FACIAL REFLEXOLOGY ON STRESS

EFFECT OF FACIAL REFLEXOLOGY ON STRESS AMONG ADOLESCENT GIRLS AT SRI RAMAKRISHNA MATRICULATION HIGHER SECONDARY SCHOOL, COIMBATORE

REG. NO. 30101431

A Dissertation Submitted to
The Tamilnadu Dr. M. G. R. Medical University,
Chennai-32.

In Partial Fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN NURSING

2012

EFFECT OF FACIAL REFLEXOLOGY ON STRESS AMONG ADOLESCENT GIRLS AT SRI RAMAKRISHNA MATRICULATION HIGHER SECONDARY SCHOOL, COIMBATORE

REG. NO. 30101431

A Dissertation Submitted to
The Tamilnadu Dr. M. G. R. Medical University,
Chennai-32.

In Partial Fulfillment of the Requirement for the

Award of the Degree of

MASTER OF SCIENCE IN NURSING

2012

EFFECT OF FACIAL REFLEXOLOGY ON STRESS AMONG ADOLESCENT GIRLS AT SRI RAMAKRISHNA MATRICULATION HIGHER SECONDARY SCHOOL, COIMBATORE

Approved by Dissertation Committee on _____

_____

1. **Mrs. S. GirijaKumari, M. Sc. (N).,**
Professor & Head,
Department of Community Health Nursing,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore - 641 044.

_____

2. **Dr. G. K. Sellakumar, M. A., M. Phil., P. G. D. P. M., Ph. D.,**
Professor & Head,
Department of Psychology & Research Methodology,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore - 641 044.

_____

3. **Dr. S. L. Ravi Shankar, M.B.B.S., M.D.,**
Professor,
Department of Community Medicine,
P. S. G. Institute of Medical Sciences and Research,
Coimbatore- 641 004.

Certified that this is the bonafide work of

ANITHA. J

COLLEGE OF NURSING
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044.

Submitted in Partial Fulfillment of the Requirement for the Award of the Degree of

MASTER OF SCIENCE IN NURSING

to The Tamilnadu Dr. M. G. R. Medical University, Chennai –32.

College Seal

Prof. (Mrs.) SEETHALAKSHMI,
B. Sc., R. N., R. M., M. N., M. Phil., (Ph. D).,
Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore - 641 044,
Tamilnadu, India.

COLLEGE OF NURSING
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 44

2012

ACKNOWLEDGEMENT

I express my heartfelt thanks to honorable **Thiru. C. Soundara Raj Avl.,** Managing Trustee, SNR & Sons Charitable Trust for giving me an opportunity to utilize all the facilities in this esteemed institution.

I am immensely grateful to **Prof. Seethalakshmi**, B. Sc (N)., R. N. R. M., M. N., M. Phil., (Ph. D)., Principal, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore for her expert guidance and valuable suggestions throughout the study.

I extend my deep felt sincerity to **Prof. R. Ramathilagam**, M. Sc (N)., Vice Principal, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore for her keen interest, enduring moral support and valuable suggestions in completing this study.

I express my deep sense of gratitude to **Prof. S. Girija Kumari,** M. Sc (N)., for her expert guidance, valuable suggestions, encouragement and keen interest in conception, planning and execution of the study.

I express my profound gratitude to **Dr. S. L. Ravishankar,** M. B. B. S., M. D., Professor, Department of Community Medicine, PSG Institute of Medical Sciences and Research, Coimbatore for his valuable suggestions and expert guidance throughout my study.

I express my special and sincere thanks to **Prof. G. K. Sellakumar**, M. A., M. Phil., P. G. D. P. M., Ph.D., **Mrs. R. Ramya**, M. Sc., M. Phil., for their intelligent guidance and constant encouragement which contributed a great deal to give meaning and enrichment of the study.

I express my special thanks to **Prof. Suganthi,** M. Sc (N)., **Prof. W. Chitra**, M. Sc (N). **Mrs. V. Brindha**, M. Sc (N)., **Mrs. Renuka,** M. Sc (N)., **Mrs. Nuziba begum,** M. Sc (N)., and **Mrs. Anusuya devi,** M. Sc (N)., for their moral support and valuable suggestions in completing the study.

Heartfelt thanks to **Dr. Jan Andrews**, Reflexologist, Grace Health Care for the training in the practice of facial reflexology.

Extent my special thanks to **Sri. S. Ranganathan,** M. Sc., M. Ed., P. G. D. P. M., M. Phil., Secretary, **Mrs. Jothibai Rengammal,** M. Sc, Chemistry. **All faculties** of Sri Ramakrishna Matriculation Higher Secondary School, for the support and co-operation in the execution of the study.

I extend my sincere thanks to **all adolescent girls** who participated in my study, for their cooperation and help.

I owe much to **all faculties, staff members** who have instructed and enlightened me in the field of education and rendered and all possible help with their heart and soul co-operation to achieve my target.

I am grateful to the **Librarians** & **Office Staffs** of Sri Ramakrishna Institute of Paramedical Sciences for their retrieving patience and timely helping many ways to prepare the manuscript. I express my gratitude to staff of **Bubbles**, Coimbatore for their compute and technical assistance. There cannot be anything possible by me without the affection, support and love of **my parents, family members** and **my classmates – the spartans** for their prayerful support and guidance throughout the course of my studies.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXURE

LIST OF APPENDICES

Abstract

The effect of facial reflexology on stress was studied through quasi-experimental one group pre-test post-test design. The population of present study was 230 adolescent girls studying in Sri Ramakrishna Matriculation Higher Secondary School, Coimbatore. Among them Stratified random sample of 40 participants were selected for this study. Kendler's Stress Questionnaire (1981) was used to assess the level of stress. Facial reflexology was given for 15 minutes twice a day for a duration of six days. The level of stress was reassessed with the same questionnaire. Appropriate statistical techniques were applied to test the hypotheses. The result reveals that there is significant reduction in the level of stress after facial reflexology. The facial reflexology can also be applied in future for reducing stress.

Effect of Facial Reflexology on Stress among Adolescent Girls at Sri Ramakrishna Matriculation Higher Secondary School, Coimbatore

Healthy citizens make a healthy nation. Health is now recognized as fundamental right of every human being. Health means happiness. Health is one of the most precious possessions we have and we should learn to preserve it. The golden ingredients to preserve and maintain good health are food, exercise and recreation. Above all, the contribution of mental health peace should not be ignored. Adolescent health status is strongly influenced by family, social, cultural factors as well as environmental factors. Adolescent period is a rapid growing period, where mainly the physical as well as mental development occurs. The young people's specific health problems and developmental needs differ from those of children or adults. The young people often lack awareness of the harm associated with risk behavior, and the skills to protect themselves.

The World Health Organization (WHO) has defined adolescence as the period between 10 and 19 years and youth as life between 15-24 years. Young people, or, are those between 10-24 years of age; they are no longer children, an adult (WHO, 2010).

Adolescent have significant energy, drive with abundant innovative ideas. The future productivity of nation is fully dependent on the adolescents. Hence, it is essential that healthy development of adolescents needs to be carried out in a positive manner. In any country, adolescents are considered healthy due to low mortality rate in their age group (Bennett, 2002).

According to 2001 census, in India adolescence female comprises of 46.9 percent and males comprises of 53.1 percent. According to 2011 census, total adolescents population in India is 239 million. Among the total population adolescents in India between the age group of 15-19 years, comprises of 8.9 percent of males and females comprises of 9 percent and by 2016 male and female will be about 8.7 percent (Swaminathan, 2008).

Changes make life more beautiful and worth living, if one knows how to adapt oneself and how to adjust to the challenges presented by the situation; the person can face any challenges in life. Adolescence is the period of rapid physical growth, sexual and psychological changes. Habits and behavior picked up during adolescence have lifelong impact. The changes are more frequent when compared to boys, girls mature earlier and reach the period of rapid growth and changes in the physical structure on attainment of puberty. Today the major health problems faced by the adolescents include stress, insomnia, headache/migraine and back pain (Mohit Joshi, 2010).

Stress is a mental or physical phenomenon formed through one's cognitive appraisal of stimulation and is a result of one's interaction with the major environment. Stressor is anything that challenges the client's adoptability or stimulates an individual's body or mentality (Joyce Walker, 2002).

Today, most of the adolescent girls are suffering from stress related problem which includes low memory status, depression 84.2 percent, family problems 60 percent, financial problems 50 percent, social stress 85-90 percent, and ego threat 42.5 percent, and death of loved ones 50 percent, separation of family 70 percent and personal problems 65 percent. About 15.3 percent adolescents reported stress feel

everyday and about 33.6 percent once a week. In terms of stress sources, 56.7 percent of them considered that their depression comes from school stress and 45.6 percent attributed to academic stress (Parsons, Robert & Bradley, 2001).

Many methods are used to relieve stress which include exercise, aromatherapy and massage therapy. One of the important methods of reducing stress is reflexology. Reflexology uses massage techniques to stimulate the energy flow, by using press thumb, finger and hand techniques to reduce stress, improve circulation and balance the body's energy. Reflexology works on the premise that there are zones that correspond to all parts of the body using gentle pressure on the hands, feet or ears and face. Facial reflexology is a wonderful stress reducer and improves concentration. It is a similar in some respects to foot and hand reflexology in that it works through the meridians sending impulses to specific organs of the body via the central nervous system which helps to relax and rebalance the body. The facial stimulation also helps cause the release of serotonin and endorphins which produce calmness and help reduce stress, depression, and anxiety (William & Fitzgerald, 2000).

A study conducted in London explains that each facial reflexology session begins by stimulating the reflexology points on the face using acupressure (pressing on them with the fingertips and rotating them on the spot). The treatment is popular with those suffering from conditions that may be stress-related such as insomnia, tension headaches and bowel syndrome (Ariff, 2010).

The adolescent girls affected by stress needs an intervention that is scientific, affordable and accessible to all sectors of people. Facial reflexology is such an intervention that reduces the stress level.

1.1. NEED FOR THE STUDY

Adolescence is regarded as a unique phase of human development. Traditionally adolescence is a period of “stress or storm”. A WHO expert committee (1993) has considered adolescent period is between 10 to 20 year of age.

Adolescent period is a rapid growing period when mainly the physical changes are crucial in the development. Adolescents, who are constitute the age group of 13-19 years, are prone to get stress under many conditions. Stress can be caused due to environmental factors, psychological factors, biological, and social factors (Margaret, 2010).

Stress can have both a positive and negative aspects, when it is positive it can act as a motivating force for growth but when negative it can also cause illness. High stress and anxiety impair concentration, memory, and communication and problem solving and individual performance. In addition to this, a number of degenerative diseases are believed to be triggered by stress like coronary thrombosis, rheumatoid arthritis, peripheral vascular disease, ulcer, asthma and essential hypertension (Hnney Avarachan, 2010).

In terms of stress sources, 56.7 percent of them considered that their depression comes from school stress, 50.9 percent through that their depression is caused by interpersonal relations and 45.6 percent attributed their depression to academic test. From the above statistics, it can be inferred that school is a main sources of stress for adolescent (Sieving & Bearinger, 2004).

A comparative study was conducted by Torbjorn Torshein (2003), at Norwegian school to find out the stress level whether it was influenced by subject, health complaints or psychosocial environment. Through multilevel analysis, the result shows that stress level was increased in subject health complaints especially in academic stress.

Many alternative methods are used for stress reduction which includes yoga, exercise, acupressure, acupuncture, meditation, mindfulness therapy, music therapy, laughter therapy, deep breathing exercise, diet therapy, aromatherapy, massage therapy along with stress tranquilizer, anti-depressants and anti anxiety drugs. One such important methods of eliminating stress is reflexology which is believed to reduce stress and their related symptoms.

Reflexology is a natural health science that studied the relationship of the reflex areas in the face, feet, hands and ears to the rest of the body. It is based on the principal that reflex points are related to internal organs, by pressing on reflex points with hand and finger techniques. Facial reflexology has relaxing effect and thus reduces stress. Once stress is reduced the body is able to function better and heal itself (Kunz, Katie & Scarvey, 2003).

Facial reflexology introduces concept and methods of the healing which relieve 200 common problems like insomnia to ulcers including stress. Some of the condition that reflexologists report they have helped is anxiety, depression, stress, back pain, arthritic condition and digestive problems. Carefully manipulating their points can improve the balance between the organ systems of the body (Midwest & Petty, 2010).

Reflexology is an ideal complement to massage and other tactile therapies as well as nursing. It is one of the few natural therapies to be adopted by the nursing profession, and is used increasingly in palliative care, midwifery and aged care. Basic reflexology techniques can be used by anyone at home to promote balance, reduce stress and manage pain (Mohit, 2010).

WHO is pleased to join the international community in celebrating International Youth Day 2011 under the theme “Change the World”. This theme calls on all of us to work with adolescents and young people to create a world in which they can grow and develop in a safe and supportive environment and in which they have access to the information and services they require (WHO, 2011).

Considering the above facts, the researcher implements facial reflexology as a complementary intervention suggesting it as a non-pharmacological, self care therapy to reduce stress, increase human touch, which is a basic human need. Facial reflexology also offers an opportunity to convey a sense of caring and healing comfort to enhance relaxation and reduce stress provides satisfaction for them.

