REVIEW OF LITERATURE
Yoga is an Indian cultural heritage. Yoga has been accepted by most of the schools of Indian thought. It is very much useful for the mankind in this hectic way of modern life. The practice of yoga disciplines the body, mind and the self. Yogic activities are also helpful in the management of anxiety and subjective well-being. Yoga is one of the most important techniques evolved by Indians to cope-up with stress, anxiety and other factors that lead to mental disorder and also problems related to physical health. The true nature of yoga, results in a positive thinking and in improving the quality of life, subjective well-being.

The present chapter provides a review of important and relevant research studies on the impact of yoga on Self-concept, State Anxiety, Trait Anxiety, and Subjective Well-being. Some studies related to the efficacy of yoga and other variables are also reviewed here for instance, personality study of yoga practitioners, effect of yoga practice on memory, reaction time for audio-visual stimulus, effect of yogic practices on neuromuscular efficiency in normal and stressful conditions, impact of yoga on management of blood pressure, heart-rate, cardio-vascular system, galvanic skin responses, respiration, asthama, diabetis etc., and also the role of yoga therapy in stress management, neurosis, and depression.

There are few studies on the impact of yoga on Self-concept, State anxiety, Trait anxiety and Subjective well-being particularly with regard to college students. The relevant studies are reviewed under the following research areas:

2.1 Studies on Yoga and Self-concept.
2.2 Studies on Yoga and State Trait Anxiety.
2.3 Studies on Yoga and Subjective Well-being.
2.4 Studies on Yoga and other variables.
2.1 Studies of Yoga and Self-concept

Turnbull & Noriss (1982) reported effects of Transcendental Meditation (TM) on self-identity indices and personality. Sample consisted of seven practitioners of TM (4 boys & 3 girls) and a control group of seven (4 boys & 3 girls) from the University of Birmingham. Eysenck Personality Questionnaire was administered on meditation group the day before they started TM, then subjects practiced the TM daily, in the morning and evening for 20 minutes. The same questionnaire was administered on the TM group after 3 days of practicing TM and third time after one month of continued TM practice. Control group subjects were assessed in the same ways at the same times as meditation group.

Results revealed the differences between 'actual-self' and 'ideal-self' concepts for both subject groups on the three test occasions. In the meditation group there is a tendency for the distance between 'actual-self' and 'ideal-self concept' to decrease over the three tests (i.e. means 0.88, 0.82 and 0.61 respectively) and these were found to be significant (P < 0.05) using the Wilcoxon matched pairs test. Where as control group shows opposite tendency towards increased distance between the actual self and ideal self-concepts over three tests, (means = 0.81, 0.87 and 0.85 respectively) but statistically not significant.

Further in the meditation group there is a clear decrease in the distance between the 'actual self' and 'social self-concepts' over the three tests. A Wilcoxon matched pairs test showed the decreases between first test and 3, 2 and 3 that is 0.66 and 0.66 and 0.50 to be significant at (p < 0.02). While in the control group it was not so. These results show that TM practice helps practitioners to know oneself more clearly.

Rani and Rao (1992) made a comparative study on the effect of yogic practice on self-ideal disparity (SID). The sample consisted of 36 subjects in the pre-training group, that is, those were admitted into a yoga training group and another group of 37 subjects in the after practicing yoga group, who underwent the yoga training for 3 months. Hari Gopal’s Self-ideal
Disparity Scale (1979) was administrated on first group before the yoga training, and the second group was after the yoga training.

Results show that for the experimental group, before yoga training the mean self scores and ideal-self scores are 181.0 and 198.6 respectively, the correlation between these two scores is .379 which is significant (P < 0.05). The mean self and ideal-self scores after yoga training are 191 and 207 respectively, the correlation between these two scores is .471 which is significant at 0.01 level. The correlation of self and ideal self-scores is positive and significant for both before yoga training. These results are in an expected direction indicating that yoga training enhances self-congruence and reduces self-ideal disparity.

Tioeczynski (1994) studied the effects of meditation on college adjustment and self-actualization. He selected 45 subjects and divided them equally into meditation, relaxation and control groups. Both meditation and relaxation subjects were given one hour training each separately. The meditation group was instructed to meditate and relaxation group to relax at least once daily for 20 minutes. Control group subjects were asked to follow study and interaction. All subjects were administered the College Adjustment Scale and Personal Orientation Inventory to measure adjustment and self-actualization after 2 and 4 weeks. A significant interaction was found for Anxiety scores from the college adjustment scales (F4, 12 = 4.0, P < .05), significant effect was also found for the family problems scale scores (F 2,7 = 5.54, P < .05). A significant effect (F 2,3 = 4.32 P < .05) was found on feeling reactivity also. Meditation group scored (F 2,3 = -.52, P < .05) on Personal Orientation Inventory, which is higher compared to other groups. These results show that the practice of meditation and relaxation has a positive effect on college adjustment and self-actualization.

Janowiak and Hackman (1994) carried out a study on college students regarding the effect of meditation on Self-actualization and rated Stress. Investigators randomly selected 62 students and assigned as meditation group (n=21), relaxation (n = 20) and control group (n=21). Meditation and
relaxation groups were given training and asked to meditate or practice relaxation twice daily for 20–30 minutes for 8 weeks. Pre and post-test measures were taken on the Personal Orientation Inventory (Showstrom, 1964) to measure self-actualization and behavioral relaxation.

Analysis of variance shows no differences in scores on the dimensions of personal orientation inventory i.e., on time competence (F_{2, 7822} = .55) and the inner-directed (F_{2, 7782} = 2.53). Also, the groups did not differ significantly on any of the ten sub-scales. Application of the repeated measures analysis of variance after 8 weeks shows no significant differences among the 3 groups scores on the time competence (F_{2, 59} = .89), where as the difference scores within groups between pre-test and post-test scores were higher than that of the pre-test scores for all the 3 groups, but the difference was significant only for the relaxation group (M = 15.7 and 17.3, t = -2.66, P < .02). Similar results occurred for scores on the inner directed (F_{2, 59} = 1.63), differences were not significant among groups, whereas a 't' test of the difference within groups (pre-test - post-test) showed significant change in all the 3 groups but for the relaxation group it was more significant.

Pearson correlations showed that for the meditation group there is a significant correlation of .65 (P < .01) between the change in stress ratings with compliance total scores, indicating that those with greater compliance to meditation showed greater reduction in rated stress. The correlation between inner-directedness, post-test scores and compliance total scores was significant and negative (r = -.43, P < .05) between self reported health status and compliance total scores (r= -.45, P < .05). For relaxation group a significant correlation of .57 (P < .01) was obtained between stress change scores and compliance total scores. These results indicate that meditation and relaxation practices help in self-actualization and minimize the stress.

Vinod, Vinod & Rajguru (1998) assessed and compared the effect of yoga on self-concept, ability to handle crisis proper attitude towards evaluation of other persons, and tenacity and perseverance. For this purpose, the researchers selected 260 youths: 39 males and 71 females.
with the age range of 17–21 years. These subjects received training in yoga, in batches either in the morning or evening sessions for a duration of two hours. Participants were administered G.I.G. verbal speed of thinking test before the commencement of the programme and the same test was repeated after one month when the training was over.

