

# **The Significance of Health education, Taekwondo, and Yoga Training for Women's Physical and Psychological fitness**

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## **Abstract**

Women can lead a happy and healthy life by engaging in physical activity. Unfortunately, they are less health-conscious than men. This fact has been raised and debated around the world for decades. Health is a complete state of physical, mental, and social well-being and not simply the absence of disease. Especially for women, it shows that in order to achieve health, the above components must be satisfied. Physical and Psychological analyses were performed in this study using experimental methods. The essential factors for maintaining good health are many, and everyone has to follow good health practices in their day-to-day lives. However, if we are not fit, our movement decreases and our joints become stiff and prone to injury. Many health problems related to physical and psychological factors can be controlled or eliminated through known physical activities. This paper describes the role of health education, taekwondo, and yogic training for women on physical and psychological fitness levels. The study has been carried out through an experimental study by imparting health education theory and, in practical settings, selected martial arts and yoga training on flexibility and mental health variables. And in order to serve this purpose, a total of 40 sedentary women from universities were randomly selected as subjects for the study. The subjects were further divided into two groups (Group "A" control and Group "B" experimental) of 20 subjects each with a pretest. Group "B" was given 60 minutes of training per day for three days a week for a period of two months. The fitness management awareness class is provided once a week. At the end of the second month of training, both group subjects were retested as a post-test. The post-test data were collected on all selected variables of the study. A t-test was used to analyze the data by variables. The level of significance chosen was 0.05. In conclusion, health education, taekwondo exercises, and yogic exercises showed highly significant improvements in mental health and flexibility variables from pre- to post-test in the experimental group compared to the control group.

**Key words: Health education, Training, Taekwondo, Yoga**

## 1.0 Introduction

The essential factors for maintaining good health and everyone has to follow good health practices in their day-to-day life. Many health problems, diseases like B.P, Diabetes, acidity and Asthma are controlled by people using medicines. But we can control or eliminate almost all dreadful diseases through physical activity. One of the commonly known physical activity like Yoga, martial art, dance etc. However, if we are not fit our movement decreases and joints become stiff and prone to disease, Physical activity can help women live a happy and healthy life. They are, unfortunately, less health-conscious than men. For decades, people have addressed and argued this truth all across the world. According to the World Health Organization, health is a complete condition of physical, mental, and social well-being, not only the absence of sickness. It demonstrates, particularly for women, that the following components must be met in order to achieve health. This study used experimental approaches to conduct physical and psychological analyses. The majority of long-term studies on yoga and martial arts training agree that they are effective in promoting positive psychological and social outcomes. for trainees' independence, self-control, and self-confidence, which tended to increase with their training time. Some martial arts, especially Tae Kwon Do, are characterized by fluid and powerful movements. (David Mitchell, 1989) Yoga produces psychological benefits faster than other forms of exercise. Therefore, this study may benefit women's health. Yoga is the science of living well and it comes into play when we incorporate it into our daily routine. It affects the physical, mental, emotional, spiritual and spiritual factors of a woman. A quick glance at the history of yoga can help us appreciate its long history, and knows, it might even inspire us to include yoga in our lives. Yoga has these characteristics, especially in an attempt to improve the human condition at this time. Yoga is a fair science of life, and it comes into play when integrated into our daily lives. It works on all human aspects: physical, mental, emotional, spiritual and spiritual. The word yoga means "unity" or "oneness" and is derived from the Sanskrit word "yuj", which means "joining". We might already have an idea of what yoga is, but to understand it better, we have to know what it has become as well as its roots and beginnings. A brief look at the history of yoga helps us to appreciate its rich tradition and maybe it can help us integrate yoga into our lives. The earliest

