

**ASSESSMENT OF INTEGRATED APPROACH OF YOGA THERAPY
ON OBESITY USING ELECTRO PHOTONIC IMAGING**

Dissertation Submitted by

ARAKSHITA SAHANI

Under the Guidance of

Dr. Judu Ilavarsu, Ph.D

Dr. Guru Deo, Ph.D



TOWARDS THE PARTIAL FULFILLMENT OF THE MASTER'S DEGREE

Master of Science (Yoga Therapy)



To

SWAMI VIVEKANANDA YOGA ANUSANDHANA SAMSTHANA

(Declared as Deemed University under Section 3 of the UGC Act, 1956)

#19 Eknath Bhawan, Gavipuram Circle, K G Nagar

BENGALURU - 560 019

INDIA

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CERTIFICATE

This is to certify that Arakshita Sahani is submitting this literature research “**ASSESSMENT OF INTEGRATED APPROACH OF YOGA THERAPY ON OBESITY USING ELECTRO PHOTONIC IMAGING**” in partial fulfilment of the requirements of Master of Science (Yoga Therapy) with effect from January 2016 to December 2017 by Swami Vivekananda Yoga Anusandhana Samsthanam (SVYASA) under the division of Life Sciences and this is a record of work carried out by him in this university.

Dr. Judu Ilavarsu, Ph.D

Dr. Guru Deo, Ph.D.

Research Guide

Research Co - Guide

DECLARATION

I, hereby declare that this study was conducted by me at Swami Vivekananda *Yoga Anusandhana Samsthana* (S-VYASA), Bangalore, under the guidance of Dr. Judu Ilavarsu, Ph.D. and Dr. Guru Deo, Ph.D. S-VYASA University Bangalore.

I also declare that the subject matter of my dissertation entitled “**ASSESSMENT OF INTEGRATED APPROACH OF YOGA THERAPY ON OBESITY USING ELECTRO PHOTONIC IMAGING**” has not previously formed the basis of the award of any degree, diploma, associate-ship, fellowship or similar titles.

Place- Prashanti kutiram
SVYASA University
Bangalore

Date:

Arakshita Sahani

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Arakshita Sahani
M.Sc. Yoga Therapy

STANDARD INTERNATIONAL TRANSLITERATION CODE USED TO
TRANSLITERATE SANSKRIT WORDS

a	=	अ	ña	=	ड	pa	=	प
ā	=	आ	ca	=	च	pha	=	फ
i	=	इ	cha	=	छ	ba	=	ब
ī	=	ई	ja	=	ज	bha	=	भ
u	=	उ	jha	=	झ	ma	=	म
ū	=	ऊ	ñ	=	ञ	ya	=	य
ṛ	=	ऋ	ṭa	=	ट	ra	=	र
ṝ	=	ॠ	ṭha	=	ठ	la	=	ल
e	=	ए	ḍa	=	ड	va	=	व
ai	=	ऐ	ḍha	=	ढ	śa	=	श
o	=	ओ	ṇa	=	ण	ṣa	=	ष
au	=	औ	ta	=	त	sa	=	स
m̐	=	अं	tha	=	थ	ha	=	ह
ḥ	=	अः	da	=	द	kṣa	=	क्ष
ka	=	क	dha	=	ध	tra	=	त्र
kha	=	ख	na	=	न	jña	=	ज्ञ
ga	=	ग						
gha	=	घ						

ABBREVIATION

WHO-:	World Health Organization
BMI-:	Body Mass Index
E-AMS-:	Exercise- Avoidance motivation scale
IAYT-:	Integrated approach to yoga therapy
EPI-:	Electro Photonic Imaging
GDV-:	Gas Discharge Visualization
IJOY-:	International Journal of Yoga
PR-:	Pulse Rate
SYS-:	Systolic Blood Pressure
DIA-:	Diastolic Blood Pressure
RR-:	Respiratory Rate
BHT-:	Breath Hold Time
WT-:	Weight
SS-:	Symptom Score

ABSTRACT

ASSESSMENT OF INTEGRATED APPROACH OF YOGA THERAPY ON OBESITY USING ELECTRO PHOTONIC IMAGING

Background and Introduction

Obesity is becoming a serious global public health issue especially in developed countries. According to the World Health Organization (WHO), most of the diseases that today's generation is suffering from, obesity is one of the major causes. Today among 2.1 billion people, nearly 30% of the world's populations are either obese or overweight.

EPI or Electro Photonic Imaging system allows for direct, real-time viewing and analysis of changes in the energy field of human. The instrument Gas Discharge Visualization (GDV) that is based on EPI principle, measures electron emission from fingertips. Variation in images correspond to changing health status in different organ system, here we determined the characteristics of these GDV images in obesity participants.

Methods

Thirty-five participants with the age range from 20 to 60 years Obesity participants at Arogyadhama, in Prashanti Kuttiram of SVYASA Bangalore, Karnataka, India had participated in this study. All participants were given Integrated Approach of Yoga Therapy (IAYT) practice every day for one week according to Arogyadhama Schedule. The Gas Discharge Visualization assessments were taken before and after yoga.

Result

There were significant reduction in the scores of Endocrine System Balance, Pancreas, and Digestive System-Balance. Other parameters like Systolic Blood Pressure, Diastolic Blood Pressure, Breath Holding Time, Weight, Body Mass Index, Mid Arm Circumference and Exercise- Avoidance motivation scale were found to be significantly changed. Also Hip circumference and Waist circumference slightly changed after the one week of IAYT intervention.

Conclusion

The present study suggests that one week integrated Yoga therapy can improve the overall general well-being. This study provides strong evidence for use of GDV parameters in understanding obesity. Also findings show that one week of IAYT may bring a positive change in clinical parameters in obesity. Furthermore it may help in prevention and management of obesity.

Keyword

Obesity, Integrated approach of yoga therapy, Electro Photonic Imaging

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CHAPTER -1

1.1.0 Introduction

Obesity is defined as an abnormal or excessive fat accumulation of that may impair health (Agrawal & Alam, 2015). The development of obesity not only depends on the balance between food intake and caloric utilization but also on the balance white adipose tissue, which is the primary site of energy storage, and brown adipose tissue, which is specialized for energy expenditure. Sources say that obesity has emerged as the plague of humankind and is a chronic disease, like other killer diseases (Eknoyan, 2006).

In western lifestyle also impact in our daily food consumption to take more fatty diets coupled with a sedentary life pattern. In the US, Saudi Arabia, overweight and obesity represent the major non-communicable health disorder. The worldwide prevalence of obesity more than doubled between 1980 and 2014.

Overweight and obesity are caused to more deaths worldwide than underweight. Most of the Wolds's population live in countries where overweight and obesity kill more people than underweight and it was found that all luxurious lifestyle and middle-income countries are suffered. A total of 191 countries are including in the sub-regional grouping, which has been constructed on the basis of observed infant mortality rates and life expectancies (WHO, 2017).

Adolescent obesity prevention remains a high priority given negative health consequences of overweight and obesity both during adolescence and later in life. It has been suggested that prevention efforts should be community-based to meet the complex and multidimensional nature of obesity (Hoare, 2014).

The epidemic of obesity in adolescents has been expanded in the past several years. Increases in body fat mass during adolescence may be related to the development and acceleration of cardiovascular risk factors. The primary cause of obesity is a chronic storage of excess energy and physical inactivity which plays very vital role in the development (Seo, 2012a).

1.1.1 Cause of Obesity

- Lifestyle changes between 1972-2000
- Increase in sedentary Lifestyle
- Decrease physical activity
- Intake of calorie remaining same
- Increase in fat intake
- Most manual jobs have been replaced by mechanized jobs
- Transportation to school /workplace universally by use of motor car/Bus/Bicycle
- Increase in hours for activates: TV viewing/computer

1.1.2 Body Mass Index (BMI)

It is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

The WHO definition is indicated that if the BMI greater than or equal to 25 is overweight and if it is grate than or equal to 30 is obesity. It is the help for a measure of overweight and obesity as it is the same for both sexes and for all of the adults. However, it also considered a rough guide because it may not proper indication of fatness in different individuals.

- **Lifestyle**

Obesity is progressive more seen due to the inactive lifestyle, processed food. The ready availability of these foods, the constant stream of food advertising, the provision of large position sizes as a marketing technique, and the immediate and widespread availability of "fast foods" all mean that individuals have to be constantly on guard against the natural tendency to eat. It is perhaps not unexpected that as societies develop, it is the more disadvantaged who prove particularly prone to obesity (James, 2004).

1.1.3 Classification of obesity

Obesity can be classified into the group on the basis of body fat distribution and the waist -to-hip-circumference ratio. This simple classification is easily understood by the public and also predicts the risk of obesity-related health problem.

Classification	BMI [Kg/mt ²] Principle cut-off points
Underweight	<18.50
Severe Thinness	<16.00
Moderate thickness	16.00-16.99
Mild thickness	17.00-18.49
Normal range	18.50-24.99
Overweight	>25.00
Pre-Obese	25.00-29.99
Obesity	>30.00
Obese Class-I	30.00-34.99
Obese Class-II	35.00-39.99
Obese Class-III	>40.00
Morbid obesity	40.00-49.9
Super obesity	>50

(Queensland, 2013).

1.1.4 Limitation of BMI

1. BMI can tell you if you're carrying too much weight but it can't tell if you're carrying too much fat. The BMI can't tell the difference between excess fat, muscle, or bone.
2. The measurement of waist circumference provides information regarding fat topography where body fat is stored. Measuring waist circumference is the most practical and clinically useful way to assess the distribution of body fat (Chan, Watts, Barrett, & Burke, 2003; Eknoyan, 2008).
3. To measure your waist and hip circumferences: Use a tape measure to check your waist circumference by measuring the distance around your waist just above the belly button.
4. Use a tape to measure your hip circumference by measuring the distance around the largest area of your hips at the widest part of the buttocks.

If the result is over 1.0 you would be considered to be at higher risk for heart disease and other health problems. Researchers have called having a high WHR the “**apple shape**” because the weight is centred in the abdomen. People who are apple-shaped are at higher risk than those with their weight entered in their hips (**also known as “pear” shaped**). The Centres for Disease Control (CDC) considers the following WHR to be safe: for men, a ratio <0.90, for women, a ratio a ratio <0.80

Note:-Waist to Hip Ratio or WHR is calculated by dividing the measurement around your waist by the measurement around your hips.

1.1.5 The various type of categorize in obesity given below.

- **Apple shaped**

Also, it's called, android, abdominal, or central obesity People with "Apple shape", their body fat is distributed mainly on the upper trunk, the chest, and abdomen giving the typical apple shape. This kind of obesity mainly affected on males.

- **Pear Shape**

Also called, Gynoids' or peripheral, obesity the body fats distributed mainly on the lower trunk, hip, and thigh which are given typical shape. This kind of obesity mainly affected in females (Nagendra & Nagarathna, 2014).

- **Mixed type**

Some person neither belongs to Android or to Gynoid category. Their body weight from head to toe looks like barrel .the fat tissues in their body hinder the movement of the entire internal organ and consequently affect their healthy functioning.

1.1.6 Complications

- **Cardiology**

Obesity is associated with increased cardiac arrhythmias, congestive heart failure, angina pectoris, myocardial infarction etc.,(Harrison, Fauci, & Isselbacher, 1998; Haslam & James, 2005).Increased atherosclerosis, abnormal lipid profile, and hypertension. All these factors increase the sudden risk of death in obese individuals (Darvall, Sam, Silverman, Bradbury, & Adam, 2007; Harrison et al., 1998; Haslam & James, 2005).

- **Reproductive system**

Irregular and an ovulation cycles are more common in obese females. Females with central or visceral fat have the higher level of testosterone and females with glutei femoral obesity have higher levels of testosterone hormone. T3 levels are increased by overfeeding (obesity) and decreased in starvation (Harrison et al., 1998; Haslam & James, 2005).

- **Psychiatry**

Social stigma is always the big concern for obese individuals and sometimes an individual can land up in Obesity. Obesity associated with obesity is more in women. Obesity hypoventilation syndrome and bronchial asthma are two other known entities associated with asthma (Haslam & James, 2005).

- **Orthopaedics**

Low back pain (Molenaar, Numans, Van, & Grobbee, 2008) are common problems in obesity patients. Urology& Nephrology: Erectile dysfunction (Esposito, Giugliano, & Giugliano, 2004), urinary incontinence (Husnkaar, 2008), chronic renal failure (Ejerblad et al., 2006).

- **Medical problems leading to obesity**

Some medical problems, such as arthritis, can lead to decreased activity that may result in weight gain. Some medications can lead to weight gain if it is not compensated through diet or activity. These medications include some antidepressants, anti-seizure medications, diabetes medications (insulin), antipsychotic medications, beta blockers.

Damage to hypothalamus due to some trauma, surgery or destructive lesion can result in obesity. This hypothalamic obesity is characterized by excessive hunger and disturbance of autonomic nervous system resulting in increased parasympathetic activity and reduced sympathetic activity.

- **Stress and Obesity**

Obese subjects with uncontrollable stress, frequently have mild hypercortisolism. This hyper cortisol along with visceral obesity increases the risk of the cardiovascular and another squeal.