Results indicated that the mean scores before and after yoga on all the four sub-tests, namely on self-concept (2.69 and 3.18), on ability to handle crisis (2.61 & 3.51), on proper attitude towards proper evaluation of other persons (3.36 and 3.68) and on tenacity and perseverance (2.25 and 2.88) respectively differences on all the scores are significant at 0.01 level.

These results suggest that after training in yoga, considerable improvement had taken place in self-concept, in ability to handle crises in a positive way, in proper attitude towards proper evaluation of other people and improvement in perseverance and tenacity.

Malathi, Dadmodaran, Shah & others (1999) conducted a study on self-actualization and practice of yoga. The sample consisted of 48 subjects: male and female 24 each, who participated in integrated yogic practices daily for a period of 1 hour, for 5 days a week for a period of 4 months. The subjects, age ranged from 35 to 50 years. The Personal Orientation Inventory was used to measure the various dimensions of self-actualization before and after the training of yoga. Results revealed that at the end of four months, significant increase is observed in the mean percentile both in the basic scales namely, Time competence before and after yoga practice the mean scores 61.4 and 85.3 respectively, t=2.3, significant at P < .05 level, and on inner directedness before and after yoga practice mean scores 61.8 and 92.2 respectively, t = 2.3, significant at P < 0.05 level.

Further, out of 10 sub-dimensions, 7 dimensions percentile scores before and after the practice of yoga are significant at P< 0.05 level. The sub-dimensions are; self-actualizing values (44.6 and 72.6), spontaneity (47.2 and 66.3), self-regard (68.2 and 75.3), self-acceptance (65.5 and 80.2), synergy
(64.2 and 85.0), acceptance of aggression (45.4 and 68.5), and capacity of intimate contact (64.3 and 82.2) respectively. Whereas only on three dimensions i.e. existentiality (75.2 and 85.6), feeling reactivity (85.3 and 88.7) and nature of man (67.2 and 75.0) the percentile scores before and after yoga are not statistically significant. These results point out that practice of yoga helps in the development of self-actualization.

Mishra, Tripathi & Bera (2004) studied the impact of yoga on body image and self-concept among university women. For this purpose they selected 50 young women of 20 – 24 years of age from PG. departments of Utkal University. This was a longitudinal study for a period of 2 years i.e., from 1996 to 1998. It included pre-test – 1st year, post-test – 2nd year and follow up test – 3rd year. The selected sample was divided into two groups i.e. group A and group B, 25 each. There was no control group. Yoga training was imparted on both the groups every year for a period of 3 months. Two psychological tools namely body image scale and self-concept scales were administered to assess the impact of yoga. The t-test was employed for the analysis of data.

Results indicate significant difference between pre and post measures mean scores respectively for the combined group (A+B) in respect of body image sub-dimensions namely – body constitution (mean 31.86 and 36.72, t = 5.67), on complexion (mean 32.48 and 39.70, t = 5.54), on general health (mean 33.28 and 40.94, t = 5.34), on attractiveness (mean 30.44 and 36.90, t = 5.00), and on flexibility (mean 31.88 and 37.42, t = 5.22), significant at 0.001 level.

There are differences between post and follow up measures mean scores respectively for the combined group (A+B) in respect of body image on sub-dimensions like body constitution (mean 33.64 and 36.72, t = 4.45, P<0.001), and on remaining dimensions i.e., complexion (mean 35.84 and 39.74, t = 3.50), on general health (mean 36.74 and 40.94, t = 3.44), attractiveness (mean 33.52 and 36.96, t = 3.31), and on flexibility (mean 34.48 and 37.42, t = 3.35). All the differences are significant at 0.01 level.
It is also evident that there are significant differences between pre and post-measure mean scores respectively for the combined group (A+B) in respect of self-concept sub dimensions namely physical self (mean 52.32 and 56.98, t = 5.48, P<0.001). Whereas, in other dimensions like moral and ethical self (mean 53.94 and 57.98, t=2.97), personal self (mean 55.46 and 59.00, t=1.69), on family self (mean 54.58 and 57.76, t=3.47), and on social self (mean 56.52 and 60.08, t= 3.34), etc, the difference is significant at 0.01 level.

There are also the significant differences between post and follow up measures mean scores respectively for the combined group (A+B) in respect of self-concepts sub-dimensions such as on physical self (mean 54.38 and 56.98, t = 2.84, P < 0.01), while on family self (mean 56.08 and 57.56, t = 2.18, P < 0.05), on moral and ethical self (mean 56.16 and 57.98, t = 1.73, P < 0.10), on personal self (mean 58.04 and 59.00, t= 1.17) and on social self (mean 58.48 and 60.08, t = 0.53) the differences are not significant. From these results it is evident that the impact of yoga training on body image and self-concept is positive.

Rani & Rao (2005) studied the influence of yoga training on body image and depression. The study was carried out on a single group comprising 40 adults (23 males and 17 females) in the age range of 20-29 years. These subjects participated in a yoga training course for a duration of two weeks at the Institute for Yoga and Consciousness, Andhra University, Visakhapatnam. Body Image Scale and the Depressed mood / Depressive tendencies Scales (1992) developed by Alsaker were administered before and after the completion of yoga training programme.

The analysis of results revealed that the differences between the mean scores of body image scale before and after yoga training is 13.28 and 14.25 t = 1.37 significant at P < 0.05. On the depression scale, the obtained mean scores before and after yoga training were 16.93 and 14.8 t =2.09, P < 0.05. This indicates that there is a change in body image in positive direction and also reduction in depression as a result of yoga training.
Gupta (2006) conducted a study on the impact of yoga practices on adjustment patterns and self-concept. The subjects were administered Bell's Adjustment Inventory adopted by Mohsin and Husain (1970) and Mohsin's Self-Concept Scale on 100 subjects (60 males and 40 females). These selected subjects were students who were admitted to Hindi certificate course in yogic studies for four months at Bihar Yoga Bharati, Munger, Bihar.

The statistical 't' test reveals that the impact of yoga practices on different areas of adjustment is significant at .01 level. Subjects also showed significant promotion in self-concept at .01 level.

Jadhav & Havalappannavar (2006) conducted a study to find the impact of yoga on self-concept, selected 50 students of Bachelor of Naturopathy and Yogic Sciences, 25 boys and 25 girls and another set of 50 students of MBBS, 25 boys and 25 girls. Their age ranged from 19-23 years. The Self-Concept scale developed by Rastogi (1976) was administered on both the groups. Analysis of 't' test reveals that Bachelor of Naturopathy and Yogic Sciences students mean score 211.9 is higher compared to MBBS students mean score 140.0, t = 35.26, significant at $P < 0.01$ level. Further, it is also found that on all the ten sub-dimensions, Bachelor of Naturopathy and Yogic Sciences students mean scores are higher compared to the MBBS students and significant at $P < 0.01$ level. This denotes that yoga practice is very useful in the development of individual's self-concept.

