

Isokinetic Assessment of Wrist Muscles Performance among Egyptian Physical Therapy Students with Chronic Non-Specific Neck Pain

Thesis

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By

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Data analysis and statistical design

Data were expressed as mean \pm SD. Unpaired t-test was used to compare between subjects characteristics of the two groups. One way MANOVA was used to compare measured variables between the two groups. Statistical package for the social sciences computer program (version 20 for Windows; SPSS Inc., Chicago, Illinois, USA) was used for data analysis. *P* less than or equal to 0.05 was considered significant.

CHAPTER IV

RESULTS

The main aim of this study was to assess the effect of chronic non-specific neck pain on peak torque of wrist extensor and flexor muscles /body weight, extensor / flexor wrist ratio and on wrist extensor and flexor muscles endurance among Egyptian physical therapy students.

Demographic data of subjects:

A total of 44 students participated in this study; they were assigned into 2 equal groups, Group A, study group, was include twenty two students with chronic non-specific neck pain (CNSNP) and Group B, control group, was include students without CNSNP.

As shown in table (1) and figures (1-4); the mean values of age of groups A and B were (20.6 ± 1.8) and (20.5 ± 1.7) years respectively, and of weight were (68.6 ± 10.7) and (72.1 ± 12.5) kg respectively, the mean values of height of groups A and B were (170.5 ± 7.8) and (171.2 ± 10.3) cm respectively, and of BMI were (23.4 ± 2.4) and (24.7 ± 3.1) kg/m^2 respectively. There were no significant differences between both groups of mean age, weight, height and BMI ($p > 0.05$).

Table (1): Subjects characteristics of both groups

Measurd variable	Group A Mean \pm SD	Group B Mean \pm SD	t-value	p-value
Age (years)	20.6 ± 1.8	20.5 ± 1.7	0.085	0.933
Weight (kg)	68.6 ± 10.7	72.1 ± 12.5	-1	0.314
Height (cm)	170.5 ± 7.8	171.2 ± 10.3	-0.247	0.806
BMI (kg/m^2)	23.4 ± 2.4	24.7 ± 3.1	-1.47	0.149

