EFFECT OF MACHINE VS MASSAGE TREATMENT BY SELECTED FEMALE CLIENTS FOR IMPROVEMENT OF ANTHROPOMETRIC MEASUREMENT

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ABSTRACT *: The purpose of the present study was to compare the effectiveness of 12 weeks machine based programme vs massage based programme by selected female clinician clients for improvement of anthropometric measurements. For this purpose, a total of 20 (Twenty) female clients were randomly chosen for the present study. These subjects were divided into two equated programme groups consisting of 10 (Ten) subjects in each and acted as machine programme group - I and massage programme group – II respectively. Anthropometric measurements i.e., body weight, chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth were selected as a dependent variables and 12 weeks machine based programme vs massage based programme were considered as independent variables. The data was analyzed by applying one way analysis of variance to draw appropriate conclusions and to find out the effect of 12 weeks machine based programme vs massage based programme on body weight, chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth among selected male clinician clients. The significance level was set at 0.05. The results indicated that there was no significant difference found in selected variables (i.e., body weight, chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth) among selected female subjects of both the groups namely machine programme group – I and massage programme group – II respectively. The findings of this study exhibited that 12 week machine and massage based programme in commercial spa centers was not an effective treatment technique to improve a female body weight and selected girth measurements.*

Keywords: Machine, Massage, Programme, Clinician, And Girth Measurements

INTRODUCTION

The marketing campaigns for many over-the-counter electrical stimulation units are focused on the desire of individuals to improve their physical appear-ance. The idea of obtaining firmed, toned muscles while working on a computer or driving a car is appealing. Companies claim that EMS is an easy and painless method for improving muscle strength, body composition, and appearance. Subjects tolerated EMS amplitudes that produced discomfort but still were not able to achieve a muscular contraction of sufficient intensity to induce strength gains. Additionally, although manufacturer's claim that workouts can be conducted quickly, units using with fewer stimulation channels would take even quicker. Thus, EMS used under the conditions does appear to be a pain free, quick method to increase muscular strength and its composition in healthy consumer. Now the days, in fact many products and programs for weight adjustment have been used by people including obesity patients.

However, it is proved that most of them are not only costly and ineffective but also carry a side effect on those who try to lose weight in such a short period of time **(Jung, 1998)**. And repeated failing to lose weight cause severe weight change and health problems **(Goodrick et. al. 1991)**. There is strong evidence to suggest that the risks of mortality and morbidity associated with obesity can be reduced with weight loss. A 10 kg weight loss was associated with a 20–25% fall in total mortality, 30–40% fall in diabetes related deaths, and 40–50% fall in obesity related cancer deaths (**Jung,** 1997). A relatively modest weight loss of 5–10% of pretreatment body weight has been associated with significant improvements in concomitant medical disorders, such as type 2 diabetes, hypertension, and cardiovascular disease, in addition to an increase in life span (**Goldstein, 1992; Dattilo et. al. 1992; & Wing et. al. 1987**). In severely obese patients who lost 20–30 kg following surgical banding gastroplasty, hypertension and diabetes were cured in 89% and 43% of patients, respectively (**Sign, 1996**). Weight loss can also prevent the progression to type 2 diabetes. Two recent studies have shown that modest weight loss in overweight subjects with impaired glucose tolerance resulted in a 58% reduction in

incident diabetes (**Tuomilehto et. al. 2001 & Diabetes Prevention Program Research Group, 2002**). The ongoing prospective Swedish obese subjects study had recently examined the effect of a large, longstanding and intentional weight reduction on the incidence of several cardiovascular risk factors (**Sjostrom et. al. 1999**). After two years, the incidence of diabetes was reduced 32 times and that of hypertension by 2.6 times in the surgically treated group compared with the control group. After eight years, there was still a fivefold reduction in diabetes incidence (**Torgerson et. al. 2001**). It was also reported that correction of daily habit (e.g. diet and exercise) is effective to solve obesity problem. But the latest report tells that successful weight control or self-efficacy in obesity-management is more important prospect factor (**Clark et. al. 1996; Fontaine et. al. 1997; Roach et al., 2003; Matin et. al. 2004**). Synthesizing these results from previous studies, self- consciousness about unhealthy eating habit and behavior in obesity, cultivation of confidence and advisable weight control by usual exercise and diet are important for solving the obesity problem.