- **Genetic and environmental**

The most common causes of obesity are genetic and environmental. The current result is almost certainly a combination of two factors. It dedicated to contributes various health conditions. Obesity may cause many diseases, like cardiovascular, respiratory and lower back pain. Those person having obese they have full of negative quality of life and also create social discrimination. The obesity epidemic results from many factors coming together, the solution needs to focus on all levels aspect (Nishida, 2003).



1.1.7 Prevalence of Over Weight and Obesity

In India also the burden of obesity is significant. Obesity is more common in urban residents, followed by peri-urban/slum and lowest among rural residents. Generalized obesity: Urban (men: 30.7%, women: 38.8%), peri-urban/slum: (men: 16.7%, women: 26.1%) and rural (men: 9.4%, women: 14.1%). Abdominal obesity: Urban (men: 30.9%, women: 57.8%), peri-urban/slum: (men: 17.9%, women: 41.1%) and rural (men: 12.2%, women: 29.6%). This data clearly shows that more females are affected in comparison to males (WHO 2012). The prevalence of overweight was high in Kerala (27%) followed by Tamil Nadu (23%) and Andhra Pradesh (19%). The prevalence of central obesity was 43% in Kerala, 25% in Tamil Nadu, 18% in Utrakhand, 14% in Andhra Pradesh and Maharashtra, 12% in Mizoram and 11% in Madhya Pradesh (Deepa, Pradeep, Anjana, & Mohan, 2011).

According to the World Health Organization (WHO), today generation suffering most of the disease from that one of the big causes is Obesity. Today among 2.1 billion people, nearly 30% of the world's populations are either obese or overweight. The study was conducted in 2013 reports that rates of overweight and obesity among adults have increased for both men (from 29% - 37%) and women (from 30% - 38%). In developed countries, men had higher rates of overweight and obesity, while women in developing countries exhibit higher rates. Looking at individual countries, the highest proportion of the world in obese people (13%) live in the United States of America, China and India together represent 15% of the world's population (Sarvottam & Yadav, 2014).

The study showed that among Indian s, both abdominal and central obesity are present in male and female (Deepa, Farooq, Deepa, Manjula, & Mohan, 2009). Generalized obesity is more in male and abdominal obesity in the female. Also, studies showed that Asian Indians have some special features of obesity regarding the effect of excess body fat (Misra et al., 2009). The limits of normal Body Mass Index (BMI) are reduced in Asian Indians than in white Caucasians considering percentage body fat.

1.2.0 Electro Photonic Imaging

The electro photonic camera instrument based on analysis is a state of the art computerized system to study human energy fields. This system allowed for direct, real-time viewing and analysis of changes in the energy field of human and other organisms. It is developed in 1995 in Russia by a team of Professor Konstantin Korotkov. It is based on the achievements of the quantum electro photonic imaging (EPI). This instrument approved by Russian Health Authorities for general as for general use. It uses for clinical diagnosis and utilizes almost

instant response. Without any pain, it will capable of reading measurements and it gives perfect accurate data for further procedure.

This instrument was made on quantum theory which is produced Electro photonic imaging (EPI). The Electro photonic camera is one type of instrument for using analysis human energy fields. Using the Kirlian effect, this technique goes far beyond traditional photography in many ways (Korotkov, 2007).

This instrument provides real-time viewing and analysis of changes in the energy field of human and other organisms. This statement is analyzed by sophisticated software. This instrument is importantly implication for all health-related conventional and complementary medicine on this instrument EPC the following research was done on the field such as medicine, "energy medicine-athletic training, biophysics, parapsychology and other areas and recently a new application of EPC for remote detection of Human Emotions named "EPC Sputnik" has been developed. The EPI system provides perfect reliability source of information to the researcher (Korotkov, 2014).

EPI technique is based on Kirlian Effect which is the visible electro-photonic glow of an object in response to pulsed electrical field excitation. The EPI (Electro Photonic Imaging) system provides non-invasive, painless and almost immediate assessment which can highlight the potential health abnormalities prior to even the earliest symptoms of an underlying condition and suggests courses of action.

EPI utilizes a weak, electrical current applied to the fingertips for less than a millisecond The response to this stimulus is the formation of a variation of an electron cloud composed of energy photos. The electronic "bright" of this discharge (invisible to the human eye) is captured by an optical CCD camera system and then translated into a digital computer file (Korotkov, 2007).

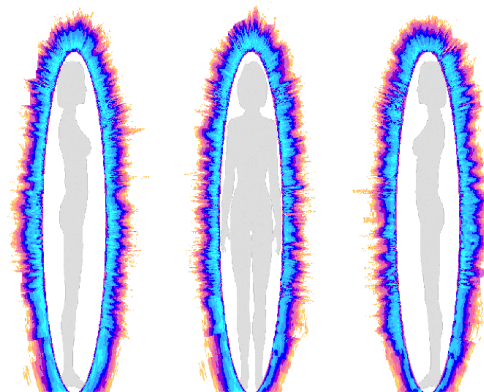
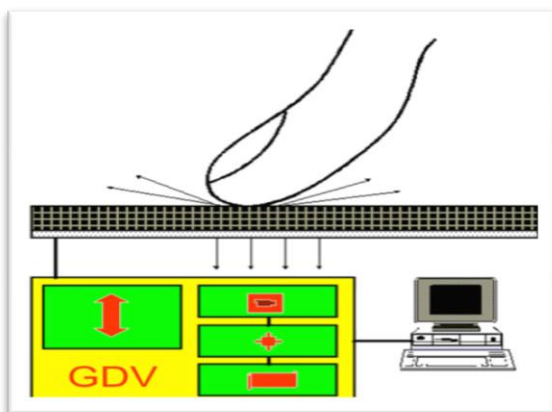
1.2.1 Advantages of the EPI/GDV bio electrographic technique

- Screening evaluation of the psycho physiological state and functional activity of an individual.
- Non-invasiveness, safety and complete sterility of the technique.
- Assessment of the anxiety and stress levels
- Quantitative information on the energy homeostasis level both for the Organism as a whole and for individual functional systems.
- Supervising of individual's reaction towards regulating of various treatment procedures, allopathic and homeopathic medicines, and mild informational influences.

- During the investigation of an individual's state only measurements from his/ her fingers and toes have to be taken (Korotkov, 2014).

Tools and Its functions:-

- The KTI Company provides EPI Camera Pro instrument was used for the study, together with GDV software, such as GDV Screening, GDV Diagram, and Left-Right Hand imbalance.
- Reading without filters was also made obtaining data about subject's sympathetic nervous systems and psychosomatic nervous system and psychosomatic states. For taking the Bio photon energy in the form of GDV grams we use GDV camera as an instrument which utilizes a high frequency (1024Hz), high- voltage (10Kv), input to the finger which is placed on the electrified glass lens of the camera.
- The causes of corona discharge of light-passing off plasma to current outward from the fingertip. The light emitted from the finger is detected directly by the charge-coupled detector, which measures extremely low-level light. The signal from the CCD is sent directly to a computer, and software analysis is done to calculate a variety of parameters that characterize the pattern of light emitted, colour enhancement to enable subtle feature such as intensity variations of the aura to be perceived. In measuring human participants, the electro photograph of all ten fingers is made and analyzed (Korotkov, 1998a, 1998b).



1.2.3 IAYT (Integrated approach of yoga therapy)

IAYT is a multi-dimensional treatment modality that caters at different levels of existence. IAYT is basically built on the concept of Panca koça (Five aspects of human existence) explained in Taittiriya Upanisad. The five layers of existence are Annamaya koça (physical level), Pranamaya koça (Subtle energy level), manomaya koça (emotional level), vijñanamaya koça (intellectual level) and anandamaya koça (level of Bliss). Imbalance at the emotional level and creates disease known as Vyadhi says Yoga Vasishtha. The IAYT is an approach which consists is not only dealing with physical layer but also include techniques to operate on different layers of our existence. Hence IAYT can help to remove wastage excessive fats in the overweight and obesity to work at the physical level and also notional correction to get their good health and healthy.

1.2.4 Need The Study

Today we are familiar with scientific evidence on Integrated Approach to Yoga Therapy which are useful for not only communicable but also non-communicable disease as well (Satyapriya, Nagarathna, Padmalatha, & Nagendra, 2013). An early study showed on overweight and obesity, how yoga works on it and how it is able to reduce body weight and BMI parameters and also it helped to rectify lifestyle. Assessment of obesity using electro photonic imaging technique is not attempted earlier. So this study is trying to show how the subtle energy levels act on obesity after the one-week IAYT intervention.

CHAPTER- 2

2.1.0 Ancient Literature Review

Obesity is a blessing of the Modern Age of Machines and Materialism. The impact of modern civilization has absolutely changed our lifestyles. Most of the peoples are forced to live a sedentary life. Obesity is a type of disease, which invites many major & minor manifestations. Ayurveda has described one of such disorder as Sthaulya.

Obesity is emerging as an important health problem worldwide. It is a metabolic symptom complex disorder which has affected every corner of the World. Obesity associated with troublesome problems like Hypertension, Diabetes Mellitus, Osteoarthritis and dyslipidemia having a considerable impact on the personal and national economy. No system of medicine including allopath and related health sciences can completely manage the disease or restrict it (Karade, Jawale, & Kawarkhe, 2017).

Adults will be overweight and more than 700 million will be obese. Management of obesity (should) continues to be a challenging problem for healthcare professionals, professionals, patients and their families. Intervention efforts have included a diversity of approaches including genetic, pharmacological, diet, lifestyle counselling and behavioural therapy for patients and their families. Till date, a universally indicated or successful solution for control of sthoulya could not be obtained (Kulkarni, Dubewar, Shirke, & Yadav, 2015).

2.1.1 Definition of Sthaulya

Maharshi Charaka was the person to give the appropriate and precise definition of sthaulya

मेधोमांसातिवृद्धत्वाच्चलस्फिगुदरस्तनः ।

अयथोपचयोत्साहो नरोतिस्थुल उच्यते ॥ च स्ब् २१-९ ।

medhomāmsātivrddhatvāccalaspfigudarastanaḥ |
ayathopacayotsāho narotisthula ucyate || ca sb 21-9 |

He defines Atithsulya as a person who an account of the inordinate Meda & Mamsa having dropping buttocks, abdomen and breast, whose increase bulk is not matched by corresponding to energy. In other words, the person is called as over obese, due to excessive increase of fat and muscle, has pendulous buttock, abdomen & breast and suffers from deficient metabolism and energy.

2.1.2 Aetiology.

अव्ययामदिवास्वप्नश्लेशमलाहाहर सेवितः ॥

मदुरोन्नरसः प्रायः स्नेहान्मेदः प्रवर्धयित् ॥ १ ॥

*avyayāmadivāsvapnaśleśmalāhāhara sevitaḥ ॥
maduronnarasaḥ prāyaḥ snnehānmedaḥ pravardhayet ॥ 1 ॥*

The absence of physical activity, sleeping during the day and intake of food which increase Kapha make the end product of digestion to become abnormally sweet which in turn causes medas (fat) Various etiological factors for obesity have been described in the Ayurvedic classic texts. Charaka Samhita mentions dietetic, lifestyle, psychological, and hereditary components as causative factors (Shastri and Chaturvedi, 2004) other factors may involve vitiation of Meda and kapha, the formation of Ama Anna Rasa (toxic build-up in the physiology) (Shastri, 2003) defective intercellular metabolism (Gupta, 1951).

2.1.3 Classification of Obesity

The Ayurvedic texts identify generalized classes of obesity. The Charaka Samhita describes patients as Sthaulya (obese). And Ati Sthaulya (extremely obese). Vagbhata, one of the three prominent authors of the classical Ayurvedic texts, categories obesity as Hina sthulya (mild), Madhya Sthaulya (moderate), and Ati sthulya (Severe) and describes the dietary and life-style related management for diseases caused by over nutrition (Gupta, 1951, 1982).

शुले स्युर्दुस्थरा रोगा विसर्पाः सभगन्धराः ।

ज्वरातिसारमेदार्शः श्लीपदापचिकामला ॥ योर् । र । मेदोरोगः ॥८ ॥

*śule syurdustharā rogā visarpāḥ sabhagandharāḥ ।
jvarātisāramedārśaḥ ślīpadāpacikāmalā ॥ yorr | ra | medorogaḥ ॥8 ॥*

The imbalance in the Dhatus that occurs in obesity gives rise to dyspnoea, fever, gastric, disorders, anal fissure, diabetes boils and abscesses etc. (Gupta, 1951). Sushruta Samhita also mentions Vata Vikara (neurological deficits) as a complication of obesity and asserts that obese individuals will die of one of the fore mentioned disorders/ disease (Shastri & Chaturvedi, 2004). Charaka Samhita mentions a number of diseases that are generated as a result of over nutrition; diabetes, diabetic boils urticaria patches, itching, anaemia, fever, skin diseases, dyslexia, anorexia, drowsiness, impotency, lassitude, heaviness in the body, obstruction in the sense organs and channels of the body, disorders of consciousness, sleeping

etc (Shastri & Chaturvedi, 2004). Due to malfunctioning of Agni and formation of Ama (accumulation of toxins), complications such as indigestion, diarrhoea, haemorrhoids, other gastrointestinal disorders, etc., can emerge.

