**Review of Research Resources**

The difficulties which will come in the process of present study will be overcome by resource materials related to the topic. To get the answer to the problem, some important books and resource materials will be studied by the researcher. The researcher will study some important books, earlier review, journals, magazines or any published material related to the present study to complete his project. The problems will be solved by studying the mentioned resources.

Vedamurthachar, et al. (2011) Short Term Effect of Sudarshan Kriya Yoga on Lipid and Hormone Profile of Type 2 Diabetic Patients. The study of short term effect of an advanced Sudarshan Kriya Yoga practice as a complementary therapy for 6 days. Design: Open label intervention study. Settings/Location: Art of living international ashram. Subjects: 50 type 2 diabetic patients (22-69 yr). Interventions/therapy: Advanced SKY workshop of 6 days (Sudarshan Kriya and its accompanying practices(SK&P), taught by the Art of Living Foundation world-wide, are stress promotion techniques whose health management/health benefits are being validated by modern medical science) Outcome Measures: Plasma cholesterol, HDL, triglycerides, LDL and VLDL, FT4 and prolactin, cortisol, TSH. Results: In the participants, there was a significant decrease in plasma cholesterol (p<0.03), increase in HDL (p<0.0001), but levels of triglycerides, LDL and VLDL remained unaffected (p>0.05). Further, levels of FT4 and prolactin significantly increased while cortisol levels were significantly decreased (p< 0.05). Other parameters; viz.; plasma levels of TSH remained unchanged (p>0.19). Conclusion: The action of SKY on lipid profile and hormonal status was of counteractive nature and felt to be distinctly different than the effect of drugs.

Brown et al. (2005) Sudarshan Kriya Yogic Breathing in the Treatment of Stress, Anxiety, and Depression: Part II—Clinical Applications and Guidelines. Yogic breathing is a unique method for balancing the autonomic nervous system and influencing psychologic and stress-related disorders. Part I of this series presented a neurophysiologic theory of the effects of Sudarshan Kriya Yoga (SKY). Part II will review clinical studies, our own clinical observations, and guidelines for the safe and effective use of yoga breath techniques in a wide range of clinical conditions. Although more clinical studies are needed to document the benefits of programs that
combine pranayama (yogic breathing) asanas (yoga postures), and meditation, there is sufficient evidence to consider Sudarshan Kriya Yoga to be a beneficial, low-risk, low-cost adjunct to the treatment of stress, anxiety, post-traumatic stress disorder (PTSD), depression, stress-related medical illnesses, substance abuse, and rehabilitation of criminal offenders. SKY has been used as a public health intervention to alleviate PTSD in survivors of mass disasters. Yoga techniques enhance well-being, mood, attention, mental focus, and stress tolerance. Proper training by a skilled teacher and a 30-minute practice every day will maximize the benefits. Health care providers play a crucial role in encouraging patients to maintain their yoga practices.

Sharma, et al, (2008) Gene expression profiling in practitioners of Sudarshan Kriya. The rapid pace of life, eating habits, and environmental pollution have increased stress levels and its related disorders. The complex molecular response to stress is mediated by stress genes and a variety of regulatory pathways. Oxidative stress is internal damage caused by reactive oxygen species. Increasing evidence suggests that chronic psychosocial stress may increase oxidative stress, which in turn may contribute to aging, and etiology of coronary diseases, cancer, arthritis, etc. Psychophysiological concomitants of meditation have been extensively researched, but there are very little data available on biochemical activity leading to relieving stress by causing a relaxation response by Sudarshan Kriya (SK). SK is a breathing technique that involves breathing in three different rhythms. It is preceded by Ujjayi Pranayam (long and deep breaths with constriction at the base of throat) and Bhasrika (fast and forceful breaths through nose along with arm movements). Methods: Forty-two SK practitioners and 42 normal healthy controls were recruited for our study. The practitioners had practiced SK for at least 1 year.

