

Table 1 Demographic characteristics the exposed factors among cases and controls

	Group 1 (n=12)	Group 2 (n=90)	Group 3 (n=33)	p**
Age (year)	67.08±2.02 (64-69) ^{bc}	60.31±4.71 (50-70)	59.76±5.16 (52-69)	<0.001*
Last menstrual period date(year)	15.33±6.77 (5-31)	10.20±6.18 (0-27)	4.70±3.93 (0-13) ^{ab}	<0.001*
Osteoporosis n(%)	6(50) ^{bc}	32(35.6)	2(6.1)	0.002
Comorbidities n(%)				
Hypertension	5 (55.6)	22 (52.4)	7 (36.8)	0.762
Thyroid diseases	0	7 (16.7)	2 (10.5)	
Hypertension+Goiters.	2 (22.2)	5 (11.9)	3 (15.8)	
Asthma	1 (11.1)	3 (7.1)	3 (15.8)	
Hypertension+Asthma	0	3 (7.1)	3 (15.8)	
Atherosclerotic Cardiovascular Disease	1 (11.1)	2 (4.8)	1 (5.3)	
Cigarette smoking	2 (16.7)	13 (14.4)	0	0.004
BMI (Kg/m2)	23.24±3.34 (18.4-29.3) ^{bc}	32.82±5.44 (20.8-61.6)	29.22±3.20 (22.6-35.9)	<0.001
Circumferences(cm)				
Waist	80.75±13.86 (59-110) ^{bc}	103.0±9.79 (75-125)	97.42±7.68 (83-114)	<0.001
Hip	86.9±16.0 (60-115) ^{bc}	114.3±16.0 (11-155)	108.6±11.1 (90-128)	<0.001
Arm (cm)	22.17±4.00 (18-32) ^{bc}	33.37±5.04 (21-57)	32.18±4.33 (26-43)	<0.001
Calf (cm)	31.92±2.68 (25-35) ^{bc}	40.52±6.30 (32-63)	40.85±6.46 (32-57)	<0.001
Thigh (cm)	40.25±5.91 (32-51) ^{bc}	52.12±5.98 (39-68)	51.76±6.87 (35-68)	<0.001
Grip strength (Kgs)				
Right	13.58±2.94 (7-17) ^{bc}	20.69±5.38 (8-38)	21.94±5.72 (12-38)	<0.001
Left	12.08±3.12 (5-16) ^{bc}	20.24±5.29 (4-40)	19.97±4.73 (10-34)	<0.001
Gait speed (m/s)	09.36±0.1 (0.82-1.12) ^{bc}	0.61±0.18 (0.36-1.5)	0.6±0.14 (0.36-0.9)	<0.001

Table 2 Comparison of the clinical characteristics of the groups.

	Group 1 (n=12)	Group 2 (n=90)	Group 3 (n=33)	p**
Timed up&go test (sec)	13.92±1.71 (12.1-18.1) ^{bc}	8.64±2.98 (3.5-15.0)	7.44±2.54 (3.6-12.7)	<0.001
IPAQ-SF (MET-mn/week)	351.2±129.9 (132-520) ^b	1195.9±1432.1 (120-8240)	1041.6±1187.3 (120-4260)	0.017**
Mini-Nutritional Assessment	19.71±4.60 (16.0-29.5) ^{bc}	26.24±2.63 (18-30)	26.92±2.85 (18-30)	<0.001**
CES-D	25.58±11.73 (5-52)	22.47±14.07 (4-54)	15.15±10.85 (0-49) ^{ab}	0.004**

IPAQ-SF: International Physical Activity Questionnaire - Short Form, MET: The metabolic Equivalent of Task, CES-D: Center for Epidemiologic Studies Depression Scale Data are given as ratio or mean ± standard deviation.

a A statistically significant difference was found with the group 1 in post hoc paired comparisons (p <0.017)

b A statistically significant difference was found with the group 2 in post hoc paired comparisons (p <0.017)

c A statistically significant difference was found with the group 3 in post hoc paired comparisons (p <0.017)

Table 3 Laboratory parameters of the groups.

	Group 1 (n=12)	Group 2 (n=90)	Group 3 (n=33)	p*
	X-±S (min-max)	X-±S (min-max)	X-±S (min-max)	
Adiponectin (µg/mL)	9.66±4.07 (3.98-14.44)	9.66±5.60 (1.22-45.0)	-----	0.720**
Leptin (ng/mL)	8.45±12.44 (0.43-45.46)	15.15±13.31 (0.30-55.84)	-----	0.068**
Vitamin D (ng/ml)	19.10±13.00 (5-53)	15.63±10.46 (3-62.4) ^c	20.32±11.04 (6.7-55.9)	0.030
Urea (mg/dL)	31.45±8.31 (16-43)	29.56±8.48 (18-58)	32.58±8.22 (18-59)	0.087
Uric acid (mg/dL)	5.07±1.23 (3.20-6.53)	5.02±0.95 (3.0-7.41)	4.75±1.47 (0.49-8.0)	0.550
Total Protein (mg/dL)	7.39±0.47 (6.56-8.41)	7.33±0.53 (4.78-8.39)	7.25±0.48 (6.26-8.30)	0.591
Albumin (mg/dL)	4.32±0.47 (3.10-4.86)	4.30±0.38 (2.24-5.01)	4.09±0.48 (3.24-4.98) ^{ab}	0.035
Calcium (mg/dL)	9.22±0.48 (8.60-10.07) ^b	9.58±0.48 (8.4-10.9)	9.45±0.42 (8.40-10.15)	0.023
Hemoglobin (gram/dL)	12.72±0.94 (11.0-13.9)	13.10±1.15 (9.9-16.5)	13.04±1.35 (8.8-15.1)	0.418

