

"INFLUENCE OF YOGIC LIFE STYLE ON PHYSICAL, PHYSIOLOGICAL  
AND PSYCHO-SOCIAL WELLBEING OF YOGA PRACTITIONERS IN  
SHIVAMOGGA AND CHIKKAMAGALURU DISTRICTS"



**A Thesis submitted to Kuvempu University in fulfilment of  
the requirements for the Award of the Degree of**

**DOCTOR OF PHILOSOPHY  
IN  
PHYSICAL EDUCATION**

**By**

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**2022**

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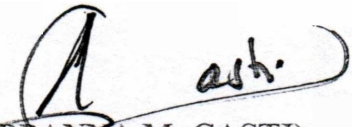
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*Parents, Teachers &  
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*Chapter-1*

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*Introduction*

## **Chapter-I**

### **INTRODUCTION**

Yoga plays a significant function and has a huge impact on modern society since it meets a man's physiological, sociological, spiritual, and biological needs. Yoga is currently booming on a global scale. Yoga is a verb that means "to yoke or to bind together" in Sanskrit. Yoga is an age-old discipline and way of life that has its roots in India. It entails the use of postures, controlled breathing, and meditation. It is a form of exercise that has been shown to assist older persons in numerous ways.

Yoga was viewed in Indian culture as a means of achieving happiness, liberation from grief, mental stability, and tranquilly. Since the beginning of time, those who seek spiritual knowledge often referred to as Rishis or Yogis have used yogic techniques to rebalance their mind and bodies and prepare them for spiritual realization. There are various terminologies that have been used to characterize the latter stages of mental health development in humans. Nirvana is a concept used by Buddhists, the Samkhya school employs 'Moksha', Vedantists use 'Atmasakshaatkar', etc. However, all of these ideas converge on the idea that it entails freedom from pain.

The Yoga Sutras, allegedly authored around 3000 BC by the Indian physician and Sanskrit scholar Patanjali, contain a description of the physical yoga postures. Yoga consists of a variety of activities, such as postures, exercises, meditation, and breathing exercises (Pranayama) (Brown and Gerbarg, 2005). In the first aphorism of the well-known Yoga Sutra, Sage Patanjali, who organised, coordinated, and systematized the yoga system, stated that the primary goal of yoga is to regulate the mind (Iyengar, 2005).

The Bhagavad Gita, which elaborates thorough typologies of yoga, mentions the necessity of yoga for eradicating grief and enhancing happiness in life. Hath yoga, a different type of yogic practice, stresses postures, breathing patterns, energy locks, and contemplation to increase energy and vigour. It concentrates on physical modes-operandi for attaining deeper realms of consciousness.

Yoga is a light that, once lighted, never goes out. The more consistently you practice, the brighter the flame becomes. Through consistent practice, everyone young, elderly, very old, sick, and infirm achieves yoga perfection. Yoga is, in essence, a path to complete health, tranquilly, bliss, and wisdom. Yoga's mental, physical, and spiritual qualities all contribute to a determined, fruitful existence. Yoga is a form of art, science, and philosophy that has an impact on every aspect of a man's life.

### **Yoga and Health**

Regular yoga practice cultivates traits of kindness, compassion, and increased self-control as well as flexibility, strength, and endurance. It also fosters a sense of serenity and wellbeing. Additionally, consistent practice results in significant changes in perspective on life, increased self-awareness, and increased energy for a fuller, more genuine enjoyment of life.

Regular yoga practice fosters qualities like kindness, compassion, and increased self-control while creating a sense of peace and well-being. It also has positive psychological effects (Collins, 1998; McCall, 2007). Yoga is a practice that has been around for ages and was created to help people with their physical, mental, emotional, and spiritual well-being. In India, it has long been a regular habit, and in recent decades, it has spread to western society as well.

Yoga is a type of mind-body exercise that combines physical exercise with an inwardly directed attentive focus on awareness of one's self, breath, and energy (Collins). Yoga is acknowledged as a type of mind-body medicine that unifies a person's physical, mental, and spiritual qualities to enhance various aspects of health, especially disorders linked to stress. The epidemics of mental stress, diabetes, hypertension, and cardiovascular disease are quickly spreading as a result of altered lifestyles brought on by globalization and industrialization. Although yoga has its roots in India and dates back thousands of years, it was first brought to the western world in the 19th century.

Epidemiological studies on Indian population concur that more than 50% of the elderly above 60 years of age suffer from chronic medical conditions and its prevalence increases with age (Sarvakshana, 1991). Health problems especially cardiovascular disorders, diabetes and hypertension are the widely prevalent while arthritis was mostly prevalent in women (Srinivasan *et al.*, 2010). Depression was the most common psychiatric disorder followed by dementia in the elderly (Varghese, 2003). Yoga is effective in prevention as well as management of stress and stress-induced disorders.

Age-related mental illness is becoming a bigger social issue. According to the World Health Organization, 15% of persons over 60 are thought to have a mental illness, and as the population ages, this number is expected to rise (WHO, 2017). This piece of work will take into account the research and writing that have been done in this field to determine whether yoga has the ability to improve the wellbeing of older individuals who have been diagnosed with a mental health problem.

Yoga is a form of mind-body-spirit practice that offers a comprehensive cure for a variety of somatic or psychological disorders (Feuerstein, 2000). Yoga reduced

depression and anxiety, according to studies of yoga-based interventions carried out on healthy populations (Pilkington *et al.*, 2005; Waelde *et al.*, 2004 and Woolery *et al.*, 2004).

The goal of the yoga module employed in this study was to enhance senior participants' overall health and quality of life. Recent medical and scientific research investigations on yoga have shown that it is quite effective in the treatment of several disorders. Numerous illnesses, including multiple sclerosis, asthma, irritable bowel syndrome, cancer, hypertension, drug addiction, osteoarthritis, and mental health difficulties have been linked to yoga in research. The factors of self-description, psychological status, and quality of life were all enhanced by yoga workouts. Yoga, according to researchers, enhances mental and intellectual function and reduces indigestion.

According to reports, yogic practices encourage healthy ageing (Dhar, 1997 and Zettergren *et al.*, 2011). Yoga combines the mental, emotional, and physical aspects to improve wellness. Age-related improvements in gait, balance, flexibility, and mood have been linked to yoga-based therapies (Chen *et al.*, 2009 and Donesky-Cuenco *et al.*, 2009). A yoga-based programme for elderly people living in community homes has been developed and is feasible, according to most prior research, which either examined individual yogic practices, such as meditation in the elderly or used yoga therapy interventions from a specific school of yoga (Chen *et al.*, 2007).

Numerous studies have examined elderly people's general psychological health. Ayurveda and yoga were used in a study in India that successfully reduced depressive symptoms in an elderly care facility (Krishnamurty and Telles, 2007); Kimberlee Bonura



has contributed significantly to this field and conducted a study to determine the impact of yoga on older adults' psychological health.

For the majority of older adults, independence is a crucial objective. Yoga is recognized to have a number of health advantages, such as reduced blood sugar levels in patients with type 2 diabetes, improved anxiety and depressive symptoms, reduced pain, reduced sleep disturbance, and enhanced quality of life.

### **STATEMENT OF THE PROBLEM**

The purpose of the present study was to investigate the influence of yogic life style on physical, physiological and psycho-social wellbeing of yoga practitioners.

### **OBJECTIVES OF THE STUDY**

The present investigation had the following objectives.

1. The study assessed selected physical variables like flexibility and hand grip strength of Shivamogga and Chikkamagaluru yoga practitioners as per available norms.
2. The study assessed selected physical variables like flexibility and hand grip strength of Shivamogga and Chikkamagaluru non-yoga practitioners as per available norms.
3. The study assessed selected physiological variables like body mass index (BMI), blood pressure and pulse rate of Shivamogga and Chikkamagaluru yoga practitioners as per available norms.

4. The study assessed selected physiological variables like body mass index (BMI), blood pressure and pulse rate of Shivamogga and Chikkamagaluru non-yoga practitioners as per available norms.
5. The study assessed selected psychological variables namely loneliness, anxiety, depression and stress of Shivamogga and Chikkamagaluru yoga practitioners as per available norms.
6. The study assessed selected psychological variables namely loneliness, anxiety, depression and stress of Shivamogga and Chikkamagaluru non-yoga practitioners as per available norms.
7. The study compared selected physical, physiological and psychological aspects of yoga practitioners with non-yoga practitioners of Shivamogga and Chikkamagaluru district.

#### **THE DELIMITATIONS OF STUDY**

1. The study was delimited to one hundred men (N=100) and one hundred women (N=100) yoga practitioners of Shivamogga and Chikkamagaluru districts.
2. The study was again delimited to one hundred men (N=100) and one hundred women (N=100) non-yoga practitioners of Shivamogga and Chikkamagaluru districts.
3. The study was delimited to subjects within the age group of 35 to 45 years.
4. The study was delimited to the selected physical variables like flexibility and hand grip strength.

5. The study was delimited to the selected physiological variables such as body mass index(BMI), blood pressure and pulse rate.
6. The study was delimited to the selected psychological variables namely loneliness, anxiety, depression and stress.

### **THE LIMITATIONS OF STUDY**

The present study has the following limitations :

1. The regular day to day activities were work was considered as limitation of the study.
2. The subjects selected were measured by the questionnaires and the responses obtained from the subjects were considered as genuine, these could be the limitations of study.
3. The initial level of fitness was not same in all subjects considered was another of the limitations of study.
4. The health condition of the subjects during the data collection was beyond the control of the researcher considered was another limitation of the study.

### **THE HYPOTHESES OF STUDY**

On the basis of researcher's understanding of the problem and based on the literature reviews the following hypotheses were formulated:

**H1:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga men practitioners of Shivamogga district.

- H2:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga women practitioners of Shivamogga district.
- H3:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga men practitioners of Shivamogga district.
- H4:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga women practitioners of Shivamogga district.
- H5:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga men practitioners of Shivamogga district.
- H6:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Shivamogga district.
- H7:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga men practitioners of Chikkamagaluru district.
- H8:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga women practitioners of Chikkamagaluru district.

**H9:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga men practitioners of Chikkamagaluru district.

**H10:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga women practitioners of Chikkamagaluru district.

**H11:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga men practitioners of Chikkamagaluru district.

**H12:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Chikkamagaluru district.

### **THE SIGNIFICANCE OF STUDY**

The present investigation will be significant in the following ways:

1. The result of the study will helpful to know the physical condition of yoga and non-yogapractitioners.
2. The result of the study will helpful to know the physiological condition of yoga and non-yoga practitioners.
3. The result of the study will helpful to know psychological condition of yoga and non-yoga practitioners.

## DEFINITION OF TERMS

**Body Mass Index :** Body Mass Index (BMI) formerly called the body mass index, is a measure for indicating nutritional status in adults it is defined as a person's weight in kilograms divided by the square of the person's height in meters ( $\text{kg}/\text{m}^2$ ).

**Muscular strength :** Muscular strength is defined as the ability of a muscle group to develop maximal contractile force against a resistance in a single contraction (Heyward, 2010).

**Hand grip strength :** Grip strength is the force applied by the hand to pull on or suspend from objects and is a specific part of hand strength (Clarke, 1976).

**Flexibility :** Flexibility is the ability of a joint, or series of joints to move through a full range of motion without injury (Heyward, 2010).

**Pulse rate :** Heart rate, also known as pulse, is the number of times a person's heart beats per minute.

**Blood pressure (Systolic and Diastolic Blood Pressure) :** Blood is moved through the circulatory system by pressure generated by the heart. Systolic blood pressure represents the strain placed against the arterial walls during ventricular contraction. Diastolic blood pressure indicates the peripheral resistance, or the ease at which blood flows into the capillaries (Heyward, 2010).

**Stress :** Stress is defined as a substantial between demand (physical or psychological) and response capability under conditions where failure to meet that demand has important consequences (Mcgrath, 1970).

**Loneliness** : Loneliness is the state of being alone and feeling sad about it. Your loneliness might lead you to sit at home listening to depressing.

**Anxiety** : A feeling of worry, nervousness, or unease about something with an uncertain outcome. "He felt a surge of anxiety.

**Yoga practitioners** : Those who are practicing yoga everyday are called yoga practitioners.

**Psycho-social conditions** : Psycho-social wellbeing is a superordinate construct that includes emotional or psychological wellbeing as well as social and collective well-being.

## *Chapter-11*

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# *Review of Related Literature*



## Chapter-II

### REVIEW OF RELATED LITERATURE

Gour *et al.* (2020) randomized control trial in which intervention was carried to observe the effects of yoga or light exercise on the improvement in health and well-being among the elderly population. The purpose of the study was to randomized control trial interventions to explore the experience of the elderly practicing yoga or light exercise in relation to sedentary behavior in the Ujjain district of Madhya Pradesh, India. For achieving this purpose participants of the randomized control trial were selected for this study. Eighteen focus group discussions were conducted six during each phase of randomized control trial interventions. The findings regarding motivating and demotivating factors in various phases of intervention were presented in three categories namely experience and perception of the effects of yoga or light exercise on sedentary behavior (1) before, (2) during, and (3) after intervention. This study reviles the positive effect of yoga or light exercise on sedentary behavior and subjective well-being on the elderly population. This study was recognized to have undergone changes in their physical and emotional well-being by consistently practicing yoga or light exercise. This study reviles that the notion that these interventions should be encouraged in the community to use physical exercise as a method to better control the physical and social effects of aging.

Patel *et al.* (2019) conducted the study on “Effect of Yoga on Balance in Geriatric Population”. Balance problems in elderly are generally due to multi-factorial condition which may include age related and disease-related declines in the balance system. This study shows that altered balance is the greatest collaborator towards falls in the elderly

with a high correlation between balance deficit and the incidence of falls. Iyengar yoga, one of the active, or Hatha, yoga techniques, is a system for increasing physical and mental well-being through stretching of all muscle groups for strength, flexibility and physical balance. Its practice has been associated with increased muscle strength, endurance, flexibility, range of motion and cardiopulmonary endurance. It mainly works on increasing body awareness and proprioception, which will lead to improvement of balance in older adults.

Hypertension is the most commonly encountered problems experienced by the elderly with sometimes unknown cause Permana, (2020). The purpose of review was to find out the effectiveness of yoga exercises for decreasing blood pressure in the elderly people. An preliminary search for articles was done on Google Scholar and PubMed. For this purpose researcher studies obtained about exercise therapy for hypertension elderly have 4,560 articles and journals but only 5 articles meet the search criteria. To find out the results of reviews, yoga exercises can reduce blood pressure in the elderly and besides, it is also very important to be applied as a non-pharmacological therapy for the elderly who have a medical history of hypertension.

Shin (2021) studied meta-analysis of the effect of yoga practice on physical fitness in the elderly. Achieving this purpose the study databases were systematically searched in 25 March 2021: Cochrane, PubMed and Embase. Researcher reviewed total of 656 papers was identified through key word combinations, finally, 12 studies were included in the meta-analysis. The main conclusions are as follows, First, yoga practice showed moderately positive effects on muscle strength, balance, mobility and lower body flexibility, but had no significant effect on cardio-respiratory endurance and upper body

flexibility. Secondly, sub-group analysis showed that subjects in their 60s and 70s and yoga practice for 9 to 12 weeks had a large positive effect on physical fitness. Yoga is a multimodal activity that help the muscle strength, balance, and flexibility in the elderly, and physical activity policies should continue to promote yoga as an activity that enhances physical and mental wellbeing in this population.

Senility and reduction of physical activities usually cause undesirable physical and even mental effects on the adults. Since physical activities can improve physical even mental condition, and consequently bring about more independence for adults, the purpose of this paper was to find out the effects of some of yoga practices on some factors of physical preparation in the elderly Koohboomi *et al.* (2015). For this purpose, total of 45 elderly women (age:  $64\pm 6.12$  y, height:  $162.50\pm 10.21$  cm, weight:  $63.21\pm 9.71$  kg), all enjoying general health were selected through convenience sampling method to take part in this test. For the achieving of purpose used the Sharpened Romberg test, acquiring operation test, timed up and go (TUG) test, number of arm flexion for 30 seconds test, number of takeoff and landing chair, getting hands together from behind, number of sitting and rising of the chair test, were used for measuring the static balance, dynamic balance, agility, upper organ, strength of lower organ, inflection of upper organ, trunk and lower organ, respectively. These tests were conducted before and after the program. The findings of the study showed that the yoga exercises for 6 weeks significantly affected the static and dynamic balances with eyes open and closed, agility, upper and lower extremity muscle strength, flexibility, upper and lower extremities.

Sivaramakrishnan *et al.* (2019) the effects of yoga compared to active and inactive controls on physical function and health related quality of life in older adult's systematic

review and meta-analysis of randomized controlled trials. For this purpose researcher following the databases were systematically searched in September 2017: MEDLINE, PsycInfo, CINAHL Plus, Scopus, Web of Science, Cochrane Library, Embase, Sport Discus, AMED and ProQuest Dissertations & Theses Global. This study inclusion criterion: Older adult participants with mean age of 60 years and above, not recruited on the basis of any specific disease or condition; yoga intervention compared with inactive controls; physical function and health related quality of life outcomes; and randomized/cluster randomized controlled trials published in English. A vote counting analysis and meta-analysis with standardized effect sizes (Hedges'  $g$ ) computed using random effects models were conducted.

Kazeminia *et al.* (2020) worked on the effect of exercise on anxiety in the elderly worldwide: a systematic review and meta-analysis. In this study, national and international databases of SID, MagIran, IranMedex, IranDoc, Cochrane, Embase, ScienceDirect, Scopus, PubMed, and Web of Science were searched to find studies published electronically from 1999 to 2019. Heterogeneity between the collected studies was determined using the Cochran's test ( $Q$ ) and  $I^2$ . Due to presence of heterogeneity, the random effects model was used to estimate the standardized mean difference of sport test scores obtained from the measurement of anxiety reduction among the elderly, between the intervention group before and after the test. In this meta-analysis and systematic review, 19 papers finally met the inclusion criteria. The overall sample size of all collected studies for the meta-analysis was 841 s. Mean anxiety score before and after intervention were  $38.7 \pm 5.6$   $33.7 \pm 3.4$  respectively, denoting a decrease in anxiety score

after intervention. Results of this study indicate that sport significantly reduces anxiety in the elderly. Therefore, a regular exercise program can be considered as a part of the elderly care program.

Bartos *et al.* (2022) examined the effectiveness of yoga to address multiple risk factors of falling in active and low active older adults. For this purpose selected Community dwelling older adults (N = 35) over the age of 65 actively participated in either yoga program, an exercise program, or a no program control. Physical variables included lower body strength, static balance, and lower body flexibility. Psychological variables included perceived self-efficacy with respect to falls and health related quality of life. Results of the study planned comparisons and practical significance testing indicated that yoga participants scored higher than the exercise and control participants on both right and left lower body flexibility tests and yoga participants also scored higher than the control participants on right leg static balance, and the right and left lower body flexibility tests. The findings of the study were to exercise participants scored higher than yoga participants on the RAND-36 quality of life subscales of energy/fatigue, pain and general health. These findings were discuss in relation to promoting physical activity programs to reduce risks of falling and the roles of the protocol, practical significance and measures employed when determining program effectiveness.

Saradha and Rajam (2017) studied the effect of “Yogic Practices on Selected Psychological Variables of College Women Students”. For this purpose selected 40 college women were randomly selected from Kumaraguru Institute of Technology, Coimbatore. The subjects age ranged between 18 to 22 years and researcher were randomly divided into two groups consisting of twenty each. Experimental Group I

underwent Yogic practices for a period of 16 weeks ; Group II acted as control group and were not engaged in any training programme other than their work. The psychological variables selected namely anger, stress and anxiety. The selected psychological tested through standard questionnaires. Pre and post tests were conducted in all the variables and selected subjects. The yogic practice group was significantly decreased in anger, stress and anxiety whereas the control group had no significant decrease in all the variables.

Gothe *et al.* (2014) investigated the “Effects of an 8-Week Hatha Yoga Intervention on Executive Function in Older Adults”. For this purpose researcher randomized controlled trial was to examine the effects of an 8-week Hatha yoga intervention on executive function measures of task switching and working memory capacity. A Hatha yoga intervention or a stretching-strengthening control group were randomly assigned to two groups of community-dwelling senior citizens (N = 118; mean age = 62.0). Over the course of the 8-week trial period, both groups attended three one-hour exercise sessions per week. At baseline and follow-up, all individuals completed standardized assessments of executive function, such as the task switching paradigm, n-back, and running memory span. The findings of the study were showed significantly shorter reaction times on the mixed and repeat task switching trials for the Hatha yoga group. Higher accuracy was recorded on the single trials the 2 back condition of the n back and partial recall scores of running span task and eight weeks of yoga practice, selected participants in the yoga intervention group showed significantly better performance on the executive function measures of working memory capacity and efficiency of mental set shifting and flexibility match with their stretching strengthening counterparts.

Bonura and Gershon (2013) investigated the “Effects of Yoga on Psychological Health in Older Adults”. For this purpose researcher randomized controlled trial study, conducted at two North Florida facilities for older adults. The researcher selected 98 year older adult subjects and age range of the subjects 65 to 92. Selected participants were randomly assigned to chair yoga, chair exercise, and control groups and assessed pre intervention, post intervention, and one month follow-up on the state anger expression inventory, state anxiety inventory, geriatric depression scale, Lawton's PGC morale scale, general self-efficacy scale, chronic disease self-efficacy scales, and self-control schedule. In this study yoga participants improved more than both exercise and control participants in anger, anxiety, depression, well-being, general self-efficacy, and self-efficacy for daily living and over a six-week period, our findings indicate yoga's potential for improving psychological health in older adults.

Yoga practice has become increasingly popular around the world for the benefits it can bring for physical and mental health. Belam (2020), studied Yoga as an intervention for older peoples mental health: a literature review. This study reviewed the attempt to answer the questions; what research has been done to look into the use of yoga as therapy for elderly people with a diagnosis of mental health problems, what does this research showed and what future directions may this work taken in the future. Conclusion, it is clear that although this field of study is still in its early stages, yoga has the potential to be an effective form of treatment for older people who are struggling with mental health issues. Originality/value A group of people who are frequently vulnerable and who occasionally do not receive all the treatment they deserve will benefit from using the traditions of yoga, as has been of great benefit to so many. However, as with all

research into treatments for mental health problems, patient and caregiver involvement will be essential to ensure that the direction of the research is one that will be valuable.

Good health is a fundamental human right of every individual. Yoga has always been considered to contribute a good health Singh and Sharma (2017) studied mental and physical health study of yoga practitioners and non practitioners. For this purpose selected adult one hundred participants equally divided into two groups namely yoga practitioners and non practitioners each group consistent fifty subjects from the residential areas of Punjab state in India for their mental and physical health status. The researcher used world health organization quality of life scale was administered to all participants to find out status of various health facets and obtained data were treated to one-way ANOVA statistics. The findings of the study reported yoga exercise practitioners comparatively sound sleep, enhanced energy level, and overall general health wellness. Analysis of the scores discovered that the significant differences among the yoga practitioners and non practitioners groups. This study concluded that the yoga practice improves the mental health of the people.

Javnbakht *et al.* (2009) sought to “Evaluate the Influence of Yoga in Relieving Symptoms of Depression and Anxiety in Women”. For this purpose, involved a convenience sample of women who were referred to a yoga clinic from July 2006 to July 2007. For achieving the purpose of the study researcher were evaluated on admission using a personal information questionnaire well as Beck and Spielberger tests and participants were randomly assigned into an experimental and a control group. Researcher divided into two groups namely experimental group N=34 subjects participated in twice weekly yoga classes of 90 min duration for two months and control



group N=31. Both experimental and control groups were evaluated again after the two-month study period. This study concluded that the Participation in a two month yoga class can lead to significant reduction in perceived levels of anxiety in women who suffer from anxiety disorders. This study showed that yoga can be considered as a complementary therapy or an alternative method for medical therapy in the treatment of anxiety disorders.

Chauhan *et al.* (2016) evaluated the “Effect of 1 month Yoga Practice on Body Mass Index and Blood Pressure”. The present study was conducted to determine the effect of yoga practice on 64 participants in experimental group whereas the results were compared with 26 healthy volunteers in control group. The researcher examined the effects of yoga on physiological parameters in a 1 month pilot study. Yoga practice causes decreased body mass index, systolic blood pressure, and diastolic blood pressure. On the other hand, no significant changes were observed in body mass index and blood pressure of control group. The study showed that the yoga practice has potential to control BMI and BP without taking any medication.

Madanmohan *et al.* (2008) discovered the designed to test whether yoga training of six weeks duration modulates sweating response to dynamic exercise and improves respiratory pressures, handgrip strength and handgrip endurance. For this purpose selected 46 healthy subjects. 30 were male and 16 were female their aged between 17 to 20 years and 23 motivated subjects selected in this 15 male and 8 female were given yoga training and the remaining 23 subjects served as controls. The maximal inspiratory pressure, maximum expiratory pressure, 40 mm endurance, handgrip strength, and handgrip endurance were measured before and after the six week study period. The

weight loss following the Harvard step test (a measure of sweat loss) was also assessed. This study concluded that the yoga training for a short period of six weeks can produce significant improvements in respiratory muscle strength and endurance.

Madanmohan *et al.* (1992) discovered the “Effect of Yoga training on Reaction Time, Respiratory Endurance and Muscle Strength”. This study investigation was undertaken to study the effect of yoga training on visual and auditory reaction times, maximum expiratory pressure, maximum inspiratory pressure, 40 mm Hg test, breath holding time after expiration, breath holding time after inspiration, and hand grip strength. Twenty seven student volunteers were given yoga training for 12 weeks. The findings of the study shows that yoga practice for 12 weeks results in significant reduction in visual and auditory reaction times and significant increase in respiratory pressures, breath holding times and hand grip strength.

Satyanarayana *et al.* (2013) evaluated the “Effect of Yoga on Heart Rate, Blood Pressure, Body Mass Index”. The aim of the study was to yoga attainment of the physical, mental and spiritual health and to control the blood pressure. The achieving the purpose of the study was conducted to determine the effect of yoga training on 50 male subjects and researcher examined the effects of yoga on hemodynamic and laboratory parameters in a 6-months pilot study. The present study reveals that there is a significant reduction in blood pressure, heart rate, and body mass index in the total cohort with yoga.

Yoga is a treatment for high blood pressure that is quite successful. The purpose of the current study was to assess yoga's efficacy in the management of high blood pressure (Satyanand *et al.*, 2016). Subsequently, the acquisition of informed consent, yoga sessions were held at Narayana Yoga and Naturopathy Medical College and

Hospital for a period of 12 weeks on 100 subjects who complained of high blood pressure and attended the outpatient department of cardiology at Narayana Medical College and Hospital, Nellore. The same number of individuals in the control group, who were of the same age and gender but did not practice yoga, were also enrolled. A sphygmomanometer is used to measure the individuals' symptom alleviation at regular intervals throughout the therapy period.

Hagins *et al.* (2013) systematically reviewed and meta-analyzed that the effectiveness of yoga for reducing blood pressure in adults with hypertension. To assess the modifying influences of type and length of yoga intervention and type of comparison group. For this purpose, researcher used academic search premier, Alt Health Watch, BIOSIS/Biological Abstracts, CINAHL, Cochrane Library, Embase, MEDLINE, PsycINFO, Psycarticles, Natural Standard, and Web of Science databases were screened for controlled studies from 1966 to March 2013. Results : All 17 studies included in the review had unclear or high risk of bias. Yoga had a modest but significant effect on systolic blood pressure and diastolic blood pressure. Subgroup analyses demonstrated significant reductions in blood pressure for interventions incorporating three basic elements of yoga practice but not for more limited yoga interventions; yoga compared to no treatment but not for exercise. The study reviles that the Yoga can be preliminarily recommended as an effective intervention for reducing blood pressure.

Due to changes in human lifestyle over the past few decades, worldwide health agencies, such as the World Health Organization, are now concentrating on both the prevention and treatment of chronic illness (Kaleeswari *et al.* (2021). Studies emphasize

that, heavier women in the 30- to 45-year-old age range are more susceptible to hypertension and heart disease. Yoga is a useful technique for managing our physiological processes, such as blood pressure, pulse, etc. This study's primary goal was to determine how yoga affected several physiological indicators. The study, which involved 40 female participants, was an experimental study with a two-group, pretest and posttest control group, design. These women practiced pranayama and meditation for a total of 6 weeks. The study showed that the yoga therapy significantly reduced the blood pressure (0.000\*) and pulse rate (0.000\*) of women, which was also statistically proved. Finally, this study reveals that the yoga therapy can be an effective method to control blood pressure and pulse rate of patients with chronic diseases.