1.2. STATEMENT OF PROBLEM

EFFECT OF FACIAL REFLEXOLOGY ON STRESS AMONG ADOLESCENT GIRLS AT SRI RAMAKRISHNA MARTICULATION HIGHER SECONDARY SCHOOL, COIMBATORE

1.3. OBJECTIVES

1.3.1. To assess the level of stress among adolescent girls.

1.3.2. To implement facial reflexology among adolescent girls.

1.3.3. To assess the level of stress after facial reflexology.

1.4. OPERATIONAL DEFINITION

1.4.1. Effect

Effect refers to reduction in stress level by using facial reflexology.

1.4.2. Facial Reflexology

It refers to the pressure that was applied to facial reflexology points manually using index finger. The reflexology points for facial reflexology consists of GB 14, GB1, UB 2, UB 1, ST 1, SI 18, ST 4, ST 3, ST 6, DU 26, REN 24, ST 1, LI 18. The procedure is scheduled in two times a day with morning and afternoon session duration of 15 minutes, which was given one hour after the meals.

1.4.2. Stress

The adolescent girls who had scored between 39-76 were identified with having mild score, and a score of 77-114 as moderate stress and a score between 115-152 was defined with severe stress. This was assessed with the help of Kendler's Stress Questionnaire, which consists of somatic symptoms and psychological symptoms.

1.4.3. Adolescent Girls

Students in the age group of 13-19 years studying at Sri Ramakrishna Matriculation Higher Secondary School.

1.5. CONCEPTUAL FRAMEWORK

Conceptual framework used for this study is based on general system theory. The basic concepts of general system theory were proposed in the 1950's. One of its major proponents; Ludwig Von Bertalanffy (1980) introduced system theory as a universal theory that could be applied to many field of study. Nurses are increasingly

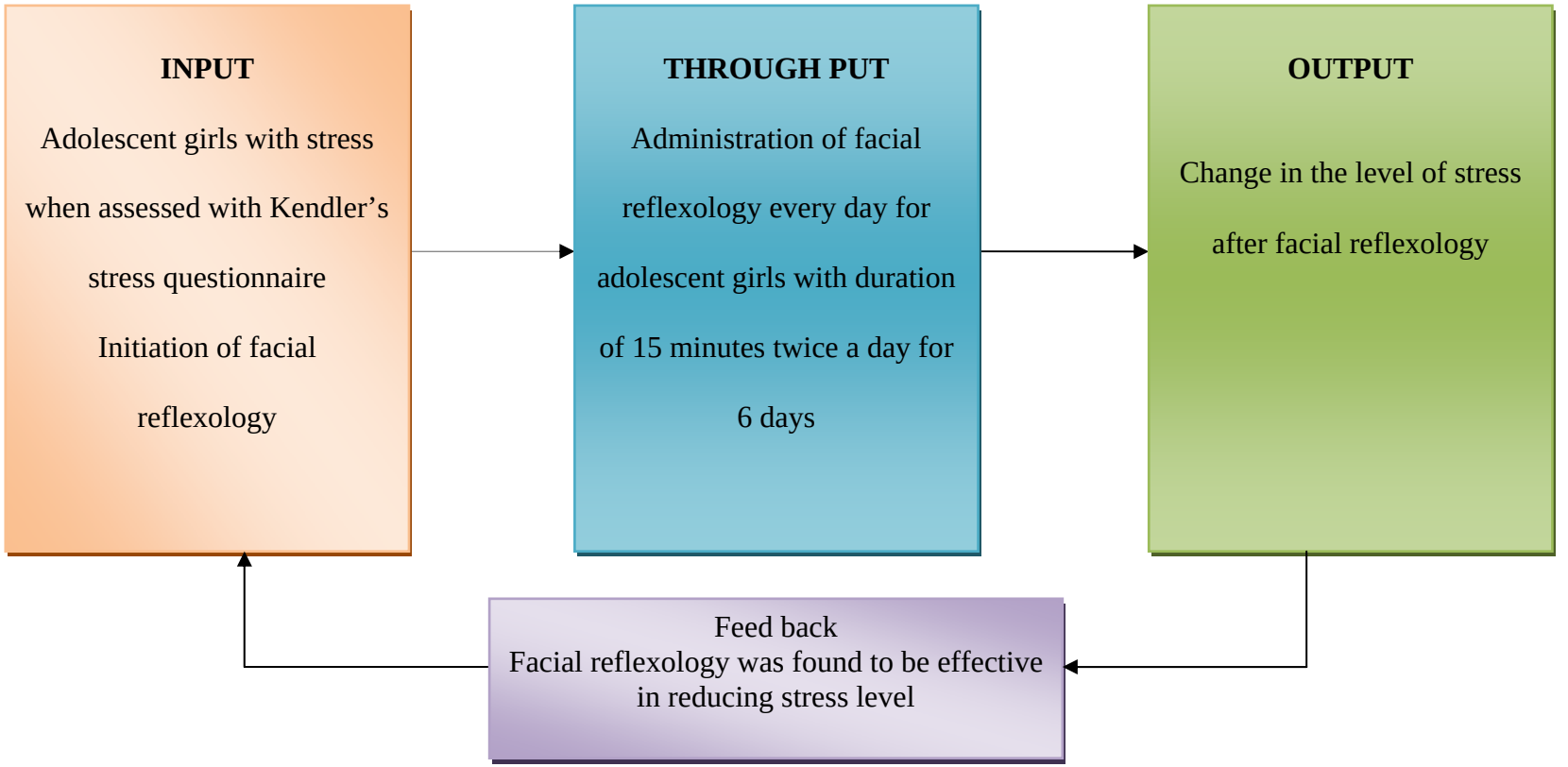
using system theory to understand not only biologic systems but also systems in families, communities, nursing and health care. General system theory provides a way of examining interrelationships and deriving principles.

A system is a set of interacting identifiable parts or components and it depends on the quality and quantity of its input, throughput, output and feedback. Input consists of information, material or energy that enters the system. After the input is absorbed by the system, it is processed in a way useful to the system. This information is called throughput. Output from a system is energy, matter or information given out by the system as results of its processes. Feedback is the mechanism by which some of the output of a system is returned to the system as input. Feedback enables a system to regulate itself and redirects the output of a system back into the system as input, thus forming a feedback loop.

In present study adolescent girls with stress was identified using Kendler's Stress Questionnaire. Facial reflexology was administered to the adolescent girls with stress, which acts as the input. Subsequently, facial reflexology was administered every day for each participants, duration of 15 minutes twice a day for 6 days, which acts as the throughput for the study. The change in the level of stress was assessed after facial reflexology which is the output of the study. The reassessment acts as a feedback for the school teacher who is the in charge of the students to reinforce facial reflexology on regular basis.

.

FIG 1.1
CONCEPTUAL FRAMEWORK BASED ON GENERAL SYSTEM THEORY
BY LUDWIG VON BERTALANFFY (1980)



Source: Kozier & Erbz, (2008)

1.6. PROJECTED OUTOME

Administration of facial reflexology helps to reduce the stress among adolescent girls.

REVIEW OF LITERATURE

Literature review is an essential component for the investigators to a greater understanding of the researcher problem and its major aspects. It provides the investigator with an opportunity to evaluate many different approaches to the problems.

First it is necessary to obtain the most current facts relevant to the problem and secondly, a through literature review will assist the researcher with the selection or development of the theoretical and methodological approaches to the problem.

2.1. Literature related to stress

2.2. Literature related to stress management

2.3. Literature related to reflexology

2.4. Literature related to facial reflexology on stress management

Health is a state of complete physical, mental and social wellbeing and not merely an absence of disease or infirmity (WHO, 1986).

2.1. LITERATURE RELATED TO STRESS

Stress is the non-specific response of the body to any demand made upon it. The demand can be a threat or a challenge or any kind of change which requires the body to adopt. The response is automatic as well as immediate. Stress can be good when it helps as perform better, or it can be bad (distress) when it cause and upset or makes sick (Selye, 1996).

Stress is a mental or physical phenomenon formed through one’s cognitive appraisal of stimulation and is a result of one’s interaction with the environment.

Stressors are anything that challenges the clients adoptability or stimulates an individual's body or mentality (Joyce Walker, 2002).

Stress can have both positive and negative aspects and when it is positive it can act as a motivating force for growth and chance, but when negative it can also a cause of illness. High stress and anxiety impair concentration, memory, communication and problem solving individual performance. In addition to this, a number of degenerative diseases are believed to be triggered by stress like coronary thrombosis, rheumatoid arthritis, peripheral vascular disease, ulcer, asthma and essential hypertension (Avarchan, 2010).

The reason for increased arguments with parents, trouble with brother or sister, change in parents financial status, serious illness or injury is caused due to stress among adolescent girls (Swaminathan, 2008).

The physical signs and symptoms of stress are headache, nervousness, rashes, stomachaches, fast heartbeat, perspiration and increased urination. Mental symptoms like lack of concentration, forgetfulness, drop in school performance, unable to study and carelessness. Emotional symptoms are many like anger outbursts, nightmares, sad/depressed, withdrawn and fighting (Lewinsohn, 1982).

2.2. LITERATURE RELATED TO STRESS MANAGEMENT

Many methods are used to relieve stress like exercise, aromatherapy, massage therapy, yoga, mindfulness therapy, muscle tension relaxation exercise and laugh therapy. Reflexology is a wonderful stress reducer and it increases concentration. One of the important methods of reducing stress in facial reflexology (Jason, 2006).

American Massage Therapy Association, (2008), accounted that about 45 percent of women and 21 percent of men were seeking massage therapy for conditions such as back pain, headache and anxiety.

Studies conducted by the Touch Research Institute at the University of Miami School of medicine indicated that massage produces positive results for stress reduction (Murray, 2009).

A study was conducted among nurses working in stressful environment based on the demands of their physical, emotional and spiritual wellbeing. The researcher suggested that use of humor as a powerful medication to reduce the stress level among nurses working in stressful environment (Wooten & Patty, 1996).

A study conducted on laughter yoga session for the staff, family and military personnel revealed that, all the participants experienced a remarkable reduction of stress and pressures after attending the session (Lynn, 2010).

A study was conducted among 33 people in a behavioral health centre. The participants had group laugh therapy daily for 15 minutes for 15 days. The results reveals that self competency scores and role competency had doubled, there rational competencies increased to 50 % and stress was reduced to more than 50 % (Geobler, 2007).

A study was conducted to establish a holistic view of the relationship between stress and health. The population selected for the study was 21 imprisoned women who were 35 years age and above. Participants attended 120 minutes of yoga session twice a week. A questionnaire and descriptive response examined the level of anxiety

and stress. The result of the study showed that yoga decreased stress level (Jason, Boardman & Hanlon, 2010).

The study was conducted at the public school of Jalandhar, Punjab, to assess the effect of yoga on academic performance in relation to stress. Among 800 adolescent students, 159 high stress students and 142 low-stress students were selected on the basis of scores obtained through Bisht Battery of Stress Scale. Experimental group and control group were given pre test in three subjects like mathematics, science and social studies. A yoga module consisting of yoga asanas, pranayama, meditation, and a value orientation program was administered on experimental group for 7 weeks. The experimental and control groups were post tested for their on the 3 subjects. The results reveal that the students, who practiced yoga performed better in academics. The study also revealed that low stress students performed better than high stress students pointing to the fact that stress affects the students performance (Sharma, 2009).

A study was conducted at Denmark. The researcher selected 4 persons randomly and practiced laughter yoga exercise for a period of one month. The results show that the body stress levels are significantly reduced after the laughter yoga exercises (Lonedal, 2004).

2.3. LITERATURE RELATED TO REFLEXOLOGY

Reflexology is a natural health science that studied the relationship of the reflex areas in the face, feet, hands and ears to the rest of the body. Pressing the reflex points with hand and finger techniques is the principles of reflexology. Facial

reflexology has relaxing effect and thus reduces stress. Once stress is reduced the body is able to function better and heal by itself (Kunz, Katie & Scarvey, 2003).

Many methods are used to relieve stress which include exercise, aromatherapy and massage therapy. One of the important methods of reducing stress is reflexology. Reflexology use massage techniques to stimulate the energy flow with pressing thumb, finger and hand techniques to reduce stress improve circulation and balance the body's energy. Reflexology works on the premise that there are zones that correspond to all parts of the body by giving gentle pressure on the hands, feet or ears and face (Fitzgerald, 2000).

Among two third of Americans with chronic pain were seeking reflexology for chronic pain management (Stephenson, 2003).

Reflexology is potentially a very valuable therapeutic nursing skill and could have wide ranging and cost effective benefits in health care, from special care baby units to care of the elderly (Griffiths, 2000).

A study was conducted at Gyeong- Sang National University for middle aged women on the effects of foot reflexology on pain and depression of middle aged women with osteoarthritis. The participants were 41 osteoarthritis patients. The research design of this study was a quasi experimental design. Among them 41 were assigned to the experimental group. The foot reflexology was applied to the experimental group 3 times a week, for a period of 4 weeks, for 30 minutes. Data were analyses chi-square test was conducted to verify the homogeneity of general characteristics, and 't' test was done to verify the homogeneity of pain, and

depression and paired ‘t’ test, ANOVA. After foot reflexology, the subjects in experimental group showed significant improvement in pain (F=155.77, P=.000) and depression (F=20.00, P=.000). So the results reveal that the foot reflexology is effective in relieving of pain and depression (Chen- Guang, 2004).