Rani (2007) explored the impact of yoga training on triguna (Satva, Rajas and Tamas) and self-ideal disparity. Total sample consisted of 38 subjects 19 each in experimental group and control group. Hari Gopal's Self-Ideal Scale (1979) and Pathak and others Personality Inventory of Trigunas (1992) were administered on both the groups. Results reveal that in the control group for Tamas dimension the Spearman rank difference $P$ is 0.472, which is significant at 0.05 level. It means that control group subjects have a higher self-disparity and show high tamasic temperament. The control group and experimental group did not differ significantly in the self-ideal disparity.
The Z value obtained in Mann Whitney U test is 1.33, which is slightly less than significant level. It is also found that a correlation between self and ideal-self in the case of control group the P is 0.095, which is not significant.

2.2 Studies on Yoga and Anxiety

Kocher (1972) studied the effect of yoga practice on anxiety. 37 subjects were selected and assigned to experimental group (n=20) and control group (n=17). For the experimental group yoga training was given daily in the morning regularly for eight months. Cattle and Scheier's Anxiety scale (1963) was administered for both the groups before and after the practice of yoga. Results reveal that the experimental group mean score before the practice of yoga is higher i.e. 25.17 and after the practice of yoga lowered to 20.50 the mean difference is 4.67, t=3.27, P < 0.05.

Kocher (1976) in another study examined the impact of yoga on anxiety. 40 subjects were given yoga training daily for a period of 90 minutes, regularly for 3 weeks. Anxiety scale developed by Cattle and Scheier (1963) was administered on the subjects before & after yoga practice. The analysis of data reveals that the total anxiety mean score before yoga is 43.11 and after yoga 40.56, and the mean difference is +0.55, t = 10.20, P < 0.01. This proves that yoga practice helps in the decrease of anxiety.

Vicente Pedro de (1987) studied the role of yoga therapy in anxiety neurosis and depression. It observed 73 patients who came to clinic for the treatment of anxiety and depression in the Department of Physical Medicine, Seville, Spain. He introduced yoga therapy for 2 to 3 hours every week for one year.

The Study reveals that, at the end of one year 42% of the patients (31/73) showed very good improvement and they stopped all medicines, 52% of the patients (38/73) showed good response and reduced medicines to a great extent. While 6% (4/73) of the patients did not show any change, they maintained medicines as before. It was also evident that after one year, 35
patients (41%) were regular in their practice of various yoga techniques. 15 patients (19%) had irregular practice of yoga and 23 patients (33%) had given up yoga practice for one reason or the other.

Jangid, Vyas & Shukla (1988) studied the effect of Transcendental Meditation (TM) programme on the normal individuals. They selected 30 subjects and trained in TM daily for 6 weeks. Hamilton's Anxiety Scale was administered before and after the TM programme. Results show a significant decrease in the level of anxiety, t= 3.3, P < 0.01. This shows that practice of TM is useful in decrease of anxiety.

Shashi, Mohan & Chitra (1989) studied the effectiveness of yogic techniques in the management of anxiety. 48 patients suffering from anxiety neurosis were randomly assigned to yoga therapy (n=30) and drug therapy (n=18). Their age ranged between 18 – 47 years. The yoga group was given yoga training for 3 months regularly, 40 minutes daily, five days in a week. Foulds and Hope's Symptom sign inventory (1965) and Cattel and Scheier's IPAT anxiety scale (1963) were administered on them before and after yoga training. Results reveal that the difference between before and after yoga training mean difference scores on symptom sign inventory is 0.83, t= 4.23, P < 0.001 and on the IPAT anxiety scale 3.39, t = 2.39, P < 0.05. While in the drug therapy group pre and post-therapy mean difference scores on both the above mentioned tests are not statistically significant, it means that compared to drug therapy, yoga therapy is more effective in the management of anxiety.

Shashi, Chawla Dhar, & Katiyar (1991) made a comparative study of progressive relaxation and yogic techniques in the management of anxiety neurosis. Researchers selected 38 subjects of 18 - 44 years of age range and assigned them randomly to yoga practice group (n=20) and Progressive relaxation technique group (n=18). The IPAT anxiety scale, Cornell medical index, State -Trait anxiety scales were administrated on them in the beginning, and after three months of practice of yoga and relaxation. Result show significant difference score between before and after practice of yoga on IPAT anxiety scale (mean difference 11.1, t =5.75), on Cornell medical index (mean
difference 17.5, $t=5.86$), on state anxiety (mean difference 10.2, $t = 8.81$), and on trait anxiety (mean difference 10.5, $t=4.58$) All these 4 scores are significant at .001 level. On the other hand in progressive relaxation technique group the mean difference score on IPAT anxiety scale is 7.39, $t = 6.96$ and on trait anxiety 8.11, $t = 8.09$ both scores significant at $P < 0.001$ level. While on cornell medical index (mean 10.39, $t=5.00$ an: on state anxiety mean is 6.00, $t = 3.84$ significant at $P < 0.001$ level). These results indicate that anxiety and improved feelings of well-being are generally more comprehensive among yoga group than among the progressive relaxation group.

Zin, Massion, Kristeller, & others (1992) studied the effect of Meditation on stress. The 22 study participants were screened with a structured clinical interview and found that they are suffering from generalized anxiety disorder. Hamilton's Anxiety Scale and Depression Scale as well as Beck's Anxiety Inventory and Depression Inventory were administered on these subjects before and after the practice of meditation for three months. Results reveal significant reduction in anxiety and depression scores, with mean pre-treatment & post-treatment scores respectively, of 25.86 and 7.10 on the Hamilton anxiety scale ($t = 5.18, P < 0.001$) and 30.85 and 23.85 on the Hamilton depression scale ($t = 4.88, P < 0.001$). Mean pre-treatment & post-treatment scores, respectively, were 20.32 and 7.09 on the Beck anxiety inventory ($t = 6.14, P < 0.001$) and 16.18 and 8.18 on the Beck depression inventory ($t = 4.65, P < 0.001$). These represented mean reductions of 34%, 23%, 65%, and 49% respectively, on the four scales. Twenty of the 22 subjects showed a marked improvement in scores on the Beck and Hamilton anxiety depression scale.

Khumar, Kaur & Kaur (1993) studied the impact of 'Shavasana' on depression among university students. Researchers identified fifty female university students as cases of severe depression on the basis of diagnostic tests, and divided them equally into shavasana practice group & control group. Shavasana group practiced shavasana for half an hour every morning for a period of 30 days. The control group did not get any treatment. Both
groups were evaluated three times i.e, before commencement of practice, at the end of 15 days, and after 30 days of practice. Results show the differences in the 't' values between pre and mid- treatment (before the practice of shavasana and after practicing it for fifteen days), mid and post-treatment (after the practice of shavasana for fifteen days and again after practice it for a month) and pre and post treatment (before and after the practice of shavasana) evaluations are significant at 0.01 level (t = 6.15, 8.29, 3.66 respectively). These results indicate a significant decrease in depression scores on each stage of treatment in the experimental group. No significant differences are obtained in the control group.

Venkatesh, Pal, Negi & others (1994) made a comparative study of yoga practitioners and control group (non practitioner of yoga) on state trait anxiety. Sample, consisted of 80 subjects (40 males and 40 females) with the age ranging between 20-25 years. These subjects were equally divided into yoga group and control group. Yoga group practiced yoga continuously for more than one year, while control group did not practice yoga. Spielberger's State Trait Anxiety Inventory was administered on both the groups. Results indicate that the mean score of yoga group on state anxiety compared to control group is less i.e, 25.90 and 32.15 respectively, t =3.79 significant at .01 level. The same is true with the mean scores on trait anxiety i.e, 33.13 and 37.72, t = 2.70 significant at .01 level. The findings indicate that practice of yoga leads to reduction of anxiety.

