

**EFFECTIVENESS OF TAICHI EXERCISES ON STRESS AMONG
COLLEGE STUDENTS AT SELECTED
COLLEGES, SALEM**

By

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**A DISSERTATION SUBMITTED TO
THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY, CHENNAI,
IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE
DEGREE OF MASTER OF SCIENCE IN NURSING
PSYCHIATRIC (MENTAL HEALTH) NURSING**

APRIL – 2015

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ABSTRACT

A Study was conducted to Evaluate the Effectiveness of Taichi Exercises on stress among college students at Selected colleges, Salem. The design adopted was true-experimental pre-test post-test control group design. Setting of the study was Vinayaka Mission Kirubananda Variyar College of Engineering (Experimental group) and Sri Annapoorna College of Engineering (Control Group). The screening was done with the use of *Perceived Stress Scale (PSS)*. Then the subjects were separated based on their stress level. 60 samples were drawn through simple random sampling technique (Lottery method without replacement). Level of stress was assessed by four point rating scale through structured self-administered questionnaire. Taichi Exercises was administered for 21 consecutive days. Then Post-test was done. The data gathered were analysed by descriptive and inferential statistical method.

The findings revealed that during pre-test, all 30 (100%), of the samples had moderate stress in Experimental and control group. During post-test, in experimental group, 10(33.33%) and 20(66.67%) of the college students had mild and moderate stress, whereas in control group, all 30(100%) of the samples had moderate stress. The mean difference in the level of stress between pre test and post test of experimental group was 24.4 and the estimated paired 't' value 18.29 was most significantly higher than table value 2.05 at $p \leq 0.05$ level. Hence H_1 was retained. The post test mean difference in the level of stress between the experimental and control group was 23.1 and the estimated 't' value 8.39 was most significantly higher than table value 2.06 at $p \leq 0.05$ level. Hence H_2 was retained, which shows that the Taichi Exercises was effective in reducing the stress among college students. There was no significant association ($p \leq 0.05$) between the stress among college students in experimental group and control group. Hence H_3 was rejected. The study concluded that Taichi Exercises was effective and innovative therapeutic approach, and a cost effective technique in establishing, maintaining and promoting a good sense of psychological wellbeing among students.

CHAPTER -I

INTRODUCTION

“Adapting the right attitude can convert a negative stress into a positive one.”

-Hans Selye

Every individual wants to lead their life without illness. Generally, health is a basic need for everyone, since ‘health is wealth’. It is defined by World Health Organization in clear terms as health is the state of complete of physical, mental and social wellbeing not merely an absence of any disease or infirmity. Adolescence is a transitional stage of physical and psychological human development that generally occurs during the period from puberty to legal adulthood (age of majority). The period of adolescence is most closely associated with the teenage and early adulthood, though its physical, psychological and cultural expressions may begin earlier and end later. **(Stanley, 2004)**

There are major developmental changes and challenges associated with the period of adolescents. As youth acquire and consolidate the competencies, attitudes and values, so the social capital is necessary to make a successful transition into adulthood. Late adolescents and the period following, often referred to as emerging adulthood, have been noted as particularly important for setting the stage for continuous development through the life span as individuals begin to make choices and engage in a variety of activities that are influential on the rest of their lives. **(Nicole Zarrett, 2009)**

Early adults undergo a period of adjustment to their new adult identity and suffer with a feeling of loss for the childhood they leave behind. Faced with these feelings and a lack of effective coping mechanism, adolescents can become overwhelmed and turn to escapist measures such as drugs, smoking and some other bad

habits and finally that may lead to withdrawal from society and ultimately go to commit suicide. **(Malone et.al, 2005)**

College life can be very stressful. To students currently attending college, however, the process is often stressful and frustrating. There are many issues commonly experienced by students in college that can sometimes pose major challenges to study, play , socializing and living. The competition for grades, the need to perform, relationships, career choice, and many other aspects of the college environment cause stress. Much of the stress that we all experience is helpful and stimulating. **(Kanthan, 2006)**

Stress is an inevitable part of life; it can take a toll on students' physical health, emotional wellbeing and academic success unless they learn to manage it appropriately. College students experience stress related to changes in lifestyle, increased workload, new responsibilities and interpersonal relationships. Extreme levels of stress can hinder work effectiveness and lead to poor academic performance and attrition. College students who experienced stressful life events also reported worse health outcomes and reduced quality of life **(Newyork times, 2011).**

Stress is a major problem for college students throughout the World. Stress leads to many issues with emotional and physical health and can be brought on by a number of causes. One of the most frightening consequences of college student stress is suicide resulting from depression. Adolescent with adequate support network of friends, family, religious affiliations, peer groups or extracurricular activities may have an outlet to deal with everyday frustrations. But many adolescents don't believe that they have it and feel disconnected and isolated from family and friends **(American Institute of Stress, 2010).**

There are several methods to reduce stress. Some of them are music therapy, laughter therapy, guided imagery, relaxation techniques like Taichi Exercises and other techniques like yoga and meditation etc. It is proven that Taichi Exercises reduce stress. A study states that significant change in the practice group as Taichi positively decreased the stress level of male and female students. Taichi refers to the slow, smooth body movements to achieve a state of relaxation of both body and mind also called as “meditation in motion”.(**Kumar 2008**)

*The rhythm of the body, the melody of the mind & the harmony of the soul create
the symphony of life*

~ B.K.S. Iyengar

Tai chi is an ancient Chinese discipline of meditative movements practiced as a system of exercises called also Taichi-chuan. The beauty and ease of tai chi offer multifold benefits as far as its practice: it is adaptable to numerous physical positions and requires no special equipment, expensive outfits, or specific athletic conditioning. It's not a high-cardio workout, it's all about deepening the relaxation in the movement. Originally developed for self-defense, tai chi has evolved into a graceful form of exercise that's now used for stress reduction and a variety of other health conditions. Often described as meditation in motion. Tai chi promotes serenity through gentle, flowing movements.

Taichi Exercises can be used in all aspects of daily life to feel more mentally and emotionally balanced when encountering difficult situations. A sense of emotional wellbeing is developed. This technique is presumed to cause a relaxation response through a multi-faceted approach of psycho physiological mechanisms to activate the parasympathetic nervous system and innate healing capacities of the mind-body complex.

Need for the Study:

Stress period is very essential period of human being, which brings the turnout from childhood to adulthood; some stress may end up antisocial behaviour, losing self-confidence and self-esteem.

Today's adolescents and youth comprises of 1.8 billion population and make up one quarter of the world's population. They are shaping social and economic development, challenging social norms and values, and building the foundation of the world's future. Studies have found that in developing countries , Stress is an emerging problem for young people..(WHO-2009)

In 2009, there were an estimated 1.2 billion adolescents in the world, forming around 22.8 per cent of the global population. An adolescent is defined as an individual aged 12-24 by the UN. The vast majority of the world's adolescents ,88% live in developing countries. The developing countries are home to roughly 16% of all adolescents.(UNICEF-2009)

Stress is a major problem that college students everywhere are dealing with. 1 out of 10 college students reported that they feel stressed often. 1 out of 5 say they feel stressed most of the time. 1 out of 4 students experienced daily stress. 1 in 10 students had thoughts of suicide. The second leading cause of death among college students is suicide. The first is overdose due to drugs and alcohol or being involved in a driving accident. It's extremely frightening to know that college student's stress levels can result in depression and suicide throught the world.(American College Association,2011).

The statistics shows about 85% of students reported feeling stressed on a daily basis. Academic concerns like school work and grades, with 77% and 74% respectively, maintain their positions as the top drivers of student stress, even over

financial woes in today's economy. 6 out of 10 students report having felt so stressed they couldn't get their work done on one or more occasions. Since starting college, over 70% of students have not considered talking to a counselor to help them deal with stress or other emotional issues. **(Music television Associated Press Poll 2009)**

Around 243 million people live in India, out of whom 40% of suicides were found among adolescents. India alone contributes to more than 10% of suicides due to Academic, Interpersonal, Intrapersonal and Environmental Stressors in the world. The suicide rate in India has been increasing steadily due to stressors and has reached 11.2 per 100,000 in 2012. **(UNICEF 2011)**

Tamilnadu have a population of 7.21 crores. In this 21% of population comprises of adolescents. In this majority of population, 72% suffer from stress related disorders which leads to depression and suicide. **(National Crimes Bureau, 2010)**

Salem had a population of 3,482,056 of which male and female were 1,781,571 and 1,700,485 respectively. In this 28% of population comprises of adolescents. **(Tamilnadu Census Operation, 2012)**

Stress in individuals leads to depression, feeling of sadness, loneliness, anxiety and hopelessness associated with depression may be perceived as the normal emotional stresses of the growing up. There are so many techniques to reduce stress, one among that is Taichi. Taichi is a slow, smooth body movements to achieve a state of relaxation of both body and mind.

There are several vulnerable groups' especially adolescents and young adults as per statistics, who were one of the fastest growing population and which will increase to become 4 times the current figure, by 2025. The challenge in the 21st century is to ensure optimal quality of life for their future growth and development.

Taichi is one of the interventions that have the major advantages of being creative, social, therapeutic and recreational therapy for the students.

So, the investigator felt that this study needs to be conducted to evaluate the effectiveness of Taichi Exercises on stress among college students at selected colleges, Salem.

Statement of the problem

A Study to Assess the Effectiveness of Taichi Exercises on Stress among College Students at selected Colleges, Salem.

Objectives of the study

1. To assess the level of stress among college students in experimental group and control group.
2. To evaluate the effectiveness of Taichi exercises on stress among college students in experimental group.
3. To determine the association between stress and their selected demographic variables among college students in experimental and control group.

Operational Definitions

Effectiveness:

It represents the outcome of Taichi exercises among college students. In this study it is determined by the difference between the mean post- test and mean pre- test score on stress among the college students at selected colleges, Salem.

Taichi exercises:

Taichi is a Chinese exercise technique through which slow, smooth body movements of study samples makes them to achieve a state of relaxation of both body and mind.

In this study. It consists of series of steps such as rocking forward and backward movements(3mts), pushing the water(2mts), over the drum(3mts), ball in the mountain(3mts), ball in the valley(3mts), circle the globe(2mts), pushing from the shoulders(3mts), push and pull(3mts), Hand waving the clouds(3mts). It mainly focuses on vision, concentration, balance, breathing pattern and movement. It is used as an intervention to reduce the stress among college students.

Stress:

Refers to a condition or feeling experienced by an individual when he/she is exposed to excessive pressure or excessive demand placed on him. In this study it is measured by using Structured self administered questionnaire to assess the stress which mainly focuses on symptoms of stress and factors causing stress.

College Student:

The students between age group between 19 – 24 years studying in IInd & IIIrd year in Bachelor of Engineering programme at selected colleges, Salem.

Assumptions

- Taichi exercises may induce relaxation of both body and mind.
- Taichi Exercises may have an effect on the stress.
- Stress may be common during the period of transition from early adolescence to early adulthood.

Hypotheses

H₁: There is a significant difference in the stress among college students in experimental group before and after Tai chi exercises at $p \leq 0.05$ level.

H₂: There is a significant difference between post test scores of stress among college students in experimental and control group at $p \leq 0.05$ level.

H₃: There is a significant association between the stress and their selected demographic variables among college students in experimental and control group at $p \leq 0.05$ level.

Delimitations

- The study was limited to the Engineering college students with stress.
- Data collection period was limited to 4 weeks.

Projected Outcome

1. The study would help to identify the stress among college students.
2. Taichi exercises would reduce the stress among college students.
3. The study would help the health professionals to gain knowledge and practice Taichi Exercises effectively.

Conceptual Framework

The present study is aimed to decrease the stress among college students. The conceptual framework adopted for the study is derived from American Nurses Association published standards of nursing practice which describes the five steps of nursing process model (ANA1991). The term nursing process was first introduced by Lydia Hall in 1955.

The nursing process is the blueprint for care. It provides a creative organized structure and framework for the delivery of nursing care. Yet it is flexible enough to use in all setting.

Nursing process is a systematic problem solving method for providing individualized care for clients in all state of health. Thus the Five basic steps involved in this process:

- Assessment
- Diagnosis
- Planning
- Implementation

- Evaluation

Assessment:

The nurse collects data about the client from variety of sources. This information is used for problem identification, so that the planning and implementation are appropriate to the client's needs it is also the basic requirement for accurate evaluation.

In this study, the assessment is done by using tools, like demographic variables, Perceived stress scale and Structured self-administered questionnaire

Diagnosis:

It is the second phase of the nursing process. Nurses use critical thinking skills to interpret assessment data and identify client strength and problems. It is the statement or conclusion regarding the nature of the phenomenon.

In this study, the diagnosis is done using the assessment tools, thereby the students stress is diagnosed and the intervention will be provided.

Planning:

In this step of nursing process, plan of care is formulated. It is individualized, based on the assessment and nursing diagnosis made. The plan of care consists of client goal and expected client outcomes and appropriate nursing interventions and expected outcomes are the criteria used to evaluate the effectiveness of care.

In this, the investigator planned to provide Taichi exercises to decrease the stress among college students in experimental group.

Implementation:

It is the action phase in which nurse performs the nursing intervention. During this step, the care is delivered to the client according to the planning. Interventions are continually modified as necessary by an ongoing nursing assessment of the client responses.

In this study implementation refers to performance/ practice of Taichi exercises to reduce the stress level among college students and planned as continuous twenty one days of intervention for 25 minutes daily.

Evaluation:

The nurse determines the client progress towards the expected outcome, achieving goals and effectiveness of nursing intervention. It is important aspect in the nursing process since it draws conclusion to interventions and determines whether the nursing intervention should be terminated, continued or changed.

In this study, evaluation has been done by the post-test analysis of stress among college students after the practice of Taichi exercises for twenty one days.

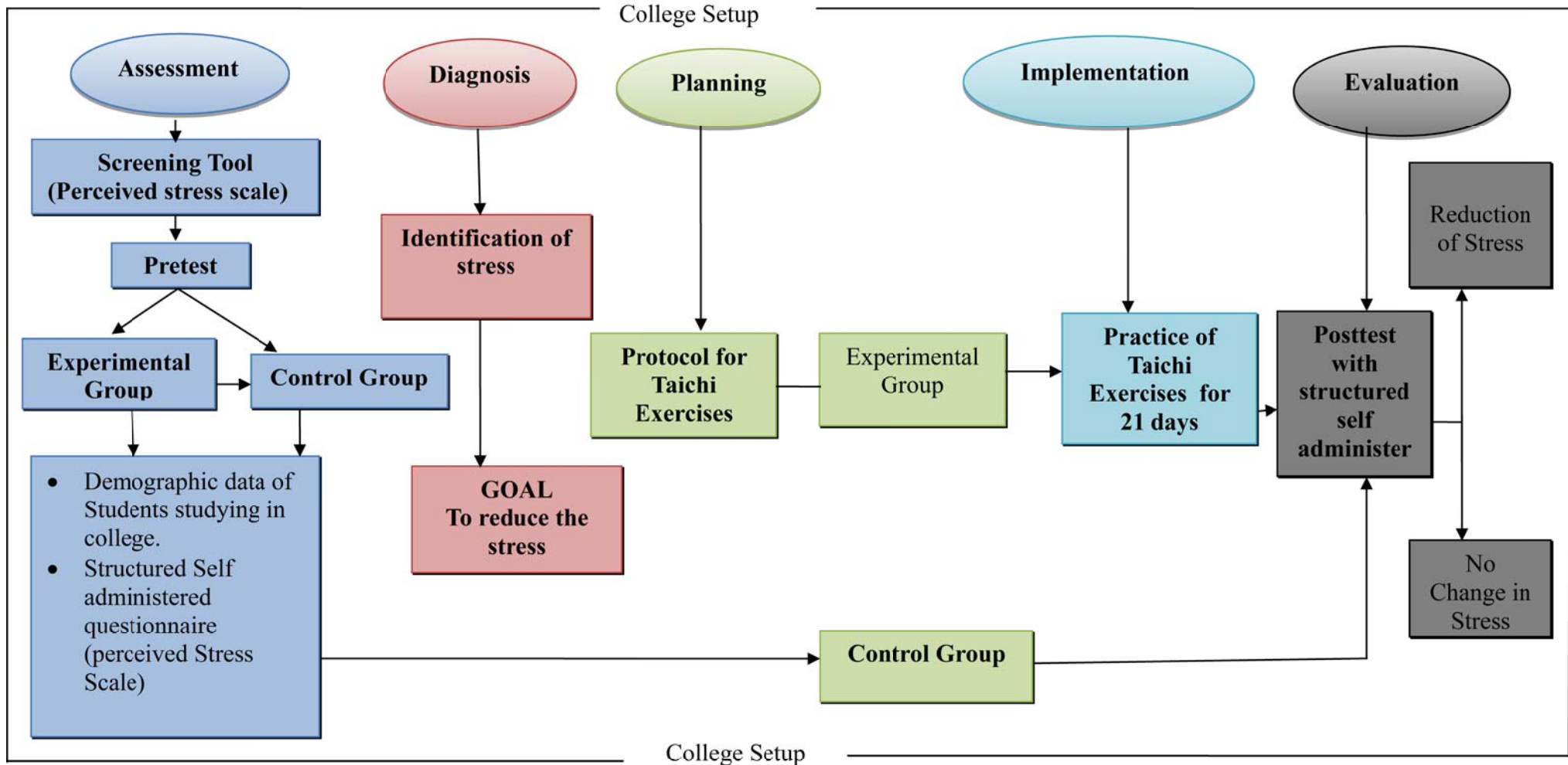


Fig – 1.1: Conceptual Framework based on Nursing Process Model on Effectiveness of Taichi Exercises on stress among College Students

Summary

This chapter dealt with introduction, need for the study, statement of the problem, objectives, operational definitions, assumptions, hypotheses, delimitations, projected outcome and conceptual framework.

