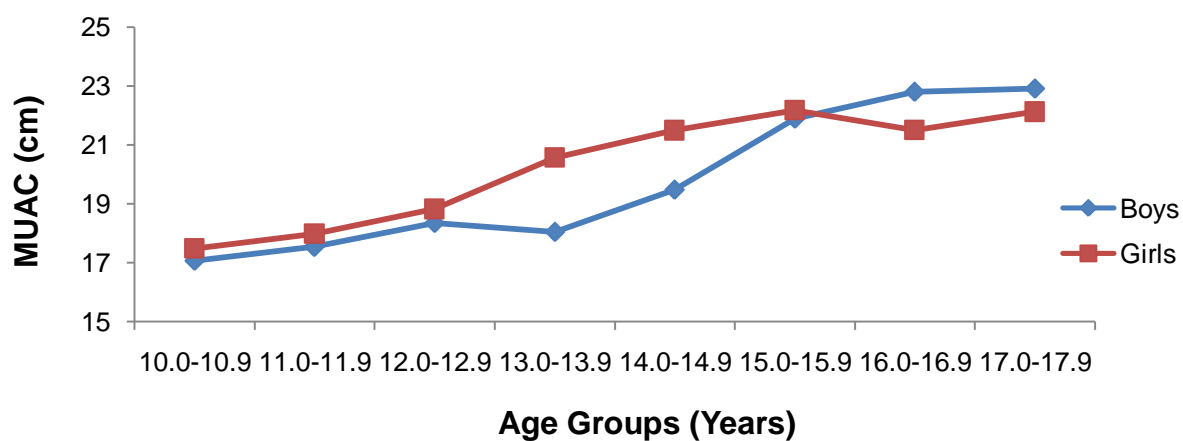
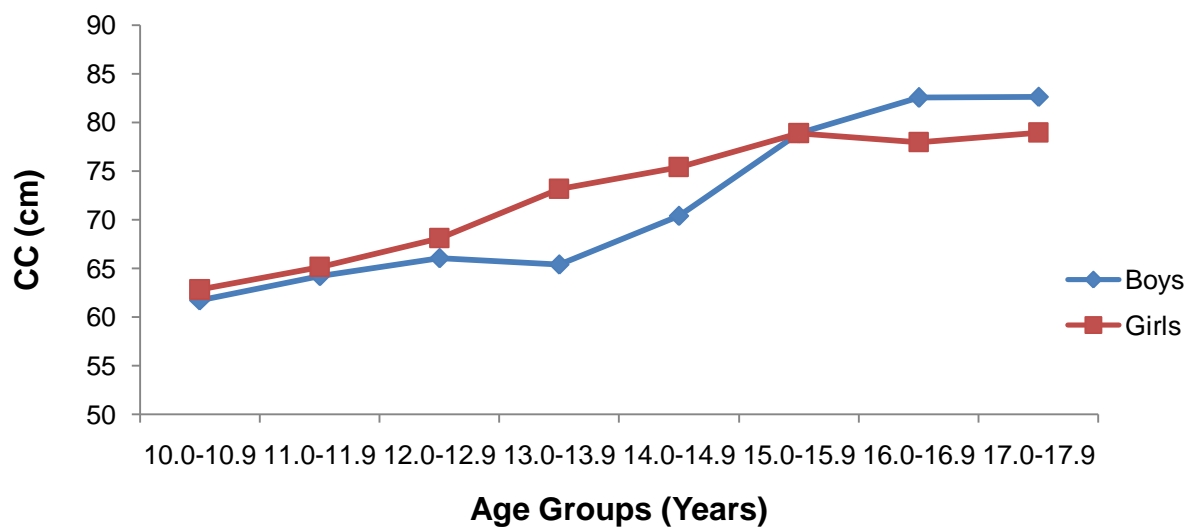