archaeological evidence of the existence of yoga is found in stone seals depicting figures in poses. Stone seals indicate the existence of Yoga around 3000 BC. However, scholars have reason to believe that yoga has these characteristics, especially in an attempt to improve the human condition at the time. In addition, they aim to heal community members and practitioners who act as religious mediators. To better discuss the history of yoga, we can divide it into four periods: Vedic period, pre-classical period, classical period and post-classical period. The versatility of the physical components is an essential aspect of fitness for health. Flexibility is part of physical activity and is related to health. Health exercise refers to aspects of physical activity that help protect against disease caused by a sedentary lifestyle. Flexibility is the ability to perform gestures with greater range or range of motion. A person's ability to control any part of their body through a series of movements is known as flexibility. Stretching exercises tend to maintain or improve the elasticity of muscles, tendons, and ligaments. (Singh 1991) Martial art taekwondo training is a science-based educational process that teaches techniques to prepare men for self-defense, competition, and physical training. Our mobility decreases and joints stiffen if we are not agile. In sports, flexibility helps train these skills more effectively; for example, a gymnast, dancer or diver must be extremely flexible; however, flexibility is often needed in other sports to promote competition and reduce the risk of injury. It also helps prevent injury, improves posture and relieves pressure on the lower back, maintains knee stability, and improves balance in motion. Yoga is a martial art practiced as part of a religious ritual from Vedic times to British times. Military training was also popular at the time and they practiced martial arts daily. Flexibility is an essential aspect of fitness that has many beneficial effects on the body. It increases body mobility, posture and coordination, and reduces the risk of fractures and muscle pain, for example. This also results in a more traditional "shape". This will expand your range of motion and make these exercises easier to do. Being flexible is the first step to better physical health. Flexibility is described as compliance in our daily lives; it plays a unique and impactful role in the modern era as it responds to yoga-like biological and physiological processes. All should be careful to live a healthier life. Good health includes not only the absence of disease in the body, but also the general physical and social condition of an individual. Good health is one of the keys to success in life. Martial arts is one of the most popular and useful gifts for fitness. The researcher's goal here is to enhance the experience of everyone in the model and provide fit through flexibility. Martial arts professionals can benefit from the research. Many people in our

culture currently suffer from depression and other health-related issues, and the effects of this training approach can have a positive impact on ordinary people's lifestyles. The study's findings and conclusions may encourage young people to pursue any martial art as a means of achieving minimum and standard physical activity, mental wellbeing, and satisfaction in their work and personal lives.

## **1.1 Statement of problem**

The purpose of the study was to find out the role of taekwondo do and yogic, health education on Physical and psychological fitness of women. Using the variables of Physical fitness are flexibility along with and Mental health of women variable.

## **1.2 Importance of Study**

To prevent everyday injuries, include muscle and disc strain that occurs when turning in or out of bed, shoulder adjustments due to work tasks that involve lifting or reaching, back pain from changing positions From sitting to standing, bending over to pick up things something, or even going up and down stairs, muscles become stiff if we don't exercise flexibility. Flexibility improves your posture, helps prevent lameness, scoliosis, and more. While playing with your kids, friends and baby, easier and less hurtful, but play a game where you stretch your hamstrings, quads, etc. capable of hurting you there, feel free, open, calm, satisfied, personality development, high level of self-confidence. Improved athletic performance (e.g., better arm and shoulder extension and rotation for swimmers and basketball players, longer stride for runners, deeper knee and hip flexion for skiers ) as well as parry shots associated with high-intensity athletic endeavors, gymnastics. We can walk more comfortably thanks to the ability to sit in different positions. Training helps "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. Nowadays, stress levels are increasing due to health difficulties, work-related stress, and other personal issues; life isn't what it used to be. When we have to make difficult decisions, cope with stressful situations, and interact with others, we need to have positive mental health, physical activity plays a vital influence in our total health. As a result, we must understand more about this illness in order to keep it at bay and raise mental health awareness.

### **1.3 Objective of the Study**

1. The effect of training will increase flexibility for subjects and helps to wide range of movement.
2. The common people can practice martial art and they can lead healthy life.
3. The enhancement of flexibility helps to maintain good posture.
4. The better flexibility will protect the human body from injury.
5. The individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully,

### **1.4 Definitions**

**Mental health** as It is defined as a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to her or his community. (S.K Mangal 1991)

**Flexibility** is part of physical activity and is related to health. Health exercise refers to aspects of physical activity that help protect against disease caused by a sedentary lifestyle. Flexibility is the ability to perform gestures with greater range or range of motion

**Yoga** is a science of right living and it works when integrated in our daily life. It works on all aspects of the person: the physical, mental, emotional, psychic and spiritual. The word yoga means 'unity' or 'oneness' and is derived from the Sanskrit word 'yuj' which means 'to join'.