Another the study was conducted to know the effect of foot reflexology on myopia among the middle school adolescents. The selected samples were having an average visual acuity of 0.27 right eye and 0.44 left eye. Foot reflexology was applied for 5-10 minutes for a period of 15- 30 days. The results revealed that an overall improvement of 83.8 %. Among 34 samples, 10 (14.7 %) showed more than 0.5 increases in visual acuity, 12 (33.8 %) showed an increases of 0.25- 0.40) and 12 (35.3 %) showed an improvement rate of 0.1- 0.25. Thus, the results concluded to the point that foot reflexology was an effective intervention for myopia (Zhenshens, 2004).

A study was conducted by Gordon, (2006) at Royal Hospitals for sick children at Edinburgh on Effectiveness of reflexology as an adjunct to treatment in childhood idiopathic constipation. Among 184 ages between 1-13 years with chronic idiopathic constipation were randomly assigned to one of three groups: standard care and reflexology; standard care and foot reflexology and standard care. Parents and cares of two groups were taught either foot reflexology or foot massage. Treatments were followed for 12 weeks and the outcome was measured by a self reporting constipation questionnaire considering the increase in the mean number of bowel movements and improvements in constipation symptoms at 12 weeks: soiling pain, medication in use, general health status and behavior for 4 weeks period. The results showed significant

differences between reflexology and control group in bowel frequency and total constipation symptoms at 12 weeks. It was concluded that reflexology is effective in improving outcomes for children when used as an adjunct to standard treatment.

The study was conducted at Inje University on effect of self foot reflexology massage on depression, stress responses and immune functions of middle aged women. The research design selected for the study was one group pre test post test experimental design. The participants were 46 middle aged women who were recruited from the community health center in Busancity. Self foot reflexology massage was given once a day for duration of 4 weeks. The collected data were analyzed using repeated measure ANOVA. There was a statistically significant difference in depression and perceived stress. The results revealed that self foot reflexology massage could be utilized as an effective nursing intervention to reduce depression and stress responses (Lee, 2004).

The study was conducted at Sun Chong Am College, Korea to identify the effect of foot reflexology on premenstrual syndrome and dysmenorrhea in female college students. The research design of this study was a quasi-experimental design. Among 40 female college students, twenty were assigned to the experimental group and 20 were control group. The participants were assessed using Visual Analogue Scale. Subjects in the experimental group received foot reflexology 6 times with 1 hour for 60 days, and subjects assigned to the control group did not receive foot reflexology. Data were analyzed with X (2) test, unpaired t test and ANOVA. The results of the study are the mean score of the premenstrual syndromes and dysmenorrheal before foot reflexology was 8.35, and it was reduced to 4.16 at the first

menstruation after foot reflexology and it was again reduced to 3.25 at the second menstruation for the experimental group. The relived symptoms after foot reflexology was fatigue (50 %), insomnia (40 %), abdominal pain (35 %) and constipation (30 %). So the results reveal that foot reflexology was effective in improving the symptoms of the female college students who have the premenstrual syndromes and dysmenorrhea (Kim Cho, 2002).

The study conducted at catholic university of Korea for nursing students on effect of foot reflexology education program on bowel function, anxiety and depression among nursing students. The research design adopted for the study was pre test post test with control group design with non-equivalent control group. The participants were 61 nursing students. Among them 31 samples were assigned to the experimental group and 30 samples were control group and received foot reflexology education program that was authorized by the World Foot Reflexology association by the author for 6 weeks. The program of 2 weeks theory and 4 weeks practical skills assessment. The participants were measured by bowel function assessment form for constipation, State Anxiety Inventory, and Beck Depression Inventory. Data were analyses by ‘t’ test, X(2) test and repeated ANOVA. After all session of treatment, the score of bowel function assessments were significantly decreased in the experimental group compared to the control group out comes of 6 and 7 weeks were significantly different from those of pre- experiment. So the results reveal that the foot reflexology education program will improve the bowel function, anxiety and depression for the nursing students with constipation, anxiety and depression (Korea & Samcheok, 2006).

An experimental study was conducted at Taiwan on “Effects of reflexology at sanyinijao point on primary dysmenorrheal”. The samples size selected for the study was 69. None of the samples had prior history of gynecological diseases of 2 dysmenorrhea. All the samples were having a pain score more than 5 on Visual Analogy Scale. The experimental group (n=35) received reflexology. The control group consists of 20. The duration of the study period was 6 weeks. The tool used for the study was Visual Analog Scale for pain. Data were analyses using chi-square test, independent ‘t’ test and two way ANOVA. Thirty one (87 %) of the experimental participants reported that reflexology was helpful and 33 (94 %) were satisfied with reflexology in terms of providing pain relief and psychological symptoms at sanyinijao point is effective in relieving dysmenorrheal (Myles, 1996).

2.4. LITERATURE RELATED TO FACIAL REFLEXOLOGY ON STRESS MANAGEMENT

Facial reflexology is a new type of holistic reflexology treatment carried out on the face. The client is fully clothed and lies on a reflex technique based on the neuro-biochemical action that is caused because of stimulating an area or a point, and which has both a general or practical effect in the entire organism (Kim Cho, 2002).

Reflexology uses zone therapy to treat other areas of the body to affect healing and wellness. These zones are stimulated with a specific technique to energetic balance the entire body and it’s functions. Reflexology is often combined with Traditional Chinese Acupressure. Acupressure stimulates certain points along lines of the body known as meridians. This stimulation corresponds to specific organs or body parts. This holds true for various zones in the feet, hands and face. A part of a

reflexology treatment using the foot, hand and the face is based on this theory. The foot, hand and face are covered with points that correspond to various body systems and parts. Massaging these points, and stroking them or applying specific types of pressure, releases tension and blockages that prevent the flow of energy and stimulates the circulation of blood. Reflexology also helps crush small “crystals,” or deposits of lactic acid, that settle in our body. Once they are broken up, they can be reabsorbed into the body and the waste can be eliminated by the lymphatic system (Sorensen, 2009).

Reflexology is based on the Chinese belief that a vital energy, called Chi which flows through the body along paths known as meridians. As long as this energy flows smoothly, the body is in balance and becomes stressed. Reflexology is a tool in which certain movements are implemented to restore the energy balance. According to reflexology, all the organs and parts of the body are mapped on the feet and hand. The left side of the body is mapped on the left hand and foot while the right side of the body is reflected on the right hand and foot. Applying pressure to the zones of the feet &hands will result in a physical change in the body (Williams, 2004).

The face is a micro map of the entire body. All 12 body meridians have energy points on the face which can be affected by giving acupressure on them with fingertips. On rotation, more blood flows to the face, improving the facial circulation and facial nerve supply. It release blocks in energy lines and remove imbalances under the upper layer of the skin on the face, breaking down skin deposits and boosting energy. The facial circulation is directly related to brain circulation and

hence great relaxation may occur by releasing serotonin and endorphins and thus reducing depression, stress and anxiety (Omura & Anspaugh, 2009).

Facial reflexology is now increasingly used to treat common conditions like stress, insomnia, digestive problems, joint pain, menopausal flushes and memory loss which need long time curative period. In recent days, for reflexology face is used instead of feet or hands to deliver the health therapy.

Facial reflexology is based on a recognized medical therapy which uses the concepts that energy within the body flows through ten vertical zones that run from head to toe. When pressure is applied to specific facial points, it will stimulate an identifiable muscle tissue, the toxins, the toxins in area through the meridians sending impulses to specific organs of the body via central nervous system which helps to relax and rebalance the body. The facial stimulation also helps cause the release of serotonin and endorphins which produce a calmness and help reduce stress (William, 2002).

Reflexology can manipulate the various nerve endings to interrupt the stress signals and effect of relaxation and thus reducing the stress. Sessions are scheduled in time increments of 30 minutes both feet and face will be treated using pressure, stretch, and movements. When the session is completed, the patient should feel relaxed (Kavin, Barbara & Kunz, 2005).

According to the American Reflexology Certification Board, reflexology is a scientific art based on the premise that there are zones and reflex areas in the feet, hand &face which correspond to all body parts. The physical act of applying specific

pressure using thumb and hand techniques result in stress reduction which causes a physiological change in the body (Scarvey, 2003).

Facial Reflexology has own therapeutic treatment and offers a wide range of healing benefits. The facial reflexology utilizes a combination of pressure and assisted- stretching techniques, some of which are common to other therapies, such as massage and reflexology. The treatment stimulates the circulation and the flow of lymphatic fluid, releases toxins and deep seated tensions from the muscles, stimulates the hormonal system and the immune system and acts on the autonomic nervous system, allowing the recipient to relax deeply and to get in touch with own healing power. Other benefits of shiatsu include stress reduction, relieve of fatigue, reducing blood pressure and increasing vitality stamina and energy (Shiatsu, 2006).

Facial reflexology is effective because the face has a large number of nerves and blood vessels. According to Chinese medicine, our energy flows through the body via 12 invisible meridians. If these energy lines become blocked, imbalances occur and can result in aches, pains, insomnia and irritable bowel syndrome (Shiatsu, 2010).

The brain is the control center of the body and the face is much closer to it than the feet are, so face reflexology can work faster than foot reflexology (Tariff, 2010).

Facial Reflexology is a profoundly relaxing yet powerful therapy which is completely safe for all age groups and with virtually no contraindications. It is therefore of great assistance in helping you to restore balance and calm. A relaxed body is more able to heal combat disease and resist infection (Santangelon, 2011).

Facial Reflexology, which is a completely separate therapy to traditional Foot/Hand Reflexology, is both ancient and new. 'Ancient' because it uses several ancient face charts, and 'new' because it is the first time these charts have been drawn together and combined with a modern understanding of neurological points on the face to form one therapeutic practice (Lafuente, Lucini & Malacarne, 2001).

Facial Reflexology neurovascular points, reflex zones, and certain neurological points are gently stimulated with hand, using only the finger-tips. This gentle how stimulation sends impulses through the central nervous system and the meridians to the physical body's major organs. In addition it stimulates blood circulation and lymphatic drainage, balances the hormones and treats the emotions. Stimulation of the points and zones on the face also triggers the release of endorphins (pleasure hormones) and serotonin (a chemical which promotes a calm and optimistic state of mind and which is instrumental in the treatment of conditions such as anxiety and depression).

Facial reflexology has proven to be quite powerful to alleviate stress and muscle spasms. Along with hand, ear, scalp and abdominal acupressure, facial reflexology has proven to be as effective acupressure treatment. Massaging the facial bladder points backache encircling in all the stomach points relieves heart burn and massaging stomach, bladder and gall bladder points relieves sinusitis (Cornelius & Chrouses, 1992).

A study conducted in London explains that each facial reflexology session begins with the stimulation of the reflexology points on the face using acupressure (pressing on them with the fingertips and rotating them on the spot). The treatment is

popular with those suffering from conditions that may be stress-related such as insomnia, tension headaches and irritable bowel syndrome. In some irritable bowel syndrome patients, for example, there is a strong link between stress and symptoms, especially constipation. If stress can be also be alleviated, gut symptoms such as constipation can be alleviated too (Ariff, 2010).

Public interest in complementary therapies continues to grow and many and nurses are incorporating complementary therapies such as reflexology, aromatherapy &massage in to their clinical practice. The longetivity of pharmacological treatments associated with complications of stress more when compared to the non pharmacological therapies. Reflexology is effective, affordable with no side effects. Prevents the development of complications associated with stress (Botting, Motzes & Hertig, 2003).

METHODOLOGY

This chapter describes the research methodology adopted to assess the effect of facial reflexology on stress among adolescent girls. The methodology of the present study includes research approach, research design, setting, population, criteria for sample selection, sampling technique, variables of the study. Development and description of tools and technique of data analysis and interpretation

3.1. RESEARCH APPROACH

The present study aimed at determining the effect of facial reflexology on stress among adolescent girls. Hence, a quantitative approach was considered appropriate to determine the effectiveness of facial reflexology on stress.

3.2. RESEARCH DESIGN

The research adopted to carry out the present study was quasi experimental one group pre test post test design. This design was found to be appropriate to identify the effect of facial reflexology on stress among adolescent girls.

3.3. SETTING

The study was conducted in Sri Ramakrishna Matriculation Higher Secondary School, an authorized private institution, located in Coimbatore. The total strength of the school was 1500 students which consist of both boys and girls. Among this, there were about 230 adolescent girls. The school timings were 9:00 am to 4:00pm. School focuses not only on educational activities but also develops students extracurricular activities through sports, cultural and NSS camps. Every week about 3 hours is allotted for physical training.

3.4. POPULATION

The population of the present study was adolescent girls with stress

3.5. CRITERIA FOR SAMPLE SELECTION

The samples were taken based on following inclusion criteria.

Inclusion Criteria :

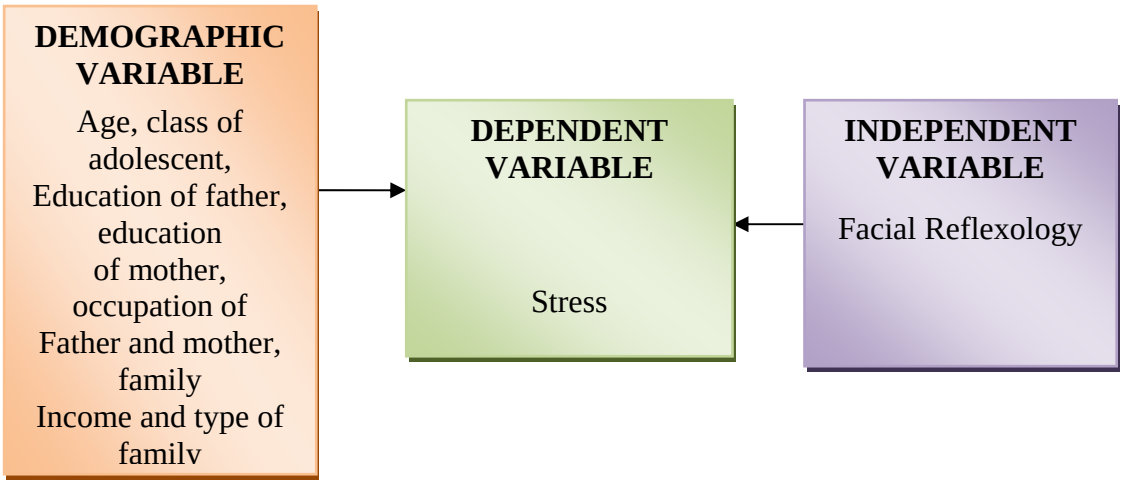
1. Adolescent girls with mild, moderate and severe stress.
2. Adolescent girls with the willingness to follow the interventional procedure and the researcher instructions.