CHAPTER – II

REVIEW OF LITERATURE

Review of literature is an essential step in the development of a research project. It helps the researcher to design the proposed study in a scientific manner so as to achieve the desired result. It helps to determine the gaps, consistencies and inconsistencies in the available literature about particular subject under the study.

Review of literature for the present study is classified under the following headings

- 1. Literature related to stress among students.**
- 2. Literature related to Effectiveness of Taichi exercises on Stress.**

1. Literature related to stress among students:

Mane Abhay B, et.al, (2012) conducted a study on difference in perceived stress and it correlates method among students in professional courses. The main objective of the study was to assess the stress among college students. The setting of the study was Engineering colleges in south India. Total of 282, 272 students were selected through random sampling & administered with the questionnaire of perceived stress scale. The result shows that 128, 717(45.4%) were male students and 154,120(54.6%) were female students. The mean stress score was 26.2 and SD was 6.7 in male students and mean stress score was 26.9 and SD was 6.3 in female students. Thus the high level of perceived stress existed in the professional students during the period of their courses

Richayadav, (2011) conducted a study to stress among college students of professional group. The objective of the study was to assess the level of stress among college students studying in professional courses. The study samples were 100 students (50 medical and engineering students and 50 nursing college students) selected by using a convenient sampling technique from medical, engineering and

nursing colleges in Goa, India. The study subjects consists of 28(58%) medical students, 36(78%) engineering students and 26(54.2%) nursing students comes under the age of 20-25yrs. Stress level among college students was assessed by stress management scale having 24 yes/no questions. The result shows 26 (54.2%) medical, 32(69%) engineering students and 13(27.1%) nursing students were experiencing moderate level of stress requires relaxation therapies to relieve from stress

Singh A, (2010) conducted a study to assess the level of stress and emotional adjustment among professional and non-professional students. The objective of the study was to assess the level of stress among professional and non-professional students. A total of 110 students were selected by using simple random sampling technique, lottery method without replacement. The settings of the study was medical, engineering, management and non-professional colleges of Kanpur, Uttarpradesh. Eight state questionnaire and Bells adjustment inventory was used to assess the level of stress and emotional adjustment among college students. Student of professional group mean score was 16.35 and non-professional group mean score was 15.39 with mean difference of 0.96. Thus the result shows that the moderate level of stress among professional college students is significantly higher than non-professional college students.

Cheng Kai Wen, (2009) conducted a descriptive study on several factors like physical, family, interpersonal, intrapersonal, environmental factors had an influence on students stress. The objective of the study was to find out the factors that has influence on students stress. Total of 230 samples selected through convenience sampling in the colleges of Taiwan. 5 point likert scale which consists of 50 items was used to collect data. The result shows that the male students feel stronger stress from family, interpersonal, intrapersonal factors than female students.

Robert J Murphy, et.al, (2008) conducted a study to assess the stress among college students at Kennington Park, London. The objective was to assess the stress among college students. The study samples consist of 500 students who were selected using convenient sampling technique. Structured self-administered questionnaire consists of factors such as education based on academic performance, faculty relation, personal and professional issues. Thus the researcher found that there was an association between the academic performance and stress among college students.

Maria Del Pilar, (2006) conducted a comparative study on stress among male college students in Sweden and Peru. The objective of the study which focuses on stress perception, stressful situation and stress management strategies. Among the college students 22 Swedish and 35 Peruvian students were selected by using convenient sampling technique. The assessment was done using questionnaire (stress and stress management strategies questionnaire) and interview. The result shows that Peruvian students have a tendency to face stress in studies by means of strategies as emotional control and avoidance.

Purna Prabhaka Nandamuri, (2006) conducted a study on academic stress among undergraduate management students in New York City, USA. The objective of the study was to explore the components of academic stress among undergraduate management students. Among the college students 500 samples were selected (n = 500 mean age 21.4 years) using random sampling technique. The stress level was assessed by using Holmes and Rahe's social readjustment rating scale. Thus the result shown that academic performance activities in college were found to be largely responsible for stress (86%) among the graduate students.

2. Literature related to Effectiveness of Taichi exercises on Stress:

Ankita Roy., (2012) conducted a study on Taichi exercises as a complementary treatment of stress and anxiety among college students in Baba Farid medical university, Faridkot as experimental group & Sri Guru Ram Das medical University, Amritsar as control group. The objective of the study was to know the influence of Taichi exercises on stress among college students. Total of 214 study subjects were selected using simple random sampling technique. The assessment was done using Perceived Stress scale and the duration of study was six months. The analysis shows that mean score was 27.67 and SD was 7.85 and in control group, the mean score was 26.58 and SD was 6.87. Thus the result shows that the Taichi intervention was effective in reducing stress & anxiety among college students

Abinav Mukund., (2011) conducted a study to assess the effectiveness of Taichi exercises on Stress among non-professional college students in Gandhinagar, Gujarat. The objective of the study was to assess the stress among college students. A quasi experimental research design was adopted for the study. The 80 samples were selected between the age group of 18 -22 years for the study. The stress was measured through Perceived stress scale which consist 20 items were used. 70 out of 80 samples were completed both pre and posttest. Taichi exercises (intervention) was taught to the students regularly for 1 month. Thus the result shows that participants reported with lower level of stress after learning to do Taichi exercises in a regular basis.

Prasad. M,et.al., (2011) conducted a prospective study for stress reduction using Taichi Exercises among college professors in Bhopal, Madhya Pradesh. The objective was to reduce the stress using Taichi Exercises among college professors. The samples who comes under age group of 30-45 years were selected using convenient sampling technique. The level of stress was assessed by smith stress

symptoms inventory. The result shows that significant there was significant reduction of stress after practicing Taichi Exercises.

Rakesh Bhima, (2009) conducted a study on the impact on stress and anxiety through Taichi Exercises. The objective of the study was to find out the impact on stress and anxiety through Taichi Exercises (Daily Taichi). The settings of the study was Guru Nanak college of business and management Gurgaon, Newdelhi. The research design adopted for this study was true experimental research design. Total of 60 college going students (30 male and 30 female) were selected using simple random sampling technique. The stress level assessed through modified Perceived stress scale(5 poin rating scale) which consists of 30 items was used. Taichi Intervention(Daily Taichi) was provided to experimental group for 30 minutes for 25 days in the morning. The analysis shows that stress ($t=2.50$ at $p<0.05$) & Anxiety level ($t=2.48$ at $p< 0.05$ level). Thus the results shows there was significant change in the practice group as Taichi Exercises positively decreased the stress level of the subjects.

Oman D, Shapiro SL.et.al., (2008) conducted a small randomized, controlled study to assess the effectiveness of two different kinds of simple, user-friendly meditation on stress among undergraduate college students. The objective of the study was to evaluate the effectiveness of two different kinds of simple, user-friendly meditation on stress among undergraduate college students. The settings of the study was Institute of Public Health, University of California at Berkeley .The research design was True experimental research design. The samples were selected using simple random sampling technique lottery method without replacement. The stress level of students was assessed by using structured self reporting questionnaire. The intervention consisted of two 8-week, 90-minute training programs in meditation-

based stress-management. After a pretest, the college undergraduates were randomly assigned to either training in (1) Jon Kabat-Zinn's mindfulness-based stress reduction (MBSR; n=15), (2) Taichi Exercises (Daily Taichi) ,(DT; n=14). The authors gathered pre-test, post-test, and 8-week follow-up data on self-reported outcome measures. The finding shows that there was no post-treatment differences between the two kinds of meditation (MBSR and DT). Compared with the control group, treated participants (n=29) demonstrated significant benefits for stress ($p < 0.05$, Cohen's $d = -.45$). The study concludes that meditation-based stress-management practices reduce stress and enhance wellbeing among college undergraduates, and suggests that such programs acts as a potential health-promotion tools for college populations and for others.

Jung Hyun Choi. et al., (2005) conducted a study on the Effects of Sun-style Tai Chi exercises on physical and psychological wellbeing among adolescents in Jilin university of education, Changchun, China. The objective of the study was to evaluate the effectiveness of Sun-style Tai Chi exercises on physical and psychological wellbeing among adolescents. Total of 68 adolescents with a mean age of 18.4 years were participated in the study. The samples were selected using purposive sampling technique. 68 adolescents are divided into experimental group (n=34) and control group (n=34). The Tai Chi exercise programme was provided three times a week for 6 weeks in the experimental group. Data were analyzed for group differences using t-tests. The researcher found that the Tai Chi exercise programmes had a significant effect on physical and psychological wellbeing among adolescents.

Akshar Patel., (2004) conducted a study to evaluate the impact of Taichi Exercises on stress, anxiety and depression on college population at B.R.Ambedkar university, Muzafarpur, Bihar. Totally 45 students (25 men with a mean age of 20.8 years, $SD = 3.01$ and 20 women with a mean age of 20.2 years, $SD = 2.64$) were

selected using purposive sampling technique.. Pre and post assessments were administered using PSS (10), becks depression inventory (21), and State trait anxiety inventory (40) items to obtain data. The sessions held weekly 1.5 hours for 8 weeks period. The result shows that there was significant reduction on stress, anxiety and depression on college students after Taichi intervention.

Summary

This chapter dealt with review of literature related to stress among students, effectiveness Taichi exercises on stress.

CHAPTER -III
RESEARCH METHODOLOGY

The methodology of research indicates the general pattern of organizing the procedure for gathering the valid and reliable data for the purpose of investigation.

(Polit D.F, and Hunger, 2003)

The present study aims to evaluate the Effectiveness of Tai-chi exercises on stress among college students at selected colleges, Salem.

Research Approach:

The Quantitative Research Approach was adopted in this study.

Research Design:

True Experimental Research Design, in which pre test-post test design with Control group was used to evaluate the Effectiveness of Tai-chi exercises on stress among college students in selected colleges, Salem

$$\boxed{RE = O_1 \quad X \quad O_2}$$

$$\boxed{RC = O_1 \quad O_2}$$

R= Randomization

E = Experimental group.

C = Control group.

O₁ = Pre-test.

O₂ = Post-test.

X = Intervention (Tai-chi Exercises)

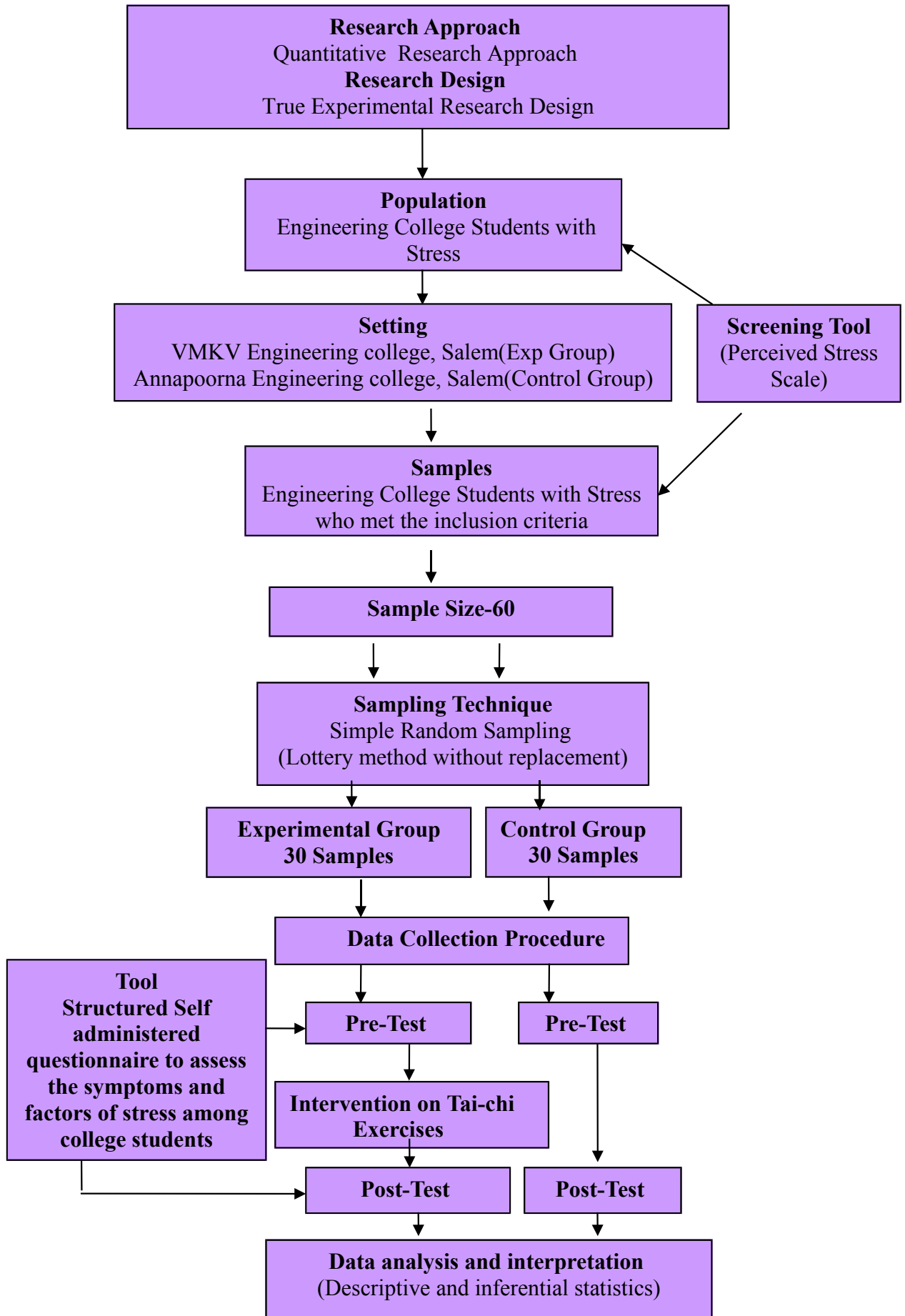


Fig3.1: Schematic Representation of Research Methodology

Population:

Population is defined as the entire set of individuals or objects having some common characteristics. **(Polit D.F & Beck Tatano Cheryl, 2008)**

The study population comprised of VMKV & Annapoorna Engineering College Students with stress studying in IInd & IIIrd Year at VMKV Engineering College & Annapoorna college of Engineering college, Salem.