आव्यायामदिवास्वप्न श्लेश्मलाहारसेविनह्

मधुरोन्नरसः प्रायः स्नेहान्मेदो प्रवर्धयेत् ॥ १ ॥

āvyaāyāmadivāsvapna śleśmalāhārasevinah

madhuronnarasaḥ prāyaḥ snehānmedo pravardhayet || 1 || ma.ni.ch-34, shloka1, pg-589, |

मेदसावृतमार्गं त्वात्पुष्यन्त्यन्ये न धातवः

मेदश्चु चोयते तस्मादशक्तः सर्वकर्मसु ॥ २ ॥

medasāvṛtamārga tvātpuṣyantyanye na dhātavaḥ

medaśtu coyate tasmādaśaktaḥ sarvakarmasu || 2 || ma.ni.ch-34, shloka-2, pg-589, |

क्षुद्रश्चासत् शामोहस्वप्न क्रथनसादनिः ।

युक्तः क्षुत्स्वेद दौर्गन्ध्यैर अल्पप्रानोस्त्वमैथुनः ॥३ ॥

kṣudraścāsatṛ śāmohasvapna krathanasādaniḥ |

yuktaḥ kṣutsveda daurgandhyair alpaprānoslvamāithunaḥ ||3 || ma.ni.ch-34, shloka 3, pg-589, |

मेदस्तु सर्वभुतानमुदरेश्च स्थितम् ।

अत एवोदरे व्रद्धिः प्रायो मेदस्विनो भवेत् ॥ ४ ॥

medastu sarvabhutānamudareśva sthitam |

ata evodare vradhdiḥ prāyo medasvino bhavet || 4 || ma.ni.ch-34, shloka 4,pg-589, |

मेदसावृतमार्गत्वाद्वायुः कोष्ठे विशेषतः ।

चरन् सधुक्षयत्यग्निमाहारम् शोषयत्यापि ॥ ५ ॥

medasāvṛtamārgatvāvdāyuh koṣṭhe viśeṣataḥ |

caran sadhukṣayatyagnimāhāram śoṣayatyāpi || 5 || ma.ni.ch-34, shloka 5, pg-589, |

तस्मात् स शिघ्रं जरयत्याहारमभिकाङ्क्षति

विकाराम्श्चाप्नुते घोरान् कान्श्चित् कालव्यतिक्रमात् ॥ ६ ॥

*tasmāt sa śīghra jarayatyāhāramabhikāṅkṣati
vikārāms̄rcāpnute ghorān kānśricata kālavyatikramāta ॥ 6 ॥ ma.ni.ch-34, shloka 6, pg-589, 1*

एतावृषद्वकरौ विषेशादग्निमात्रहतौ ।

एतौ तु दहतः स्थूलां बनदावो वनं यथा ॥ ७ ॥

*etāvṛṣadravakarau viṣeśādagnimārtou ।
etau tu dahataḥ sthūlāṁ banadāvo vanam yathā ॥ 7 ॥ ma.ni.ch-34, shloka 7, pg-589, 1*

मेदस्यतिव सवृध्दे सहसैवान्निलादयः ।

विकारान् दग्गणान् कृत्वा नाशयन्त्याशु जिवितम् ॥ ८ ॥

*medasyatīva savṛdhde sahasaivānnilādayaḥ ।
vikārān darṅāna kṛtvā nāśayantyaśu jivitam ॥ 8 ॥ ma.ni.ch-34, shloka 8, pg-589, 1*

मेदोमासातिव्धत्वच्चलस्फिगुदरस्तनह् ।

अयथोपचयोत्साहो नरोस्ति स्थूला उच्यते ॥ ९ ॥

*medomāsātīvdhtvaccalaspfigudarastanah ।
ayathopacayotsāho narosti sthūlā ucyate ॥ 9 ॥ ma.ni.ch-34, shloka 9, pg-589, 1*

Meaning:

Reasons for diseases related to fat are written as follows, according to mähdhava nidhän, lack of exercise, day sleeping, consumption of a cough producing food, sweet food, oily and heavy food, that is difficult to digest, due to which the medhägñi is not working properly , other juices are not nourished ; only fat and fat is accumulated all over the body. One bloats up like a balloon. That's why the obese person is not energetic in doing work. Besides this, shortness of breath, greed, attachment, sleep, fatigue, thirst, hunger, bad body order, and smelling armpits, obesity results in all these harmful effects.

Fat is accumulated in the naval region and subtle bones that's why the obese person tends to put on weight on the stomach and his stomach becomes big. Due to fat accumulation, väyu region obstructs the nourishment of the next dhātu and the other dhātu as fat sits in the stomach increasing the jaöuarägñi. Food is not digested properly .hence more ama is created

and they feel hungry again and again. If they do not eat food at that time gas is formed that makes them feels restless and uneasy.

Agni (the digestive power of the body) and vāyu, both are important and great troublemakers. These when increase or aggravated, in the fat person's body, damage the body like the fire that catches in the forest. In this way other dhātu do not get proper nutrition, only fat increases too much, due to which vata dosa gets aggravated suddenly, and so many dangerous diseases capture the body due to which life energy is reduced drastically.

2.1.4 Sign and symptom of the obesity

Too much of increase in fat and flesh leads to obesity, Obese people's body, like buttocks hips, thighs, stomach, and breasts become bouncy. It means that hips become very heavy stomach is protruding out, and breasts are hanging loosely. The rest of the organs and parts of the body also become inactive, like it was said previously that an obese person seems like covered with cow dung or looks like a football around all over. Besides this, he is not enthusiastic, and mental capability also is reduced. He becomes dull. Hence one who is obese initially shows enthusiasm, in a moment, but the next moment he feels lethargic and helpless. Such a person is known as the obese person. One who is obese gets criticism and is always under inferiority complex and an introvert.

2.1.5 Health according to yoga

The concept of health according to yoga is also about balance. More specifically yoga defines health as a state of complete harmony of five different aspects of our personality also called Kosa or sheats. It refers to balanced functioning of all physiological functions of the body. Ayurveda, A holistic system of medicine that included yoga health in this verse.

समदोषः समाग्निश्च समघातुमलक्रियः ।

प्रसन्नात्मेन्द्रियमनाः स्वस्थ इत्यभिधीयते ॥ सुश्रुतसंहिता ॥१५॥४१॥

*samadoṣaḥ samāgniśca samadhātumalakriyaḥ ।
prasannātmendriyamanāḥ svastha ityabhidhiyate ॥ suśrutasaṁhitā ॥15॥41॥*

In Sanskrit, “Sama” means “Balanced.” In the sloka, this balance is described at different levels: Samadoñā (the proper balance of the three Dosa vāta, pitta and kapha).

Sama – Agni (balanced metabolic activity).

Sama- Dhātu (balanced functioning of the tissues), and

Sama- Malakriyā (balance process of excretion).

Also Prasanna Ātma – Happy soul, Prasanna Indriya – Sense and Prasanna Manah – Happy mind.

when the vitiating factors of the body and the environment are in balance, digestive fire (metabolism) is in a balanced condition, the balanced condition of all tissues which constructs our body, and the exertion of all waste products in proper time and clearly. With these entire, if a person is pleasant in mind, calm in spirit, then only that condition can be considered svāsthya (balanced).

According to Ayurveda, the depression is categorized by the suppression of one's prana of life force energy. Through prana, we are all will to live. When it is unbalanced, there is a lot of desire or loss of desire to participate in life's activities. People always undergo the stress due to low of ojas and low of prana. True depression is different than lethargy or sluggishness those are not willing to do work or loss of motivation. This situation does not produce always suffering. This condition we called melancholy it may even exist with feeling that everything is fine the way it is. There is a lack of desire for growth and change. There is a general loss of motivation. Some consider this to be a mild form of depression. From an Ayurvedic perspective, this is a Kapha-type of depression categorized by high ojas in combination with low prana. We could say that kapha (stagnation) is blocking vata (life energy). This is a condition of complacency and does not become severe.

CHAPTER- 3

3.1.0 Scientific Literature Review

In a study assessing the social variation in attitudes to obesity in children, poorer psychological well-being was seen in treatment seekers when compared with population-based obese and normal weight control (Wardle, Volz, & Golding, 1995).

A stress reduction and Relaxation program conducted at the Community Health Centre in Meriden showed the significant decrease in medical and psychological symptoms and improvement in self-esteem after 8- weeks of intervention (Roth & Creaser, 1997).

Abdominal obesity is associated with overstimulation of the HPA axis to chronic stress that alters the diurnal cortisol secretion. Abdominal regulation of the HPA axis and perceived stress-dependent cortisol levels are strongly related to perturbations of the endocrine axis as well as abdominal obesity with metabolic abnormalities (Bjorntorp, 1996,Perez, 2002; Rosmond, Dallman, & Bjorntorp, 1998).

Dr.korotkov advised practicing various therapies such as bio filed therapy, hypnosis and qigong(pattern of Chinese mediation breathing) shows it can alter the human energy field in a positive way following a particular intervention which is useful to the subject for enhancing health or healing (Korotkov,2002).

Medical researchers have reported that Yogasanas reduce the amount of cholesterol and liquid fats in the blood and help towards harmonizing the inner body mechanism. Particularly in women, increased weight may be connected with imbalances in the hormones of the reproductive systems. Asanas rectify the hormonal imbalance and massage the integral organ (Muktananda, 2003).

Persistent Yoga practice for four or more year was found to be associated with a 3.5 lb. lower weight gain among normal weight participants when compared to an 18.5 lb lower weight gain amongst overweight participants in a review of health status done in 15,550 adults (Springer & Hauser, 2006).

The integrated approach to yoga therapy can improve hot flushes and night sweats. It also can improve cognitive functions such as remote memory mental balance attention and concentration delayed and immediate recall, verbal retention and recognition tests (Chattha, Nagarathna, Venkatram, & Nagendra, 2008).

The short-term health impact of a yoga and diet change program on obesity shown significant change on BMI (1.6%), waist and hip circumferences, fat-free mass, total cholesterol (7.7% decrease), (HDL) cholesterol (8.7% decrease), fasting serum leptin levels (44.2% decrease) and an increase in postural stability and hand grip strength (Telles, Visweswaraiiah, Balkrishna, & Kumar, 2009).

The study was done to test the effect of an 8-week of yoga-asana training on body composition, lipid profile, and insulin resistance (IR) in obese adolescent boys. Twenty volunteers with body mass index (BMI) greater than the 95th percentile were randomly assigned to yoga (age 14.7 ± 0.5 years, n=10) and control groups (Age 14.6 ± 1.0 years, n=10). The yoga group performed exercises three times per week for 8 weeks. After yoga training, body weight, BMI, fat mass, body fat % was significantly decreased and fat-free mass and basal metabolic rate were significantly increased than baseline valued. FM and BF % were significantly improved in the yoga group compared with the control group ($p < 0.05$) (Seo, 2012b).

This can be clearly observed as the smoothening of the energy field by the pre and post-Energy Field Images. The chakras also indicate inner empowerment. Physiological and Psycho-Emotional State of Volunteers happens. Energy intensity increased during the course of the program. Entropy reduces during the course of the program and stabilizes (Deshpande, Madappa, & Korotkov, 2014).

The study was aimed at examining the effect of some yogic practices (Surya Namaskara, Anulom-Viloma pranayama) on aggression level of adolescents. 30 adolescents were conveniently selected and were randomly assigned to experimental groups. The yogic practice was allowed among participants for 25 days. Pre and post measurement were collected on the logical memory of the participants by using aggression Scale developed by KM. Roma Pal. The result showed a statistically significant decrease in post anxiety level of participants on $p < 0.01$ level of significance (Singh, 2015).

Telles et al conducted an intensive residential program on 47 obese participants and showed a decrease in BMI (1.6 percent) waist and hip circumferences, fat-free mass, total cholesterol (7.7 percent decrease), high-density lipoprotein (HDL) cholesterol (8.7 percent decrease), fasting serum leptin levels (44.2% decrease) and increase in postural stability and hand grip strength within 6 days (Telles et al., 2010).

The effect of fast and slow pranayama practice on cognitive functions in healthy volunteers was shown significant in reduction of the percent of reaction time more in the fast pranayama group as compared to that in slow pranayama group. The study showed beneficial effects of (PSS), BMI, waist to hip ratio (Sharma, Subramaniam, Sahai, & Thangavei, 2014).

Among traditional lifestyle modifications, yoga is a low cost, simple to administer, nonpharmacological, the popular behavioral intervention that can lower blood pressure in prehypertensive HIV- infected adults with mild-moderate CVD risk factors. The resting systolic and diastolic blood pressures improve more ($p=0.04$) in the yoga group (-5 ± 2 and -3 ± -1 mmHg respectively) (Mondy et al., 2010).