Parathormone (pg/ml)	53.32±29.71 (24-138)	49.72±18.54 (14.7-118.4)	47.54±14.32 (21-82)	0.984
Thyroid stimulating hormone (mU/ml)	2.15±2.15 (0.26-7.43)	2.01±1.37 (0.03-7.83)	1.72±0.81 (0.25-3.68)	0.758
Vitamin B12 (mg/dL)	215.3±82.1 (85-374)	244.2±128.8 (99-786)	366.3±561.6 (132-3378)	0.282

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Table 4 Comparison of DEXA body composition parameters between study groups

	Group 1 (n=12)	Group 2 (n=90)	Group 3 (n=33)	p*
	X±S (min-max)	X±S (min-max)	X±S (min-max)	
DEXA-FM	23.18±6.01 (12.48-33.88) ^{bc}	31.92±6.48 (16.73-51.10)	31.71±6.11 (20.48-51.07)	<0.001
DEXA-LBM	38.12±4.81 (29.14-44.78) ^{bc}	44.91±5.90 (16.40-57.19)	44.90±5.79 (31.87-57.19)	0.001
DEXA-FM (%)	31.26±6.18 (17.46-38.20)	38.84±4.47 (25.75-50.20) ^{ac}	33.75±3.52 (28.17-45.23)	<0.001
DEXA-FMI	10.40±2.71 (5.98-14.28) ^b	13.05±2.60 (6.96-23.0)	12.55±2.47 (8.30-18.31)	0.012
DEXA-LBMI	16.33±2.52 (11.38-19.90)	18.86±2.04 (14.9-24.1) ^{ac}	17.82±2.90 (12.89-23.60)	0.002
DEXA-SMI	5.35±0.15 (4.99-5.50) ^{bc}	7.27±1.19 (4.20-9.99)	6.74±0.82 (5.39-8.13)	<0.001

DEXA: Dual-energy X-ray absorptiometry FM: Fat mass, LBM: Lean body mass, FMI:Fat mass index, LBMI:Lean body mass index, SMI: skeletal muscle index

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Table 5 Ultrasonographic measurements of subcutaneous tissue and muscle thicknesses (cm) of the groups

	Group 1 (n=12)	Group 2 (n=90)	Group 3 (n=33)	p [*]
	X \pm S (min-max)	X \pm S (min-max)	X \pm S (min-max)	
GM SCT (left side)	1.32 \pm 0.35 (0.6-1.9)	1.24 \pm 0.86 (0.3-8.4)	1.28 \pm 0.34 (0.6-2.2)	0.098
GM SCT (right side)	1.13 \pm 0.40 (0.50-1.69)	1.07 \pm 0.36 (0.34-2.46) ^c	1.23 \pm 0.32 (0.44-1.84)	0.045
GM muscle (left side)	1.62 \pm 0.21 (1.16-2.07)	1.81 \pm 0.30 (1.16-2.70) ^{ac}	1.67 \pm 0.35 (1.12-2.35)	0.025
GM muscle (right side)	1.49 \pm 0.23 (1.03-1.80) ^b	1.74 \pm 0.31 (1.03-2.52)	1.66 \pm 0.31 (1.18-2.36)	0.014
GM FL (left side)	3.22 \pm 0.32 (2.70-3.62) ^{bc}	6.01 \pm 0.88 (4.32-8.27)	5.61 \pm 0.97 (2.46-7.22)	<0.001
GM FU (right side)	3.15 \pm 0.25 (2.55-3.47) ^{bc}	6.11 \pm 0.80 (4.29-8.61)	5.74 \pm 0.66 (4.62-7.20)	<0.001
GM PA (left side)	14.85 \pm 5.03 (2.04-19.90)	16.48 \pm 3.06 (8.70-27.0)	16.54 \pm 3.36 (11.0-27.0)	0.768
GM PA (right side)	12.61 \pm 3.94 (2.81-17.90) ^{bc}	15.82 \pm 2.92 (9.70-23.50)	16.71 \pm 2.66 (12.36-22.3)	0.003
Rectus femoris SCT (right side)	2.30 \pm 0.82 (1.40-3.80)	2.25 \pm 0.69 (0.95-4.33)	2.37 \pm 0.76 (1.40-4.33)	0.796
Rectus femoris SCT (left side)	2.17 \pm 1.01 (0.70-4.17)	2.10 \pm 0.70 (0.94-4.33)	2.20 \pm 0.77 (0.94-4.02)	0.837
Rectus femoris (right side)	1.65 \pm 0.57 (0.66-2.50)	1.66 \pm 0.37 (0.95-2.76)	1.70 \pm 0.40 (0.95-2.76)	0.818
Rectus femoris (left side)	1.45 \pm 0.51 (0.89-2.30)	1.66 \pm 0.37 (0.95-2.76)	1.70 \pm 0.40 (0.95-2.76)	0.135
Rectus Abdominis SCT (right side)	3.70 \pm 1.20 (2.04-5.95)	4.12 \pm 1.06 (1.55-6.38)	4.06 \pm 0.78 (2.44-5.28)	0.403
Rectus Abdominis SCT (left side)	1.11 \pm 0.62 (0.67-2.81)	0.96 \pm 0.39 (0.50-3.50) ^{ac}	1.11 \pm 0.23 (0.59-1.47)	0.001

SCT; subcutaneous tissue thickness GM ;gastrocnemius medialis FL;fascicle length PA; pennation angle . Thickness values are given as mean \pm standard deviation.

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