**Health** WHO has stated that health is a complete Physical, Mental, Social fitness and not merely the absence of diseases

## 2.0 Review of Related Literature

Project always requires strong review literature like as any other subjects, we have to learn the history for the progress of present work and its future relevance. A study of relevant literature is an essential step to get full picture of what has been done with regard to the problem under study. Such a review brings about a deep and clear perspective of the overall field. In order to support analysis of the study the research scholar collected research reference materials from various books, journals, periodicals.

In order to support analysis of the study the research scholar collected research reference materials from various books, journals, periodicals, websites etcetera. The study in the field of flexibility and martial art are limited. JingXianLi,(2000)investigated Balance, control, flexibility, and cardio respiratory fitness among older Tai Chi practitioners, Tai Chi Chuan exercise has beneficial effects on the components of physical fitness. A.Yiannakis and P.Thomporowski (2003) conducted a comparative study on the effects of martial arts training on mood on 200 students of Okinawa dojo, numerous studies have shown that exercise has a beneficial effect on the reduction of stress, enhancement of mood, and lessening of depression. Chapin.S.H(1986)conducted a study on the effect of a judo throwing drill on resting heart rate and physical work capacity in college men and women. These are only limited studies on flexibility and flexibility research is upcoming concept for common man. This filed required more studies voraciously required websites etcetera.

Taylor and William L. Haskell (2005) The purpose of this study was to determine the effects of a six-month aerobic exercise-training regimen on cardiovascular response to mental arithmetic in healthy middle-aged men and women. Subjects were randomly assigned to a moderate intensity exercise. Before and after the training subjects' heart rates and blood pressures were measured doing a mental arithmetic task (N = 83). Other physiological and psychosocial measures included the Type A structured interview and a maximal exercise treadmill test. There were significant increases in aerobic capacity in those subjects receiving exercise training.

German T.M (1984) conducted study on relationship of absolute and relative power to strength and speed. Both absolute power and realistic power were calculated. The results were correlated with strength measured during a maximum leg press and speed measured on a modified bicycle ergo meter. Results indicated a significant ( $P < 0.01$ ) correlation between absolute power and strength and speed measures. There was also a significant ( $P < 0.01$ ) relationship between relative power and speed.

The kinematic analysis was done by Shull R.A (1986) on reverse punch in Karate, cinematographic techniques were utilized to obtain kinematic data regarding the spatial and temporal organization of selected joints in the production of peak wrist velocity. It was hypothesized that the reverse punch and high block / reverse punch techniques would confirm to the kinetic link principle and scrape effective movement models. It was further hypothesised that the first hypothesis would apply independent of Karate styles striking patterns of wrist elbow, shoulder, hip and knee varied among students. Due to movement time limitations, usually inherent in the reverse punch, the above mentioned models may not be wholly appropriate for analyzing the Karate reverse punch.

Nosanchuk and MacNeil (2006) examined the aggressive tendencies of participants at seven schools offering Karate, Taekwondo or Jujitsu. At each school, they evaluated the relative importance of meditation in the class, the amount of respect the students showed towards the sensei, the dojo, and each other, the level of contact allowed to vital areas of the body, and the relative importance of kata. Based on this evaluation, they classified 4 of the schools as "traditional" (more meditation, respect and kata, less contact to vital areas) and 3 of them as "modern". To control for self-selection and abrasion skewing the results, beginning students in both traditional and modern schools had similar scores. More advanced students in the traditional schools showed lower scores for aggression than beginning students.

### 3.0 Methodology

The study was carried out by two means one is imparting health education knowledge and second is fitness training through practical means. The purpose of the study was to find out the Health educational imparting theoretically and physical training concentrates on yoga and Taekwondo Exercises on Physical Fitness, and Mental health of women. In-order to serve this purpose, a total of 40 sedentary women from universities were randomly selected as subjects for the study. The subjects were further divided into two groups (Group “A”& “B”) of 20 subjects in each. Group “A” Control Group. Group “B” (experimental group) was given 60 minutes training per day for 3 days in a week for a period of two months. The fitness management awareness class will provide twice in a week. Before training a pre test and at the end of the second month exercises training, both the group subjects were retested as post- test. The data was collected on all selected variables of the study.