3.6. SAMPLING

The population of the research setting was found to be 230 adolescent girls. The samples were selected on the basis of stratified randomized sampling method. The samples were selected from the students studying 9th standard to higher secondary classes. A total strength of 9th standard was 49 out of that 8 samples were selected. From 10thstandard out of the 58 students, 10 samples were selected, from 11th standard from the total strength of the 68 students, 11 samples were selected and 12th standard from the total strength of the 63 students, 11 samples were selected using lottery method. The total number of samples was 40. Stressed adolescent girls when assessed using Kendler's Stress Questionnaire with score of mild 39-76, moderate 77-114; severe 115-152 were selected for the study.

3.7. VARIABLES OF THE STUDY

The independent variable in the present study was facial reflexology and dependent variable was stress.



3.8 MATERIALS

The following materials were used for the data collection.

3.8.1. Demographic data

3.8.2. Kendler's Stress Questionnaire

3.8.3. Facial reflexology interventions

3.8.1. *Demographic* data : Demographic data consists of age, class of adolescent girls, education of father, education of mother, occupation of father, occupation of mother, family income and type of family.

3.8.2. *Kendler's Stress Questionnaire (1981)* : It was developed in the early 1981 by Kendler. It is effective instrument used to measure the stress in adolescent. Kendler's Stress Questionnaire can be self-administered one. It consists of 38 items divided 2 subscales. Somatic symptoms – 19 and Psychological symptoms – 19. The participants responded to the statement by circling a number in the column that

described them body symptoms. The score frequently was if the participant had experiences the feeling in the statement (during the past month) at least once a week or more often. The score occasionally was uses if the experience was somewhat less than once a week and rarely when it was less than occasionally.

The scores of the tool were described as the score of 1 for never, 2 for rarely, 3 for occasionally and 4 for frequently. The participants who scored 38 had no stress, 39-76 were categorized as mild stress, 77-114 were categorized as moderate stress and 115-152 were categorized as severe stress. The minimum score of the scale is 1 mark and maximum mark is 4 marks. The reliability co-efficient obtained for this tool is ranging from 0.49, 0.48 respectively which indicates that the tool is reliable for the study.

3.8.3. *Facial reflexology* : It is similar in some respects to foot and hand reflexology in that it works through the meridians sending impulses to specific organs of the body via the central nervous system which helps to relax and rebalance the body. The facial stimulation also helps cause the release of serotonin and endorphins which produce a calmness and help reduce stress, depression and anxiety.

Point Meridians

GB 14 - 1 Shun above from the middle of the eyebrow

GB 1 - half shun adjustment to the outer canthus of the eye

UB 2 - 1 Shun above the inner canthus of the eye, situated on the eye brow

UB 1 - the point located in the inner canthus

ST 1 - the point located in the middle of the lower eyelid

SI 18 - 1 shun below the ethmoid bone

ST 4 - below half shun from the end of the molar teeth over the cheek

ST 3 - 2 shun below the ST 1 at the nostrils

ST 6 - Tip of the nose

DU 26 - The point located below the nose above the upper lip

REN 24 - The point located above the chin and below the lower lip

ST 1 - Centre point of the fore head between the two eyebrows

LI 18 - Above 3 shun adjustment in front of the mandible bone

3.8.3. ADMINISTRATION TECHNIQUE

3.8.3.1. Instructions followed by the Researcher

1. Facial reflexology should be given with the tip of thumbs.
2. The nails of the thumbs and fingers should be properly dipped and smoothened in order to avoid any injury or on the skin, while pressing the points.
3. Reflexology should be postponed up to one hour after meals
4. After facial reflexology the participants should drink glass of water
5. The procedure is scheduled in two times a day with duration of 15 minutes and the time chosen one hour after meals.

3.8.3.2. Procedure for Facial Reflexology

Pre Procedure

1. Select appropriate place.
2. Explain the procedure to the participants
3. Provide privacy
4. Hand washing.

Procedure

Step 1: Make the participants to sit in a chair.

Step 2: Instruct the participants to be relaxed throughout the procedure.

Step 3: Select reflexology points and provide intervention using index finger. Pressure is applied in each point for 1 minute which comes for about 15 minutes, for all the 15 pressure points.

Step 4: Advice the participants to drink a glass of water.

3.9. HYPOTHESES

H_1 : There is a significant difference in the somatic symptoms between before and after facial reflexology.

H_2 : There is a significant difference in the psychological symptoms between before and after facial reflexology.

H_3 : There is a significant difference in stress before and after facial reflexology.

3.10. PILOT STUDY

Pilot study was conducted to check the feasibility, practibility, validity, and reliability of the study. The study was conducted among adolescent girls at Government Higher Secondary School, Ganapathy, for a period 10 days. Purposive sample of 10 samples were selected. Personal information was collected from each participant. A pre assessment was done with Kendler's Stress Questionnaire to categorize the participants in to mild 39-76, moderate 77-114, and severe 115-152 were selected for the study. Facial reflexology was provided to samples for a period of 7 days. After completion of facial reflexology, on the eighth day stress was reassessed using the same questionnaire. The data collected was tabulated and

analysis using descriptive and inferential statistical methods and results show that there is significance different in stress before and after facial reflexology. Hence, the study is feasible and practical.

3.11. MAIN STUDY

The main study was conducted to meet the objectives of the present study. Data was collected for a period of 30 days. The study was conducted in Sri Ramakrishna Matriculation Higher Secondary School, Coimbatore. Initially adolescent girls were divided in to 4 groups of class of adolescents 9^{th} standard, 10^{th} standard, 11^{th} standard and 12^{th} standard. Demographic data was collected from each sample. A pre assessment was done using Kendler's Stress Questionnaire to categorize the participants to mild 39-76, moderate 77-114, and severe 115-152 were selected for the study. Facial reflexology was applied by the researcher for 15 minutes twice a day for a period of 6 days for 10 samples, totally 40 samples for a period of 4 weeks. The procedure is schedule in two times a day morning and afternoon and time chosen one hour after meals. Post assessment was done using the same questionnaire.

3.12. TECHNIQUES OF DATA ANALYSIS

Descriptive and inferential statistical methods were used for data analysis. Descriptive statistics applied for demographic variable such as age, class of adolescent, education of father and mother, occupation of father and mother, family income and type of family. Inferential statistical method used for the study was paired 't' test to find the significant different in stress before and after facial reflexology.

DATA ANALYSIS AND INTERPRETATION

The present chapter deals with the method of data analysis and interpretation. Stress of adolescent girls was assessed and facial reflexology was given to adolescent girls. The data collected were grouped and analyzed using descriptive and inferential statistics and presented in the form of tables and figures. The study was intended to find the effectiveness of facial reflexology on stress management among adolescent girls. The study was conducted in Sri Ramakrishna Matriculation higher Secondary School, Coimbatore. A total number of 40 samples were enrolled in the study.

SECTION – I

4.1. BASELINE DATA PRESENTATION

Data collected from 40 samples were tabulated, analyzed and interpreted to study the effect of facial reflexology on stress among adolescent girls. Based on the tool deals with personal information age, class of adolescent, education of father, and education of mother, occupation of father and mother, family income and type of family. These data were presented in the form tables and figures.

TABLE 4.1.
DISTRIBUTION ON DEMOGRAPHIC DATA OF ADOLESCENT GIRLS

(N = 40)

Demographic Variables	No of Participants	Percentage (%)
Age in Years		
13	4	10
14	8	20
15	12	30
16	14	35
17	2	5
Class of Adolescent girls		
9^{th} standard	8	20
10^{th} standard	10	24
11^{th} standard	11	28
12^{th} standard	11	28

The table 4.1 reveals that majority of the participants (i.e.) 35 % of adolescent girls were 16 years of age, 30 %were 15 years of age, 20 % of were 14 years of age 10 % were 13 years old and 5 % of adolescent girls were 17 years of age. The class of adolescent girls reveals that majority (28 %) of the participants were in 11^{th} and 12^{th} respectively, while 24 % were in 10^{th} and 20 % were in 9^{th} standard.

FIG 4.1
AGE DISTRIBUTION OF ADOLESCENT GIRLS

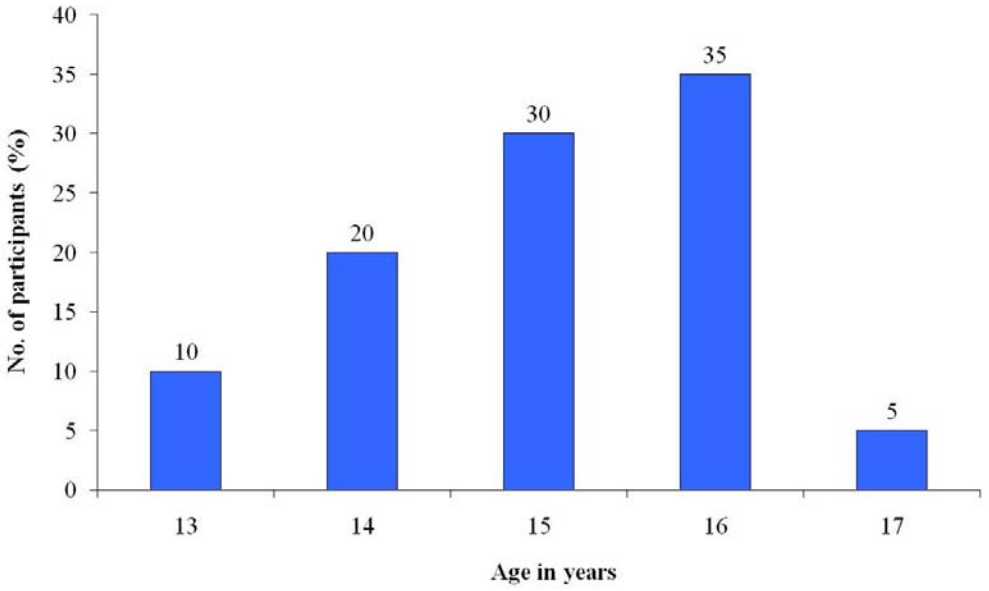


FIG. 4.2
DISTRIBUTION ON CLASS OF ADOLESCENT GIRLS

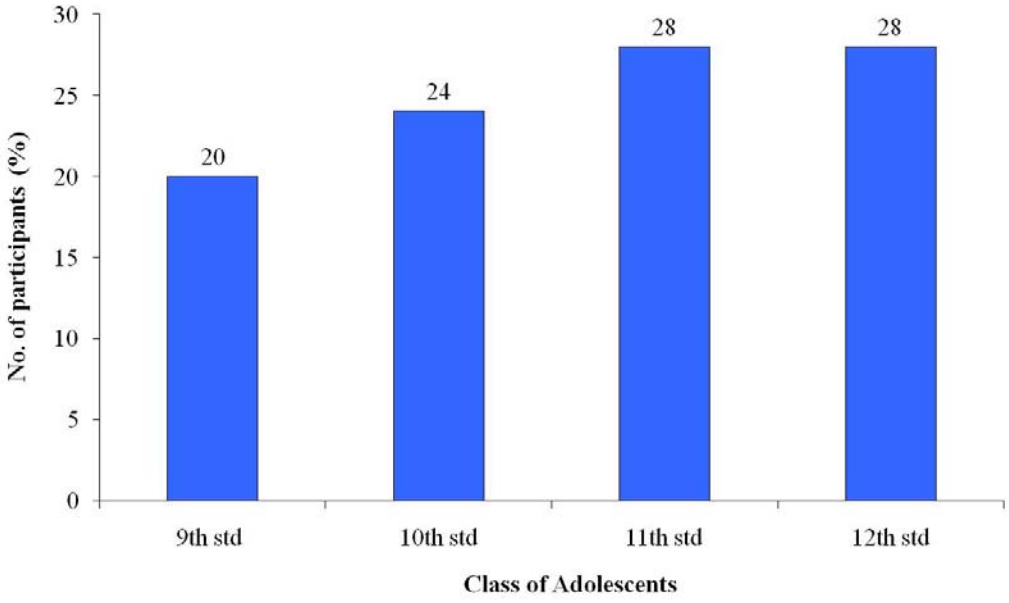


TABLE 4.2.
DISTRIBUTION ON FAMILY PROFILE

(N = 40)

Demographic Variables	No of Participants	Percentage (%)
Education of Father		
Secondary	27	68
Undergraduate	12	30
Post Graduate	1	2
Education of Mother		
Primary	3	7
Secondary	26	65
Undergraduate	8	20
Post Graduate	3	8
Occupation of Father		
Heavy	2	5
Moderate	13	32
Sedentary	25	63
Occupation of Mother		
Working women	9	23
House wife	30	75
Coolie	1	2
Family Income in Rupees		
Below 5,000	11	28

Demographic Variables	No of Participants	Percentage (%)
6,000 – 10,000	24	60
Above 10,000	5	12
Type of Family		
Nuclear family	36	90
Join family	4	10

The table 4.2 reveals that 68 % of father had secondary level education, undergraduate were 30 % and postgraduate were 3 %. The education of mother reveals that 8 % had primary level education, 65 % of mother had secondary level education, 20 % were under graduate and 8 % of mother had post graduation. The occupational status of father reveals that majority (63 %) was sedentary worker, 33 % were moderate worker and 5 % were heavy worker. The occupational status of mother reveals that majority (75 %) was house wife, 23 % were working women and 3 % were coolie. The family income shows that majority (60 %) had Rs. 5000 – Rs. 10000/- as income, 28 % had below Rs. 5000 and 13 % had above Rs.10000. The type of family reveals that majority 90 % had nuclear family and 10 % had joint family.

