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REVIEW OF RELATED LITERATURE

A Review of relevant literature was conducted which includes following Articles, Journals, Research publication, Books and Online newsletters and Internet article were referred:-

Swami Kuvalayananda (1922) was the pioneer in the field of laboratory research in yoga. He started his experiments with the help of his students, by starting a research on the effects of yoga practices on the human body in a local hospital laboratory in Baroda. His subjective experience, combined with objective experiments gave him the conviction that the ancient system of yoga can be understood by modern science and documented experiments, and thus can greatly help modern society. They studied in detail about the influence of Hatha Yoga and Meditation on Human system i.e. circulatory and respiratory system responses. And the influence of Dhauti and Nauli on Gastric, constipation and indigestion.

Ganguly (1974) conducted a study to know the effects of yogic training on cardio-vascular efficiency before and after yogic training (47). In the maintenance of proper health, physical fitness and motor fitness, cardio vascular fitness plays a vital role. So this study was proposed to be conducted to determine the effect of long term yogic training programme on cardio-vascular capacity. Harvard Step was used to measure the earlier vascular fitness. The test was administered to eleven male students of G.G.S. College of Yoga and Cultural Synthesis, Kaivalyananda, Lonavala, before yogic training was started in order to determine their level of cardio-vascular efficiency. The subjects were given yogic training daily except on Sundays. In few holidays for sixty minutes in the morning for a period of eight months. On the completion of training, the subjects were again administered the Harvard Step test and comparisons were made between the pre-training data and post training data. The result of this study indicated that a daily one hour programme of yogic practices significantly improved cardio-vascular efficiency of the subjects. Motor fitness and physical fitness supposed to depend upon the cardio-vascular efficiency of an individual to maintain strenuous activity of whole body for prolonged period. And the
man who has good cardio-vascular efficiency has good endurance to do any type of activities including sports activities.

Kocher (1976) carried out a study to determine the effect of yogic practices on mental fatigue. He found that there was significant improvement in the overall performance of the mental work in 32 subjects after 3 week of training in yogic physical culture.

Tulpule (1980) conducted a study on Yoga –as a Method of Relaxation for Rehabilitation after Myocardial Infarction. Simple yogic postures and yogic type of breathing were taught to 102 male patients of myocardial infarction who agreed to practice them regularly for one year. An equal number of myocardial infarction patients, well matched for age, served as control. During yogic practice, emphasis was on relaxation of all the other groups of muscles, except those necessary for maintenance of that particular posture. Of the trial group, 96 patients were able to resume work within 6 months. 12 of these needed some assistance of vasodilators or beta blockers; 3 out of 102 in the trial group and 13 out of 102 in the control group died during this period. The results are quite obvious. There was significant improvement in the yoga group compared to the non-yoga group in mortality and the number of patients who could be completely rehabilitated one year after myocardial infarction. The fall in mortality with those practicing yogic postures and breathing is impressive and interesting.

Nanda (1982) selected yogic practices enhance mental alertness, creative ability and learning capacity of individual. This was supported by a research report undertaken on young scientists by Shelvan urthy (1996). The results indicate that compared to the control group the experimental group of young scientists who were given yoga practice performed better in concentration, memory, cognitive management of situations, stress- management, coping with hot and cold conditions.

Bagga and Gandhi (1983) conducted a comparative study on the effect of Transcendental Meditation (T.M.) and Shavasana practice on the cardiovascular system. This study was designed “to evaluate the effect of Transcendental Meditation and Shavasana practice on blood pressure, radial and carotid pulse, and ECG, EMG and skin resistance.”
Mangalteertham (1986) at Charing Cross Medical School in London studied in detail showing the synchronized the alpha activity in Yoga Nidra practice. The author also reveal that Yoga Nidra bring simultaneous and relaxation in both the hemispheres of brain.

Nagendra et al. (1994) conducted a control study on Physiological Measures of Right Nostril Breathing. This study was conducted to assess the physiological effects of a yoga breathing practice that involves breathing exclusively through the right nostril. This practice is called surya loma viloma pranayama (SAV). Twelve volunteers (average age 27.2 years ± 3.3 years, four males) were assessed before and after test sessions conducted on two consecutive days. On one day the test session involved practicing SAV pranayama for 45 minutes (SAV session). During the test period of the other day, subjects were asked to breathe normally for 45 minutes (NB session). After the SAV session was a significant increase in oxygen consumption and decrease in systolic blood pressure (mean increase 9.4 mm Hg) and a significant decrease in digit pulse volume.