In India, the prevalence of non-communicable diseases is rising, and one of the main risk factors for cardiovascular diseases is hypertension, which is also known as a chronic lifestyle disorder. Thus, non-pharmacological therapies that result in lifestyle changes are crucial for managing and preventing hypertension (Hadaye *et al.* (2021). The purpose of the study was to find out the effect of yoga intervention in the management of hypertension: A preventive trial. A tertiary care facility conducted an open-label, two-armed, non-randomized controlled trial on 145 patients with hypertension: 73 in the intervention group and 72 in the control group. For a total of 4 months, the intervention group received weekly yoga instruction along with tips on food, exercise, and standard medications. The yoga intervention was not given to the control group. The findings demonstrated that yoga is an efficient, secure, and less expensive adjunct therapy for the treatment of hypertension. Yoga was discovered to be successful at lowering stress levels.

The control and prevention of hypertension can be greatly aided by dietary changes and physical activity.

Shin (2021) systematically reviewed the “Effect of Yoga Practice on Physical Fitness in the Elderly. The objective of this study was to determine the effects of a yoga intervention on senior citizens physical fitness by a meta-analysis. On March 25, 2021, the databases Cochrane, PubMed, and Embase were thoroughly searched by the researcher. Through the use of key word combinations, a total of 656 papers were found; ultimately, 12 studies were included in the meta-analysis. The above are the study's major findings. First, yoga practice had minimally favourable impacts on upper body flexibility and cardio-respiratory endurance, but moderately positive effects on muscle strength, balance, and mobility. Second, sub-group analysis revealed that yoga practice for 9–12 weeks had a significant favourable impact on physical fitness among subjects in their 60s and 70s. Physical activity policy should continue to support yoga as a multimodal exercise that increases muscle strength, balance, and flexibility in the elderly. Yoga is a multimodal activity that benefits this population's physical and emotional welfare.

Telles *et al.* (2014) studied on “Immediate Changes in Muscle Strength and Motor Speed Following Yoga Breathing”. The present study was conducted to evaluate the immediate effect of high-frequency yoga breathing on muscle strength and motor speed. For this purpose selected bilateral handgrip strength, leg and back strength, finger tapping and arm tapping speed were assessed in fifty male subjects before and after (a) high frequency yoga breathing for 15 minutes and (b) breath awareness for the same duration. Sessions after (a) and before (b) were on two different days but at the same time of the

day. The results of the study revealed a considerable improvement in finger and arm tapping after both workouts, as well as a significant increase in right hand grip strength. This study suggests that high frequency yoga breathing has a direct positive impact on hand grip strength.

Shohani *et al.* (2018) studied on the “Effects of Yoga on Stress, Anxiety and Depression in Women Living in Ilam, Iran”. For this purpose used DASS-21 (Depression Anxiety Stress Scale-21) questionnaire. Researcher achieving the purpose of the study selected 52 women’s in admitted to yoga club in the city of Ilam in 2014–2015. For selected samples, given Hatha yoga exercises and training sessions were held for 4 weeks (3 time/weeks; 60-70 min each) by a specialist. The collected Data were analyzed using SPSS version 20. The findings of the study showed that the depression, anxiety, and stress decreased significantly in women after 12 sessions of regular Hatha yoga practice and yoga has an effective role in reducing stress, anxiety, and depression. Thus, it can be used as complementary medicine.

Regular practice of yoga promotes strength, endurance, flexibility and facilitates characteristics of friendliness, compassion & self-control (Khan *et al.*, 2018). The purpose of the study was to find out the effect of yoga on anxiety. For this study, the researchers chose 200 anxiety cases having age range between 18 to 55 years. The investigator employed the questionnaire method to achieve the study's goal using Hamilton anxiety scale to measure the anxiety. The participants were divided into the study group and the control group at random. The study group received a specific set of yoga exercises. The researcher analyzed the data used through Chi-square, independent t

test. In this study observed that anxiety was significantly decreased after the yogic intervention. The results of study suggest that the yoga can reduce perceived stress improve well-being even more significantly so its recommend to do yoga regularly.

Butterfield *et al.* (2016) reviewed yoga and mindfulness for anxiety and depression and the role of mental health professionals. The aim of the study was to examine the role of yoga in the management of anxiety and depression, development of mindfulness and self-compassion and implications for mental health care delivery and mental health professionals, with a specific focus on nursing practice. For this purpose researcher used electronic databases Scopus, CINAHL, EMBASE, Medline and Cochrane Library was undertaken. The findings of the study showed that there is growing research evidence supporting the use of yoga as an adjunct or combination therapy for the management of stress, anxiety and depression. Although further research is needed, mindfulness has been suggested as a potential mechanism of change. Professionals in the medical field may be crucial in encouraging patients to practice yoga as part of their mental health therapy.

Javnbakht *et al.* (2009) conducted a study on 2 groups of woman one is experimental group (n=34, who is exposed to yoga classes of 90 min duration for two months twice a day) and second is control group (N=31 who did not receive yoga). The result shows that the experiential group (pre and post) did not differ in effect of intervention. The mean score of pre-test was  $12.82 \pm 7.9$  and mean of post-test was  $10.79 \pm 6.04$ , i.e., statistically insignificant ( $p = 0.13$ ). However, when the experimental group was compared to the control group, women who participated in yoga classes showed a

significant decrease in trait anxiety ( $p < 0.001$ ) and state anxiety ( $p = 0.03$ ). So, the 2 month yoga class helped in significant reduction in levels of anxiety in women participants.

Armat *et al.* (2018) conducted a study on “Retired Woman Employees in Iran by Applying Laughter Therapy”. The result showed significant difference in depression and anxiety scores between groups. Laughter yoga play significant role to reducing anxiety and depression among retired women.

Krishnamurthy (2007) conducted a “Study on People above Age 60 Living in Residential Homes”. The result show that, the depression symptom scores of the Yoga Group at both quarter and half year decreased significantly from the average baseline of 10.6 to 8.1 and 6.7, respectively ( $p < .001$ ). The other groups showed no change. Hence, the method of yoga including mental and physical practices was useful for institutionalized older persons.

Shohani *et al.* (2018) conducted a study to investigate the “Effects of Yoga on Anxiety Stress and Depression in Women Living in Iran”. This is a quasi-experimental design study with pre-test and posttest. Depression Anxiety Stress Scale-21 (questionnaire) was used in the study. The yoga exercises and training sessions were held for 28 days (three times in weeks; 70-60 minutes) by a professional. Paired sample t-test was used to compare the results of before & after the intervention. Result revealed that yoga showed a positive correlation with all three variable i.e. Depression, stress and anxiety ( $r=.8, .7$  &  $.7$  at  $P < 0.001$ ). Results revealed that regular yoga exercise significantly reduced stress, anxiety and depression in women.



Moliver *et al.* (2013) conducted a study on 211 female yoga practitioners (45-80) and examine psychological attitudes, transcendence, mental mastery, and subjective vitality according to the length and frequency of yoga practice. They found significant positive relationship between yoga experience and all outcome variables. Yoga is found to have exercising protective effect against low levels of subjective well being and vitality.

Nityananthan and Kalpana (2014) studied on a random sample of middle-aged men was divided into two groups: a control group and an experimental group, each with fifteen participants. Pretests on certain psychological factors, such as stress and self-confidence, were completed by all subjects. For six weeks, the experimental group received the corresponding care. The dependent variables mentioned above were subjected to post tests six weeks later. The difference between the original and final means was taken into account when calculating the participants' individual effects. Through ANCOVA, the statistical significance was examined. The findings indicate that yoga significantly improved the middle-aged men's general health conditions and reduced their stress levels. The findings indicate that yoga significantly improved the middle-aged men's general health conditions and reduced their stress levels. Significant differences were seen in the post-test means between the experimental group (mean 22.00) and the control group (mean 25.40).

Loneliness is common among orphans and has been found to activate biological stress processes; also responsible for many psychiatric disorders like anxiety, depression, sleep problems, personality disorders, eating disorders along with nausea, headaches and

poor immunity was studied by Purohit *et al.* (2016). The purpose of the study was to find out the effect of a yoga program on the loneliness in orphan adolescents. For this purpose researcher randomized wait-list control pre-post study. The study found that eighty orphan adolescents of age range between 11 to 16 years. To achieve this goal, yoga group underwent three months of Yoga program with a schedule of 90 minutes per day, four days per week. The wait-list control group underwent the routine activities. Socio-demographic information form and Children's Loneliness Scale (CLS) were assessed in the beginning and end of the intervention to address the research question. In this study independent sample 't' test showed that there was significant difference ( $p=0.001$ ) in the post scores of Children's Loneliness Scale in Yoga group compared to wait-list control group. There was no significant difference observed in both the groups between pre and post scores although the magnitude of change in Yoga group is higher as compared to wait-list control group. The findings show three months Yoga program may be useful for the young orphan adolescents in reducing loneliness.

*Chapter-III*

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*Methodology*

## Chapter-III

### METHODOLOGY

This section describes the procedure that was adopted for the selection of subjects, selection of variables, orientation of subjects, criterion measures, reliability of data, test administration, collection of data and statistical techniques employed for analyzing the data.

#### SELECTION OF SUBJECTS

For this study two hundred yoga practitioners were selected as subjects through purposive sampling method. Men (N=100) and women (N=100) yoga practitioners and Non-yoga practitioners Men (N=100) and women (N=100), who were residing in Shivamogga and Chikkamagaluru districts of Karnataka state were selected for the study. The age ranged between the subjects 35 to 45 years. The detailed information on selection is subjects from yoga and non- yoga practitioners in men and women section is given in the following table 1.

**Table 3.1. Information on selection of subjects in yoga practitioners and non-yoga practitioners Shivamogga and Chikkamagaluru District**

Place	Yoga practitioners		Non-yoga practitioners		Total
	Men	Women	Men	Women	
Shivamogga	50	50	50	50	200
Chikkamagaluru	50	50	50	50	200
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>400</b>

## SELECTION OF TEST ITEMS

The research scholar reviewed the available literature pertaining to the study from books, journals, periodicals, magazines research papers and also taking into the consideration of the importance of variables and feasibility criteria, the following variables were selected. The details of tests selected for yoga and non-yoga practitioner category are given in table 2.

**Table 3.2. Information on selection of test items for yoga practitioners and non-yoga practitioner's category of Shivamogga and Chikkamagaluru districts**

<b>Variables</b>	<b>Sub-variables</b>	<b>Equipment / Tools</b>
Physical	Height	Stadiometer
	Weight	Standard Weighing Machine
	Flexibility	Sit and Reach Box
	Hand grip strength	hand grip dynamometer
Physiological	Pulse	Automated digital blood pressure monitor
	Blood pressure	
	Body composition	Using the BMI formula
Psychological	Loneliness	Questionnaire constructed and standardized by Russel D Peplau. 1980
	Anxiety	Questionnaire constructed and standardized by Aaron Temkin Beck 1988
	Depression	Questionnaire constructed and standardized by WW Zung
	Stress	Questionnaire constructed and standardized by Cohens Kamarek 1983

## **Procedure for administering the tests and collection of data**

Investigator had a meeting with the subjects. The objectives and importance of the test were made clear to the subjects at the outset. Demonstration of the test was done by the researcher in order to clear any ambiguities in terms of understanding of the test by subjects

### **1. Standing Height**

**Purpose:** To measure the standing maximum height from floor to top of the head.

**Equipment:** Standing indo-surgical portable stadiometer, data entry sheet.

**Procedure:** The height of an individual was measured by using an instrument called stadiometer. The standing height was measured with the subjects standing erect without shoes and socks on the floor board of stadiometer. The subjects were asked to stand with heels together, buttocks and back touching the vertical bar and look straight ahead along the pole of the stadiometer. They placed their head in frank fort plane and maintain the normal breathing. The head piece of the stadiometer bar and the sliding part of the measuring rod was lowered up to the top of the head of an individual. The researcher took the height measurement from the floor to the height point of the head and reading was recorded in centimeter.

**Scoring:** The score was recorded in centimeters.



**Picture 3.1. Pictorial depiction of data collection by research scholar from a subject on standing height**

## **2. Standing Weight**

**Purpose:** To measure the weight.

**Equipment:** Electric weighing machine, pen, paper, performance sheet.

**Test Method:** The research instructed the subject to come only in the skin tights and stand on the weighing machine without shoes and any heavy objects. The subject has to look forward at the same time researcher has to see the electronic display of kilograms on the machine.

**Scoring:** To maintain this record the researcher writes the body weight of the subject in kilograms.



**Picture 3.2. Pictorial depiction of data collection by research scholar from a subject on standing height**

### **3. Sit and Reach Test**

**Purpose :** The sit and reach test was developed to measure hamstring and lower back flexibility and was first describe by Wells and Dillon 1952 Lemmink *et al.* (2003).

**Equipment required:** Sit and reach box trunk flexibility box deluxe was used.

**Test procedure:** The selected subjects removed their shoes and placed the sole of both feet against the flexibility box. The subjects assumed a sitting position with the head, back and hips against a wall (90 degree angle at hip joint) and the feet against the sit and reach box and was instructed to place hand over hand and reach out, level with the measurement scale. During this reach, the head, back and hips had to remain in contact with the wall and only scapular abduction should be performed (Lemmink *et al.*, 2003). \

**Scoring:** The distance reached by the best three trials was recorded as the score.





**Picture 3.3. Pictorial depiction of data collection by research scholar from a subject on sit and reach**

#### **4. Hand Grip Strength Test**

**Purpose :** Hand grip dynamometer is the equipment which is used to assess the maximum isometric strength of hand and forearm of an individual.

**Equipment used:** Hand grip dynamometer, chair, data entry sheet.

**Procedure:** The test was performed as per following standard procedure and using jammer hydraulic hand grip dynamometer. A total of three trials were performed on every subjects with at least thirty seconds active rest between each effort including in the study and the average was taken for the analysis. The measurement was recorded in kilograms. The individual was made to sit on the chair with a straight body position and feet flat on the floor and keeping their arms at the right angles and elbow on either side of the body. The handle of the dynamometer was adjusted as per palm size of an individual. The base of the handle should rest on middle of four fingers. Then, the individual was asked squeeze the dynamometer with maximum isometric is allowed.

**Scoring:** The score was recorded in kilograms.



**Picture 3.4. Pictorial depiction of data collection by research scholar from a subject on hand grip strength test**

## **5. Body Mass Index**

To measure the Body mass index Standard Body Mass Index calculator Body mass index (BMI) is a measure of body fat based on height and weight that applies to adult men and women.  $BMI = \frac{\text{Weight (kg)}}{\text{Height (m)}^2}$  BMI weight status\_\_Below 18.5 Underweight 18-24.9 Normal weight 25.0-29.9 Overweight 30.0-34.9 obesity class I, 35 .0-34.9 Obesity II, Above 40 Obesity class III.

### **Blood Pressure**

**Purpose:** to measure the systolic and diastolic blood pressure.

**Equipment:** Automated Omron 10 series digital blood pressure monitor.

**Procedure:** the researcher before taking the blood pressure reading, an individual was made to set on the chair straight with the both the feet flat on the floor and their upper left arm, elbow slightly fixed forearm with the palm facing upwards, support an flat surface and normal breathing. The instrument was placed just above the elbow of an individual

and cantered over the brachial artery. The cuff of the monitor and wrapped around the upper arm of an individual and attached to the monitor and then located the brachial artery and investigator press the start button, the systolic and diastolic blood pressure units will displayed the monitor unit. The blood pressure was measured by millimeter of mercury (mmHg).

**Scoring:** Systolic and Diastolic blood pressure is recorded in the units of millimeter of mercury (mmHg). Picture 1 portrays research scholar collecting data on blood pressure by means of Omron Blood Pressure monitor.



**Picture 3.5. Pictorial depiction of data collection by research scholar from a subject on blood pressure test**

### **Standard Stress Scale (SSS)**

It is a scale (Annexure-II) which refers to the whole life course and has been particularly developed to meet the necessities of multicohort panel studies. Accordingly,

the standard stress scale is steadily appropriate for different age groups from fourteen years and above. It is also suitable for a wide range of people irrespective of their employment situation and stage in life; the items are applicable for old-age pensioners, unemployed and self-employee, househusband and wife, for university students and so forth. 35 questions regarding stressful life situations, social stress, daily distress, anxieties about the future and other stresses and strains were developed following the theoretical approach of the effort reward imbalance model and the demand-control model. These 35 items were pre-tested with different subsamples such as students in different school types, university students, and adults in different life stages using self-administered questionnaires (Gross and Seebab, 2014).

The questionnaire consisted of 35 questions under 5 sub-categories- 1) Over commitment and workload, 2) Enjoyment of work, self-realization, empowerment; 3) Social distress, social support, social approval; 4) Recreational capacities, exhaustion; 5) Anxiety about the future, uncertainty. The distribution of questions under sub-categories in presented in table 1.

**Table 3.3. Details on distribution of questions under various sub-categories**

Over commitment, workload	1, 3, 5, 7, 10
Enjoyment of work, self-realization, empowerment	2, 4, 6, 8, 9, 11
Social distress, social support, social approval	12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 34
Recreational capacities, exhaustion	23, 24, 26, 27, 28, 29, 30, 32
Anxiety about the future, uncertainty	25, 31, 33, 35

Each statement in the questionnaire had to be rated on 5 point Likert scale ranging from 'Not at all' to 'Completely'. The scoring was done in the following manner: 'Not at all'= 1 point; 'To a small extent'= 2points; 'Somewhat'= 3 points; 'To a large extent'= 4 points; and 'Completely'= 5 points. Firstly, point on each question was calculated and lastly the score on entire questionnaire was calculated. The larger the score on the questionnaire the higher the stress.

### **Loneliness**

To measuring loneliness using a 4-point rating scale (1= never; 4 = always), participants answer 20 questions, such as "How often do you feel left out?" and "How often do you feel part of a group of friends?" Researchers later reverse-code the positively worded items so that high values mean more loneliness, and then calculate a score for. Studies show that people who have high scores on the UCLA Loneliness Scale tend to have trouble in other areas related to social mobility.

For instance, people with higher loneliness scores have worse friendships and romantic relationships than do people with lower scores (Russell *et al.*, 1994). Other studies suggest that poor relationships can be both a cause and an effect of poverty (Conger, Conger and Martin, 2010).

### **Depression**

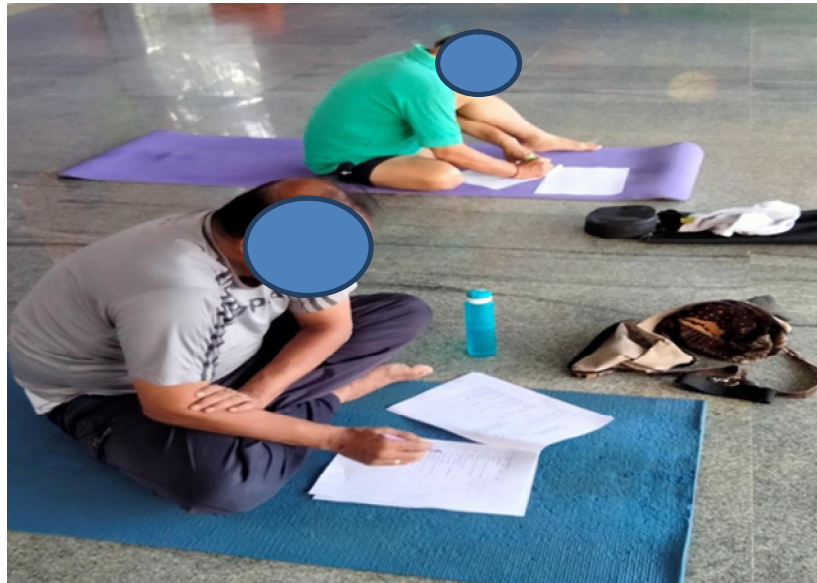
The Zung Self-Rating Depression Scale was designed by W.W. Zung to assess the level of depression for patients diagnosed with depressive disorder. The Zung Self-Rating Depression Scale is a short self-administered survey to quantify the depressed status of a patient. There are 20 items on the scale that rate the four common characteristics of depression: the pervasiveeffect, the physiological equivalents, other disturbances, and psychomotor activities. There are ten positively worded and ten

negatively worded questions. Each question is scored on a scale of 1-4 (a little of the time, some of the time, good part of the time, most of the time). The scores range from 25-100. • 25-49 Normal Range • 50-59 Mildly Depressed • 60-69 Moderately Depressed • 70 and above Severely Depressed.

### **Anxiety**

The Zung Self-Rating Depression Scale was designed by Aaron T. Beck to used self-report measure of anxiety.

The total score is calculated by finding the sum of the 21 items. Score of 0-21 = low anxiety Score of 22-35 = moderate anxiety Score of 36 and above = potentially concerning levelsof anxiety.



**Picture 3.6. Pictorial depiction of data collection by research scholar from a subject on psychological questionnaire**

### **Statistical Techniques**

Descriptive statistics like mean and standard deviation were calculated for raw data of each variable. Analysis was done to find out the number of subjects coming under

each category as per normative values where ever norms are available. In case if norms were not readily available, based on previous studies on age and population matched subjects, the norms were constructed using mean value and standard deviation. For this purpose, five categories were done with 0.5, 1 and 1.5 Standard Deviation based on principles of normal probability curve. In this way norms were prepared with five categories as given in table 3.12.

**Table 3.4. Criteria for constructing norms on the basis of Mean and Standard Deviation on the basis of principles of Normal probability curve**

Mean + 1.5 S.D and above	Strong
Mean + 0.5 S.D to Mean + 1.5 S.D	Above average
Mean – 0.5 S.D to Mean + 0.5 S.D	Average
Mean – 0.5 S.D to Mean – 1.5 S.D	Below average
Mean – 1.5 S.D and below	Weak

In order to find out the results of the study, various statistical techniques was employed. In the first level, percent analysis was performed on the data pertaining to different variables selected for the investigation and matched against available norms.

Secondly, the results on different variables of yoga practitioners were compared against non-yoga practitioner’s subjects. ‘T’ test for independent samples was employed for this purpose.

## *Chapter-IV*

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# *Analysis of Data and Results of the Study*



## Chapter-IV

### ANALYSIS OF DATA AND RESULTS OF THE STUDY

This section contains information on analyses of data, presentation of results as well as their interpretations and discussion of findings as well as discussion on hypotheses. The results of data analyses after application of suitable statistics to raw data methodically presented. An interpretation of results pertaining to physical, physiological and psycho-social wellbeing aspects of yoga practitioners and non-yoga practitioners is made as per the insight of researcher in available literature.

#### ANALYSIS OF DATA

The raw data collected on various physical, physiological, psychological variables of yoga practitioners and non-yoga practitioner's subjects to various statistical analyses to answer the research hypotheses formulated for the present investigation. The results are documented under following heads:

**I. Percent analysis on selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners in men and women section as per available norms**

Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners. The results under above headings are presented one by one in the ensuing paragraphs of this section.

**I. Norms based results on physical, physiological and psycho-social wellbeing aspects of men and women yoga practitioners**

The subject characteristic of yoga practitioners is given in table 3 for providing a better understanding of subjects under investigation.

**Table 4.1. Descriptive statistic results of selected characteristics of yoga men and women practitioners belong to Shivamoggaand Chikkamagaluru districts**

	Shivamogga						Chikkamagaluru					
	Men			Women			Men			Women		
	Mean ± SD	Max	Max	Mean ± SD	Max	Max	Mean ± SD	Max	Max	Mean ± SD	Max	Max
Flexibility	20.54±2.63	27	18	20.68±2.57	27	18	20.26±2.54	15	28	20.62±2.55	27	17
Hand Grip Strength	36.06±3.10	43	31	36.08±1.83	32	20	35.78±2.88	42	31	35.98±1.83	30	22
Body Mass Index	24.46±1.94	29	20	23.90±2.62	28	21	24.87±2.60	27.34	19.56	24.64±4.77	30	19.36
Systolic Blood Pressure	119.44±2.79	130	120	119.44±3.43	127	110	124.82±2.24	130	120	122.46±2.53	126	118
Diastolic Blood Pressure	80.08±3.57	86	66	80.44±3.00	87	66	80.50±3.91	89	66	80.96±2.93	89	70
Pulse Rate	78.04±3.83	88	70	79.14±4.39	88	70	78.92±4.38	88	62	78.92±4.38	78	70
Loneliness	32.14±2.28	37	27	32.08±2.32	36	24	32.70±2.14	38	29	32.42±3.56	39	21
Anxiety	31.92±3.64	38	20	22.42±3.26	31	17	31.30±3.03	36	21	22.54±4.00	38	20
Depression	37.76±4.56	49	31	34.64±2.66	39	30	33.56±3.33	39	29	33.58±2.56	39	30
Stress	105.50±5.28	117	95	105.54±3.27	112	97	105.12±3.62	114	95	105.86±4.73	116	98

Table 4.1 provides information on selected sample characteristics selected for the present study. The flexibility in men section was  $20.54 \pm 2.63$ cms; and in women section it was  $20.68 \pm 2.57$ cms. The hand grip strength was found to be  $36.06 \pm 3.10$ kgs in men section; and  $36.08 \pm 1.83$ kgs in women section. It was found that the body mass index in men and women section was  $24.46 \pm 1.94$  per cent and  $23.90 \pm 2.62$  per cent respectively. The systolic and diastolic blood pressure in men section was  $119.44 \pm 2.79$ mm/Hg and  $80.08 \pm 3.57$ mm/Hg respectively. Similarly, in women section, systolic and diastolic blood pressure was  $119.44 \pm 3.43$ mm/Hg and  $80.44 \pm 3.00$ mm/Hg respectively. The pulse rate in men section was  $78.04 \pm 3.83$  beats per minute and in women section it was  $79.14 \pm 4.39$  beats per minute. The loneliness was found to be  $32.14 \pm 2.28$  in men section and  $32.08 \pm 2.32$  in women section. Anxiety in men section was  $31.92 \pm 3.64$ ; and  $22.42 \pm 3.26$  in women section. The depression was found to be  $37.76 \pm 4.56$  in men section and  $34.64 \pm 2.66$  in women section. Finally, stress in men section was  $105.50 \pm 5.28$  and  $105.54 \pm 3.27$  in women section of Shivamogga district.

The table 4.1 also provides information on selected sample characteristics selected for the present study. The flexibility in men section was  $20.26 \pm 2.54$ ; and in women section it was  $20.62 \pm 2.55$ cms. The hand grip strength was found to be  $35.78 \pm 2.88$ kgs in men section; and  $35.98 \pm 1.83$ kgs in women section. It was found that the body mass index in men and women section was  $24.87 \pm 2.60$  per cent and  $24.64 \pm 4.77$ per cent respectively. The systolic and diastolic blood pressure in men section was  $124.82 \pm 2.24$ mm/Hg and  $80.50 \pm 3.91$ mm/Hg respectively. Similarly, in women section, systolic and diastolic blood pressure was  $122.46 \pm 2.53$ mm/Hg and  $80.96 \pm 2.93$ mm/Hg respectively. The pulse rate in

men section was  $78.92 \pm 4.38$  beats per minute and in women section it was  $79.14 \pm 4.39$  beats per minute. The loneliness was found to be  $32.70 \pm 2.14$  in men section and  $32.42 \pm 3.56$  in women section. Anxiety in men section was  $31.30 \pm 3.03$ ; and  $22.54 \pm 4.00$  in women section. The depression was found to be  $33.56 \pm 3.33$  in men section and  $33.58 \pm 2.56$  in women section. Finally, stress in men section was  $105.12 \pm 3.62$  and  $105.86 \pm 4.73$  in women section of Chikkamagaluru district.

After understanding the subject characteristics of selected yoga practitioners, each aspect of physical, physiological and psycho-social wellbeing aspects was subjected to percent analysis. Results on percent analysis conducted by the researchers is presented in ensuing paragraphs.