Damodaran, Thatte, Verma & Patil (1995) made a study on the impact of yogic practices on the short- term memory and anxiety of students. The sample consisted of 120 students who were equally divided into yoga group and control group. These students belonged to 12-14 years age group section. Yoga group was trained in yoga for duration of 40-50 minutes daily for one month. Both the groups were assessed on state trait anxiety and memory tests for pictures, words, and delayed recall. Results show reduction in anxiety level in yoga group compared to control group. Improvement is also found in memory for visually presented words in yoga group. No significant difference was found between boys and girls.
Malathi, Damodaran, Shah, & others (1998) studied psychological changes at the time of examination in medical students before and after the practice of yoga and relaxation. Researchers selected 75 first year MBBS students and divided them into three groups of 25 each. The first group (Group- Y) practiced yoga for an hour at a time, 3 times a week, for a period of three months. The second group (Group-R) practiced relaxation for 30 minutes at a time, 3 times in a week for a period of three months. The third group (Group-C) was the control group. The students were asked to remain in a classroom and allowed to do whatever they wished to do, like reading, drawing etc., for about 45 minutes at a time, 3 times in a week for a period of three months. At the end of three months, Spielberger's State Trait Anxiety was measured a month prior to and on the day of second terminal examination and a month prior to and on the day of preliminary examination of first year MBBS. The changes in anxiety level before and after were compared in each group as well as amongst the three groups using paired 't' test and ANOVA.

Results show that the baseline anxiety mean score before the practice of yoga or relaxation a month before the examination was around 30 points in all the three groups. On the day of the examination this mean anxiety score increased by about 15 points in all the three groups and was around 45 points.

After the practice of yoga or relaxation, the mean anxiety score, a month before the examination was observed to be around 20 points in students practicing yoga (Group- Y) and around 24 points in students practicing relaxation (Group- R). This is in sharp contrast to the mean anxiety score of the control group (Group-C, 45 points). This difference in the baseline anxiety score is found to be statistically significant in both the groups (Group-Y: t = 4.8, df = 24, P < 0.001; Group-Y: t = 4.02, df = 24, P < 0.001). On the day of examination, the anxiety mean score increased by about 10 points and is around 30 in students practicing yoga (Group- Y) and around 35 points students practicing relaxation (Group-R). While in control group (Group-C) the mean anxiety score is around 50 points on the day of examination. This
difference is also found to be statistically significant ($F = 6.2$, $df = 2.72$, $P < 0.001$). These results prove that practice of yoga is more useful in reduction of the state trait anxiety at the time of examination compared to relaxation.

Malathi & Damodaran (1999) studied the effect of yoga on stress due to exams among medical students. They selected 50 first year MBBS students and assigned them equally to yoga group and control group. These students belonged to 18 and 19 years of age. The yoga group underwent practice of yoga for 1 hour thrice a week, for 3 months regularly. Spielberger's state-trait anxiety inventory (1970) was used to determine the anxiety score of both the groups on 2 occasions. First time before practice of yoga i.e., 1 month before the exams, which served as basal reading and on the day of exam to determine the anxiety state due to exam stress. Second time after practice of yoga i.e., one month before the exams which serve as new basal reading and on the day of exam to determine the effect of practice of yoga on the anxiety status at the time of exam.

The results reveal that first time before the practice of yoga, a month before exam (basal reading) anxiety mean score s 30.64 and 30.92 in yoga and control group respectively. On the day of exam the mean anxiety score rose to 46.21 and 46.75 in yoga group and control respectively indicating increase in anxiety status at the time of exam in both the groups.

After the practice of yoga a month before exam the mean anxiety score reduced to 20.30 in yoga group which is statistically significant at $P < 0.001$ level, as compared to the mean score prior to practice 30.64. On the day of exam the mean anxiety score is 46.75 prior to yoga practice and 30.84 in yoga group following the practice of yoga significant at $P < 0.001$ level. Where as, in control group a month before exam and on the day of exam in mean scores there is no significant change. This result confirms the benefits of practice of yoga.

Ray, Mukopadhyaya, Purkaystha, & others (2001) Studied the effect of Yoga on Anxiety. The study selected 54 course trainees with age ranging
between 20 - 25 years and assigned them to yoga group (n = 28) and control
group (n = 26) to assess the effect of yogic exercises on anxiety. The yoga
group practiced yoga for one hour every alternate day in a week (for 3 days a
week), for first 5 months of the course; the control group did not perform any
yogic exercises during this period. From the 6th t: 10th month control group
also practiced yogic exercises along with the yoga group.

Results reveal that there is a significant reduction in anxiety score in
male subjects at the 5th and 10th month (mean 25.20 and 25.60, P < 0.01)
compared to the beginning stage (mean 28.40) in yoga group. In control
group reduction is significant (mean 27.50 and 26.00, P < 0.05) only at the
10th month compared to the 5th month. This result indicates that practice of
yoga decreases the anxiety level of a practitioner.

Singh, Vempati, Sharma, & others (2003) explored the effect of a short-
term yoga based intervention on anxiety. Thirty eight subjects (21 male and
17 female), with age ranged between 23-70 years were selected. The 9 days
yoga intervention programme included asanas, meditation, lectures, films and
individual counseling. auto-suggestion and positive attitude were encouraged
throughout the course. Spielberger's State Trait Anxiety Inventory was
administered on the subjects in the beginning and on the last day of the
course. Results show that, before the practice of yoga the state anxiety mean
score was 1.78 and after practice of yoga it decreased to 1.48, significant at P
< 0.05 level. And the mean scores of trait anxiety before practice of yoga was
2.02 and after yoga practice it decreased to 1.89, significant at P < 0.05 level.
This suggests that practice of yoga leads to decreases in anxiety level.

Kamakhya (2004) studied the impact of Yoga on Stress and Anxiety.
He selected fifty two PG students (26 male and 26 female) of 20-30 years of
age and divided them into two groups namely, experimental group of both sex
20 each and control group (male 6 and female 6). The Experimental group
practiced 'Yoganidra' daily for half an hour (except on Sundays and holidays)
for 6 months. While, the control group did not practice it. After six months,
Mishra's Stress and Anxiety Scales were administered on both the groups.
From the analysis of 't' test it is observed that there is a significant decrease of stress level in experimental group compared to control group, the mean score is 4.5 and 7.5 respectively, t=7.89, P < 0.01. Whereas, in anxiety level the mean score of control group is 5.6 higher than experimental group mean 4.8, t = 1.86, significant at P < 0.05 level. Thus, yoga Nidra can be considered an effective practice for decreasing anxiety and stress.

Shrivastava & Meshram (2004) studied the effect of Yoga on anxiety of medical students. Investigators selected 50 First Year MBBS Students of 19 years age. Taylor's Manifest Anxiety Scale was administered on the participants before and after one month yoga training. Results show that the mean score of anxiety before yoga training was 37.32 higher compared to the mean score after practice of yoga i.e, 31.74, significant at P < 0.001 level. The results clearly indicate that, the practice of yoga has helped in decreasing the anxiety level of students.

