

**THE EFFECT OF ACUPRESSURE ON LOW BACK
PAIN AND DISABILITY AMONG FEMALE SCHOOL
TEACHERS IN SELECTED
SCHOOL AT TRICHY.**



Dissertation submitted to

**THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY
CHENNAI**

IN PARTIAL FULFILLMENT OF REQUIREMENT
FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2016

**THE EFFECT OF ACUPRESSURE ON LOW BACK
PAIN AND DISABILITY AMONG FEMALE SCHOOL
TEACHERS IN SELECTED
SCHOOLS AT TRICHY.**

Certified that this is the bonafide work of

Reg. No: 301411705,

**MEDICAL SURGICAL NURSING,
THANTHAI ROEVER COLLEGE OF NURSING,
PERMBALUR**

COLLEGE SEAL :

SIGNATURE :

Prof. R.PUNITHAVATHI, M.Sc (N),
Principal,
Thanthai Roever College of Nursing,
Perambalur ,Tamil Nadu.

Dissertation submitted to

**THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY
CHENNAI**

IN PARTIAL FULFILLMENT OF REQUIREMENT
FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2016

**THE EFFECT OF ACUPRESSURE ON LOW BACK
PAIN AND DISABILITY AMONG FEMALE SCHOOL
TEACHERS IN SELECTED
SCHOOL AT TRICHY.**

Approved by the Dissertation Committee On : _____

Research Guide : _____
Prof. R.PUNITHAVATHI M.Sc (N),
Principal,
Thanthai Roever College of Nursing,
Perambalur, Tamil Nadu.

Clinical Specialty Guide : _____
Prof. V.J ELIZABETH M.Sc. (N),
Vice-principal,
Thanthai Roever College of Nursing,
Perambalur ,Tamil Nadu.

Dissertation submitted to

**THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY
CHENNAI**

IN PARTIAL FULFILLMENT OF REQUIREMENT
FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2016

INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

I, **301411705** hereby declare that this dissertation entitled **A STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE ON LOW BACK PAIN AND DISABILITY AMONG FEMALE SCHOOL TEACHERS IN SELECTED SCHOOL AT TRICHY** has been prepared by me under the guidance and direct supervision of **Prof.R. PUNITHAVATHI,M.Sc(N)**, Principal, Thanthai Roever College of Nursing, Perambalur, as requirement for partial fulfillment of **M.Sc Nursing** degree course under **The Tamilnadu Dr. M.G.R. Medical University, Chennai**. This dissertation had not been previously formed and this will not be used in future for award of any other degree or diploma. This dissertation represents independent original work on the part of the candidate.

Place : Perambalur,

Date : April – 2016.

301411705,

II Year M.Sc (N) Student,

Thanthai Roever College of

Nursing, Perambalur.

ACKNOWLEDGEMENT

I hereby offer my heartfelt gratitude to the King of kings and the Lord of lords , the Almighty God **JESUS CHRIST** who makes all things beautiful in His own time. His grace and blessings were my strength throughout this study. I consider it as a privilege to express my gratitude and respect to all those who guided me in the completion of this project.

I express my sincere gratitude to **Dr. K. Varadharaajen, BA.,BL., Chairman and Managing Trustee, Thanthai Roever College of Nursing, Perambalur** for providing me an opportunity to pursue this Post Graduate programme in this esteemed institution.

I would like to express my gratitude to my guide **Prof. R. Punithavathi, M.Sc. (N), Principal Thanthai Roever College of Nursing** for her valuable suggestions, encouragement and keen interest in the planning and execution of the study.

I would like to express my gratitude to **Prof. Mrs. V.J. Elizabeth., M.Sc. (N)., Vice Principal Thanthai Roever College of Nursing** who gave me valuable suggestions, guidance and encouragement which shaped and fashioned my study and spared her precious time to complete my study.

I thank all **teaching faculty of Thanthai Roever College of Nursing** for their timely advice, encouragement and support. I am grateful to all the **Experts** for their sincere efforts in validating my tool.

I express my words of appreciation to **Mr.VenkataRaman, M.Sc.,M.Phil.,** Statistician, for his guidance and suggestions in the statistical analysis of the data. His expert validation in the statistical analysis procedures helped in great measure.

My heartfelt gratitude to the school Headmistress, **Rev.Sister S.Maria Ranjitha Leela** for giving permission to conduct the study.

I owe my gratitude to **all the participants** who enthusiastically participated in carrying out the research project. I appreciate their keen interest, patience and cooperation evinced for successful completion of the study.

My gratitude to **Mrs.S.Backialaksmi ,M.Phil., librarian of Thanthai Roever College of Nursing and** all the library staffs of **Tamilnadu Dr. M.G.R. Medical University, Chennai** for their support and guidance in procuring the literature related to the study.