Description of the Setting:

Setting is the physical location and conditions in which data collection takes place in a study. **(Polit D.F & Beck Tatano Cheryl, 2008)**

The study was conducted in selected engineering colleges such as,

1. VMKV College of Engineering, Salem.
2. Annapoorna College of Engineering, Salem

VMKV College of Engineering, Salem, is a private organization, which is situated 3kms away from Sri Gokulam college of Nursing. It has various departments like ECE, EEE, Computer science, IT and Mechanical Engineering.

Annapoorna College of Engineering, Salem also is a private organization which is situated 4kms away from Sri Gokulam College of Nursing. It has various departments like ECE, EEE, Computer science, IT and Mechanical Engineering.

Samples:

Sample is defined as the subset of population, selected to participate in a study. **(Polit D.F & Beck Tatano Cheryl, 2008)**

The sample of the study was college students with stress who met the inclusion criteria.

- **Sample Size:**

The sample size of this study was 60.

Experimental group - 30

Control group - 30

- **Sampling Technique:**

The sampling technique adopted for this study was simple random sampling by using lottery method without replacement.

Criteria for Sample Selection:

Inclusion criteria:

Students(Boys) who were

- In age group between 17 & 24 years.
- staying in hostel
- Willing to participate in the study.

Exclusion criteria:

Students(Boys) who were

- Already exposed to Tai-chi exercises .
- absent at the time of data collection.
- Suffering with physical illness at the time of data collection.
- With physical deformity eg., lower limb handicapped ,polio attack of limb

Variables:

- **Independent variable:** Tai-chi exercises.
- **Dependent variable:** Stress
- **Demographic variable:** Age in years, Course of study, Year of study, Birth in order, Type of family, religion, Family monthly income, Previous medium of instruction, Pattern of school education they underwent, Number of siblings,

Hobbies, Availability of parents, Any medical illness, Any previous experience of stay in hostel, Academic performance in previous school education and knowledge on Tai-chi exercises.

Description of the tool:

It consists of three sections,

Section-I: Demographic data.

This section consists of demographic variables like Age in years, Course of study, Year of study, Birth in order, Type of family, religion, Family monthly income, Previous medium of instruction, Pattern of school education they underwent, Number of siblings, Hobbies, Availability of parents, Any medical illness, Any previous experience of stay in hostel, Academic performance in previous school education and knowledge on Tai-chi exercises.

Section II: Perceived Stress Scale (screening tool)

This is one of the standardized scales, which was used to screen the samples with stress. The name of the scale was “**Perceived Stress scale**’.’ This scale was introduced by Sheldon Cohen in 1988. It consists of 10 items. The maximum score was 4 & the minimum score was 0. Author introduced this scale to use on young adolescents & young adults. This is a 5 point rating scale. In this scale the items 1,2,3,6,9 and 10 were considered as negative statements, so the rating was given as Never = 0 Almost Never = 1 Sometimes = 2 Fairly Often = 3 & Very Often = 4.

Whereas the items 4,5,7 and 8 were considered as positive statements, so the rating was given as Never = 4 Almost Never = 3 Sometimes = 2 Fairly Often = 1 & Very Often = 0 (i.e in reverse order).

Table 3.1: Scoring Pattern

Statements	Question nos.	Scores	
			Never
POSITIVE	4,5,7&8	Almost Never	3
		2	
		Fairly Often	1
		Very Often	0
NEGATIVE	1,2,3,6,9&10	Never	0
		Almost Never	1
		Sometimes	2
		Fairly Often	3
		Very Often	4

Table 3.2: Scoring Procedure

Stress category	Score
No stress	≤13
Progressing with stress	≥14-40

Section III: Structured Self administered questionnaire to assess the symptoms and factors of stress among College Students

This is a structured self reporting questionnaire, used as soon the screening is done & the samples were selected for the study. This questionnaire was divided under two domains. The domains are ‘Symptoms of Stress’ & the ‘Factors Causing Stress’ in college students. The domain ‘Symptoms of stresses has got 14 items. & the ‘factors causing stresses’ domain has got 40 items & further this domain was divided as ‘Interpersonal (7), Intrapersonal (7), Academic (6), Financial (2) And Environmental (4) .The total items are 26.This is a 4 point rating scale. The rating is done as Never (1), occasionally (2), Often (3) & Always (4) for the positive statements such as 1,2,3,4,5,6,7,9,10,11,12,15,16, 18,19,20,21,22,23,24, 25,26, 28, 29, 30, 31, 32, 33,34,35,36,37,38,39 &40, the negative statements are 8,13,14,17 & 27 are given the reverse scoring like Never (4), Occasionally (3), Often(2) and Always (1).The total scoring of these items were 160.

Table 3.3: Scoring Pattern

STATEMENTS	QUESTION NOS.	SCORE	
POSITIVE	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 & 40.	Never	1
		Occasionally	2
		Often	3
		Always	4
NEGATIVE	8, 13, 14, 17 & 27	Never	4
		Occasionally	3
		Often	2
		Always	1

Table 3.4: Scoring procedure

Levels of stress	Score
Mild stress	≤53
Moderate stress	54 - 107
Severe stress	≥108

Validity and Reliability of the Tool

Validity:

Validity of an instrument refers to the degree to which an instrument measures what it is supposed to measure. (Sharma Suresh K, 2012).

In this study the content of the intervention & the tool was given for validity to the experts in the field of psychiatry-1, psychology-1, psychiatric nursing-5 and the Tai-chi exercises expert-1. Based on their on their suggestions and recommendations the modification were done.

Reliability:

Reliability is the degree of consistency and accuracy with which an instrument measures the attribute for which it is designed to measure. (Sharma Suresh K, 2012)

In this study the tool reliability was checked and established through Test-retest method, and the obtained $r = 0.92$, shows that the tool was reliable and it was considered for proceedings.

Pilot Study

After obtaining the written permission from principal of Muthayammal college of Engineering, Rasipuram & AVS college of Engineering, Salem , the pilot study was conducted from 23.06.14 to 29.06.14 among five study samples.. On 23.06.14 screening was done with the help of perceived stress scale, then the study samples were separated with stress. Then pre test was conducted with the help of Structured self administered questionnaire. Followed with that Taichi Exercises were given till 28.06.14. Then the post test was conducted on 29.06.14 with the same tool. The findings of the pilot study revealed that it was feasible to conduct the main study.

Method of Data collection

▶ Ethical consideration:

- Written permission was obtained from the Principal of VMKV college of Engineering & Annapoorna college of Engineering, Salem.
- Oral and written consent was obtained from the study subjects.

▶ Period of data collection:

- The data collection period was 4 weeks from 04.09.14 to 30.09.14.

Data Collection Procedure:

The formal permission was obtained from the concerned higher authority to conduct the study. The purpose of the study was explained to all the samples in the selected setting. After obtaining the written consent from the 80 students in the experimental group and 65 students in the control group ,the screening was done on 04.09.2014 with the use of **Perceived Stress Scale (PSS)**. Then the college students with stress were separated. Afterwards the **pre test** was done from 05.09.14 and 06.09.14 with the use of '**structured self administered questionnaire to assess the symptoms and factors of stress among college students**'. In both the settings

Selection of samples were done by simple random sampling technique using lottery method (without replacement). The investigator used the help of the college hostel warden to prepare a list of students who fulfilled the sampling criteria accordingly. In experimental group the investigator selected 50 students out of 80 students and in control group the investigator selected 42 students out of 65 students. Simple random sampling technique was done to select 30 samples for each group. Taichi Exercises was demonstrated by the investigator to experimental group from 05.06.14 to 11.06.14 and asked them to do along with the investigator. Each day the session lasted for 25 minutes. The students redemonstrated the series of steps in Taichi exercises along with the supervision of investigator for 14 days. Students were very co-operative during the intervention. It consists of Series of steps which are as follows,

- Rock Forward and backward movement (3mts)
- Pushing the Water (2mts)
- Over the drum (3mts)
- Ball in the mountain (3mts)
- Ball in the valley(3mts)
- Circle the globe (2mts)
- Pushing from the shoulders (3mts)
- Push and pull(3mts)
- Hand waving the clouds(3mts)

Post test was done on 29.09.14 and 30.09.14 for experimental and control group respectively after 21 days of intervention.

Plan for Data Analysis

The data analysis was done using both descriptive and inferential statistics,

- ❖ Demographic data was calculated by using frequency and percentage.
- ❖ The effectiveness of Taichi exercises was calculated using inferential statistics (t-test).
- ❖ Association between the stress and demographic variables was calculated using inferential statistics (chi-square analysis).

Summary

This chapter dealt with the methodology of the study. It consists of Research approach, Design, population, Description of the setting, Samples, Sampling Technique, Criteria for Sample selection, Variables, Description of the Tool, Validity, Reliability, Pilot study , Data collection procedure and Plan for data analysis.

CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

Analysis is the process of the organizing and synthesizing data in such a way that question can be answered and hypothesis tested. (**Polit and Hungler, 2003**).

This chapter deals with the analysis and interpretation of data to evaluate the effectiveness of Taichi exercises on stress among college students at selected engineering colleges, Salem.

The findings are presented under the following sections

Section-A:

Distribution of college students according to their selected demographic variables in experimental and control group.

Section-B:

Distribution of pre-test scores on Stress among college students in experimental group and control group.

Section-C:

- a) Distribution of posttest scores on Stress among college students in experimental group and control group.
- b) Comparison of pretest and posttest scores on Stress among college students in experimental and control group.
- c) Comparison of Mean, SD and mean difference according to the pretest and posttest scores on stress among college students in experimental and control group.

Section-D: Hypotheses testing

- Effectiveness of Taichi exercises on Stress among college students in Experimental Group.

- Effectiveness of Taichi exercises on Stress among college students in Experimental Group and Control Group.
- Association between the Stress among college students in experimental and control group and their selected demographic variables.

Section-A

Distribution of Samples according to their Selected Demographic Variables in Experimental and Control Group.

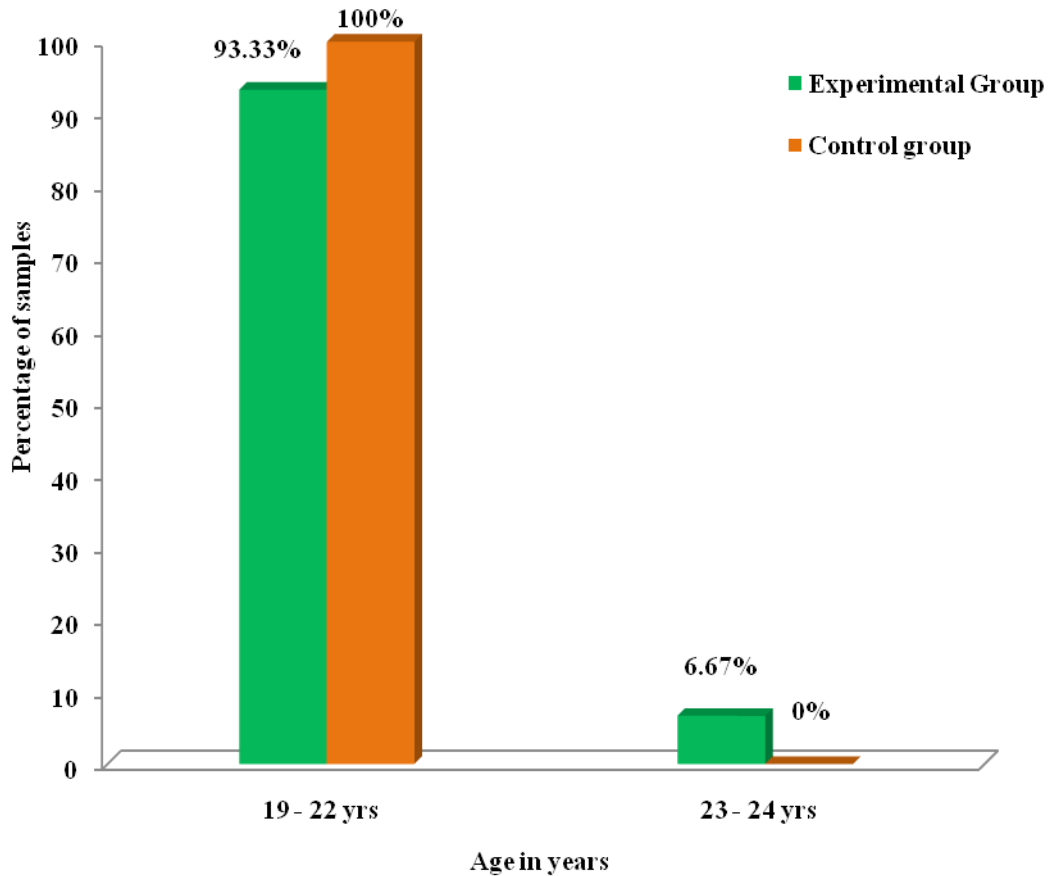


Fig-4.1: Percentage distribution of college students according to their age in years.

The above figure shows, that in experimental group, 28(93.33%) of the college students are between 19- 22yrs and 2(6.67%) college students are in the age group of 23 - 24yrs. In control group, all 30(100%) are in age group of 19-22yrs.

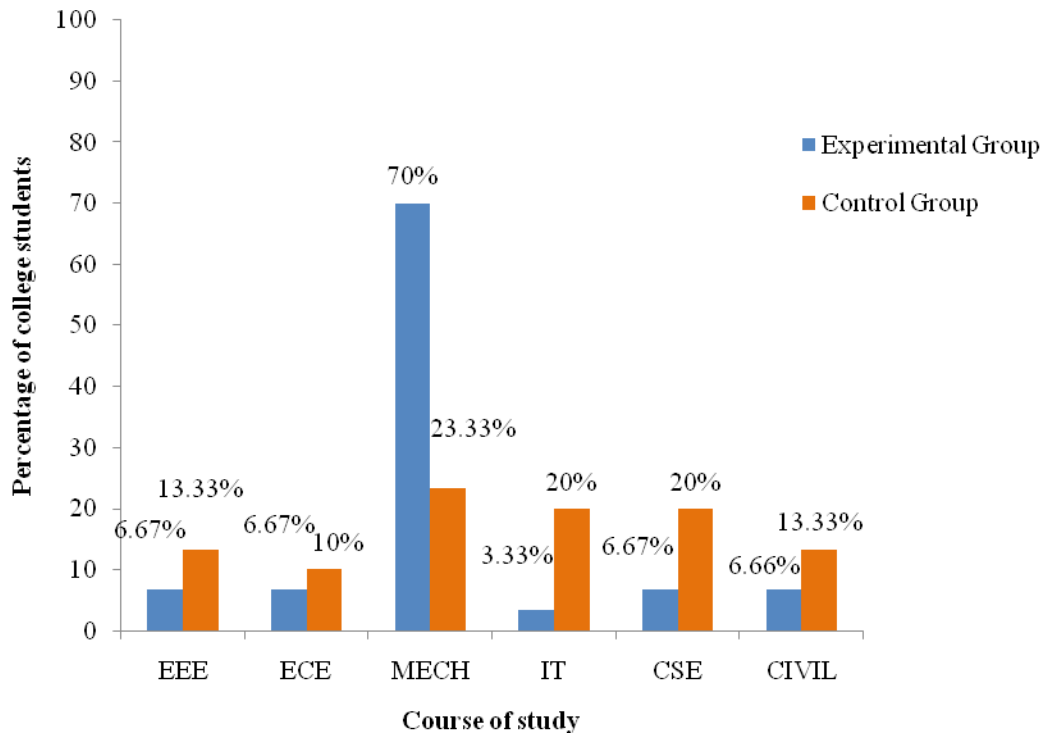


Fig-4.2: Percentage distribution of college students according to their Course of study

The above figure shows, that in experimental group, 2(6.67%) of the college students are studying in EEE, 2(6.67%) of the college students are studying in ECE, 21(70%) of the college students are studying in Mechanical, 1(3.33%) of college students are studying the course IT, 2(6.67%) of the college students are studying in CSE, 2(6.67%) of the college students are studying in Civil Engineering. In control group, 4(13.33%) of the college students are studying in EEE, 3(10%) of the college students are studying in ECE, 7(23.33%) of college students are studying in Mechanical, 6(20%) of the college students are studying in IT, 6(20%) of college students are studying in CSE, 4(13.33%) of the college students are studying in Civil Engineering.