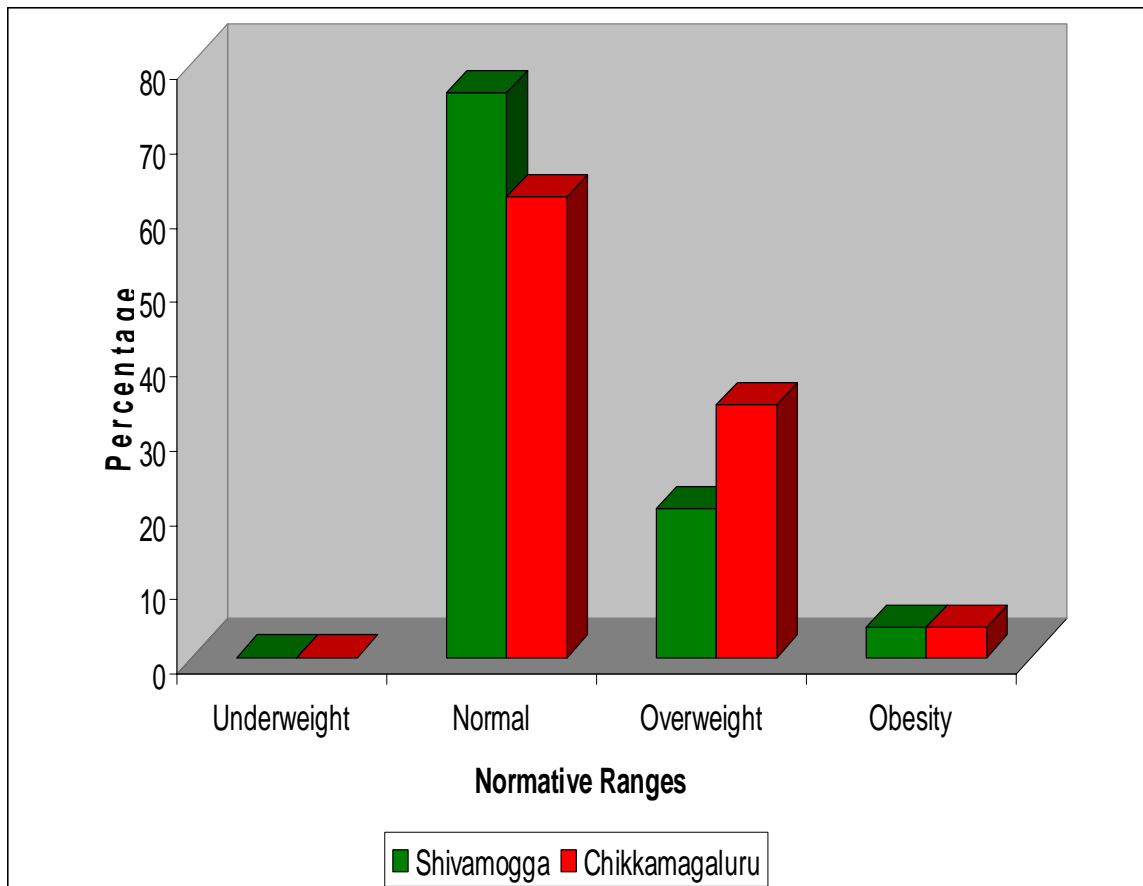
Results on percent analysis of retired sportspersons on body mass index as per norms is presented in table 4.2.

**Table 4.2. Summary of percentage analysis of body mass index among yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category (kg/m <sup>2</sup> )	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Underweight	Under 18.5	-	-	-	-
Normal	18.5 to 24.9	38	76	31	62
Overweight	25 to 29.9	10	20	17	34
Obesity	Above 30	02	4	02	04
<b>Total</b>		<b>50</b>	<b>100</b>	<b>50</b>	<b>100</b>

The above table shows that 76% of yoga practitioners from Shivamogga district are having normal weight, 20% are having over weight and 4% are having obesity.

In Chikkamagaluru district 62% of yoga practitioners are having normal weight, 34% are having over weight and 4% are having obesity.



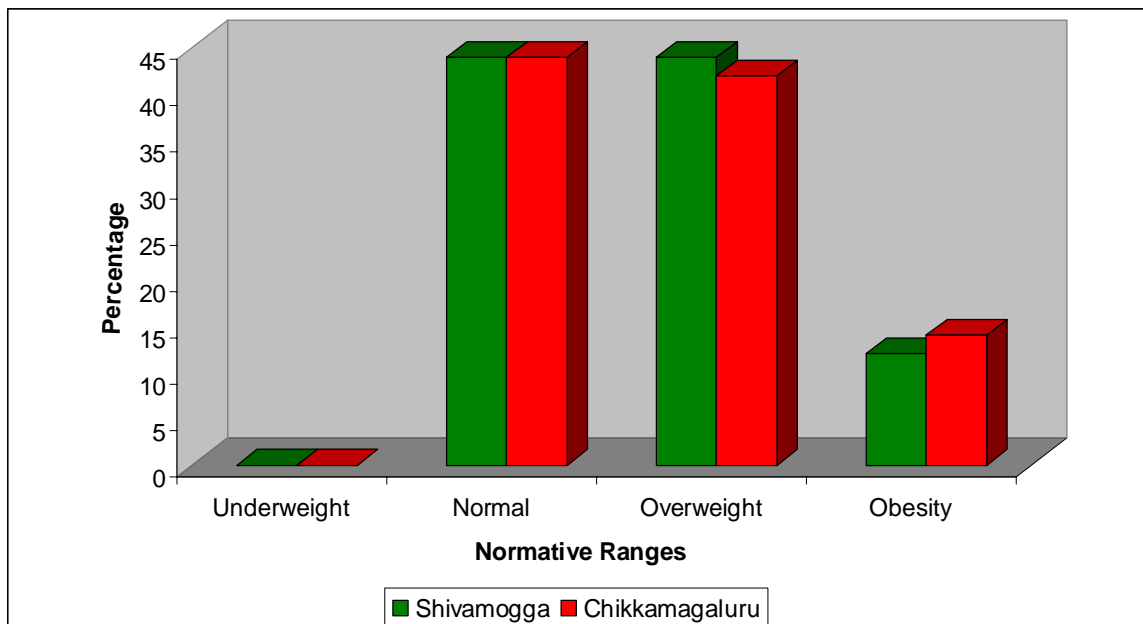
**Figure 4.1. Graphical representation of body mass index among yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

**Table 4.3. Summary of percentage analysis of body mass index among non-yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category (kg/m <sup>2</sup> )	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Underweight	Under 18.5	-	-	-	-
Normal	18.5 to 24.9	22	44	22	44
Overweight	25 to 29.9	22	44	21	42
Obesity	Above 30	06	12	07	14

The above table shows that 44% of non-yoga practitioners from Shivamogga district are having normal weight, 44% are having over weight and 12% are having obesity.

In Chikkamagaluru district 44% of non-yoga practitioners are having normal weight, 42% are having over weight and 14% are having obesity.



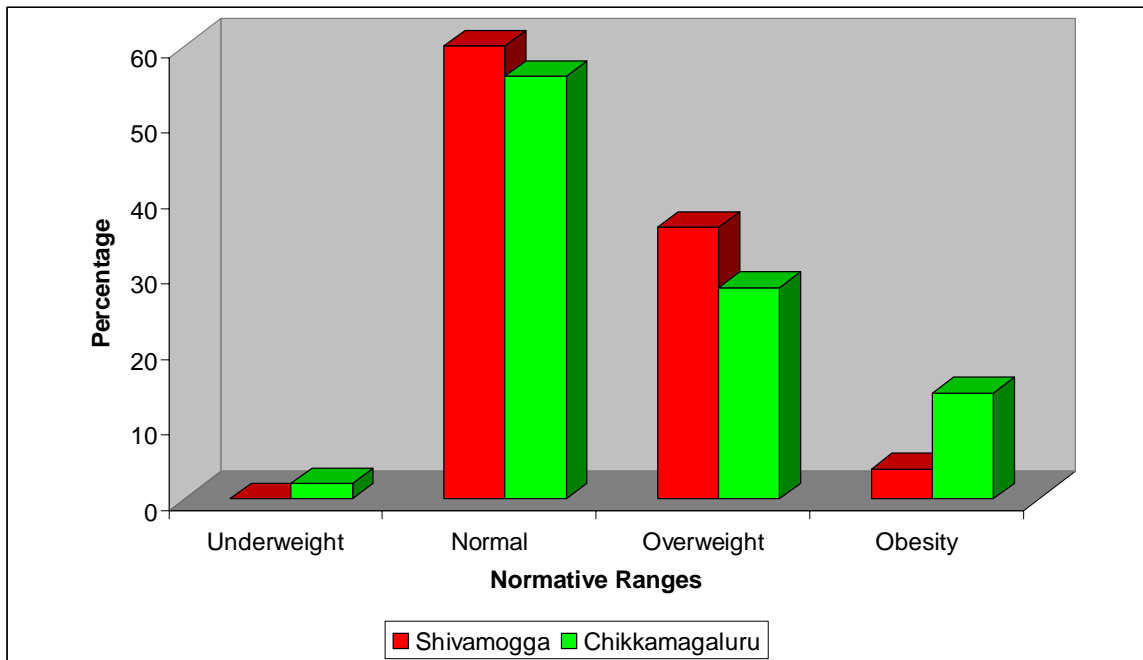
**Figure 4.2. Graphical representation of Body Mass Index among non-yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

**Table 4.4. Summary of percentage analysis of body mass index among yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category (kg/m <sup>2</sup> )	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Underweight	Under 18.5	-	-	01	02
Normal	18.5 to 24.9	30	60	28	56
Overweight	25 to 29.9	18	36	14	28
Obesity	Above 30	02	4	07	14
Total		50	100	50	100

The above table shows that 60% of yoga practitioners from Shivamogga district are having normal weight, 36% are having over weight and 4% are having obesity.

In Chikkamagaluru district 02% of yoga practitioners are having under weight, 56% are having normal weight, 28% are having over weight and 14% are having obesity.



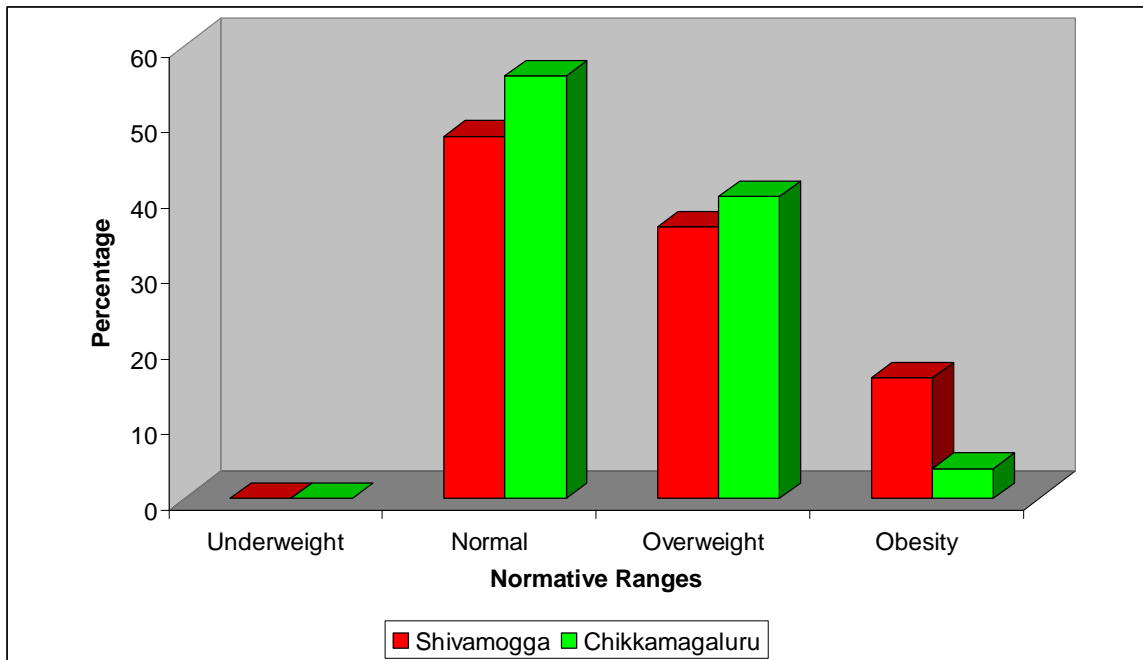
**Figure 4.3. Graphical representation of Body Mass Index among yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**

**Table 4.5. Summary of percentage analysis of body mass index among non-yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category (kg/m <sup>2</sup> )	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Underweight	Under 18.5	-	-	-	-
Normal	18.5 to 24.9	24	48	28	56
Overweight	25 to 29.9	18	36	20	40
Obesity	Above 30	08	16	02	04
Total		50	100	50	100

The above table shows that 48% of non-yoga practitioners from Shivamogga district are having normal weight, 36% are having over weight and 16% are having obesity.

In Chikkamagaluru district 56% of non-yoga practitioners are having normal weight,40% are having over weight and 04% are having obesity.



**Figure 4.4. Graphical representation of body mass index among non-yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**

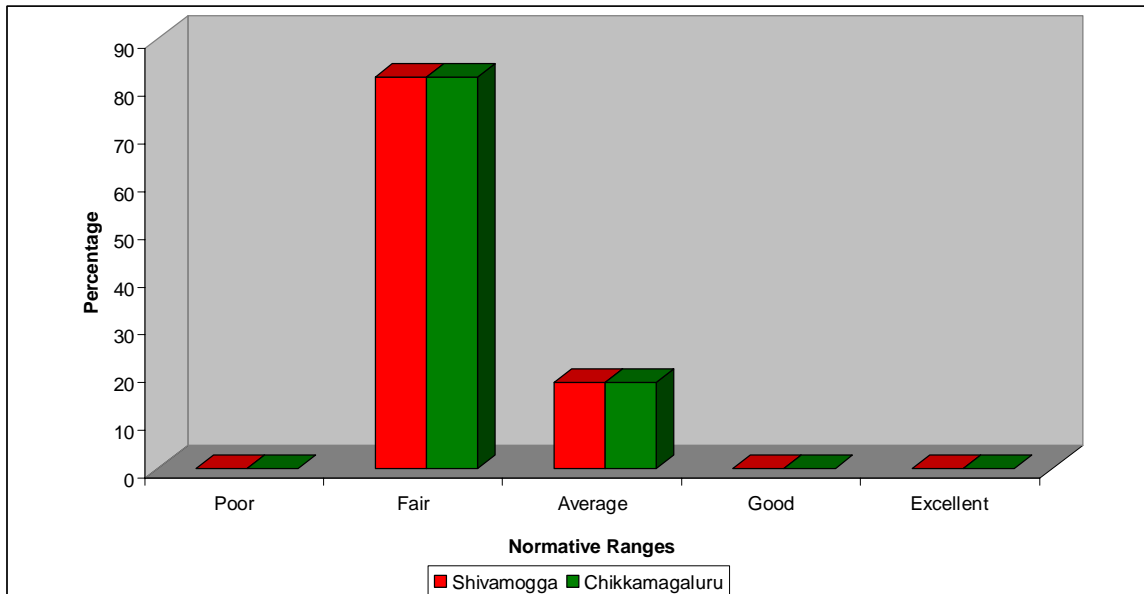


**Table 4.6. Summary of percent analysis on flexibility of yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Poor	5.05 & above	-	-	-	-
Fair	5.06 to 14.54	41	82	41	82
Average	14.54 to 22.04	09	18	09	18
Good	22.05 to 33.53	-	-	-	-
Excellent	33.54 & above	-	-	-	-
Total		50	50	50	100

The above table shows that 82% of yoga practitioners from Shivamogga district are having fair and 18% are having average.

In Chikkamagaluru district 82% of yoga practitioners are having fair and 18% are having average.



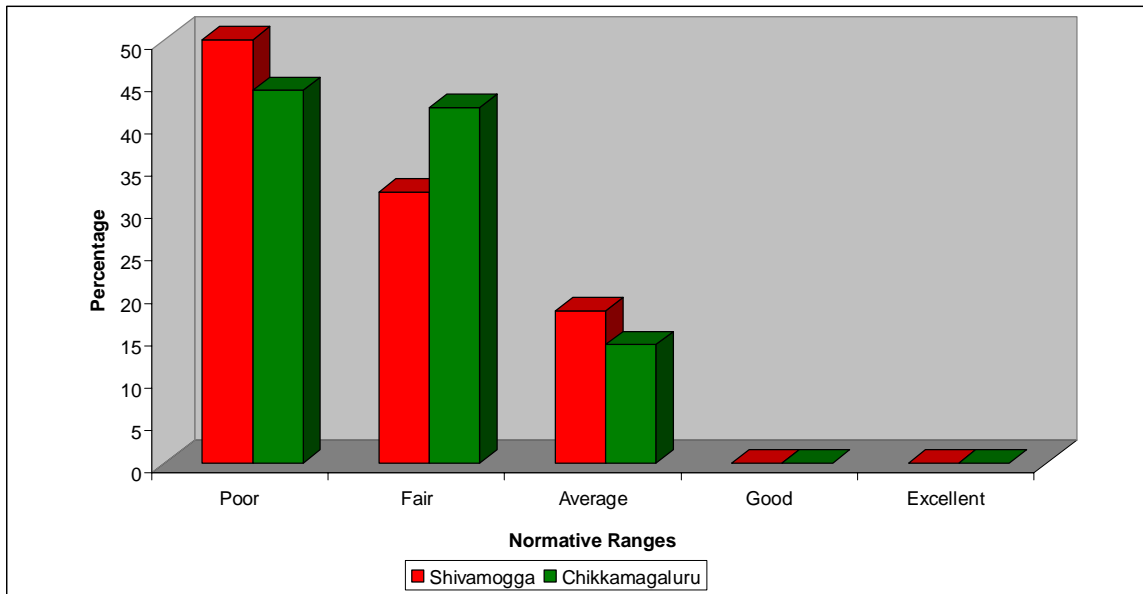
**Figure 4.5. Graphical representation of flexibility of yoga men practitioners belong to Shivamogga and Chikkamagaluru districts**

**Table 4.7. Summary of percent analysis on flexibility among non-yoga men practitioners of Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Poor	5.05 & above	25	50	22	44
Fair	5.06 to 14.54	16	32	21	42
Average	14.54 to 22.04	09	18	07	14
Good	22.05 to 33.53	-	-	-	-
Excellent	33.54 & above	-	-	-	-
Total		50	50	50	100

The above table shows that, 50% of non-yoga practitioners from Shivamogga district are having poor, 32% are having fair and 18% are having average.

In Chikkamagaluru district 44% of non-yoga practitioners are having poor, 42% are having fair and 14% are having average.



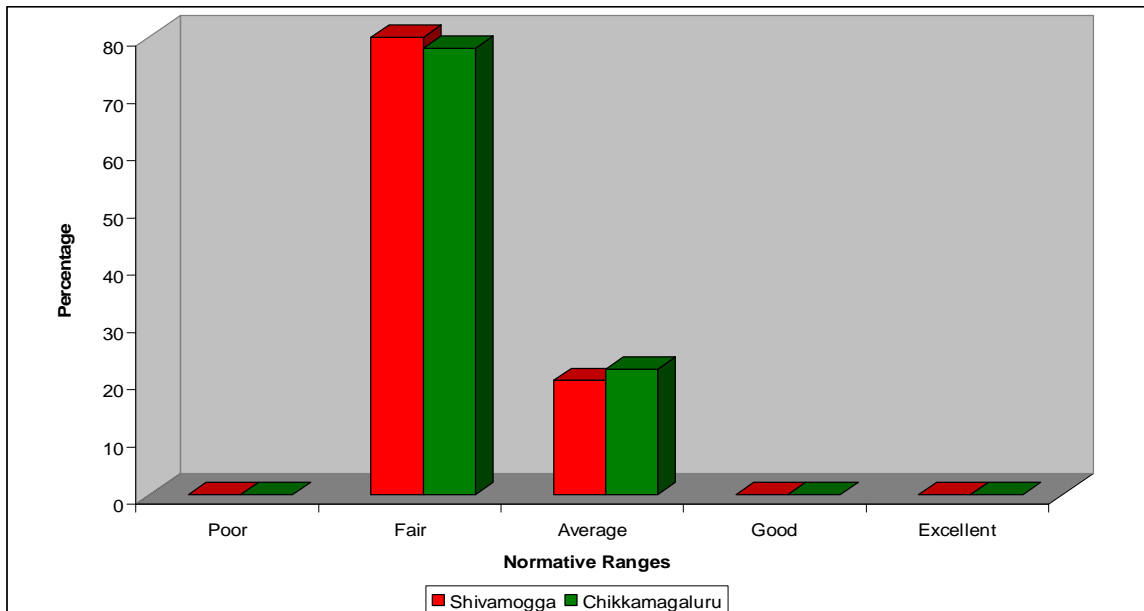
**Figure 4.6. Graphical representation of flexibility among non-yoga men practitioners of Shivamogga and Chikkamagaluru districts**

**Table 4.8. Summary of percent analysis on flexibility of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Poor	5.05 & above	-	-	-	-
Fair	5.06 to 14.54	40	80	39	78
Average	14.54 to 22.04	10	20	11	22
Good	22.05 to 33.53	-	-	-	-
Excellent	33.54 & above	-	-	-	-
Total		50	100	50	100

The above table shows that 80% of yoga practitioners from Shivamogga district are having fair and 20% are having average.

In Chikkamagaluru district 78% of yoga practitioners are having fair and 22% are having average.



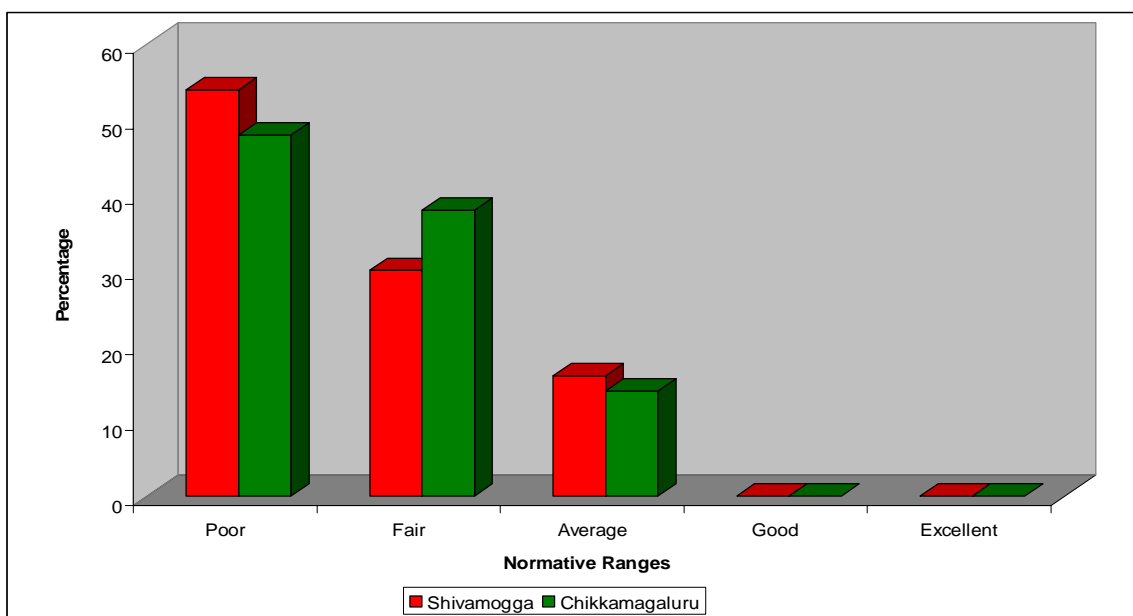
**Figure 4.7. Graphical representation of flexibility of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.9. Summary of percent analysis on flexibility among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Poor	5.05 & above	27	54	24	48
Fair	5.06 to 14.54	15	30	19	38
Average	14.54 to 22.04	08	16	07	14
Good	22.05 to 33.53	-	-	-	-
Excellent	33.54 & above	-	-	-	-
Total		50	100	50	100

The above table shows that, 54% of non-yoga practitioners from Shivamogga district are having poor, 30% are having fair and 16% are having average.

In Chikkamagaluru district, 48% of non-yoga practitioners are having poor, 38% are having fair and 14% are having average.



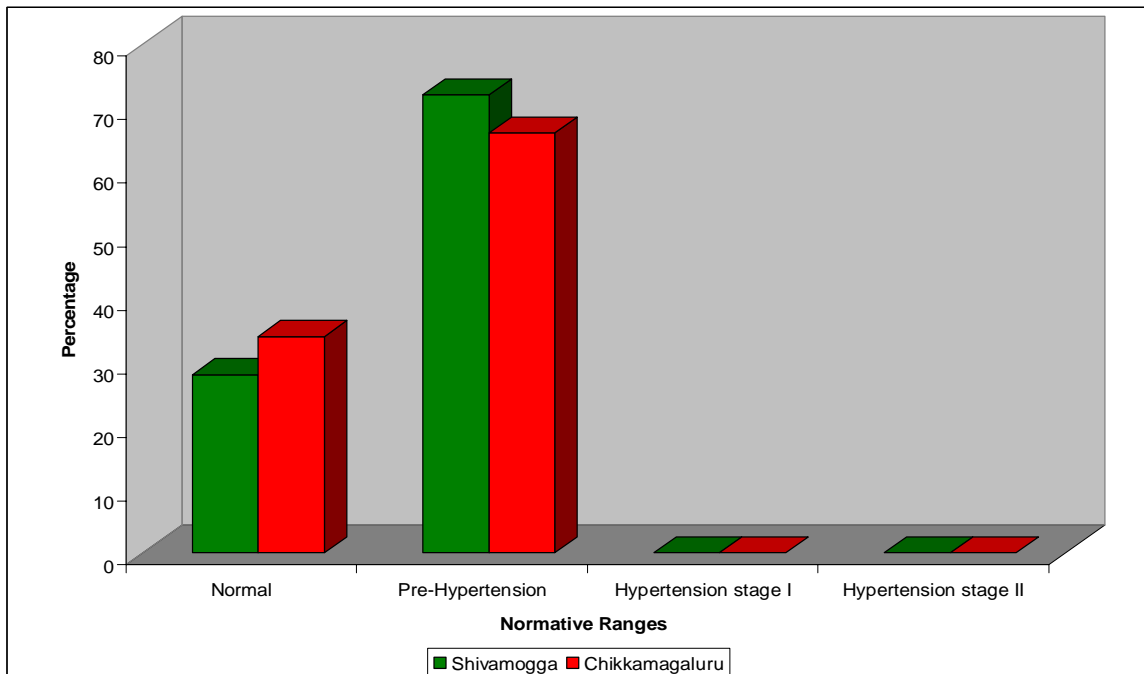
**Figure 4.8. Graphical representation of flexibility among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.10. Summary of systolic blood pressure of yoga men practitioners belongs to Shivamogga and Chikkamagaluru district**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 120	14	28	17	34
Pre-Hypertension	120 to 139	36	72	33	66
Hypertension stage I	140 to 159	-	-	-	-
Hypertension stage II	160 & Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 28% of yoga practitioners from Shivamogga district are having normal and 72% are having pre hypertension.

In Chikkamagaluru district, 34% of yoga practitioners are having normal and 66% are having pre-hypertension.



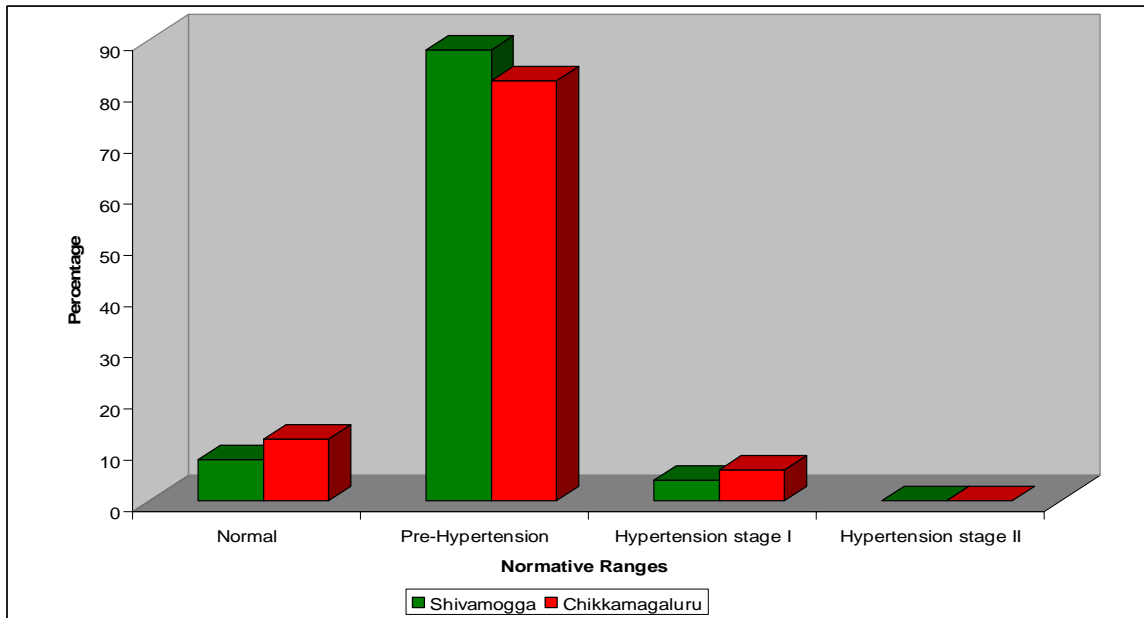
**Figure 4.9. Graphical representation of systolic blood pressure of yoga men practitioners belongs to Shivamogga and Chikkamagaluru district**

**Table 4.11. Summary of systolic blood pressure among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 120	04	08	06	12
Pre-Hypertension	120 to 139	44	88	41	82
Hypertension stage I	140 to 159	02	04	03	06
Hypertension stage II	160 & Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 8% of non-yoga practitioners from Shivamogga district are having normal, 88% are having pre-hypertension and 04% are having hypertension stage-I.

