YOGA FOR REHABILITATION - AN OVERVIEW

Shirley Telles,* KV Naveen**
Vivekananda Kendra Yoga Research Foundation
No.9, Appajappa agrahar, Chamarajpet, Bangalore - 560018, India.

Yoga is an ancient Indian science and way of life. The practice of yoga has been shown to be therapeutically useful in bronchial asthma,1.2 type II diabetes Mellitus,3.4 hypertension,5 as well as other Psychosomatic ailments. The practice of yoga can also play a role in the rehabilitation of physically and mentally handicapped persons, as well as those who are socially disadvantaged.

Mentally handicapped subjects

A single case study showed that a mentally retarded woman (I.Q. = 41, on standard testing) was able to learn transcendental meditation (TM), which she practiced under close supervision for 14 months.4 This brought about significant improvements in her speech, behaviour, and social skills, though her I.Q. remained unchanged. A controlled study was carried out on 90 mentally retarded children, randomly assigned the children to two groups (yoga, control) so that there were equal numbers of mild, moderate and severely retarded children in both groups.7 The study assessed the effects of yoga practices (breathing exercises, pranayamas, loosening exercises, suryanamaskar, asanas and meditation) for a year. The moderately retarded among the yoga group performed significantly better on testing with the Binet-Kamat test (for general mental ability), Seguin form board (for co-ordination), and in the Vineland social maturity scale (to assess social adjustment and behaviour). Compared to their initial performance, as well as to that of the control group. The mild and severely retarded subjects of the yoga group had another benefit: they showed no deterioration in any score, where as the mildly retarded subjects of the control group showed negative scores on retesting. Hence yoga practices, including meditation are useful in the rehabilitation of the mentally handicapped.

Visually handicapped subjects:

Persons with impaired vision understandably often have higher levels of anxiety than those with normal vision. It has been shown that blind children learn yoga asanas with great ease. In a controlled study, it was shown that following three weeks of yoga practice (asanas and breathing practices), blind children had a significant decrease in breath rate and their abnormally irregular breathing became regular (reduced physiological signs of stress). There is also another possible area where the practice of yoga may benefit the blind. The blind are known to have a significantly better developed tactile sense than subjects with normal vision. Unfortunately this does not apply to their performance of motor skills,10 which are increasingly required today, for example to use the specially designed computer keyboards. Yoga practices help in the development of motor skills in persons with normal vision, 11 so a similar effect may be obtained in the blind. This is currently under investigation.

PHYSICALLY HANDICAPPED SUBJECTS

It was reported that 1.8% of the total Indian population had locomotor disorders such as those resulting from poliomyelitis. Deformities were found to occur in 53.3% of sufferers from rural areas. Certain yoga asanas (e.g. paschimottanasana and ushtrasana) were found to be useful by causing repeated stretching of tightened muscles. Similarly. Yogic sithilikaran vyayama (loosening exercises) helped patients with finger deformities due to rheumatoid arthritis, to regain some degree of function, e.g. in grasping.13

PRISIONERS (JAIL) AND CHILDREN IN A REMAND HOME

Jail inmates who were given training yoga experienced significant benefits.l4 This was based on their self report (better appetite, sleep and well being), as well as reports of the prison wardens.

Children who were committed to legal custody in a state remand home had signs of high physiological anxiety (higher heart and breath rates, and lower skin resistance), compared to children of the same age who were staying at home.15 After six months of practising yoga with an emphasis on relaxation and awareness, the children showed significant improvement (reduced heart and breath rates, and an increase in skin resistance).

In contrast, a matched group of children who had a physical activity program during the allotted time, for the six month period, showed no such change in breath rate for skin resistance. Hence yoga practice is a useful addition to the routine of prisoners or of young people in a remand home. It may help reduce their stress and anxiety levels, improve their physical fitness, and perhaps even help in their social and moral rehabilitation. However, the last has yet to be tested.