Schell et al. (1994) published an article in Int J Psychosom 1994;41(1-4):46-52 on their study conducted to study the Physiological and psychological effects of Hatha-Yoga exercise in healthy women and concluded that significant reduction in heart rate was observed on the subject after training session.

Verma et al. (1996) conducted a controlled study on effect of selected yoga practice in the control and management of 50 cases of essential hypertension and equal number of healthy (no hypertensive) controls. Free radical cellular damage is considered to be the underlying common biological factor in essential hypertension. They, therefore, investigated lipid profile lipid per oxidation and Na-K AT Pase activities of plasma membrane of subjects with essential hypertension. It was found that hypertensive subjects had an elevated lipid per oxidation and decreased Na-K AT Pase activity in plasma membrane as compared to normotensive healthy controls, the specific yoga training protocol which was administered not only helped to decrease blood pressure but also retard the progression of cellular damage due to free radicals.

Telles and Naveen (1997) published an article in Indian J Med Sci 1997 Apr; 51(4):123-7 on their study conducted on mentally handicapped subjects in
Vivekananda Kendra Yoga Research Foundation, Bangalore. In the article they concluded that Yoga practice benefited mentally handicapped subjects by improving their mental ability, also the motor coordination 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.

Appel (1999) in his book Non-pharmacologic therapies that reduce blood pressure stated that nonpharmacologic therapy, also termed lifestyle modification, has an important and expanding role that complements drug therapy. Specifically, nonpharmacologic therapies can serve as initial therapy in Stage 1 hypertensive patients, facilitate medication step down or withdrawal in patients with well-controlled hypertension, prevent hypertension in high-risk populations, and reduce blood pressure in normotensive individuals. Traditional lifestyle modifications that reduce blood pressure include sodium reduction, weight loss, moderation of alcohol intake, and increased physical activity. Diet, which was rigorously evaluated in the Dietary Approaches to Stop Hypertension (DASH) clinical trial, substantially lowered blood pressure in normotensive and hypertensive individuals.

Murugesan et al. (2000) conducted a study to determine the effect of yogic practices on the management of hypertension. Thirty-three hypertensive, aged 35 to 65 years were examined with four variables, including systolic and diastolic blood pressure, pulse rate and body rate. The subjects were randomly assigned to three groups: a yoga group, a group who received medical treatment by the physician of the hospital and the control group. Yoga was offered in the morning and in the evening with 1 Hr/session for 11 weeks. Medical treatment comprised drug intake every day for the experimental period. The result of pre-post test revealed that both the treatment stimuli (i.e. yoga and drug) were effective in controlling the measurement of hypertension.

Manchanda et al. (2000) conducted a study on 2000 possible role of lifestyle modification incorporating yoga on retardation of coronary artery disease. In This prospective, controlled, open trial included angiographic ally proven coronary artery disease patients (71 patients in study group and 42 patients in control group). They
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were assessed clinically, by biochemical parameters, stress myocardial perfusion and function studies and coronary angiography and on psychological parameters. The study group patients were given a family based Yoga Programme which included, control of risk factors, dietary modifications and stress management for a period of one year. The patients were assessed at baseline, at frequent intervals and at the end of one year. At the end of one year of yoga training, statistical significant changes (P<0.05) were found in serum total cholesterol (reduction by 23.3% in study group patients as compared to 4.4% in controls); serum LDL cholestrol (reduction of 26% in study group patients as compared to 2.6% in the control group), regression of disease (43.7% of study group patients v/s 31% control group on MPI and 70.4% of study group v/s 28% of control group on angiography) arrest of progression (46.5% study group v/s 33.3% control group on MPI) and progression (9.9% of study group Vs 35.7% of controls on MPI, 29.6% of study group v/s 60.0% of controls on angiography). At the end of the study improvement in anxiety scores was concordant with the improvement seen in the MPI. No untoward effects of the therapy were observed. They thus concluded that Yoga based lifestyle modifications help in regression of coronary lesions and in improving myocardial perfusion. This is translated into clinical benefits and symptomatic improvement.