Sathiamma, et al. (2006) Evaluation of sleep architecture in practitioners of Sudarshan Kriya yoga and Vipassana meditation, Yoga is an ancient Indian science and way of life that has been described in the traditional texts as a systematic method of achieving the highest possible functional harmony between body and mind. Yogic practices are claimed to enhance the quality of sleep. Electrophysiological correlates associated with the higher states of consciousness have been reported in long-term practitioners of transcendental meditation during deep sleep states. The present study was carried out to assess sleep architecture in Sudarshan Kriya Yoga (SKY) and Vipassana meditators. This was to ascertain the differences, if any, in sleep architecture following yogic practices. Whole night polysomnographic recordings were carried out in 78 healthy male subjects belonging to control and yoga groups. The groups studied were aged
between 20 and 30-years-old (younger) and 31 to 55-years-old (middle-aged). The sleep architecture was comparable among the younger control and yoga groups. While slow wave sleep (non-REM (rapid eye movement) S3 and S4) had reduced to 3.7 percent in the middle-aged control group, participants of the middle-aged yoga groups (both SKY and Vipassana) showed no such decline in slow wave sleep states, which was experienced by 11.76 and 12.76 percent, respectively, of the SKY and Vipassana groups. However, Vipassana practitioners showed a significant enhancement ($P < 0.001$) in their REM sleep state from that of the age-matched control subjects and also from their SKY counterparts. Yoga practices help to retain slow wave sleep and enhance the REM sleep state in the middle age; they appear to retain a younger biological age as far as sleep is concerned. Overall, the study demonstrates the possible beneficial role of yoga in sleep wakefulness behavior.

Sayyed et al. (2010) Study of Lipid Profile and Pulmonary Functions in Subjects Participated in Sudarshan Kriya Yoga. We intended to study the effect of Sudarshan Kriya Yoga, a novel breathing technique conceived by the world renowned spiritual leader and founder of The Art of Living Foundation Sri Sri Ravishankar. Millions of followers all over the world are practicing and reporting positive well being and better health. To see the effect of Sudarshan Kriya Yoga on Lipid Profile, Pulmonary Function and Hemoglobin concentration, we conducted a workshop of 8 days consisting of 150 participants. Out of which 55 were included in the study group. Our results show that after practicing Sudarshan Kriya, there is decrease in Total Cholesterol, LDL-Cholesterol along with significant increase in HDL-Cholesterol. There are significant changes in Pulmonary Function, but statistically non-significant changes in Hematological parameters. From the observation Sudarshan Kriya Yoga may play vital role in reducing Total Cholesterol ($P<0.05$), LDL-Cholesterol ($P<0.001$) and significantly increasing HDL-Cholesterol ($P<0.001$). Spirometric Pulmonary Function Tests studied were Forced Vital Capacity, Forced Expiratory Volume in first second, Peak Expiratory Flow Rate and Maximum Voluntary Ventilation. The results showed improvement in all Pulmonary Function parameters in all subjects as compared to before practicing Sudarshan Kriya Yoga. Thus Sudarshan Kriya Yoga may have therapeutic implication in the adjunctive (non pharmacological) management of cardiovascular diseases and respiratory diseases. The present study confirmed the positive effect of Sudarshan Kriya Yoga on Lipid Profile and Pulmonary Function over period of 8 days.
Mahagita and Chitrawina (2010) Roles of Meditation on Alleviation of Oxidative Stress and Improvement of Antioxidant System. According to MEDLINE/Pubmed search to December 2009, the modulation effects of meditation on oxidative stress have been increasingly investigated for acute, short and long term effects. Both invasive and noninvasive measurements have been utilized. Long term transcendental and Zen meditators have been showed to diminish oxidative stress seen by a reduction of lipid peroxidation and biophoton emission. Glutathione level and activity of antioxidant enzymes (catalase, superoxide dismutase, glutathione peroxidase and glutathione reductase) have been facilitated in Yoga and Sudarshan Kriya practitioners. One year of Tai Chi training has been reported to promote superoxide dismutase activity and lessen lipid peroxidation. Performing diaphragmatic breathing after exhaustive exercise has attenuated oxidative stress faster than control. These data suggest possible roles of meditation and meditation-based techniques on the decrease of oxidative stress which may assist to prevent and/or alleviate deterioration of related diseases. However, further research needs to elucidate the cellular and molecular mechanisms which remain challenge to accomplish.

Shankarappa et al. (2012) The Short Term Effect of Pranayama on the Lung Parameters. Yoga is a science which has been practised in India from over thousands of years. Besides its spiritual achievements, the practice of yoga is accompanied by a number of beneficial physiological effects in the body. Pranayama is an art of controlling the life force of breath. It produces many systemic psycho physical effects in the body, besides its specific effects on the respiratory functions. This study is designed to study the effects of short- term pranayama (6 weeks) on the pulmonary function parameters.