Substance abuse

The practice of transcendental meditation (TM) was reported to improve inner control, decrease anxiety and strengthen the mental resolve. This was based on a retrospective study on 1862 persons who practised TM for an average of 20 months and showed a significant decrease in their consumption of marijuana, and a non significant trend of decrease in the abuse of amphetamines, barbiturates, LSD and narcotics.14 A combination of yogasanas, pranayamas and meditation practised by chronic alcoholics for 3 months was found to cause significant changes in psychological and biochemical (e.g. plasma cortisol) parameters, which are known to be abnormal in chronic alcoholism.12 Hence, following a period of deaddiction, yoga practice may contribute significantly to the rehabilitation of alcoholics as well as persons addicted to other substances.

Coronary artery disease

A combination of stress management through stretching exercises, meditation and visualization, along with dietary changes helped in the rehabilitation of patients with coronary artery disease.18 After 24 days of this program, patients showed a 44% mean increase in duration of exercise, a 55% mean increase in total work performed, improved left ventricular regional wall motion during peak exercise, and a net change in left ventricular ejection fraction from rest to maximum exercise of +6.4%. There was 20.5%, mean decrease in plasma cholesterol levels and a 91.0% mean reduction in frequency of anginal episodes. Hence the practice of exercises, and meditation along with diet modification helps in the rehabilitation of patients with coronary artery disease, increasing their ability to perform exercise and work.

HIV Positve and Aids Patients

A pilot study conducted on HIV positive persons,19 showed that the. practice of Transcendental Meditation improved the health status and general well being while the immune status did not change. The practice of meditation and other yoga techniques may help in improving the psychological status of HIV positive persons.

Summary

The use of yoga for rehabilitation has diverse applications. Yoga practice benefited mentally handicapped subjects by improving their mental ability, also the motor cordination and social

skills. Physically handicapped subjects had a restoration of some degree of functional ability after practicing yoga. Visually impaired children showed a significant decrease in their abnormal anxiety levels when they practiced yoga for three weeks, while a program of physical activity had no such effect. Socially disadvantaged adults (prisoners in a jail) and children in a remand home showed significant improvement in sleep, appetite and general well being, as well as a decrease in physiological arousal. The practice of meditation was reported to decrease the degree of substance (marijuana) abuse, by strengthening in them the mental resolve and decreasing the anxiety. Another important area is the application of yoga (and indeed, lifestyle change), in the rehabilitation of patients with coronary artery disease. Finally, the possible role of yoga in improving the mental state and general wel1 being of HIV positive persons and patients with AIDS, is being explored.

REFERENCE

1. Ahvenainen, O, Lindholm, H, and Nikkanen P, 1984: Community Home students in Spring, 1981, (National Board of Social Wellfore, finland)

2. Ax, A. F.. 1953: The physiologic differentiation between fear and anger in humans, Psychological Medicine, 15, 433-442.

3. Bloch, S., Lemeignan, M., & Aguilera T.N.. 1991: Specific respiratory patterns distinguish among human basic emotions, International Journal of Psychophysiology, 11, 141-154.

4. Joseph S., Sridharan S.K.B., Patil MD., Kumaria A., Selvamurthy, W., Joseph NT., & Nayar, H.S.. 1981: Study of some physiological and biochemical parameters in subjects undergoing yogic training. Indian Journal of Medical Research. 74. 120-124.

5. Ollendick, T.H., Matson. J.L., & Helsel. W.J., 1985: Fears in visually impaired and normally sighted youths. Behavioural Research Therapy. 23(3). 375-378.

6. Rauhala. E., Alho. H., Hanninen. O., & Helin. P., 1990: Relaxation trailing combined with increased physical activity lowers psychophysiological activation in community homeboys, International Journal of Psychophysiology. 10. 63-68.

7. Steptoe. A., Kearsley. N., & Walters. N., 1993: Cardiovascular activity during mental stress following vigorous exercise in sportsmen and inactive men, psychophysiology, 30, 245-252.

8. Telles. S., Narendran. S., Raghuraj. P., Nagarathna. R., & Nagendra, H.R., 1997: Comparison of changes in autonomic and respiratory parameters of girls after yoga and games at a community home. Perceptual and Motor Skills, 84, 251-257.

9. Wallace. R.K., Benson. H., & Wilson. A.F., 1971: A wakeful hypometabolic physiologic state, American Journal of Physiology. 221, 785-799.

10. Wycherley. R. J., & Nicklin. B.H., 1970: The heart rate of blind and sighted pedestrians on a town route. Ergonomics, 13(2), 181-192.