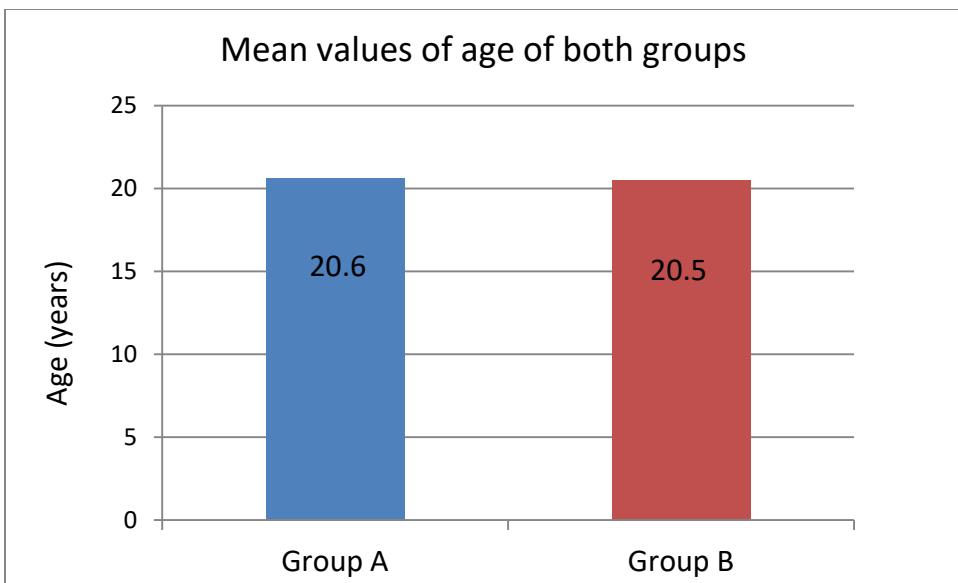


Fig 1: mean values of subjects age of both groups

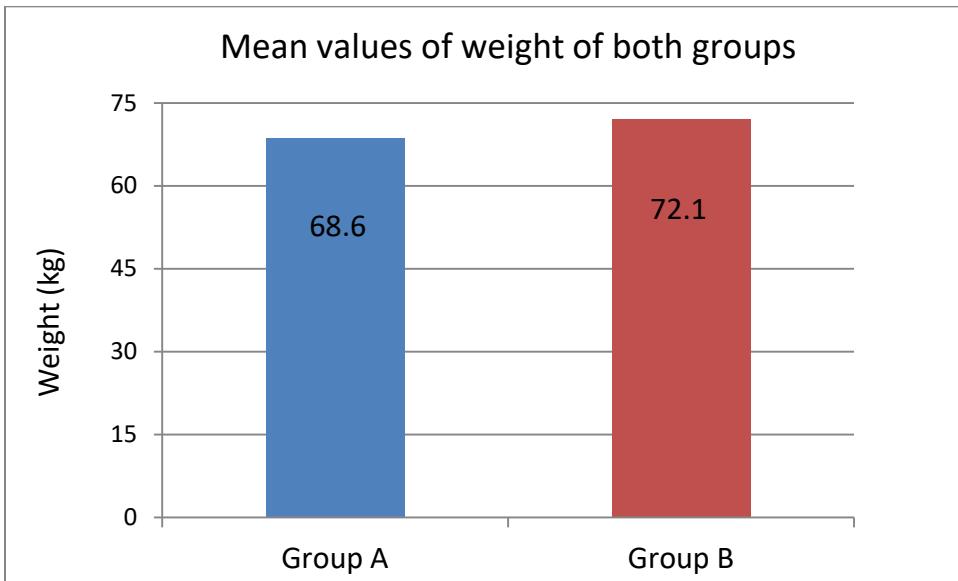


Fig 2: mean values of subjects weight of both groups

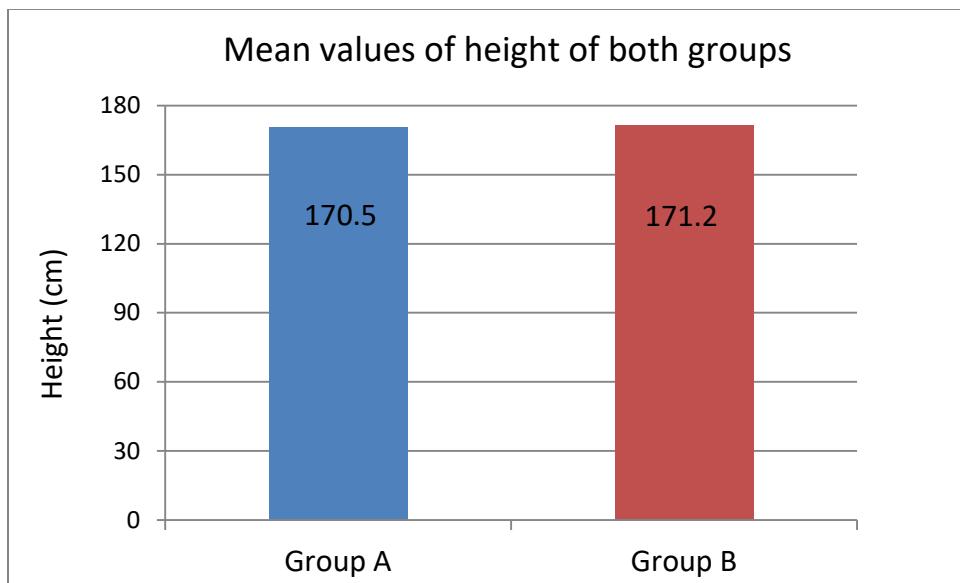


Fig 3: mean values of subjects height of both groups

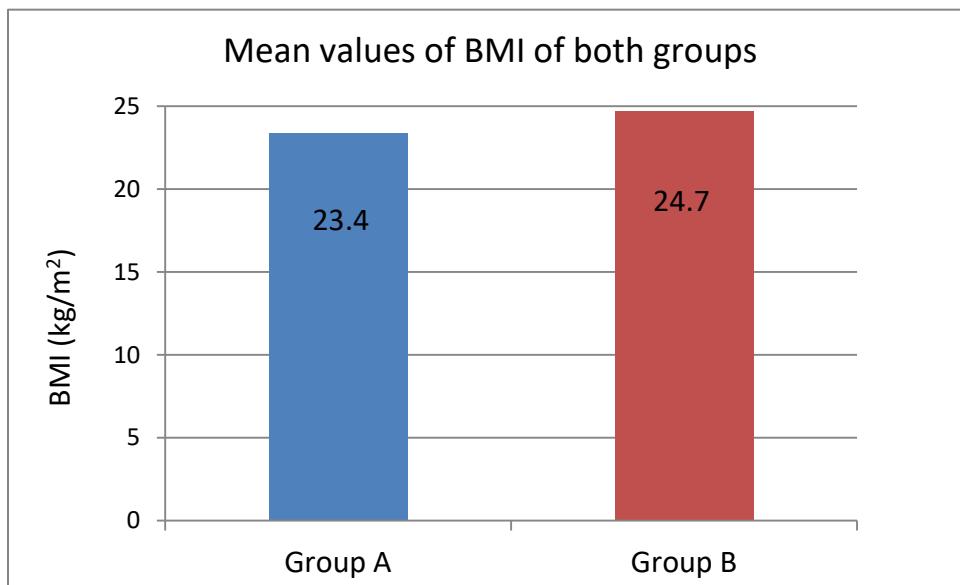


Fig 4: mean values of subjects BMI of both groups

Normality test:

Data were screened for normality assumption, homogeneity of variance, and presence of extreme scores. Shapiro-Wilk test for normality showed that all measured variables are normally distributed, so one way

MANOVA for between groups' comparison and Pearson coefficient correlation for finding the relation between variables were used.