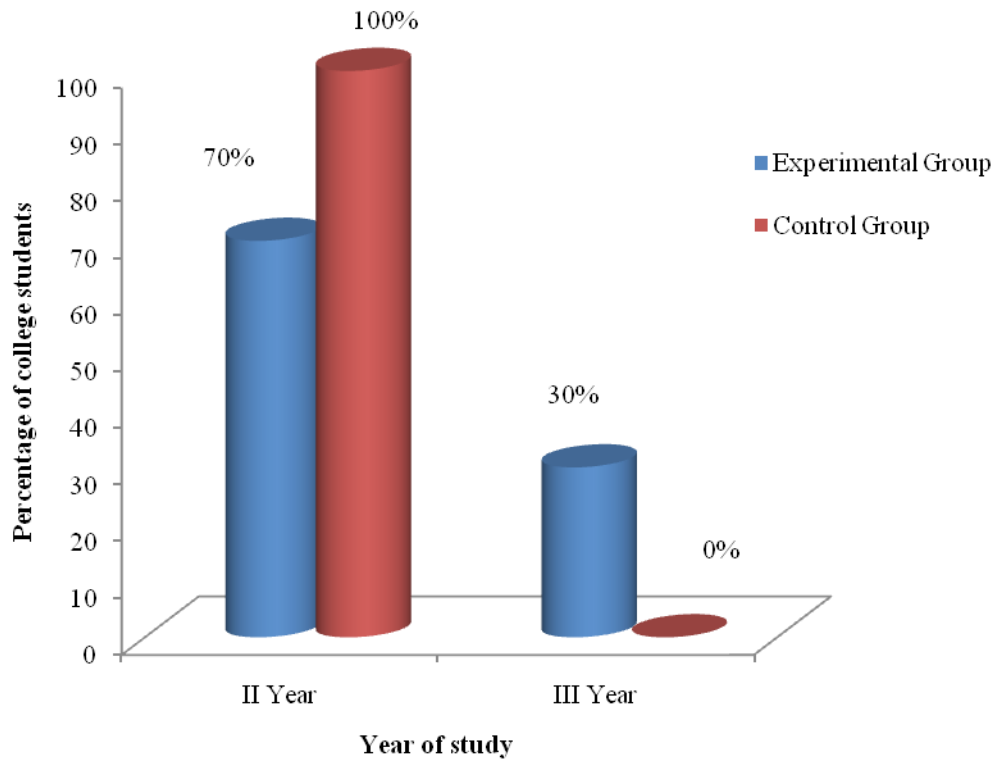


Fig-4.3: Percentage distribution of college students according to their Year of study.

The above figure shows that, in experimental group, 21(70%) of the college students are studying in II year and 9(30%) of the college students are studying in III year. In control group, all 30(100%) of the college students are studying in II year

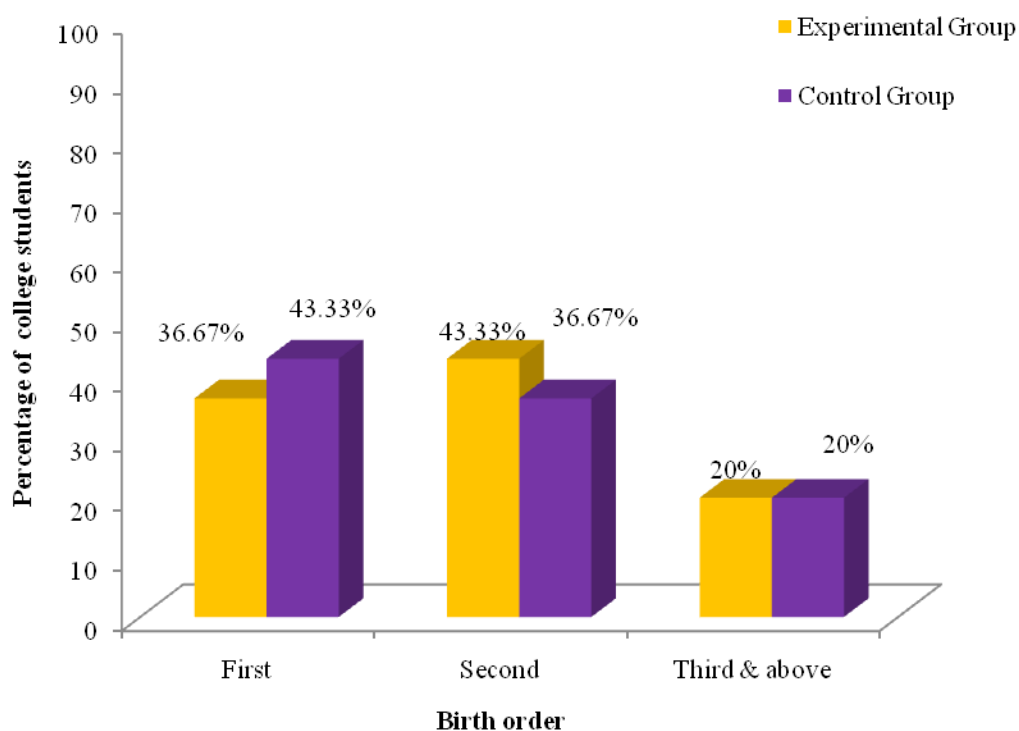


Fig-4.4: Percentage distribution of college students according to their Birth order.

The above figure shows that, in experimental group 11(36.67%) of the college students are in first birth order, 13(43.33%) are in second birth order and 6(20%) are in third birth order and above. In control group, 13(43.33%) are in first birth order, 11(36.67%) are in second birth order and 6(20%) are in third and above birth order.

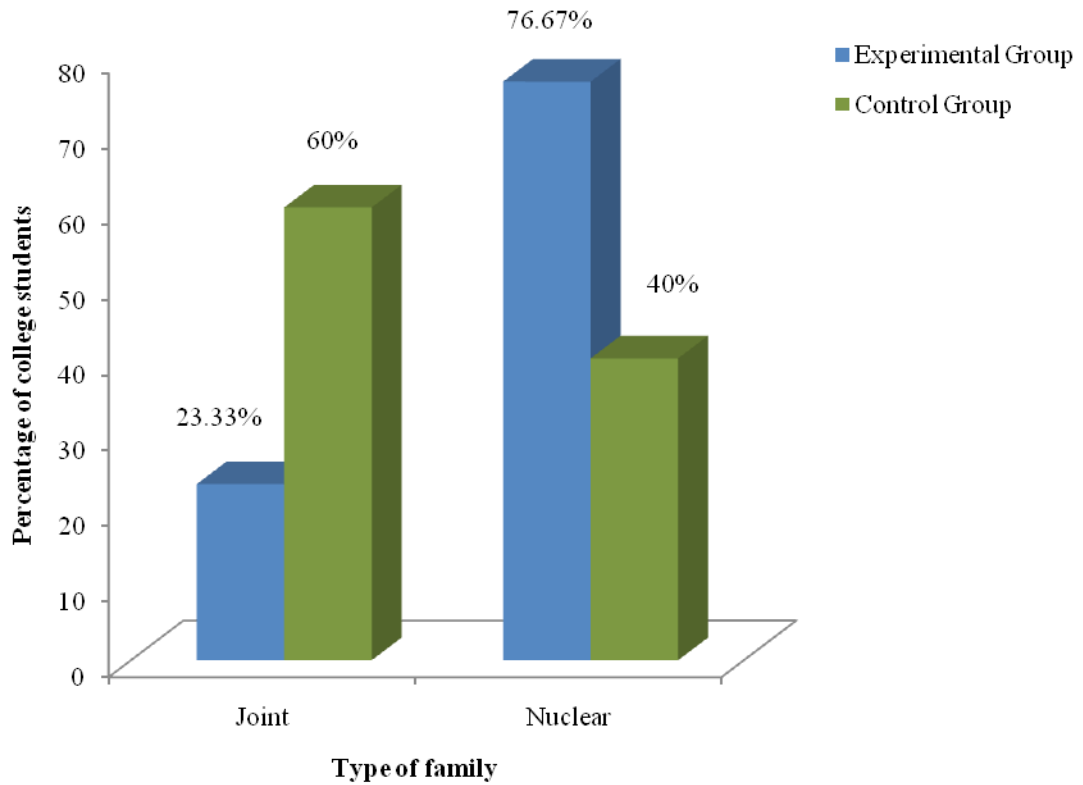


Fig-4.5: Percentage distribution of college students according to their Type of family.

The above figure shows that, in experimental group 7(23.33%) of the college students are from joint family and 23(76.67%)are from nuclear family. In control group 18(60%) are from joint family and 12(40%)are from nuclear family.

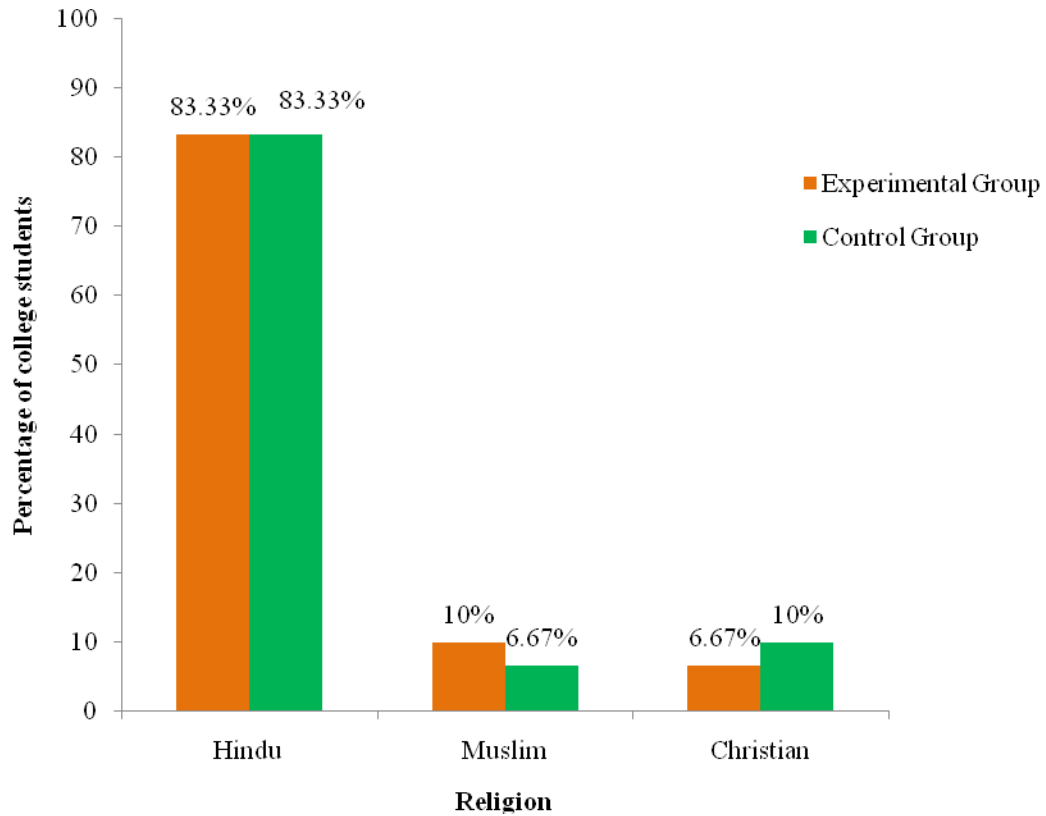


Fig-4.6: Percentage distribution of college students according to their Religion.

The above figure shows that, in experimental group 25(83.33%)of the college students belongs to Hindu religion, 3(10%)of the college students belongs to Muslim religion and 2(6.67%)of the college students belongs to Christian religion. In control group 25(83.33%)of the college students belongs to Hindu religion, 2(6.67%)of the college students belongs to Muslim religion and 3(10%)of the college students belongs to Christian religion.

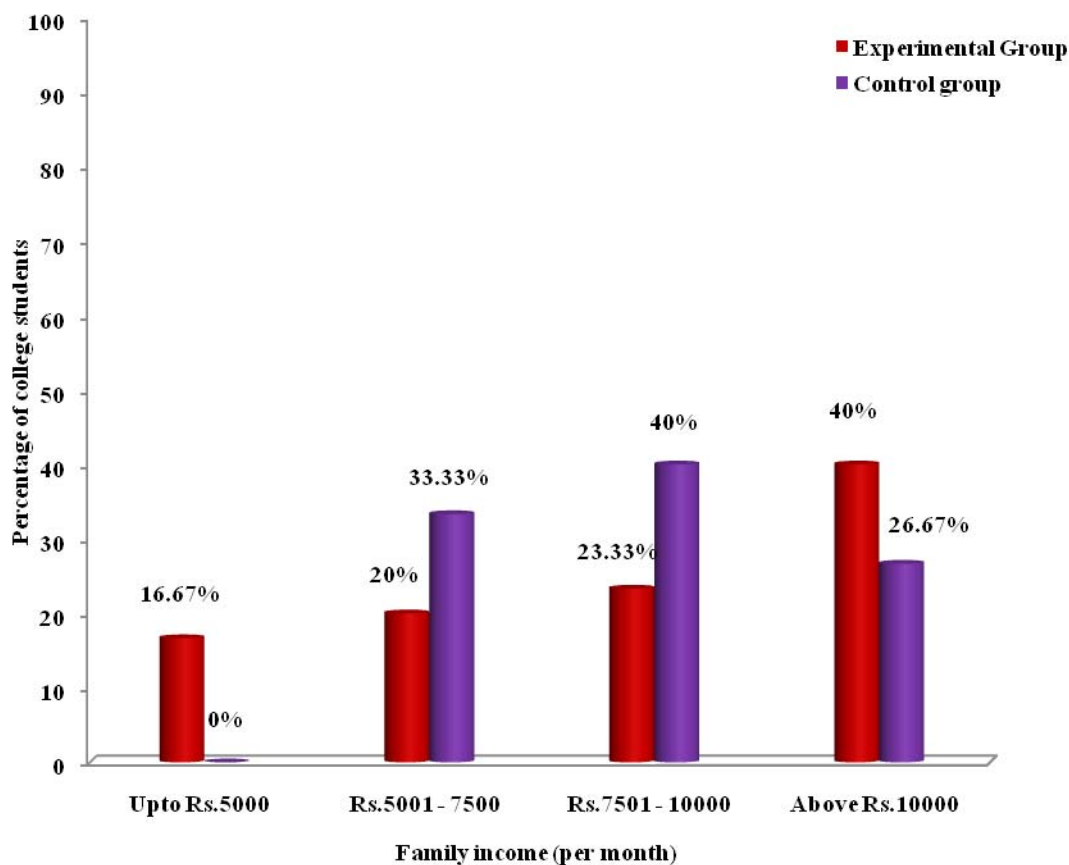


Fig-4.7: Percentage distribution of college students according to their Family income (per month).

The above figure shows that, in experimental group 5(16.67%)of the college students belongs to family income(per month) of upto Rs.5000, 6(20%)of the college students belongs to family income(per month) of Rs.5001 to 7500, 7(23.33%) of the college students belongs to family income(per month) of Rs.7501 to 10,000 and 12(40%) of the college students belongs to family income(per month) of above Rs. 10,000. In control group, 10(33.33%) of the college students belongs to family income(per month) of Rs.5001 to 7500, 12(40%) of the college students belongs to family income(per month) of Rs. 7501 to 10,000 and 8(26.67%) of the college students belongs to family income(per month) of above Rs. 10,000.