3.1.1 Table of Scientific Literature Review

Sl. No	Author	Title of Study	Result	Conclusion
1	(Rani, 2017).	Obesity and its control through yogic practices	There was a significant decrease in Body weight, BMI, fat mass body fat percent and cholesterol level and the significant increase in fat-free mass and basal metabolic rate in Experimental yoga group compared to control group.	These reviews have contributed a lot to form a large body of research regarding the Positive Health Benefits of Yoga. Yoga is supposed to play a vital role in the promotion of physical and mental health and treating many other disorders.
2	(Rshikesan & Subramanya, 2016).	Effect of Integrated Approach of Yoga Therapy on Male Obesity and Psychological Parameters-A Randomized Controlled Trial	The anthropometric and psychological parameters were improved in both the groups but changes were significant in the yoga group.	The IAYT for the obese male in the urban setting will be effective and it's reduced related problems.
3	(Patel & Kumar, 2016).	A study on the effect of Yoga and diet- control on Body mass index and cholesterol level of the Obese Youth.	The BMI level has significant changes. $P < .01$ and Blood cholesterol level of the subjects are also significance change $p < .01$	Regular practice of Yoga not only helps in better metabolism but it also regulates the digestive process. Effect of Yogic Intervention significantly reduces the General Body weight of the subjects.
4	(Kushwah, Srinivasan, Nagendra, & Ilavarasu, 2016).	Journal of Ayurveda and Integrative Medicine Effect of yoga-based techniques on stress and health indices using electro photonic imaging technique in managers	Cyclic Meditation has produced a highly significant reduction in stress level which can show in GDV EPI parameter.	The investigations in this study suggest that Cyclic Meditation Practice reduces stress and improves health.
5	(Thiyagarajan et al., 2015).	Additional benefit of yoga to standard lifestyle modification on blood pressure in pre-hypertensive	The result indicates efficacy of non-pharmacological intervention and the	Further, the reduction in systolic BP was significantly more in LSM+Yoga group (6mm

		subjects: a randomized controlled	additional benefit of yoga to standard LSM	Hg) as compared with LSM group (4 mm hg). In addition, 13 pre hypertensive
6	(Neatam, Yadav, Khadgawat, Sarvottam, & Yadav, 2015).	Interleukin-6, vitamin D & diabetes risk-factors modified by a short-term yoga-based lifestyle intervention in overweight/ obese individuals	BMI- ($p < 0.001$) Waist/hip-ratio ($p < 0.05$) Blood glucose ($p < 0.01$)	Its shown yoga truly effectively modified lifestyle, il-6, vitamin D, and diabetes risk factors were favourably modified by a short-term yoga-based lifestyle intervention in obesity
7	(Bhardwaj & Bhardwaj, 2015).	Therapeutic Applications of Yoga for Weight Reduction in Obese Population: An Evidence-Based Overview	Yogic management of obesity is based on controlled and balanced diet, yoga postures and breathing techniques.	Yoga poses work on endocrine glands, improve blood circulation and improve body's metabolism. In this review article, evidence-based therapeutic application of yoga therapy for managing obesity has been discussed.
8	(Kumar, Kushwah & Nagendra , 2015).	Effect of Integrated Yoga Program on Energy Outcomes as a Measure of Preventive Health Care in Healthy People	The results showed the highly significant reduction in stress levels and highly significant improvement in the health at the psycho physiological level.	The EPI outcomes are resource able. Further EPI also able to find out differentiate energy pattern within gender.
9	(Deo, Kumar, Srinivasan, & Kushwah, 2015).	Effect of anapanasati meditation technique through electro photonic imaging parameters: A pilot study	It is envisioned that EPI measurement technique could provide finer details of psycho-physiological states in mediators.	The EPI can be used in the recording functional physiological and psycho physiological status of mediators at the subtle level.
10	(Shirley, Sharma, Yadav, Singh, & Balkrishna, 2014).	A comparative controlled trial comparing the effects Of yoga and walking for overweight and obese adults.	Both groups showed a Significant ($p < 0.05$; repeated measures ANOVA, post-hoc analyses) decrease in BMI,	The yoga group increased serum leptin ($p < 0.01$) and decreased LDL cholesterol ($p < 0.05$). The walking group decreased

			waist circumference, hip circumference, lean mass, bodywater, and total cholesterol.	serum adiponectin (p<0.05) and Triglycerides (p<0.05).
11	(Rao & Nagendra, 2014).	The effect of active and silent music intervention on Patients with type 2 Diabetes measured with electron Photonic Imaging Technique.	The result showed effect music on Type- 2 Diabetes people which are clearly reflected on GDV organ parameters.	The GDV is able to differentiate in between both interventions.
12	(Dhanajai, Tiwari, Dutt, & Kumar, 2013).	Reducing psychological distress and obesity through yoga practice	This study supports yoga as an effective tool with no diet restriction to improve anxiety and Obesity symptoms as well as obesity in obese subjects.	Incorporating yogic asana in the treatment protocol of patients suffering from anxiety and Obesity may prove beneficial in the long run.
13	(Dhananjai, Sadashiv, Tiwari, Dutt, & Kumar, 2013).	Reducing psychological distress and obesity through Yoga practice	this study was done to evaluate the effects of Yogic Practice on anxiety/ Obesity associated with obesity	The levels of all parameters decreased (improved) in both the groups and the decrease (Improvement) was higher in Yoga group than an Aerobic group.
14	(Telles et al., 2009).	Short-term health impact of a Yoga and diet change program on obesity	BMI (1.6%) W and Hip circumference, fat-free mass, total cholesterol (7.7% decrease), (HDL) cholesterol (8.7% decrease), fasting serum leptin levels (44.2% decrease) and an increase in postural stability and hand grip strength (p & it;0.05, all comparisons)	Decreased the BMI and the fat-free mass. Total cholesterol also decreased due to reduced HDL levels. Benefits seen were better postural stability, grip strength, reduced waist and hip circumferences and decrees in serum leptin levels.
15	(Lazos, Savino, & Edelstein, 2006).	Yoga Participation Is Beneficial to Obesity Prevention, Hypertension Control, and Positive Quality of Life	A statistically significant body mass index for obesity (30.0) was observed ($P < .001$). A significantly lower systolic blood pressure was detected in the 1- to 4-year yoga	The mean Total Mood Disturbance score was - 5.04, indicating the survey participants scored a positive mood state.Hatha and relaxation yoga had a

			participant group as compared to the less than 1-year yoga group ($P < .023$).	Statistically significant role in controlling weight, hypertension, and mood.
16	(Cioca, Giacomoni, & Rein, 2004).	A correlation Between GDV and Heart rate variability	GDV and heart rate variability (HRV) in healthy volunteers before and after three different physiological conditions.	The orthostatic test consisting of deep breathing followed by rapid standing and consumption of chocolate showed significant correlation.

CHAPTER- 4

4.1.0 Aim and Objectives

Aim of the Study

- To explore GDV organs parameters in Obesity

The objectives of the study are

1. Assessment of the GDV image pattern in Obesity patients.
2. Assessment of the IAYT on GDV image parameters.

4.1.1 Research Question

Are there any changes in GDV image parameters while taking the data from the participant after the (IAYT)? If so, are there any Subtle Energy level changes from the effect of IAYT for helping to improve that energy.

4.1.2 Hypothesis

The Integrated Approach of Yoga Therapy (IAYT) may able to reduce the epidemiology Obesity score and enhance the subtle energy. The electro photonic imaging is able to find out the consequence of subtle energy in the participants.

4.1.3 Null Hypothesis

There is no chance of changes in energy levels after the practice of IAYT in Obesity and as the duration of one-week intervention are not giving proper strength to find out the subtle energy by the GDV instrument.

CHAPTER- 5

5.1.0 Methodology

5.1.1 Subjects

The participants for the study were obtained from Arogyadhama, in Prashanti Kuttiram of SVYASA Bangalore, Karnataka. 50 Participants in the age group 20 to 60 year were screened according to inclusion and exclusion criteria. Daily follow-up was taken during the Section-H practices.

5.1.2 Source of Subjects

Among all the section of Arogyadhama, in Prashanti Kuttiram of SVYASA Bangalore, Karnataka, The subjects were taken from only H- Section which is belonging to Overweight, Obesity, and related subjects.

5.1.3 Sample Size

The convenience sampling method was done in the Arogyadhama, H- Section. A total number of participants at the end of the study were 35.

5.1.4 Ethic Clearance and Consent

Patients who fulfil the inclusion criteria will be explained about the study design and were invited to participate in the study. A logistic were prepared for the sending the GDV report to them so that they agree to give their detail information like patient's name, file number, age, gender, address, contact number and information on whether the patient agreed to participate in the survey. After signing the inform consent form and, the patients were trained in yoga therapy. The present study was approved by ethical committee of SVYASA University, Bangalore, India.

5.1.5 Section Criteria

The participants who are interested to attend joined the H- Section of Argoyadhama, Prashanti Kuttiram, Bengaluru, Karnataka were selected to study based on the following the criteria.

5.1.5.1 Anthropometric variable collection from H- Section

- **Weight:**

The body weight was measured by using the weighing machine. Subjects were asked to remove their foot wear while wearing minimum clothing to stand on the scale.

- **Height:**

The height (in centimetres') was measured by a scale graduated in millimetres. This scale will be placed against the wall with their neither lifted nor depressed but be facing straight ahead.

- **BMI (Body mass index):**

BMI is calculated from the equation –dividing Subjects weight in kilograms by height in meters squared.

- **Mid Arm Circumference:**

MAC was measured at the midpoint between the tip of Acromion and the lower end of Humerus at the elbow using a flexible centimeter tape.

- **Waist circumference:**

Waist Circumference was measured at 2 CM above the umbilicus using a centimeter tape.

- **Hip circumference:**

WHR was measured around the buttocks, above the gluteal fold using a flexible centimeter tape.

5.1.6. Inclusion criteria

Adults who are 20 years of age and older with Obesity, diagnosed by Doctor in charge of Arogyadhama based on the criteria specified before, willing to volunteer for the study; for the giving the finger images for GDV.

5.1.7 Exclusion Criteria

Those who are not well fingered like cutting, skin infection, less than or more than 10 fingers, those who regularly visit SVYASA camp for practices yoga therapy.

5.1.8 Design

The design was a short-term intervention with single group pre-post study.

5.2.0 Methods

Among all the Arogyadhama participants, the subjects were taken from only H-section which is actually belonging to Obesity. Those who satisfied with the inclusion criteria were recruited for the study. Before joining the section participants was given their GDV data for the 1st day. During the course of the intervention, there was strict follow-up attendance was taken by the Section parameter. The section has three special techniques which basically undergo dynamic practices, and remain class, was follow based on the Arogyadhama schedule the participants had to attain all the class starting from Om meditation to happy assembly. These scheduled has covered with IAYT module and his subjects, which is basically designed by S-VYASA Yoga University. All of the participants were given 1 weeks of Yoga therapy by the certified yoga therapist from Arogyadhama – H' Section, under the guidance of chief yoga consultant of S-VYASA. IAYT includes āsana, Pranayama, kriya, meditation, notional correction, and devotional sessions. Daily all Arogyadhama schedule was followed by the participants. The section parameters were taken in each day at 9 am for the daily improvement record. Then after parameter, we are allowed to the participants given the GDV for 2nd data. This is basically.

Taking fingers images for find out the changes between before yoga and after yoga.

5.3.0 Integrated Approach of Yoga Therapy (IAYT)

The concept of an integrated approach of yoga therapy module for Obesity was considered from the traditional yoga scripture. That basically highlight a holistic lifestyle for positive health at physical, mental, emotional, and intellectual levels (Nagendra, & Nagarathna, 2001).

The integrated approach of yoga therapy is a form of yoga therapy which consists of physical yogic posture practice, breathing practices, meditation, different types of cleansing techniques called Kriyas, devotional session, spiritual discourses, disease-related lecture, and counselling session. The integrated approach to yoga therapy can improve hot flushes and night sweats. It also can improve cognitive functions such as remote memory, mental balance, attention and concentration, delayed and immediate recall, verbal retention and recognition tests (Chattha et al., 2008).

5.3.1 Annamaya kosa

There are few organic causes of obesity. Only small percentages of all obese people will have hormonal imbalance/endocrine disorders. Most of the obese people in the population have a wrong food habit, over eating and physical inactivity.

By balancing the Kapha energetic principle in our body we can reduce excess fat and increase energy levels, enable the **endocrine and digestive system** to function better, and create a more youthful appearance. The key factor is to balance digestion as this will help to reduce cravings and normalize appetite.

Kapha- related weight imbalance is due to a lack of digestive fire (low Agni) and low metabolic rate so even though we may eat very small amounts of food, we still tend to gain weight. With this type of imbalance, digestive impurities get deposited, the fat tissue gets accumulated in the body and the formation of bone tissues get slowed down due to the accumulation of fat tissue. The solution is to increase the metabolic rate and burn up the impurities (Cavanagh & Willis, 2004).

Kriya: - Neti, vamanadhouti, Laghusankhaprakhalana practice once or twice weekly. These will relieve a clogged up and devitalized digestive system, overtaxed bowels, depleted liver and pancreas functions can be improved.

Note: - Vhagbhatacharya Astangarudhaya in sutra stahana 14/12 suggests that, the main reason for overweight/obesity is to balance the aggravated, Kapha, vata and to reduce the increased medhodosha, this can be better achieved through dhoutikriya, dhouti neutralized the acid balance in the stomach, thus helpful in counter-attacking the tivrajatharagni, this helps in reducing the excessive hunger and thirst and relief from the obesity can be achieved. (Chowdhury e t al., 2013).

Mitahara: - Fill half of the stomach with food, the next one-fourth with water and last fourth is to be left for air. One should estimate the quantity of food which satisfies the hunger completely, and then start eating half that quantity [i.e. one should learn to eat only to satisfy hunger and not psychological disturbance [Gherenda Samhita states].

Note: - Drink few glasses of water [15-30min] before the meal that can help avoid eating.