FIG. 4.3.
DISTRIBUTION OF EDUCATIONAL STATUS OF FATHER AND MOTHER

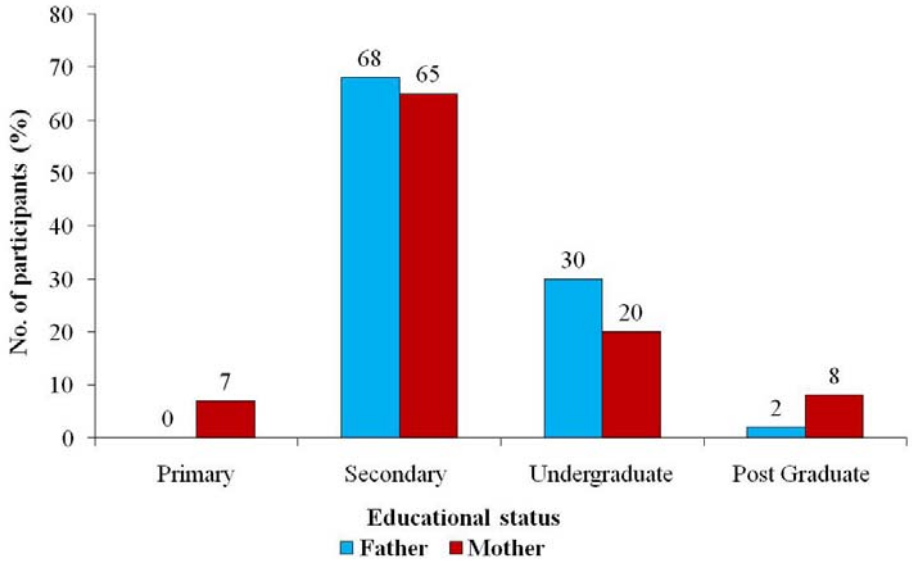


FIG. 4.4
DISTRIBUTION OF OCCUPATIONAL STATUS OF FATHER

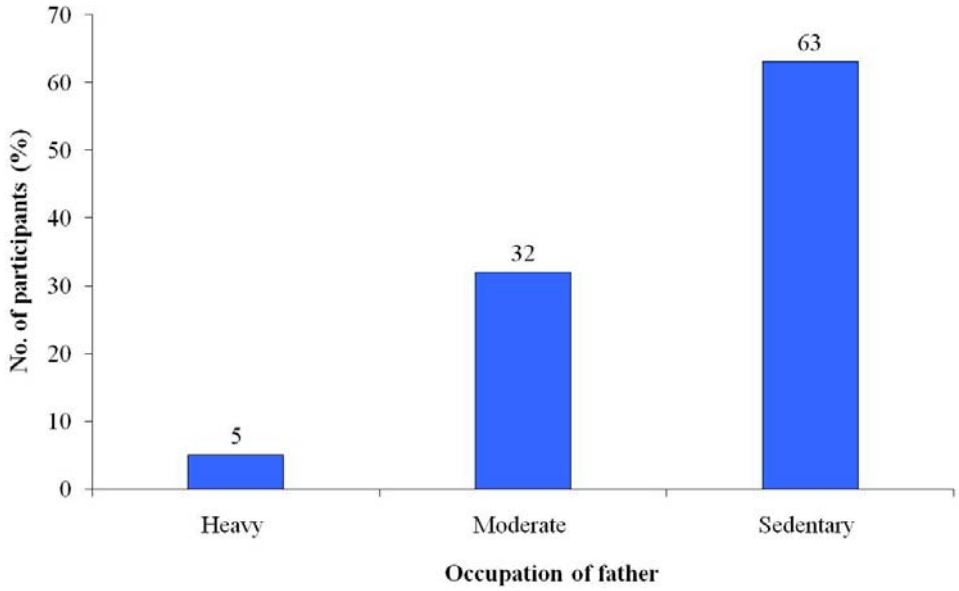


FIG. 4.5.
DISTRIBUTION OF OCCUPATIONAL STATUS OF MOTHER

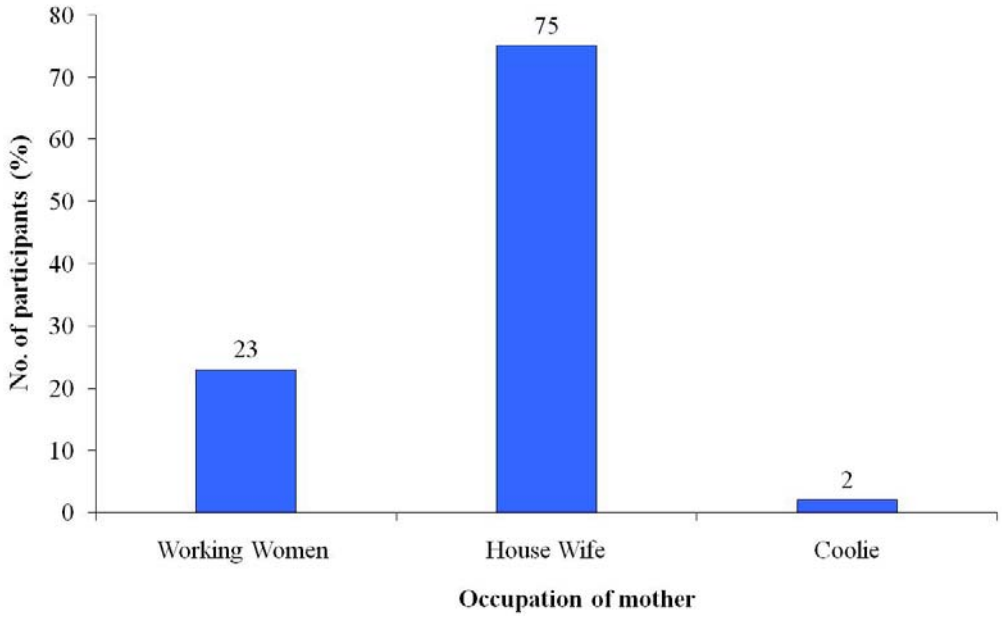


FIG. 4.6
DISTRIBUTION ON FAMILY INCOME OF ADOLESCENT GIRLS

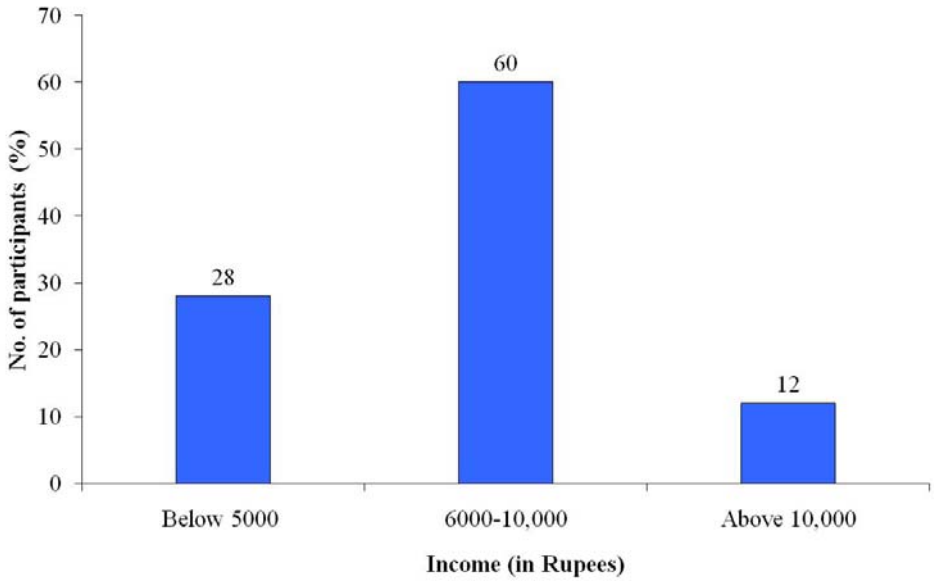
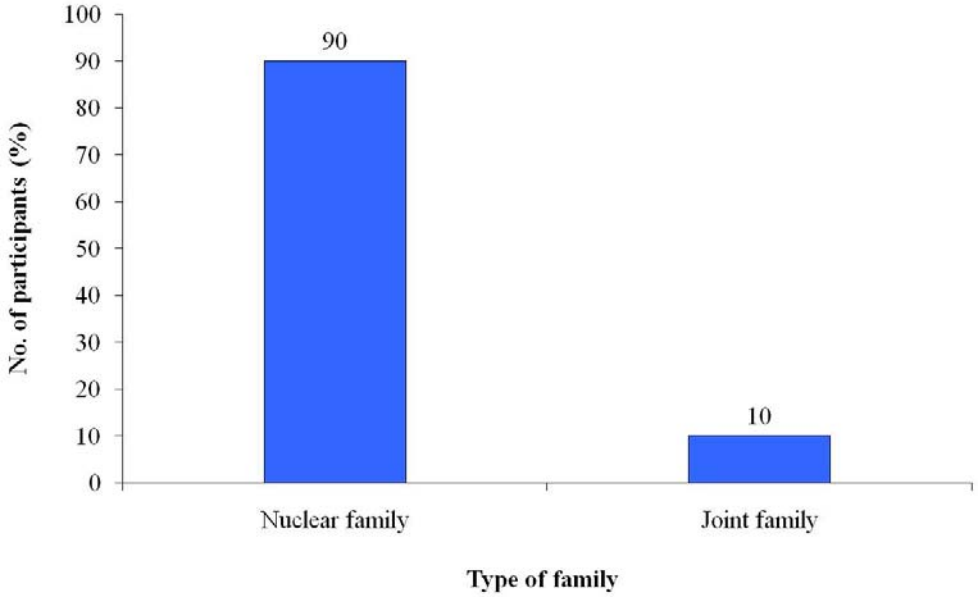


FIG. 4.7
DISTRIBUTION ON TYPE OF FAMILY



SECTION-II

4.2. ASSESSMENT ON STRESS OF ADOLESCENT GIRLS

Stress was assessed with Kindler's Stress Questionnaire and it was categorized mild and moderate level of stress.

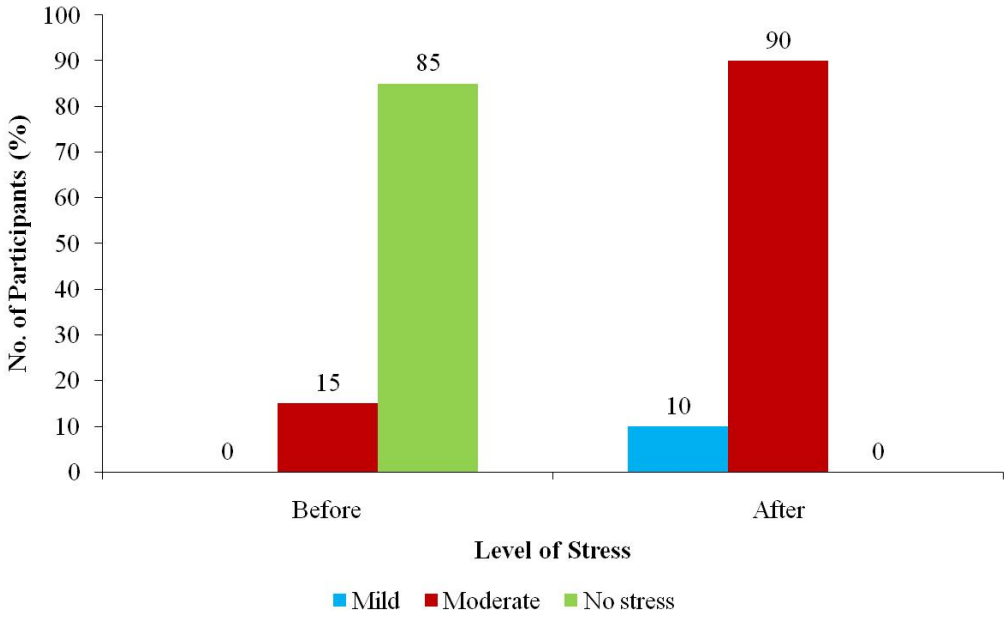
TABLE 4.3.
COMPARISON ON STRESS BEFORE AND AFTER FACIAL REFLEXOLOGY

(N=40)

Level of Stress	Before		After	
	No. of participants	Percentage (%)	No. of participants	Percentage (%)
No stress	-	-	4	10
Mild	6	15	36	90
Moderate	34	85	-	-

The above table shows that 34 samples were found to have moderate stress and 6 samples were found to have mild stress before reflexology. After facial reflexology the samples who were having moderate stress was reduced to mild level of stress and among the 4 samples who were in the mild stress level was changed to no stress level and remaining two samples in the mild stress level was remained as such.