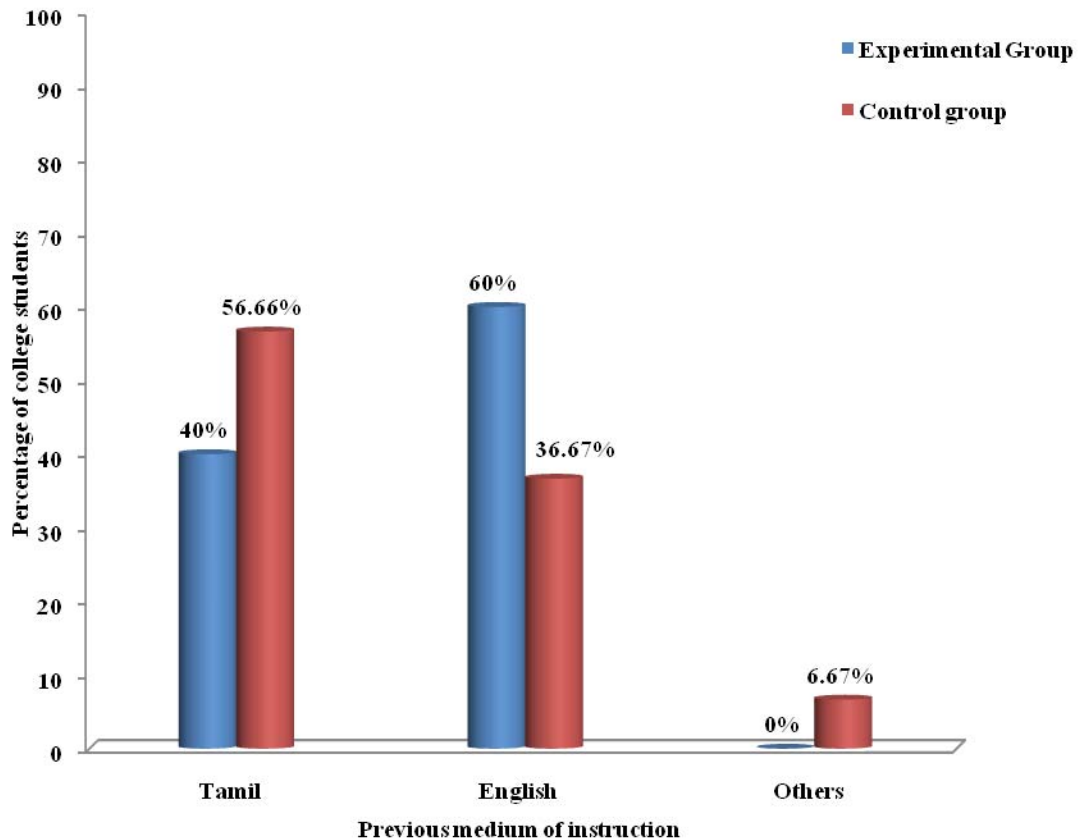


Fig-4.8: Percentage distribution of college students according to their Previous medium of instruction.

The above figure shows that, in experimental group 12(40%)of the college students are from Tamil medium and 18(60%) of the college students are from English medium. In control group, 17(56.67%) of the college students are from Tamil medium , 11(36.67%) of the college students are from English medium and 2(6.67%) of the college students are from other medium of instruction(Malayalam).

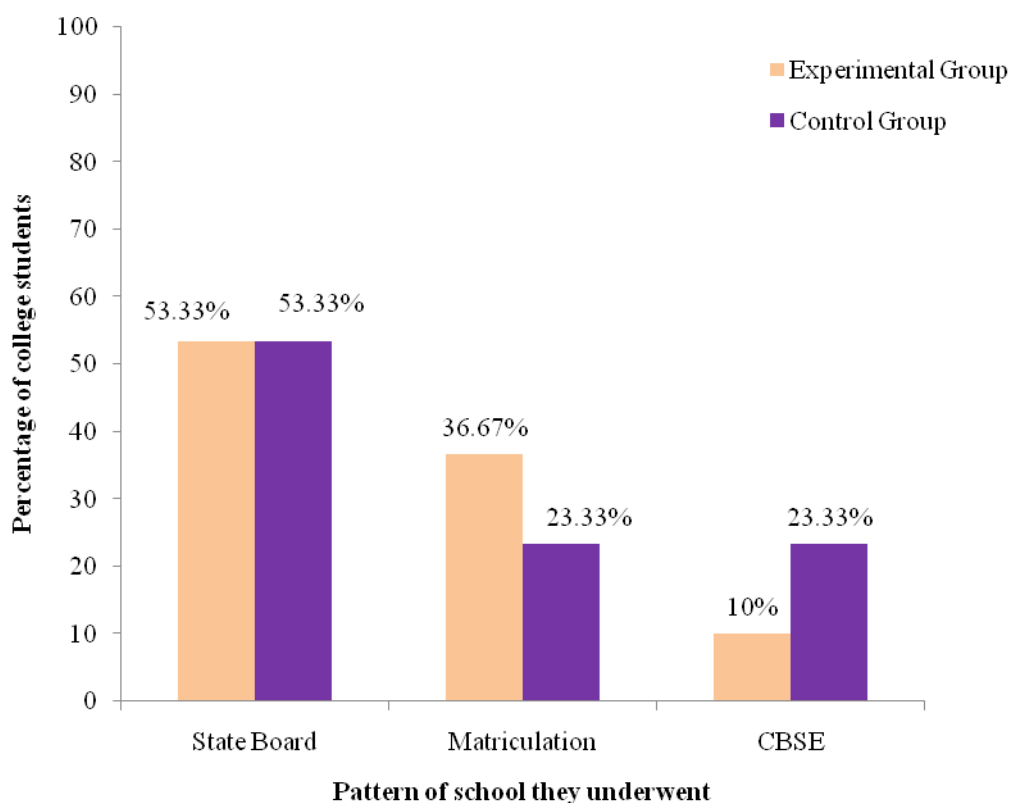


Fig-4.9: Percentage distribution of college students according to their Pattern of school had they underwent.

The above figure shows that, in experimental group 16(53.33%)of the college students have studied in state board syllabus, 11(36.67%) of the college students have studied in matriculation and 3(10%) of the college students have studied in CBSE. In control group 16(53.33%) of the college students have studied in state board, 7(23.33%) of the college students have studied in matriculation and 7(23.33%) in CBSE.

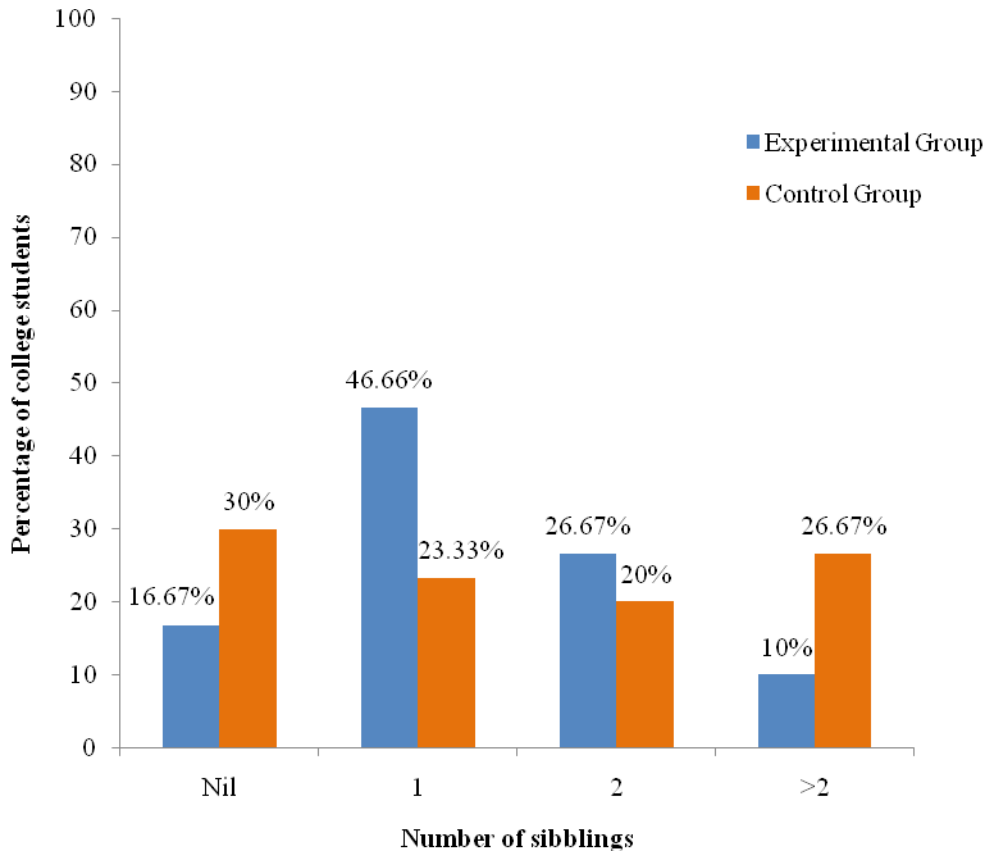


Fig-4.10: Percentage distribution of college students according to the number of siblings.

The above figure shows that, in experimental group, 5(16.67%)of the college students have no siblings, 14(46.66%) of the college students have one sibling, 8(26.67%) of the college students have 2 siblings and 3(10%) of the college students have more than 2 siblings. In control group , 9(30%) of the college students have no siblings, 7(23.33%) of the college students have one sibling, 6(20%) of the college students have 2 siblings and 8(26.67%) of the college students have more than 2 siblings.

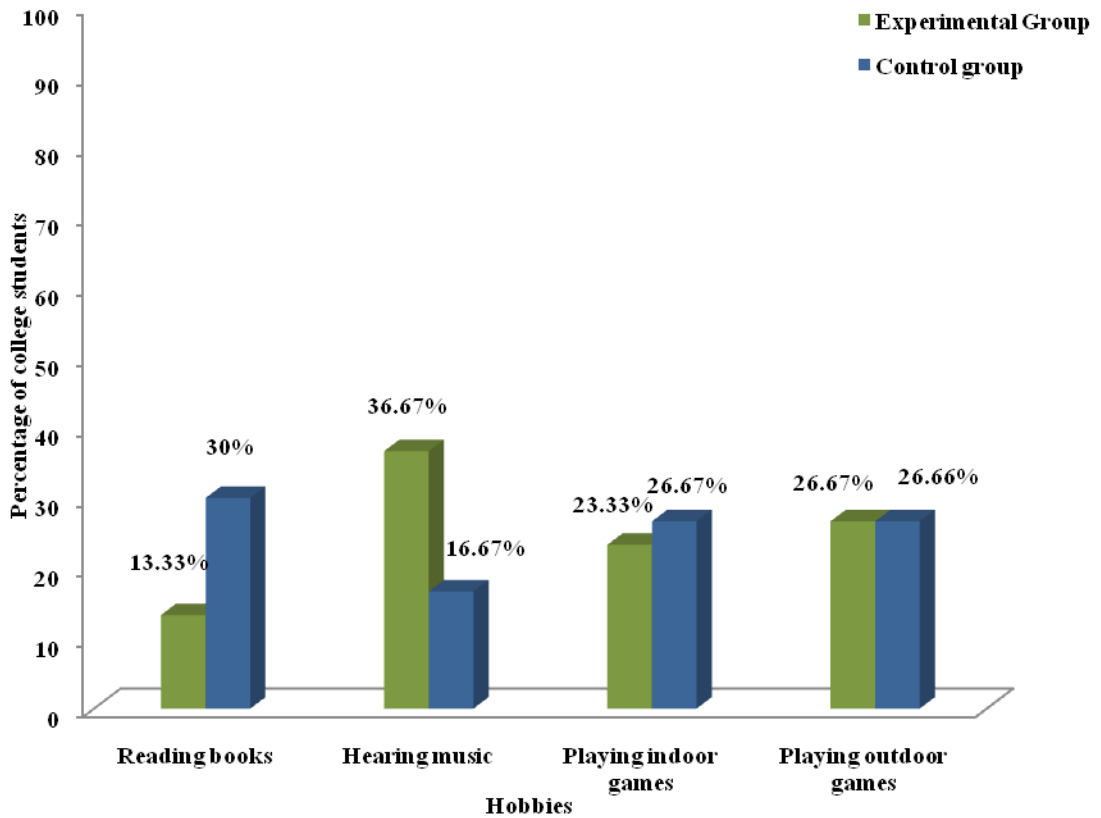


Fig-4.11: Percentage distribution of college students according to their hobbies.

The above figure shows that, in experimental group, 4(13.33%) of the college students have the hobby of reading books, 11(36.67%) of the college students have the hobby of hearing music, 7(23.33%) of the college students have the hobby of playing indoor games and 8(26.67%) of the college students have the hobby of playing outdoor games. In control group, 9(30%) of the college students have the hobby of reading books, 5(16.67%) of the college students have the hobby of hearing music, 8(26.67%) of the college students have the hobby of playing indoor games and 8(26.67%) of the college students have the hobby of playing outdoor games.

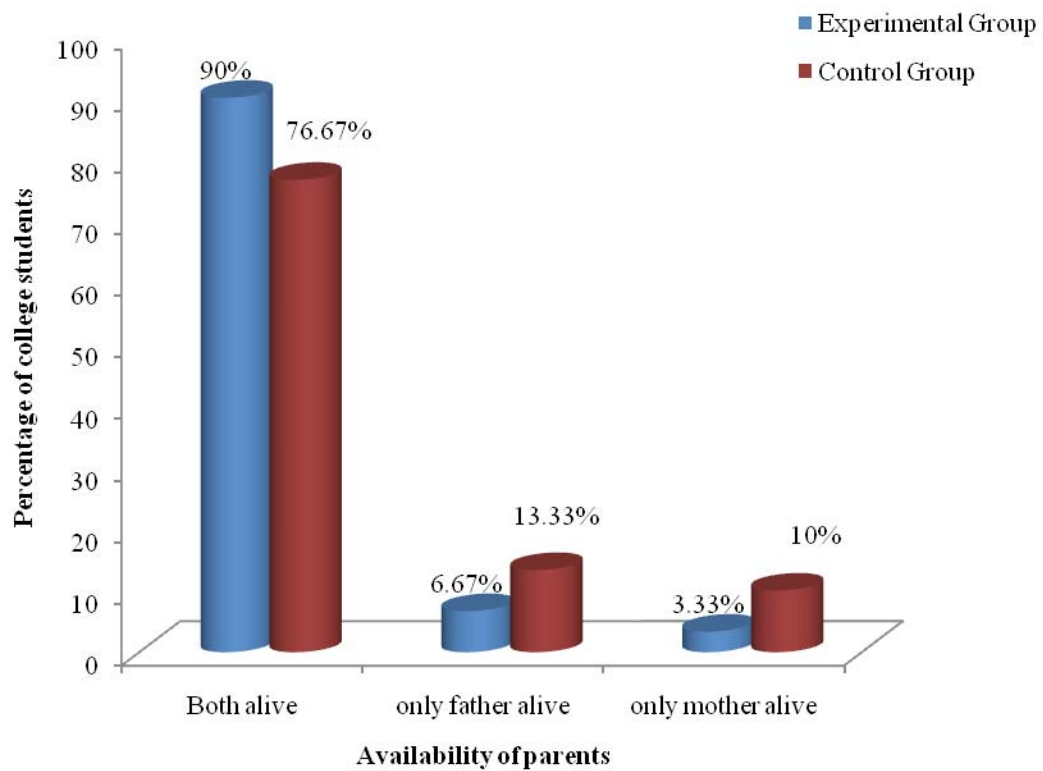


Fig-4.12: Percentage distribution of college students according to the availability of parents.

