REVIEW OF RELATED LITERATURE

Maity (1998) studied ninety (N=90) fifth grade girls from Calcutta District, West Bengal considered as the subjects. The subjects were divided into three equal groups on the basis of motor fitness test scores and allotted randomly to experimental group-1, experimental group-2, and control group.

Experimental group-1, was given calisthenics table consisted of ten exercises; Experimental group-2 was given selected Yogasana for practice in alternate days for ten to thirty minutes per session for twelve weeks. After twelve weeks of treatment each subject was tested again on Oregon Motor fitness Test and this score was treated as post test. From the result it was concluded that Calisthenics and Yogasanas were effective in developing motor fitness. Calisthenics exercise program was found superior to Yogasana in improving performance in each individual test item of Oregon Motor Fitness. Thus hypothesis formulated for this study hold true.

Mosses (1999) showed the effects of yoga on flexibility and respiratory measures of vital capacity and breath holding time. He proved that yoga schedule made greater improvements than non yoga in hip, trunk flexibility in three of ten variations of breath holding and vital capacity. The results of the altitude questionnaire interpret that Yoga student had more TVC altitude about the benefits of “Yoga than the non Yoga” students had about the no Yoga activity in which they were enrolled. There was no difference between the groups in the changes of ankle flexibility after normal inhalation.

Joshi (1990) studied on the effects selected yogic asana on flexibility of school girls. After the training program of 6 Weeks of yogic exercise he found a significant improvement in the flexibility of girls.

The main objective of Hasijas experiment was to determine the effect of some selected yogasanas on the development of agility and endurance of kho-kho players. Total 60 girls student age range from 12 to 16 years, were selected by administrating the north Corolina motor fitness test divided in to two homogeneous groups. The experimental group was served six weeks training program of selected asana.
The analysis of the results helped to conclude that a significant improvement was observed on endurance and agility of experimental group in comparison to the control group because the training of yogic asanas.

Gunde studies the effect of Suryanamaskar for the promotion of flexibility. A sample of sixty male subjects between age group of 12 to 14 years, were selected randomly from Chandanwadi Municipal School, Mumbai. The subjects were divided in two groups namely Group A was experimental and B was control group. The experimental group was given training in Suryanamaskar for 8 weeks.

The result was analyzed by using 2x3x5 ANOVA and followed up test. The result concluded that intervention of Suryanamaskara for 8 weeks contribute to enhance the level of flexibility fitness of school boy’s in the age group of 12 to 14 years. Suryanamaskar is useful to improve certain motor skill of the selected subjects.

Govindarajulu et al. (2003) conducted the study, yoga practices on flexibility and cardio-respiratory endurance. Sixty high school girls (average 12 years) were volunteered in a pre-experimental group ‘A’ (n1=30) for a period of eight weeks. The control group ‘B’ (n2=30) was not allowed to participate in the experimental treatment. The pre and post tests were conducted on flexibility and cardio-respiratory endurance. The results of ANOVA revealed that there was an improvement in the flexibility and no significant change was evident in the cardio-respiratory endurance. Thus, short-term yoga is useful in improving flexibility, but not the cardio-respiratory endurance.

Kaur (2003) conducted the study to know whether motor abilities are reliable and valid for testing the subjects. The investigator selected 70 secondary school female volleyball players. Each subject was administered 11 motor abilities tests i.e. standing broad jump, medicine ball throw, 40mt sprint, forward bend reach, sit ups, 10x4mtr shuttle run, 800mtr run, right hand grip strength, left hand grip strength, vertical jump and push ups.

For assessing playing abilities five tests were administered i.e. upper hand pass, under pass, target pass, service and wall volley tests. The score of motor abilities and playing abilities was made differently and each test was correlated with it to find out the validity. For reliability
test-retest score was correlated with each other. It was found that all the tests were very reliable and valid.

Khupsangikar (1996) studied the effect of yogasana and specific exercises on the performance of 100 mts. run of 15+ boys. She selected a set of specific exercises and yogasana and conducted 4 weeks training programme on boys of 15 years of age. She observed overall improvement in the 100 meters run and also their training was reduced. There was significant improvement in the flexibility of boys and therefore the movement of strides length and running actions were also improved.

Bera and Rajapurkar (1993) conducted a study in which forty male high school students, age 12-15 yrs, participated for the study of yoga in relation to body composition, cardiovascular endurance and anaerobic power. The Ss were placed into two subsets viz., yoga group and control group. Body composition, cardiovascular endurance anaerobic power were measured using standard method. The duration of experiment was one year.

The result of ANCOVA revealed that a significant improvement in ideal body weight, body density, cardiovascular endurance and anaerobic power was observed as a result of yoga training. This study could not show significant change in body fat (midaxillary), skeletal diameters and most of the body circumferences. It was evident that some of the fat-folds (tricep, subscapular, suprailiac, umbilical, thigh and calf) and body circumferences (waist, umbilical and hip) were reduced significantly.