However, weight management has always been an issue of debate. There is, invariably, confusion about which programme or methods of treatment are best suited for particular group for weight loss, weight gain, and weight maintenance. The above discussion leads to the present research study to identity and compare the 12 weeks machine based programme vs massage based programme used in improving anthropometric measurements by selected female clinician clients.

METHODOLOGY

For this purpose, a total of 20 female clients who were regularly participating in a branded commercial fitness and SPA clinics were randomly chosen for the present study. These subjects were further divided into two equated treatment programme groups consisting of 10 subjects in each and acted as machine programme group - I and massage programme group – II respectively. The age of the subjects were ranging from 30 years to 40 years of ages. The average age was being 35 years. Body weight, chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth were selected as a dependent variables and 12 weeks machine based programme vs massage based programme were considered as independent variables. Machine programme group – I and massage programme group – II selected male subjects were exposed to their machine and massage programme sessions i.e., two times a week for 45 minutes per day as prescribed and monitored by their respective clinics for a period of 12 weeks (84 days). Before the administration of machine and massage based programme by their respective joined fitness and SPA clinics, the anthropometric measurement i.e., body weight was measured in kilograms to nearest 0.01 grams by using electronic digital portable weighing machine. However, chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth were respectively measured in centimeters to the nearest 0.01 by using steel tape at their respective venue on both the groups namely machine programme group - I and massage programme group – II respectively to collect pre test data. After the completion of 12 weeks again the same selected anthropometric measurements were conducted to collect the post training data. One way analysis of variance was computed to analyze the data and the significance level was set at 0.05.

FINDINGS

The findings of the study are given below:

Variable	Groups	Sum of	Df	Mean	**F**
Machine Programme Group – I Body Weight	Between	55.041	3	18.347	**0.082**
	Within Groups	8007.637	36	222.434	
	Total	8062.678	39		
Massage Programme Group – II Body Weight	Between	12.585	3	4.195	**0.025**
	Within Groups	5965.035	36	165.695	
	Total	5977.620	39		
Machine Programme Group – I Chest Girth	Between	30.043	3	10.014	**0.581**
	Within Groups	620.705	36	17.242	
	Total	650.748	39		
Massage Programme Group – II Chest Girth	Between	5.313	3	1.771	**0.225**
	Within Groups	283.657	36	7.879	
	Total	288.970	39		
Machine Programme Group – I Right Arm	Between	5.875	3	1.958	**1.136**
	Within Groups	62.056	36	1.724	
	Total	67.931	39		
Massage Programme Group – II Right Arm	Between	1.699	3	0.566	**0.318**
	Within Groups	64.199	36	1.783	
	Total	65.898	39		
Machine Programme Group – I Left Arm Girth	Between	6.023	3	2.008	**1.184**
	Within Groups	61.035	36	1.695	
	Total	67.058	39		

Massage Programme Group – II Left Arm	Between	1.699	3	0.566	**0.318**
	Within Groups	64.199	36	1.783	
	Total	65.898	39		
Machine Programme Group – I Waist Girth	Between	77.507	3	25.836	**0.668**
	Within Groups	1392.572	36	38.683	
	Total	1470.079	39		
Massage Programme Group – II Waist Girth	Between	20.264	3	6.755	**0.457**
	Within Groups	532.340	36	14.787	
	Total	552.604	39		
Machine Programme Group – I Hip Girth	Between	59.369	3	19.790	**1.126**
	Within Groups	632.845	36	17.579	
	Total	692.214	39		
Massage Programme Group – II Hip Girth	Between	5.403	3	1.801	**0.686**
	Within Groups	94.487	36	2.625	
	Total	99.890	39		
Machine Programme Group – I Right Thigh	Between	6.063	3	2.021	**0.243**
	Within Groups	299.791	36	8.328	
	Total	305.854	39		
Massage Programme Group – II Right Thigh	Between	2.157	3	0.719	**0.162**
	Within Groups	160.241	36	4.451	
	Total	162.398	39		
Machine Programme Group – I Left Thigh	Between	10.446	3	3.482	**0.420**
	Within Groups	298.378	36	8.288	
	Total	308.824	39		
Massage Programme Group – II Left Thigh	Between	2.157	3	0.719	**0.162**
	Within Groups	160.241	36	4.451	
	Total	162.398	39		