I would like to thank the staffs of **SUNWAY Trichy** for their enthusiastic help and sincere effort in typing the manuscripts meticulously with much valued Computer skills.

It is my immense pleasure to express my heartiest gratitude to my family members, **Mr.M.Rajendran** my dear father for his moral support

and priceless encouragement, **Mrs.S.Sagaya Shanthi** my dear mother for her kind unconditional help, love and encouragement from birth till now. I am extremely thankful to my husband **Mr.J.Prabaharan** and my sister **Ms.R.Teresa Robena**, for their support and motivation throughout my career.

As a final note I, the investigator, owe a deep sense of gratitude to all those who have directly or indirectly contributed to the successful completion of this endeavor.

TABLE OF CONTENTS

CHAPTER NO	TITLE	PAGE NO
I	INTRODUCTION	1-6
	Need for the study	2
	Statement of the problem	4
	Objectives of the study	4
	Research Hypotheses	5
	Operational Definitions	5
	Assumption	6
	Delimitations	6
	Projected outcome	7
II	REVIEW OF LITERATURE	8-18
	Related studies	8
	Conceptual Framework	14
III	RESEARCH METHODOLOGY	19-25
	Research approach	19
	Research design	19
	Variables	19
	Setting of the study	20
	Population	20
	Sample size and sampling technique	20
	Description of data collection tool	21
	Pilot study	22
	Data collection procedure	22
	Plan for data analysis	23
	Schematic representation of research methodology	25

CHAPTER NO	TITLE	PAGE NO
IV	DATA ANALYSIS AND INTERPRETATION	26-43
V	DISCUSSION	44-46
VI	SUMMARY IMPLICATIONS CONCLUSION	47-52
	Major findings of the study	48
	Implications	49
	Recommendations	51
	Conclusion	52
	REFERENCES	53-57
	ANNEXURES	i-xi

LIST OF TABLES

TABLE NO	TITLE	PAGE NO
1	Frequency and percentage distribution of demographic variables of female school teachers in the experimental and control group.	27
2	Frequency and percentage distribution of pretest and post test level of low back pain among female school teachers in the experimental group.	31
3	Frequency and percentage distribution of pretest and post test level of disability among female school teachers in the experimental group.	32
4	Frequency and percentage distribution of pretest and post test level of low back pain among female school teachers in the control group.	34
5	Frequency and percentage distribution of pretest and post test level of disability among female school teachers in the control group.	34
6	Comparison of pre test mean score and post test mean score of low back pain and disability among female school teachers in the experimental group.	36
7	Comparison of pre test mean score and post test mean score of low back pain and disability among female school teachers in the control group.	37
8	Comparison of post test mean score of low back pain and disability among female school teachers between the experimental and control group.	38
9	Correlation between low back pain and disability among female school teachers in experimental group.	39
10	Association of pre test level of low back pain among female school teachers with their selected demographic variables in the experimental group.	40
11	Association of pre test level of disability among female school teachers with their selected demographic variables in the experimental group.	42

LIST OF FIGURES

FIGURE NO	TITLE	PAGE NO
1	Conceptual framework	18
2	Schematic representation of research methodology	25
2a	Percentage distribution of age of female school teachers.	29
2b	Percentage distribution of body mass index of female school teachers.	29
2c	Percentage distribution of type of physical activity among female school teachers.	30
2d	Percentage distribution of years of teaching experience among female school teachers.	30
3	Percentage distribution of pretest and post test level of low back pain among female school teachers in experimental group	33
4	Percentage distribution of pretest and post test level of disability among female school teachers in experimental group	33
5	Percentage distribution of pretest and post test level of low back pain among female school teachers in control group	35
6	Percentage distribution of pretest and post test level of disability among female school teachers in control group	35

LIST OF ANNEXURES

ANNEXURE NO	TITLE	PAGE NO
I	Letter seeking permission for Research purpose	i
II	Letter seeking expert's opinion for content validation	ii
III	Evaluation criteria checklist for validation	iii
IV	List of expert's opinion for content validity of research tool	iv
V	Certificate for English editing	v
VI	Informed Consent	vi
VII	Data collection tool	vii-xi

THE EFFECTIVENESS OF ACUPRESSURE ON LOW BACK PAIN AND DISABILITY AMONG FEMALE SCHOOL TEACHERS IN SELECTED SCHOOL AT TRICHY.

ABSTRACT

INTRODUCTION: Low back pain is the leading cause of disability. It occurs in similar proportions in all cultures interferes with quality of life and work performance and is the most common reason for medical consultation.