Diet: - Sattvik diet promotes life, virtue, strength, health, performance, happiness, purification of the inner being, and satisfaction.

Contribute towards healthy weight loss: - Yogic breathing practices combined with simple body movement to achieve a slow rhythmic breathing pattern are the safest way to get mastery over the mind. The principle involved in the technique of breathing was slow down the rate of breathing with synchronizing the body movements with breathing, ensure that exhalation is longer than inhalation and practice with full awareness of the flow of air through the nostril.

Awareness that we have the healing power to ourselves, to realize what our needs and strength are important. Yogic approach to weight loss refers not only to the physical body but to all aspects.

Asanas: - These are essential to remove blockages, to liberate prana, revitalize the mind and to activate the endocrine glands. Obese people should be encouraged to practice to their limit, but never to exhaustion. Let them practice with enjoyment, relaxation, and awareness, and their problem will fly away. It is not necessary to try to sweat off excess pounds. This is not the way to lose weight. The obese person has poor stamina and willpower and will soon get dropout from such demanding an exhausting exercise.

Permanent loss of weight demands a well-balanced flow of the Pranic energy throughout the body. Asana builds up vitality. They rebalance the nervous and endocrine pathways gradually and effortlessly. In yoga, the slimming and rebalancing process will be occurring. Weight will surely re accumulate quickly unless the psychic and Pranic energies are rebalanced and glandular mechanisms readjusted.

Metabolic work out- Four simple postures, that promotes youth and vitality. It works to balance the metabolic rate and energy level of each of the major endocrine glands in the body which control many functions.

1. Uttanpadasana: - The posture activates the thyroid gland in the throat, which control energy level and active the reproductive gland in the groins.

Focus: - By keeping the hips on the ground, and on squeezing chin firmly on to your throat.

- 2. Ustra asana:**-This posture activates the adrenals in the lower back, which controls stress levels, and thyroid in the throat, which control the energy level as the chin squeeze the chin into the chest.

Focus: - On pinching the shoulder blades together and dropping the head right back to create strong lock over the thyroid in throat also focus on the arching backward strongly, to squeeze the adrenals on top the kidney.

- 3. Purvottanaasana:** - This posture tightens and tones up the abdominal muscles and can make the stomach appear flattered. It tones up the pelvic floor. It strengthens bones and muscle in the arms and upper body as well as legs. In addition, it activates parathyroid glands in neck, which control calcium levels in the blood.

Focus: - Pinching the stomach and buttock muscle tightly together, to strengthen the pelvic floor area. Use the strength of the thighs to keep pushing the hip higher into the air and improve the position.

- 4. Inverted V posture [parvatanasana]:** - This posture activates the thyroid gland for high energy level. It put pressure on the pituitary gland, which controls much of the body functions, including appetite. It controls the pineal gland which regulates mood. Moods can play a major part in the success of weight reduction programme.

Focus: - Keeping the hands and feet in the same position throughout the action and pushing the buttocks high into the air with each inverted V position. Keep the head well through shoulders and push up from the pads of your hands to move your weight back on your heels.

- 5. SuptaPawanmuktasana:** - It purifies impure air, release gas from the abdomen. Strengthen the abdominal muscles which are usually very flaccid in the obese patient. It also helps to burn the extra fat tissue of the momentum which is the fold of peritoneum in the abdomen very rich in fat tissue.

- 6. Asanas:** - like Halasana, paschimottansana, dhaurasana, sarvangasana, matsyasana, that governs metabolic process.

7. **Sun salutation:** - Surya Namaskar (salutation to the sun) is most important for the treatment of obesity. Surya Namaskar is a complete practice itself because it is a combination of asana, pranayama, mantra, and meditation. This practice has a unique influence on the endocrine and nervous system helping to correct the metabolic imbalance that causes and perpetuate obesity (Tater, 2013).
8. **Deep relaxation technique:** - The relaxation response is defined as your personal ability to make your body release chemicals and brain signals that make your muscles and organs slow down and increases blood flow to the brain. Drugs can help it to some extent, however, they often have side effects. You can get your body to relax just as well without drugs while remaining conscious and aware at the same time. To be physically relaxed and mentally alert is the goal of the relaxation response (Williams & Carey, 2003).

5.3.2 Pranamaya kosa

Pranayama helps in gaining mental and emotional health. Breathing is closely related to mind. No other system of treatment is better than Pranayama for the cure of mental disorders. Pranayama means controlling and regulating life force. In a gross form, this life-force is related to breathing. By practicing pranayama, one can get control over life-force and attain physical and mental health. As has already been told, physical and psychophysical diseases originate in the mind, feeling and thought.

Mental, physical and psycho-physical diseases are caused by negative feelings that cause an imbalance among body, mind, and emotions. Pranayama removes this imbalance.

Fat 'breathed out' of the body via lungs, say scientists (Roberts, 2014).

Belly Breath: - This is good for toning the abdomen, improving peristalsis and helping with weight loss.

Kapalabhati: - This is also good for cleansing and detoxifying the lungs and improving lung capacity.

Fast Pranayama: - This practice speed up metabolism and helps in weight loss. It can also be practiced for 20-30 seconds before 'alternate nostril breathing.

Right Nostril Breathing: - (Kapha Pranayama): Helps warm the body and is excellent for Kapha imbalances. If the right nostril is blocked the body often feels cold.

Alternate Nostril Breathing (Vata Pranayama):- NadiShodhana, or alternate nostril breathing, is a type of Pranayama that balances the right and left hemispheres of the

brain and has a calming effect on the nervous system while creating a more alert mind. It cleanses the channels of the subtle energy layer of the body by removing blockages along the nadis (channels) that correspond to the nerve ganglia on either side of the spinal cord. It is extremely entering, making it one of the best practices for Vata dosha.

Bhramaripranayama: - relieves stress and cerebral tension, and so help in alleviating anger, anxiety, and insomnia, increasing the healing capacity of the body. It strengthens and improves the voice. Bhramari induces a meditation state by harmonizing the mind and directing the awareness inwards. The vibration of the humming sound creates a soothing effect on the mind and nervous system.

5.3.3 Mannomaya kosa

Stress: Origin, cause, and effect: Stress is the main cause of all diseases. Now greater numbers of people are suffering from stress-related diseases such as-^{*} Hypertension, Heart diseases, Diabetes, Stomach problems, Obesity, Irregularities in cholesterol level.

A healthy mind lives in a healthy body; therefore, it is necessary to keep the body healthy for a healthy mind. Our body is a victim of various diseases because of stress hormones and lack of secretion of good hormones. Diseases and misery germinate in the conditioned mind and later it percolates and manifests in the body through the neuron-endocrine axis. Thus disease which appeared in the mind at psychic phase passes through psychosomatic. Thus negative emotion alone is the primary cause of human suffering and agony. The manomayakosa work at two levels, level of mind and emotion.

Thus the act of detaching our mind from the worldly objects and focusing it on the Om picture is called Dharana. Dharana [concentration] is the foundation of Dhyaan. As we perfect our practice of Dharana, Dhyana will takes place on its own.

By performing Dharna on concentrating on the Om Image one experience tremendous rapport with the God. This concentrated flow of superior knowledge is called Dhyana. When a river enters the sea it submerges with the seawater. Similarly, one should submerge think of anything else. To lose our self in this pure joy and divine peace of the God's presence is Dhyana.

The practice will try to draw the wavering mind to introvert and helps to study the same. The internal prayer will facilitate the positive thinking of total surrender, her by zeroing the ego, which is more important in stress reduction processes. As stress is one of the reasons to increases BMI and this helps to reduce the same.

Bhakti yoga [Bhajans, Swadhyaya is good for culturing emotions. It gives emotion to the right direction for growth. By devotional practice negative, harsh, violent emotion can be replaced with positive, soft and gentle emotion.

5.3.4 Vijnanmaya kosa

This is the level of higher budhi, good intellect intuition, wisdom [means a life of selfless] the wisdom sheath is made of detachment service. Higher knowledge, psychic abilities, and shine out from an innermost zone.

Many of us do not go beyond this layer because there is so much going on here, and we live out our days believing that we are only our thoughts and our physical form, which leads to the spiritual crisis that so many are experiencing today).

Note: - Dhyana, Jnana yoga is helpful to reach the level of this kosha.

5.3.5 Anandamaya kosa

Love, compassion, joy, accomplishment and mutually fulfilling relationships get evolved from the crude level to a more refined level; Anandamayakosa is the ineffable experience of peace, love ecstasy yoga helpful to reach the state of bliss state. When we discover this layer, we experience the purest state of being. This is our true nature – the light that shines out through the layers.

5.3.6 Yoga module:

Yogic sukshnavyayamas (loosening and strengthening practices).

These are safe, rhythmic, repetitive stretching movements synchronized with breathing pattern

- **Breathing practices:**

Various types of breathing practices were given to enhance the capacity of the lungs. And it gives the nice soothing massage in all the parts of the body. They are: Hands in and out breathing, Hands stretch breathing, Ankle stretch breathing, Sasanka Asana breathing, Tigerbreathing, Tiger Stretch breathing, straight leg rising breathing, Bhujangasana breathing, Salavasana breathing.

- **Loosening exercises:**

Some of the dynamic exercises which loosen joints and increase energy utilization were practiced. There are Jogging, Bending, Twisting, Toe touching, Heel touching, Swimming, Side bending, Neck movement, crow walking, line walking, drill walking, Suryanamaskar, Pavanmuktasanakriya, Backstretch, Spinal stretch etc.

- **Asanas (physical posture)**

Āsanas are featured by effortless maintenance in the final posture by internal awareness. The yoga practices were given in a dynamic way and after towards followed by nadanusandhan practices. These pattern help reduce the lethargicness and gives the nice calmness in the entire parts of the body and minds.

- **Pranamayama**

The practice of voluntary regulated while the mind is directed to the flow of breath is called Praṇāyama. Through the practices of Praṇāyama removes all the blockage of prana, which is basically mean responsible for emotional seed and stress. It channelized the prana throughout the body and mind so that each part of the cell have proper oxygen for rectified themselves and find out better healing power for strengthening themselves.

Kapalabhati (cleaning techniques)- 60 times/ minutes and three beats.

Nadisudhi pranayama(balancing for breath) – 9 rounds.

Vibhagiya pranayama (sectional breathing: abdomen, thoracic, clavicular)- 9 rounds.

Bhramari pranayama (produced male honey bee sounds- M' kara) -9 rounds.

Nadanusandhana(A-Kara, U-Kara, M-kara, AUM chanting) –each section 3 rounds.

- **Cyclic Meditation**

Cyclic meditation is a yoga practice which combines the practice of yoga posture with guided mediation. Practicing yoga posture the constitutes the 'awakening' practices, while periods of supine rest comprise 'calming practices. These practices have followed the rule of simulation and relaxation. this practice gives nice experience throughout the practice and creates sensation arising thought out the body (Nagendra & Nagarathna, 1997).

Om Meditation

It gives gently relaxation in stress levels and help to improvise reduced the thought levels, leads to one single thought and after towards the reach of sadhana state. Its create tranquilize and calmness of the mind.

- **Lectures and counseling**

Yogic concepts of health and disease, Yama, niyama, Bhakti yoga, jnana yoga, and karma yoga were presented in theory classes. These sessions were aimed at understanding the need for the lifestyle change, weight management, emotional

management, stress management, prevent high mood depressive state by yogic self-management of psychosocial stress.

- **Timetables**

Yoga class will be conducted based on Arogyadhama time schedule. Starting from Morning to Evening. During the breakfast, lunch, deener the satvika food was provided to the participants to remove the fats. Daily selection parameter will be taken and entered in the logistic records.

5.4.0 Outcome Measures

5.4.1 Primary Outcomes

Data of the participants is extracted by capturing images of all ten fingers using GDV camera. The data were then analyzed with the Bio-well software with specific parameters.

Note:-Data collection has been done by trained expert.

- The integral area is a measure of general good health status with a range of -0.6 to +1. It showing the present situation of structural and functional state in normal mind and body (Korotkov, 2011).
- Integral entropy is a way of calculation for disorderliness in human energy filed with the normal range of 1-2 healthy people. It indicates the presence of deficiencies in the organs measured (Korotkov, 2002).

5.4.2 Secondary Outcome

- Tools: - **Exercise- Avoidance motivation scale**

This study examined the relationship between weight stigma, exercise motivation and exercise behaviour. One hundred female undergraduates (BMI [kg/m²] 17–38) completed measures of experiences with weight stigma, body dissatisfaction, self-esteem and exercise motivation, and reported on their exercise behaviour (Vartanian & Shaprow, 2008).

- Section Parameter- which indicates symptom score in Anxiety and obesity.

CHAPTER- 6

Data Extraction and Analyses

6.1.0 Data Collection

Data was collected from the particular environment and particular fixed time. The participants give their data before joining the yoga practice and before leaving the prashantikuttiram that assessment between Friday 3 pm to 5 pm and Thursday 9 am to 11 am, timing was kept fixed for all the participants for the whole duration of study, all the participants were practiced yoga therapy under the section- H' therapist as per their time schedule. The participants reported twice for giving their data which is based on before and after the yoga practice module. Data was taken with the help of Gas discharge visualization instrument which is another name for Electro photonic Imaging. Before taking the data complete instruction and with the demonstration was given to the participants. When the data are recorded completely through the Electro photonic imaging respondents were appreciated to participants.