Thieme (2001) published an article Blood Pressure Lowering by Hydrotherapy to establish the antihypertensive effect of hydrotherapy or balneotherapy over the course of rehabilitation treatment. Approximately 100 subjects were taken, participants were randomly allocated to two groups, i.e. the intervention group (n=48) with regular hydrotherapeutic treatments and the control group (n=50) without hydrotherapy. Both groups received identical multidisciplinary general treatment, as is common for cardio-logical rehabilitation. Blood pressure levels were quantified by measurements at rest, under standardized stress ergometry and by a 24-h sustained measurement. In addition, weight progression and pharmacological consumption were monitored. In both groups, systolic and diastolic blood pressure decreased. However, the reduction of systolic blood pressure and mean arterial blood pressure over 24 h was significantly more distinct in the intervention group. After rehabilitation, members of the intervention group not only exhibited a significantly lower increase in blood pressure under the exposure to ergometry at 100 Watt but also a higher level of overall performance than the control group. Reducing the dosage of
antihypertensive medication was only possible in the intervention group. Thus they concluded that periodical hydrotherapeutic treatment reduces systolic blood pressure, increases overall performance and facilitates dosage reduction of antihypertensive drugs. Therefore, hydrotherapy qualifies as a suitable supplement to non-pharmacological treatment in arterial hypertension.

Arambula et al. (2001) studied the effects of Kundalini yoga on heart rate and breath rate in San Francisco State University and found a remarkable decrease in both heart rate and breath rate per minute in subjects.


Diet: Low in saturated fat, high in complex-carbohydrates; increase whole grains (whole grains are almost complete meals within themselves, containing fiber, protein, complex and simple carbohydrates, fats, vitamins such as B-family and E, and many minerals like calcium, magnesium, potassium, iron, copper, and manganese which are essential for health), fruits, vegetables, nuts, seeds, legumes, fish, soy products; food rich in potassium, calcium and magnesium (carrots, spinach, celery, alfalfa, mushrooms, lima beans, potatoes, avocados, broccoli, and most fruits); salt restriction; fiber is very important in blood pressure and to reduce cholesterol and prevent atherosclerosis (hardening of arteries). A diet rich in garlic and onion is as important as any other supplements. To determine the impact of dietary patterns on the control of hypertension researchers studied the subgroup of 133 participants with systolic blood pressure (BP) of 140 to 159 mm Hg and/or diastolic BP of 90 to 95 mm Hg enrolled in the Dietary Approaches to Stop Hypertension (DASH) study. Participants were fed a control diet for a 3-week period and were then randomized to receive for 8 weeks either the control diet; a diet rich in fruits and vegetables, but otherwise similar to control; or a combination diet rich in fruits, vegetables, and low-fat dairy products, including whole grains, fish, poultry, and nuts, and reduced in fats, red meats, sweets, and sugar-containing beverages. Sodium intake and body weight were held constant throughout the study. The combination diet significantly reduced systolic BP and diastolic BP. The fruits-and-vegetables diet also significantly reduced systolic and diastolic. The combination diet produced significantly greater BP effects
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than the fruits-and-vegetables diet. Blood pressure changes were evident within 2 weeks of starting the intervention feeding. After the 8-week intervention period, 70% of participants eating the combination diet had a normal BP (systolic BP < 140 and diastolic BP < 90 mm Hg) compared with 45% on the fruits-and-vegetables diet and 23% on the control diet. In patients with hypertension, the DASH combination diet effectively lowers BP and may be useful in achieving control of Stage 1 hypertension.

Life-style Changes: Weight loss-The United States is in the midst of an epidemic of obesity involving more than one-third of the adult population. Weight gain is very high risk in determination of hypertension. It is very critical to lose weight in a slow fashion to control hypertension. Rapid weight loss is not advised. Many studies have shown those overweight-hypertensive patients can reduce their medication with weight loss.

Sundaram (2003) did commendable job in assessing the human bio-energy field through GDV, where digital aura was registered and they indicated how this can be used in interpretation of the functioning of Chakra and different organ.

Iyengar (2003) in his article on Yoga and blood pressure stated that Yoga asanas can ease of blood pressure they can combat the causes, as well as the effects of high blood pressure and stabilize blood pressure thus reducing high blood pressure and regulating low pressure. Asanas calm the mind and regularize and balance the autonomous nervous system, the center that controls stress. The sympathetic and parasympathetic nervous system, which are involved in stress reaction also get stabilized in the practice of asanas resulting in regulation of blood pressure. The asanas, which regulate blood pressure, belong to the forward bends, supine, sitting, and inversions group. However forward bends are the fundamental asanas to be practiced by persons suffering from high blood pressure, whereas Viparita Dandasana is the most beneficial asana for low blood pressure.