Shanta Ashokumar (2006) studied the effect of yoga on anxiety in middle school students. 201 students were selected from those who have attended personality development course for 10 days residential course at Prashanti Kuteeram, Bangalore. Their age ranged between 9-13 years; among these, 114 students (boys 69 and girls 45) were assigned to control group and 87 students (boys 57 and 30 girls) were assigned to experimental group. Experimental group underwent the yoga module for personality development, and the control group had daily routine of non-yogic activities for promotion of positive health. The State-Trait Anxiety scale for children was administered on the second and the ninth day of the course. The Study indicates Yoga intervention decreases levels of State and Trait Anxieties. In experimental group the state anxiety mean score before the yoga practice is 32.54 higher than the after the yoga practice that is 27.16, significant at P < 0.001 level. Whereas, there is no significant difference in the trait anxiety score before the practice of yoga 38.92 and after the practice of yoga 34.09. The same trend is observed in the control group results for state and trait anxiety level. This
result indicates that state anxiety is decreased in the yoga group better than control group.

Gupta, Khera, Vempati, & others (2006) studied the impact of Yoga on State and Trait Anxiety. The sample consisted of 175 subjects (98 males and 77 females), their age ranged from 19-76 years. These subjects attended yoga camp comprising theory and practice sessions for 3-4 hours every day for ten days. The other group of 50 subjects selected as control group. The results of intervention reveal the mean score of state anxiety 39.6 and 34.1 before and after the practice of yoga respectively significant at P < 0.001 level. The mean score of trait anxiety 43.1 and 38.5 before and after the practice of yoga, respectively is also significant at P < 0.001 level. These results suggest that practice of yoga has greatly helped in decrease of anxiety in practitioners. In the control group there is no significant change found in the mean scores of the subjects.

Gupta and Gupta (2006) studied the effect of yogic meditation on psycho-physiological health of 60 male coronary patients. The selected sample was divided randomly and equally into control group and meditation group. The subjects were assigned to meditation group and were requested to practice meditation daily twice at home in the morning before breakfast and again in the evening after supper for about 25-30 minutes every time regularly for six months. Results show significant decrease after practice of meditation on depression scores i.e, 8.93 to 6.27, P < 0.01. The significant decrease is also found both in state anxiety mean 42.78, and 37.63, P < 0.01, as well as in trait anxiety mean, 41.64 and 36.12, P < 0.01 level. Further significant decrease is also found in 3 out of 4 anxiety components, viz., in somatic (mean 33.12 and 26.21, P < 0.01), behavioral (mean 31.42 and 25.89, P < 0.01), and in affective component (31.56 and 24.76, P < 0.01). No significant decrease is found in control group. These results clearly demonstrate that, yoga practice leads to a significant alleviation of anxiety and depression in coronary patients.
2.3 Studies on Yoga and Subjective Well-being.

Venkatesh, Pal, Negi, & others (1994) studied the effect of yoga on health. Investigators selected 80 subjects with equal number from both the sexes and randomly assigned them equally to yoga group and control group. Yoga group had been given yoga training regularly for one year. PGI Health Questionnaire N-2 (Verma 1978) was administered on both the groups. Results reveal that yoga group has scored less i.e., mean score is 3.20 compared to non-practitioners of yoga group 5.88, and $t = 2.03$, significant at .05 level. This lesser score in yoga group suggests that practice of yoga leads to improvement in general health of the practitioners.

Malathi, Damodaran, Shah, & others (2000) studied the effect of yogic practices on subjective well-being. Sample consisted of 48 normal subjects, (males 24 and females 24). Their age ranged from 35-50 years. These subjects were given training of yoga for a period of 1 hour, five days in a week for a period of 4 months. Sell and Nagpal's Subjective well-being Inventory was administered in the beginning and at the end of yoga practice on the subjects and results were compared.

Eleven dimensions of Subjective well-being are studied. The mean scores before and after the practice of yoga on positive factors of the subjective well-being inventory namely, general well-being (mean 5.3 and 7.5, $t = 2.8$), expectation and achievement congruence (mean 6.8 and 8.2, $t = 2.7$) and confidence in coping (mean 7.2 and 8.3, $t = 2.7$) is significant at $P < 0.01$. Improvement is noticed on all the 3 dimensions of subjective well-being. The mean scores are on transcendence (mean 5.8 and 6.5, $t = 2.1$) $P < 0.05$ level; on family group support (mean 6.8 and 7.2, $t = 1.4$) and on social support (mean 7.8 and 8.2, $t = 1.0$) are not significant. The mean score before and after practice of yoga on negative dimensions are; on inadequate mental mastery (mean 16.8 and 4.6, $t = 2.5$), on deficiency in social contacts (mean 5.8 and 4.5, $t = 2.7$) and on general well-being negative affect (mean 5.4 and 3.8, $t = 2.8$) significant at 0.01 level; there is a decrease in the negative dimensions namely, primary group concern (mean 5.6 and 4.6, $t = 2.4$) and on perceived ill health (mean 14.9 and 12.0, $t = 2.7$) significant at $P < 0.05$. The study indicates that the practice of yoga leads to improvement in subjective well-being.
The differences are significant in 9 dimensions and not in two dimensions. This shows that practice of yoga is very helpful in improvement of positive factors and reducing negative factors of the subjective well-being.

Khurana & Dhar (2000) made a comparative study of male jail inmates of Tihar jail. The experimental group consisted of those who practice Vipasana meditation. The control group did not practice Vipasana meditation. The parameters were assessed by using life satisfaction scale, Subjective well-being scale and Criminal propensity scale. It is noticed that after the Vipasana meditation practice, the level of criminal propensity came down, i.e. the experimental group's criminal propensity decreased and subjective well-being increased significantly as compared to those among control (non-Vipasana) group.

Ray, Mukhopadhyaya, Purkyastha, & others (2001) studied the yogic effect on physical and mental health of the young Mechanical Engineer fellowship Course Trainees. Investigators selected 54 trainees 20-25 years of age group. These subjects were divided into yoga group (23 males and 5 females) and control group (21 males and 5 females). Yoga group practiced yoga for one hour every alternate day, 3 days in a week, for first five months of the course. The control group did not practice yoga. From the 6th - 10th month of training both the groups practiced yoga. Subjective well-being inventory was administered on both the groups, at the beginning of course, after 5th month and 10th of training period. For analysis of the data, 't' test and ANOVA were employed. Results reveal that the mean scores on subjective well-being of yoga group in respect to male subjects are significantly better and higher i.e. 98.4 and 106.6, P < 0.01 in the 10th month compared to the 5th month. While in case of female, the mean scores of 10th month compared to 5th month are 100.0 and 106.6 respectively, P < 0.05. In the control group, no significant differences are found. This indicates that practice of yoga for a longer duration leads to a better subjective well-being.