The above figure shows that, in experimental group, 27(90%) of the college students have both parents alive, 2(6.67%)of the college students have only father alive, 1(3.33%) of the college student has only mother alive. In control group, 23(76.67%) of the college students have both parents alive, 4(13.33%) of the college students have only father alive, 3(10%) of the college students have only mother alive.

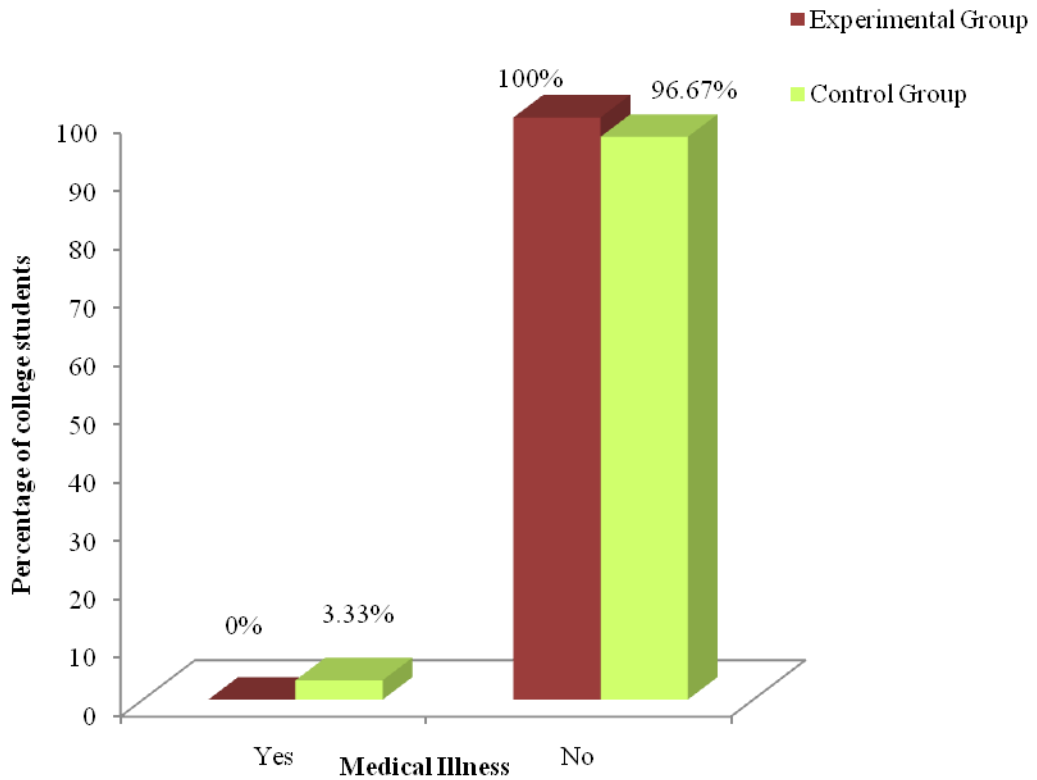


Fig-4.13: Percentage distribution of college students according to any medical illness.

The above figure shows that in experimental group, all 30(100%) of the college students have no medical illness. In control group, 1(3.33%) of the college student has medical illness, 29(96.67%) have no medical illness.

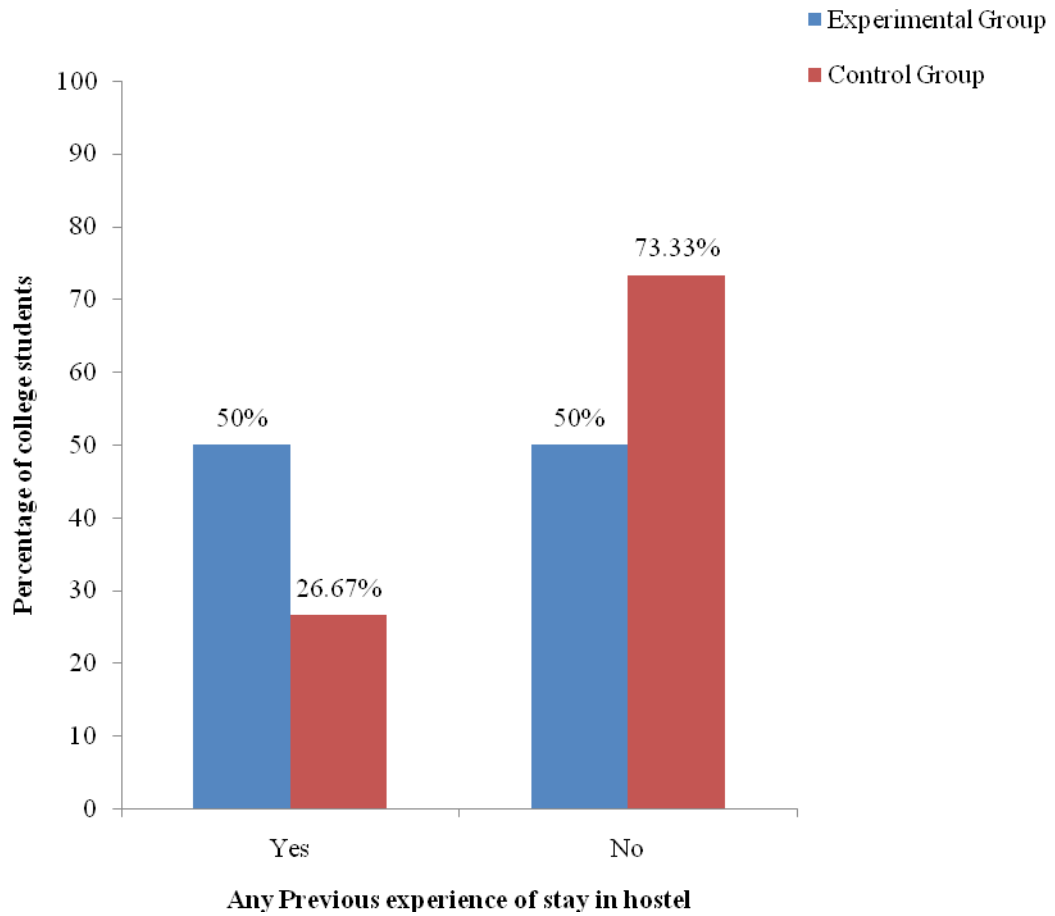


Fig-4.14: Percentage distribution of college students according to the previous experience of stay in hostel.

The above figure shows that, in experimental group 15(50%)of the college students have experience of previous stay in hostel and 15(50%) of the college students does not have experience of previous stay in hostel. In control group, 8(26.67%) of the college students have experience of previous stay in hostel and 22(73.33%) of the college students does not have experience of previous stay in hostel.

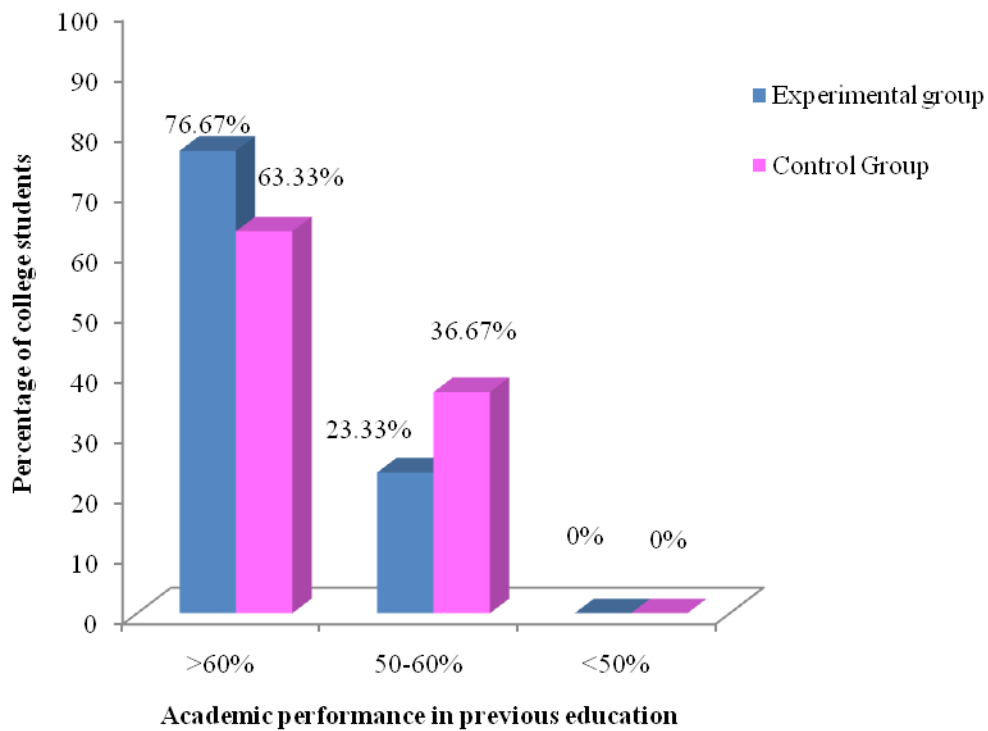


Fig-4.15: Percentage distribution of college students according to academic performance in previous school education.

The above figure shows that, in experimental group 23(76.67%)of the college students scored >60% of marks and 7(23.33%) of the college students scored between50-60% of marks. In control group 19(63.33%) of the college students scored >60% of marks, 11(36.67%) of the college students scored between 50-60% of marks in previous school education.

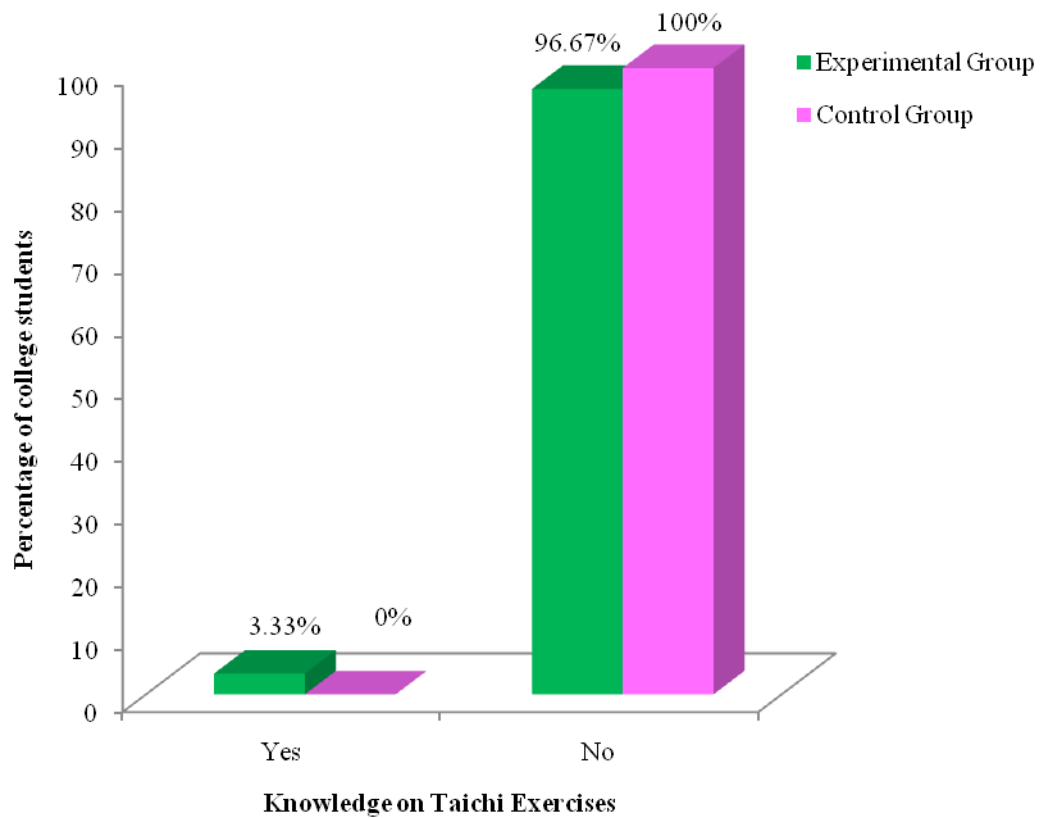


Fig-4.16: Percentage distribution of college students according to Previous knowledge on Taichi exercises.

The above figure shows that, in experimental group 1(3.33%)of the college students has knowledge on Taichi exercises and 29(96.67%) of the college students have no knowledge on Taichi exercises. In control group, all 30(100%)of the college students have no knowledge on Taichi exercises

Section-B

Distribution of college students according to their pretest Score on stress in Experimental and control group.

Table-4.1:

Frequency and percentage distribution of college students according to their pretest scores on stress among Experimental and control group.

n=60

Level of Stress	Pre test			
	Experimental group n = 30		Control group n = 30	
	f	%	f	%
Mild	0	0	0	0
Moderate	30	100	30	100

The above table shows that during pretest,Both in experimental and Control group, all 30(100%)of the college students have moderate level of Stress.

Section-C

- a) **Distribution of college students according to their posttest score on stress in experimental and control group.**

Table- 4.2:

Frequency and Percentage distribution of college students according to their posttest scores on stress in Experimental and control group.

n=60

Level of Stress	Post test			
	Experimental group n = 30		Control group n = 30	
	f	%	f	%
Mild	10	33.33	0	0
Moderate	20	66.67	30	100

The above table shows that during posttest, in experimental group, 10(33.33%) of the college students have mild stress and 20 (66.67%) of the college students have moderate stress. In control group, all 30(100%) of the college students have moderate stress.

Group	Pretest				Posttest			
	Mild		Moderate		Mild		Moderate	
	f	%	f	%	f	%	f	%
Experimental group	0	0	30	100	10	33.33	20	66.67
Control group	0	0	30	100	0	0	30	100

b) Comparison between the pretest and posttest scores on Stress among college students in experimental and control group.

Table- 4.3 :

Frequency and Percentage distribution of college students according to their stress in Experimental and control group.

The above table shows that during pretest, in experimental group, all 30(100%) of the college students have moderate level of Stress. In control group, all 30(100%) of the college students have moderate level of stress.

During posttest, in experimental group 10(33.33%) of the college students have mild level of Stress, 20(66.67%) of the college students have moderate level of Stress. In control group, all 30(100%) of the college students have moderate level of stress.

c) Comparison of Mean, SD and Mean difference according to their pre test and post test score on stress among college students in experimental and control group.

Table- 4.4:

Mean, standard deviation and mean difference according to their pretest and posttest score on stress among college students in experimental and control group.

n=60

Group	Pretest		Posttest		Mean difference
	Mean	SD	Mean	SD	
Experimental group	87.9	7.48	63.5	9.02	24.4
Control group	88.2	12.78	86.6	11.82	1.60

The above table shows that, in experimental group the mean pretest score is 87.9 ± 7.48 , and mean post test score is 63.5 ± 9.02 with a mean difference of 24.4.

In the control group, the mean pretest score is 88.2 ± 12.78 and mean post test score is 86.6 ± 11.82 with a mean difference of 1.60.

Section – D

Hypotheses Testing

- a) **Effectiveness of Taichi exercises on stress among college students in Experimental group.**

Table- 4.5:

Mean SD and Paired-‘t’ value on stress among college students in experimental group.

n=30

S.No	Experimental group	Mean	SD	Mean difference	df	‘t’ value
1.	Pretest	87.9	7.48	24.4	29	18.29*
2.	Posttest	63.5	9.02			

Table value $t=2.04$, * Significant at $p \leq 0.05$ level.

The above table shows that the mean score on stress in experimental group before intervention is 87.9 + 7.48 and after intervention is 63.5 + 9.02 with a mean difference of 24.4. The estimated paired-‘t’ value 18.29 which is higher than the table value of 2.05 and significant at $p \leq 0.05$ level. It shows that Taichi exercises was effective in reducing stress among college students. Hence the research hypothesis (H_1) is retained.