Figure 4.4 : Chest Circumference (CC) by Age Groups of the Muslim Adolescents



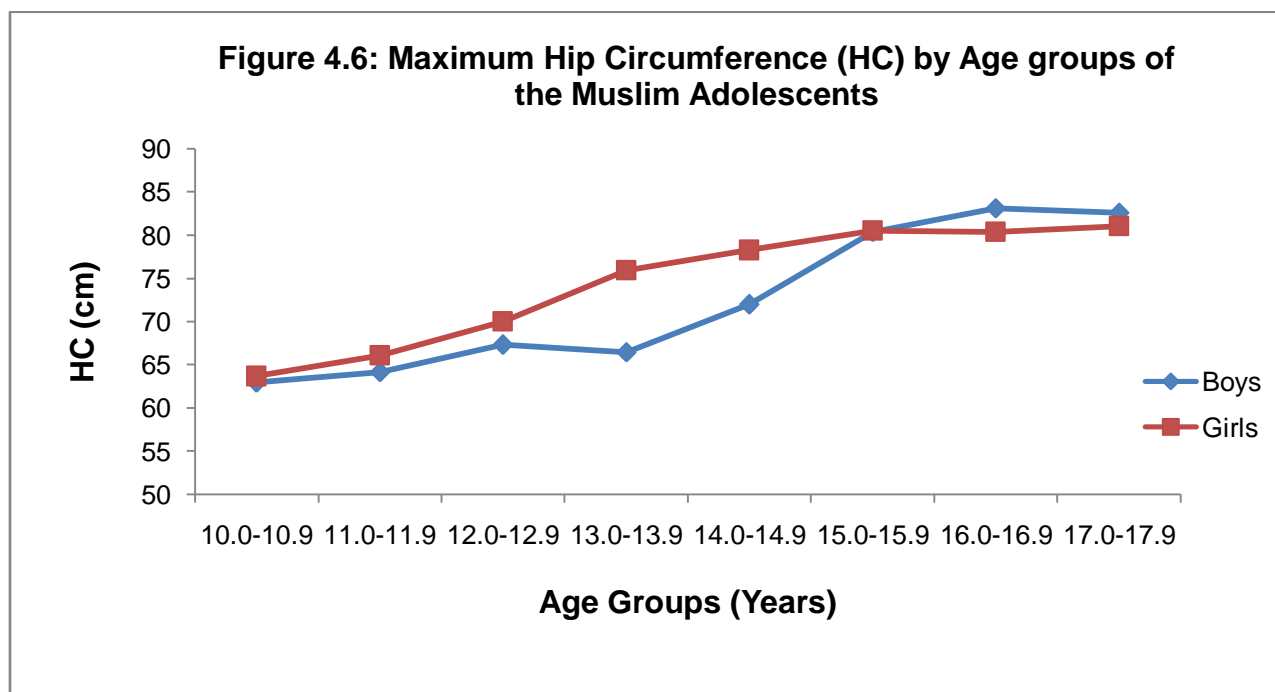
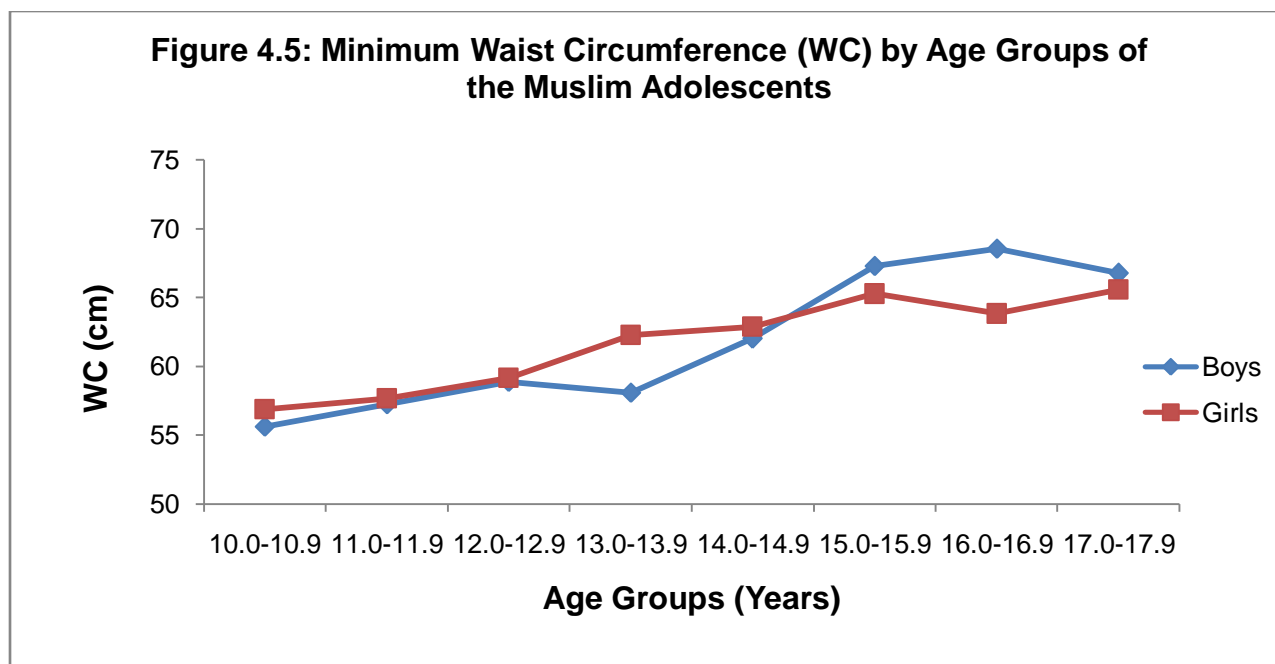


