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COMPARATIVE STUDY OF HAND GRIP STRENGTH IN RHEUMATOID ARTHRITIS PATIENTS AND NORMAL VOLUNTEERS FOLLOWING YOGA TRAINING

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ABSTRACT

The present study aimed at assessing the effect of a set of Yoga practices on patients of Rheumatoid Arthritis and normal adults. Equal number of normal subjects and patients of Rheumatoid arthritis who did not practice yoga were studied. Yoga and control group subjects were assessed at baseline and after varying intervals after 30 days. Hand grip of both the hands were assessed by grip dynamometer, increased in normal and patients of Rheumatoid Arthritis following yoga session, but not in control group. Hence Yoga practice improves hand grip strength in normal and patients with rheumatoid arthritis, through magnitude of improvement varies with factors like age, gender.

Keywords: *Hand Grip, Yoga, Gender*

INTRODUCTION

Hand grip strength has been used as an objective clinical measure in a variety of situations. For example grip strength has been used as to assess general strength in order to determine work strength for extent of injury and disease processes and potential for and progress in rehabilitation.

The practice of yoga for three months has found to increase hand grip in male volunteers. This improvement in hand grip strength following yoga was also seen in patients in whom function of gripping is abnormal due to disease.

Patients of rheumatoid arthritis having pain and swelling of joints showed a trend of improvement in hand grip strength following yoga session for five days a week, followed by weekly 2 hour session for further 3 months. The present study aimed in assessing the affect of yoga training on hand grip strength in adults who had no special earlier physical training, patients of rheumatoid arthritis who were given intensive yoga therapy.

MATERIALS AND METHODS

Methods

There were 2 categories of subjects (1) adults (2) patients of rheumatoid arthritis, an equal number of adult volunteers and patients with rheumatoid arthritis who did not practice yoga formed control groups. Both groups of patients were allowed to continue medication which was prescribed to.

Assessments

Hand grip strength of both hands were assessed using a handgrip dynamometer During assessment subjects were asked to keep arm extended at shoulder level, horizontal to ground. The maximum value obtained during the three trails was used for statically analysis.

Interventions

Certain yoga practices were taught to patients as well as normal subjects. These included yoga asana, pranayama, meditation and lectures about yoga philosophy and joint loosening exercises for patients with rheumatoid arthritis.

Analysis

The before and after comparison of each category of subjects was analyzed for subjects of each gender separately using t- test.

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RESULTS AND DISCUSSION

Results

Subjects of two categories showed significant increase in hand grip strength following yoga.

Table 1: Details about subjects

CATEGORY	GROUP	GENDER	NUMBER	MEAN SD
ADULTS	YOGA	MALE	21	31.0
		FEMALE	16	29.9
PATIENTS	CONTROL	MALE	21	32.3
		FEMALE	16	26.9
	YOGA	MALE	10	33.0
		FEMALE	10	35.9
CONTROL	MALE	10	31.4	
	FEMALE	10	31.7	

Table 2: Hand Grip strength in adult volunteers and adult patients of both groups (control and yoga), before and after yoga .values are mean SD

Category	Gender group	Hand	Before (kg)	After (kg)	
Adults	M	L	38.4	43.1	
		R	40.7	44.1	
	YOGA F	L	23.7	30.0	
		R	26.6	23.9	
Patients	M	L	37.9	37.3	
		R	39.7	40.1	
	CONTROL	L	L	20.3	19.6
			R	26.3	22.9
		F	L	23.7	30.5
			R	27.8	34.7
	M YOGA	F	L	8.5	21.6
			R	10.2	22.8
		CONTROL	L	-	-
			R	18.7	18.6
F	CONTROL	L	18.4	19.1	
		R	10.34	10.9	
	YOGA	L	11.7	11.34	
		R	11.7	11.34	

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The control group who did not practice yoga showed no change. The group mean values \pm S.D and percent change were significant are given in table 2. Patients who were on 15 days yoga therapy showed greater percentage increase. For subjects right hand grip strength was greater than left hand grip.

Discussion

The present study has showed that following yoga practices, there was significant increase in hand grip strength in volunteers and patients with rheumatoid arthritis.

Yoga practice has already shown to increase in hand grip strength though short duration program. These results show that there is improvement following rapid short term yoga therapy. The present study has also shown a significant improvement in hand grip strength in hand dominance, both for normal and rheumatoid patients.

REFERENCES

- Gilbert J and Knowlton R (1983)**. Simple method of determine effort during maximal isometric test of hand grip. *American Journal of Physical Medicine & Rehabilitation* **62** 135-144.
- Haslok I monrow R, Nagrathna R, Nagender R (1994)**. Measuring effects of yoga on Rheumatoid arthritis. *Brazilian Journal of Rheumatology* **33** 788.
- Mohinder P and Malik SL (1988)**. Effect of smoking on anthropometric somatotype and grip strength. *Indian Journal of Medical Research* **87** 494-499.
- Peterson p, Petrec M, Coonor H and Conklin D (1989)**. Grip strength and hand dominance; *American Journal of Occupational Therapy* **43** 444-447.
- Telles S, Garathan N, Nagender HR and Desiraju T (1993)**. Physiological changes in sports teachers following yoga training. *Indian Journal of Medical Sciences* **47** 235-237.