Andreas et al. (2003) in American heart journal published an article titled Thermal hydrotherapy improves quality of life and hemodynamic function in patients with chronic heart failure. A research work was conducted to find the possibility nonpharmacological peripheral vasodilation with thermal therapy by means of warmwater baths and sauna has beneficial effects in chronic heart failure. They studied 15
patients (5 men, 10 women, mean (± SD) age 64.3 ± 1.8 years) with mild chronic heart failure (NYHA functional class II to III, ejection fraction 30%-40%). Patients were randomly assigned to 6 weeks of intensive home-based hydrotherapy or 6 weeks restriction in a crossover intervention trial. Quality of life and heart-failure-related symptoms were assessed by means of a validated questionnaire (PLC). Graded bicycle exercise test with incremental workloads (0, 50, 75, 100 watts) was performed at the end of each treatment period. The hydrotherapeutic program consisted of a structured combination of daily home-based external warm- and cold-water applications. Thus they concluded that home-based hydrotherapeutic thermal treatment program improves quality of life, heart-failure-related symptoms and heart rate response to exercise in patients with mild chronic heart failure. The results of this investigation suggest a beneficial adaptive response to repeated brief cold stimuli in addition to enhanced peripheral perfusion due to thermal hydrotherapy in patients with chronic heart failure.

Mangalteertham (2004) made use of latest computerized diagnostic tool ARM PERSVET in diagnosis of the pathological, pathomorphological changes in organs and tissues. It was also studied latent or other pathological process to determine their pathogenic effects on separate organs and system. On the whole by means of topical it your logic, nosologic and differential diagnosis can be made through this apparatus. This can also be use to realize preventive diagnosis of pre clinical heath status, a new direction of preventive medicine, especially for Yoga and Naturopaths. This enables to Yoga therapist and Naturopaths to diagnose their patients quickly and effectively. It also opens up the possibility to evaluate efficacy of treatment at any phase of progress and to detect in proper time, a side effect of the therapeutics methods in use.

Brown and Particia (2005) conducted a study and written papers on Sudarshan Kriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression. A 3-month, open pilot study of 15 patients with dysthymia and 15 with major depression showed significant reductions in both Hamilton Rating Scales for Depression and Beck Depression Inventory scores after 1 week of Sudarshan Kriya training and 3 more weeks of daily practice. In another 4-week study, 45 persons with severe melancholic depression were randomly assigned to three treatment groups:
bilateral electroconvulsive therapy (ECT) 3 times per week; imipramine (IMN) 150 mg at night; and Sudarshan Kriya Yogic Breathing. The Sudarshan Kriya group was instructed to practice once per day for 30 minutes, followed by 15 minutes of rest, 6 days per week; Mean HRSD scores dropped significantly in all three groups by the end of 4 weeks: ECT from 26.7 to 2.5; IMN from 22.7 to 6.3 and Sudarshan Kriya from 25.1 to 8.3. Considering the severity of the patients’ depressions, the 67% rate of remission with Sudarshan Kriya is impressive. Although Sudarshan Kriya was less powerful than ECT, it appeared to be an effective alternative to ECT or medication even in severe depression.

Decker Weiss (2005) a renowned (Naturopathic Cardiologist), emphasized management of hypertension by natural measure. He suggested Dandelion leaf extract, lycopene, Stevia extract, olive leaf extract and hawthorn extract are scientifically and clinically studied natural ingredients that lower high blood pressure separately, and work even better when they’re combined. Stevia and olive leaf have been shown in scientific studies to lower blood pressure, hawthorn helps keep blood vessels flexible and elastic, dandelion (a diuretic) lowers blood pressure by encouraging the body to release excess water, and the antioxidant, lycopene, helps lower cholesterol and homocysteine levels and reduce your risk of heart attack. Every one of these ingredients has been studied and recommended for years. But now, a scientific study on a supplement that combines them in one synergistic formula shows encouraging results lowering systolic and diastolic blood pressure. In a small pilot study, 100% of participants taking the combination of nutrients listed above in a product called BP Manager by Enzymatic Therapy, Inc., showed lower blood pressure numbers in systolic and diastolic readings—some after only two weeks of use, with best results after eight weeks.