FIG. 4.8
COMPARISON ON STRESS BEFORE AND AFTER FACIAL REFLEXOLOGY



SECTION – III

4.3. ANALYSIS ON EFFECT OF FACIAL REFLEXOLOGY

Paired 't' test was used to analyze the effectiveness of facial reflexology on stress.

TABLE 4.4.
COMPARISON ON THE SOMATIC AND PSYCHOLOGICAL SYMPTOMS SCORE BEFORE AND AFTER FACIAL REFLEXOLOGY

(N=40)

Domain	Before			After			Mean difference	't'
	Mean Score	Mean %	SD	Mean Score	Mean %	SD		
Somatic Symptoms	39.93	48.592	6.645	22.3	29.342	3.163	17.63	15.51**
Psychological symptoms	44.88	59.052	7.153	23.85	31.38	3.806	21.03	19.94**

** Significant at 0.01 level

The above table compares the scores of somatic and psychological symptoms before and after facial reflexology. The mean scores in both the domains decreased after facial reflexology i.e. from 49.93 to 22.3 in somatic symptoms and from 44.88 to 23.85 in psychological symptoms.

An analyzing the mean scores of somatic symptoms and psychological symptoms sub scales of stress in both before and after intervention condition depicts that there is a decrease in mean score level. The calculated 't' value is significant at 0.01 level. Hence, the hypotheses H_1: **"There is significant difference in the somatic symptoms between before and after facial reflexology"** is accepted.

Similarly, the hypothesis H_2: **"There is significant difference in the psychological symptoms between before and after facial reflexology"** is also accepted. This shows that facial reflexology was found to be effective in influencing somatic and psychological symptoms.

TABLE 4.5.
COMPARISON ON THE STRESS SCORES BEFORE & AFTER FACIAL REFLEXOLOGY

(N=40)

Group	Mean score	SD	Mean Percentage	Mean Difference	't'
Pretest	80.6	12.597	53	34.45	19.11**
Post test	46.15	6.397	30.8		

**Significant at 0.01 level.

The above table shows the computed mean and standard deviation of stress score obtained before and after applying facial reflexology to the adolescent girls. The data shows that from a mean score of 80.6, the score decreased to 46.15 with a mean difference of 34.45.

The calculated 't' value 19.11 was greater than the table value at 39 degree of freedom at 0.01 level of significance. So, the Research hypothesis H_3: **"There is a significant difference in stress before and after facial reflexology"** is accepted. This shows that a significant difference exist between the mean scores before and after the facial reflexology. Thus, the difference is statistically significant and it confirms that facial reflexology was effective in reducing stress among adolescent girls.

RESULTS AND DISCUSSION

The present chapter reveals the results and discussion in detail. The analyzed data is being discussed under various sections. 5.1 deals with the demographic data, 5.2 deals with the comparisons on stress based on no stress, mild and moderate score before and after facial reflexology, 5.3 deals with the comparison on the somatic and psychological symptoms score before and after facial reflexology and 5.4 deals with effect of facial reflexology on stress among adolescent girls.

5.1. FINDINGS RELATED TO DEMOGRAPHIC DATA

In the present study 40 samples were included. The table 4.1 reveals that majority of the participants 35 % of adolescent girls were 16 years of age, 30 % of adolescent girls were 15 years of age, 20 % of adolescent girls were 14 years of age 10 % were 13 years old and 5 % of adolescent girls were 17 years of age. The class of adolescent girls reveals that majority (28 %) of the participants were in 11^{th} and 12^{th} respectively, 24 % of adolescent girls were in 10^{th} and 20 % of the adolescent girls were 9^{th}standard. The table 4.2 reveals that 68 % of father had secondary level education, undergraduate were 30 % and postgraduate were 3 %. The education of mother reveals that 8 % had primary level education, 65 % of mother had secondary level education, 20 % were under graduate and 8 % of mother had post graduation. The occupational status of father reveals that majority 63 % were sedentary worker, 33 % were moderate worker and 5 % were heavy worker. The occupational status of mother reveals that majority was house wife 75 %, 23 % were working women and 3 % were coolie. The family income shows that majority 60 % had Rs.5000- 10,000

as income, 28 % had below Rs. 5, 000 and 13 % had above Rs. 10,000. The type of family reveals that majority 90 % had nuclear family and 10 % had joint family.

Robert (2002), conducted a socioeconomic status related to stress study in University of Arkansas at Little Rock, said that several ways measuring socioeconomic status have been proposed, but most include some quantification of family income, parental education, and socioeconomic status. Research shows that socioeconomic status is associated with a wide array of health, cognitive and socio-emotional outcomes in children, with effects beginning prior to birth and continuing in to adulthood. A variety of mechanisms linking socioeconomic status to child well-being have been proposed, with most involving differences in assess to material and social resources or reaction to stress inducing condition by both the adolescent themselves and their parents.

5.2. COMPARISON ON STRESS BASED ON NO STRESS, MILD, AND MODERATE SCORE BEFORE AND AFTER FACIAL REFLEXOLOGY

The table (4.3) reveals that 34 samples were found to have moderate stress and 6 samples were found to have mild stress before reflexology. After facial reflexology the samples who were having moderate stress was reduced to mild level of stress and among the 4 samples who were in the mild stress level was changed to no stress level and remaining two samples in the mild stress level was remained as such.

5.3. COMPARISON ON THE SOMATIC AND PSYCHOLOGICAL SYMPTOMS SCORE BEFORE AND AFTER FACIAL REFLEXOLOGY

The table (4.4) reveals that compares the scores of somatic and psychological symptoms before and after facial reflexology. The mean scores in both the domains

decreased after facial reflexology. i.e. from 49.93 to 22.3 in somatic symptoms and from 44.88 to 23.85 in psychological symptoms.

An analyzing the mean scores of somatic symptoms and psychological symptoms sub scales of stress in both before and after intervention condition depicts that there is a decrease in mean score level. The calculated 't' value is significant at 0.01 level. Hence, the hypotheses H_1: **"There is significant difference in the somatic symptoms between before and after facial reflexology"** is accepted. Similarly, the hypothesis H_2: **"There is significant difference in the psychological symptoms between before and after facial reflexology"** is also accepted. This shows that facial reflexology was found to be effective in influencing somatic and psychological symptoms.

5.4. EFFECT OF FACIAL REFLEXOLOGY ON STRESS AMONG ADOLESCENT GIRLS

The table (4.5) reveals that after administrating the facial reflexology among adolescent girls, the results shows that pretest mean score of 80.6, the post test mean score decreased to 46.15 with a mean difference of 34.45. This proves that facial reflexology has shown positive difference in reduction of stress. The calculated 't' value of stress score was much higher than the table value. The 't' value was obtained in order to find out the significance of facial reflexology on stress among adolescent girls. The calculated 't' value obtained for stress level are 19.117 and compared with the table value at 39 degree of freedom with 0.01level of significance. The calculated value was much higher than the table value, the hypothesis H3: **"There is a significant difference in stress between before and after facial reflexology"** is

accepted. This proved that facial reflexology had effect on stress of adolescent girls. The present result is in line with the study conducted by Ariff (2010), Cornelius & Chrouses (1992). Similarly, another study conducted by in the Manipal University. Supports the present research which is cited in this chapter II. In both the above cited studies, an experimental approach was made. Likewise in the present study an experimental approach was undertaken to confirm the effect of the intervention.

SUMMARY AND CONCLUSION

This chapter summarizes the major findings, limitations, recommendations and implications in the field of nursing education, nursing administration, nursing practice, and nursing research. The study was conducted with the objectives to find out the effect of facial reflexology on stress among adolescent girls. Initially stress was assessed by Kindler's Stress Questionnaire. Facial reflexology administered for period of 6 days twice daily and level of stress was reassessed with same questionnaire.

The conceptual framework of this study was based up on Bertanlaffy's general system theory (1980). A quantitative approach was used for the study. Review of literature brought out many facts about massage and foot reflexology on stress. And it also highlighted the effect of facial reflexology on stress.

This study was conducted at Sri Ramakrishna Matriculation Higher Secondary School, Coimbatore. A quasi-experimental one group pre test and post test design was adopted for the study; stratified randomized sampling method was used to select the samples for the study. Total numbers of samples selected for the study was 40. Paired't' test was used to find out the effect before and after the facial reflexology. This study indicates that the administration of facial reflexology reduced the level of stress among adolescent girls.

6.1. MAJOR FINDINGS OF THE STUDY

1. The personal information reveals that 15 percent of adolescent girls had mild stress and 85 percent had moderate stress.

2. The study shows that facial reflexology was found to be effective in reducing stress among adolescent girls.
3. The result shows that facial reflexology was found to be effective in reducing somatic symptoms and psychological symptoms.

6.2. LIMITATIONS

1. The study was limited to one setting only.
2. Size of the sample is small, which limits generalization.
3. The study was limited to one month duration.

6.3. RECOMMENDATIONS

1. The study can be replicated with a larger size for wider generalization of findings.
2. A similar study can be conducted among shift workers of various disciplines such as staff nurses, police personnel and IT workers.
3. A similar long term study can be conducted to determine the association of demographic variables with stress.
4. A follow-up study can be conducted to determine the level of stress.
5. Facial reflexology can be structured for depression, headache and anxiety disorder.
6. Facial reflexology can be structured for treatment modalities among stress related adolescent girls.

6.4. NURSING IMPLICATIONS

6.4.1. Nursing Education

Facial reflexology interventions have primary focus on stress and to cope with stressful situations. Facial reflexology is a natural, non-invasive and simple method and can be used by a person aiming to reduce the level of stress and its implication needs wide knowledge and practice. This facial reflexology can be included in the nursing curriculum.

6.4.2. Nursing Administration

The nurse administrator can draw written policies regarding facial reflexology to reduce stress and cope with stressful situations. Thereby the staff nurses are kept in pace with the evidence based practice.

6.4.3. Nursing Practice

Facial reflexology helps us to cope with the stressful situations. Nurses are prone to have stress since the multivariance and multidimensional form of their profession can be practiced this technique as a routine and rest rooms be set up in offices and relaxation techniques like meditation, deep breathing exercise or yoga to be practiced in between working hours.

6.4.4. Nursing Research

The effect of facial reflexology in reducing the level of stress of various disciplines such as staff nurses, factory workers, police personals, and social workers could be studied. And the relationship between stress and health consequences to be studied. The incidence and prevalence of stress in vulnerable populations like IT professional also could be studied. Since importance to mental health is as important

as physical health alternative methods like facial reflexology can be used to cope up with stressful conditions.

6.5. CONCLUSION

Modern life style is becoming more stressful and people are overloaded with stress. Adolescents health status is also strongly influenced by family, social, economic and cultural factors as well as environmental hazards to which they are exposed. Adolescents suffer from many problems because of high stress level. Thus stress among the adolescent girls must be managed in a timely manner using effective coping strategies like positive thinking, exercise, meditation, music therapy, laughter therapy and facial reflexology. The researcher adopted the facial reflexology among adolescent girls to reduce the stress level. The result in the present study reveals that facial reflexology is effective in reducing the level of stress.

References

Anspaugh, D. J., et al., (2009). Coping with and Managing Stress. (7th Ed.), Newyork: McGraw- hill 312 – 329.

Axellrad, A. D., & Ariff. (2009). Text Book of Psychiatry. (9th Ed.), Lippincott Williams and Wilkins, 2804 – 2832 .

Barbara & Kevin Kunz. (2007). Complementary Therapeutic Clinical Practice, Institute of Health and Social Care. *13 (3):* 137-145. Retrieved August 7, 2007 from http://www.reflexology-research.com/newabstracts.htm/

Bennett, D. (2003). Evidence Based Complement Alternative Medicine. 3(2): 187-190. Retrieved June 1, 2003 from http://www.evid.based complement alternative medi.com year=2003; volume=3; issue=2; spage=187; epage=190.

Bonthron, S. (2000). Reflexology and the Critically Ill Focus on Alternative and Complementary Therapy. 5(2); 86-87. Retrieved August 11, 2011 from http:// www.reflexology-research.com.

Braun, M. S. & TorbjornTorshein.(2003). School Related Stress, Support and Subjective Health Complaints among Early Adolescent.*Journal of Adolescent*: 26 (6)., 773. Retrieved October 13, 2011from http://www.cdc.gov/healthyouth/yrbs/index.htm

Brinda Williams. (2011). Reflexology Stress Relief and Stress Management. Retrieved April 7, 2011,from
http://www.reflexology for stress management.com

Cathesine & DrennanVari. (2007). Using reflexology (for Mental Health Concerns); Afeasibility Study. *Mental Health Nursing*. 2(6); 14-17.

Carie, A., Linda, H., & Bearinger.(2003). Adolescent Use of Complementary Therapy.Retrieved July 9, 2011 from http://www.complementary therapy.com

Chen-Guang. (2004). Exploring the Application of Reflexologyto the Treatment of Arthritis. China Reflexology Association Beijing; 2(1): 62.

Chrouses, G. P., &Cornelius.(1992). Regulation and Dysregulationof the Hypothalamic- Pituitary Adrenal Axis.Clinics of North America, 21, 833-858.

Chrouses, G. P., &Gold, P. W.(1992).The Concepts of Stress and Stress System Disorder, *Journal of the American Medical Association.* 267; 1244-1252.