Table (2): Comparison of mean values of measured variables between groups.

Work fatigue (%)				
Flexion 60°/sec	15.96 ± 16	13.8 ± 15.7	2.16	0.658
Flexion 180°/sec	14.5 ± 33	4.14 ± 26	10.36	0.260
Extension 60°/sec	8.4 ± 16	0.25 ± 15	8.15	0.095
Extension 180°/sec	4.95 ± 25	1.6 ± 36	3.35	0.725

II- Effect of CNSNP on work fatigue:

As shown in table (2) and demonstrated in figures (7 and 8), the mean values \pm SD of work fatigue of wrist flexion at (60 and 180°/sec) for subjects in groups A and B were (15.96 \pm 16 and 14.5 \pm 33) and (13.8 \pm 15.7 and 4.14 \pm 26) % respectively. The mean values \pm SD of work fatigue of wrist extension at (60 and 180°/sec) for subjects in groups A and B were (8.4 \pm 16 and 4.95 \pm 25) and (0.25 \pm 15 and 1.6 \pm 36) % respectively. There was statistical non-significant difference in the mean values of work fatigue of wrist flexion and extension at 60 and 180°/sec between both groups ($P>0.05$).

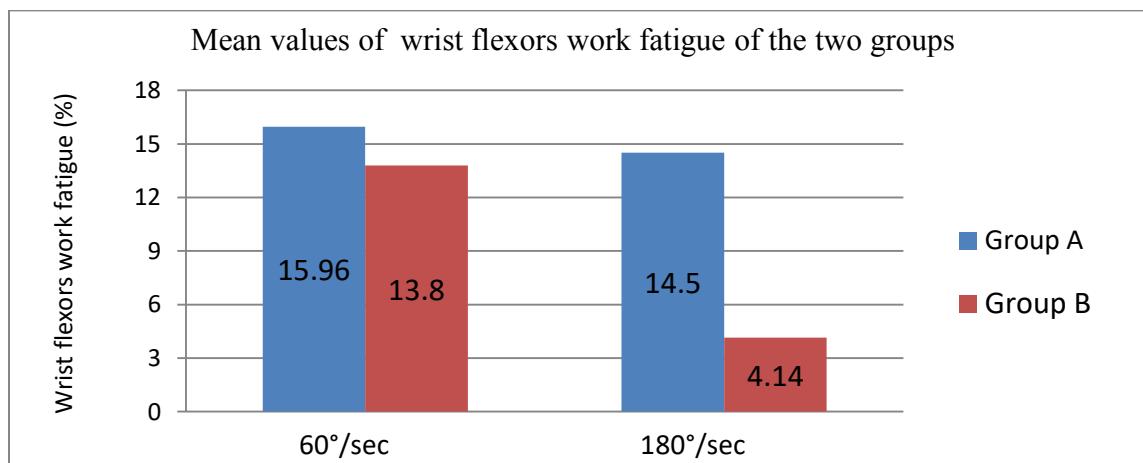


Fig 7: mean values of wrist flexors work fatigue of the two groups

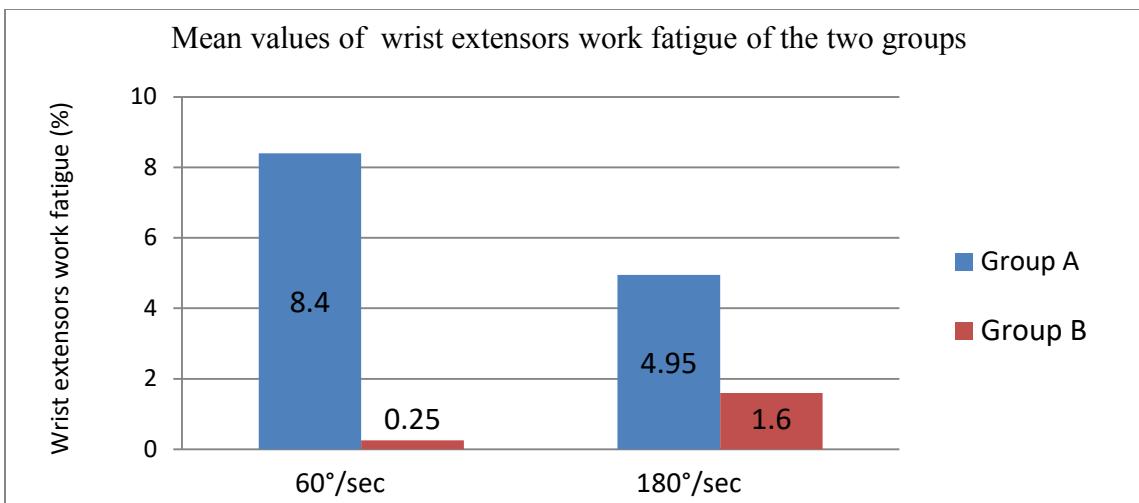


Fig 8: mean values of wrist extensors work fatigue of the two groups