Chen (2009) with the purpose conducted this study to investigate the effect of yoga exercise on the health-related physical fitness of school-age children with asthma. The study employed a quasi-experimental research design in which 31 voluntary children (exercise group 16; control group15) aged 7 to 12 years were purposively sampled from one public elementary school in Taipei County. The yoga exercise program was practiced by the exercise group three times per week for a consecutive 7 week period. Each 60-minute yoga session included 10 minutes of warm-up and breathing exercises, 40 minutes of yoga postures, and 10 minutes of cool down exercises.
Fitness scores were assessed at pre-exercise (baseline) and at the seventh and ninth week after intervention completion. A total of 30 subjects (exercise group 16; control group 14) completed follow-up.

Results included: 1. Compared with children in the general population, the study subjects (n = 30) all fell below the 50th percentile in all five physical fitness items of interest. There was no significant difference in scores between the two groups at baseline (i.e., pre-exercise) for all five fitness items.

2. Research found a positive association between exercise habit after school and muscular strength and endurance among asthmatic children.

3. Compared to the control group, the exercise group showed favorable outcomes in terms of flexibility and muscular endurance. Such favorable outcomes remained evident even after adjusting for age, duration of disease and steroid use, values for which were unequally distributed between the two groups at baseline.

4. There was a tendency for all item-specific fitness scores to increase over time in the exercise group. The GEE analysis showed that yoga exercise indeed improved BMI, flexibility, and muscular endurance. After 2 weeks of self-practice at home, yoga exercise continued to improve BMI, flexibility, muscular strength, and cardiopulmonary fitness.

Tran (2001) studied Ten healthy, untrained volunteers (nine females and one male), ranging in age from 18-27 years, to determine the effects of hatha yoga practice on the health-related aspects of physical fitness, including muscular strength and endurance, flexibility, cardiorespiratory fitness, body composition, and pulmonary function. Subjects were required to attend a minimum of two yoga classes per week for a total of 8 weeks. Each yoga session consisted of 10 minutes of pranayamas (breath-control exercises), 15 minutes of dynamic warm-up exercises, 50 minutes of asanas (yoga postures), and 10 minutes of supine relaxation in savasana (corpse pose).

The subjects were evaluated before and after the 8-week training program. Isokinetic muscular strength for elbow extension, elbow flexion, and knee extension increased by 31%, 19%, and 28% (p<0.05), respectively, whereas isometric muscular endurance for knee flexion increased 57% (p<0.01). Ankle flexibility, shoulder elevation, trunk extension, and trunk flexion
increased by 13% (p<0.01), 155% (p<0.001), 188% (p<0.001), and 14% (p<0.05), respectively. Absolute and relative maximal oxygen uptake increased by 7% and 6%, respectively (p<0.01). These findings indicate that regular hatha yoga practice can elicit improvements in the health-related aspects of physical fitness. (c)2001 CHF, Inc.

Woodyard (2011) with the objective conducted this study to assess the findings of selected articles regarding the therapeutic effects of yoga and to provide a comprehensive review of the benefits of regular yoga practice. As participation rates in mind-body fitness programs such as yoga continue to increase, it is important for health care professionals to be informed about the nature of yoga and the evidence of its many therapeutic effects. Thus, this manuscript provides information regarding the therapeutic effects of yoga as it has been studied in various populations concerning a multitude of different ailments and conditions.

Therapeutic yoga is defined as the application of yoga postures and practice to the treatment of health conditions and involves instruction in yogic practices and teachings to prevent reduce or alleviate structural, physiological, emotional and spiritual pain, suffering or limitations. Results from this study show that yogic practices enhance muscular strength and body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression, and chronic pain, improve sleep patterns, and enhance overall well-being and quality of life.

Hagins et. al. (2007) conducted the study with the following purposes: 1) to determine whether a typical yoga practice using various postures meets the current recommendations for levels of physical activity required to improve and maintain health and cardiovascular fitness; 2) to determine the reliability of metabolic costs of yoga across sessions; 3) to compare the metabolic costs of yoga practice to those of treadmill walking.

In this observational study, 20 intermediate-to-advanced level yoga practitioners, age 31.4 +/- 8.3 years, performed an exercise routine inside a human respiratory chamber (indirect calorimeter) while wearing heart rate monitors. The exercise routine consisted of 30 minutes of sitting, 56 minutes of beginner-level hatha yoga administered by video, and 10 minutes of treadmill walking at 3.2 and 4.8 kph each. Measures were mean oxygen consumption (VO2),
heart rate (HR), percentage predicted maximal heart rate (%MHR), metabolic equivalents (METs), and energy expenditure (kcal). Seven subjects repeated the protocol so that measurement reliability could be established.

Mean values across the entire yoga session for VO2, HR, %MHR, METs, and energy/min were 0.6 L/kg/min; 93.2 beats/min; 49.4%; 2.5; and 3.2 kcal/min; respectively. Results of the ICCs (2,1) for mean values across the entire yoga session for kcal, METs, and %MHR were 0.979 and 0.973, and 0.865, respectively. Metabolic costs of yoga averaged across the entire session represent low levels of physical activity, are similar to walking on a treadmill at 3.2 kph, and do not meet recommendations for levels of physical activity for improving or maintaining health or cardiovascular fitness.

Yoga practice incorporating sun salutation postures exceeding the minimum bout of 10 minutes may contribute some portion of sufficiently intense physical activity to improve cardio-respiratory fitness in unfit or sedentary individuals. The measurement of energy expenditure across yoga sessions is highly reliable.