Gopukumar & Ali (2002) conducted a study on the impact of meditation on Subjective well-being. The sample consisted of 67 students of 12th class, belonging to 16-18 years of age. These students were divided into two groups.
namely experimental group (n = 33, male 19 and female 14) and control group (n = 34, male 23 and female 11). Sell and Nagpal’s Subjective well-being inventory was administered in the beginning and after 40 days of practice of meditation on both the groups. The Mean, SE and Critical ratios were calculated.

The experimental groups mean score before and after the practice of meditation for 40 days shows that three out of eleven sub-dimensions i.e, transcendence (mean 11.70 and 12.81, CR= 1.92), deficiency in social contact (mean 9.25 and 8.21, CR= 3.15) and confidence in coping (mean 7.76 and 10.56, CR = 6.22) are significant at 0.01 level. Two dimensions, namely, inadequate mental mastery (mean 37.09 and 33.22, CR=2.17) and family support (mean 9.19 and 8.12, CR= 2.40) are significant at P < 0.05 level. This higher score after the practice of meditation shows improvement in practitioner’s subjective well-being. The scores on 6 out of 11 sub-dimensions of subjective well-being are not significant. And these dimensions are expectation achievement congruence, perceived ill health, general well-being, negative affect, social support, expectation achievement discrepancy and adequacy of social contacts.

Pareck, Gautam & Gautam (2002) studied the efficiency of the Sahaj Sidd Yoga Training (SSY) on health and subjective well-being. The sample consisted 20 volunteers, for whom 15 days training was given by a qualified yoga teacher. General Health Questionnaire, Beck Rating Scale, and Subjective well-being Inventory were administered on the volunteers before and after the yoga practice. Results indicate a quantitative and qualitative improvement in mental health of the volunteers.

Sharma, Manjunath & Bijlani (2004) conducted a study to evaluate the feelings of subjective well-being of 77 patients. An intervention composed of an integrated package of lecture / films, on the philosophy of yoga, practice and techniques of yogasana and meditation was given for a period of 9 days. Sell and Nagpal’s Subjective well-being was administered in the beginning and end of the 9 days yoga course. Results, reveal a significant improvement
in the general well-being, expectation achievement congruence, transcendence, primary group concern, and mental mastery. To find out whether this improvement in subjective well-being is due to the yoga course, the same questionnaire was administered twice on a control group of 52 subjects with a gap of 9 days. No significant change is found in this group.

Kamakhya (2006) studied yoganidra and its impact on well-being. The sample consists of 40 students of both sex equally and formed the experimental group and another set of 12 students (6 male and 6 female) formed the control group. These subjects belonged to 20-30 years of age group. Experimental group practiced yoganidra daily for half an hour except on Sundays and holidays for six months. While for the control group no treatment is given. After practice of yoganidra for 6 months, Verma and Verma’s PGI General well-being test was administered on both the groups. Results revealed that after practice of the yoganidra, mean score of experimental group 15.75 is higher than the control group mean 13.80, t = 3.48, significant at P < 0.01 level. It shows that yoganidra is useful for the improvement of practitioner’s well-being.

Kapoor & Shukla (2006) studied the impact of Meditation on mental health. They selected 40 subjects and divided them into two groups i.e., meditation practitioners (n =20) and non-practitioners of meditation as control group (n =20). Cornell Medical Index Health questionnaire was administered on both the groups. Results reveal that average score of those persons who meditate is low, and average score of those persons who did not meditate is high. Low score on Cornell Medical Index Health Questionnaire indicates sound mental health, and high score indicates poor mental health. Thus, it is clear that the effect of meditation is positive on mental health. Meditation helps in reducing stress and anxiety and in improving overall psychological health of a person.

Gupta, Hinger, Mittal, and Pareek (2007) studied the effect of Yoga and Naturopathy on Stress and Life Satisfaction. They selected 52 women and divided them equally into experimental group and control group. For
experimental group, one month yoga training was given. Cohen and Hoberman's (1983) Perceived Stress Scale and Diener and others (1985) Satisfaction with Life Scale were administered on experimental group before and after intervention and for control group one month before after. The mean score of stress at pre-stage was (22.08) and the mean score of stress at post-stage was (14.65) and 't' value was (4.86, P < 0.01). The mean score for life satisfaction at pre-stage was (22.31) and the mean score of life satisfaction at post-stage was (27.11) and the 't' value (3.65, P < 0.01). These results show that yoga and naturopathy intervention has helped subjects in reducing their stress and increasing their life satisfaction level in the experimental group. There was no significant difference found in the control group.

2.4 Studies on Yoga and Other Variables

Studies related to impact of Yoga on Physiological and Psychological aspects are reviewed here under two sub-sections: A) Effects of yoga practice on physiological aspects and, B) Effects of yoga practice on psychological aspects.

A. Effects of yoga practice on physiological aspects

Selvamurthy, Nayar, Joseph & others (1983) made a comparative study on 30 men (20-30 years of age group) to find the effect of yogic practices on physiological aspects. The selected subjects were divided into two groups. Group 'A' subjects served as control group and they performed the physical training exercises of army routine, daily for one hour. For group 'B' yogic training was given daily for 1 hour in the morning for a period of six months. Heart rate, blood glucose, blood cholesterol were measured before and after yoga practice. Results show that heart rate mean score before practice of yoga was 147.00 and after the practice of yoga it decreased to 137.00, significant at P < 0.01 level. Blood glucose level before the practice of yoga was 74.00 and it got reduced after the practice of yoga to 69.00, significant at P < 0.05 level. The blood cholesterol before the practice of yoga mean score was 170.00, and it significantly decreased after the practice of
yoga to 154.00, P < 0.001. This indicates that regular practice of yoga leads to improvement in various physiological functions of the body of the practitioners. No significant change was found in control group.

Latha & Kaliappan (1991) studied the effect of relaxation, yogic pranayama, and thermal bio-feedback techniques in the management of stress and high blood pressure. They selected 14 hyper-tensive patients, seven of these patients (Experimental group) underwent yoga training weekly twice for a period of six months. Other seven patients served as comparison (Control group) and met once a week to record their BP, and to have general talk with them. These patients age ranged from 45-70 years. Case history, blood pressure, stress questionnaire and somatic symptoms scale was administered before and after intervention.

Results reveal that the mean score of systolic BP is (154.08 and 148.32, t = 2.52, P < 0.05) and diastolic BP (102.50 and 99.32, t = 1.91, P < 0.01) baseline and treatment phase respectively, it was found that there was a significant decrease in BP of yoga group. The mean score of systolic BP of yoga and control group (149.36 and 152.16, t = 2.69, P < 0.01) shows significant decrease. There was no significant change in diastolic BP the mean scores 99.68 and 100.12 respectively, t = 6.06 not significant. In yoga group, the mean score of somatic symptoms before and after the practice of yoga 16.7, 8.71 respectively, t = 4.61, P < 0.01 significant. The mean score of stress expressed by yoga group before 11.2 and after 11.14 is not significant. These results show that yoga training is beneficial in the management of high BP.

