

CHAPTER- 8

Appraisal

8.0 APPRAISAL OF THE STUDY

The improvement of anthropometric parameters including the trend of weight reduction continued during the follow up period in Yoga group. Also body composition and the psychological parameters improvement sustained in the followup. This showed the long term effect of yoga practices. One of the concerns in adapting the yoga training for clinical improvement is that the daily spending of more than one hour in yoga practices will deter them. Our study found that after 14 weeks of intervention, the subjects continued the yoga practice at their home. Further the improvement obtained during the intervention was sustained during followup.

The body weight, BMI, MAC of left and right sides, SKF cumulative, suprailiac SKF, Percentage body fat, Obesity degree, and psychological scores of PSS AAQW, GHQ, PHQ were all improved (with significance) both after intervention as well as in follow up period, unlike in the Control group. This shows that the IAYT is sustainable. Also the significant suprailiac skinfold reduction underscore the sustainability and improvement, in the abdominal fat reduction by yoga practice.

The linkage of psychological parameters and metabolism is also revealed in the significant reduction in PSS and other scores throughout the study period.

8.1 SUMMARY

The improvements in anthropometric body composition and psychological parameters are matching and Yoga group got more positive effects compared to Control group. The beneficial effects obtained during the intervention were reduced during follow up period. However the Yoga group had the retained most of the beneficial effects after the follow up.

The long term effect of yoga practices were observed in anthropometric body composition and on psychological parameters.

The important findings are summarized as below:

- 1) In the literary search of ancient texts it was found that obesity was considered as an unhealthy condition in the ancient India and the scriptures considered the natural way of healing for the diseases. The *Haṭha* yoga texts prescribed various yoga practices for obesity directly and indirectly.
- 2) Due to IAYT intervention the body weight reduced in the Yoga group and the improvement was sustained after three months.
- 3) The weight reduction was due to fat reduction. Further there was abdominal fat reduction evidenced by improvement in suprailiac skin fold thickness reduction, sustained during follow up.
- 4) The psychological score of GHQ-12 PHQ-9 and PSS were consistently improved along with improvement in the fat reduction.
- 5) The psychological parameters are correlated to body composition and anthropometric parameters.
- 6) The improvement during followup period in anthropometric body composition and psychological parameters shows the sustainable effect of yoga practice.
- 7) The stress reduced along with fat reduction as evident in perceived stress scale score.
- 8) The stress causes HPA axis misalignment and deregulation of hormonal secretions and metabolic disorders. This leads to disorder in fat metabolism associated disorder in eating behavior. The stress reduction due to intervention made the corrections in HPA axis misalignment evidenced by the significant improvements in anthropometric body composition and psychological parameters consistently. Thus both physical and mental health improved.

- 9) The Bone mass and Mineral mass were decreased initially and then started increasing. There was no consistent change found IPAQ, MAAS, PSQI, BRQ and other parameters but the trend of improvement was observed.
- 10) The segmental percentage water and segmental percentage body fat were reduced during the followup showing the long term effect of yoga practice.
- 11) The left mid arm circumference is negatively correlated with perceived stress score. PSS and AAQW scores were found positively correlated. Further the Fat free mass was found positively correlated with BMR.

8.2 CONCLUSIONS

The IAYT yoga training is effective in improving the anthropometric parameters of male obesity in urban setting. The weight BMI waist circumference and skin fold thickness were decreased. The psychological stress related to body weight difficulties and perceived stress were also reduced along with the improvements in anthropometric parameters, by the yoga practice.

Yoga training is effective for controlling the obesity in male and improving their quality of life. The body composition parameters and sleep quality were improved due to yoga training. Future studies can be taken in different cross sections and in different cities where eating habits and consumption of junk food could be different. The range of age among subjects can be reduced in future studies.

Yoga practice for obese male in urban setting will be useful for management of obesity in urban areas.

8.3 LIMITATIONS OF THE STUDY

The age range was wider in this study. However the minimisation of cofactors was done to have the balance between the groups. The physical activity of Control group was unsupervised and food intake data of both the groups were self- reported. Lipid profile tests or blood pressure test were not included,

8.4 STRENGTHS OF THE STUDY

The anthropometric body composition and the psychological parameters were studied together for male obese from an urban setting.

It was a parallel group randomised controlled trial and also registered in Clinical Trials Registry of India.

8.5 FUTURE DIRECTIONS

i) The study can be extended to different urban cities where the food habits are different.

Also narrow age range studies for male obese can be done.

ii) Along with anthropometric and body composition parameters blood pressure, pulse rate and lipid profile can be also assessed which can reflect the changes in physiological parameters.

iii) The measurements of stress hormone levels and profile of eating disorder will be rewarding.