#### 3.1 Health education imparting areas

**Physical Health - Right labour:** There is a general move away from physically demanding work. This, together with the increasing use of automated transport, technology at home, and more passive leisure time, all contribute to lower levels of physical activity. Right labour is also an essential part in the awakening of woman’s consciousness and energy. We have already started getting everything done by others. we are unnecessarily using too much of human resources, science and technology. All the strength, all the vitality of life is lost because man’s body and man’s being have been created for a certain amount of labour and now, she has been spared from all that work.

**Right diet for women:** Women are more victims in irregular diet. So the first thing is that every person should be very aware and conscious about his eating. It is necessary for a man to remain aware of what he eats, how much he eats, what its effects are on his body, what should a woman eat and what should she not eat. Human body is made of chemical elements. The whole process of the body is very chemical. For a right diet the first thing to remember is that it should not



create excitement, it should not be intoxicating, it should not be heavy. In world level women are victims of starvation and overeating.

**Psychological level- Right mental health of women:** The W.H.O defines mental health of women as "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community. Mental health of women and mental health of women disorders are determined by multiple and interacting social, psychological, and biological factors, just as health and illness in general and with indicators of poverty, including low levels of education and in some studies with poor housing and poor income. Increasing and persisting socio-economic disadvantages for individuals and for communities are recognized risks to mental health of women. If the life proceeds on these points with physical activities, then there is a possibility to lead a happy life.

**Right digestions in women:** The other part of right food is that you should eat in a very peaceful, joyful state. If you are not in such state, and then it is better to wait till you are and not to eat for a while. When the mind is absolutely ready, only then should have his meals.

**Right sleep:** The person who cannot sleep rightly cannot live rightly. Sleep is not a waste of time. The eight hours of sleep are not being wasted; rather because of those eight hours, you are able to stay awake for sixteen hours. Otherwise, you would not be able to stay awake all that time. During those eight hours life energy is accumulated, your life gets revitalized, the centers of your brain and heart calm down and your life functions from your navel centre

**Right state of mind - Id, Ego and Superego:** Perhaps Freud's single most enduring and important idea was that the human psyche has more than one aspect. Freud (1923) saw the psyche structured into three parts (i.e. tripartite), the id, ego and superego, all developing at different stages in our lives. These are systems, not parts of the brain, or in any way physical.

**Sociological level for women empowerment:** Women required mental health and learning to manage social problems through social media, technology like internet, mobile phones. Social engineering is a practice of obtaining confidential information by manipulation of legitimate users.

**General policies, community legal knowledge:** Women community must be made aware of the fact that there are Acts which ensure their safety and security. Especially women know that which acts constitute offence they can make complaint either before the police or other authorities. So they must be made aware of the authorities before whom they can make complaint. legal education must be imparted in the field of Informal Education.

**Benefits of fitness** - Women should be aware of benefits of Improved health, increased efficiency of heart and lungs, reduce cholesterol level, BP variation tends to be stable, increased muscular strength and endurance. reduce risk of Heart disease, Improved sense of well-being. More energy, Less stress, Improved quality of sleep, Improved ability to cope up with stress, Improved appearance, help to keep healthy weight, improved body posture. Enhanced social life, increased opportunity to make new friends,improved self image, Increased stamina, increased productivity,increased immunity to illness, faster recovery.

**Principles of fitness training:** women should known the systematic process of training such as Prognostic performance of training, Continuity of training, Progression of load of training, Uniformity and differentiation of training, Progressive specialization of training, Planned and systematic of training, Cyclicity of training ,Planning based on latest scientific knowledge, Planning based on diet,Based on time, living conditions

**Posture :** Posture is the correct alignment of body segments. Any good posture must have all parts of the body is readiness for action and held in relaxation rather than tension. considering the movement of the body posture is referred to as pose or position of the body, the way an individual carries himself in sitting and standing, etc. Posture in children is an important indication of their future appearance. In the good standing posture, the general line of the body is straight the head poised on the top of the chest and not projecting forth. The abdomen is flat and contracted.

**Physical fitness** is a state of general wellbeing, physically sound and healthy, along with mental stability Or capacity of a person to meet the physical demand of daily life and carry out he days activities with out fatigue.