**Impact of yoga on heart rate, blood pressure, and galvanic skin response**

Malathi, Damodaran, Shah & others (1998) studied the effect of yoga and relaxation on physiological changes. Investigators selected 75 first year MBBS students and divided them into three groups - the first group (Group Y) practiced yoga for an hour at a time, three times a week for a period of 3 months. The second group (Group R) practiced relaxation for 30 minutes at a
stretch, three times a week for a period of 3 months. The third group (Group C) was a control group, students were asked to remain in a classroom and were allowed to do whatever they wished to do, like reading, drawing etc., for about 45 minutes at a time, three times in a week, for a period of 3 months. At the end of three months heart rate, blood pressure and galvanic skin resistance were measured a month prior and on the day of 2nd terminal examination and a month prior and on the day of preliminary examination of first year MBBS.

Heart rate was measured before the practice of yoga or relaxation. The baseline mean pulse rate measured a month before the examination was around 78 beats/minute. This increased around 102 beats/minute on the day of examination in all the three groups. After the practice of yoga or relaxation for three months the baseline pulse was found to be 72 beats/minute and 74 beats/minute in students practicing yoga and students practicing relaxation respectively. This difference in the baseline pulse rate, though very small, was found to be statistically significant in both the groups (Group Y-1 = 2.02, df = 24, P < 0.05, Group R-1 = 2.12 df = 24, P < 0.05). On the day of examination the mean pulse rate was found to be around 82 beats/minute in students practicing yoga, and 85 beats/minute in students practicing relaxation as compared to the mean pulse rate of around 104 beats/minute in the control group. This difference was also found to be statistically significant (F = 4.4, df = 2.72, P < 0.001).

Systolic and diastolic blood pressures were measured before the practice of yoga or relaxation. The baseline mean blood pressure a month before the examination was around 120/80 mm of Hg, which increased around 130/90 mm of Hg at the time of examination in all the 3 groups. After the practice of yoga or relaxation for 3 months the baseline BP was found to be 115/74 mm of Hg and 116/76 mm of Hg in students practicing yoga and the students practicing relaxation respectively. This difference in the baseline BP was found to be statistically significant in both the groups (systolic BP, Group - Y - t = 3.2, df = 24, P < 0.05 Group R - t = 3.2, df = 24, P < 0.05 and diastolic BP. Group- Y- t = 2.8, df = 24, P < 0.05, Group- R- t = 2.6, df = 24,
While at the time of examination, the mean BP was found to be around 125/82 mm of Hg in students practicing yoga, and 126/82 mm of Hg in students practicing relaxation as compared to the mean BP of around 132/92 mm of Hg in the control group. This difference was also found to be statistically significant (systolic: $F = 4.2$, df = 2.72, $P < 0.05$ and diastolic: $F=4.8$, df=2.72, $P < 0.05$).

Galvanic Skin Response is one of the important parameter of sympathetic activity and anxiety level. It was measured before the practice of yoga or relaxation. The baseline mean GSR a month before the examination was around 64 K–Ohms, which decreased around to 40 K-Ohms at the time of examination in all the three groups. After the practice of yoga or relaxation it was found to be around 102 K–Ohms, and 83 K-Ohms in students practicing yoga and students practicing relaxation respectively. This difference in the baseline GSR was found to be statistically significant in both the groups (Group – Y- $t = 5.2$, df, $P <0.001$ Group – R- $t = 4.2$, df = 24, $P < 0.001$). At the time of examination the mean GSR was found to be around 90 K–Ohms in students practicing yoga and 67 K–Ohms in students practicing relaxation as compared to mean GSR of around 41 K–Ohms in the control group. This difference was also found to be statistically significant ($F= 11.5$, df = 2.72, $P < 0.001$).

Rastogi, Gupta, Saxena, & others (2004) studied the effect of pranayama training on pulmonary function and breath holding time in male medical students. For this purpose the investigators selected 20 students who were divided into two groups of ten each; control group and pranayama training group. Pranayama training was given for 6 days a week at a fixed time each day for two months. After two months pranayama group significantly fell in pre and post-exercise rate after pranayama training as compared to pre-training levels is ($P < 0.001$). There is a significant increase in pranayama practice of Tidal value ($P < 0.001$), The Forced expiratory volume in first and second is ($P < 0.001$), Forced Vital capacity is ($P < 0.05$), Peak expiratory flow rate is ($P < 0.001$) and Breath holding time is ($P < 0.001$). Thus, it can be concluded that Pranayama training can alter various
pulmonary function increasing endurance time for a better physical performance.

Malhotra, Tandon & Singh (2004) studied the effect of individual yogic asanas on blood pressure. This study of individual asanas was undertaken to find the effect of changing postures on the blood pressure. 25 first year MBBS students of age group of 16 to 19 years performed Sukhasana, Vajrasana and Dhanurasana in the Dept. of Physiology. Their blood pressure was measured by the mercury sphygmomanometer by standard method while the asanas were being performed. During Sukhasana B.P. was the lowest $116.4 + 7.21 / 76.1 + 7.34$. The pressure increased slightly in Vajrasana to $119.5 + 7.82 / 81.4 + 6.2$. It was the highest at the time of Dhanurasana performance ($125.2 + 8.23 / 84.8 + 7.78$). Thereby, indicating that the pressure is lowest in Sukhasana and this asana may be performed regularly in meditation for calming the overworked heart.

**Yoga and Cardiac Recovery Index**

Muralidhara & Ranganathan (1982) studied the effect of yoga practice on cardiac recovery index. They randomly selected ten medical (1st year MBBS) students and treated them as experimental group. Another set of 10 students were selected and were treated as control group. Their mean age range was 18-19 years. Experimental group underwent yoga training for a period of 2 1/2 months. Yoga training was imparted daily, for a duration of one hour in the evening. Cardiac recovery index was assessed before and after the training period for both the groups. The *t* test analysis show the difference after the yoga training in the experimental group which is statistically significant $t = 5.57$, $P < 0.001$. No significant difference was found in control group.

Balasubramanian & Panasare (1991) studied the effect of Yoga on Aerobic and Anaerobic power of Muscles. The sample consisted of 17 healthy medical students (Both boys and girls) aged 16 to 18 years. They were given yogic training for one hour daily, from 5 to 6 p.m., for six weeks. Results reveal the effect of Yogic exercises on Aerobic power. The mean score before
yoga training was 1.95, and after yoga training it increased to 2.29, \( P < 0.001 \) highly significant. The mean score of an anaerobic power before practice of yoga was 74.53 and the score after practice of yoga was 54.11. The difference is highly significant at \( P < 0.001 \) level. These results indicate the improved cardio respiratory efficiency and increase in muscle blood flow as a result of yogic practices.

**Yoga and Asthma**

Satyaprabha, Murthy & Murthy (2001) studied efficacy of Naturopathy and Yoga in Bronchial Asthma. They selected 37 patients (19 men and 18 women) who were admitted in the Institute of Yoga and Naturopathy, Bangalore, for the period of 21 days. The male and females were investigated on day of admission and on the day of discharge on different parameters namely vital capacity, forced vital capacity, forced expiratory volume, maximal voluntary ventilation, and on tidal volume. The mean scores for vital capacity of males and females on the day of admission and the day of discharge are (male 3.00 and 4.03) female 2.75 and 3.15. The mean scores on forced vital capacity of male and female on the day of admission and on the day of discharge are (male 3.07 and 4.16, and female 2.85 and 3.65. The mean scores on forced expiratory volume of male and female on the day of admission and on the day of discharge are (male in first second 2.37 and 3.71), and female 2.08 and 3.14. The mean scores on maximal voluntary ventilation of male and female on the day of admission and on the day of discharge are (male 57.89 and 75.30, and female 73.65 and 85.91). The mean scores on tidal volume of male and female on the day of admission and on the day of discharge respectively are highly significant at \( P < 0.001 \) level. This shows that Naturopathy and Yoga helps improving health and in alleviating the symptoms of disease by acting at physical and mental levels.