Table No. 1.0. One way analysis of variance of initial, fourth, eighth, and twelve weeks of Machine Programme and Massage Programme on Body Weight, Chest Girth, Waist girth, Hip Girth, Right Arm Girth, Left Arm Girth, Right Thigh Girth and Left Thigh Girth of Female Participants
*Significant at 0.05 level. 'F' 0 .05 (3, 36) df = 2.87 N = 10

Table no. 1.0 exhibits the one way analysis of variance of initial, forth, eight and twelve weeks of machine and massage programme on body weight, chest girth, hip girth, right arm girth, left arm girth, right thigh girth and left thigh girth of female clinicians clients group differs insignificantly, as the obtained F value of machine programme group – I body weight(0.082), chest girth (0.581) , right arm girth (1.136), left arm girth (1.184),waist girth (0.668), hip girth (1.126), right thigh girth (0.243) & left thigh girth (0.420) and massage programme group – II body weight (0.025), chest girth (0.225), right arm girth (0.318), left arm girth (0.318), waist girth (0.457), hip girth (0.686), right thigh girth (0.162) & left thigh girth (0.162) among the participants is much lesser than the required value of 2.87. at 0.05 level of confidence.

DISCUSSION

Findings of the present research study indicated that all the selected variables i.e., chest girth, waist girth, right arm girth, left arm girth, right thigh girth, left thigh girth and hip girth) for improvement of anthropometric measurement in female clinician clients had not improved by both the treatment programmers' namely exercise based programme and massage based programme respectively. Main reason could be that there are numerous varieties of machine and massage techniques those are in practice today but the expert might have not applied the appropriate techniques to the subjects under study since the research scholar did not keep any control instead allowed the independent programme of the SPA and commercial fitness centers. **Porcari et. al. (2002)** claimed that there were no significant changes in any of the measured parameters after 8 weeks of EMS and similar findings were also identified by them. First, to achieve an increase in contractile strength, a muscle needs to be stimulated above a critical threshold. This thresholdcanbeaslowas30%ofmaximalvoluntary contraction (MVC) in deconditioned individuals, but must be in the range of 60–80% of MVC in highly conditioned athletes **(Mueller, 1959)**. After a series of studies to determine the minimum threshold required to achieve improvements in strength, Currier and colleagues concluded that the electrically induced contraction must be least 60% MVC **(Currier et.al.1988; Currier et. al. 1983; & Currier et. al. 1979)**. When the strength of the electrically elicited contraction in the current study was measured on the Orthotron, the resultant force was less than 20% of the volitional MVC. This level of contraction is well below the critical threshold necessary to increase the strength of the muscle in an apparently healthy population. A second factor was the poor quality of the stimulators used. The units did not have the ability to alter the phase duration of the pulsed waveform. They

delivered a stimulus with relatively long pulse duration, making the stimulation quite uncomfortable. In addition, most commercially available medical-grade stimulators have a ramp function that allows the amplitude to gradually increase each time the unit cycles on, thus increasing the comfort of the electrical stimulation. The long phase duration coupled with the lack of a ramp function may not have allowed the subjects to increase the amplitude of the stimulation to the critical threshold required to achieve a strong motor contraction. Other related reason could be that they joined these types of programme not for weight loss as their main aim but to get rejuvenation from their daily hard work schedule. Research evidence of **Marandi et.al., (2013); Paoli et. al., (2012); Zarneshan et.al., (2012);** and **Wycherley et. al., (2010)** studies were strongly suggested that at least four to five days in a week in high/moderate intensity of 45 minutes physical exercises constituting with high protein diets having a significant effects on body composition.

CONCLUSION

The results showed that there was no significant improvement shown by machine programme group – I and massage programme group – II selected female clients on anthropometric measurements. Therefore, it is concluded that both machine and massage based programmes of commercial fitness and SPA clinics were not an effective treatment technique to improve a female anthropometric measurements.

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