Das, R., Navak, B. S., & Margaret, B. (2009). Facial Reflexology and Physical Stress among High School Students. 48(4), 380 – 7 .

Dimsdale, J. E., et al., (2009). Stress and Psychiatry and Comprehensive Text Book of Psychiatry. (9th Ed.)., Lippincott Williams and Wilkins, 2407 – 2423.

William, H., Fitzgerald. (2002). Uses the Concept that Energy within the Body Flows through Ten Vertical Zones that Run from Head to toe.*Journal of Alternative Health;*34.

Gail, W. (2000). A Study on the Effect of Reflexology on Migraine Headache, Stress. 5(2): 139. Retrieved November 7, 2011 from http://www.effect-of-reflexology-on-stress- headache; year=2000; volume=5; issue=2; spage=139.

GaoWa, Wang Zhen & Liu Haige. (1996). Preliminary Exploration of Treatment for Insomnia, China Reflexology Symposium Report, China Reflexology Association, Beijing, 91(13). Retrieved July 17, 2011 from http://www. reflexology.for.insomnia.com; year=1996; volume=91; issue=13/

Gupta, S. P. (2007). Statistical Methods.(11th Ed.)., New Delhi; Sultan chand and Sons Publications.

Griffiths, P. (2000). Using Reflexology for Stress Management.*Journal of HolisticNursing*,Jun;21(2):179-91.

Hanney Avarachan, A. & Hanlon. (2010). Say Goodbye to Stress Enhance Coping Strategies. *Journal of Nightingale Nursing Times, 5, 17-20*. Retrieved from http://www.stress.com

Jason, D., & Boardman. (2006). Benefit of Facial Reflexology. *Journal of Adolescent Health*, 38 *(4)*, University of Colorado at Boudler, 219.

Jin, S. J., & Kim, Y. H. (2005). The Effect of Reflexology on Sleep and Fatigue. Catholic University of Pusan,http://eziniearticles.com/?health-benefit-of-Face-Reflexology&id=2230007

Julia. (1990). Nursing Theory the Base for Professional Nursing Practice. (3rd Ed.)., Morwall, Appletore and Lone Publication.

Gordon, J. S., Alderl, E. M., Matthews Smith, G., & Wilson, D. C. (2006). The Effectiveness of Reflexology as an Adjunct to Treatment in Childhood Idiopathic Constipation.Napies University; 91(13). Retrieved July 17, 2006 from http://wwwpt.wkhealth.com/

Kendler, K. S., Sullivan, P. F. & Neale, J. M. (2000). Genetic Epidemiology of Major Depression. Review and meta analysis. 157: 1552- 1562

Kim, Y. H. & Cho, S. H. (2002). The Effect of Reflexology on Premenstrual Syndrome and Dysmenorrheal.CheonCheon Am College, Korea; 22(3):145.

Korean & Samcheok. (2011). Self Foot Reflexology Can Reduce Stress and Fatigue among Undergraduate Students.

Kothari, C. R. (2007). Research Methodology. (6th Ed.), New Delhi.Wiley Eastern Ltd.

Kozier, E. (2009). Fundamentals of Nursing. A System Approach, (3rd Ed.), W.B. Saunder's Company.

Kunz & Katie Scarvey.(2003). Reflexology on Stress Management.*Journal of India;*22(2).

Lewinsohn, N. (2011). Reducing Stress in School Age Girls through Mindful Yoga. *Journal of Alternative and Complementary Medicine:*2: 39-43

Lee, Y. M. (2006). Effect of Reflexology on Climacteric Symptom, Fatigue and Physiological of Middle Aged Women, Department of Nursing, Inje University, *18(2);* 292.

Lone Sorensen. (2010). Facial Reflexology Offers Relief in Stress, Insomnia and Headache, *Journal of India; 22(2).*

Lucini, D., Malacarne, M. & Lafuente. (2009). Complementary Medicine for the Management of Chronic Stress. *27(12),* University of Milano, Italy, 2481-8.

Margaret, B. (2010). Knowledge and coping pattern among adolescents.*Journal of Nightingale Nursing Times;* 6:56-59.

MohitJoshi. (2010). Facial Reflexology Offers Relief in Stress Insomnia, 7(2)., London. Retrieved February 10, 2011 from http://www.thaindian.com/newsportal/health/facial reflexology-offers-relief-in-stress-insomnia.

Motzes, S. A. & Hertig, V. (2004). Stress Response and Health, Nursing Clinics of North America.39:1 – 17.

Murray, M. T. & Pizzorma, J. E. (2006). Stress Management. (3rd Ed.)., St. Louis Churchill Living Stone, 701-708.

Murray, M. T., Pizzorma, J. E. & Steve Ibach. (2006). Text Book of Natural Medicine. (3rd Ed.), St.Louis Churchill Living Stone, 706-708.

Neelam Sharma. (2009). Effect of Yoga academic Performance in relation to stress, 2(1): 339- 43. Retrieved July 17, 2009 from http://www.ijoy.in/article.asp? issn= 0973-6131, year=2009; volume=2; issue=1;spage=39; epage=43; aulast=kauts.

Nikke Tariff. (2010).TheEffectiveness of Facial Reflexology. *Journal of India;* 22(2).

Swaminathan, M. A. (2008). Adolescent Health Problems.*Journal of Health Action;* 6(5).

Parker, G. (2000). Parental Characteristics in Relation to Stress and Depressive Disorders.134: 138-147.

Perry, P. (2004). Fundamentals of Nursing. (6th Ed.), Mosby Publication, 598-601

Phipps. (2009). Medical Surgical Nursing. (8th Ed.), Elsevier, 38.

Planning Commission. (2011). Retrieved October 20, 2011 from http://www planning commission.nic,in) about us/committee/wrkgrp 12/hrd/wg-repadolsent.pdf.

Polit, F. D. & Hungler, P. B. (2008). Nursing Research Principles and Methods. (6th Ed.), Philadelphia: Lippincott Publications.

Rao, P. S. & Richard, J. (1996). An Introduction to Biostatistics. (3rd Ed.), New Delhi. Practice Hall of India, Pvt. Ltd.

Rita Woods, Midwest & Petty. (2010). Effect of Facial Reflexology to Reduce Stress. 2(9). Retrieved February7,2009 from http://www.*Journalof India*/2009/facial reflexology-relief-in-stress

Robert, H., Bradley & Robert, F. (2002). Socioeconomic Status and Child Development. (53), University of Arkansas at Little Bock, 2801-2803.

Selye, H. (1996). Humanantidote for Antidote for stress. Retrieved fromJuly 11, 2011 from http://www.stressmanagement. Com.

Shiatsu. (2010). TheEffectiveness of Facial Reflexology Relief in Stress, Pain, Insomnia and Irritable Bowel Syndrome. *Journal of India*: 22(2). Retrieved November 4, 2011 from http://www.thaindian.com/newsportal/health1/facial-reflex ology-offers-relief-in-stress

Sieving, R. E. & Bearinger.(2001). Development of Adolescent Self Report Measure from the National Longitudinal Study of Adolescent Health.*Journal of Adolescent Health*: 28: 73-81.

Sodock, B. J. & Sadock, S. A., (2007). Psychological Factors Affecting Physical Conditions Section of Psychosomatic Medicine.(10th Ed.)., India, Lippincott Williams and wilkins, 813-828.

Stephens, C., Long, N. & Miller, L. (1998).The Impact of Trauma and Social Support of Post Traumatic Stress Disorders.Marrey University, New Zeland

Stephenson, N. L. & Dalton, J. A. (2003). Using Reflexology for Pain Management. *Journal of Holistic Nursing.*21(2): 179-91.

Stewart, et al., (1989).The American Migraine Study. *Journal of American Medical Association.* 267(1), 63-69.

World Health Organization. (2001). Stress statistics retrieved from July 12, 2011 from http://www.stress-statistics2011.com

Wooten & Patty. (1996). Humor: An Antidote for stress. Holistic Nursing Practice. 10(2):49-56. Retrieved July 20, 2011 from http://www.rnao.org/storage /11/ 600=stress.com.

World Health Organization. (2011). Retrieved October 15, 2011 from http://www.worldhealthorganization.com /stress-statistics report on 2011.

Zhensheng, Wu, Xizhen & Weiyu. (2004). Reflexology in Treating Adolescent Myopia, China Reflexology Symposium Report, 2(6); 40.

References

Anspaugh, D. J., et al., (2009). Coping with and Managing Stress. (7th Ed.), Newyork: McGraw- hill 312 – 329.

Axellrad, A. D., & Ariff. (2009). Text Book of Psychiatry. (9th Ed.), Lippincott Williams and Wilkins, 2804 – 2832 .

Barbara & Kevin Kunz. (2007). Complementary Therapeutic Clinical Practice, Institute of Health and Social Care. *13 (3):* 137-145. Retrieved August 7, 2007 from http://www.reflexology-research.com/newabstracts.htm/

Bennett, D. (2003). Evidence Based Complement Alternative Medicine. 3(2): 187-190. Retrieved June 1, 2003 from http://www.evid.based complement alternative medi.com year=2003; volume=3; issue=2; spage=187; epage=190.

Bonthron, S. (2000). Reflexology and the Critically Ill Focus on Alternative and Complementary Therapy. 5(2); 86-87. Retrieved August 11, 2011 from http:// www.reflexology-research.com.

Braun, M. S. & TorbjornTorshein.(2003). School Related Stress, Support and Subjective Health Complaints among Early Adolescent.*Journal of Adolescent*: 26 (6)., 773. Retrieved October 13, 2011from http://www.cdc.gov/healthyouth/yrbs/index.htm

Brinda Williams. (2011). Reflexology Stress Relief and Stress Management. Retrieved April 7, 2011,from
http://www.reflexology for stress management.com

Cathesine & DrennanVari. (2007). Using reflexology (for Mental Health Concerns); Afeasibility Study. *Mental Health Nursing*. 2(6); 14-17.

Carie, A., Linda, H., & Bearinger.(2003). Adolescent Use of Complementary Therapy.Retrieved July 9, 2011 from http://www.complementary therapy.com

Chen-Guang. (2004). Exploring the Application of Reflexologyto the Treatment of Arthritis. China Reflexology Association Beijing; 2(1): 62.

Chrouses, G. P., &Cornelius.(1992). Regulation and Dysregulationof the Hypothalamic- Pituitary Adrenal Axis.Clinics of North America, 21, 833-858.

Chrouses, G. P., &Gold, P. W.(1992).The Concepts of Stress and Stress System Disorder, *Journal of the American Medical Association.* 267; 1244-1252.

Das, R., Navak, B. S., & Margaret, B. (2009). Facial Reflexology and Physical Stress among High School Students. 48(4), 380 – 7 .

Dimsdale, J. E., et al., (2009). Stress and Psychiatry and Comprehensive Text Book of Psychiatry. (9th Ed.)., Lippincott Williams and Wilkins, 2407 – 2423.

William, H., Fitzgerald. (2002). Uses the Concept that Energy within the Body Flows through Ten Vertical Zones that Run from Head to toe.*Journal of Alternative Health;*34.

Gail, W. (2000). A Study on the Effect of Reflexology on Migraine Headache, Stress. 5(2): 139. Retrieved November 7, 2011 from http://www.effect-of-reflexology-on-stress- headache; year=2000; volume=5; issue=2; spage=139.

GaoWa, Wang Zhen & Liu Haige. (1996). Preliminary Exploration of Treatment for Insomnia, China Reflexology Symposium Report, China Reflexology Association, Beijing, 91(13). Retrieved July 17, 2011 from http://www. reflexology.for.insomnia.com; year=1996; volume=91; issue=13/

Gupta, S. P. (2007). Statistical Methods.(11th Ed.)., New Delhi; Sultan chand and Sons Publications.

Griffiths, P. (2000). Using Reflexology for Stress Management.*Journal of HolisticNursing*,Jun;21(2):179-91.

Hanney Avarachan, A. & Hanlon. (2010). Say Goodbye to Stress Enhance Coping Strategies. *Journal of Nightingale Nursing Times, 5, 17-20*. Retrieved from http://www.stress.com

Jason, D., & Boardman. (2006). Benefit of Facial Reflexology. *Journal of Adolescent Health*, 38 *(4)*, University of Colorado at Boudler, 219.

Jin, S. J., & Kim, Y. H. (2005). The Effect of Reflexology on Sleep and Fatigue. Catholic University of Pusan,http://eziniearticles.com/?health-benefit-of-Face-Reflexology&id=2230007

Julia. (1990). Nursing Theory the Base for Professional Nursing Practice. (3rd Ed.)., Morwall, Appletore and Lone Publication.

Gordon, J. S., Alderl, E. M., Matthews Smith, G., & Wilson, D. C. (2006). The Effectiveness of Reflexology as an Adjunct to Treatment in Childhood Idiopathic Constipation.Napies University; 91(13). Retrieved July 17, 2006 from http://wwwpt.wkhealth.com/

Kendler, K. S., Sullivan, P. F. & Neale, J. M. (2000). Genetic Epidemiology of Major Depression. Review and meta analysis. 157: 1552- 1562

Kim, Y. H. & Cho, S. H. (2002). The Effect of Reflexology on Premenstrual Syndrome and Dysmenorrheal.CheonCheon Am College, Korea; 22(3):145.

Korean & Samcheok. (2011). Self Foot Reflexology Can Reduce Stress and Fatigue among Undergraduate Students.