Jerath (2006) in this book “Physiology of long Pranayamic Breathing” explained how slow deep breathing shifts the autonomic nervous system. Pranayamic breathing has been shown to contribute to a physiologic response characterized by the presence of decreased oxygen consumption, decreased heart rate, and decreased blood pressure, as well as increased theta wave amplitude in EEG recordings, increased parasympathetic activity accompanied by the experience of alertness and reinvigoration. The mechanism of how pranayamic breathing interacts with the
nervous system affecting metabolism and autonomic functions remains to be clearly understood. It is our hypothesis that voluntary slow deep breathing functionally resets the autonomic nervous system through stretch induced inhibitory signals and hyperpolarization currents propagated through both neural and non-neural tissue which synchronizes neural elements in the heart, lungs, limbic system and cortex. During inspiration, stretching of lung tissue produces inhibitory signals by action of slowly adapting stretch receptors (SARs) and hyperpolarization current by action of fibroblasts. Both inhibitory impulses and hyperpolarization current are known to synchronize neural elements leading to the modulation of the nervous system and decreased metabolic activity indicative of the parasympathetic state.

Lazos (2006) conducted a study on Yoga Participation Is Beneficial to Obesity Prevention, Hypertension Control, and Positive Quality of Life. The objective of this study was to evaluate the effects of hatha and relaxation yoga on obesity, blood pressure, and quality of life. Seventy healthy women and men aged 18 years or older completed a survey. A statistically significant body mass index for obesity (30.0) was observed ($P < .001$). A significantly lower systolic blood pressure was detected in the 1- to 4-year yoga participant group as compared to the less than 1 year yoga group ($P <.023$). The mean Total Mood Disturbance score was -5.04, indicating the survey participants scored a positive mood state. Hatha and relaxation yoga had a statistically significant role in controlling weight, hypertension, and mood.

Chih-Hsien et al. (2006) published a paper on The Role of the ‘Eubiotic’ Diet in Intestinal Dysbiosis and hypertension. The following report discusses how a naturopathic approach employing the Eubiotic diet is hypothesized to be the major intervention responsible for improving the patient’s hypertension. A 69-year-old female patient presented with chief concerns of hypertension, hypercholesterolemia, low immunity, and osteoarthritis in June 2006. The patient was treated with dietary interventions – specifically, the Eubiotic diet after approximately six months on the diet, her blood pressure stabilized, resulting in a dramatic reduction in prescription blood pressure medication use.

Lawrence et al. (2006) published an article in journal of American heart association titled Dietary Approaches to Prevent and Treat Hypertension. A substantial body of evidence strongly supports the concept that multiple dietary
factors affect blood pressure (BP). Well-established dietary modifications that lower BP are reduced salt intake, weight loss, and moderation of alcohol consumption (among those who drink). Over the past decade, increased potassium intake and consumption of dietary patterns based on the "DASH diet" have emerged as effective strategies that also lower BP. Of substantial public health relevance are findings related to blacks and older individuals. Specifically, blacks are especially sensitive to the BP-lowering effects of reduced salt intake, increased potassium intake, and the DASH diet. Furthermore, it is well documented that older individuals, a group at high risk for BP-related cardiovascular and renal diseases, can make and sustain dietary changes. The risk of cardiovascular disease increases progressively throughout the range of BP, beginning at 115/75 mm Hg. In view of the continuing epidemic of BP-related diseases and the increasing prevalence of hypertension, efforts to reduce BP in both nonhypertensive and hypertensive individuals are warranted. In nonhypertensive individuals, dietary changes can lower BP and prevent hypertension. In uncomplicated stage I hypertension (systolic BP of 140 to 159 mm Hg or diastolic BP of 90 to 99 mm Hg), dietary changes serve as initial treatment before drug therapy. In those hypertensive patients already on drug therapy, lifestyle modifications, particularly a reduced salt intake, can further lower BP. The current challenge to healthcare providers, researchers, government officials, and the general public is developing and implementing effective clinical and public health strategies that lead to sustained dietary changes among individuals and more broadly among whole populations.