In Chikkamagaluru district, 12% of non-yoga practitioners are having normal, 82% are having pre hypertension and 06% are having hypertension stage-I.



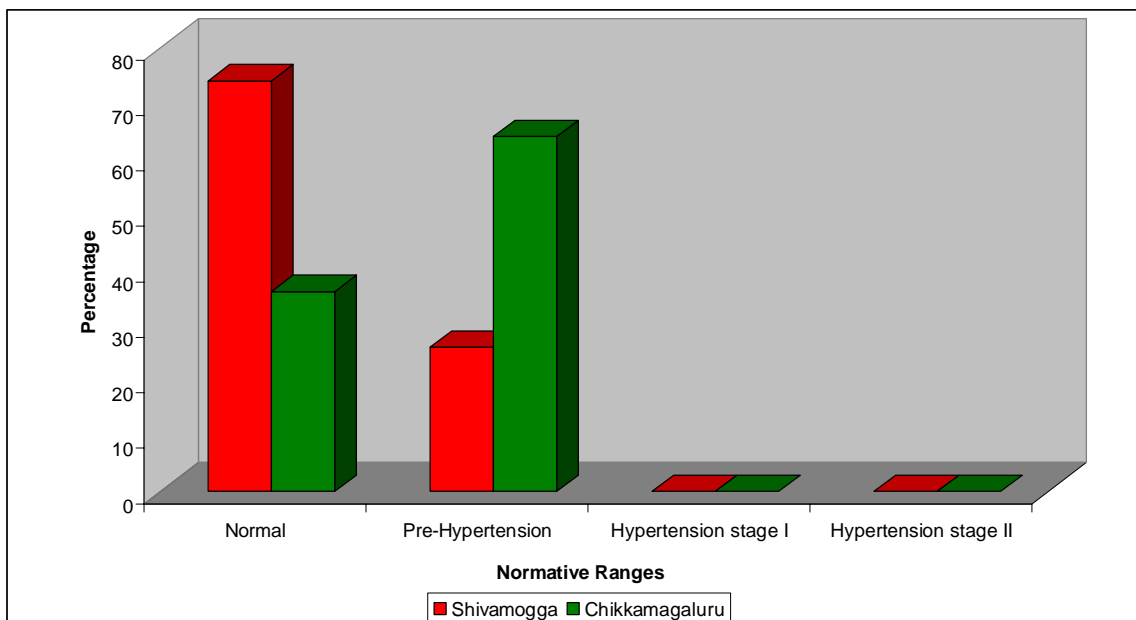
**Figure 4.10. Graphical representation of systolic blood pressure among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.12. Summary of systolic blood pressure of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 120	37	74	18	36
Pre-Hypertension	120 to 139	13	26	32	64
Hypertension stage I	140 to 159	-	-	-	-
Hypertension stage II	160 & Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 74% of yoga practitioners from Shivamogga district are having normal and 26% are having pre-hypertension.

In Chikkamagaluru district 36% of yoga practitioners are having normal and 64% are having pre-hypertension.



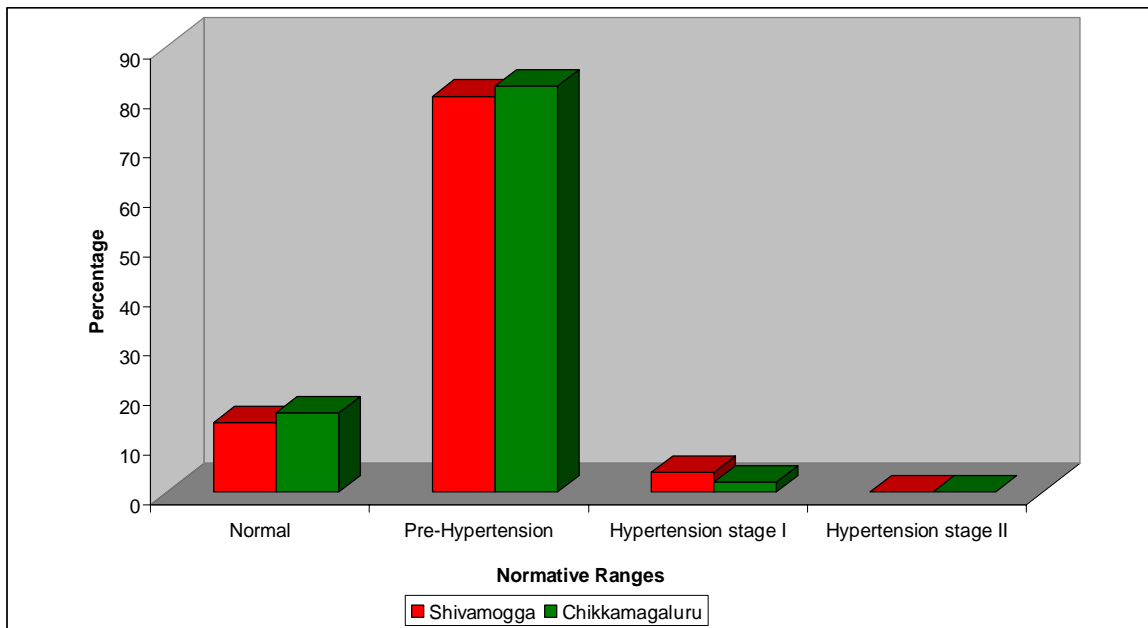
**Figure 4.11. Graphical representation of systolic blood pressure of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.13. Summary of systolic blood pressure among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 120	07	14	08	16
Pre-Hypertension	120 to 139	40	80	41	82
Hypertension stage I	140 to 159	02	04	01	02
Hypertension stage II	160 & Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 14% of non-yoga practitioners from Shivamogga district are having normal, 80% are having pre-hypertension and 04% are having hypertension stage-I.

In Chikkamagaluru district, 16% of non-yoga practitioners are having normal, 82% are having pre-hypertension and 02% are having pre-hypertension-I.



**Figure 4.12. Graphical representation of systolic blood pressure among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

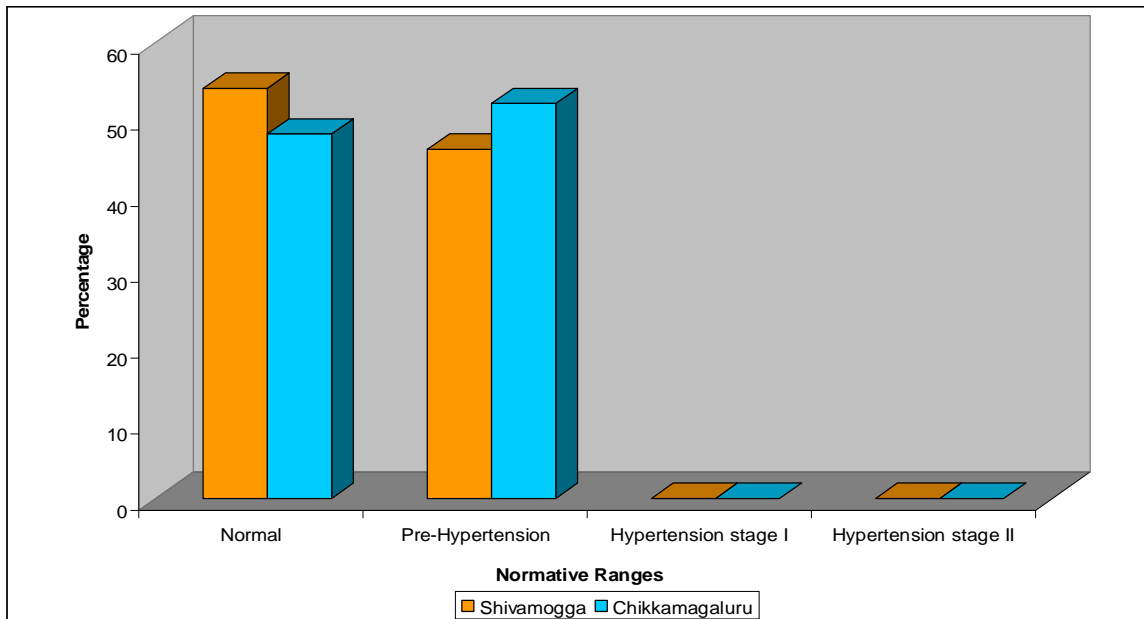


**Table 4.14. Summary of diastolic blood pressure of yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 80	27	54	24	48
Pre-Hypertension	80 to 89	23	46	26	52
Hypertension stage I	90 to 99	-	-	-	-
Hypertension stage II	100 &Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 54% of yoga practitioners from Shivamogga district are having normal and 46% are having pre-hypertension.

In Chikkamagaluru district 48% of yoga practitioners are having normal and 52% are having pre-hypertension.



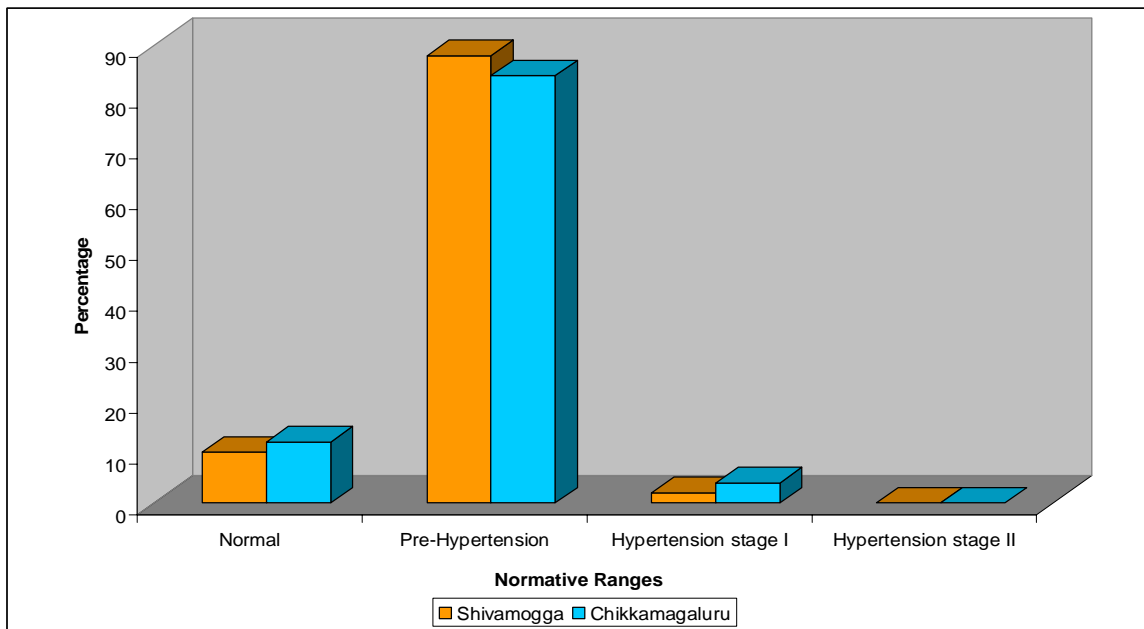
**Figure 4.13. Graphical representation of diastolic blood pressure of yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.15. Summary of diastolic blood pressure among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 80	04	10	06	12
Pre Hypertension	80 to 89	44	88	42	84
Hypertension stage I	90 to 99	01	02	02	04
Hypertension stage II	100 &Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 10% of non-yoga practitioners from Shivamogga district are having normal, 88% are having pre-hypertension and 02% are having hypertension stage-I.

In Chikkamagaluru district, 12% of non-yoga practitioners are having normal, 84% are having pre-hypertension and 04% are having hypertension stage-I.



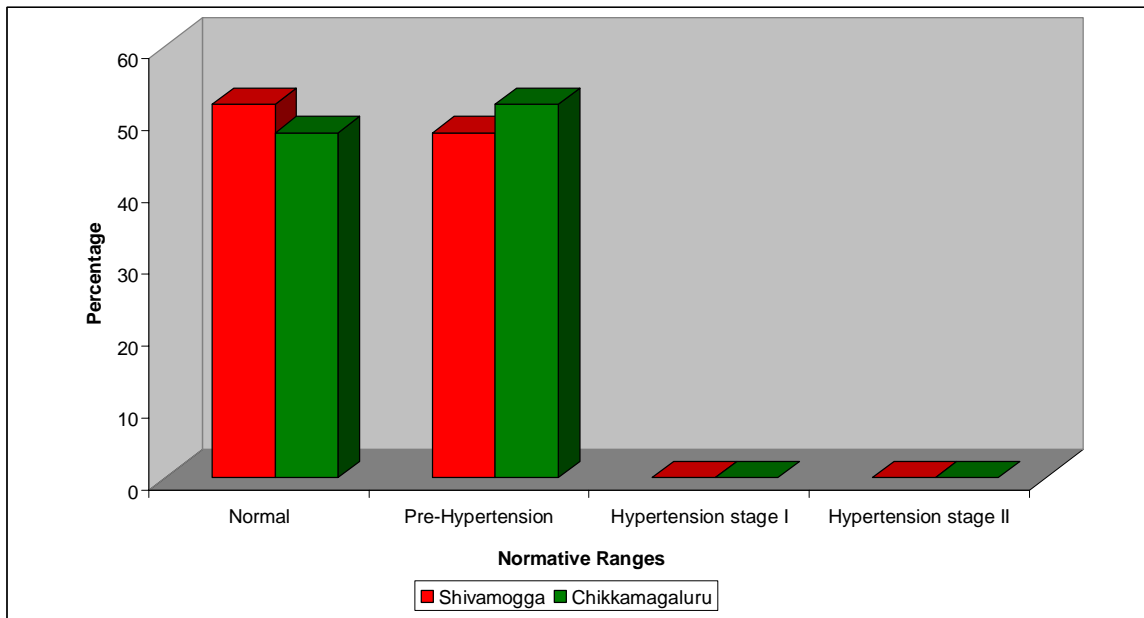
**Figure 4.14. Graphical representation of diastolic blood pressure among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.16. Summary of diastolic blood pressure of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 80	26	52	24	48
Pre-Hypertension	80 to 89	24	48	26	52
Hypertension stage I	90 to 99	-	-	-	-
Hypertension stage II	100 & Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 52% of yoga practitioners from Shivamogga district are having normal and 48% are having pre-hypertension.

In Chikkamagaluru district, 48% of yoga practitioners are having normal and 52% are having pre-hypertension.



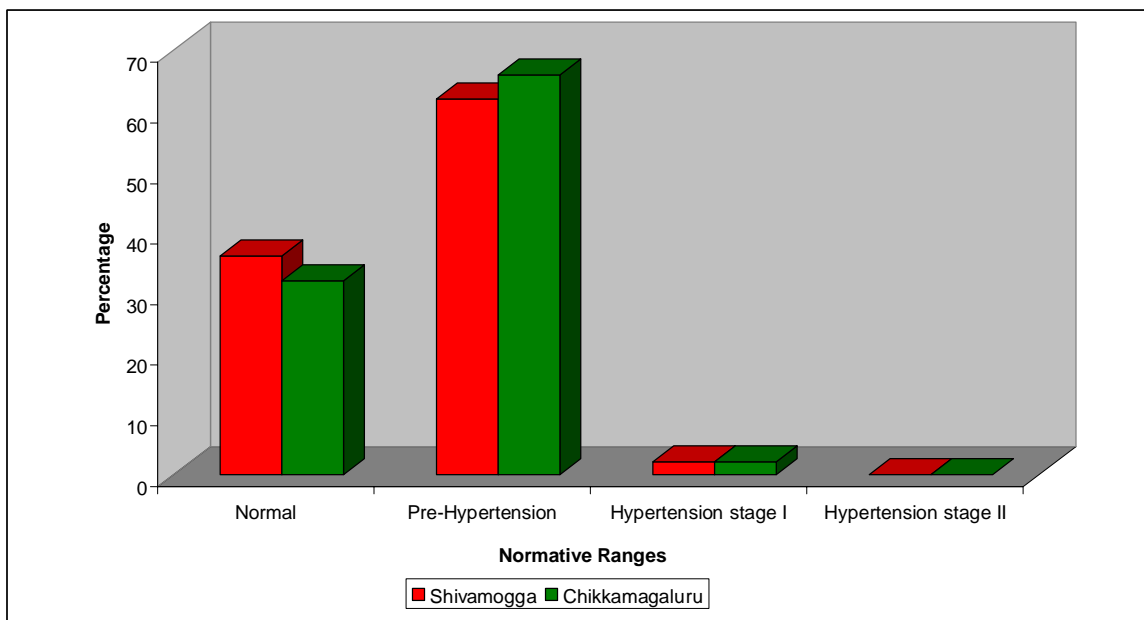
**Figure 4.15. Graphical representation of diastolic blood pressure of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.17. Summary of diastolic blood pressure among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Normal	Below 80	18	36	16	32
Pre-Hypertension	80 to 89	31	62	33	66
Hypertension stage I	90 to 99	01	02	01	02
Hypertension stage II	100 &Above	-	-	-	-
Total		50	100	50	100

The above table shows that, 36% of non-yoga practitioners from Shivamogga district are having normal, 62% are having pre hypertension and 02% are having hypertension stage-I.

In Chikkamagaluru district, 32% of non-yoga practitioners are having normal, 66% are having pre-hypertension and 02% are having hypertension stage-I.



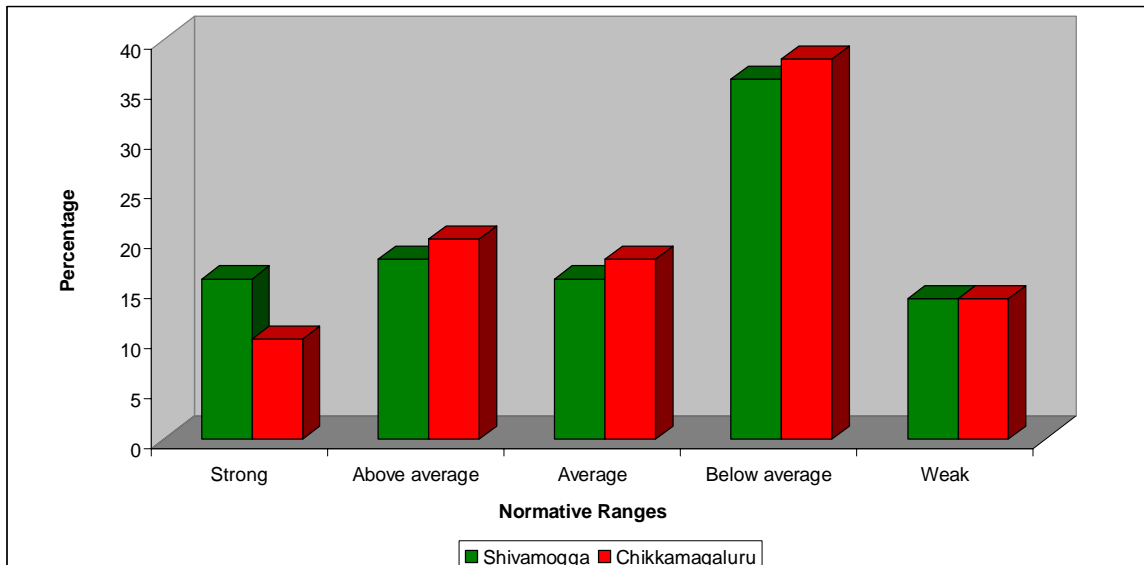
**Figure 4.16. Graphical representation of diastolic blood pressure among non-yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.18. Summary of hand grip strength of yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Strong	39.66 & above	08	16	05	10
Above average	37.62 to 39.65	09	18	10	20
Average	35.58 to 37.61	08	16	09	18
Below average	33.54 to 35.57	18	36	19	38
Weak	33.53 & below	07	14	07	14
Total		50	100	50	100

The above table shows that, 16% of yoga practitioners from Shivamogga district are having strong, 18% are having above average, 16% are having average, 36% are having below average and 14% are having weak.

In Chikkamagaluru district, 10% of yoga practitioners are having strong, 20% are having above average, 18% are having average, 38% are having below average and 14% are having weak.



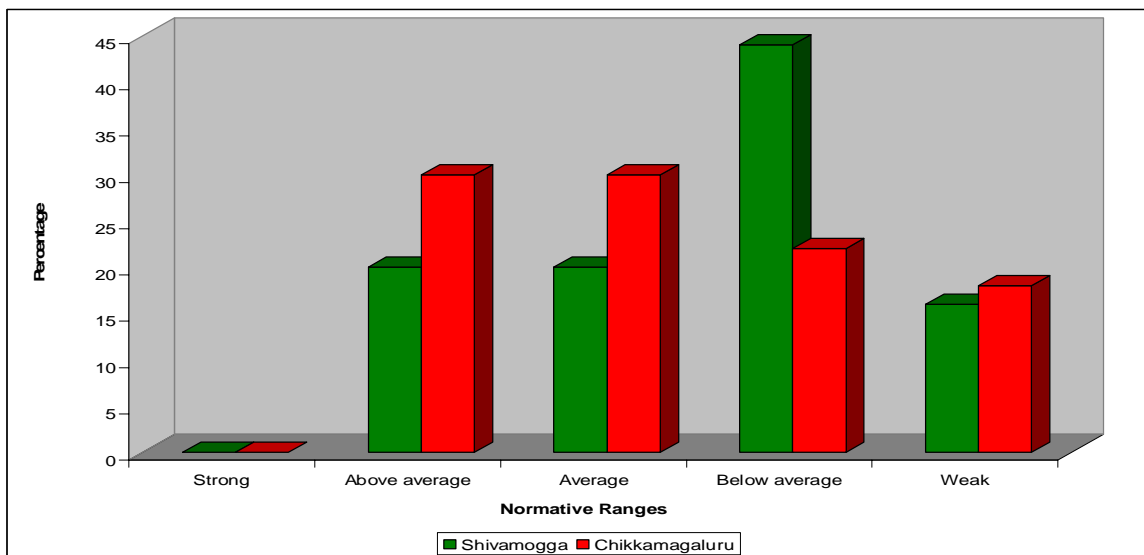
**Figure 4.17. Graphical representation of hand grip strength of yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.19. Summary of hand grip strength among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Men			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Strong	39.66 &above	-	-	-	-
Above average	37.62 to 39.65	10	20	15	30
Average	35.58 to 37.61	10	20	15	30
Below average	33.54 to 35.57	22	44	11	22
Weak	33.53 & below	08	16	09	18
Total		50	100	50	100

The above table shows that, 20% of non-yoga practitioners from Shivamogga district are having above average, 20% are having average, 44% are having below average and 16% are having weak.

In Chikkamagaluru district, 30% of non-yoga practitioners are having above average, 30% are having average, 22% are having below average and 18% are having weak.



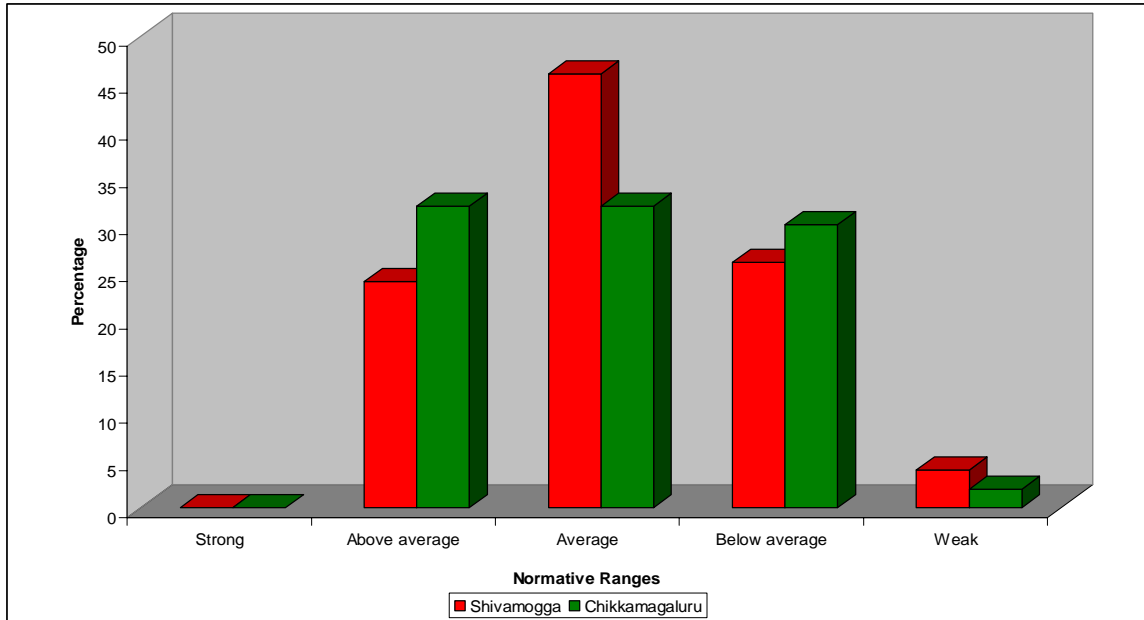
**Figure 4.18. Graphical representation of hand grip strength among non-yoga men practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.20. Summary of hand grip strength of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Strong	32.96 & above	-	-	-	-
Above average	30.83 to 32.95	12	24	18	36
Average	28.69 to 30.82	23	46	16	32
Below average	26.56 to 28.68	13	26	15	30
Weak	26.55 & below	02	04	01	02
Total		50	100	50	100

The above table shows that, 24% of yoga practitioners from Shivamogga district are having above average, 46% are having average, 26% are having below average and 04% are having weak.

In Chikkamagaluru district, 36% of yoga practitioners are having above average, 32% are having average, 30% are having below average and 02% are having weak.



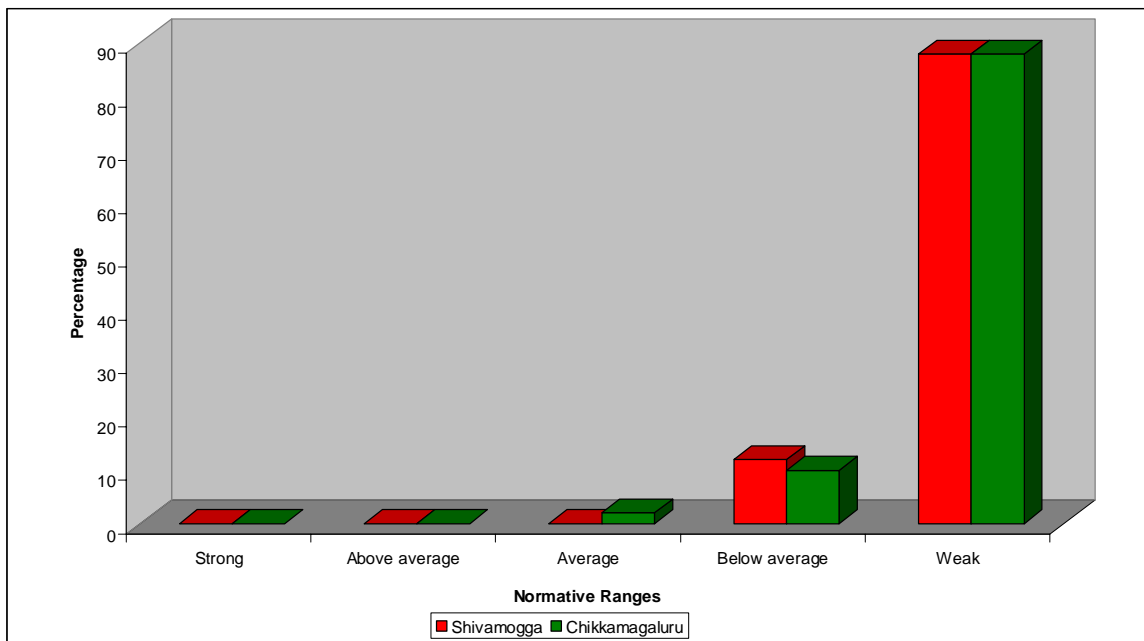
**Figure 4.19. Graphical representation of hand grip strength of yoga women practitioners belongs to Shivamogga and Chikkamagaluru districts**

**Table 4.21. Summary of hand grip strength among non-yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**

Normative Ranges	Normative Category	Women			
		Shivamogga		Chikkamagaluru	
		Frequency	%	Frequency	%
Strong	32.96 & above	-	-	-	-
Above average	30.83 to 32.95	-	-	-	-
Average	28.69 to 30.82	-	-	01	02
Below average	26.56 to 28.68	06	12	05	10
Weak	26.55 & below	44	88	44	88
Total		50	100	50	100

The above table shows that, 12% of non-yoga practitioners from Shivamogga district are having below average and 88% are having weak.