**Health related Physical Fitness,** Health-related physical fitness is measured by two aspects, the ability to cope with daily activities as well as the persistency in good functioning of the body. Health related physical fitness refers to the activities that focus on overall health. Various health related Physical fitness components are essential to keep good health and also to perform day to day activities effectively and efficiently.

### 3.2 Practical training

**Training Design Table 3.2.3**

1	Vriskshasana	2	Padahasatasana	3	Janu shirshasana	4	Matsyendrasana
5	Vajrasana	6	Padmasana	7	Gomukhasana	8	Dhanurasana
9	Halasana	10	Paschimothasana	11	Chakarasna	12	Bujangasana
Sl.	Exercises					No of repetitions x No	
	of set						
1.	Front rolling exercises					10Rep X 1set	
2.	Back rolling					10Rep X 1set	
3.	Side wards rolling(both sides)					4 Rep X 1set	
4.	Allow the legs to separate under there own weight					3 Rep X 2set	
5.	Punch exercises					3 Rep X 2set	
6.	Front Kick					4 Rep X 2set	
7.	The Side kicks					4 Rep X 2set	
8.	Hurdle exercises					4 Rep X 2set	
9.	Blocking exercises					15 rep X 3 set	
10.	Back kick					4 Rep X 2set	

**Vrikhasana:** In Sanskrit, vriksha means "tree," and asana means "position." The body resembles a tree in the ultimate position of the asana. As a result, it is referred to as the tree stance. Procedure for Tree Positioning Stand in Samasthithi or Tadasana as the first stage of the pose. Exhale and place the right foot on the root of the left thigh, right knee bending. Inhale, raise your arms, bring your palms together, and repeat. Hold the stance for five breaths while staring

straight ahead. Rep the process on the opposite side. Vriskshasana is a balanced as well as hip-opening pose. Beginners can try this pose with the use of a chair or a wall support..

**Padahastasana ( Hand Under Foot Pose):** Pada hastasana is a stretching pose. It gives a lot of stretch to your thigh and calf muscle. It also gives a stretch to your lower back. Pada means foot and hast means hand, asana means to be in posture where you can stay firmly and comfortably for longer. Hence Padahastasana is the posture where the feet are touched by the hands.

**Janu Sirsasana,**( Head- to- Knee disguise) Is applicable for scholars of any position and melds a forward bend with a spinaltwist.Begin in Dandasana( Staff Pose). Bend your right knee and place the sole of your right bottom high on your left innerthigh.Inhale and outstretch your chine; exhale and take your right hand to the outside of your left ham and your left hand behind your leftthip.On an exhalation, bend at your hips and spare forward over your leftleg.Reach for your leftfoot.However, clasp your left wrist with your right hand, If it's available toyou.Inhale and reach your sternum forward; exhale and revolve your right caricatures toward your left knee indeedmore.To exit the disguise, gobble and lift your casket. Unbend your right leg, returning to StaffPose.Repeat on the other side.

**Ardha Matsyendrasana** Ardha Matsyendrasana is a seated twist asana that's amongst one of the twelve introductory Hatha Yoga acts. Also known as Half Lord of the Fishes or Sitting Half Spinal Twist, it's a freshman position disguise. Your legs must be stretched in front.Flex your right knee and place your right bottom outside the leftknee.Bend your left knee and bring your left bottom around the righthip.Inhale deeply and raise your left arm as you twist your torso. Pass the left arm around the external edge of your rightknee.Hold your right bottom with the left hand so that your right knee is near to your leftarmpit.Inhale deeply and while keeping your reverse straight, raise your right arm in the front and aspect ahead. Exhale and continue twisting towards the right. Fix your aspect towards the right and look past your right shoulder. Hold the disguise for 30- 40 seconds. Return to the starting position and reprise on the left side.

**Vajrasana** Sit with your legs straight out in front of you. Fold both legs and sit on the bottom in a kneeling position. Keep your hips on your heels; your toes should point behind you, and your big toes should meet at therear.However, you should have a bumper under your bases for

comfort and to avoid ankle strain, If you're a beginner. However, you can also keep a bumper or mask above your bases and below your knees, If you have knee pain. Flash back to check with your croaker if you have any special medical problems. Sit comfortably on the hole created by the split heels. Maintain a straight line with your head, neck, and chine. Place your triumphs on your shanks, triumphs facing over. Hold this disguise for roughly 15 twinkles while taking long and deep breaths if you're an accomplished yoga guru. newcomers can begin with as little as 30 seconds, depending on their degree of comfort. Relax and unbend your legs as you exhale.