Tunswal et al. (2012) A Study on effect of yoga and various asanas on obesity hypertension and dyslipidemia. The effect of Pranayama and certain yogic asanas on parameters of obesity viz. weight reduction (BMI and waist hip ratio), Blood pressure and lipid profile were studied. Our study Included 150 patients after screening inclusion and exclusion criteria for obesity, hypertension and dyslipidemia. The duration of the study was 3 months. Various parameters on demographic and clinical data for these diseases were recorded at the start of the study. 75 study group Patients were to attend Yoga camp daily for 3 months. The clinical data was again recorded at the end of the study period of 3 months for comparison. There were significant decrease in the parameters of obesity viz. BMI and WHR, significant improvement in hypertension both systolic and diastolic blood pressure and significant improvement in various
lipid profile parameters viz. decrease in total cholesterol, LDL, triglycerides, VLDL and increase in HDL in study group as compared to control group.

Azadeh and Habibi (2012) The effect of practicing pranayama on test anxiety and test performance. Teacher’s observation and the related literature indicate that for many students the idea of taking a test can cause waves of panic and fear. As a result, it can negatively impact the student’s function. This study intends to investigate the effect of doing pranayama on test anxiety and test performance. The participants consist of 107 MA students who were randomly assigned to control and experimental group. The students of the experimental group practiced pranayama for one full semester before starting teaching. Sarason’s (1980) test anxiety scale was given to both control and experimental groups in the final session before taking the exam. The gathered data were analyzed statistically. It revealed that due to practicing pranayama, 33% of the participants of experimental group fall in the high test anxiety category while this percent is nearly twice for the control group (66.7%). Furthermore, the result of the t-test for test anxiety and test performance showed that there was a significant difference between the student of control and experimental groups and based on the mean the students of experimental group had lower test anxiety (M=16.00) comparing the students of control group (M=19.31). Similarly, males and females of the experimental group had lower test anxiety comparing their males and females in control group. Also, test performance of experimental group was higher. Finally, the result of correlation showed that there was a negative correlation between final test performance and test anxiety (r= -0.204, P<0.05). This means that the higher test anxiety, the lower test performance. The result can be helpful for teachers and students to lower test anxiety.

Swami et al. (2009) The study of Effect of yoga on pulmonary function test of hypothyroid patients. Aim of this study was to see any effect on respiratory functions in hypothyroid patients after pranayama (yoga). The subjects for the study were 20 hypothyroid females, 39.70±8.27 years of mean age referred from medicine department of UCMS & G.T.B. Hospital. Spirometric recordings were taken with hypair (version-1.28). Baseline (first) recordings were taken when patient came for the first time. Patients came to yoga lab in physiology department for 21 days continuously where they were trained by the yoga instructors and then told to do pranayama at home and called at regular intervals after 7 days to see the compliance. The breathing exercises were done for 45 minutes everyday. After 6 months of pranayama second recording was taken
and compared with the baseline. There were significant improvement in forced expiratory volume in first second (FEV1), Maximum voluntary ventilation (MVV) and Inspiratory Capacity(IC). Thus Pranayama and meditation has beneficial effect on pulmonary functions of hypothyroid patients along with conventional treatment. Gaurav Swami, (2009), et al, the study of Effect of yoga on pulmonary function test of hypothyroid patients. Indian J Physiol Pharmacol 2009; 54 (1) : 51–56 12) Savita Singh,(2012), et al, The study of Effect of Yoga practices on pulmonary function tests Including transfer factor of lung for carbon Monoxide (tlco) in asthma patients. Prana is the energy, when the self-energizing force embraces the body with extension and expansion and control, it is pranayama. It may affect the milieu at the bronchioles and the alveoli particularly at the alveolo-capillary membrane to facilitate diffusion and transport of gases. It may also increase oxygenation at tissue level. Aim of our study is to compare pulmonary functions and diffusion capacity in patients of bronchial asthma before and after yogic intervention of 2 months. Sixty stable asthmatic-patients were randomized into two groups i.e group 1 (Yoga training group) and group 2 (control group). Each group included thirty patients. Lung functions were recorded on all patients at baseline, and then after two months. Group 1 subjects showed a statistically significant improvement (P<0.001) in Transfer factor of the lung for carbon monoxide (TLCO), forced vital capacity (FVC), forced expiratory volume in 1st sec (FEV1), peak expiratory flow rate (PEFR), maximum voluntary ventilation (MVV) and slow vital capacity (SVC) after yoga practice. Quality of life also increased significantly. It was concluded that pranayama & yoga breathing and stretching postures are used to increase respiratory stamina, relax the chest muscles, expand the lungs, raise energy levels, and calm the body.