In Chikkamagaluru district, 02% of non-yoga practitioners are having average, 10% are having below average and 88% are having weak.



**Figure 4.20. Graphical representation of hand grip strength among non-yoga women practitioners belong to Shivamogga and Chikkamagaluru districts**



## II. Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners

The raw data of yoga practitioners and non- yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and the results of men section is provided in table 4.22.

**Table 4.22. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga district**

	Groups	N	Mean	Std. Deviation
Flexibility	Yoga Men	50	20.54	2.63
	Non-Yoga Men	50	13.48	1.33
Hand GripStrength	Yoga Men	50	36.06	3.10
	Non-Yoga Men	50	34.92	6.52
Body MassIndex	Yoga Men	50	24.46	1.94
	Non-Yoga Men	50	25.79	4.00
Systolic BloodPressure	Yoga Men	50	119.44	2.79
	Non-Yoga Men	50	124.78	2.23
Diastolic BloodPressure	Yoga Men	50	80.08	3.57
	Non-Yoga Men	50	84.02	3.56
Pulse Rate	Yoga Men	50	78.04	3.83
	Non-Yoga Men	50	78.44	4.10
Loneliness	Yoga Men	50	32.14	2.28
	Non-Yoga Men	50	40.46	2.22
Anxiety	Yoga Men	50	31.92	3.64
	Non-Yoga Men	50	42.46	3.86
Depression	Yoga Men	50	37.76	4.56
	Non-Yoga Men	50	37.18	6.43
Stress	Yoga Men	50	105.50	5.28
	Non-Yoga Men	50	124.50	1.34

From table 4.22 it becomes clear that the scores on flexibility of yoga men is  $20.54 \pm 2.63$  and non-sportsmen is  $13.48 \pm 1.33$ ; The hand grip strength of yoga men is  $36.06 \pm 3.10$  and non-yoga men is  $34.92 \pm 6.52$ ; the body mass index of yoga men is  $24.46 \pm 1.94$  and non-yoga men is  $25.79 \pm 4.00$ .

The systolic blood pressure of yoga men is  $119.44 \pm 2.79$  and non-yoga men is  $124.78 \pm 2.23$ . The diastolic blood pressure of yoga men is  $80.08 \pm 3.57$  and non-yoga men is  $84.02 \pm 3.56$ . Pulse rate of yoga men is  $78.04 \pm 3.83$  and non-yoga men is  $78.44 \pm 4.10$ ; scores on loneliness of yoga men is  $32.14 \pm 2.28$  and non-yoga men is  $40.46 \pm 2.22$ ;

The anxiety of yoga men is  $31.92 \pm 3.64$  and non-yoga men is  $42.46 \pm 3.86$ . The depression of yoga men is  $37.76 \pm 4.56$  and non-yoga men is  $37.18 \pm 6.43$ . The stress of yoga men is  $105.50 \pm 5.28$  and non-yoga men is  $124.50 \pm 1.34$ .

The raw data of yoga practitioners and non- yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of men section is provided in table 4.23.

**Table 4.23. Summary of comparison between Yoga Men and Non-yoga men practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga district**

	<b>Group</b>	<b>Mean±SD</b>	<b>‘t’ score</b>	<b>Sig.</b>
Flexibility	Yoga Men (N=50)	20.54±2.63	16.953	<b>.000</b>
	Non-Yoga Men (N=50)	13.48±1.33		
Hand Grip Strength	Yoga Men (N=50)	36.06±3.10	1.116	.537
	Non-Yoga Men (N=50)	34.92±6.52		
Body Mass Index	Yoga Men (N=50)	24.46±1.94	-2.124	<b>.000</b>
	Non-Yoga Men (N=50)	25.79±4.00		
Systolic Blood Pressure	Yoga Men (N=50)	119.44±2.79	-9.229	.244
	Non-Yoga Men (N=50)	124.78±2.23		
Diastolic Blood Pressure	Yoga Men (N=50)	80.08±3.57	-5.523	.163
	Non-Yoga Men (N=50)	84.02±3.56		
Pulse Rate	Yoga Men (N=50)	78.04±3.83	-.504	.389
	Non-Yoga Men (N=50)	78.44±4.10		
Loneliness	Yoga Men (N=50)	32.14±2.28	-18.483	.707
	Non-Yoga Men (N=50)	40.46±2.22		
Anxiety	Yoga Men (N=50)	31.92±3.64	-14.053	.587
	Non-Yoga Men (N=50)	42.46±3.86		
Depression	Yoga Men (N=50)	37.76±4.56	.520	<b>.003</b>
	Non-Yoga Men (N=50)	37.18±6.43		
Stress	Yoga Men (N=50)	105.50±5.28	-24.655	<b>.000</b>
	Non-Yoga Men (N=50)	124.50±1.34		

From table 4.23 it is clear that there is significant difference in 'flexibility' between yoga men ( $20.54 \pm 2.63$ ) and non-yoga men ( $13.48 \pm 1.33$ ). Significant difference was found in 'body mass index' between yoga men ( $24.46 \pm 1.94$ ) and non-yoga men ( $25.79 \pm 4.00$ ).

Significant difference was found in 'loneliness' between yoga men ( $32.14 \pm 2.28$ ) and non-yoga men ( $40.46 \pm 2.22$ ). Significant difference was found in 'depression' between yoga men ( $37.76 \pm 4.56$ ) and non-yoga men ( $37.18 \pm 6.43$ ).

Significant difference was found in 'stress' between yoga men ( $105.50 \pm 5.28$ ) and non-yoga men ( $124.50 \pm 1.34$ ). Significant differences were not found in hand grip strength, pulse rate and depression between and non-yoga men practitioners of Shivamogga district.

The raw data of yoga practitioners and non- yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and the results of women section is provided in table 4.24.

**Table 4.24. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in women section of Shivamogga district**

	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Yoga Women	50	20.68	2.57
	Non-Yoga Women	50	13.04	1.67
Hand Grip Strength	Yoga Women	50	36.08	1.83
	Non-Yoga Women	50	22.54	1.89
Body Mass Index	Yoga Women	50	23.90	2.62
	Non-Yoga Women	50	24.84	4.78
Systolic Blood Pressure	Yoga Women	50	119.44	3.43
	Non-Yoga Women	50	124.50	2.73
Diastolic Blood Pressure	Yoga Women	50	80.44	3.00
	Non-Yoga Women	50	81.12	3.88
Pulse Rate	Yoga Women	50	79.14	4.39
	Non-Yoga Women	50	78.14	15.26
Loneliness	Yoga Women	50	32.08	2.32
	Non-Yoga Women	50	39.84	2.59
Anxiety	Yoga Women	50	22.42	3.26
	Non-Yoga Women	50	42.18	4.27
Depression	Yoga Women	50	34.64	2.66
	Non-Yoga Women	50	39.86	6.97
Stress	Yoga Women	50	105.54	3.27
	Non-Yoga Women	50	124.50	1.67

From table 4.24 it becomes clear that the scores on flexibility of yoga women is  $20.68 \pm 2.57$  and non-yoga women is  $13.04 \pm 1.67$ ; The hand gripstrength of yoga women is  $36.08 \pm 1.83$  and non-yoga women is  $22.54 \pm 1.89$ ; the body mass index of yoga women is  $23.90 \pm 2.62$  and non-yoga women is  $24.84 \pm 4.78$ . The systolic blood pressure of yoga women is  $119.44 \pm 3.43$  and non-yoga women is  $124.50 \pm 2.73$ .

The diastolic blood pressure of yoga women is  $80.44 \pm 3.00$  and non-yoga women is  $81.12 \pm 3.88$ . pulse rate of yoga women is  $79.14 \pm 4.39$  and non-yoga women is  $78.14 \pm 15.26$ ; scores on loneliness of yoga women is  $32.08 \pm 2.32$  and non-yoga women is  $39.84 \pm 2.59$ ;

The anxiety of yoga women is  $22.42 \pm 3.26$  and non-yoga women is  $42.18 \pm 4.27$ . The depression of yoga women is  $34.64 \pm 2.66$  and non-yoga women is  $39.86 \pm 6.97$ . The stress of yoga women is  $105.54 \pm 3.27$  and non-yoga women is  $124.50 \pm 1.67$ .

The raw data of yoga practitioners and non- yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of women section is provided in table 4.25.

**Table 4.25. Summary of comparison between Yoga women and non-yoga women practitioners in selected physical, physiological and psycho-social wellbeing aspects in Shivamogga district**

	<b>Groups</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Yoga Women (N=50)	20.68±2.57	17.655	<b>.021</b>
	Non-Yoga Women (N=50)	13.04±1.67		
Hand Grip Strength	Yoga Women (N=50)	36.08±1.83	36.448	.848
	Non-Yoga Women (N=50)	22.54±1.89		
Body Mass Index	Yoga Women (N=50)	23.90±2.62	-1.216	<b>.000</b>
	Non-Yoga Women (N=50)	24.84±4.78		
Systolic Blood Pressure	Yoga Women (N=50)	119.44±3.43	-8.157	.967
	Non-Yoga Women (N=50)	124.50±2.73		
Diastolic Blood Pressure	Yoga Women (N=50)	80.44±3.00	-.981	<b>.000</b>
	Non-Yoga Women (N=50)	81.12±3.88		
Pulse Rate	Yoga Women (N=50)	79.14±4.39	.445	<b>.138</b>
	Non-Yoga Women (N=50)	78.14±15.26		
Loneliness	Yoga Women (N=50)	32.08±2.32	-15.781	.249
	Non-Yoga Women (N=50)	39.84±2.59		
Anxiety	Yoga Women (N=50)	22.42±3.26	-25.996	<b>.012</b>
	Non-Yoga Women (N=50)	42.18±4.27		
Depression	Yoga Women (N=50)	34.64±2.66	-4.949	<b>.000</b>
	Non-Yoga Women (N=50)	39.86±6.97		
Stress	Yoga Women (N=50)	105.54±3.27	-36.505	<b>.000</b>
	Non-Yoga Women (N=50)	124.50±1.67		

It is obvious from table 4.25 it is clear that there is significant difference in 'flexibility' between yoga women ( $20.68 \pm 2.57$ ) and non-yoga women ( $13.04 \pm 1.67$ ). Significant difference was found in 'body mass index' between yoga women ( $23.90 \pm 2.62$ ) and non-yoga women ( $24.84 \pm 4.78$ ).

Significant difference was found in 'diastolic blood pressure' between yoga women ( $80.44 \pm 3.00$ ) and non-yoga women ( $81.12 \pm 3.88$ ). Significant difference was found in 'anxiety' between yoga women ( $22.42 \pm 3.26$ ) and non-yoga women ( $42.18 \pm 4.27$ ).

Significant difference was found in 'depression' between yoga women ( $34.64 \pm 2.66$ ) and non-yoga women ( $39.86 \pm 6.97$ ). Significant difference was found in 'stress' between yoga women ( $105.54 \pm 3.27$ ) and non-yoga women ( $124.50 \pm 1.67$ ).

Significant differences were not found in hand grip strength, systolic blood pressure, pulse rate and loneliness between yoga women and non-yoga women practitioners of Shivamogga district.

The raw data of yoga practitioners and non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and the results of men section of Chikkamagaluru district is provided in table 4.26.



**Table 4.26. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in men section of Chikkamagaluru district**

	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Yoga Men	50	20.26	2.54
	Non-Yoga Men	50	13.28	1.40
Hand GripStrength	Yoga Men	50	35.78	2.88
	Non-Yoga Men	50	35.46	2.54
Body MassIndex	Yoga Men	50	24.87	2.60
	Non-Yoga Men	50	25.46	4.59
Systolic BloodPressure	Yoga Men	50	124.82	2.24
	Non-Yoga Men	50	119.44	3.43
Diastolic Blood Pressure	Yoga Men	50	80.50	3.91
	Non-Yoga Men	50	80.08	3.57
Pulse Rate	Yoga Men	50	78.92	4.38
	Non-Yoga Men	50	75.96	10.39
Loneliness	Yoga Men	50	32.70	2.14
	Non-Yoga Men	50	39.60	3.25
Anxiety	Yoga Men	50	31.30	3.03
	Non-Yoga Men	50	37.52	3.38
Depression	Yoga Men	50	33.56	3.33
	Non-Yoga Men	50	39.78	5.46
Stress	Yoga Men	50	105.12	3.62
	Non-Yoga Men	50	124.34	2.61

From table 4.26 it becomes clear that the scores on flexibility of yoga men is  $20.26 \pm 2.54$  and non-yoga men is  $13.28 \pm 1.40$ ; The hand grip strength of yoga men is  $35.78 \pm 2.88$  and non-yoga men is  $35.46 \pm 2.54$ ; the body mass index of yoga men is  $24.87 \pm 2.60$  and non-yoga men is  $25.46 \pm 4.59$ . The systolic blood pressure of yoga men is  $124.82 \pm 2.24$  and non-yoga men is  $119.44 \pm 3.43$ .

The diastolic blood pressure of yoga men is  $80.50 \pm 3.91$  and non-yoga men is  $80.08 \pm 3.57$ . Pulse rate of yoga men is  $78.92 \pm 4.38$  and non-yoga men is  $75.96 \pm 10.39$ ; scores on loneliness of yoga men is  $32.70 \pm 2.14$  and non-yoga men is  $39.60 \pm 3.25$ ;

The anxiety of yoga men is  $31.30 \pm 3.03$  and non-yoga men is  $37.52 \pm 3.38$ . The depression of yoga men is  $33.56 \pm 3.33$  and non-yoga men is  $39.78 \pm 5.46$ . The stress of yoga men is  $105.12 \pm 3.62$  and non-yoga men is  $124.34 \pm 2.61$ .

The raw data of yoga practitioners and non- yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of Chikkamagaluru district men section is provided in table 4.27.

**Table 4.27. Summary of comparison between Yoga Men and Non-yoga Men practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Chikkamagaluru district**

	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Yoga Men (N=50)	20.26±2.54	17.027	<b>.002</b>
	Non-Yoga Men (N=50)	13.28±1.40		
Hand Grip Strength	Yoga Men (N=50)	35.78±2.88	.589	.630
	Non-Yoga Men (N=50)	35.46±2.54		
Body Mass Index	Yoga Men (N=50)	24.87±2.60	-.791	<b>.001</b>
	Non-Yoga Men (N=50)	25.46±4.59		
Systolic Blood Pressure	Yoga Men (N=50)	124.82±2.24	9.290	<b>.251</b>
	Non-Yoga Men (N=50)	119.44±3.43		
Diastolic Blood Pressure	Yoga Men (N=50)	80.50±3.91	.560	.607
	Non-Yoga Men (N=50)	80.08±3.57		
Pulse Rate	Yoga Men (N=50)	78.92±4.38	1.857	.642
	Non-Yoga Men (N=50)	75.96±10.39		
Loneliness	Yoga Men (N=50)	32.70±2.14	-12.534	<b>.023</b>
	Non-Yoga Men (N=50)	39.60±3.25		
Anxiety	Yoga Men (N=50)	31.30±3.03	-9.702	.463
	Non-Yoga Men (N=50)	37.52±3.38		
Depression	Yoga Men (N=50)	33.56±3.33	-6.876	<b>.000</b>
	Non-Yoga Men (N=50)	39.78±5.46		
Stress	Yoga Men (N=50)	105.12±3.62	-30.444	<b>.164</b>
	Non-Yoga Men (N=50)	124.34±2.61		

From table 4.27 it is clear that there is significant difference in 'flexibility' between yoga men ( $20.26 \pm 2.54$ ) and non-yoga men ( $13.28 \pm 1.40$ ). Significant difference was found in 'body mass index' between yoga men ( $24.87 \pm 2.60$ ) and non-yoga men ( $25.46 \pm 4.59$ ).

Significant difference was found in 'loneliness' between yoga men ( $32.70 \pm 2.14$ ) and non-yoga men ( $39.60 \pm 3.25$ ). Significant difference was found in 'depression' between yoga men ( $33.56 \pm 3.33$ ) and non-yoga men ( $39.78 \pm 5.46$ ). Significant difference was found in '*Stress*' between yoga men ( $105.12 \pm 3.62$ ) and non-yoga men ( $124.34 \pm 2.61$ ).

Significant differences were not found in hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate and anxiety between and non-yoga men practitioners of Chikkamagaluru district.

The results on descriptive statistics of yoga practitioners women and non-yoga practitioners women on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.28.

**Table 4.28. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in women section of Chikkamagaluru district**

	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Yoga Women	50	20.62	2.55
	Non-Yoga Women	50	13.12	1.61
Hand Grip Strength	Yoga Women	50	35.98	1.83
	Non-Yoga Women	50	22.42	2.43
Body Mass Index	Yoga Women	50	24.64	4.77
	Non-Yoga Women	50	25.02	2.66
Systolic Blood Pressure	Yoga Women	50	122.46	2.53
	Non-Yoga Women	50	124.54	2.59
Diastolic Blood Pressure	Yoga Women	50	80.96	2.93
	Non-Yoga Women	50	80.70	3.51
Pulse Rate	Yoga Women	50	78.92	4.38
	Non-Yoga Women	50	76.54	3.99
Loneliness	Yoga Women	50	32.42	3.56
	Non-Yoga Women	50	39.04	3.17
Anxiety	Yoga Women	50	22.54	4.00
	Non-Yoga Women	50	39.84	4.55
Depression	Yoga Women	50	33.58	2.56
	Non-Yoga Women	50	39.54	6.24
Stress	Yoga Women	50	105.86	4.73
	Non-Yoga Women	50	124.34	2.40

From table 4.28 it becomes clear that the scores on flexibility of yoga women is  $20.62 \pm 2.55$  and non-yoga women is  $13.12 \pm 1.61$ ; The hand gripstrength of yoga women is  $35.98 \pm 1.83$  and non-yoga women is  $22.42 \pm 2.43$ ;

The body mass index of yoga women is  $24.64 \pm 4.77$  and non-yoga women is  $25.02 \pm 2.66$ . The systolic blood pressure of yoga women is  $122.46 \pm 2.53$  and non-yoga women is  $124.54 \pm 2.59$ .

The diastolic blood pressure of yoga women is  $80.96 \pm 2.93$  and non-yoga women is  $80.70 \pm 3.51$ . Pulse rate of yoga women is  $78.92 \pm 4.38$  and non-yoga women is  $76.54 \pm 3.99$ ; scores on loneliness of yoga women is  $32.42 \pm 3.56$  and non-yoga women is  $39.04 \pm 3.17$ .

The anxiety of yoga women is  $22.54 \pm 4.00$  and non-yoga women is  $39.84 \pm 4.55$ . The depression of yoga women is  $33.58 \pm 2.56$  and non-yoga women is  $39.54 \pm 6.24$ . The stress of yoga women is  $105.86 \pm 4.73$  and non-yoga women is  $124.34 \pm 2.40$ .

The raw data of yoga practitioners and non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of women section is provided in table 4.29.

**Table 4.29. Summary of comparison between Yoga Women and Non-yoga Women practitioners in selected physical, physiological and psycho-social wellbeing aspects in women section of Chikkamagaluru district**

	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Yoga Women (N=50)	20.62±2.55	17.597	<b>.005</b>
	Non-Yoga Women (N=50)	13.12±1.61		
Hand Grip Strength	Yoga Women (N=50)	35.98±1.83	31.529	.073
	Non-Yoga Women (N=50)	22.42±2.43		
Body Mass Index	Yoga Women (N=50)	24.64±4.77	-.484	<b>.000</b>
	Non-Yoga Women (N=50)	25.02±2.66		
Systolic Blood Pressure	Yoga Women (N=50)	122.46±2.53	-4.067	.403
	Non-Yoga Women (N=50)	124.54±2.59		
Diastolic Blood Pressure	Yoga Women (N=50)	80.96±2.93	.402	.280
	Non-Yoga Women (N=50)	80.70±3.51		
Pulse Rate	Yoga Women (N=50)	78.92±4.38	2.840	.956
	Non-Yoga Women (N=50)	76.54±3.99		
Loneliness	Yoga Women (N=50)	32.42±3.56	-9.817	.684
	Non-Yoga Women (N=50)	39.04±3.17		
Anxiety	Yoga Women (N=50)	22.54±4.00	-20.211	<b>.023</b>
	Non-Yoga Women (N=50)	39.84±4.55		
Depression	Yoga Women (N=50)	33.58±2.56	-6.249	<b>.000</b>
	Non-Yoga Women (N=50)	39.54±6.24		
Stress	Yoga Women (N=50)	105.86±4.73	-24.630	<b>.000</b>
	Non-Yoga Women (N=50)	124.34±2.40		

It is obvious from table 4.29 it is clear that there is significant difference in 'flexibility' between yoga women ( $20.62 \pm 2.55$ ) and non-yoga women ( $13.12 \pm 1.61$ ).

Significant difference was found in 'body mass index' between yoga women ( $24.64 \pm 4.77$ ) and non-yoga women ( $25.02 \pm 2.66$ ). Significant difference was found in 'anxiety' between yoga women ( $22.54 \pm 4.00$ ) and non-yoga women ( $39.84 \pm 4.55$ ).

Significant difference was found in 'depression' between yoga women ( $33.58 \pm 2.56$ ) and non-yoga women ( $39.54 \pm 6.24$ ). Significant difference was found in 'stress' between yoga women ( $105.86 \pm 4.73$ ) and non-yoga women ( $124.34 \pm 2.40$ ).

Significant differences were not found in hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate and loneliness between and non-yoga men practitioners of Chikkamagaluru district.

The results on descriptive statistics of Shivamogga and Chikkamagaluru district men yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.30.



**Table 4.30. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in yoga practitioners men section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Shivamogga	Yoga Men	50	20.54	2.63
	Chikkamagaluru	Yoga Men	50	20.26	2.54
Hand Grip Strength	Shivamogga	Yoga Men	50	36.06	3.10
	Chikkamagaluru	Yoga Men	50	35.78	2.88
Body Mass Index	Shivamogga	Yoga Men	50	24.46	1.94
	Chikkamagaluru	Yoga Men	50	24.87	2.60
Systolic Blood Pressure	Shivamogga	Yoga Men	50	119.44	3.43
	Chikkamagaluru	Yoga Men	50	124.82	2.24
Diastolic Blood Pressure	Shivamogga	Yoga Men	50	80.08	3.57
	Chikkamagaluru	Yoga Men	50	80.50	3.91
Pulse Rate	Shivamogga	Yoga Men	50	78.04	3.83
	Chikkamagaluru	Yoga Men	50	78.92	4.38
Loneliness	Shivamogga	Yoga Men	50	32.14	2.28
	Chikkamagaluru	Yoga Men	50	32.70	2.14
Anxiety	Shivamogga	Yoga Men	50	31.92	3.64
	Chikkamagaluru	Yoga Men	50	31.30	3.03
Depression	Shivamogga	Yoga Men	50	37.76	4.56
	Chikkamagaluru	Yoga Men	50	33.56	3.33
Stress	Shivamogga	Yoga Men	50	105.50	5.28
	Shivamogga	Yoga Men	50	105.12	3.62

From table 4.30 it becomes clear that the scores on flexibility of Shivamogga yoga men is  $20.54 \pm 2.63$  and Chikkamagaluru yoga men is  $20.26 \pm 2.54$ ; The hand grip strength of Shivamogga yoga men is  $36.06 \pm 3.10$  and Chikkamagaluru yoga men is  $35.78 \pm 2.88$ ; the body mass index of Shivamogga yoga men is  $24.46 \pm 1.94$  and Chikkamagaluru yoga men is  $24.87 \pm 2.60$ .

The Systolic Blood Pressure of Shivamogga yoga men is  $119.44 \pm 3.43$  and Chikkamagaluru yoga men is  $124.82 \pm 2.24$ . The diastolic blood pressure of Shivamogga yoga men is  $80.08 \pm 3.57$  and Chikkamagaluru yoga men is  $80.50 \pm 3.91$ . Pulse rate of Shivamogga yoga men is  $78.04 \pm 3.83$  and Chikkamagaluru yoga men is  $78.92 \pm 4.38$ ; scores on loneliness of Shivamogga yoga men is  $32.14 \pm 2.28$  and Chikkamagaluru yoga men is  $32.70 \pm 2.14$ ;

The anxiety of Shivamogga yoga men is  $31.92 \pm 3.64$  and Chikkamagaluru yoga men is  $31.30 \pm 3.03$ . The depression of Shivamogga yoga men is  $37.76 \pm 4.56$  and Chikkamagaluru yoga men is  $33.56 \pm 3.33$ . The stress of Shivamogga yoga men is  $105.50 \pm 5.28$  and Chikkamagaluru yoga men is  $105.12 \pm 3.62$ .

The raw data of yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of Shivamogga and Chikkamagaluru district men section is provided in table 4.31.

**Table 4.31. Summary of comparison between yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in yoga men section of Shivamogga and Chikkamagaluru district**

	District	Group	Mean±SD	't' score	Sig.
Flexibility	Shivamogga	Yoga Men (N=50)	20.54±2.63	.542	.671
	Chikkamagaluru	Yoga Men (N=50)	20.26±2.54		
Hand Grip Strength	Shivamogga	Yoga Men (N=50)	36.06±3.10	.468	.527
	Chikkamagaluru	Yoga Men (N=50)	35.78±2.88		
Body Mass Index	Shivamogga	Yoga Men (N=50)	24.46±1.94	-.893	.094
	Chikkamagaluru	Yoga Men (N=50)	24.87±2.60		
Systolic Blood Pressure	Shivamogga	Yoga Men (N=50)	119.44±3.43	-9.290	.251
	Chikkamagaluru	Yoga Men (N=50)	124.82±2.24		
Diastolic Blood Pressure	Shivamogga	Yoga Men (N=50)	80.08±3.57	-.560	.607
	Chikkamagaluru	Yoga Men (N=50)	80.50±3.91		
Pulse Rate	Shivamogga	Yoga Men (N=50)	78.04±3.83	-1.069	.239
	Chikkamagaluru	Yoga Men (N=50)	78.92±4.38		
Loneliness	Shivamogga	Yoga Men (N=50)	32.14±2.28	-1.267	.699
	Chikkamagaluru	Yoga Men (N=50)	32.70±2.14		
Anxiety	Shivamogga	Yoga Men (N=50)	31.92±3.64	.927	.143
	Chikkamagaluru	Yoga Men (N=50)	31.30±3.03		
Depression	Shivamogga	Yoga Men (N=50)	37.76±4.56	5.258	<b>.025</b>
	Chikkamagaluru	Yoga Men (N=50)	33.56±3.33		
Stress	Shivamogga	Yoga Men (N=50)	105.50±5.28	.420	<b>.001</b>
	Chikkamagaluru	Yoga Men (N=50)	105.12±3.62		

It is obvious from table 4.31 that there is significant difference in 'depression' between Shivamogga yoga men ( $37.76 \pm 4.56$ ) and Chikkamagaluru non-yoga men ( $33.56 \pm 3.33$ ).

Significant difference was found in 'stress' between yoga men ( $105.50 \pm 5.28$ ) and non-yoga men ( $105.12 \pm 3.62$ ). Significant differences were not found in flexibility, hand grip strength, body mass index, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness, and anxiety between Shivamogga yoga men and Chikkamagaluru yoga men practitioners of Shivamogga and Chikkamagaluru district.

The results on descriptive statistics of Shivamogga and Chikkamagaluru district Women yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.32.