6.1.1 Data Scoring

The data were extracted from Bio-Well software to excel. Data handling was simpler and analysis thorough Bio-Well is more convenient. For the extraction of EPI report to the Bio-Well, it needs the Internet connection. After the data extraction, all remain thing undergoes in offline.

6.1.2 Data Analysis

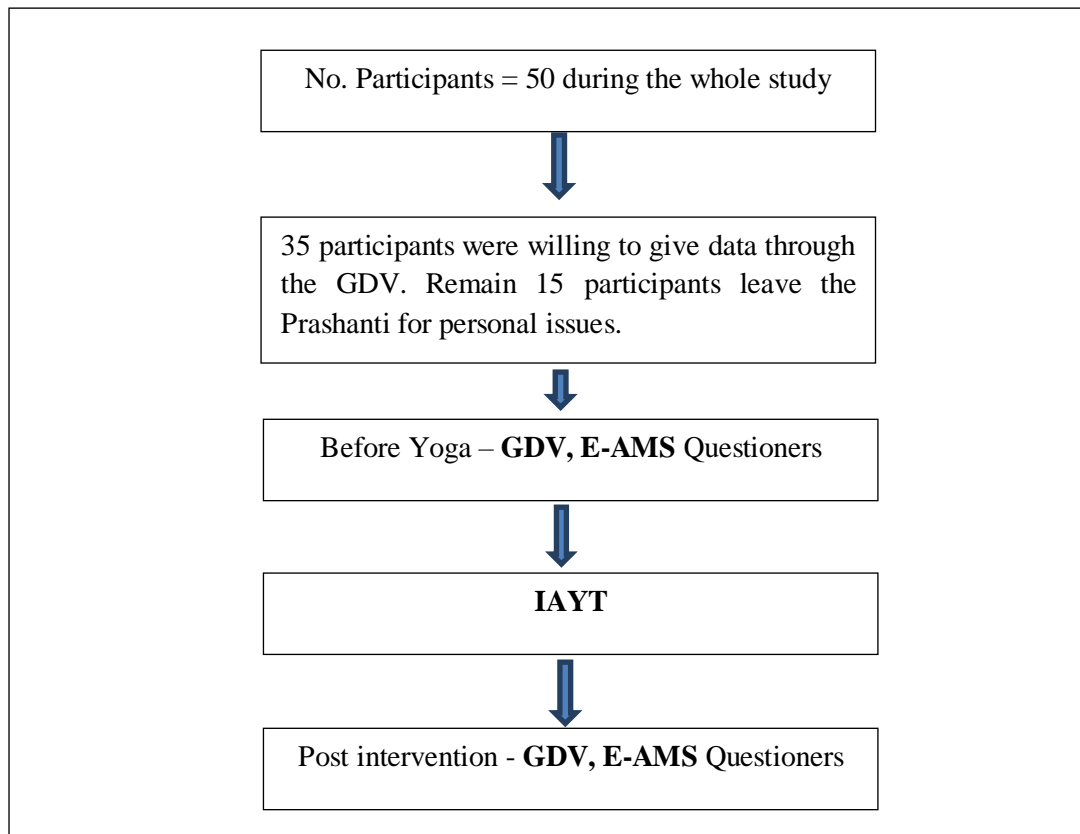
All variable was a mean \pm standard deviation. The non-parametric test was used for analysis of pre-post changes in all groups. Statistical significance was set up $p < 0.05$, and all the analysis were performed using R-Studios.

CHAPTER-7

Results

7.1.0 Study Profile

Total no of participants was came in the study were 50. But some of the not willing to give their data and some participants were not able to give data for the ruptured skin on the finger. Out of which 35 participants were giving their data willingly. The daily intervention was given to the participants. On the 7th-day post-interventional assessment was taken.



7.1.1 Demographic Data

There were 50 participants with Obesity and related disorders with the mean age of 40 (\pm 12) years who contributed for this study, out of this 15 were male and 20 female. This data assured that all pre-symptoms scores are taken clearly through excel.

Sl. No	Details		Value
1	Total No. of Participants	Obesity	35
2	Gender	Male	15
		Female	20
		Mean	1.43
		Sd	0.5
3	Age	Mean	40
		Sd	12
		Range	20-60
4	Occupation	Retired	05
		Business/Employee	10
		Housewife	20
5	Exercise- Avoidance motivation scale	Mean	18.83
		Sd	10.21
		Range	36

(Demographic data of the participants).

7.1.2 Results of Primary Outcomes

The descriptive statistic for the pre-post comparison of GDV organs parameters after IAYT.

Sl.No	Variable	Name of the Variables	Pre			Post		
			Mean	Sd	median	Mean	sd	median
1	Parameter	Emotional Pressure	3.83	0.8	3.69	3.74	0.96	3.47
2		Energy	54.57	7.92	55.95	55.26	8.46	55.23
3		L/R Symmetry	88.82	8.96	91.37	88.74	9.98	91.24
4		Organs balance	76.28	9.08	77.5	78.26	10.86	80.36
5		Entropy coefficient	2.68	0.34	2.66	2.77	0.5	2.66
6		Form Coefficient	4.65	1.75	4.27	6.49	6.29	3.74
7	Energy Field	Left Area	68219.89	12455.64	70087	68323.89	12050.71	71105
8		Left Energy	25.79	5.02	26.16	26.31	5.23	27.23
9		Front Area	65350.97	12538.89	65789	66127.6	10384.98	69378
10		Front Energy	24.36	5.13	24.97	24.95	4.31	24.69
11		Right Area	68611.74	10654.43	70739	68991.91	11946.95	72477
12		Right Energy	26.12	4.88	25.94	26.16	4.96	27.01
13	Chakra Value	Muladhara	4.86	1.3	5.21	5.07	1.41	5.58
14		Svadhithana	4.27	1.13	4.41	4.5	1.29	4.64
15		Manipura	4.54	1.14	4.63	4.63	1.07	4.72
16		Anahata	4.9	1.52	5.05	5.13	1.34	5.15
17		Vishuddha	4.42	1.53	4.78	4.47	1.66	4.61
18		Ajna	4.45	1.13	4.62	4.47	1.21	4.55
19		Sahasrara	4.22	0.89	4.34	4.22	1.02	4.33
20	Chakra Align	Muladhara	86.67	12.06	89.74	85.72	12.39	89.33
21		Svadhithana	87.4	13.52	92.34	91.1	8.76	94.07
22		Manipura	89.48	9.26	92.7	89.99	11.93	94.25
23		Anahata	86.72	12.55	89.5	82.29	17.12	86.12
24		Vishuddha	89.05	9.2	92.26	89.15	8.6	91.03
25		Ajna	90.98	9.24	93.44	90.74	7.92	93.46
26		Sahasrara	89.65	9.09	91.68	92.93	6.13	94.91

Sl.No	Variable	Name of the Variables	Pre			Post		
			Mean	Sd	median	Mean	Sd	median
27	Chakra Assymetric	Muladhara	0.02	0.54	-0.06	0	0.57	-0.14
28		Svadhithana	0.03	0.56	0.04	0.04	0.37	0.02
29		Manipura	0.02	0.42	0.1	-0.04	0.47	-0.08
30		Anahata	0.12	0.54	0.2	0.26	0.7	0.15
31		Vishuddha	0.02	0.43	-0.13	-0.13	0.4	-0.11
32		Ajna	0.02	0.39	0.02	-0.07	0.36	-0.07
33		Sahasrara	0.04	0.41	0.11	0.02	0.28	0.05
34		Mid Alignment	88.57	6.37	89.62	88.84	5.53	89.7
35		Index	66.87	14.28	65.94	68.7	13.89	68
36		Organ Energy	Hypothalamus	3.7	0.91	3.65	3.94	1.02
37	Epiphysis		4.54	1	4.51	4.52	1.09	4.55
38	Pituitary gland		4.29	1.16	4.57	4.13	1.16	4.19
39	Thyroid gland		4.35	1.3	4.64	4.25	1.19	4.28
40	Pancreas		3.93	1.1	4.15	4.03	1.25	4.18
41	Adrenals		4.47	1.57	4.22	4.7	1.61	4.75
42	Spleen		3.63	1	3.82	3.85	1.1	3.94
43	Organ Balance	Hypothalamus	63.59	29.77	74.31	72.73	27.03	79.17
44		Epiphysis	76.4	22.73	84.27	79.91	18.66	82.27
45		Pituitary gland	73.47	26.97	79.9	74.83	27.36	85.53
46		Thyroid gland	73.94	23.84	84.35	80.17	18.05	82.65
47		Pancreas	54.55	31.68	65.21	68.89	29.91	82.29
48		Adrenals	53.37	34.73	59.14	63.88	28.15	73.46
49		Spleen	58.19	36	69.64	68.05	27.09	73.58
50	Muscular Energy	Spine - cervical zone	4.1	0.79	4.21	3.94	0.95	4.18
51		Spine - thorax zone	3.34	0.83	3.34	3.31	0.89	3.44
52		Sacrum	4.06	1.04	4.16	4.06	1.17	4.39
53		Spine - lumbar zone	5.58	1.72	5.64	6.08	1.97	6.38

	Variable	Name of the Variables	Pre			Post		
Sl.No			mean	Sd	median	Mean	Sd	median
54	Muscular Balance	Spine - cervical zone	74.49	21.66	79.39	73.72	30.04	83.03
55		Spine - thorax zone	66.43	30.61	76	68.4	30.15	77.54
56		Sacrum	69.26	26.58	72.79	67.39	30.57	78.82
57		Spine - lumbar zone	68.3	30.62	80.27	70.16	33.62	85.81
58	Digestive system Energy	Colon - descending	3.44	1.22	3.72	3.43	1.28	3.73
59		Colon – sigmoid	4.01	1.46	4.32	4.37	1.65	4.82
60		Rectum	5.95	2.42	6.06	6.22	2.48	6.93
61		Blind gut	5.83	2.53	5.97	6.1	2.01	6.18
62		Colon - ascending	3.72	1.31	3.89	3.71	1.26	4
63		Colon - transverse	4.49	0.86	4.69	4.23	1.25	4.35
64		Duodenum	3.85	1.41	4.25	4.18	1.05	4.21
65		Ileum	4.09	1.66	4.61	4.2	1.12	4.23
66		Jejunum	3.97	1.64	4.3	3.9	1.57	4
67		Liver	5.62	1.78	5.69	5.79	1.53	5.74
68		Pancreas	3.93	1.1	4.15	4.03	1.25	4.18
69		Gallbladder	4.22	1.43	4.79	4.28	1.27	4.34
70		Appendix	4.24	1.57	4.74	4.35	1.43	4.49
71		Abdominal zone	4.29	1.44	4.53	4.47	1.38	4.78
72	Digestive system Balance	Colon - transverse	80.26	22.58	91.06	71.85	30.58	85.1
73		Liver	68.07	25.96	71.62	70.43	26.05	75
74		Pancreas	54.55	31.68	65.21	68.89	29.91	82.29
75	Immune system	Question Score	34	12.96	36	11.51	8.88	9
76		Immune system	3.37	1.06	3.51	3.48	1	3.66
77		Immune Balance	66.46	28.08	74.4	72.76	25.35	80.29

Sl.No	Variable	Name of the Variables	Pre			Post		
			mean	Sd	median	Mean	Sd	median
78	Section Parameter	Pulse	79.34	7.07	80	79.6	9.15	78
79		Systolic Pressure	131.49	15.46	128	120.17	12.47	118
80		Diastolic Pressure	86.11	10	86	77.77	6.66	80
81		Respiratory system	18.09	3.12	18	17.23	4.07	16
82		Bhramari time	13.54	4.13	13	18.29	6.84	17
83		Weight	92.44	19.08	88.2	88.77	17.37	86
84		Body Mass Index	34.13	4.88	32.9	32.83	4.6	32.1
85		West Circumference	113.13	11.86	111	106	21.86	110.5
86		Hip Circumference	111.57	12.13	111	109.24	12	110
87		Mid Circumference	36.01	14.39	34	34.47	14.3	32
88	Exercise-Avoidance motivation scale	Question Score	18.83	10.21	17	13.11	7.44	10

The data were analysed using R Studio, and 172 variables were analysed for pre and post mean and standard deviations.

For the internal consistency measure of reliability on Exercise- Avoidance motivation scale questionnaire, the Cronbach's alpha was found to be 0.95.

7.1.3. Test for significant normality test.

Within group analysis of Electro Photonic parameter table

Sl.No	Variable Name	t value	Df	effect size	p-value
1	Endocrine System Balance- Pancreas	-2.03	34	-0.34	.050
2	Digestive System- Balance- Pancreas	-2.03	34	-0.34	.050
3	Systolic Blood Pressure	5.46	34	0.91	<.001
4	Diastolic Blood Pressure	5.60	34	0.93	<.001
5	Breath Holding Time	-4.58	34	-0.76	<.001
6	Weight	8.81	34	1.47	<.001
7	Body Mass Index	9.38	34	1.56	<.001
8	Waist circumference	2.38	34	0.40	.023
9	Hip circumference	3.30	34	0.55	.002
10	Mid Arm Circumference	5.08	34	0.85	<.001
11	Exercise- Avoidance motivation scale	4.01	34	0.67	<.001

Table: Results of GDV, Clinical and Anthropometrical parameters.