Figure 4.7: Calf Circumference (CFC) by Age groups of the Muslim Adolescents

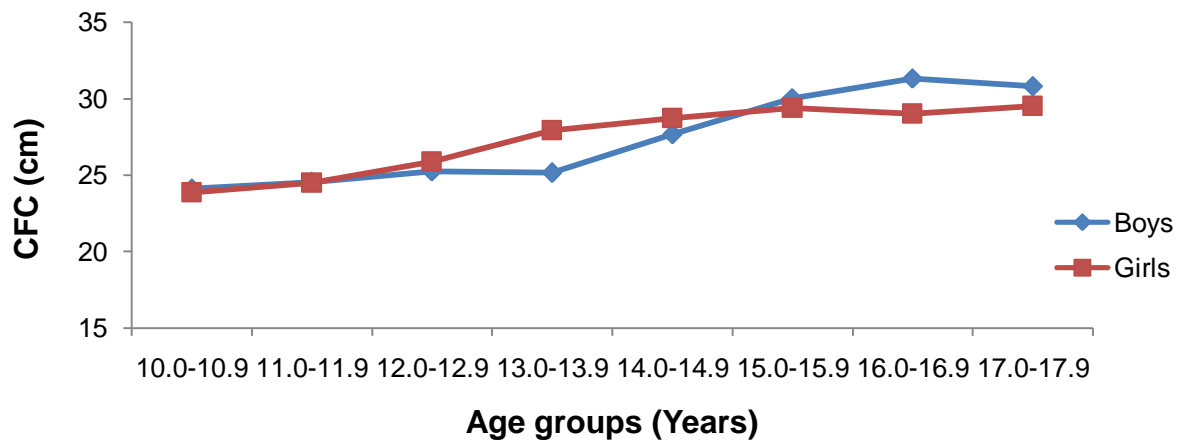


Figure 4.8: Biceps Skinfold (BSF) by Age Groups of the Muslim Adolescents

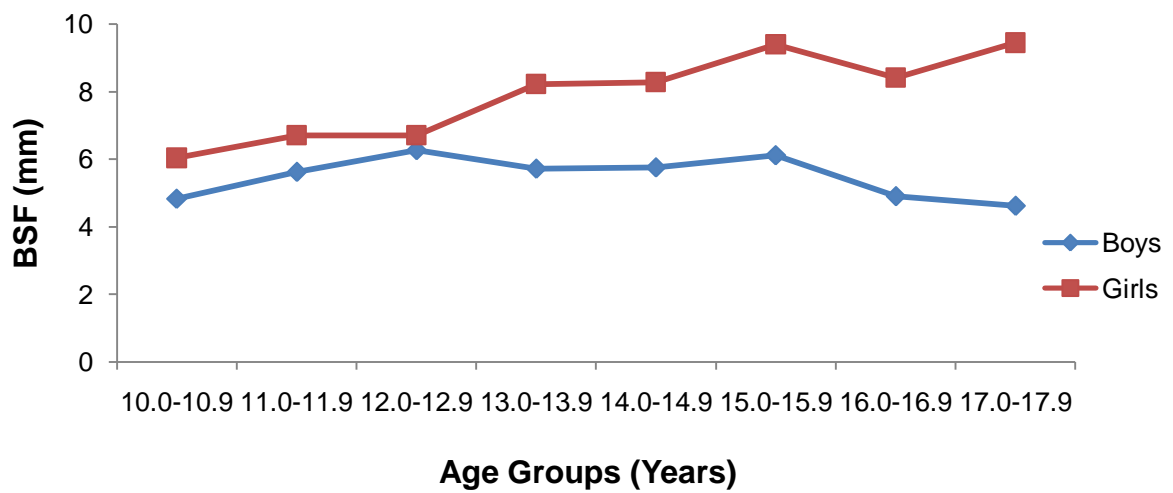