**Table 4.32. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in yoga practitioners women section of Shivamogga and Chikkamagaluru district**

		<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Shivamogga	Yoga Women	50	20.68	2.57
	Chikkamagaluru	Yoga Women	50	20.62	2.55
Hand Grip Strength	Shivamogga	Yoga Women	50	36.08	1.83
	Chikkamagaluru	Yoga Women	50	35.98	1.83
Body Mass Index	Shivamogga	Yoga Women	50	23.90	2.62
	Chikkamagaluru	Yoga Women	50	24.64	4.77
Systolic Blood Pressure	Shivamogga	Yoga Women	50	119.44	3.43
	Chikkamagaluru	Yoga Women	50	122.46	2.53
Diastolic Blood Pressure	Shivamogga	Yoga Women	50	80.44	3.00
	Chikkamagaluru	Yoga Women	50	80.96	2.93
Pulse Rate	Shivamogga	Yoga Women	50	79.14	4.39
	Chikkamagaluru	Yoga Women	50	78.92	4.38
Loneliness	Shivamogga	Yoga Women	50	32.08	2.32
	Chikkamagaluru	Yoga Women	50	32.42	3.56
Anxiety	Shivamogga	Yoga Women	50	22.42	3.26
	Chikkamagaluru	Yoga Women	50	22.54	4.00
Depression	Shivamogga	Yoga Women	50	34.64	2.66
	Chikkamagaluru	Yoga Women	50	33.58	2.56
Stress	Shivamogga	Yoga Women	50	105.54	3.27
	Chikkamagaluru	Yoga Women	50	105.86	4.73

From table 4.32 it becomes clear that the scores on flexibility of Shivamogga yoga women is  $20.68 \pm 2.57$  and Chikkamagaluru yoga women is  $20.62 \pm 2.55$ ; The hand grip strength of Shivamogga yoga women is  $23.90 \pm 2.62$  and Chikkamagaluru yoga women is  $35.98 \pm 1.83$ ; the body mass index of Shivamogga yoga women is  $24.46 \pm 1.94$  and Chikkamagaluru yoga women is  $24.64 \pm 4.77$ .

The systolic blood pressure of Shivamogga yoga women is  $119.44 \pm 3.43$  and Chikkamagaluru yoga women is  $122.46 \pm 2.53$ . The diastolic blood pressure of Shivamogga yoga women is  $80.44 \pm 3.00$  and Chikkamagaluru yoga women is  $80.96 \pm 2.93$ .

Pulse rate of Shivamogga yoga women is  $79.14 \pm 4.39$  and Chikkamagaluru yoga women is  $78.92 \pm 4.38$ ; scores on loneliness of Shivamogga yoga women is  $32.08 \pm 2.32$  and Chikkamagaluru yoga women is  $32.42 \pm 3.56$ ;

The anxiety of Shivamogga Yoga women is  $22.42 \pm 3.26$  and Chikkamagaluru yoga women is  $22.54 \pm 4.00$ . The depression of Shivamogga Yoga women is  $34.64 \pm 2.66$  and Chikkamagaluru yoga women is  $33.58 \pm 2.56$ . The stress of Shivamogga yoga women is  $105.54 \pm 3.27$  and Chikkamagaluru yoga women is  $105.86 \pm 4.73$ .

The raw data of yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of Shivamogga and Chikkamagaluru district women section is provided in table 4.33.

**Table 4.33. Summary of comparison between yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in yoga women section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Group</b>	<b>Mean±SD</b>	<b>‘t’ score</b>	<b>Sig.</b>
Flexibility	Shivamogga	Yoga Women (N=50)	20.68±2.57	.117	.903
	Chikkamagaluru	Yoga Women (N=50)	20.62±2.55		
Hand Grip Strength	Shivamogga	Yoga Women (N=50)	36.08±1.83	.273	.977
	Chikkamagaluru	Yoga Women (N=50)	35.98±1.83		
Body Mass Index	Shivamogga	Yoga Women (N=50)	23.90±2.62	-.958	<b>.000</b>
	Chikkamagaluru	Yoga Women (N=50)	24.64±4.77		
Systolic Blood Pressure	Shivamogga	Yoga Women (N=50)	119.44±3.43	-5.014	.795
	Chikkamagaluru	Yoga Women (N=50)	122.46±2.53		
Diastolic Blood Pressure	Shivamogga	Yoga Women (N=50)	80.44±3.00	-.877	.532
	Chikkamagaluru	Yoga Women (N=50)	80.96±2.93		
Pulse Rate	Shivamogga	Yoga Women (N=50)	79.14±4.39	.251	.981
	Chikkamagaluru	Yoga Women (N=50)	78.92±4.38		
Loneliness	Shivamogga	Yoga Women (N=50)	32.08±2.32	-.565	<b>.007</b>
	Chikkamagaluru	Yoga Women (N=50)	32.42±3.56		
Anxiety	Shivamogga	Yoga Women (N=50)	22.42±3.26	-.165	.763
	Chikkamagaluru	Yoga Women (N=50)	22.54±4.00		
Depression	Shivamogga	Yoga Women (N=50)	34.64±2.66	2.027	.704
	Chikkamagaluru	Yoga Women (N=50)	33.58±2.56		
Stress	Shivamogga	Yoga Women (N=50)	105.54±3.27	-.393	<b>.002</b>
	Chikkamagaluru	Yoga Women (N=50)	105.86±4.73		

From table 4.33 it is clear that there is significant difference in 'body mass index' between Shivamogga yoga women ( $23.90 \pm 2.62$ ) and Chikkamagaluru yoga women ( $24.64 \pm 4.77$ ).

Significant difference was found in 'loneliness' between Shivamogga yoga women ( $32.08 \pm 2.32$ ) and Chikkamagaluru yoga men ( $32.42 \pm 3.56$ ). Significant difference was found in 'stress' between Shivamogga yoga women ( $105.54 \pm 3.27$ ) and Chikkamagaluru yoga women ( $105.86 \pm 4.73$ ).

Significant differences were not found in Flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, and anxiety between Shivamogga yoga women and Chikkamagaluru yoga women practitioners of Shivamogga and Chikkamagaluru district.

The results on descriptive statistics of Shivamogga and Chikkamagaluru district men yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.34.



**Table 4.34. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in non-yoga practitioners men section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Shivamogga	Non-yoga Men	50	13.48	1.33
	Chikkamagaluru	Non-yoga Men	50	13.28	1.40
Hand GripStrength	Shivamogga	Non-yoga Men	50	34.92	6.52
	Chikkamagaluru	Non-yoga Men	50	35.46	2.54
Body MassIndex	Shivamogga	Non-yoga Men	50	25.79	4.00
	Chikkamagaluru	Non-yoga Men	50	25.46	4.59
Systolic Blood Pressure	Shivamogga	Non-yoga Men	50	124.78	2.23
	Chikkamagaluru	Non-yoga Men	50	119.44	3.43
Diastolic Blood Pressure	Shivamogga	Non-yoga Men	50	84.02	3.56
	Chikkamagaluru	Non-yoga Men	50	80.08	3.57
Pulse Rate	Shivamogga	Non-yoga Men	50	78.44	4.10
	Chikkamagaluru	Non-yoga Men	50	75.96	10.39
Loneliness	Shivamogga	Non-yoga Men	50	40.46	2.22
	Chikkamagaluru	Non-yoga Men	50	39.60	3.25
Anxiety	Shivamogga	Non-yoga Men	50	42.46	3.86
	Chikkamagaluru	Non-yoga Men	50	37.52	3.38
Depression	Shivamogga	Non-yoga Men	50	37.18	6.43
	Chikkamagaluru	Non-yoga Men	50	39.78	5.46
Stress	Shivamogga	Non-yoga Men	50	124.50	1.34
	Chikkamagaluru	Non-yoga Men	50	124.34	2.61

From table 4.34 it becomes clear that the scores on flexibility of Shivamogga non-yoga men is  $13.48 \pm 1.33$  and Chikkamagaluru non-yoga men is  $13.28 \pm 1.40$ ;

The hand grip strength of Shivamogga non-yoga men is  $34.92 \pm 6.52$  and Chikkamagaluru non-yoga men is  $35.46 \pm 2.54$ ; the body mass index of Shivamogga yoga non-yoga is  $25.79 \pm 4.00$  and Chikkamagaluru non-yoga men is  $25.46 \pm 4.59$ .

The systolic blood pressure of Shivamogga non-yoga men is  $124.78 \pm 2.23$  and Chikkamagaluru non-yoga men is  $119.44 \pm 3.43$ . The diastolic blood pressure of Shivamogga non-yoga men is  $84.02 \pm 3.56$  and Chikkamagaluru non-yoga men is  $84.02 \pm 3.56$ .

Pulse rate of Shivamogga non-yoga men is  $78.44 \pm 4.10$  and Chikkamagaluru non-yoga men is  $75.96 \pm 10.39$ ; scores on loneliness of Shivamogga non-yoga men is  $40.46 \pm 2.22$  and Chikkamagaluru non-yoga men is  $39.60 \pm 3.25$ ;

The Anxiety of Shivamogga non-yoga men is  $42.46 \pm 3.86$  and Chikkamagaluru non-yoga men is  $37.52 \pm 3.38$ . The depression of Shivamogga non-yoga men is  $37.18 \pm 6.43$  and Chikkamagaluru non-yoga men is  $39.78 \pm 5.46$ . The stress of Shivamogga non-yoga men is  $124.50 \pm 1.34$  and Chikkamagaluru non-yoga men is  $124.34 \pm 2.61$ .

The raw data of non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of Shivamogga and Chikkamagaluru district men section is provided in table 4.35.

**Table 4.35. Summary of comparison between Non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Shivamogga	Non-yoga Men (N=50)	13.48±1.33	.733	.943
	Chikkamagaluru	Non-yoga Men (N=50)	13.28±1.40		
Hand Grip Strength	Shivamogga	Non-yoga Men (N=50)	34.92±6.52	-.545	.280
	Chikkamagaluru	Non-yoga Men (N=50)	35.46±2.54		
Body Mass Index	Shivamogga	Non-yoga Men (N=50)	25.79±4.00	.390	.310
	Chikkamagaluru	Non-yoga Men (N=50)	25.46±4.59		
Systolic Blood Pressure	Shivamogga	Non-yoga Men (N=50)	124.78±2.23	9.225	.244
	Chikkamagaluru	Non-yoga Men (N=50)	119.44±3.43		
Diastolic Blood Pressure	Shivamogga	Non-yoga Men (N=50)	84.02±3.56	5.523	.163
	Chikkamagaluru	Non-yoga Men (N=50)	80.08±3.57		
Pulse Rate	Shivamogga	Non-yoga Men (N=50)	78.44±4.10	1.570	.553
	Chikkamagaluru	Non-yoga Men (N=50)	75.96±10.39		
Loneliness	Shivamogga	Non-yoga Men (N=50)	40.46±2.22	1.544	<b>.009</b>
	Chikkamagaluru	Non-yoga Men (N=50)	39.60±3.25		
Anxiety	Shivamogga	Non-yoga Men (N=50)	42.46±3.86	6.811	.212
	Chikkamagaluru	Non-yoga Men (N=50)	37.52±3.38		
Depression	Shivamogga	Non-yoga Men (N=50)	37.18±6.43	-2.179	.179
	Chikkamagaluru	Non-yoga Men (N=50)	39.78±5.46		
Stress	Shivamogga	Non-yoga Men (N=50)	124.50±1.34	.386	<b>.004</b>
	Chikkamagaluru	Non-yoga Men (N=50)	124.34±2.61		

From table 4.35 it is clear that there is significant difference in 'loneliness' between Shivamogga non-yoga men ( $40.46 \pm 2.22$ ) and Chikkamagaluru non-yoga men ( $39.60 \pm 3.25$ ).

Significant difference was found in 'stress' between Shivamogga yoga men ( $124.50 \pm 1.34$ ) and Chikkamagaluru yoga men ( $124.34 \pm 2.61$ ). Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, anxiety and depression between Shivamogga non-yoga men and Chikkamagaluru non-yoga men practitioners of Shivamogga and Chikkamagaluru district.

The results on descriptive statistics of Shivamogga and Chikkamagaluru district non-yoga women on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.36.

**Table 4.36. Descriptive results on selected physical, physiological and psycho-social wellbeing aspects in non-yoga practitioners women section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Shivamogga	Non-yoga Women	50	13.04	1.67
	Chikkamagaluru	Non-yoga Women	50	13.12	1.61
Hand GripStrength	Shivamogga	Non-yoga Women	50	22.54	1.89
	Chikkamagaluru	Non-yoga Women	50	22.42	2.43
Body MassIndex	Shivamogga	Non-yoga Women	50	24.87	2.60
	Chikkamagaluru	Non-yoga Women	50	25.02	2.66
Systolic Blood Pressure	Shivamogga	Non-yoga Women	50	124.50	2.73
	Chikkamagaluru	Non-yoga Women	50	124.54	2.59
Diastolic Blood Pressure	Shivamogga	Non-yoga Women	50	81.12	3.88
	Chikkamagaluru	Non-yoga Women	50	80.70	3.51
Pulse Rate	Shivamogga	Non-yoga Women	50	78.14	15.26
	Chikkamagaluru	Non-yoga Women	50	76.54	3.99
Loneliness	Shivamogga	Non-yoga Women	50	39.84	2.59
	Chikkamagaluru	Non-yoga Women	50	39.04	3.17
Anxiety	Shivamogga	Non-yoga Women	50	42.18	4.27
	Chikkamagaluru	Non-yoga Women	50	39.84	4.55
Depression	Shivamogga	Non-yoga Women	50	39.86	6.97
	Chikkamagaluru	Non-yoga Women	50	39.54	6.24
Stress	Shivamogga	Non-yoga Women	50	124.50	1.67
	Chikkamagaluru	Non-yoga Women	50	124.34	2.40

From table 4.36 it becomes clear that the scores on flexibility of Shivamogga non-yoga women is  $13.04 \pm 1.67$  and Chikkamagaluru non-yoga women is  $13.12 \pm 1.61$ ; The hand grip strength of Shivamogga non-yoga women is  $22.54 \pm 1.89$  and Chikkamagaluru non-yoga women is  $22.42 \pm 2.43$ ; the body mass index of Shivamogga non-yoga women is  $24.87 \pm 2.60$  and Chikkamagaluru non-yoga women is  $25.02 \pm 2.66$ .

The systolic blood pressure of Shivamogga non-yoga women is  $124.50 \pm 2.73$  and Chikkamagaluru non-yoga women is  $124.54 \pm 2.59$ . The diastolic blood pressure of Shivamogga non-yoga women is  $81.12 \pm 3.88$  and Chikkamagaluru non-yoga women is  $80.70 \pm 3.51$ . Pulse rate of Shivamogga non-yoga women is  $78.14 \pm 15.26$  and Chikkamagaluru non-yoga women is  $76.54 \pm 3.99$ ; scores on loneliness of Shivamogga non-yoga women is  $39.84 \pm 2.59$  and Chikkamagaluru non-yoga women is  $39.04 \pm 3.17$ ;

The anxiety of Shivamogga non-yoga women is  $42.18 \pm 4.27$  and Chikkamagaluru non-yoga women is  $39.84 \pm 4.55$ . The depression of Shivamogga non-yoga women is  $39.86 \pm 6.97$  and Chikkamagaluru non-yoga women is  $39.54 \pm 6.24$ . The stress of Shivamogga non-yoga women is  $124.50 \pm 1.67$  and Chikkamagaluru non-yoga women is  $124.34 \pm 2.40$ .

The raw data of non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results of Shivamogga and Chikkamagaluru district women section is provided in table 4.37.

**Table 4.37. Summary of comparison between non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in women section of Shivamogga and Chikkamagaluru district**

	<b>District</b>	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Shivamogga	Non-yoga women (N=50)	13.04±1.67	-.244	.715
	Chikkamagaluru	Non-yoga women (N=50)	13.12±1.61		
Hand Grip Strength	Shivamogga	Non-yoga women (N=50)	22.54±1.89	.276	.109
	Chikkamagaluru	Non-yoga women (N=50)	22.42±2.43		
Body Mass Index	Shivamogga	Non-yoga women (N=50)	24.87±2.60	-.270	.822
	Chikkamagaluru	Non-yoga women (N=50)	25.02±2.66		
Systolic Blood Pressure	Shivamogga	Non-yoga women (N=50)	124.50±2.73	-.075	.665
	Chikkamagaluru	Non-yoga women (N=50)	124.54±2.59		
Diastolic Blood Pressure	Shivamogga	Non-yoga women (N=50)	81.12±3.88	.568	.063
	Chikkamagaluru	Non-yoga women (N=50)	80.70±3.51		
Pulse Rate	Shivamogga	Non-yoga women (N=50)	78.14±15.26	.717	.133
	Chikkamagaluru	Non-yoga women (N=50)	76.54±3.99		
Loneliness	Shivamogga	Non-yoga women (N=50)	39.84±2.59	1.382	.103
	Chikkamagaluru	Non-yoga women (N=50)	39.04±3.17		
Anxiety	Shivamogga	Non-yoga women (N=50)	42.18±4.27	2.652	.553
	Chikkamagaluru	Non-yoga women (N=50)	39.84±4.55		
Depression	Shivamogga	Non-yoga women (N=50)	39.86±6.97	.242	.181
	Chikkamagaluru	Non-yoga women (N=50)	39.54±6.24		
Stress	Shivamogga	Non-yoga women (N=50)	124.50±1.67	.387	.207
	Chikkamagaluru	Non-yoga women (N=50)	124.34±2.40		

From table 4.37 it is clear that there is no Significant differences in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness, anxiety, depression and stress between Shivamogga non-yoga women and Chikkamagaluru non-yoga women practitioners of Shivamogga and Chikkamagaluru district.

The over-all Summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district is provided in table 4.38.

**Table 4.38. Overall Descriptive results between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district**

	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Yoga Men	100	23.19	6.40
	Non-yoga Men	100	13.38	1.36
Hand GripStrength	Yoga Men	100	35.92	2.98
	Non-yoga Men	100	35.19	4.93
Body MassIndex	Yoga Men	100	24.66	2.29
	Non-yoga Men	100	25.62	4.29
Systolic Blood Pressure	Yoga Men	100	124.95	2.52
	Non-yoga Men	100	120.99	3.37
Diastolic Blood Pressure	Yoga Men	100	80.29±	3.73
	Non-yoga Men	100	82.05	4.06
Pulse Rate	Yoga Men	100	78.48	4.12
	Non-yoga Men	100	77.20±	7.95
Loneliness	Yoga Men	100	32.42	2.22
	Non-yoga Men	100	40.03	2.80
Anxiety	Yoga Men	100	31.61	3.34
	Non-yoga Men	100	39.99	4.38
Depression	Yoga Men	100	35.66	4.50
	Non-yoga Men	100	38.48	6.08
Stress	Yoga Men	100	105.31	4.51
	Non-yoga Men	100	124.42	2.07



From table 4.38 it becomes clear that the scores on flexibility of yoga men is  $23.19 \pm 6.40$  and non-yoga men is  $13.38 \pm 1.36$ ; The hand grip strength of yoga men is  $35.92 \pm 2.98$  and non-yoga men is  $35.19 \pm 4.93$ ; the body mass index of yoga men is  $24.66 \pm 2.29$  and non-yoga men is  $25.62 \pm 4.29$ .

The systolic blood pressure of yoga men is  $124.95 \pm 2.52$  and non-yoga men is  $120.99 \pm 3.37$ . The diastolic blood pressure of yoga men is  $80.29 \pm 3.73$  and non-yoga men is  $82.05 \pm 4.06$ .

Pulse rate of yoga men is  $78.48 \pm 4.12$  and non-yoga men is  $77.20 \pm 7.95$ ; scores on loneliness of yoga men is  $32.42 \pm 2.22$  and non-yoga men is  $40.03 \pm 2.80$ ;

The anxiety of yoga men is  $31.61 \pm 3.34$  and non-yoga men is  $39.99 \pm 4.38$ . The depression of yoga men is  $35.66 \pm 4.50$  and non-yoga men is  $38.48 \pm 6.08$ . The Stress of yoga men is  $105.31 \pm 4.51$  and non-yoga men is  $124.42 \pm 2.07$ .

The raw data of overall yoga practitioners and non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results men section is provided in table 4.39.

**Table 4.39. Over-all Summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psychosocial wellbeing aspects in men section of Shivamogga and Chikkamagaluru district**

	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Yoga Men (N=100)	23.19±6.40	14.985	<b>.000</b>
	Non-Yoga Men (N=100)	13.38±1.36		
Dominate Hand Grip Strength	Yoga Men (N=100)	35.92±2.98	1.267	.666
	Non-Yoga Men (N=100)	35.19±4.93		
Body Mass Index	Yoga Men (N=100)	24.66±2.29	-1.981	<b>.000</b>
	Non-Yoga Men (N=100)	25.62±4.29		
Systolic Blood Pressure	Yoga Men (N=100)	124.95±2.52	9.409	<b>.046</b>
	Non-Yoga Men (N=100)	120.99±3.37		
Diastolic Blood Pressure	Yoga Men (N=100)	80.29±3.73	-3.189	.052
	Non-Yoga Men (N=100)	82.05±4.06		
Pulse Rate	Yoga Men (N=100)	78.48±4.12	1.429	.520
	Non-Yoga Men (N=100)	77.20±7.95		
Loneliness	Yoga Men (N=100)	32.42±2.22	-21.287	.172
	Non-Yoga Men (N=100)	40.03±2.80		
Anxiety	Yoga Men (N=100)	31.61±3.34	-15.211	<b>.000</b>
	Non-Yoga Men (N=100)	39.99±4.38		
Depression	Yoga Men (N=100)	35.66±4.50	-3.729	<b>.000</b>
	Non-Yoga Men (N=100)	38.48±6.08		
Stress	Yoga Men (N=100)	105.31±4.51	-38.527	<b>.000</b>
	Non-Yoga Men (N=100)	124.42±2.07		

From table 4.39 it is clear that there is significant difference in 'flexibility' between yoga men ( $23.19 \pm 6.40$ ) and non-yoga men ( $13.38 \pm 1.36$ ). Significant difference was found in 'body mass index' between yoga men ( $24.66 \pm 2.29$ ) and non-yoga men ( $25.62 \pm 4.29$ ).

Significant difference was found in 'systolic blood pressure' between yoga men ( $124.95 \pm 2.52$ ) and non-yoga men ( $120.99 \pm 3.37$ ). Significant difference was found in 'anxiety' between yoga men ( $31.61 \pm 3.34$ ) and non-yoga men ( $39.99 \pm 4.38$ ).

Significant difference was found in 'depression' between yoga men ( $35.66 \pm 4.50$ ) and non-yoga men ( $38.48 \pm 6.08$ ). Significant difference was found in 'stress' between yoga men ( $105.31 \pm 4.51$ ) and non-yoga men ( $124.42 \pm 2.07$ ).

Significant differences were not found in hand grip strength, diastolic blood pressure, pulse rate and loneliness between yoga men and non-yoga men practitioners of Shivamogga and Chikkamagaluru district.

The results on overall descriptive statistics of yoga practitioners women and non-yoga practitioners women on selected physical, physiological and psycho-social wellbeing aspects is provided in table 4.40.

**Table 4.40. Overall Descriptive results between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in women section of Shivamogga and Chikkamagaluru district**

	<b>Groups</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Flexibility	Yoga Women	100	20.65	2.54
	Non-yoga Women	100	13.08	1.63
Hand GripStrength	Yoga Women	100	36.03	1.82
	Non-yoga Women	100	22.48	2.16
Body MassIndex	Yoga Women	100	24.27	3.85
	Non-yoga Women	100	24.94	2.62
Systolic Blood Pressure	Yoga Women	100	120.95	3.36
	Non-yoga Women	100	124.52	2.65
Diastolic Blood Pressure	Yoga Women	100	80.70	2.96
	Non-yoga Women	100	80.91	3.68
Pulse Rate	Yoga Women	100	79.03	4.37
	Non-yoga Women	100	77.34	11.13
Loneliness	Yoga Women	100	32.25	3.00
	Non-yoga Women	100	39.44	2.91
Anxiety	Yoga Women	100	22.48	3.63
	Non-yoga Women	100	41.01	4.54
Depression	Yoga Women	100	34.11	2.65
	Non-yoga Women	100	39.70	6.58
Stress	Yoga Women	100	105.70	4.05
	Non-yoga Women	100	124.42	2.06

From table 4.40 it becomes clear that the scores on flexibility of yoga women is  $20.65 \pm 2.54$  and non-yoga women is  $13.08 \pm 1.63$ ;

The hand grip strength of yoga women is  $36.03 \pm 1.82$  and non-yoga women is  $22.48 \pm 2.16$ ; the body mass index of yoga women is  $24.27 \pm 3.85$  and non-yoga women is  $24.94 \pm 2.62$ .

The systolic blood pressure of yoga women is  $120.95 \pm 3.36$  and non-yoga women is  $124.52 \pm 2.65$ . The diastolic blood pressure of yoga women is  $80.70 \pm 2.96$  and non-yoga women is  $80.91 \pm 3.68$ .

Pulse rate of yoga women is  $79.03 \pm 4.37$  and non-yoga women is  $77.34 \pm 11.13$ ; scores on loneliness of yoga women is  $32.25 \pm 3.00$  and non-yoga women is  $39.44 \pm 2.91$ ;

The anxiety of yoga women is  $22.48 \pm 3.63$  and non-yoga women is  $41.01 \pm 4.54$ . The depression of yoga women is  $34.11 \pm 2.65$  and non-yoga women is  $39.70 \pm 6.58$ . The stress of yoga women is  $105.70 \pm 4.05$  and non-yoga women is  $124.42 \pm 2.06$ .

The raw data of overall yoga practitioners and non-yoga practitioners on selected physical, physiological and psycho-social wellbeing aspects was subjected to descriptive statistics and 't' test. The results women section is provided in table 4.41.

**Table 4.41. Over-all Summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psychosocial wellbeing aspects in women section of Shivamogga and Chikkamagaluru district**

	<b>Group</b>	<b>Mean±SD</b>	<b>'t' score</b>	<b>Sig.</b>
Flexibility	Yoga Women (N=100)	20.65±2.54	25.050	<b>.000</b>
	Non-Yoga Women (N=100)	13.08±1.63		
Dominate Hand Grip Strength	Yoga Women (N=100)	36.03±1.82	47.910	.126
	Non-Yoga Women (N=100)	22.48±2.16		
Body Mass Index	Yoga Women (N=100)	24.27±3.85	-1.444	<b>.004</b>
	Non-Yoga Women (N=100)	24.94±2.62		
Systolic Blood Pressure	Yoga Women (N=100)	120.95±3.36	-8.345	.203
	Non-Yoga Women (N=100)	124.52±2.65		
Diastolic Blood Pressure	Yoga Women (N=100)	80.70±2.96	-.444	<b>.001</b>
	Non-Yoga Women (N=100)	80.91±3.68		
Pulse Rate	Yoga Women (N=100)	79.03±4.37	1.414	.089
	Non-Yoga Women (N=100)	77.34±11.13		
Loneliness	Yoga Women (N=100)	32.25±3.00	-17.223	.556
	Non-Yoga Women (N=100)	39.44±2.91		
Anxiety	Yoga Women (N=100)	22.48±3.63	-31.864	<b>.000</b>
	Non-Yoga Women (N=100)	41.01±4.54		
Depression	Yoga Women (N=100)	34.11±2.65	-7.878	<b>.000</b>
	Non-Yoga Women (N=100)	39.70±6.58		
Stress	Yoga Women (N=100)	105.70±4.05	-41.205	<b>.000</b>
	Non-Yoga Women (N=100)	124.42±2.06		

From table 4.41 it is clear that there is significant difference in 'flexibility' between yoga women ( $20.65 \pm 2.54$ ) and non-yoga women ( $13.08 \pm 1.63$ ). Significant difference was found in 'body mass index' between yoga women ( $24.27 \pm 3.85$ ) and non-yoga women ( $24.94 \pm 2.62$ ).

Significant difference was found in 'diastolic blood pressure' between yoga women ( $80.70 \pm 2.96$ ) and non-yoga women ( $80.91 \pm 3.68$ ). Significant difference was found in 'anxiety' between yoga women ( $22.48 \pm 3.63$ ) and non-yoga women ( $41.01 \pm 4.54$ ).

Significant difference was found in 'depression' between yoga women ( $34.11 \pm 2.65$ ) and non-yoga women ( $39.70 \pm 6.58$ ).

Significant difference was found in '*Stress*' between yoga women ( $105.70 \pm 4.05$ ) and non-yoga women ( $124.42 \pm 2.06$ ).

Significant differences were not found in hand grip strength, plus rate and loneliness between yoga women and non-yoga women practitioners of Shivamogga and Chikkamagaluru district.

## DISCUSSION ON FINDINGS

The results of the present study are discussed in this section for making inferences on hypotheses formulated in this study.

### **Body Mass Index related discussion**

On the basis of body mass index, in yoga men section; 76% of yoga practitioners from Shivamogga district are having normal weight, 20% are having over weight and 4% are having obesity. In Chikkamagaluru district 62% of yoga practitioners are having normal weight, 34% are having over weight and 4% are having obesity. Body mass index, in Yoga women section 60% of yoga practitioners from Shivamogga district are having normal weight, 36% are having over weight and 4% are having obesity; In Chikkamagaluru district 02% of yoga practitioners are having under weight, 56% are having normal weight, 28% are having over weight and 14% are having obesity. This is noteworthy benefits to regularly practicing yoga and need to be focused on healthy practices. In spite of observing active lifestyle effects of noteworthy benefits regarding healthy aging.

