

The effect of 8-week crossfit training on social physical anxiety levels

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ABSTRACT

It is important to preserve some bodily mobility so that people are made up of a system based on movement and the organism remains healthy and vigorous. Crossfit is a widely preferred sport in recent years. For this reason, the aim of the study is to investigate the effect of 8-week crossfit workouts on social physical anxiety levels according to genders. 45 volunteers participated in the study. Crossfit workouts were performed for 8 weeks, 3 days a week. In the first 4 weeks, crossfit model named "Cindy" was applied. In the last 4 weeks, the Chelsea model, which has the same content as the Cindy model, was applied for 30 minutes. The Wilcoxon signed rank test was used in the pre- and post-test comparison of the data with no normal distribution, whereas the Mann Whitney-U test was used to compare the groups. According to the pre-post test results, there is a significant difference in body weight, BMI and SPAS values ($p < 0.05$). There was a significant difference in SPAS values in favor of women in the comparison between groups ($p < 0.05$). As a result, it was seen that social physical anxiety states were higher in women eight weeks ago. This may be due to the higher body weight and BMI rates in women compared to men.

Keywords: Social physical anxiety, Crossfit, sports.

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INTRODUCTION

CrossFit is a constantly changing, high-intensity training method consisting of functional movements. The aim of CrossFit is to create a large, widespread and comprehensive sport. CrossFit is a system focused on producing programs to prepare athletes for any physical condition that is not only known but unknown (Glassman, 2007). CrossFit has a completely open structure to the formation of new training models and criticism of the results obtained. It uses its own websites to support this data. Athletes who practice CrossFit training consist of their own trainers, trainers who are organized and organized in a virtual environment, athletes and those who do these exercises. CrossFit has been experimentally, clinically tested and applied and developed by different groups (Glassman, 2009).

Respiratory and circulatory continuity is the most important achievement of CrossFit programs. It is thought that there is a relationship between respiratory and circulatory continuity, its level and the risks of high blood pressure, coronary heart diseases, obesity, diabetes and many other diseases (Meredith and Welk, 2010). What

matters to CrossFit is how aerobic and anaerobic exercises support biomotor properties such as strength, power, speed, endurance, which are performance variables. It is the general philosophy of CrossFit to operate each physiological system correctly and regularly for overall durability and high health (Ebben, 2002). A new range of interval training has become popular, with a combination of high-intensity variety, multiple joint movements, and high-intensity resistance training. Such complex workouts are in a different position in terms of strength and strength gains, due to the strength training of time, the absence of a predetermined rest interval, its constant focus on high power output and the use of multiple joint movements. Crossfit-based interval strength training program is called WOD. WODs include functional movements such as squats, deadlifts, shake-offs, and push presses, as well as basic gymnastic exercises using rings and parallel bars. The aim of the WODs is to complete the exercises as quickly and as highly as possible (Kliszczewicz et al., 2014). Some exercises are performed within a fixed time, while "every minute on the

minute" (EMOM) are performed in the "as many rounds/reps as possible" (AMRAP) style, using time fields ranging from 10 to 20 min (Smith et al., 2013).

Although CrossFit is not a fitness program, it designs its programs to maximize 10 physical biomotoric features known in the field of fitness. These features aim to improve body features such as respiratory and circulation continuity, endurance, strength, flexibility, explosive force, speed, coordination, agility and balance. Studies on CrossFit have brought many benefits to exercise programs. These benefits include: increased performance, increased strength, increased anaerobic capacity, increased aerobic capacity, increased muscle endurance, and positive changes in body composition in military physical assessment tests (Heinrich et al., 2012; Jeffery, 2012).

Social physique anxiety is defined as the social anxiety that the individual experiences in relation to the image of the body when he thinks or believes that the physical appearance is negatively evaluated by his social environment (Hart et al., 1989). In the occurrence of social physique anxiety, the individual has expectations that he or she evaluates the physical appearance of other individuals negatively. Even individuals tend to evaluate their bodies more negatively with the effect of their anxiety (Russell, 2002).

MATERIALS AND METHODS

Research model

In this study, 12-point Social Physique Anxiety Scale (SPAS) survey methods were applied (Hart et al., 1989).

Population

The population of this study was composed of 45 volunteer participants (<1 month) who went to two different sports center living in Izmir. The participants were divided into two groups as Men (MG, n: 25) and women (WM, n: 20). Participants who were invited via face-to-face interviews were informed about the purpose and content of the study and signed a voluntary consent form before starting the study. The International Physical Activity Questionnaire (IPAQ), which was developed to determine physical activity levels, was completed (Craig et al., 2003). According to the results of the survey, those with metabolic equivalent (MET) <600 were included in the study.

Data collection tools

The original version of the social physique anxiety scale was developed by Hart et al. (1989) and consists of 12 items. Items in the inventory are answered using a 5-

point scale (completely wrong, usually wrong, sometimes wrong, sometimes correct, usually correct and completely correct) and the total score of the scale varies between 12 and 60. The first validity and reliability study for the Turkish population of the original scale (Mülazımoğlu and Aşçı, 2006) was carried out on 1005 participants. The second validity and reliability study of the Turkish form of the inventory was conducted by Hagger et al. (2007) and it was found that the single factor 7-item version was more valid for the Turkish population. The fit index values of this 7-item SPAS (excluding items 1, 5, 7, 8, 11 from the original scale) were found appropriate (CFI = .952, NNFI = .929; RMSEA = .06) in Hagger's study (Hagger et al., 2007) factor loads vary between .42 and .71. Before starting the study, the length of all participants was measured with Seca 769 (Hamburg, Germany). Body composition measurements of the participants were performed with the bioelectrical impedance method (Tanita 300 MA, Tokyo-Japan) 8 weeks before and 8 weeks later.