Figure 4.9: Triceps Skinfold (TSF) by Age Groups of the Muslim Adolescents

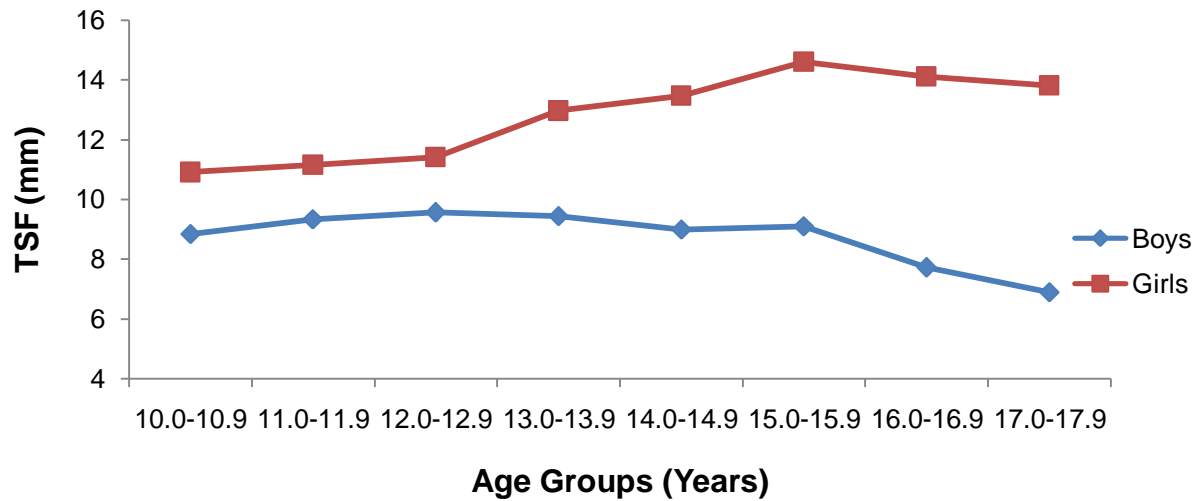


Figure 4.10: Subscapular Skinfold (SUBSF) by Age Groups of the Muslim Adolescents