In non-yoga men section; 44% of non-yoga practitioners from Shivamogga district are having normal weight, 44% are having over weight and 12% are having obesity. In Chikkamagaluru district 44% of non-yoga practitioners are having normal weight, 42% are having over weight and 14% are having obesity and 48% of non-yoga practitioners from Shivamogga district are having normal weight, 36% are having over weight and 16% are having obesity. In Chikkamagaluru district 56% of non-yoga practitioners are having normal weight, 40% are having over weight and 04% are having obesity. This is attention and need to be focused healthy practicing habits. Overweight is a main cause for obesity and its related problems.



Chauhan (2016) explored the effect of yogic asana on body mass index and is situated yoga practice causes decreased body mass index ( $26.4 \pm 2.5$ – $25.22 \pm 2.4$ ), systolic blood pressure ( $136.9 \pm 22.18$  mmHg to  $133 \pm 21.38$  mmHg), and diastolic blood pressure ( $84.7 \pm 6.5$  mmHg to  $82.34 \pm 7.6$  mmHg).

Gour *et al.* (2020) studied randomized control trial interventions to explore the experience of the elderly practicing yoga or light exercise in relation to sedentary behavior in the Ujjain district of Madhya Pradesh, India. Interventions should be encouraged in the community to use physical exercise as a method to better control the physical and social effects of aging.

### **Flexibility related discussion**

Flexibility is one of the most essential health related physical fitness component for any persons. In Shivamogga men yoga section; 82% of yoga practitioners are having fair and 18% are having average. In Chikkamagaluru district 82% of yoga practitioners are having fair and 18% are having average. On the basis of flexibility, in yoga women section; In Shivamogga district 80% of are having fair and 20% are having average; In Chikkamagaluru district 78% of women yoga practitioners are having fair and 22% are having average. While most of the men and women yoga practitioners have good and excellent flexibility it is to be noted here that the yoga practitioners with good should have been excellent in as per the norms.

In non-yoga men section; 50% of subjects from Shivamogga district are having poor, 32% are having fair and 18% are having average. In Chikkamagaluru district 44% of non-yoga practitioners are having poor, 42% are having fair and 14% are having average. On the basis of Flexibility, in Non-yoga women section; 54% of non-yoga

practitioners from Shivamogga district are having poor, 30% are having fair and 16% are having average. In Chikkamagaluru district, 48% of non-yoga practitioners are having poor, 38% are having fair and 14% are having average. Although most of the non-yoga practitioners have poor and average flexibility in relation to available norms, the proportion of subjects under poor category is a matter of concern. Stiffness in lower back and hamstring may lead to some injuries in future.

Bucht and Donath (2019) sauna yoga superiorly improves flexibility, strength, and balance: a two-armed randomized controlled trial in healthy older adults. Results indicate that the sauna yoga may serve as a promising and feasible means to significantly improve flexibility in elderly people.

### **Hand Grip Strength related discussion**

The hand grip strength in yoga men section; 16% of yoga practitioners from Shivamogga district are having strong, 18% are having above average, 16% are having average, 36% are having below average and 14% are having weak. In Chikkamagaluru district, 10% of yoga practitioners are having strong, 20% are having above average, 18% are having average, 38% are having below average and 14% are having weak. In Women section; 24% of yoga practitioners from Shivamogga district are having above average, 46% are having average, 26% are having below average and 04% are having weak. In Chikkamagaluru district, 36% of yoga practitioners are having above average, 32% are having average, 30% are having below average and 02% are having weak. This difference in dominant hand grip strength gives extent for further discussion.

In non-yoga men section; 20% of non-yoga practitioners from Shivamogga district are having above average, 20% are having average, 44% are having below

average and 16% are having weak. In Chikkamagaluru district, 30% of non-yoga practitioners are having above average, 30% are having average, 22% are having below average and 18% are having weak. In women section; 12% of non-yoga practitioners from Shivamogga district are having below average and 88% are having weak. In Chikkamagaluru district, 02% of non-yoga practitioners are having average, 10% are having below average and 88% are having weak. Notice above the results most of all subjects like yoga and non-yoga practitioners come under below average and weak category. In recent years, physical inactivity, lack of quality habits and machinery life causes the unhealthy aging.

Madanmohan *et al.* (2008) discovered the designed to test whether yoga training of six weeks duration modulates sweating response to dynamic exercise and improves respiratory pressures, handgrip strength and handgrip endurance. The maximal inspiratory pressure, maximum expiratory pressure, 40 mm endurance, handgrip strength, and handgrip endurance were measured before and after the six week study period. The weight loss following the Harvard step test (a measure of sweat loss) was also assessed. This study concluded that the yoga training for a short period of six weeks can produce significant improvements in respiratory muscle strength and endurance.

### **Blood Pressure related discussion**

In today's world, keeping blood pressure "normal" is a major challenge. Deviated blood pressure can be caused by stress, poor eating habits, too much salt consumption, and many other factors. In yoga men section systolic blood pressure; 28% of yoga practitioners from Shivamogga district are having normal and 72% are having pre

hypertension. In Chikkamagaluru district, 34% of yoga practitioners are having normal and 66% are having pre-hypertension. In yoga women section systolic blood pressure; 74% of yoga practitioners from Shivamogga district are having normal and 26% are having pre-hypertension. In Chikkamagaluru district 36% of yoga practitioners are having normal and 64% are having pre-hypertension. In yoga men section diastolic blood pressure; 54% of yoga practitioners from Shivamogga district are having normal and 46% are having pre-hypertension. In Chikkamagaluru district 48% of yoga practitioners are having normal and 52% are having pre-hypertension.

In yoga men section diastolic blood pressure; 54% of yoga practitioners from Shivamogga district are having normal and 46% are having pre-hypertension. In Chikkamagaluru district 48% of yoga practitioners are having normal and 52% are having pre-hypertension. In yoga women section diastolic blood pressure; 52% of yoga practitioners from Shivamogga district are having normal and 48% are having pre-hypertension. In Chikkamagaluru district, 48% of yoga practitioners are having normal and 52% are having pre-hypertension. In these results shown that the daily life, people engaged with many stressful works but people who are manage these type stress with active participation in physical activates like yoga and its helps to come out Stress, depression and uncertainty conditions.

Hypertension is the most commonly encountered problems experienced by the elderly with sometimes unknown cause Permana, (2020) studied effectiveness of yoga exercises for decreasing blood pressure in the elderly people. Yoga exercises can reduce blood pressure in the elderly and besides, it is also very important to be applied as a non-pharmacological therapy for the elderly who have a medical history of hypertension.

## **Discussion on comparison between men and women yoga practitioners and non-yoga practitioners in Shivamogga and Chikkamagaluru districts**

1. Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners of Shivamogga district. **In Men section;** there is significant difference in ‘flexibility’, ‘body mass index’, ‘stress’ between yoga men and non-yoga men. Significant differences were not found in hand grip strength, pulse rate ‘loneliness’ and ‘depression’ between and non-yoga men practitioners of Shivamogga district.

**In Women section;** There is significant difference in flexibility, body mass index loneliness, depression and stress between yoga men and non-yoga men. Significant differences were not found in hand grip strength, pulse rate and depression between and non-yoga men practitioners of Shivamogga district.

2. Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners of Chikkamagaluru district. **In men section;** there is significant difference in ‘flexibility’ ‘body mass index’ ‘loneliness’ ‘depression’ and ‘stress’ between yoga men and non-yoga men. Significant differences were not found in hand grip strength, systolic blood pressure, diastolic blood pressure and pulse rate and anxiety between and non-yoga men practitioners of Chikkamagaluru district.

**In Women section;** there is significant difference in ‘flexibility’ ‘hand grip strength’ ‘body mass index’ ‘anxiety’ and ‘depression’ significant difference was found in ‘stress’ between yoga women ( $105.86 \pm 4.73$ ) and non-yoga women

(124.34±2.40). Significant differences were not found in systolic blood pressure, diastolic blood pressure, pulse rate and loneliness.

3. Comparison between yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects of Shivamogga and Chikkamagaluru district. **In men section;** there is significant difference in 'body mass index' and 'stress' between Shivamogga yoga men and Chikkamagaluru yoga men. Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness, and anxiety.

**In women section;** there is significant difference in 'body mass index' 'loneliness' and 'stress'. Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, and anxiety.

4. Comparison between Non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district. **In men section;** there is significant difference in 'loneliness' and 'stress'. Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, anxiety and depression.

**In women section;** there is no significant difference in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness, anxiety, depression and stress.

5. Over-all Summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing

aspects in men section of Shivamogga and Chikkamagaluru district. **In men section;** there is significant difference in 'flexibility' 'body mass index' 'systolic blood pressure' 'diastolic blood pressure' 'anxiety' 'depression' and 'stress'. Significant differences were not found in hand grip strength, pulse rate and loneliness.

**In women section;** there is significant difference in 'flexibility' 'body mass index' 'diastolic blood pressure' 'pulse rate' 'anxiety' 'depression' and 'stress'. Significant differences were not found in hand grip strength and loneliness.

Woodyard (2011) exploring the therapeutic effects of yoga and its ability to increase quality of life. According to in his study that yogic practices improve muscular strength, body flexibility, promote and improve respiratory and cardiovascular function, promote recovery from and treatment of addiction, reduce stress, anxiety, depression and chronic pain, develop sleep patterns and enhance overall well-being and quality of life.

Saradha and Rajam (2017) examined the effect of yogic practices on selected psychological variables of college women students. For this purpose selected 40 college women were randomly selected from Kumaraguru Institute of Technology, Coimbatore. The yogic practice group was significantly decreased in anger, stress and anxiety whereas the control group had no significant decrease in all the variables.

In a similar study, Chauhan *et al.* (2016) evaluates the effect of 1-month yoga practice on body mass index, and blood pressure. It was concluded that, yoga practice causes decreased body mass index, systolic blood pressure, and diastolic blood pressure. On the other hand, no significant changes were observed in body mass index and blood

pressure of control group. The study showed that the yoga practice has potential to control body mass index and blood pressure without taking any medication.

Hypertension is the most commonly encountered problems experienced by the elderly with sometimes unknown cause Permana, (2020). The purpose of review was to find out the effectiveness of yoga exercises for decreasing blood pressure in the elderly people. Yoga exercises can reduce blood pressure in the elderly and besides, it is also very important to be applied as a non-pharmacological therapy for the elderly who have a medical history of hypertension.

Satyanarayana *et al.* (2013) evaluated the effect of yoga on heart rate, blood pressure, body mass index. Results revealed that there is a significant reduction in blood pressure, heart rate, and Body Mass Index in the total cohort with yoga.

Shohani *et al.* (2018) investigated the effects of yoga on anxiety stress and depression in women living in Iran. The result suggested that the yoga showed a positive correlation with all three variable i.e., depression, stress and anxiety ( $r=.8, .7$  &  $.7$  at  $P < 0.001$ ) and regular yoga exercise significantly reduced stress, anxiety and depression in women.



## DISCUSSION ON HYPOTHESES

The duly formulated hypotheses with regard to the influence of yogic life style on the physical, physiological and psycho-social well being of yoga practitioners and non-yoga men and women practitioners of Shivamogga and Chikkamagaluru districts.

**H1:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga men practitioners of Shivamogga district.

The hypothesis is accepted partially in the present context because there were significant differences in flexibility and hand grip strength of yoga and non-yoga men practitioners of Shivamogga district.

**H2:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga women practitioners of Shivamogga district.

The hypothesis is accepted partially in the present context because there is a significant difference in flexibility and hand grip strength of yoga and non-yoga women practitioners of Shivamogga district.

**H3:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga men practitioners of Shivamogga district.

The hypothesis is partially accepted in the present context because there is a significant difference in body mass index, systolic blood pressure and diastolic blood pressure of yoga and non-yoga men practitioners of Shivamogga district. There is no significant difference between groups in pulse rate.

**H4:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga women practitioners of Shivamogga district.

The hypothesis is partially accepted in the present context because there is a significant difference in systolic blood pressure between yoga and non-yoga women practitioners of Shivamogga district. But there is no significant difference between the groups in body mass index, diastolic blood pressure and pulse rate.

**H5:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga men practitioners of Shivamogga district.

The hypothesis is partially accepted in the present context because there were significant differences in loneliness, anxiety, and stress between yoga and non-yoga men practitioners of Shivamogga district. But there is no significant difference found between the groups in depression.

**H6:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Shivamogga district.

The hypothesis is accepted partially in the present context because there were significant differences in loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Shivamogga district.

**H7:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga men practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there were significant differences in flexibility of yoga and non-yoga men practitioners of Chikkamagaluru district. There is no significant difference in hand grip strength.

**H8:** It was hypothesized that there will be a significant difference in the selected physical aspects between yoga and non-yoga women practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there is a significant difference in flexibility and hand grip strength of yoga and non-yoga women practitioners of Chikkamagaluru district.

**H9:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga men practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there is a significant difference in systolic blood pressure of yoga and non-yoga men practitioners of Chikkamagaluru district. There is no significant difference between groups in body mass index, diastolic blood pressure and pulse rate.

**H10:** It was hypothesized that there will be a significant difference in the selected physiological aspects between yoga and non-yoga women practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there is a significant difference in systolic blood pressure between yoga and non-yoga women practitioners of Chikkamagaluru district. But there is no significant

difference between the groups in body mass index, diastolic blood pressure and pulse rate.

**H11:** It was hypothesized that there will be a significant difference in the selected psycho- sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga men practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there were significant differences in loneliness, anxiety, depression and stress between yoga and non-yoga men practitioners of Chikkamagaluru district.

**H12:** It was hypothesized that there will be a significant difference in the selected psycho sociological aspects like loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Chikkamagaluru district.

The hypothesis is partially accepted in the present context because there were significant differences in loneliness, anxiety, depression and stress between yoga and non-yoga women practitioners of Chikkamagaluru district.

## *Chapter-V*

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# *Summary, Conclusions and Recommendations*

## **Chapter V**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **SUMMARY**

Since yoga supports a man's physiological, sociological, spiritual, and biological demands, it serves an important purpose and has a considerable impact on contemporary society. Globally, the popularity of yoga is currently soaring. Yoga is a verb that in Sanskrit means 'to yoke or to bind together'. Yoga is a practice with a long history and a way of life that originated in India. It involves using specific positions, regulated breathing, and meditation. It is an activity that has been proven to benefit older people in a variety of ways.

In Indian culture, yoga was seen as a path to happiness, freedom from loss, mental stability, and tranquilly. Yogic practices have been used since the beginning of time by persons who seek spiritual understanding, sometimes known as Rishis or Yogis, to harmonies their minds and bodies and get ready for spiritual realization. The later stages of human mental health development have been described using a variety of terminologies. Buddhists use the idea of nirvana; the Samkhya school uses the term 'Moksha'; Vedantists use the term 'Atmasakshaatkar', etc. All of these concepts, however, agree that it includes painlessness.

Practicing yoga develops flexibility, strength, and endurance as well as virtues like compassion, self-control, and kindness. Additionally, it promotes tranquilly and well-being. Consistent practice also leads to profound shifts in outlook on life, greater self-awareness, and more energy for a richer, more real enjoyment of life.

To enhance wellness, yoga blends the mental, emotional, and physical elements. Yoga-based treatments have been associated to age-related gains in gait, balance, flexibility, and mood. According to most past research, which either explored individual yogic practises, such as meditation in the elderly, or used yoga therapy interventions from a specific school of yoga, a yoga-based programme has been designed and is practical for old individuals living in community homes.

The general psychological health of elderly persons has been the subject of numerous researches. Kimberlee Bonura has made significant contributions to this field and conducted a study to ascertain the effect of yoga on the psychological health of older adults. Ayurveda and yoga were used in an Indian study that successfully reduced depressive symptoms in an elderly care facility (Krishnamurty and Telles, 2007).

The purpose of the present study was to investigate the influence of yogic life style on physical, physiological and psycho-social wellbeing of yoga practitioners. Many studies have been reported on regular practicing yoga effects as regard to physical, physiological and psychological and social well-being of individuals. The research scholar reviewed the available literature pertaining to the study from books, journals, periodicals, magazines and research papers and also taking in consideration of the importance of variables and feasibility criteria, the variables like physical, physiological, and psychological. The tests selected were standing height, body weight, hand grip strength test, sit and reach test, body mass index, loneliness, anxiety, depression and stress. The duly selected tests were administered by the researcher at their respective place of residence or work. Investigator had a meeting with the subjects. The objectives and importance of the test were made clear to the subjects at the outset. Demonstration of

the test was done by the researcher in order to clear any ambiguities in terms of understanding of the test by subjects. Further a written consent for voluntary participation.

For this study two hundred yoga practitioners were selected as subjects through purposive sampling method. Men (N=100) and women (N=100) yoga practitioners and Non-yoga practitioners Men (N=100) and women (N=100), who were residing in Shivamogga and Chikkamagaluru districts of Karnataka state were selected for the study. The age ranged between the subjects 35 to 45 years.

The data was subjected to statistical analysis by using SPSS.21 version software. Descriptive statistics like mean and standard deviation were calculated for raw data of each variable. Analysis was done to find out the number of subjects coming under each category as per normative values where ever norms are available. In case if norms were not readily available, based on previous studies on age and population matched subjects, the norms were constructed using mean value and standard deviation. For this purpose, five categories were done with 0.5, 1 and 1.5 standard deviation based on principles of normal probability curve.

In order to find out the results of the study, various statistical techniques was employed. In the first level, percent analysis was performed on the data pertaining to different variables selected for the investigation and matched against available norms.

Secondly, the results on different variables of yoga practitioners were compared against non-yoga practitioners' subjects. 'T' test for independent samples was employed for this purpose.



After analysis of data the results of the study was the significant difference among the yoga and non yoga practitioners. When comparison between yoga men and non-yoga men practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga district significant results was found in flexibility (.021), body mass index (.000) and stress (.000). Comparison between yoga women and non-yoga women practitioners of Shivamogga district results was found in flexibility (.000), body mass index (.000), diastolic blood pressure (.000), anxiety (.012), depression (.000), and stress (.000).

When comparison between yoga men and non-yoga men practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Chikkamagaluru district significant results was found in flexibility (.002), body mass index (.001), loneliness (.023) depression (.000) and stress (.000). Comparison between yoga women and non-yoga women practitioners of Chikkamagaluru district significant results was found in flexibility (.005), body mass index (.000), anxiety (.023), depression (.000), and stress (.000).

Over-all summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district significant results was found in flexibility (.000), body mass index (.000), systolic blood pressure (.046), anxiety (.000), depression (.000), and stress (.000). In women section, significant difference was found between yoga women and non yoga women in flexibility (.000), body mass index (.004), diastolic blood pressure (.001), anxiety (.000), depression (.000) and stress (.000).

## CONCLUSIONS

1. **In yoga practitioners section;** Physical variables like flexibility of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is found to be good as per available norms and hand grip strength men and women yoga practitioners of Shivamogga and Chikkamagaluru district found to be good as per available norms. Physiological variables like of systolic blood pressure and diastolic blood pressure of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is good as per norms and body mass index of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is good as per norms.

**In non-yoga practitioners section;** Physical variables like flexibility of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is found to be poor as per available norms and hand grip strength men and women yoga practitioners of Shivamogga and Chikkamagaluru district found to be average as per available norms. Physiological variables like of systolic blood pressure and diastolic blood pressure of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is pre-hypertension as per norms and body mass index of men and women yoga practitioners of Shivamogga and Chikkamagaluru district is found to be overweight as per norms.

2. Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners of Shivamogga district. **In Men section;** there is significant difference in 'flexibility', 'Body Mass Index' and 'Stress' between yoga men and non-yoga men. Significant differences were not found in hand grip strength, pulse rate, loneliness and depression between and non-yoga men practitioners of Shivamogga district.

**In Women section;** There is significant difference in flexibility, body mass index, loneliness, depression and stress between yoga men and non-yoga men. Significant differences were not found in hand grip strength, pulse rate and depression between and non-yoga men practitioners of Shivamogga district.

3. Comparison of selected physical, physiological and psycho-social wellbeing aspects of yoga practitioners with the non-yoga practitioners of Chikkamagaluru district. **In men section;** there is significant difference in 'flexibility' 'body mass index', 'loneliness' 'depression' and 'stress' between yoga men and non-yoga men. Significant differences were not found in hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate and anxiety between and non-yoga men practitioners of Chikkamagaluru district.

**In Women section;** There is significant difference in 'flexibility' 'hand grip strength' 'body mass index' 'anxiety' and 'depression' significant difference was found in 'stress' between yoga women ( $105.86 \pm 4.73$ ) and non-yoga women ( $124.34 \pm 2.40$ ). Significant differences were not found in systolic blood pressure, diastolic blood pressure, pulse rate and loneliness.

4. Comparison between yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects of Shivamogga and Chikkamagaluru district. **In men section;** There is significant difference in 'body mass index' and 'stress' between Shivamogga yoga men and Chikkamagaluru yoga men. Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness and anxiety.

**In women section;** There is significant difference in 'body mass index' 'loneliness' and 'stress'. Significant differences were not found in flexibility,

hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, and anxiety.

5. Comparison between Non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district. **In men section;** there is significant difference in 'loneliness' and 'stress'. Significant differences were not found in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, anxiety and depression.

**In women section;** There is no significant difference in flexibility, hand grip strength, systolic blood pressure, diastolic blood pressure, pulse rate, loneliness, anxiety, depression and stress.

6. Over-all summary of comparison between yoga practitioners and the non-yoga practitioners in selected physical, physiological and psycho-social wellbeing aspects in men section of Shivamogga and Chikkamagaluru district. **In men section;** there is significant difference in 'flexibility' 'body mass index' 'systolic blood pressure' 'diastolic blood pressure' 'anxiety' 'depression' and 'stress'. Significant differences were not found in hand grip strength, pulse rate and loneliness.

**In women section;** There is significant difference in 'flexibility' 'body mass index' 'diastolic blood pressure' 'pulse rate' 'anxiety' 'depression' and 'stress'. Significant differences were not found in hand grip strength, and loneliness.

## RECOMMENDATIONS

The following recommendations are laid down by the researcher on the basis of findings of the present investigation.

1. Similar studies can be taken on larger subjects.
2. The study would help to the practitioners to realize the importance of yoga practice in developing their personality
3. Similar types of research can be taken on physiological and psychological suffering subjects.
4. The health and fitness of elderly people should be taken care of by themselves.
5. The study would help to the present status of physical variables like flexibility and hand grip strength of Shivamogga and Chikkamagaluru yoga practitioners.
6. The study would help to the present status of physiological variables like body mass index (BMI), blood pressure and pulse rate of Shivamogga and Chikkamagaluru yoga practitioners.
7. The study would help to the present status of psychological variables namely loneliness, anxiety, depression and stress of Shivamogga and Chikkamagaluru yoga practitioners.
8. The study would help to the healthy aging process.
9. Same study may be conducted by selecting some other variables.

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# *Bibliography*

## BIBLIOGRAPHY

- Armat, M.R., Emami Zeydi, A., Mokarami, H., Nakhband, A., & Hojjat, S.K. (2018). The impact of laughter yoga on depression and anxiety among retired women: a randomized controlled clinical trial. *Journal of Women & Aging*, 1-12.
- Bartos, L.J., Meek, G.A., & Berger, B.G. (2022). Effectiveness of yoga versus exercise for reducing falling risk in older adults: physical and psychological indices. *Perceptual and Motor Skills*, 129(4), 1245–1269.
- Bartos, L.J., Meek, G.A., & Berger, B.G. (2022). Effectiveness of yoga versus exercise for reducing falling risk in older adults: physical and psychological indices. *Perceptual and Motor Skills*, 129(4), 1245–1269.
- Belam, Georgia. (2020). Yoga as an intervention for older peoples mental health: a literature review. *Working with Older People. Ahead-of-Print*. 10.1108/WWOP-05-2020-0017.
- Bonura Kimberlee & Tenenbaum Gershon. (2013). Effects of yoga on psychological health in older adults. *Journal of Physical Activity & Health*. 11. 10.1123/jpah.2012-0365.
- Bucht, H., & Donath L. Sauna. (2019). Yoga superiorly improves flexibility, strength, and balance: a two-armed randomized controlled trial in healthy older adults. *International Journal of Environmental Research and Public Health*. 16(19):3721.
- Butterfield, Nicole, Schultz, Timothy, Rasmussen, Philippa, Proeve & Michael. (2017). Yoga and mindfulness for anxiety and depression and the role of mental health professionals: a literature review. *The Journal of Mental Health Training, Education and Practice*, 12. 44-54.
- Chauhan, A., Semwal, D.K., Mishra, S.P., & Semwal, R.B. (2017). Yoga practice improves the body mass index and blood pressure: a randomized controlled trial. *International Journal of Yoga*, 10(2), 103–106.

- Priyanka Gour, Anita Choudhary, Krushna Chandra Sahoo, Maria Jirwe, Mats Hallgren, Vinod Kumar Diwan, Vijay K. Mahadik and Vishal Diwan. (2020). Experience of elderly people regarding the effect of yoga/light exercise on sedentary behavior: A longitudinal qualitative study in Madhya Pradesh, India. *Geriatrics*, 5, 103; doi:10.3390/geriatrics5040103
- Farha Khan, Jaishree Jain, Rashmi Gupta, & Kusum Gaur. (2018). Effect of yoga on anxiety: An interventional study. *International Multispecialty Journal of Health*, 4(2), 36-40.
- Gothe, N. P., Kramer, A. F., & McAuley, E. (2014). The effects of an 8-week Hatha yoga intervention on executive function in older adults. *The Journals of Gerontology. Series A- Biological Sciences and Medical Sciences*, 69(9), 1109–1116.
- Hadaye, R.S., Shastri, S., & Salagre, S. (2021). Effect of yoga intervention in the management of hypertension: A preventive trial. *Int. J. Prev. Med.*, 12, 55.
- Hagins, M., States, R., Selfe, T., & Innes, K. (2013). Effectiveness of yoga for hypertension: systematic review and meta-analysis. *Evidence-based Complementary and Alternative Medicine (eCAM)*, 649836.
- Javnbakht, M., Hejazi Kenari, R., & Ghasemi, M. (2009). Effects of yoga on depression and anxiety of women. *Complementary Therapies in Clinical Practice*, 15(2), 102–104.
- Kaleeswari, G., Kalyani, C. Vasantha, Jayarani, J.S., & Rohilla Kusum, K. (2021). Effect of yoga on pulse rate and blood pressure among women. *Journal of Family Medicine and Primary Care*, 10(10), 3670-3674.
- Koohboomi, M., Norasteh, A. A., & Samami, N. (2015). Effect of yoga training on physical fitness and balance in elderly females. *Salmand: Iranian Journal of Ageing*, 10(3), 26-35.
- Krishna Ketan Patel, P.T., Mayura Deshmukh, P.T., & Tushar Palekar. (2019). Effect of yoga on balance in geriatric population. *IJSRST*, 6(2), ISSN: 2395-6011 | Online ISSN: 2395-602X.



- Krishnamurthy, M.N., & Telles, S. (2007). Assessing depression following two ancient Indian interventions: effects of yoga and ayurveda on older adults in a residential home. *Journal of Gerontological Nursing*, 33(2), 17-23.
- Saradha, M., & A. Rajam. (2017). Effect of yogic practices on selected psychological variables of college women students. *International Journal of Adapted Physical Education & Yoga*, 2(4).
- Madanmohan, Mahadevan, S.K., Balakrishnan, S., Gopalakrishnan, M., & Prakash, E.S. (2008). Effect of six weeks yoga training on weight loss following step test, respiratory pressures, handgrip strength and handgrip endurance in young healthy subjects. *Indian Journal of Physiology and Pharmacology*, 52(2), 164–170.
- Madanmohan, Thombre, D.P., Balakumar, B., Nambinarayanan, T.K., Thakur, S., Krishnamurthy, N., & Chandrabose, A. (1992). Effect of yoga training on reaction time, respiratory endurance and muscle strength. *Indian Journal of Physiology and Pharmacology*, 36(4), 229–233.
- Mohsen Kazemina, Nader Salari, Aliakbar Vaisi Raygani, Rostam Jalali, Alireza Abdi, Masoud Mohammadi, Alireza Daneshkhah, Melika Hosseinian Far & Shamarina Shohaimi. (2020). The effect of exercise on anxiety in the elderly worldwide: a systematic review and meta-analysis. *Health Qual. Life Outcomes*, 18(363).
- Moliver, N., Mika, E.M., Chartrand, M.S., Haussmann, R.E., & Khalsa, S.B.S. (2013). Yoga experience as a predictor of psychological wellness in women over 45 years. *International Journal of Yoga*, 6(1), 11.
- Nityananthan, V., & Kalpana, B. (2014). Impact of yoga on stress and self-confidence among the middle aged men. *Management Health*, 18, 36039.
- Satyanarayana, P., G. Vijaya Benerji, Rekha Kumari Dulala, Farid Babu Meka & Ratna Kummari. (2013). Effect of yoga on heart rate, blood pressure, body mass index. *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 8(2), 36-39.