Table 4:- Result of body mass index

Body mass index (BMI) showed significant reduction ($p < .001$) from 34.13 ± 4.88 to 32.9 ± 4.6 . The effect size is 1.56 with 3.60 changes.

Variable		Mean	SD	ES	%Change	P-Value
BMI	Pre	34.13	4.88	1.56	3.60 ↓	<.001
	Post	32.9	4.6			

SD: standard deviation, ES: effect size, %: percentage changes.

Figure 1:- Result of body mass index (BMI)

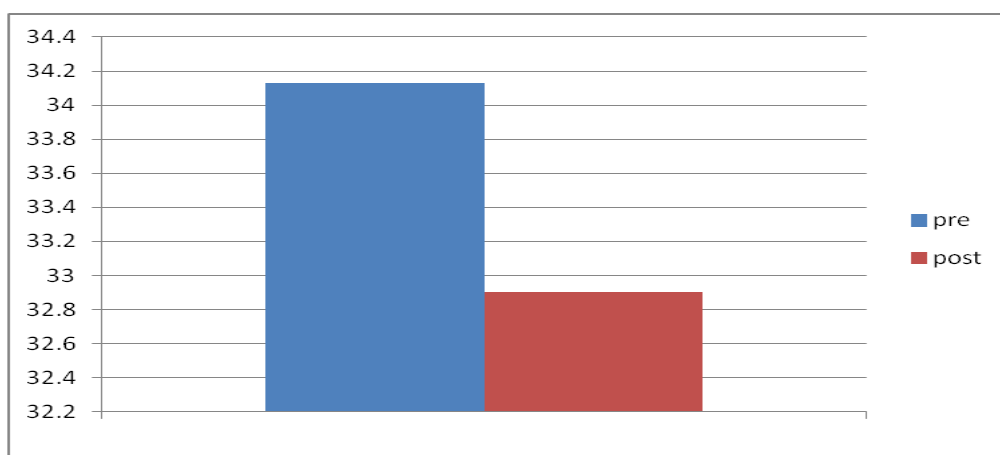


Table 5:- Result of body weight

Body weight showed significant reduction ($p < .001$) from 92.44 ± 19.08 to 88.2 ± 17.37 . The effect size is 1.47 with 4.78 changes.

Variable		Mean	SD	ES	%Change	P-Value
Body weight	Pre	92.44	19.08	1.47	4.78 ↓	<.001
	Post	88.2	17.37			

SD: standard deviation, ES: effect size, %: percentage changes.

Figure 2:- Result of body weight

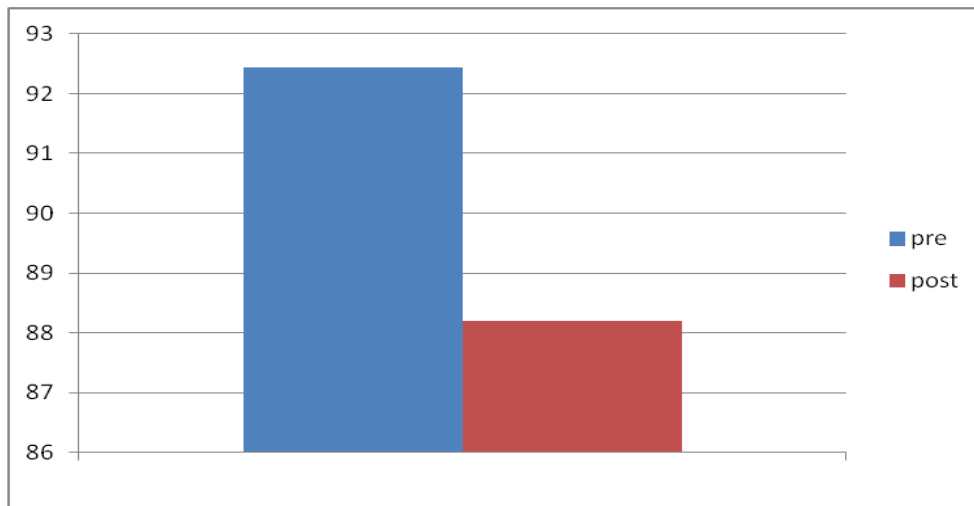


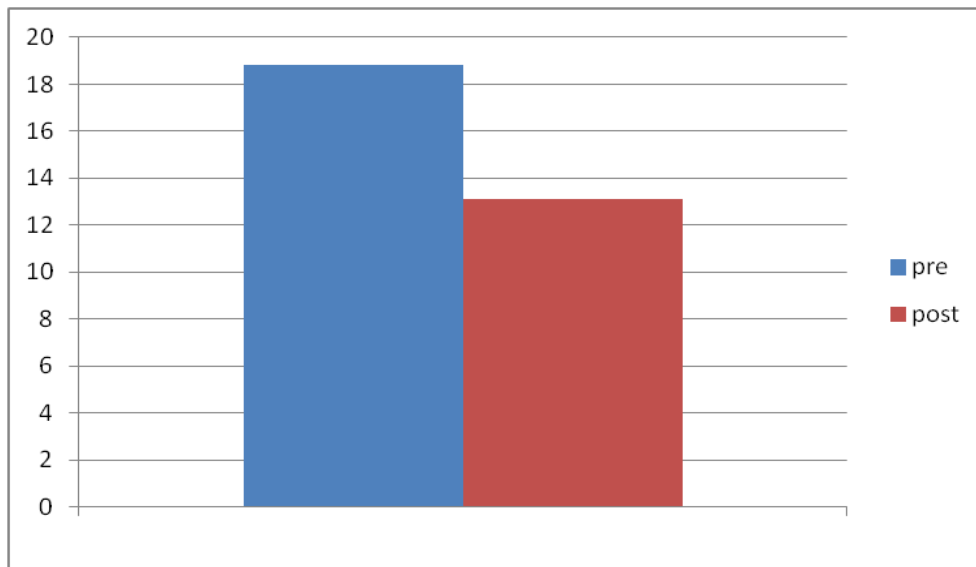
Table 6:- Results of exercise avoidance and motivation scale

Exercise avoidance and motivation scale (E-AMS) showed significant reduction ($p < .001$) from 18.83 ± 10.21 to 13.11 ± 7.44 . The effect size is 0.67 with 30.37 changes.

Variable		Mean	SD	ES	%Change	P-Value
EAMS	Pre	18.83	10.21	0.67	30.37	<.001
	Post	13.11	7.44			

SD: standard deviation, ES: effect size, %: percentage changes.

Figure 3:- Result of body weight Results of exercise avoidance and motivation scale (E-AMS)



CHAPTER- 8

8.1.0 Discussion

The present study is conducted to see the changes of GDV parameters after one week of intervention. Out of 172 variables of the GDV parameters, Endocrine System Balance- Pancreas, and Digestive System-Balance- Pancreas was found to be significantly changed, and also Section parameters Systolic Blood Pressure, Diastolic Blood Pressure, Breath Holding Time, Weight, Body Mass Index, Mid Arm Circumference and Exercise- Avoidance motivation scale was found to be significantly changed and also slightly change in Hip circumference and Waist circumference after the one week of IAYT intervention.

Comparison with previous Study

The weight was described highly significant ($p < 0.001$) after 30 days of practice. The inherent nature of right nostril breathing has shown in earlier research that due to activation of the sympathetic nervous system there is more expenditure of energy from the body (Telles, Nagarathna, & Nagendra, 1996).

Weight loss correlates more closely with the amount of subcutaneous than visceral fat. So, fat distribution after weight loss might be the cause of the decrease in the waist circumference (WC) and hip circumference (Kekan, 2013).

It is well-known that physical activity has blood pressure lowering effect. Yoga programme could be an alternative medicine for lowering blood pressure. It is interesting to note that a relatively small effort for the health care centre (in term of the number of visits) had the best effect on BP and quality of life (Moa & Kristina, 2013).

In the current study result pulse rate was not significant ($p < 0.136$) It may be due to practice forced right nostril breathing which has sympathetic activation at the whole body and this sympathetic activation which shift the autonomic balance gave rise to fluctuations in pulse rate. Perceived stress is one of the very important predictors which show how someone handles day to day activities in one's life. If it is sustained for the longer period of life beyond threshold level it percolates and manifests in the form of diseases (Muthukrishnan, Reena, & Sangeeta, 2016).

Studies have reported that yoga practice help in the reduction of day to day stress and diminishes the reaction to the stressful events, increased self-esteem, and efficiency. Self-esteem means at post-test in experimental group after cognitive behavioral group therapy has increased ($p < 0.001$) in comparison with control group. The earlier study was carried out to see the effect of intervention in two groups. The control group showed lower levels of self-esteem from pre-test to post-test (Neacsu, 2013).

Yoga therapy is assuming importance in improving mental health and quality of life in the treatment of a member of psychiatric and psychosomatic disorders. One study was undertaken on 50 subjects (20 males, 30 females) to the evaluative effectiveness of yoga therapy on psychological well-being and quality of life in anxiety disorder (mild to moderate category) diagnosed according to ICD-10, aged 20 TO 50 year, under mediation. The result showed the significant decrease in anxiety and depression symptoms and improvement in psychological well-being, self-control, general health, vitality and satisfaction with life in patients. The result of study exhibited that satisfaction with life was increased after yoga therapy sessions (Latha, 2011).

8.2.1 Mechanisms of Yoga Practices on Different Kosa Level

- **Annamaya kosa**

Dynamic action repeated jerky and speedy, this helps to distract the mind from the loop of repeating unwelcome thoughts. The dynamic practices reduced the physical imbalance and bring to its normal state. Then the slower action, example static Surya namaskar, set of asana [balancing posture] mind is pulled out of its loop of worrying thoughts, balancing diet keeps them healthy and active. kriys are helpful for opens the Pranic blockage, which enhance the internal function of the body, leads to strengthening the will power and internal awareness.

- **Pranamaya kosa**

Pranayama effect on emotion based on its influence on the limbic system and the ANS. Strong emotions cause hurried, shallow and interrupted breath, which is directly related to elevated sympathetic reactivity. The practice of Pranayama brings back the disturbed system to balance .yet another effect of Pranayama on the psychological level is in inducing stillness of mind. The mind is a chatterbox with streams of thoughts about the present, past and future. Yoga likens this nature of the mind to a

horse without reins. The fixations of attention on the breathing process during Pranayama help the practitioner stop this chatter immediately.

- **Manomaya kosa**

Yoga stimulates the right brain hemisphere and increases the alpha wave frequencies. It improves the sensory-motor performance and enhances the ability of the central nervous system. Alpha Waves, which occurs at a frequency of 8 to 12 cycles per second, It is a state of quiet and resting alertness, It also indicates relaxation, These waves forms at the diffuse Thalamus-cortical areas have the functions of learning, memory, consciousness and abstract thinking, etc., Most intensely recorded in the occipital region of the brain.

The meditation which is nothing but very slow effortless flow of single thoughts in mind sinking down in to total for a few seconds, which helps in getting better mastery over the mind.

- **Vijnanmaya kosa**

It is the sheath of knowledge, which burns the alpha satwagunas, which is responsible for making the right decision, handling conflict, giving advice and considering the goal of life. This is possible by yogic counselling, lectures on the concept of diseases, self-analysis is essential to conditioning the mind.

- **Anandamaya kosa**

In this state, the participant forgets its original status and reaches the state of Ananda by the help of desire less service with complete surrender, which is the key to happiness. Experience of the deeper state of bliss through the practices of karma yoga that takes away the occupational stress and helps in a steady state of functioning all throughout the days. Since the work stress is at its height in modern life the art of working on relaxation, with a sense of duty and working in tune with the universal principle is the essence of karma yoga. This can change the distressful reactivity into blissful activity. Thus, the module of the integrated approach to yoga therapy (IAYT) used in this study included practices to correct the imbalance at all kosha levels has effected in improving Human energy field in Obesity participants.

CHAPTER- 9

Summary & Conclusion

9.1.0 Summary

The aim of the study was to explore the pattern of GDV parameters in obese people and to show the difference between the GDV parameters before and after the intervention. The design was single group pre-post study and the subjects are Obesity Participants from Arogyadhama, Prashanti Kuttiram, S-VYASA, Bangalore, and Karnataka. The intervention consists of 7 of IAYT. Data were collected at the section before and after the intervention. The GDV parameter was taken as primary outcome measure and secondary outcome measure are the questionnaire which is finding out the Exercise- Avoidance motivation score on Obesity variables. GDV parameters was able to find out related organ energy and status of the organ which is basically responsible for the Obesity and it is able to find out the changes after the 7 days intervention of IAYT.

9.1.1 Conclusion

This study provides strong evidence for GDV parameters and this technology process may be useful for identification of obesity related variables in GDV. Integrated Approach to Yoga Therapy effects on Obesity by rectified emotional situation, and reduced stress and hence brings calmness in the mind. The GDV (Gas Discharge Visualization) is able to find out proper organ which is actually related to Obesity and it is also indicating changes between the result of before and after intervention. This study helps to understand in the better way on Obesity parameter and to see the effect of IAYT in organ level by using GDV parameters. Hence we conclude that the Integrated Approach of yoga therapy may works on Obesity effectively.