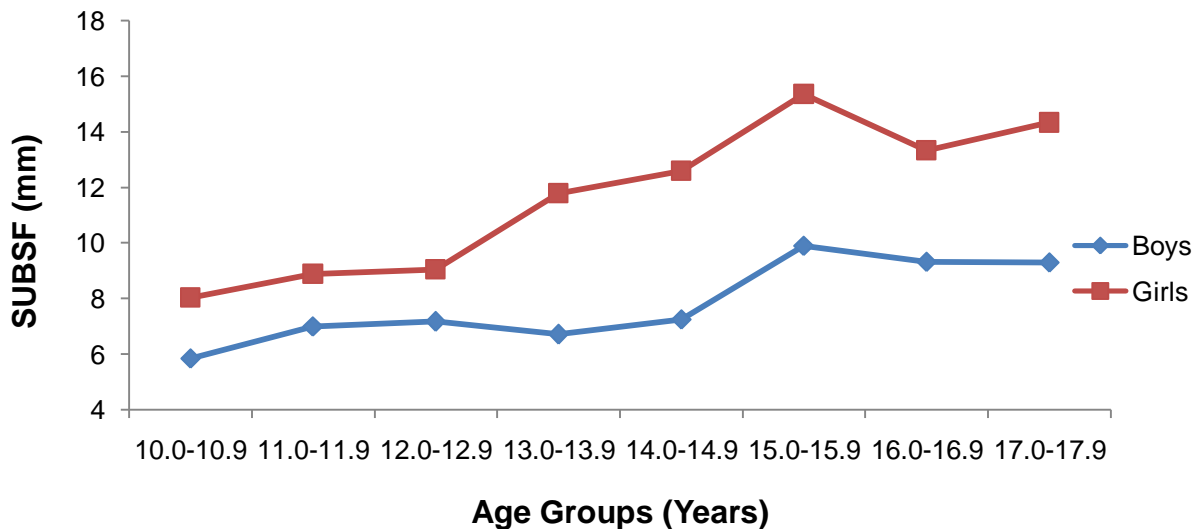


Figure 4.11: Suprailiac Skinfold (SUPSF) by Age Groups of the Muslim Adolescents

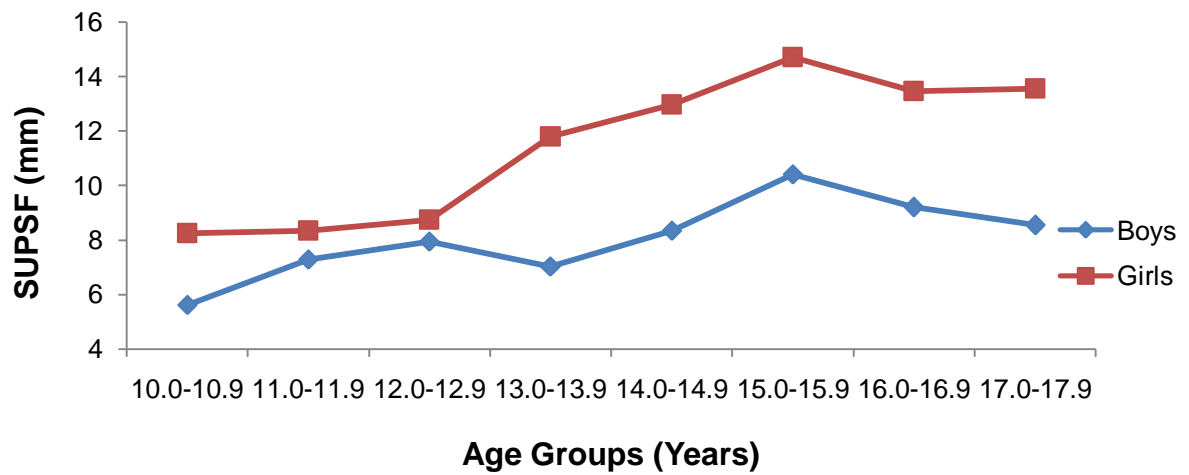


Figure 4.12: Medial Calf Skinfold (CSF) by Age Groups of the Muslim Adolescents