- Pawandeep Singh & Hariom Sharma. (2017). Mental and physical health study of yoga practitioners and non practitioners. *International Journal of Multidisciplinary Approach and Studies*, 04(4), 14 -24.
- Permana, B., Lindayani, L., Hendra, A. & Juniarni, L. (2020). The effect of yoga exercise on reducing blood pressure among elderly with hypertension : a systematic review. *Journal Pendidikan Keperawatan Indonesia*, 6(2), 163–170.
- Priyanka Gour, Anita Choudhary, Krushna Chandra Sahoo, Maria Jirwe, Mats Hallgren, Vinod Kumar Diwan, Vijay, K., Mahadik & Diwan, V. (2020). Experience of elderly people regarding the effect of yoga/light exercise on sedentary behavior: a longitudinal qualitative study in Madhya Pradesh, India. *Geriatrics*, 5, 103.
- Manju & Gobind. (2020). Role of yoga in psychological health among elderly. *International Journal of Creative Research Thoughts (IJCRT)*, 8(11), ISSN: 2320-2882
- Satya Prakash Purohit, Balaram Pradhan & Hogasandra Ramarao Nagendra. (2016). Yoga as a preventive therapy for loneliness in orphan adolescents. *Indian Journal of Health and Wellbeing*, 7(1), 121-124.
- Shin, S. (2021). Meta analysis of the effect of yoga practice on physical fitness in the elderly. *International Journal of Environmental Research and Public Health*, 18(21), 11663.
- Shohani, M., Badfar, G., Nasirkandy, M.P., Kaikhavani, S., Rahmati, S., Modmeli, Y., Soleymani, A., & Azami, M. (2018). The effect of yoga on stress, anxiety, and depression in women. *International Journal of Preventive Medicine*, 9, 21.
- Sivaramakrishnan, D., Fitzsimons, C., Kelly, P., Ludwig, K., Mutrie, N., Saunders, D., & Baker, G. (2019), The effects of yoga compared to active and inactive controls on physical function and health related quality of life in older adults: Systematic review and meta-analysis of randomized controlled trials. *International Journal of Behavioral Nutrition and Physical Activity*, 16(1), 33.

Telles, S., Sharma, S.K., Yadav, A., Singh, N., & Balkrishna, A. (2014). Immediate changes in muscle strength and motor speed following yoga breathing. *Indian Journal of Physiology and Pharmacology*, 58(1), 22–29.

Ledetra Bridges, L.M.S.W., & Manoj Sharma. (2016). The efficacy of yoga as a form of treatment for depression. Received revised March 10, 2017. Accepted for publication May 19, 2017.

Vungarala.Satyanand, Bhakthavatsala Reddy, Shaik.Mahaboobvali, Dhivya Mohanan, Shaik.Salma and F.J. Nuzhath. (2016). Effect of yoga on hypertension. *Narayana Medical Journal*, 5(1), 5-11.

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# *Appendices*

## APPENDICES

### APPENDIX-I

#### Ph.D DATA ENTRY SHEET

Researcher	Manjunatha B.C. Department of P.G. Studies and Research in Physical Education, Kuvempu University
Name of the Subject	
Age	
Gender	
Signature	
Place of the Subject	
Contact No. :	

1. Height (in centimeters) :
2. Weight (in kilograms) :
3. Flexibility (in centimeters): Trail 1 :  
Trail 2 :  
Trail 3 :
4. Hand grip strength (in kilograms) Left Right  
1. .... 1. ....  
2. .... 2. ....  
3. .... 3. ....
5. Blood pressure : Systolic ..... Diastolic .....
6. Pulse Rate : .....
7. Body Composition : BM I : .....Body Fat : .....

## APPENDIX-II

### REVISED UCLA LONELINESS SCALE [RULS] MANVÉA C¼ÁiÁªÁ ¥É ÁÁ tÁÁ ¥ÁÁ Á² Á²

Name:

Date of birth

:

Age:

Gender: Male

:

Female :

**Check mark ( ) in the column which best describes how often you felt or behaved this way during the past several**

PI¼VÉÁ ¥ÁÁiÉÁZÁ «ÁÁiÁPE P¼ZÁ °PªÁ ÇEÁ¼ÁP è ¢ÁªÁ J¼ÁÖ ¸Áj F jÁw ¸Á«¹ÇÁj ÇxPÁ  
ªÁÖ¹ÇÁj JASÁZÉÁB «ªj ÁªÁ ÇAPÁt ZP è UÁgÁVÁ °ÁÖ.

Sl. No.	Statement	Not at all E®ª Á E®è	Rarely «g¼P ÁV	Some times Pªª ÇªÁ	Often DUÁUÉ
1.	I, fell in tune with that people Around me ÉÉÁ ÁVÁ ÁVÁ ÉÁ dÉÁÉÁÇUÉ ÉÁÉÁ °ÉÁÇPÉÁÁVÉÉ				
2.	I lack companionship ÉÉÁÉ ¸ÁgÁiÁªÁÉÁÇUÉ ¸ÁÁiÁªÁ MqÉÁI ZÁ PÉgÁÉ ÉZÉ				
3.	The hre is no one I can turn to ÉÉÁ eÉÁVÉ wÁUÁqPÁ ÁiÁÁgÁ E®è				
4.	I do not feel alone MANÁiÁÁVZÁÉÉ JAZÁ ÉÉÁÉ Çª ÁªÁ Ç®è				
5.	I feel part of a group of friends ÁÁ»vÁÁ UÁÁ ; ÉP è ÉÁÉÁ MAZÁ ÁÁUP ÁVZÁÉÉ				
6.	I have a lot in common with the people around me ÉÉÁ ÁVÁ ÉÁ dÉÁÉÁÇUÉ ÉÉÁÉ Sª¼ÁÖ °ÉÁZÁtPÉ ÉZÉ				
7.	I am no longer close to anyone ÉÁÉÁ ÉÉÁªª ÁÁAZÁiÁÁ ÁiÁÁj UÁÉ CwÁP ÁUÁªÁ Ç®è				

8.	My interests and ideas are not shared by those around me ƐƐĒ Ċ ƆŪĪĀ ᵃĀVĀ Ċ ƐĒZĒŪĪĒĒB ƐvġġƐĀƆŪĒ Ɔ ĀĀPƐ¼ĀĀ ĀĊ Ɔē				
9.	I am an outgoing person ƐĀĒĀ Ɔ ƐĒĀġŪĀ½ƆġĀ ᵃĀ ᵃĊŪ				
10.	There are people I feel close to Ɛvġġ ᵃĊŪĪĀ PƐĒĒ ƐĒĪĒ Ɔ vġġP ᵃVZĀġĒ				
11.	I feel left out ƐĀĒĀ Ɔ ƐĒĀġVĒPƐĀZĀ ƐĒĪĒ ᵃĀ P ᵃŪĀVĪĒĒ				
12.	My social relationships are superficial ƐĒĒ ƐvġġƐĀƆVĒĀ ᵃĀ ĀĀFPĀ ᵃSĀZŪĪĀ ᵃĀĀ ƆPĒ PĒ ᵃĀVĀ ƐĀĒ				
13.	No one really knows me well. ĀĪĀġĀ ƐĒĒ SŪĒ ᵃĪĀV ĆxĊ ᵃĀĀPƐĒĀR Ɔē				
14.	I feel isolated from others ƐĀĒĀ Ɛvġġ ᵃĊŪĪĀZĀ ZĒĒġP ᵃVġĀVĒĒ				
15.	I can find companionship when I want it. ƐĀĒĀ SĀĪĀ ᵃZĀŪ ƐvġġƐĀƆŪĒ ᵃĀZP ĀĀƆġĀVĒĒ				
16.	There are people who really understand me. ƐĒĒĒĒB ᵃd ᵃVĀĪĀ ĆxĊ ᵃĀĀPƐĒ¼ĀĀ Ā dĒġ ZĀġĒ				
17.	I am unhappy being so withdrawn. ƐĒĒ Ɔ P ᵃĀ ᵃŪĀZĀ ƐĀĒĀ ᵃWġĀV Ɔ ƐĒĀŪPĀ ƐĒĪĒ ZĀR ᵃŪĀVĪĒĒ				
18.	People are around me but not with me dĒġĀ ƐĒĒ ᵃV P ᵃVĪ ƐZĀġĒ DZġĒ ƐĒĒĒĀƆV Ɔē				
19.	There are people I can talk to. ƐĀĒĀ ᵃĀVĒĒĒĒ SĀĪĀ ᵃĀV P ᵃĊŪĪĀZĀġĒ [Dᵃġ] ZĀġĒ				
20.	There are people I can turn to ƐĒĒ ƐĒĀVĒ wġŪĀĒĀ ĀĪĀġĀ Ɛ Ɔē				

**APPENDIX-III**  
**BECK ANXIETY INVENTORY [BAI]**  
**Beck Anxiety inventory**  
 DvĀPĀ C¼ĀiĀĀ<sup>a</sup> Ā ¥Ē ĀĀ tĀ/Ā ¥ĒĀB<sup>a</sup> ½

**Name :**  
**Age:**

**Date of birth :**  
**Gender: Male :**  
**Female:**

Dear respondent, regarding an average day, to what extent do the following statements apply to you

DwĀĀiĀ NzĀUġĒ MAZĀ ĴĀĀĀĒĀ ĆĒĒĒĀB ¥Ĵ UĀĀĒ F P¼PĀqĀ °Ā½PĀMĀ vĒĀUĒ JġġĀ<sup>a</sup> ĀnĀUĒ ĆĒĀiĀĀ ĀUĀ<sup>a</sup> ĀZĀZĀ vĒĀĀ ĴĒPĀ ¥ĀQĀiĀĀiĀĀ<sup>a</sup> ĀĀSĀAvġĀ w½<sup>1</sup>.

Sl. No.	Statement	Not at all EĒĒĀ EĒĒ	Mildly but it did not bother me much ĴĀĀĀĒĒĀV DZġĒ ĆZĀ ĒĒĒĒĒ °ZĀĀ vĒĒAZġĒ PĒĒqĒ ĒĒ	Moderately it was not pleasant at times ĀĀĀĀV ĀV ĒZĀ PĒĒĒĒĒ vĀĴ PġĒĀVġĒ ĒĒ	Severely it bothered me wĀĀĀĀV ĒĒĒĒĒ vĒĒAZġĒ ĀĀvĀ
1.	Numbness or tingling ĀġĀUĀĀ ĀĲPĒ ĆxĒĀ dĀĀĀ ĴĀĀĀĒ ĆĒĀĒĒĒ ĒZĀiĀ				
2.	Feeling hot ZĒĒPĀ ĴġġĒ PĀqĀPĒĒĒĒ ĀZġĀ ĆĒĀĒĒĒ ĴĀġĒ				
3.	Wobbliness in legs PĀĀUġĒ ĒĒĒĒĒ ĴĀġĀ ĴĀġĀĀĀ Ā ĆĒĀĒĒĒ ĒZĀiĀ				
4.	Unable to relax ĀĀĀĀ¥ĒĒĒĒ ĴĲĲĲĒĒ ĆĒĒĒĒ ĆĒĒĒĒĒĒĒ				
5.	Fear of wordst happening PĀĒĀUĒĒĒĒ ĴĀĒ ĴĀĒ ĒĒĒĒ ĒZĀiĀ				
6.	Dizzy or lightheaded ĀĀĀUĒ vĀĒĒ ĴĀġĀĒĒĒ ĴĀĒ ĆĒĀĒĒĒ ĴĀġĒ				
7.	Heart pounding/ racing ĀĀĀUĒ ĆĆPĀĒĒĒĒ ĒrvĒĀ ĆĒĀĒĒĒ ĲĲĒĒĒĒ				
8.	Unsteady ĀĀĀUĒ ĀĀĀĒ ĴġĒĀVĒĒ ĴĀZĀ ĆĒĒĒĒĒĒĒ				
9.	Fear ĀĀĀUĒ UĀĒĴ ĆxĒĀĒĒĒĒĒ DvĀPĲĲĒĒĒĒ				
10.	Nervous ĀĀĀUĒ ĒġĀ ZĒĒĒĒĒ ĴĀġĒ				



11.	Feeling of choking α <sup>a</sup> AUÉ JAZÁZbÉ G <sup>1</sup> gAUhÖ, Á <sup>a</sup> AVPA <sup>1</sup> Á <sup>a</sup> EE GAmÁVzÁiÁ				
12.	Numbness or tingling PÉUÁÁ ÉbÁUÁVÉ JAS CEA <sup>1</sup> PÁ DVZÁiÁ				
13.	Shaky/ unsteady α <sup>a</sup> AUÉ ÉbÁUÁ <sup>a</sup> (C <sup>1</sup> g) CEA <sup>1</sup> PkzÁiÁ				
14.	Fear of losing control αÁiÁAVÉ PÁZÁPÉÁÁ <sup>a</sup> ÁiÁZÁ CEA <sup>1</sup> PÁÁmé				
15.	Difficulty in breathing G <sup>1</sup> gÁI vÉAZbÉ EZÁiÁ				
16.	Fear of dying ÁÁiÁAVÉ JAS ÁiÁ GAmé				
17.	Scareds α <sup>a</sup> AUÉ DVÁPkzÁÁÁ ÁiÁ <sup>a</sup> ÁUÁVzÁiÁ				
18.	Indigestion α <sup>a</sup> AUÉ CFÁtÖZÁ CEA <sup>1</sup> PkzÁiÁ				
19.	Fain/ lightheaded α <sup>a</sup> AUÉ áÁEZÖ ©ÁÁ <sup>a</sup> AVPA CEA <sup>1</sup> PÁUÁVzÁiÁ				
20.	Face flushed <sup>a</sup> ÁÁR PÁÁÁUÁVÉ JAZÁ Cα <sub>3</sub> ÁVzÁiÁ				
21.	Hot /cold sweats © <sup>1</sup> CXPA <sup>a</sup> vÁÁÁ PÁgÁ SgÁ <sup>a</sup> Á <sup>a</sup> PÁEZÁiÁ				





**APPENDIX – V**  
**THE STANDARD STRESS SCALE**

**The standard stress scale (sss)**  
**ಒತ್ತಡ ಅಳೆಯುವ ಪ್ರಮಾಣಿತ ಪ್ರಶ್ನಾವಳಿ**

Name:

Date of birth:

Age:

Gender:

Education:

Department:

Dear respondent, regarding an average day, to what extent do the following statements apply to you.  
ಆತ್ಮೀಯ ಓದುಗರೇ, ಒಂದು ಸಾಮಾನ್ಯ ದಿನವನ್ನು ಪರಿಗಣಿಸಿ ಈ ಕೆಳಕಂಡ ಹೇಳಿಕೆಗಳು ತಮಗೆ ಎಷ್ಟರ ಮಟ್ಟಿಗೆ ಅನ್ವಯವಾಗುವುದೆಂದು ತಮ್ಮ ಸೂಕ್ತ ಪ್ರತಿಕ್ರಿಯೆಯ ಮುಖಾಂತರ ತಿಳಿಸಿ.

Sl No	Statement	Not at all ಇಲ್ಲವೇ ಇಲ್ಲ	To a small extent ಸ್ವಲ್ಪ ಮಟ್ಟಿಗೆ	Some what ಕೆಲವಷ್ಟು	To a large extent ದೊಡ್ಡಮಟ್ಟಿಗೆ	Completely ಸಂಪೂರ್ಣವಾಗಿ
1.	I have more tasks to deal with than I can afford. ನಾನು ನಿಭಾಯಿಸಬಹುದಾದ ಕಾರ್ಯಗಳಿಗಿಂತ ಹೆಚ್ಚು ಕಾರ್ಯಗಳನ್ನು ಹೊಂದಿರುವೆ.					
2.	As a rule, I am very satisfied with the results of my activities. ನಿಯಮದಂತೆ ನನ್ನ ಚಟುವಟಿಕೆಯ ಫಲಿತಾಂಶಗಳಿಂದ ನನಗೆ ತೃಪ್ತಿ ಇದೆ.					
3.	Constantly working hard at something but never getting anything accomplished. ಯಾವುದೇ ಕೆಲಸವಾಗಲೀ ನಾನು ಎಷ್ಟೇ ಪ್ರಯತ್ನಿಸಿದರೂ ವ್ಯರ್ಥ ಆದಹಾಗೆ ಅನಿಸುತ್ತದೆ.					
4.	If I do not enjoy an activity, I usually do not have to do it. ಒಂದು ಚಟುವಟಿಕೆಯು ನನಗೆ ಸಂತಸ ತರದಿದ್ದರೆ, ಅದರ ಅವಶ್ಯಕತೆ ಇರುವುದಿಲ್ಲ.					
5.	If I do not care for myself, it does not. ನಾನು ನನ್ನ ಬಗ್ಗೆ ಕಾಳಜಿವಹಿಸದೇ ಇದ್ದರೆ ಅದರ ಅವಶ್ಯಕತೆ ಇರುವುದಿಲ್ಲ.					
6.	I can determine many things in my life. ನನ್ನ ಜೀವನದಲ್ಲಿ ಬರುವ ಅನೇಕ ವಿಚಾರಗಳನ್ನು ನಾನು ನಿರ್ಧರಿಸುತ್ತೇನೆ.					

7.	Most of the work is still hanging on me. ನನ್ನ ಕೆಲಸಗಳು ಇನ್ನೂ ನನ್ನ ಮೇಲೆ ಅವಲಂಬಿತವಾಗಿವೆ.					
8.	I am often totally frustrated. ನಾನು ಆಗಾಗ ಸಂಪೂರ್ಣವಾಗಿ ನಿರಾಶೆ ಹೊಂದುತ್ತೇನೆ.					
9.	The tasks on an ordinary day give me pleasure. ಸಾಮಾನ್ಯ ದಿನಗಳ ಕೆಲಸವು ನನಗೆ ಸಂತಸ ತರುತ್ತದೆ.					
10.	I need more time for the daily activities than I have. ನನ್ನ ದೈನಂದಿನ ಚಟುವಟಿಕೆಗೆ ನನ್ನ ಬಳಿ ಇರುವ ಸಮಯಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಮಯ ಬೇಕು.					
11.	I practice meaningful activities. ನಾನು ನಿರ್ವಹಿಸುವ ಚಟುವಟಿಕೆಗಳು ಅರ್ಥಪೂರ್ಣವಾಗಿರುತ್ತವೆ.					
12.	My friends expect more from me than I can give them. ನಾನು ನನ್ನ ಸ್ನೇಹಿತರಿಗೆ ನೀಡಬಹುದಾದುದಕ್ಕಿಂತ ಹೆಚ್ಚಿನದನ್ನು ನನ್ನಿಂದ ನಿರೀಕ್ಷಿಸುತ್ತಾರೆ.					
13.	My family gives me much more joy than anger. ನನ್ನ ಕುಟುಂಬ ನನಗೆ ಕೋಪಕ್ಕಿಂತ ಹೆಚ್ಚು ಸಂತೋಷ ನೀಡುತ್ತದೆ.					
14.	I have great friends. ನಾನು ಉತ್ತಮ ಸ್ನೇಹಿತರನ್ನು ಹೊಂದಿದ್ದೇನೆ.					
15.	I am often treated unfairly. ನನ್ನನ್ನು ಆಗಾಗ ಅನ್ಯಾಯಯುತವಾಗಿ ನಡೆಸಿಕೊಳ್ಳುತ್ತಾರೆ.					
16.	I do not meet the expectations of my family. ನನ್ನ ಕುಟುಂಬ ನಿರೀಕ್ಷಿಸಿದ ಮಟ್ಟವನ್ನು ನಾನು ತಲುಪಿಲ್ಲ.					
17.	I have a lot to do with people who are stressing me. ನನಗೆ ಒತ್ತಡ ತರುವಂತಹ ಜನರೊಂದಿಗೆ ಸಾಕಷ್ಟು ಕೆಲಸ ನಿರ್ವಹಿಸಲು ಇರುತ್ತದೆ.					
18.	I often feel lonely. ನಾನು ಏಕಾಂಗಿತನವನ್ನು ಆಗಾಗ ಅನುಭವಿಸುತ್ತೇನೆ.					
19.	Most people admire me as I master my life. ನನ್ನ ಜೀವನದ ಮೇಲೆ ಹಿಡಿತ ಸಾಧಿಸಿದ್ದರಿಂದ ಹೆಚ್ಚಿನವರು ನನ್ನನ್ನು ಮೆಚ್ಚುತ್ತಾರೆ.					
20.	My performance is appropriately appreciated. ನನ್ನ ಸಾಧನೆಯನ್ನು ಸಮರ್ಪಕವಾಗಿ ಹೊಗಳುತ್ತಾರೆ..					
21.	No matter what happens, I'm not left alone with problems. ಏನೇ ಆಗಲಿ ನನ್ನ ಸಮಸ್ಯೆಯೊಂದಿಗೆ ನಾನು ಒಬ್ಬೊಂಟಿಗಳಲ್ಲ.					
22.	There are people I can rely on.					

	ನಾನು ನಂಬಿಕೆಯಿಡಬಹುದಾದಂತಹ ಜನರಿದ್ದಾರೆ.					
23.	Usually I have a restful sleep. ಸಾಮಾನ್ಯವಾಗಿ ನಾನು ಆರಾಮದಾಯಕ ನಿದ್ರೆ ಮಾಡುತ್ತೇನೆ.					
24.	I often meditate. ನಾನು ಆಗಾಗ ಧ್ಯಾನ ಮಾಡುತ್ತೇನೆ.					
25.	Probably my life situation will deteriorate. ನನ್ನ ಜೀವನದ ಸ್ಥಿತಿ ಹದಗೆಡುವ ಸಂಭವವಿದೆ.					
26.	In general, I can solve problems well. ನಾನು ಸಾಮಾನ್ಯವಾಗಿ ಸಮಸ್ಯೆಗಳನ್ನು ಚೆನ್ನಾಗಿ ಬಗೆಹರಿಸಿಕೊಳ್ಳುತ್ತೇನೆ.					
27.	I can switch off well. ನಾನು ಇತರ ಕೆಲಸಕ್ಕೆ ಗಮನವನ್ನು ಚೆನ್ನಾಗಿ ವರ್ಗಾಯಿಸಬಲ್ಲೆ.					
28.	After a normal day, I feel happy. ಸಾಮಾನ್ಯ ದಿನದ ಅಂತ್ಯದಲ್ಲಿ ನಾನು ಸಂತೋಷವಾಗಿರುತ್ತೇನೆ.					
29.	I think a lot about problems. ನಾನು ಸಮಸ್ಯೆಗಳ ಬಗ್ಗೆ ಹೆಚ್ಚು ಯೋಚಿಸುತ್ತೇನೆ.					
30.	After a normal day, I feel exhausted. ಸಾಮಾನ್ಯ ದಿನದ ಅಂತ್ಯದಲ್ಲಿ ನಾನು ಆಯಾಸಗೊಳ್ಳುತ್ತೇನೆ.					
31.	I am worried about my future. ನಾನು ನನ್ನ ಭವಿಷ್ಯದ ಬಗ್ಗೆ ಚಿಂತಿತನಾಗಿದ್ದೇನೆ.					
32.	After two days off, I feel completely recovered. ನಾನು ಎರಡು ದಿನಗಳ ರಜೆಯ ನಂತರ ಸಂಪೂರ್ಣವಾಗಿ ಚೇತರಿಸಿಕೊಳ್ಳುತ್ತೇನೆ.					
33.	I am afraid of how my life might look in three years. ಇನ್ನು ಮೂರು ವರ್ಷದಲ್ಲಿ ನನ್ನ ಜೀವನ ಎನಾಗುವುದು ಎಂದು ಭಯವಾಗುತ್ತದೆ.					
34.	I am worried about my fellow men. ನನ್ನ ಸಂಘಡಿಗರ ಬಗ್ಗೆ ನನಗೆ ಚಿಂತೆಯಾಗುತ್ತದೆ.					
35.	I look forward to the future. ನಾನು ನನ್ನ ಭವಿಷ್ಯದ ಬಗ್ಗೆ ಎದುರು ನೋಡುತ್ತೇನೆ.					

# APPENDIX – VI

## RESEARCH ARTICLES PUBLISHED ( 1 and 2)

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### A STUDY ON BODY MASS INDEX AMONG YOGA PRACTITIONERS AND NON-YOGA PRACTITIONERS

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<sup>2</sup>*Research Guide, Department of P. G. Studies & Research in Physical Education, Kuvempu University, Shankaraghatta, Shimoga, Karnataka, India 577451*

**Abstract:** Yoga, a union of one's personal consciousness with the cosmic, is a spiritual way of life, practiced by many over millennia. Researchers and practitioners have observed other benefits of yoga on the physical and mental health (Gangadhar & Varambally 2005). In order to achieve the purpose of the study Female one hundred (N=100) yoga practitioners and fifty (N=100) non-yoga practitioners were selected. Their age range between 35 to 45 years. The Body Mass Index and body fat percent of retired male sportspersons is calculated by the Omron HBF 701 Karada Scan Machine. Descriptive statistics including Mean and Standard Deviation were employed for the present investigation. Percent analysis and 'T' test was employed to compare the Body Mass Index among yoga practitioners and non-yoga practitioners. There is significant difference was found in '*Body Mass Index*' between yoga practitioners and non-yoga practitioners.

**Keywords:** Yoga, Body Mass Index, yoga practitioners, non-yoga practitioners

#### INTRODUCTION

Yoga, a union of one's personal consciousness with the cosmic, is a spiritual way of life, practiced by many over millennia. Researchers and practitioners have observed other benefits of yoga on the physical and mental health (Gangadhar & Varambally 2005). Yoga is also beneficial for musculoskeletal functioning, cardiovascular health, diabetes, respiratory disorders, hypertension, hypotension, depression, and many other disorders. In essence, yoga is a process of creating a body and mind that are stepping stone not hurdles, to an exuberant and fulfilling life. A typical yoga program, usually consisting of Asana, Pranayama, Kriya, deep relaxation, and meditation, has a combined effect of relaxation of body, slowing of breath, and calming of mind. After attention to posture, deep breathing, and chanting, yoga practice often begins with a slow movement sequence to increase blood flow and warm muscles.

**A COMPARATIVE STUDY ON STRESS LEVEL AMONG YOGA PRACTITIONERS AND  
NON-YOGA PRACTITIONERS**

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**Abstract:** Yoga is a philosophical system of exercise and meditation originating in what is now India 2000-4000 years ago. There are many forms of yoga which differ in specific practices, while maintaining the purpose of directing the mind and body. Accumulating experimental and clinical research demonstrates that yoga reduces stress (see Chong, Tsunaka, Tsang, Chan, & Cheung, 2011). The term mechanism, which will be used throughout this paper, refers to underlying psychological, social and neurophysiological processes or mediators through which therapeutic change occurs (Kazdin & Nock, 2003); in this case, mechanism refers to those processes caused by yoga that lead to reduction in stress. The stress level of yoga practitioners and non- yoga practitioners is assessed through the standard stress scale (2014). The results of the study were Yoga practitioners have good in stress level as compared to non-yoga practitioners in present investigation.

**Keywords:** Yoga, stress, yoga practitioners, non-yoga practitioners

**INTRODUCTION**

Yoga is a philosophical system of exercise and meditation originating in what is now India 2000-4000 years ago. There are many forms of yoga which differ in specific practices, while maintaining the purpose of directing the mind and body (1). Common elements of many forms include postures (asanas), which are held for a certain period of time, controlled breathing exercises (pranayama) and meditation. Yoga practice has the general aim of facilitating the development and integration of the body, mind and breath to produce structural, physiological and psychological effects (2). Specifically, the development of a strong and flexible body which is free of pain, a balanced autonomic nervous system enabling all physiological systems to function optimally and a calm, clear and tranquil mind (3).

Yoga is an experiential science. The most important benefit of yoga is it balances our physical and mental conditions. The aging process, which is largely an artificial condition, caused mainly by



# APPENDIX – VII

## PLAGIARISM CHECK CERTIFICATE

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