- b) **Effectiveness of Taichi exercises on stress among college students in Experimental and Control Group.**

Table-4.6:

Mean, SD and Independent-‘t’ value on stress among college students in experimental and control group after Intervention.

S. No	Group	Mean	SD	Mean difference	df	't' value
1.	Experimental group	63.50	9.02	23.1	58	8.39*
2.	Control group	11.82				
	86.66					

Table value $t=2.75$, * Significant at $p \leq 0.01$ level.

Table - 4.5 represents, the mean post test score on stress in experimental group is $63.50 + 9.02$ and in control group is $86.66 + 11.82$ with a mean difference of 23.1. The estimated 't' value is 8.39 which is highly significant at $p \leq 0.01$ level. It shows that Taichi exercises was effective in reducing stress among college students. Hence the research hypothesis (H_2) is retained.

c) Association between pretest stress among college students and their Selected demographic Variables in Experimental and Control Group.

Table - 4.7:

Chi-square test on pretest score on Stress among college students with their selected demographic variables in Experimental Group .

S.No	Personal Variables	Experimental Group		
		df	χ^2	Table Value
1.	Age in (years)	2	0.26	5.99
2.	Course of study	5	-	11.07
3.	Year of study	3	-	7.81
4.	Birth order	2	-	5.99
5.	Type of Family	2	-	5.99
6.	Religion	3	-	7.81

7.	Family Income(Per month)	3	-	7.82
8.	Previous Medium of Instruction	2	-	5.99
9.	Pattern of School education had they underwent	1	-	3.84
10.	Number of siblings	2	-	7.81
11.	Hobbies	3	-	7.81
12.	Availability of Parents	3	-	7.81
13.	Any medical illness	1	-	3.84
14.	Any previous experience of stay in hostel	1	-	3.84
15.	Academic performance in school education	2	-	5.99
16.	Knowledge on Taichi exercises	1	-	3.84

***Significant at $p \leq 0.05$ level**

The above table shows that, there was no significant association found between the stress among college students and their selected demographic variables at $p \leq 0.05$ level in Experimental Group. Hence hypothesis H_3 is rejected.

Table - 4.8:

Chi-square test on pretest score on Stress among college students with their selected demographic variables in Control Group .

n=30

S.No	Personal Variables	Control Group		
		df	χ^2	Table Value
1.	Age in (years)	2	-	5.99
2.	Course of study	5	-	11.07
3.	Year of study	3	-	7.81
4.	Birth order	2	-	5.99
5.	Type of Family	2	-	5.99
6.	Religion	3	-	7.81
7.	Family Income(Per month)	3	-	7.81
8.	Previous Medium of Instruction	2	-	5.99
9.	Pattern of School education had they underwent	2	-	5.99
10.	Number of siblings	2	-	5.99
11.	Hobbies	3	-	7.81
12.	Availability of Parents	3	-	7.81
13.	Any medical illness	1	-	3.84
14.	Any previous experience of stay in hostel	1	-	3.84
15.	Academic performance in school education	2	-	5.99
16.	Knowledge on Taichi exercises	1	-	3.84

***Significant at $p \leq 0.05$ level**

The above table shows that, there was no significant association found between the stress among college students with their selected demographic variables at $p \leq 0.05$ level in Control Group. Hence hypothesis H_3 is rejected.

Summary

This chapter dealt with the data analysis and interpretation in the form of statistical value based on the objectives, 't' test was used to evaluate the effectiveness of Taichi exercises on level of stress. Chi square test was used to find out the association between the stress among college students with their demographic variables in experimental and control group.

CHAPTER – V

DISCUSSION

This study was done to evaluate the Effectiveness of Taichi exercises on stress among college students at selected colleges, Salem.

Demographic variables of the samples:

In experimental group, Majority of study subjects ie.,28 college students(100%) were between 19 and 22 yrs,21(70%)were studying in Mechanical Engineering,21(70%) were studying were in Iyear,13(43.33%) were in second order, 23(76.67%)were from nuclear family,25(83.3%)were belongs to Hindu religion, 12(40%)college student's family earns above Rs.10,000 per month, 18(60%)were from English medium, 16(53.33%)studied in state board syllabus, , 14(46.66%) had one siblings, 11(36.67%)had hobby of hearing music, 24(80%) had both parents alive ,30(100%) had no medical illness, 15(50%) does not have previous experience of stay in hostel, 23(76.67%)had scored > 60% of marks in their academic performance,29(96.67%) had no knowledge on Taichi exercises.

In control group, 30 college students(100%) were between 19 and 22 yrs,7(23.33%)were studying in Mechanical Engineering,30(100%) were studying in Iyear,13(43.3%) were in First birth order, 8(60%) were from joint family,25(83.33%) belongs to hindu religion, 12(23.3%)earns Rs.7501-10,000, 17(56.66%)were from Tamil medium, 16(53.3%)studied in state board syllabus, , 9(30%) had no siblings, 9(30%)had hobby of reading books, 23(76.67%) had both parents alive ,29(96.67%) had no medical illness, 22(73.33%) does not have previous experience of stay in hostel, 19(63.33%)had scored > 60% of marks in their academic performance,30(100%) had no knowledge on Taichi exercises.

These findings were supported by **Latha KS, (2006)**, who conducted a study to assess the nature of the stress on 100 students (50 males and 50 female) of Pre University College, Mangalore. 94% of subjects were from nuclear family, in 91% of families, father was the head of the family, 95% of samples had both parents alive and 42% of boys and 28% of girls were eldest siblings at home.

The first objective of the study was to assess the stress among college students in experimental and control group.

During pretest, both in experimental & control group, all 30(100%)of the college students had moderate level of Stress.

This objective was supported by **Singh A,(2010)**, conducted a study to assess the level of stress and emotional adjustment among professional and non-professional students. The objective of the study was to assess the level of stress among professional and non-professional students. A total of 110 students were selected by using simple random sampling technique, lottery method without replacement. The settings of the study was medical, engineering, management and non-professional colleges of Kanpur, Uttarpradesh. Eight state questionnaire and Bells adjustment inventory was used to assess the level of stress and emotional adjustment among college students. Student of professional group mean score was 16.35 and non-professional group mean score was 15.39 with mean difference of 0.96. Thus the result shows that the moderate level of stress among professional college students is significantly higher than non-professional college students.

So it indicates that mild and moderate level of stress is common among the college students and they require some innovative measures to reduce their level of stress.

The second objective of the study was to evaluate the effectiveness of Taichi exercises on stress among college students in experimental group.

During posttest, mean score on stress among college students in experimental group before intervention was 87.9 ± 7.48 and after intervention was 63.5 ± 9.02 with a mean difference of 24.4. The estimated paired-‘t’ value 18.29 was most significantly higher than the table value 2.05 at $p \leq 0.05$ level. It shows that Taichi exercises was effective in reducing the level of stress. Hence H_2 was retained.

This objective was supported by a study conducted by **Indrapal singh (2009)** conducted a pre-experimental study on reducing stress using Taichi exercises in selected nursing institutes at Pune city. The sample size was 60, students were selected through simple random sampling technique and split into two groups, 30 experimental and 30 control groups. The analysis shows mean 41.40 with Standard Deviation of 16.76, t value 7.486 at $p < 0.05$ level. Thus the findings reveals that the stress decreased after intervention.

The third objective of the study was to determine the association between the stress and selected demographic variables among college students in experimental and control group.

In this study, there was no significant association found between the stress among college students and their selected demographic variables at $p \leq 0.05$ level. Hence H_3 was rejected.

Harsha, (2002) conducted a study to assess the effectiveness of Taichi exercises on stress and anxiety among adolescent college students at Bagalkot, Karnataka. With the objective to associate the knowledge with their demographic variables such as age, gender, religion, Type of family, Previous school education and other source of information. 50 students were participated in the study. The researcher

found that there was no association found between the stress and their selected demographic variables.

Summary

This chapter dealt with the discussion of the study with reference to objectives and supportive studies.

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATIONS AND RECOMMENDATIONS

This chapter consists of four sections. In the first two sections, the summary and conclusion are presented. In the last two sections, the implications and recommendations for further research are presented.

Summary:

Quantitative evaluative approach with true experimental research design was used to determine the effectiveness of Taichi exercises on level of stress among samples. The conceptual framework for the study was based on Nursing process model. The tool used in this study consisted of three sections. Section one was demographic variables, section two was Perceived Stress Scale (screening tool), section three was 'structured questionnaire to assess the symptoms and factors of stress among college students'. Simple Random sampling technique was used to select the samples and data was collected from 60 samples of engineering colleges, Salem, Tamil Nadu.

The data were collected and analysed using both descriptive and inferential statistics. To test the hypothesis, independent 't' test and chi square test were used. The level of significance was assessed by $p \leq 0.05$ level to test the hypothesis.

The Major Findings are

- During pre test, in experimental group, all 30(100%)of the college students had moderate level of Stress. In control group, 30(100%) have moderate level of stress.
- During post-test, in experimental group 10(33.33%) of the college students had mild stress and 20 (66.67%) of the college students have moderate stress. In control group, all 30(100%) of the college students have moderate stress.

- In post-test, the mean score on level of stress among samples in experimental group before intervention was 87.9 ± 7.48 and after intervention was 63.5 ± 9.02 with a mean difference of 24.4. The estimated paired-‘t’ value 18.29 is most significantly higher than the table value 2.04 at $p \leq 0.05$ level. It shows that Taichi exercises was effective in reducing the stress. Hence the research hypothesis (H_1) is retained.
- In post-test, the mean score on level of stress among samples in experimental group was 63.50 ± 9.02 and in control group the mean score was 86.66 ± 11.82 with a mean difference of 23.1. The estimated ‘t’ value was 8.39 which is highly significant at $p \leq 0.01$ level. It shows that Taichi exercises was effective in reducing the stress. Hence the research hypothesis (H_2) is retained.
- There was no significant association between the stress among college students and their selected demographic variables in experimental and control group at $p \leq 0.05$ level. Hence hypothesis H_3 is rejected

Conclusion

The study was conducted to assess the Effectiveness of Taichi exercises on stress among college students at selected colleges, Salem. The study findings showed that the Taichi exercises was effective in reducing the stress. There was no significant association found between the stress and their selected demographic variables. This study intervention would help the students to get relief from stress and to lead a healthy life.

Implications

The findings of the study have implications in different aspects of nursing. i.e., nursing practice, nursing education, nursing administration and nursing research.

Nursing Service:

- Nurses can plan the goal of nursing management of psychiatric patients and enhance their self-concept, coping strategies and sense of wellbeing through the development of mutually agreed goals.
- Student nurses can use this intervention to energize their wellbeing by reducing the stress level.

Nursing Education:

- Student nurses can be trained to assess the level of stress for themselves as well as for their friends and relatives.
- Student nurses can be educated about this technique in order to increase their knowledge to reduce the level of stress and encourage them to practice and participate in interventions.

Nursing Administration:

- The nurse administrator coordinates his/her activity along with the curative and rehabilitative aspects of care among samples by participating, practicing and supervising the Taichi exercises.
- Nursing administrator can organize in-service education programme regarding the effectiveness of Taichi exercises on reducing the stress level for staff nurses, and for social workers.

Nursing Research:

- Nursing research is to be done to find out the various innovative methods to reduce the level of stress.
- The findings of the study would help to expand the scientific body of professional knowledge upon which further research can be conducted.

Recommendations

- Similar study can be conducted with female samples in same settings.
- Similar study can be conducted as comparative study with female samples in same settings.
- Similar study can be conducted as comparative study between samples of professional colleges and non-professional colleges.
- A similar study can be conducted to different population like middle and older adults and working people.
- Similar study can be conducted as comparative study to analyse the effectiveness of Taichi exercises with other alternative therapies among the same samples.

Summary

This chapter dealt with summary, conclusion, implications and recommendations.

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ANNEXURE - A

LETTER SEEKING PERMISSION TO CONDUCT A RESEARCH STUDY

From

Mr.G.Arunkumar,
II year M.Sc., (N),
Sri Gokulam College of Nursing,
Salem.

To

The Principal,
Sri Gokulam College of Nursing,
Salem.

Respected Madam,

Sub: Permission to conduct Research Project–request- reg.

I, **Mr.G.Arunkumar**, Final year M.Sc(N) student of Sri Gokulam college of Nursing is conducting research project in partial fulfillment of “The Tamilnadu Dr .M.G.R. Medical University, Chennai” as part of the requirement for the award of M.sc(Nursing) Degree.

Topic: “A Study to Evaluate the Effectiveness of Taichi exercises on stress among college students at Selected Colleges, Salem”

I wish to seek permission to conduct the research study in VMKV College of Engineering & Sri Annapoorna college of Engineering , Salem- 10.

Kindly do the needful.

Thanking you.

Date: 20.07.2014

Yours Sincerely,

Place: Salem

(Mr.G.Arunkumar)

ANNEXURE - B

LETTER GRANTING PERMISSION TO CONDUCT A RESEARCH STUDY



SRI GOKULAM COLLEGE OF NURSING

3/836, Periyakalam, Neikkarapatti, Salem - 636 010.

Phone : 0427 - 6544550,2272240,2272250 Fax : 0427 - 2270200, 2447077

Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date :

**LETTER REQUESTING PERMISSION TO CONDUCT A
RESEARCH STUDY**

To

The Principal,

Vinayaga Mission Kirubananda Variyar Engineering College,

Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project - request- reg.

This is to introduce **Mr.Arunkumar.G**, Final Year M.Sc. (Nursing) student of Sri Gokulam College of Nursing. He is to conduct a research project which is to be submitted to "The Tamil Nadu Dr. M.G.R. Medical University, Chennai" as partial fulfillment of university requirement for the award of M.Sc. (Nursing) Degree.

Topic: "A Study to evaluate the Effectiveness of Tai chi on stress among college students at selected college, Salem".

I request you to kindly permit him to conduct the research study in your esteemed Institution. He will adhere to the policies and regulations of the Institution.

Thanking you,

Date :

Place : Salem

Yours Sincerely,

(Dr.K.Tamizharasi)

PRINCIPAL

**Sri Gokulam College of Nursing
SALEM - 636 010.**

PRINCIPAL
J.M.K.V. Engineering College
Vinayaga Mission University
SALEM-636 308

To
PD form
A
2/9/14



SRI GOKULAM COLLEGE OF NURSING

3/836, Periyakalam, Neikkarapatti, Salem - 636 010.

Phone : 0427 - 6544550, 2272240, 2272250 Fax : 0427 - 2270200, 2447077

Email : sgcon2001@yahoo.com, sgcon2001@gmail.com

Date :

LETTER REQUESTING PERMISSION TO CONDUCT A RESEARCH STUDY

To

The Principal,

Vinayaga Mission's Annaporna Engineering College,

Salem, Tamil Nadu.

Respected Sir/Madam,

Sub: Permission to conduct research project - request- reg.

This is to introduce **Mr.Arunkumar.G**, Final Year M.Sc. (Nursing) student of Sri Gokulam College of Nursing. He is to conduct a research project which is to be submitted to "The Tamil Nadu Dr. M.G.R. Medical University, Chennai" as partial fulfillment of university requirement for the award of M.Sc. (Nursing) Degree.

Topic: "A Study to evaluate the Effectiveness of Tai chi on stress among college students at selected college, Salem".

I request you to kindly permit him to conduct the research study in your esteemed Institution. He will adhere to the policies and regulations of the Institution.

Thanking you,

Date :

Place : Salem

Handwritten signature
2/9/14

Yours Sincerely,

Handwritten signature

(Dr.K.Tamizharasi)

PRINCIPAL

**Sri Gokulam College of Nursing
SALEM - 636 010.**

ANNEXURE C

LETTER REQUESTING OPINION AND SUGGESTION OF EXPERTS FOR CONTENT VALIDITY OF THE RESEARCH TOOL

From,

Mr.Arunkumar.G,
Final Year M.Sc(N),
Sri Gokulam College of Nursing,
Salem, Tamil Nadu.