**Padmasana** Sit on the bottom or on a mat with your legs stretched out in front of you and your chine erect. Bend your right knee and rest it on your left ham. Make sure the soles of your bases point overhead and your heel is close to your tummy. Replicate the former step with the contrary leg. Place your hands on your knees in mudra pose with your legs crossed and bases on opposing shanks. Maintain a straight chine and a straight head. Continue to hold and take long, slow breaths in and out.

**Gomukhasana** This is also known as the cow face disguise; it's salutary in further ways than one. It effectively maintains your body, can boost your mood, bring in further positivity and ameliorate your physical and internal well being. Gomukhasana is a Sanskrit term that translates as Cow Face disguise in English. During this posture, our crossed legs look like the face of a cow. The knees look like the mouth, the thigh looks like the side of a cow's face, and the bases look like the cognizance of a cow. Sitting in the disguise for a many twinkles and concentrating on the breaths relieves stress and anxiety.

**Dhanurasana (Bow Pose):** Dhanurasana, also known as the bow pose, Resembling an archer's bow, this posture encourages a powerful stretch along the front of the body and a deep opening at the heart center, Here's a step-by-step guide to performing Dhanurasana -1. Lie down on your stomach with your feet slightly apart, almost parallel to your hips, and place your arms on the side of your body. Slowly, fold your knees up and hold your ankles with your hands. Breathe in and lift your chest off the ground and pull your legs up and stretch it out. You should feel the stretch on your arms and thighs. Hold the pose for 12-15 seconds, paying attention to your breath as you take long, deep ones. Slowly bring your chest and legs back to the ground, release your hold on the ankles, and relax with your hands on the side. Repeat for a few sets.

**Halasana** :This yoga pose gets its name from the plow – a popular farming tool commonly used in Indian agriculture to prepare the soil for sowing crops. Like its namesake, this pose prepares the ‘field’ of the body and mind for deep rejuvenation. Lie on your back with your arms beside you, palms downwards.As you inhale, use your abdominal muscles to lift your feet off the floor, raising your legs vertically at a 90-degree angle.Continue to breathe normally and supporting your hips and back with your hands, lift them off the ground.Allow your legs to sweep in a 180-degree angle over your head till your toes touch the floor. Your back should be perpendicular to the floor. This may be difficult initially, but make an attempt for a few seconds.Hold this pose and let your body relax more and more with each steady breath.

**Paschimottanasana** :Sit with your legs straight in front of you, either together or hip-width apart. Check that you are sitting high on your sitting bones. Inhale and reach your arms parallel to your ears towards the ceiling. Exhale while extending forward and bending forward, reaching your hands towards your toes. Bring your nose all the way to your knees. Hold your ankles, shins, or even your knees if you can't reach your toes. Put your elbows down on the floor. Getting out of the stance Inhale deeply and slowly roll up, vertebra by vertebra, shoulders last, and head last.

**Bhujangasana** :Coming into Cobra from Knees, Chest, and Chin in the middle of a Sun Salutation. If not, start by lying down flat on your stomach.Place your palms directly under your shoulders on the ground. Straighten your elbows and hug them into your sides.Pause for a second with your neck in a neutral position, looking straight down at your mat. Fix your pubic bone to the ground.Lift your chest off the floor by inhaling. Keep your low ribs on the floor and roll your shoulders back. Continue to keep your elbows hugging your sides. Don't allow them swerve to either side. Maintain a neutral neck position. Don't turn it up. Your eyes should be fixed on the ground.Exhale to return to the floor.

### **3.3 Administration of Test Items**

#### **3.3.1 Mental health**

Mental health battery is intends to assess the status of mental health of persons. Questionnaire consisting 130 items was retained for test.The examiner should read the instruction carefully and if there is any confusion students should ask to clarify it by raising their hands. The examiner

should attend to such examine very carefully. There is no fixed time limit. However, generally normal examine having average mental health takes about 25 minutes in giving complete answers. Scoring the answers of those items which tally with the answers given in the scoring key .If they don't tally they will be given a score of zero.