10. Appraisal

10.1.0 Strength Of The Study

1. After the medical examination by the doctor In charge of Arogyadhama, the study was comfortable to collect the data from Obesity participants.
2. The strength of the study is the intensive supervised acceptable module of an integrated approach of yoga therapy. That could show results within one week.
3. Practice taught under complete supervision by trained yoga therapist.
4. All the section therapist was raising their helping hands to provide sufficient information about the participant and allow to us take them for GDV data.
5. This study provides the scientific evidence for promoting and recommending yoga for Obesity as a cost-effective module for enhancing the physical and psychological state of mind on Obesity.
6. Through the holistic approach on Obesity that would help rectified stress full life and reduce the emotional thought, reduced the bondage of fear and its give proper channel through which the person can maintain always calmness of mind at any stage of the life.

10.1.1 Limitation Of The Study

1. Short-term design.
2. Selection of the study sample was convenience; it may be influenced by population.
3. It required more sample size for the proving proper significant of the variable.
4. During the data collection mean the thing is environment and room which is basically needed for peace and proper ventilation.

10.1.2 Suggestion for Future Studies

The study it may be based on the cross-sectional study between section treatment, there are may be comparing between Ayurveda, Naturopathy& Yoga therapy, which actually gives strong evidence on GDV organ parameter for finding whole changes in organs levels after the each based line of treatment.

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Appendices

Appendix (1) Assessment of Needs

Biographic Data Sheet

1. File No:
2. Name:
3. Age:
4. Married/ Single :
5. Educational qualification:
6. Occupation:
7. Phone No:
8. Email.id

Medical Information

1. Chief Complaint
2. History of present illness

Stress History

1. Past History
2. Family History
3. Personal History

**Informed Consent Form:
Information to the Participants**

We take this opportunity to introduce MR Arakshita Sahani, a student of a Master’s Program in Yoga & education at Swami Vivekananda Yoga Anusandhana Samsthanam (SVYASA), Deemed University, in Bangalore, India. As a part of his research interests and Master’s Program requirements, he will be conducting a study at Arogyadhama. Please read the details below to provide consent in the end.

The Study: This will be a small research program to assess the ‘Effect of IAYT on Obesity people’. This study involves supervised practice of IAYT for a period of one week. Recognized and widely used questionnaires will also be administered to understand some of the parameters related to psychological and mental health of Participant.

Yoga Program Details: The Yoga program will be conducted at the H- Section for 6 days as per the schedule.

Confidentiality: Results obtained in this study will be kept confidential and no Participant will be exposed during any part of the research work.

If you have any questions please feel free to contact here at college.

This information is to encourage you to attend the program.

Arakshita Sahani _____9986158641

Please sign this form as: ‘I willingly enrol myself into the program’

Note: The Yoga program will be conducted at the C-Section for 6 days as per the schedule

Name & Signature of participant

Name & Signature of researcher

Appendix – II

Conditions for Reliability & Validity of GDV Technique

(Alexandrova, Trofimov, Bobrova, & Parusova, 2003)

The condition of the GDV BE registration:

1. To obtain perfect reliable data, the data should be taken in the morning before breakfast or in the first part of the day.
2. Factors which may interfere with the analysis:
 - Food intake (preferred to wait at least 3 hours after meals.
 - Smoking
 - Skin infection in the finger
 - Menstruation in women
3. The data should be taken the same room and the same time, before taking data it should be necessary for calibration for analysis the temperature and humidity of the environment for adjusting the software of Electro Photonic Imaging.
4. It is necessary to establish comparable conditions of psychological and physical comfort for the patient, with specific attention to distraction and stressors, the atmosphere should be calming environment.























Appendix- III



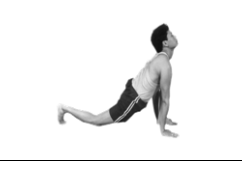
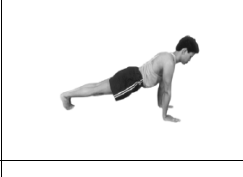
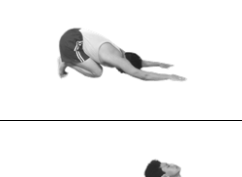
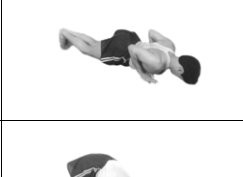
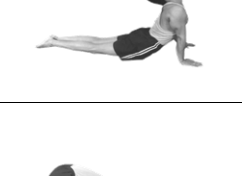

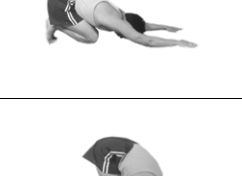
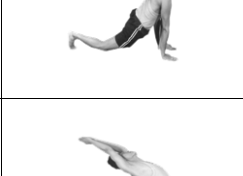


Details of the Intervention

Time Table of the Yoga Class



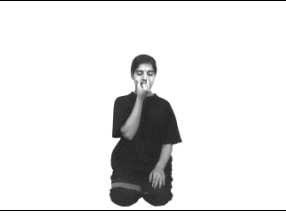
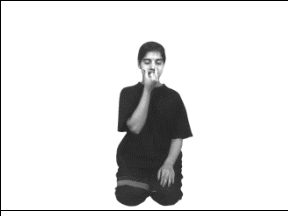

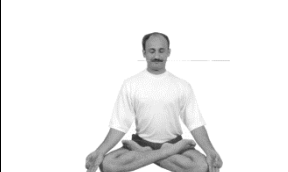
Time schedule of Arogyadhama Training

Time	Schedule
05:30 am	Pranayama, Om meditation
06:00am	Special Yoga Techniques 1
07:00 am	Maitri Milan
08:00 am	Breakfast
09:00 am	Parameters
09:45 am	Counselling
10.00am	Pranayam
11.00 am	Special Yoga Technique 2
12.00 pm	Lecture
1.00pm	Lunch
2.00pm	Resting Time
3.00 pm	Cyclic Meditaion
4.00pm	Special Yoga Technique 3
5.00 pm	Tune with Nature
6.00 pm	Bhajan
6.30 pm	Trataka
7.00 pm	MSRT
7.30 Pm	Diner
8.00 pm	Happy Assembly
8.30 pm	Subharather

BREATHING EXERCISE					
1	HANDS STRETCH BREATHING		2	HANDS IN AND OUT BREATHING	
3	ANKLES STRETCH BREATHING		4	TIGER BREATHING	
6	SASANKASANA BREATHING		7	DOG BREATHING	
LOOSENING EXERCISE					
1	JOGGING		2	FORWARD & BACKWARD BENDING	
3	SIDEWARD BENDING		4	SPINAL TWIST	
5	ParivRttaTrikoīāsana SWING		6	HIP STRETCH	
7	BACK STRETCH WITH ALTERNATE LEG		8	FULL BUTTERFLY	
9	ALTERNATE & BOTH LEG RAISING		10	ALTERNATE BHUJANGASANA & PARVATASANA	
11	SIDE LEG RAISING		12	CYCLING	
13	PAVANAMUKTASANA KRIYA		14	LUMBER STRETCH	
15	DHANURASANA SWING		16	NAUKASANA	
SURYA NAMASKAR					

1	HASTAUTTANASANA		2	PÁDAHASTÁSANA	
3	ASWASANCALANASANA		4	TULASANA	
5	SASANKASANA		6	SASTANGANAMASKARA	
7	BHUJANGASANA		8	PARVATASANA	
9	SASANKASANA		10	ASWASANCALANASANA	
11	PÁDAHASTÁSANA		12	HASTAUTTANASANA	

PRANAYAMA

1	KAPALABHATI		2	VIBHAGIYA PRANAYAMA	
3	SURYA ANULOMA		4	NADISUDHI PRANAYAMA	
5	COOLING PRANAYAMA		6	BHRAMARI	

Appendix –IV

Exercise-Avoidance motivation scale

The following statements describe reactions that some people have when they experience negative situations related to their weight. For example, this might include experiences when people make negative comments about your weight, are critical of your weight or generally make you feel uncomfortable about your weight. Using the following scale. Please indicate the extent to which each response true of you those circumstances.

Participant Name: _____ Date: - _____

Sl.No	Subject	Not At All True 1	2	3	4	5	6	Completely True 7
1	I avoid looking in the mirror so that I don't have to think about my weight.							
2	I feel uncomfortable going to a gym where there are a lot of mirrors.							
3	I avoid going out in public places because I am afraid that people will make comments about my size.							
4	I avoid going to the gym when I know there will be a lot of thin people there.							
5	I think to myself, I can't lose weight, and so I will not try.							
6	If I go to the gym, there are some exercises or pieces of equipment that I avoid.							
7	I feel unmotivated to try to lose weight.							
8	I am too embarrassed to participate in physical activity in public places (e.g. gym or fitness club; walking outside in public; swimming in public, etc.).							

Appendix V-Raw Data

Sl. No	Gender	Pre.Para.Emo.	Pre.Para.Ener	Pre.Para.L/R Symt	Pre.Para.O.Bal	Pre.Para.Ent.Co
1	Male	3.69	56.94	85.75	71.25	2.68
2	Female	3.84	54.09	89.08	83.53	2.64
3	Male	4.05	54.29	88.96	79.21	2.91
4	Female	3.24	48.62	80.81	79.11	3.01
5	Male	3.2	57.3	92.13	78.25	2.31
6	Female	4.88	46.62	87.53	71.25	2.98
7	Male	5.61	45.58	96.73	63.22	2.77
8	Female	4.92	45.82	80.39	74.7	2.9
9	Female	4	53.68	97.23	85.37	2.73
10	Male	4.38	56	97.64	79.11	2.57
11	Female	4.28	51.44	97.99	79.9	3.48
12	Female	3.25	49.93	93.19	77.5	2.38
13	Female	4.51	55.31	91.81	70.7	2.91
14	Female	4.33	43.06	93.17	78.4	3.34
15	Male	3.52	62.3	87.02	74.57	2.36
16	Female	4.59	55.95	81.64	62.5	2.81
17	Male	2.98	57.69	98.74	90.57	2.72
18	Female	4.18	47.1	96.33	86.31	3.26
19	Male	3.15	58.79	91.37	72.95	2.82
20	Female	2.73	52.14	94.56	88.29	2.63
21	Male	4.73	58.22	92.18	77.12	2.44
22	Male	2.92	59.03	95.61	84.53	2.62
23	Male	3.4	66.69	84.36	69.87	2.39
24	Female	3.14	63.28	99.12	86.12	2.21
25	Female	3.32	50	77.37	64.59	2.16
26	Male	3.65	60.06	84.06	62.44	2.6
27	Male	4.54	65.53	77.92	69.6	2.73
28	Female	5.97	27.65	70	64.39	2.33
29	Female	3.28	67.17	89.1	84.28	2.37
30	Male	3.04	60.33	85.94	80.55	2.33
31	Female	3	62.24	96.89	90.59	2.25
32	Female	2.97	56.16	99.88	73.53	2.66
33	Female	3.83	53.2	76.55	68.06	3.2
34	Female	4.02	45.49	61.11	56.2	3.16
35	Male	2.97	62.18	96.49	91.3	2.28

Sl.no	Gender	Post.Para.Emo.	Post.Para.Ener	Post.Para.L/R Symt	Post.Para.O.Bal	Post.Para.Ent.Co
1	Male	3.47	56.92	69.8	70.12	2.42
2	Female	4.05	46.85	89.05	74.67	2.88
3	Male	4.03	54.97	71.66	67.07	3.52
4	Female	3.36	57.18	96.3	80.07	2.66
5	Male	3.07	57.59	84.39	80.64	2.44
6	Female	4.34	51.08	80.21	84.75	3.23
7	Male	4.66	58.55	95.24	75.68	3.13
8	Female	4.23	51.96	97.31	78.18	2.43
9	Female	3.05	65.05	97.09	89.64	2.25
10	Male	3.58	54.37	91.95	68.72	3.36
11	Female	3.24	52.35	91.24	84.27	2.73
12	Female	3.93	61.4	91.69	87.43	2.54
13	Female	3.99	54.61	88.58	64.74	2.81
14	Female	3.55	56.27	96.05	90.04	2.91
15	Male	3.35	55.42	93.97	90.6	2.78
16	Female	3.01	52.11	97.54	80.34	3.03
17	Male	3.34	53.14	97.89	85.85	2.03
18	Female	4.45	50.45	82.32	77.42	3.02
19	Male	2.78	60.88	98.06	89.22	2.46
20	Female	2.69	68.54	99.13	88.61	2.3
21	Male	3.1	54.87	85.67	83.63	2.53
22	Male	3.46	62.62	90.16	75.53	2.48
23	Male	4.19	61.52	96.23	77.3	2.62
24	Female	2.75	60.74	95.59	87.51	2.27
25	Female	3.63	43.3	62.58	56.34	3.3
26	Male	2.93	68.18	89.37	80.96	2.3
27	Male	3.24	57.87	85.1	79.29	2.57
28	Female	6.84	34.74	63.74	51.94	2.75
29	Female	4.97	48.72	99.27	80.36	3.73
30	Male	3.2	58.53	85.82	80.86	2.58
31	Female	3.06	71.94	95.37	92.25	2.16
32	Female	2.97	55.23	89.53	82.22	2.85
33	Female	6.82	28.4	94.18	46.16	4.47
34	Female	4.15	53.05	72.53	71.78	2.96
35	Male	3.48	54.82	91.17	85.05	2.35