To,

(Through proper channel)

Respected Sir/ Madam,

**Sub:Requesting opinion and suggestions of experts for establishing content
validity of the tool.**

I **Mr.Arunkumar. G**, II Year M.Sc., (Nursing) student of Sri Gokulam College of Nursing, Salem, have selected the below mentioned Statement of the Problem for the research study to be submitted to The Tamil Nadu Dr. M.G.R. Medical University, Chennai as partial fulfillment for the award of Master of science in Nursing.

Topic: ““A Study to Evaluate the Effectiveness of Taichi exercises on stress among college students at Selected Colleges, Salem”

I request you to kindly validate the tool developed for the study and give your expert opinion and suggestion for necessary modifications.

Thanking you,

Yours sincerely,

Place : Salem

Date :

(Mr.Arunkumar.G)

Enclosed:

1. Certificate of validation
2. Criteria checklist of evaluation of tool
3. Tool for collection of data
4. Procedure for Taichi Exercises

ANNEXURE - D

TOOL FOR DATA COLLECTION

SECTION – A: DEMOGRAPHIC VARIABLES

Instruction to the respondents:

Dear participants this section requires some of the personal information and you are requested to answer each question correctly. Your answers will be kept confidential.

SAMPLE NO: _____

1)Age in years

- a) <19
- b) 19 - 22
- c) >22

2) Course of study

- a) EEE
- b) ECE
- c) MECHANICAL
- d) IT
- e) CSE
- f) Civil

3) Year of study

- a) I
- b) II
- c) III
- d) IV

4) Birth order

- a) First.
- b) Second
- c) Third and above. -----

5) Type of family

- a) Joint
- b) Nuclear
- c) Extended -----

6) Religion.

- a) Hindu.
- b) Muslim.
- c) Christian.
- d) Others. -----

7) Family Income (per month).

- a) Up to Rs. 5000.
- b) Rs 5001-7500.
- c) Rs. 7501-10,000.
- d) Above Rs.10, 000. -----

8) Previous Medium of Instruction.

- a) Tamil.
- b) English.
- c) Any other, Specify _____ -----

9) Pattern of school education you had underwent

- a) State board
- b) Matriculation
- c) C B S E
- d) Others -----

10) Number of siblings

- a) Nil
- b) 1
- c) 2
- d) >2 -----

11) Hobbies

- a) Reading books
- b) Hearing music
- c) Playing indoor games
- d) Playing outdoor games
- e) Any others specify _____ -----

12) Availability of the parents

- a) Both alive.
- b) Only father alive.
- c) Only mother alive.
- d) Both are no more -----

13) Any Medical Illness

- a) Yes,
- b) No.
- If yes, specify _____ -----

14) Any previous experience of stay in hostel

- a) Yes
- b) No. -----

15) Academic performance in previous school education

- a) >60% (Good)
- b) 50% - 60% (Medium/Average)
- d) < 50% (poor) -----

16) Knowledge on Tai-chi exercises

a) Yes

b) No

If yes, source of information

a) Mass media


b) School

c) Parents

e) Others, Specify _____

SECTION - B
PERCEIVED STRESS SCALE (PSS)

Instructions to the Participants:

Please tick  the appropriate column **ONLY ONCE**. Kindly attend all the items as your responses are greatly valued. The information will be kept confidential

S. No	Items	Never	Almost Never	Sometimes	Fairly Often	Very Often
1.	In the last month, how often have you been upset because of something that happened unexpectedly.....?					
2.	In the last month, how often have you felt that you were unable to control the important things in your life?					
3.	In the last month, how often have you felt nervous and “stressed”?					
4.	In the last month, how often have you felt confident about your ability to handle your personal problems?.....					
5.	In the last month, how often have you felt that things were going your way?					
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?					
7.	In the last month, how often have you been able to control irritations in your life?.....					
8.	In the last month, how often have you felt that					

	you were on top of things?					
9.	In the last month, how often have you been angered because of things that were outside of your control?					
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

Scoring Pattern

Statements	Question nos.	Scores	
POSITIVE	4,5,7&8	Never	4
		Almost Never	3
		Sometimes	2
		Fairly Often	1
		Very Often	0
NEGATIVE	1,2,3,6,9&10	Never	0
		Almost Never	1
		Sometimes	2
		Fairly Often	3
		Very Often	4

Scoring Procedure

Stress category	Score
No stress	≤13
Progressing with stress	≥14-40

SECTION – C

STRUCTURED QUESTIONNAIRE REGARDING SYMPTOMS AND FACTORS OF STRESS

Instructions:

Please tick (✓) the appropriate column ONLY ONCE. Kindly attend all the items as your responses are greatly valued. The information will be kept **confidential**.

S. No	Items	Never	Occasionally	Often	Always
	A. SYMPTOMS OF STRESS				
1.	Do you feel fatigue in stressful situation?				
2.	Do you get irritated?				
3.	Do you have breathlessness in times of stress?				
4.	Do you experience butterfly stomach when you get tensed?				
5.	Do you have difficulty in falling asleep?				
6.	Do you sweat when you get tensed?				
7.	Did u have changes in appetite?				
8.	Do you experience headache continuously?				
9.	Do you experience disturbed dream or nightmares?				
10.	Do you experience tiredness?				
11.	Do you feel body pain when you get tensed?				
12.	Do you felt hot flushes in times of stress?				
13.	Do you experience feeling of urinary retention when you are stressed out?				
14.	Do you experience increased heartbeat all the time?				
	B. FACTORS INFLUENCING STRESS:				
	1. Interpersonal factors:				
15.	Do you have conflict with your friends?				
16.	Do you have conflict with your Parents?				
17.	Have you ever felt you are better than others?				
18.	Do you have feeling of social rejection?				
19.	Do you feel you are let down or disappointed by your friends?				

20.	Do you feel that your parents understand you?				
21.	Are you comfortable with your friends?				
	2.Intrapersonal factors:				
22.	Do you cry in stressful situation?				
23.	Do you have lack of concentration?				
24.	Do you feel that there is no enough time to meet your obligations?				
25.	Do you murmur with yourself during stress?				
26.	Do you put hard efforts to get ahead?				
27.	Do you prefer to be in group all the time?				
28.	Do you have sense of loneliness?				
	3.Academic factors:				
29.	Do you miss the classes?				
30.	Do you complete the activities on time?				
31.	Do you feel you are overloaded?				
32.	Have you been belittled by friends, teachers and parents?				
33.	Do you feel of being low graded than you hoped for?				
34.	Do you had conflict/serious argument with teachers?				
	4.Financial factors:				
35.	Have you felt that you do not have enough money for daily expenses?				
36.	Do your Parents Pay your college fees in time?				
	5.Environmental factors:				
37.	Do you feel happy to stay in hostel?				
38.	Have you able to adjust with your Friends staying in hostel?				
39.	Do you feel that you are placed in unfamiliar living condition while staying in hostel?				
40.	Do you have conflicts with your room mates?				

Scoring Pattern

STATEMENTS	QUESTION NOS.	SCORE	
	Never	1	
		Occasionally	2
		Often	3

POSITIVE 1, 2, 3, 4, 5, 6, 7, 9,10, 11, 12, 15, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39 &40.		Always	4
NEGATIVE	8,13,14,17& 27	Never	4
		Occasionally	3
		Often	2
		Always	1

Scoring procedure

Levels of stress	Score
Mild stress	≤ 53
Severe stress 54 - 107	≥ 108
Moderate stress	

ANNEXURE D

PROCEDURE OF TAICHI EXERCISES

TAICHI EXERCISES:

DEFINITION:

Tai Chi is an ancient Chinese tradition created by the Taoist monk Zhang Sanfeng in the 12th century. Tai Chi is considered to be safe for people of all ages as it does not put too much stress on the muscles and joints. In addition to being safe, Tai Chi is also inexpensive as it does not require much equipment. It can be practiced either in a group or alone.

The Taichi has evolved over the years into an effective means of alleviating Stress and Anxiety. It has been considered to be a form of 'meditation in motion' which promotes serenity and inner peace.

DEFINITION:

Taichi exercises is a Chinese exercise technique that uses slow, smooth body movements to achieve a state of relaxation of both body and mind.

HEALTH BENEFITS OF TAICHI EXERCISES:

1. Reduces blood pressure
2. Reduces Stress and anxiety
3. Improves Balance(can help elderly to balance and walk)
4. Improves Mental focus and wellbeing
5. Improves Quality of sleep

PROCEDURE:

Mainly it Focused on

- Breathing pattern
- Vision(Concentration)
- Slow& Steady
- Balance
- Movement.

It consists of Series of steps which are as follows,

- Rock Forward and backward movement (3mts)

- Pushing the Water (2mts)
- Over the drum (3mts)
- Ball in the mountain (3mts)
- Ball in the valley(3mts)
- Circle the globe (2mts)
- Pushing from the shoulders (3mts)
- Push and pull(3mts)
- Hand waving the clouds(3mts)

1. ROCK FORWARD AND BACKWARD MOVEMENT:

The subjects were instructed to keep their feet together and place the hands like resting on the table. Then step with the right leg on angle just a little step and bring both hands up to the chest, rock forward push by open both the arms out & in slowly and rock back, rock forward again pushing by both the arms out & in slowly and then rock back. Once you are done, bring the leg together and place the hands like rest on the table. Then same thing on the left side. Once done bring legs together and place the hands like resting on the table.

2. PUSHING THE WATER:

The subjects were instructed to turn their palms to the right, step with the right leg to the side and push the water by turn hands over pushing the water to the right side and then to the left side , move in the slow pace shifting away from one leg to the other. This shift is what strengthens the legs. Then bring the legs together and place the hands like rest on the table.

3. OVER THE DRUM:

The subjects were instructed to step with right leg forward and keep their palms face each other, then rock forward and backward like both palms go over drum

forward and backward . This helps to balance and helps you feel good. Once done, bring legs together and place the hands like rest on the table. Then step with the left leg and keep their palms face each other, then rock forward and backward like both palms go over drum forward and backward. Once done, bring legs together and place the hands like rest on the table.

4. BALL IN THE MOUNTAIN:

The subjects were instructed to keep the palms open and step out with right leg and bring the hands to form a ball right in front of face. This is a ball of energy as you rock back that energy ball comes down breaks a pot gently and then you build it up again by rock forward. This helps the whole meridian system to build up energy and do one more come back to hand just circle around and rest on the table. Then same thing on the left side.

5. BALL IN THE VALLEY:

The subjects were instructed to move their hands float up to the shoulders. Step with the right leg and rock forward by bending the knees forward and move the hands come down to form a ball of energy ,pick the ball up/energy slowly towards the neck ,break and open softly and go back build the energy up again bring it up to the neck, break and open. Finally the ball comes up turn hands over rest to hang on a table. Then same thing on the left side.

6. CIRCLE THE GLOBE:

This move is circle the globe to form a ball. The subjects were instructed to think the beach ball right on the top right hand on bottom left palm facing each other. Then the subjects were instructed to let the knees relax ,step with the right leg to the side and shift away .Now roll the ball over slow ,now you notice ,don't move the

palms and just move the body. The ball will follow roller ball over just move the body to the right and roll it over and move it to the left and bring the right leg together and hands rest on the table.

7. PUSH FROM THE SHOULDERS:

The subjects were instructed to keep their hands float up to the shoulders. Step with the right leg slowly, Push the right arm out as you come back push left arm out with the right arm goes out and left arm ,right arm again and bring the leg in with that and down. Then Same thing in the other side.

8. PUSH AND PULL:

The subjects were instructed to keep their hands to float up to the chest. Step with the right leg out and push both palms out. Turn up arms over you with in. It is a good way to practice breathing. Exhale as you go out turn hands over in and inhale when come in. Its a beautiful move and easy to do.

9. HANDS WAVING THE CLOUDS:

The subjects were instructed to Stand Steady. Put your right hand in front of mouth and put left hand down below your belly .Step with you let fly to the side. Just shift away switch the hands now at this point here don't move arms, just move the body. Scroll hands like waving clouds (or) cloud waving. Top your head follow your hand on the top and that works your neck muscles. This is one of the most popular Taichi moves today.

ANNEXURE - E

CERTIFICATE OF TRAINING



ANNEXURE -F

CERTIFICATE OF VALIDATION

This is to certify that the tool developed by **Mr.Arunkumar.G**, Final year M.Sc Nursing student of Sri Gokulam College of Nursing, Salem (Affiliated to The Tamil Nadu Dr. M.G.R Medical University) is validated and can proceed with this tool and content for the main study entitled “**A Study to Evaluate the Effectiveness of Taichi Exercises on stress among college students at Selected Colleges, Salem**”

Signature with Date

ANNEXURE - G
LIST OF EXPERTS

- 1. Dr.C.Babu.MD,**
Specialist in Deaddition and Child Psychiatry'
Consultant Psychiatrist,
Sri Gokulam Hospital, Salem.
- 2. Dr. Babu Rangarajan, M.Sc(Psy), M.Phill (Child.Psy)., PGDM (CPG), IDGC**
Child & Clinical Psychologist,
Neuro foundation,
Salem.
- 3. Mrs. Lalitha, M.Sc (N),**
Vice principal,
Kongunadu College of Nursing.
Coimbatore.
- 4. Mrs.Nuziba Begum, M.SC (N),**
HOD, Dept of Mental Health Nursing,
Sri Ramakrishna College of Nursing,
Coimbatore.
- 5. Mr. Selvaraj, M.Sc(N),**
HOD, Dept of Mental Health Nursing,
Shanmuga College of Nursing, Salem.
- 6. Mrs. Devi Arul. M.Sc (N),**
Associate Professor,
Mental Health nursing,
Shanmuga College of Nursing, Salem.
- 7. Mrs. Naga Nandhini, M.Sc (N),**
Associate Professor,
Mental Health nursing,
Vinayaka Missions College of Nursing, Salem.
- 8. Sifu.M. Bala Muralikrishnan**
Chi Kung-Fu Federation,
Grand Master & Chief Tech. Director,
Coimbatore.

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C. Babu
23/6/14

Signature with Date

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Signature with Date

R- TB 24/6/2014

Dr. BABU RANGARAJAN

M.Sc(Psy), M.Phil (Psy) (Chi. Psy),
PGDPM (CPC), IDGC (NCERT, New Delhi)
Child & Clinical Psychologist

மனோதத்துவ நிபுணர் Rcl. CRR No: A 19151.

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Signature with Date.
05/07/14.

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Signature with Date

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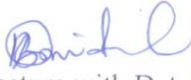
P. Selvaraj
20/6/14
Signature with Date


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CERTIFICATE OF VALIDATION


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Signature with Date *17/11/14*



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06/12/14
(R. NAYANARAJ)
Signature with Date

Department of Psychiatric Nursing
aka Mission Annapoorana College of Nursing
SALEM TAMILNADU.

CERTIFICATE OF VALIDATION

This is to certify that the tool and content developed by **Mr.ARUNKUMAR.G.**, final year M.Sc. Nursing student of Sri Gokulam College of Nursing, Salem (affiliated to The Tamil Nadu Dr.M.G.R.Medical University) is validated and can proceed with this tool and content for the main study entitled “**A Study to Evaluate the Effectiveness of Taichi exercises on stress among college students at selected college, Salem.**”


M. B.  11/08/24
Signature with Date

ANNEXURE - H

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled "A study to evaluate the effectiveness of Taichi Exercises on stress among college students at selected colleges, Salem." by Mr.ARUNKUMAR G. It has been checked for accuracy and correctness of English language usage and that the language used in presenting the paper is lucid, unambiguous free of grammatical or spelling errors and apt for the purpose.


Signature
K. SENTHIL KUMAR
Ph.D. in English
தமிழ்நாடு பல்கலைக்கழகம்
தமிழ்நாடு பல்கலைக்கழகம்
சென்னை - 600 009

ANNEXURE – I

PHOTOS