Kothari, C. R. (2007). Research Methodology. (6th Ed.), New Delhi.Wiley Eastern Ltd.

Kozier, E. (2009). Fundamentals of Nursing. A System Approach, (3rd Ed.), W.B. Saunder's Company.

Kunz & Katie Scarvey.(2003). Reflexology on Stress Management.*Journal of India;*22(2).

Lewinsohn, N. (2011). Reducing Stress in School Age Girls through Mindful Yoga. *Journal of Alternative and Complementary Medicine:*2: 39-43

Lee, Y. M. (2006). Effect of Reflexology on Climacteric Symptom, Fatigue and Physiological of Middle Aged Women, Department of Nursing, Inje University, *18(2);* 292.

Lone Sorensen. (2010). Facial Reflexology Offers Relief in Stress, Insomnia and Headache, *Journal of India; 22(2).*

Lucini, D., Malacarne, M. & Lafuente. (2009). Complementary Medicine for the Management of Chronic Stress. *27(12),* University of Milano, Italy, 2481-8.

Margaret, B. (2010). Knowledge and coping pattern among adolescents.*Journal of Nightingale Nursing Times;* 6:56-59.

MohitJoshi. (2010). Facial Reflexology Offers Relief in Stress Insomnia, 7(2)., London. Retrieved February 10, 2011 from http://www.thaindian.com/newsportal/health/facial reflexology-offers-relief-in-stress-insomnia.

Motzes, S. A. & Hertig, V. (2004). Stress Response and Health, Nursing Clinics of North America.39:1 – 17.

Murray, M. T. & Pizzorma, J. E. (2006). Stress Management. (3rd Ed.)., St. Louis Churchill Living Stone, 701-708.

Murray, M. T., Pizzorma, J. E. & Steve Ibach. (2006). Text Book of Natural Medicine. (3rd Ed.), St.Louis Churchill Living Stone, 706-708.

Neelam Sharma. (2009). Effect of Yoga academic Performance in relation to stress, 2(1): 339- 43. Retrieved July 17, 2009 from http://www.ijoy.in/article.asp? issn= 0973-6131, year=2009; volume=2; issue=1;spage=39; epage=43; aulast=kauts.

Nikke Tariff. (2010).TheEffectiveness of Facial Reflexology. *Journal of India;* 22(2).

Swaminathan, M. A. (2008). Adolescent Health Problems.*Journal of Health Action;* 6(5).

Parker, G. (2000). Parental Characteristics in Relation to Stress and Depressive Disorders.134: 138-147.

Perry, P. (2004). Fundamentals of Nursing. (6th Ed.), Mosby Publication, 598-601

Phipps. (2009). Medical Surgical Nursing. (8th Ed.), Elsevier, 38.

Planning Commission. (2011). Retrieved October 20, 2011 from http://www planning commission.nic,in) about us/committee/wrkgrp 12/hrd/wg-repadolsent.pdf.

Polit, F. D. & Hungler, P. B. (2008). Nursing Research Principles and Methods. (6th Ed.), Philadelphia: Lippincott Publications.

Rao, P. S. & Richard, J. (1996). An Introduction to Biostatistics. (3rd Ed.), New Delhi. Practice Hall of India, Pvt. Ltd.

Rita Woods, Midwest & Petty. (2010). Effect of Facial Reflexology to Reduce Stress. 2(9). Retrieved February7,2009 from http://www.*Journalof India*/2009/facial reflexology-relief-in-stress

Robert, H., Bradley & Robert, F. (2002). Socioeconomic Status and Child Development. (53), University of Arkansas at Little Bock, 2801-2803.

Selye, H. (1996). Humanantidote for Antidote for stress. Retrieved fromJuly 11, 2011 from http://www.stressmanagement. Com.

Shiatsu. (2010). TheEffectiveness of Facial Reflexology Relief in Stress, Pain, Insomnia and Irritable Bowel Syndrome. *Journal of India*: 22(2). Retrieved November 4, 2011 from http://www.thaindian.com/newsportal/health1/facial-reflex ology-offers-relief-in-stress

Sieving, R. E. & Bearinger.(2001). Development of Adolescent Self Report Measure from the National Longitudinal Study of Adolescent Health.*Journal of Adolescent Health*: 28: 73-81.

Sodock, B. J. & Sadock, S. A., (2007). Psychological Factors Affecting Physical Conditions Section of Psychosomatic Medicine.(10th Ed.)., India, Lippincott Williams and wilkins, 813-828.

Stephens, C., Long, N. & Miller, L. (1998).The Impact of Trauma and Social Support of Post Traumatic Stress Disorders.Marrey University, New Zeland

Stephenson, N. L. & Dalton, J. A. (2003). Using Reflexology for Pain Management. *Journal of Holistic Nursing.*21(2): 179-91.

Stewart, et al., (1989).The American Migraine Study. *Journal of American Medical Association.* 267(1), 63-69.

World Health Organization. (2001). Stress statistics retrieved from July 12, 2011 from http://www.stress-statistics2011.com

Wooten & Patty. (1996). Humor: An Antidote for stress. Holistic Nursing Practice. 10(2):49-56. Retrieved July 20, 2011 from http://www.rnao.org/storage /11/ 600=stress.com.

World Health Organization. (2011). Retrieved October 15, 2011 from http://www.worldhealthorganization.com /stress-statistics report on 2011.

Zhensheng, Wu, Xizhen & Weiyu. (2004). Reflexology in Treating Adolescent Myopia, China Reflexology Symposium Report, 2(6); 40.

FORMAT FOR CONTENT VALIDITY

Name of the expert: MRS. JAENY KEMP M.SC(N) PhD

Address: PRINCIPAL,
G.K.N.M INSTITUTE OF NURSING,
COIMBATORE

Kindly validate each tool and tick wherever applicable

S.No	Sections of the tool	Strongly agree	Agree	Needs modification	Remarks
1	SECTION A	✓			
2	SECTION B	✓			
3	'SECTION C	✓			

Total content for the tool : Adequate /Inadequate

Date:

Signature of the expert

JAENY KEMP
PRINCIPAL
INSTITUTE OF NURSING
G.K.N.M. HOSPITAL
COIMBATORE- 641 037.

FORMAT FOR CONTENT VALIDITY

Name of the expert:

Address: DR. S.L. RAVI SHANKAR, M.B.B.S., M.D.
PROFESSOR,
DEPARTMENT OF COMMUNITY MEDICINE.
P.S.G. INSTITUTE OF MEDICAL SCIENCES AND RESEARCH,
COIMBATORE.

Kindly validate each tool and tick wherever applicable

S.No	Sections of the tool	Strongly agree	Agree	Needs modification	Remarks
1.	SECTION A		✓		
2	SECTION B		✓		
3	SECTION C		✓		

Total content for the tool : Adequate /Inadequate

Date:

Signature of the expert

PROFESSOR OF COMMUNITY MEDICINE
P.S.G. Institute of Medical Sciences
COIMBATORE-641 004

From
Ms.J.Anitha
M.Sc Nursing I year,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

To

MRS. JAENY KEMP M.SC(N) PhD
PRINCIPAL
G.K.N.M INSTITUTE OF NURSING
COIMBATORE

Through
The Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

Sub: Requisition for content validity

Respected Madam,

I Ms.J.Anitha doing my M.Sc (N) I Year in College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, as a part of my curriculum requirement under The Tamil Nadu Dr. M.G.R. Medical University has to conduct Research, I have selected study on **"EFFECT OF FACIAL REFLEXOLOGY TO REDUCE STRESS AMONG ADOLESCENTS GIRLS AT SRI RAMAKRISHNA SCHOOL, IN COIMBATORE".**

I sincerely request to extend your guidance for my content validity.

Thanking you,

Yours faithfully,

Coimbatore

Date: 8/3/11

THE PRINCIPAL
College of Nursing
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore-641004.

[J. Anitha]

APPENDIX – II
LETTER REQUESTING TO VALIDATE
THE RESEARCH TOOL AND CONTENT

From
Ms.J.Anitha
M.Sc Nursing I year,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

To

THE PRINCIPAL,
R.V.S COLLEGE OF NURSING
SULUR,
COIMBATORE.

Through
The Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

Sub: Requisition for content validity

Respected Madam,

I Ms.J.Anitha doing my M.Sc (N) I Year in College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, as a part of my curriculum requirement under The Tamil Nadu Dr. M.G.R. Medical University has to conduct Research, I have selected study on **"EFFECT OF FACIAL REFLEXOLOGY TO REDUCE STRESS AMONG ADOLESCENTS GIRLS AT SRI RAMAKRISHNA SCHOOL, IN COIMBATORE".**

I sincerely request to extend your guidance for my content validity.

Thanking you,

Yours faithfully,

for R. Kamaleela
PRINCIPAL
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044.

[J. ANITHA]

Coimbatore

Date: 11/3/11

APPENDIX - I

PERMISSION LETTER FOR CONDUCTING THE STUDY

From
J.Anitha,
M.Sc Nursing II year,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

To
The principal,
Sri Ramakrishna Matriculation Higher Secondary School,
S.N.R. College Road,
Coimbatore.

Through
The Principal,
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences,
Coimbatore -44.

Sub: Letter requesting permission for conduct the research study.

Respected Sir,

I J.Anitha doing my M.Sc (N) II Year in College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, as a part of my curriculum requirement under The Tamil Nadu Dr. M.G.R. Medical University has to conduct Research, I have selected study on **"EFFECT OF FACIAL REFLEXOLOGY TO REDUCE STRESS AMONG ADOLOSCENT GIRLS AT RAMAKRISHNA MATRICULATION SCHOOL IN COIMBATORE".**

I kindly request you grant me permission from june 20th to july 20th . I assure that I will abide the rules of the institution and information collected from the study participants will not be disclosed.

Thanking you,

Yours faithfully,

Coimbatore

Date:

(J.ANITHA)

PRINCIPAL
College of Nursing,
Sri Ramakrishna Institute of Paramedical Sciences
Coimbatore - 641 044.

PRINCIPAL
SRI [illegible] MATRIC. HR. SEC. SCHOOL
(Edu[illegible] N.R. Sons Charitable Trust)
S.N.R. Co[illegible] Road,
Coimbatore - 641 006.

APPENDIX – VIII

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation, **"Effect of Facial Reflexology on Stress among Adolescent Girls at Sri Ramakrishna Matriculation Higher Secondary School ,Coimbatore."** done by **J.Anitha** II year M.Sc Nursing, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore, has been edited for Tamil language appropriateness.

Name : K. PARIJATHAM

Designation : TEACHER (TAMIL) M.A., M.PHIL. B.Ed.

Name of the Institution : SRI RAMAKRISHNA MAT. HR. SEC. SCHOOL.

Signature K. Parijatham

SRI RAMAKRISHNA MATRIC HR. SEC. SCHOOL
[Educational Service Mis S.N.R. Sons Charitable Trust]
S.N.R. College Road, Coimbatore - 641 006.

FORMAT FOR CONTENT VALIDITY

Name of the expert: MRS. SARASAMUVEL

Address: PRINCIPAL
R.V.S COLLEGE OF NURSING
SULUR
COMBATORE

Kindly validate each tool and tick wherever applicable

S.No	Sections of the tool	Strongly agree	Agree	Needs modification	Remarks
1 .	SECTION A				
2	SECTION B				
3	SECTION C				

Total content for the tool : Adequate /Inadequate

Date: 10-04-11

10-04-11
Signature of the expert

APPENDIX – VI

TRAINING CERTIFICATE OF FACIAL REFLEXOLOGY

36, VENKATASAMY LAYOUT,
OFF V.K.K. MENON ROAD,
SIDDHAPUDUR, COIMBATORE 641044,
TAMIL NADU
Mobile: +91 98435 04444
Email: yovan36@gmail.com

JOHN ANDREWS,
Health Care consultant
& Reflexologist

GRACE HEALTH CARE

REFLEXOLOGY & VARMAKALAI SPECIALITY TREATMENT

CERTIFICATE

This is to certify that .....ANITHA...J.....

..... has undergone ~~Acupressure~~/ Reflexology

Therapy course and successfully completed the theory, practical examination in

February 2011.

Date:
3/2/2011

Director

CONSULTING TIME: 9AM – 6 PM (WITH PRIOR APPOINTMENT ONLY)

APPENDIX – VII

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation, **"Effect of Facial Reflexology on Stress among Adolescent Girls at Sri Ramakrishna Matriculation Higher Secondary School ,Coimbatore."** done by **J.Anitha** II year M.Sc Nursing, College of Nursing, Sri Ramakrishna Institute of Paramedical Sciences, Coimbatore, has been edited for English language appropriateness.

Name : C. RAJASEKAR.

Designation : Associate Prof. in Physics

Name of the Institution : Kongunadu Arts & Science College Coimbatore -29.

Signature

FORMAT FOR CONTENT VALIDITY

Name of the expert: PROF. SIVAGAMI. RM.

Address: VICE - PRINCIPAL / HOD - Comm. H. NSG,
KMCH COLLEGE OF NSG,
CBE - 14.

Kindly validate each tool and tick wherever applicable

S.No	Sections of the tool	Strongly agree	Agree	Needs modification	Remarks
1 .	SECTION A	✓	—	—	—
2	SECTION B	✓	—	—	—
3	SECTION C	✓	—	—	—

Total content for the tool : ✓ Adequate /Inadequate

Date: 15/03/11

Rm. Swayan

Signature of the expert

Prof Sivagami Rammathan
HOD (Nursing)