Hadi et al. (2007) conducted a study on Effects of hatha yoga on well-being in healthy adults in Shiraz, a systematic review aims to assess the efficacy of mind-body therapies (MBT) versus placebo or active control in the treatment of hypertension. This study was designed with that purpose using the SF-36 questionnaire in 107 volunteers [44 males and 63 females, mean age 34 (standard deviation 7) years] who attended yoga classes for 6 months. They completed the questionnaire before and after the yoga practice. There was significant improvement in scores for all health items. The differences according to age, sex and education level were not significant. It is concluded that yoga can improve physical and mental health, and promotes well-being. Mind-Body Therapies (MBT) significantly reduced systolic blood pressure (SBP) by a mean 11.52 mm Hg and diastolic blood pressure (DBP) by 6.83 mm Hg. Of the three MBT analyzed yoga therapies demonstrated
results of the greatest magnitude, with mean SBP reductions of 19.07 mm Hg and DBP by 13.13 mm Hg. Significant results were seen in SBP reductions by yoga and meditation therapy, while only yoga therapies demonstrated significant reductions in DBP. Additionally, reductions in systolic and diastolic blood pressure to the degree found in yoga interventions were associated with reductions in vascular death rates as well as decreased overall cardiac risk.

Hagins et al. (2007) published a paper on hatha yoga satisfy recommendations for intensity of physical activity which improves and maintains health and cardiovascular fitness. Little is known about the metabolic and heart rate responses to a typical hatha yoga session. The purposes of this study were 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.

Thus it was concludes that 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 portioaaasn 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.

Fallon and Jennifer (2008) carried out research in UTAH STATE UNIVERSITY on Yoga as an intervention for stress reduction and enhanced wellbeing in African American athletes study explored the preventive impact of a brief Hatha yoga program on stress-reduction and enhanced wellbeing in a sample of healthy African American college athletes. African Americans suffer higher rates of hypertension and sudden cardiac death syndrome, both linked to stress. Study design was single case, with six replications, utilizing comparison of pre- and post intervention scores on physiological and psychological indicators of distress and wellbeing. Findings. Included beneficial increases in positive affect and perceived physical health.

Arnulfo et al. (2009) conducted a study on Cardiovascular and metabolic effects of intensive Hatha Yoga training in middle-aged and older women from northern Mexico. Study was aims to find Hatha Yoga (HY) as an alternative to improve physical activity in middle-aged and older women. However, conventional HY (CHY) exercising may not result in enough training stimulus to improve cardiovascular fitness. The purpose of this study was to evaluate the effect of an intensive HY intervention (IHY) on cardiovascular risk factors in middle-aged and older women from Northern Mexico. In this prospective quasieperimental design, four middle-aged and nine older CHY practicing females (yoginis) were enrolled into an 11-week IHY program consisting of 5 sessions/week for 90 min (55 sessions). The program adherence, asana performance, and work intensity were assessed along the intervention. Cardiovascular fitness [maximal expired air volume (VE max), maximal O 2 consumption (VO 2max), maximal heart rate (HR max ), decreased, systolic (BPs) and diastolic blood pressure (BPd)], biochemical [glucose, triacylglycerols (TAG), total cholesterol (TC), high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C)], and dietary parameters were evaluated before and after IHY. Daily caloric intake (~1,916 kcal/day), program adherence (~85%), and exercising skills (asana performance) were similar in both middle-aged and older women. The IHY program increased VO 2max and VE max and HDL-C
while TAG and LDL-C remained stable in both middle-aged and older groups ($P < 0.01$).

**Iwona and Peter (2009)** in their article published in American journal of Naturopathy under the title Functional Fats for Weight Control Stressed the role of dietary control in management of obesity which in turn leads to elevated blood pressure. They advocated that natural food a rich in conjugated linoleic acid (CLA), diacylglycerols (DAG) and medium chain triglycerides (MCT) play a great role in controlling the obesity and there by its secondary complications including the hypertension.

**Ross and Thomas (2010)** written an article on the Health Benefits of Yoga and Exercise: A Review of Comparison Studies in The Journal of Alternative and Complementary Medicine (49). The purpose of this article is to provide a scholarly review of the literature regarding research studies comparing the effects of yoga and exercise on a variety of health outcomes and health conditions. A comprehensive search of the research literature from core scientific and nursing journals yielded 81 studies that met inclusion criteria. These studies subsequently were classified as uncontrolled ($n=30$), wait list controlled ($n=16$), or comparison ($n=35$). The most common comparison intervention ($n=10$) involved exercise. In the studies reviewed, yoga interventions appeared to be equal or superior to exercise in nearly every outcome measured except those involving physical fitness.