A five point qualitative criterion has been developed for classifying their mental health is shown in table

**Table 3.3.2 Five point qualitative criterion of mental health**

<b>Scores</b>	<b>Grade</b>
90 and above	Very good
70 -89	Good
50-69	Average
30-49	Poor
Below 29	Very poor

### **3.3.3 The Sit and reach test**

The Sit and reach test of Health related physical fitness.The procedure for the test The Sit and reach test of Health related physical fitness ‘ was taken to determine the Flexibility of lower back and hamstring function of the subjects. Age and Level: Elementary school age to adult.

The purpose of the sit and reach test is to evaluate the flexibility of the low back and posterior thigh. The sit and reach test requires the performer to stretch forward and extend the hamstring and low back muscles.

The student assumes a sitting position with legs extended, feet shoulder width apart and shoes off. The arms are extended forward with the hands on top of the other and finger pads on top of finger tips.

The student reaches directly forward, palms down, along the measuring scale four times, the position of maximum reach the last time for one full second. Only one trial is given. Test Area: Room with level floor and vertical wall.

Equipment Needed: A special apparatus consisting of a box with a measuring scale in which 23 centimeters is at the level of the bottom of the feet.

**Fig 3.3.4**



**Table3.3.5** Norms For Sit and Reach (flexibility)

Sl.No		Measurement cm
1	Excellent	27-24
2	Good	23-21
3	Above average	21-20
4	Average	19-18
5	Below average	18-17
6	Poor	16-14
7	Very poor	13-8



## 4.0 Statistics analysis and calculations

The analysis of the data pertaining to the effect of martial art exercises training on variable such as Flexibility (Flx) (Physical fitness), and Mental health(MH) are presented in this chapter. The discussion of findings and hypotheses are also detailed in this chapter. The pre- test and post -test data of the experimental and control group on the variables flexibility assessed by sit and reach test for physical fitness, and mental health by questionnaire. The data of these variables were assessed through such as Descriptive statistics, Paired sample T-test statistical techniques. In all these statistical tests, level of significance was fixed 0.05 levels. All statistical analysis was carried out with the help of statistical package SPSS .

### 4.1 Statistical analysis mental health

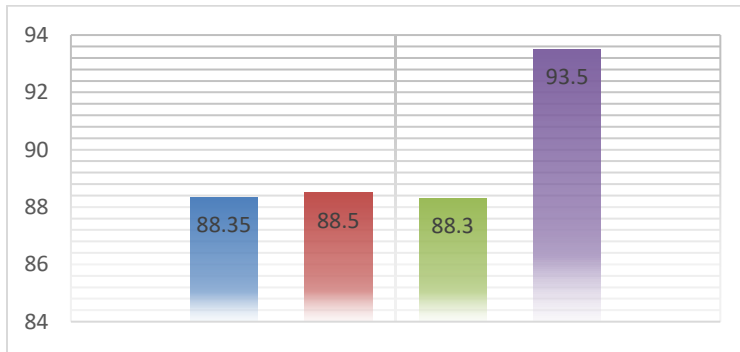
**Table -4.1.1**

#### **Descriptive statistics relating to mental health**

<b>Descriptive Statistics of Mental health</b>					
	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
Control PRE	20	75.00	110.00	88.3500	10.51953
Control POST	20	75.00	111.00	88.5000	10.57554
Experimental PRE	20	76.00	108.00	88.3000	10.31147
Experimental POST	20	84.00	105.00	93.5000	5.83546

From table it is seen that the mean scores of mental health in pre test and post test scores for control group are 88 and 88 respectively with standard deviation (SD) 10.51 and 10.57. For experimental group the pre test and post test mean scores are 88 and 93.

The bar diagram showing pre test ,post test, mean difference control group and experimental group of mental health is given fig 4.1.2



### Paired T-test on control and experimental group of mental health

Paired T-test was used to examine whether there is any statistically significance in pre test to post test mean difference of (MH) scores in the control and experimental group. The results are shown in table.