**Yoga and Reaction Time**

Boraker & Pedanekar (2003) studied the effect of Pranayama on visual and auditory reaction time before and after 4 weeks of pranayama practice for
20 minutes, daily twice once morning and once in the evening. 30 normal healthy male and female medical students of 17 – 19 years were selected and trained. The statistical analysis of ‘t’ test shows decrease in visual reaction time from 0.196 seconds to 0.141 seconds. Auditory reaction time decreased from 0.188 to 0.139 seconds. Both values are statistically significant at P < 0.001 level. This decrease in reaction time indicates an improved sensory motor performance and can be due to an enhanced processing ability of the central nervous system.

B. Effect of Yoga practice on Psychological Aspects.

Yoga and Personality

Verma & Verma (1989) compared 20 adult female yoga practitioners with a matched control group on some personality tests. The subjects age ranges between 22-35 years. Results reveal that those women who were practicing yoga showed better mental health, recording higher scores on the positive personality variables like achievement value (mean scores of yoga and control group = 10.10 and 9.00 respectively, t = 2.24, P < 0.05) and well-being (means scores of yoga and control group = 19.95 and 16.35 respectively, t = 8.75, P < 0.01). While yoga group scores lower mean = 16.90 on learned helplessness a negative personality variable compared to the control group mean score = 23.05, t = 5.34, P < 0.01. These results indicate a positive effect of yoga practice on the personality development of an individual.

Sridevi & Rao (1998) studied the effect of Meditation on personality. They selected 140 subjects from female employees of two pharmaceutical companies in Andra Pradesh, and were tested on Cattell’s 16 Personality Factor Questionnaire. The subjects age ranges between 20-28 years. These subject were divided into four groups namely, long-term meditators (3 – 8 years of meditation practice, N = 40), short-term meditators 6-12 months of meditation practice, N = 40), beginners, N = 20), and control (No practice, N=40). The meditators were chosen from an industry where they had established a meditation center and all the employees who had joined work
had to practice it regularly. And the control group subjects were selected from another industry manufacturing the same products and situated in the same place where no one practiced any form of meditation.

It was found on the whole that there was a significant positive change in personality factors as a function of the length of meditation across groups. For example, the long term meditators and control group differed significantly on factors C, (2.14, P < .05) F (2.94, P < .01) G, (3.01, P < .01) L, (3.13, P < .01), M (2.15, P < .05), N (2.75, P < .01) O (2.66, P < .01), Q2 (2.13, P < .05), Q3 (2.65, P < .01) Q4 (3.30, P < .01) and second order factors I (3.82, P < .01), and II (2.72, P < .01). This indicates that long-term meditation group compared to control group appears more emotionally stable, introspective, conscientious, trusting, careful confident, self-sufficient, controlled, relaxed and introverted compared to controls.

Bhogal, Oak and Bera (2002) made a comparative study of yoga practitioners and non-practitioners to find the effect on personality. They selected 25 students from Kaivalyadham, Lonavala, Maharashtra (institution) who had undergone 9 months yoga training, and 19 students as controls. Kundu’s Neurotic Personality Inventory (1965) was administered on them before and after the completion of 9 months training. Results reveal that the experimental group has shown a significantly lower mean score after the practice of yoga 139.32 and before practice of yoga it was 170.40, t = 2.90, P < 0.01. While in case of control group the pre-test mean score is 207.70 and post-test 205.40, t=0.36 is not statistically significant. It denotes that the practice of yoga leads to decrease in (students) neurotic tendency.

Yoga Practice and Values

Bhogal, Oak & Bera, (2002) studied the effect of yoga on value system. The sample consisted students of experimental group (n=25, 19 males and 6 females) trained in yoga for 9 months at Kaivalyadhram, Lonavala and control group students (n=14, 10 males and 4 females) selected from local college. Ojha’s Value Test (1971) was administered on both the groups in the beginning, middle and at the end of the course. Results show that the total
scores of all the three values in 3 testing i.e., pre-test mean score 94.52, post-
test I - 135.84 and post-test II - 110.92, $X^2$ value = 16.24, $P < 0.01$ this
comparison also reveals that there is a statistical difference among all the 3
values ($P < 0.01$). No significant difference was found in control group. The
study reveals that yoga group gave more importance for social value followed
by religious, and then aesthetic value.

**Yoga Practice and Emotional Maturity**

Havalappanavar (2002) studied the effect of yoga on emotional
maturity. It is a comparative study of 2 groups, i.e., a group practicing yoga
(experimental group) and non practitioners of yoga (control group). He
administered Bhargava and Yashvir Singh’s emotional maturity scale (1984)
on both the groups. Findings reveal that there is a significant difference
between the two groups in terms of emotional maturity. The mean value of
yoga practicing group is 58.93. And the mean value of yoga practitioner group
is 41.08. The 't' value = 16.33, is significant at $P < 0.001$. This indicates that
the group practicing yoga is found to have higher emotional maturity than the
non - practitioners of yoga.

**Yoga Practice and its Effect on Memory**

Jangid, Vyas & Shukla (1988) studied the impact of Transcendental
Meditation on Memory. They selected 30 normal subjects. The subjects were
given training in TM daily for 6 weeks. Wechsler’s Memory Scale (1945) was
administered before and after the TM practice. Results show increase in
memory quotient, which reached at the level of statistical significance ($t= 3.5,
$P < 0.01$). This indicates that TM is useful in the improvement of memory
power.

**Yoga and Scholastic Achievement**

Branes & Nagarkar (1989) studied the impact of yoga on education and
scholastic achievement. They selected 40 students (15 boys and 25 girls),
age ranging from 13-14 years. These students were trained in yoga for a
period of 4 months. The selected students were tested on scholastic achievement test and non-verbal test of intelligence before and after yoga training. The obtained 't' values on SAT (3.76, P < 0.05) and NVT (2.198, P < 0.05) reveal that there is a positive effect of yoga practice on scholastic achievement.

**Yoga Practice and Alcohol Dependency**

Raina, Brig, Chakraborthy & others (2001) studied the effect of yoga therapy in alcohol dependence syndrome. 50 patients who were diagnosed as alcohol dependent based on DSM –III R criteria were taken up for study. All these patients were males, who were admitted in a military hospital. There were no civilian subjects. Group I (experimental group, n = 25) was given yoga therapy for 8 weeks. Group II (control group, n = 25) was given physical training exercises for 8 weeks. Both groups were assessed at the end of 8 weeks.

After the yoga therapy for 8 weeks 40% subjects recovered, 40% improved and 20% remained unchanged. And after physical training exercise for 8 weeks, the physical training exercise group showed 16% subjects recovered, 13% improved and 52% unchanged. The higher effect of yoga therapy over that of physical training exercises in the present study is statistically significant ($X^2 = 6.346, P < 0.05$).