Training protocol

Crossfit workouts were performed for 8 weeks, 3 days a week. Prior to the training programs, the participants were first given technical training and were provided to work at the right angles. Throughout the program, the participants were employed by expert trainers. The training program was held between 50 and 60 min in total, consisting of 15 minutes of warm-up, 20 to 30 min of the main part and 15 min of cooling. In the first 4 weeks, crossfit model named "Cindy" was applied. This work; It consists of 5 barfs, 10 push-ups and 15 self-body weights and half squat movements without resting for 20 min (Kluszczewicz et al., 2014). In the last 4 weeks, the Chelsea model, which has the same content as the Cindy model, was applied for 30 min (Yüksel et al., 2017).

Data analysis

Statistical analysis was performed with SPSS 23.00 statistical package program. Normal distribution suitable for the data was assessed by the Shapiro-Wilk test. The Wilcoxon signed rank test was used in the pre-post test comparison of the data with no normal distribution, whereas the Mann Whitney-U test was used to compare the groups. Significance value was accepted as $p < 0.05$.

FINDINGS

The minimum, maximum and average values of the age, height, body mass index (BMI) and body weight of the participants were showed in Table 1.

The pre and post test values of the participants were compared in Table 2. According to this, in body weight

Table 1. Descriptive characteristics of subjects.

Parameters	MG (n = 25)		WG (n=20)	
	Min - Max	Mean \pm SD	Min - Max	Mean \pm SD
Age	21 - 35	25.68 \pm 4.42	19 - 27	21.76 \pm 2.75
Height (cm)	170 - 190	179.92 \pm 5.51	160 - 179	173.76 \pm 5.71
Body weight (kg)	62.12 - 105.54	77.47 \pm 5.40	75.15 - 106.11	92.15 \pm 2.15
BMI (kg/m ²)	18.44 - 36.49	25.12 \pm 6.81	29.7 - 35.3	30.1 \pm 7.64

Table 2. Comparison of pre- and post-test values of groups.

Parameters	Groups	Pre-test Mean \pm SD	Post-test Mean \pm SD	P
Body weight (kg)	MG	77.47 \pm 5.40	74.33 \pm 18.64	.006*
	WG	92.15 \pm 2.15	88.8 \pm 8.61	.005*
BMI (kg/m ²)	MG	25.12 \pm 6.81	24.7 \pm 16.5	.024*
	WG	30.1 \pm 7.64	29.5 \pm 78.5	.022*
SPAS	MG	31.15 \pm 5.12	28.1 \pm 5.48	.015*
	WG	32.9 \pm 5.64	25.16 \pm 2.28**	.010*

*p < 0.05 change from baseline; **p < 0.05 between MG and WG.

(p < 0.05), BMI (p < 0.05) and SPAS (p < 0.05) statistically significant difference was found. There was only a significant difference in SPAS parameter between groups (p < 0.05).

DISCUSSION

In this study, social physical anxiety states of crossfit workouts performed for eight weeks were compared according to gender. In the study, it was seen that social physical anxiety states were higher in women eight weeks ago. This may be due to the higher body weight and BMI rates in women compared to men. When the comparisons within the groups are analyzed, a significant difference was detected in all parameters between the pre- and post-test in both groups.

When the studies are examined, it is seen that although the individuals are aware of their body weight and height, most obese women and men do not consider themselves obese (Sivalingam et al., 2011). Studies show that positive effects of physical activity on body image. In addition, individuals who do physical activity feel less anxious about their body being evaluated by others than those who do not (Hausenblas and Giacobbi, 2003). Social physics is closely related to anxiety, eating disorders, and body image dissatisfaction. In addition, women's body measurements and weights are closely related to social physical anxiety (Baş et al., 2004). As a result of the analysis, in order to compare the social physique anxiety levels of low, medium and high

frequency sports after 10 weeks, it was found that the levels of social physique anxiety of the low, medium and high frequency sports did not differ significantly (Sucu, 2018). In this study, a high intensity functional training program was implemented for 8 weeks. It can be said that the significant difference that occurred in the participants had a positive effect as they consisted of the movements performed by using their own body weights against gravity.

On the other hand, in a study, 8-week fitness training applied to sedentary men between 18 and 25 showed a positive effect on social physical anxiety levels (Akyüz, 2017). Many researchers have found a high level of relation between participation in exercise and SPAS (Hausenblas and Fallon, 2006; Hausenblas et al., 2004; Koca and Aşçı, 2006).

As a result, there are contradictory results in the literature on the difference in low, medium and high intensity exercises on social physique anxiety. In this study, the high intensity functional training method, the effect of which has been shown in many studies, has been used in recent years, and it is possible to talk about the positive effect on social physical anxiety situations in both men and women with the training program we have implemented.

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