Sengupta (2012) the study of Health Impacts of Yoga and Pranayama: A State-of-the-Art Review Thousands of years ago yoga originated in India, and in present day and age, an alarming awareness was observed in health and natural remedies among people by yoga and pranayama which has been proven an effective method for improving health in addition to prevention and management of diseases. With increasing scientific research in yoga, its therapeutic aspects are also being explored. Yoga is reported to reduce stress and anxiety, improves autonomic functions by triggering neurohormonal mechanisms by the suppression of sympathetic activity, and even, now-a-days, several reports suggested yoga is beneficial for
physical health of cancer patients. Such global recognition of yoga also testifies to India’s growing cultural influence.

David and Karen (2004) The study of Mood Changes Associated with iyengar Yoga Practices: A Pilot Study. The main objectives of this study were 1) to examine changes in self-reported moods and emotional states from before to after iyengar Yoga classes and how they are affected by the practice of different types of Yoga poses and (2) to determine whether observed changes in mood depend on one's personality traits. The participants were 11 healthy Yoga students in a nine-session Yoga course in which three different types of Yoga poses were compared: back bends, forward bends, and standing poses. Each 90-minute class focused on one of the three types of poses with three repetitions of each type of class. Self-ratings of 15 moods dealing with positive, negative, and energy-related emotional states were obtained before and after each class. Personality traits of depression, anxiety, and hostility were assessed at an initial orientation. Independently of the specific pose, positive moods increased, negative moods decreased, and energy-related moods increased from before to after classes with most changes lasting for two hours. Specific poses resulted in differences in how moods were affected, with back bends associated with greater increases in positive moods. Some mood changes were dependent on one's characteristic personality traits. The positive mood effects of back bends were greater for participants who were relatively hostile or depressed. The specific and nonspecific effects of different bodily postures and movements on psychological processes in Yoga and other forms of physical activity deserve further study. Yoga practices should be investigated for their potential clinical application in mood disorders and depression.

Sivapriya et al. (2010) The study of Effect of Nadi Shodhana Pranayama on Respiratory Rarametersin School Students. Background: Yogic breathing techniques are very important for inducing relaxation. It is thought by many cultures that the process of breathing is the essence of being. The ultimate goal is to relax quickly and to improve the respiratory efficiency. It’s important for children to practice yogic breathing techniques on a daily basis. Breathing techniques help to change subtle energies within the body for health and well being. Modern human is the victim of stress and now a days yoga is widely used among adult population to relive stress but leastly concentrated in children inspite of its vast effects. Aim: Current study was undertaken to create awareness in the health benefits of pranayama and to inculcate yoga
in school students so that they can gain a healthy life in future. Methods: This study was designed to evaluate the effects of a 45 days daily practice of Nadi Shodhana Pranayama yoga practice on peak expiratory flow rate (PEFR), forced vital capacity (FVC), forced expiratory volume in 1 sec (FEV1) and respiratory rate (RR) in school students of both sexes. 115 school students aged 8 – 14 years studying in Visa Nursery & primary school, Chennai were recruited for the study. Healthy student with no history of present and past illness were selected. The participants were trained to perform Nadi Shodhana Pranayama and the study was done for 45 days. The respiratory parameters PEFR, FVC, FEV1 & RR were measured before and after practice of Pranayama. Results: The results of this study showed significant increase in PEFR, FVC, FEV1. The RR declined after the practice of Nadi Shodhana Pranayama. Conclusion: The positive results found in the present study can be applied to all schools to improve the pulmonary functions of the students. A few minutes practice daily may help in setting the mind better on works and studies. The daily practice could maintain better physical and mental health to have a better future.