**Table-4.1.2**

**P aired t-test of pre to post test mean difference of mental health scores**

Paired Samples Test of MH						
	Paired Differences					t
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		
				Lower	Upper	
Control PRE to POST	.1500	.58714	.13129	.42479	1.2479	1.143
Experimental PRE to POST	5.200	9.44569	2.11212	9.62072	.77928	2.462

**NS: Not significant**

**\*\* : Significant**

At level 0.05 is 1.96. Since T is smaller than the tabulated value, so there is no statistically significance in pre to post test mean difference score of control group. But for experimental

group the mean (MH) the pre test and post test scores are is The calculated T -value is 2.46.Since T greater than the tabulated value, there is a statistically significance from pre to post test mean difference score.

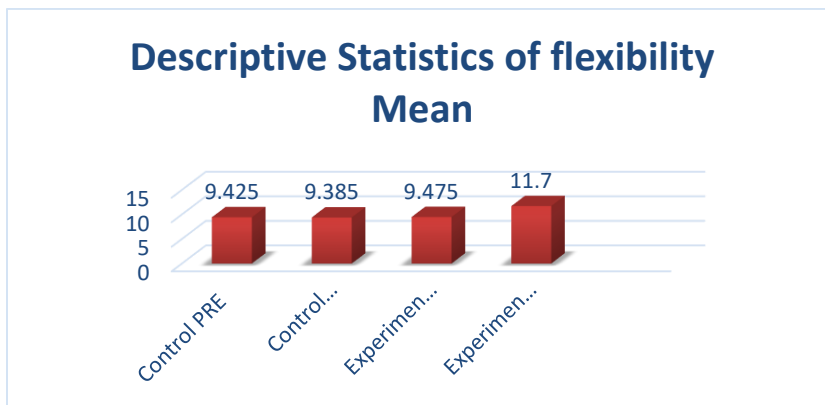
### Statistical analysis of Flexibility

**Table 4.1.3 Descriptive statistics relating to flexibility**

Descriptive Statistics of flexibility					
	N	Minimum	Maximum	Mean	Std. Deviation
Control PRE	20	5.00	16.00	9.4250	3.21360
Control POST	20	5.00	16.00	9.3850	3.10268
Experimental PRE	20	5.00	16.00	9.4750	3.14825
Experimental POST	20	6.00	17.50	11.7000	3.24605

From table , it is seen that the mean scores of flexibility in pre test and post test scores for control group are 9.4 and 9.38 respectively with standard deviation (SD) 3.21 and 3.10. For experimental group the pre test and post test mean scores are 9.47 and 11.7 with SD's 3.14 and 3.24 respectively.

The bar diagram showing pre test ,post test, mean difference control group and experimental group of flexibility is given fig 4.1.3



### Paired T-test on control and experimental group of flexibility

Paired T-test was used to examine whether there is any statistically significance in pre test to post test mean difference of flexibility scores in the control and experimental group. The results are shown in table

Table 4.1.4 Paired t-test of pre to post test mean difference of flexibility scores

Paired Samples Test of FLX						
	Paired Differences					t
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		
				Lower	Upper	
Control PRE to POST	.0400	.39122	.08748	.14310	.22310	.457
Experimental PRE to POST	2.225	1.04674	.23406	2.71489	-1.73511	9.506

The calculated t-value is .47 at level 0.05 is 1.96. Since T is smaller than the tabulated value, so there is no statistically significance in pre to post test mean difference score of control group. But for experimental group ,The calculated T-value is 9.5. Since T greater than the tabulated value, there is a statistically significant pre to post test mean difference score in experimental group. The T-test of pre test to post test mean difference score of flexibility in control and experimental group are shown.

## 5.0 Results, Discussion and Conclusion

The study may help to find out the effectiveness of taekwondo exercises. The study may help the teachers to train their students to help them achieve endurance, body composition, strength, and flexibility, and mental health of women. The study may enlighten the specialists in martial arts. In our society today, many people have stress and other health related problems, and results of this training method can be a positive change to the life styles of the common people. The results and out comes as conclusions of this study may motivate youths to take any martial arts as their means in achieving minimal and standard physical fitness, mental health of women and happiness in their work routines and life.

Health education, Taekwondo exercises the yogic exercises showed highly significant improvement in the mental health, flexibility variable from pre to post test of experimental group compared to control group.

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