OBJECTIVES: To assess the effectiveness of acupressure on low back pain and disability among the school teachers.

METHODS: True experimental pre test and post test design. Sixty participants were recruited by simple random sampling method. 30 in experimental group and 30 in control group. Numerical pain scale and modified Bournemouth disability questionnaire were used to assess the low back pain and disability, Acupressure was given to the experimental group.

RESULTS: The post test mean score of low back pain in the experimental group was 2.10 ± 0.99 and in control group was 7.16 ± 1.08 . The calculated 't' value of 18.846 was significant at $p < 0.001$ level.

The post test mean score of disability in the experimental group was 16.33 ± 6.47 . and in control group was 52.10 ± 13.30 . The calculated 't' value of 13.242 was significant $p < 0.001$ level.

CONCLUSION:

The study highlights that the effect of acupressure reduced low back pain and disability.

CHAPTER-I

INTRODUCTION

Low back pain is the leading cause of disability. It occurs in similar proportions in all cultures, interferes with quality of life and work performance and it is the most common reason for medical consultation. Low back pain is the most prevailing musculoskeletal condition that causes disability in low and middle income countries.

Prevalence of low back pain increasing globally at estimate 60-70% of people in developed countries. Age prevalence increases peaks between of 35-55 years. International surveys of low back pain report point prevalence of 15-30% and in one month between 19-43% Worldwide estimates lifetime prevalence of low back pain vary from 50%to 84%. In India, occurrence of low back pain is alarming nearly 60% of people have significant low back pain. 50% in jobs requiring handling heavy loads 19.09%with sitting jobs and 14.54% in prolonged standing, and 16.47% in standing jobs.

School teachers are an occupational group who are not exempted from being affected by low back pain. Work related low back pain is any back pain originating in the context of work and considered clinically, probably caused and exacerbated by job climate.

The physical factors that have been found to be are increasing with age, female gender, heavy physical work, repetitive job prolonged static posture and awkward posture. Anxiety depression, job dissatisfaction loss of job control and mental stress has been found to be some of the psychosocial factors related to

low back pain. The socio economic problem caused by low back pain such as disability low productivity, and psychosocial problem have made low back pain a significant condition that need to be treated.

The traditional Chinese medicine, acupressure based on the principle of acupuncture and the theory of meridians, stimulates the body and activates the regulating function. Acupressure on precise acupoints is believed to stimulate the central nervous system to release chemicals into the muscles and spinal cord. This influence the body's natural healing abilities and promote physical and emotional well being. As a result of wide indication efficacy, easy operation, minor side effects and economic recruit acupressure is deeply welcomed to relieve low back pain.

NEED FOR THE STUDY

The 2010 Global burden of disease study estimated that the low back pain is among the top diseases and injuries that account for the highest members of DALYS (disability adjusted life years)

The prevalence of low back pain in Indian population has been found to vary between 6.2% in general population to 92% in construction workers.

Mohammed et al 2011 conducted a cross sectional study among 56 asymptomatic teachers from primary and high school of Iran. Data on the personal occupational characteristics, pain intensity and functional disability as well as the prevalence and risk factors of LBP were collected .the results were point, last month, last 6 months, annual and life time prevalence rates were 21.8%, 26.3%, 29.6%, 31.1%and 36.5% respectively.

Bulletin of WHO declares non steroidal anti-inflammatory drug, analgesics and narcotic combination bring the pain to tolerable level but they should not be taken to long period of times as a risk of habituation and addiction. Physicians are increasingly referring patients for complementary and alternative medical treatments, with studies showing that more than half of primary care doctors routinely recommend or prescribe them for backache. In practice guidelines published jointly by the American College of Physicians and the American Pain Society, fair to good evidence is cited supporting numerous alternative treatments for chronic and sub acute low back pain, including acupuncture, yoga, massage, herbals and spinal manipulation, and functional restoration. Spas, moist heat and cold cabinets were introduced but were not validated. Disc herniation and spinal canal narrowing cited as reasons for surgery, but only rarely are successful in alleviating pain. The spread of chiropractic and manipulative treatment worldwide has won many adherents to low back pain, it works better than others.

The misery of low back pain is felt by everyone, which is no surprise. Back pain major cause of temporary disability and a challenge to medical and surgical decision. And visualizing that many heroic treatments that ultimately fail on low back pain motivated the researcher to find a remedy. Based on the relieving effects of acupressure on low back pain and researches on acupressure showed reduction of pain, and boosting of energy. The investigators experience with family members and environment with continuous narration which created an impact of low back pain on the eyes of the researcher among the female working group, the investigator was motivated to conduct an evaluator study to assess the effectiveness of acupressure on low back pain and disability.

STATEMENT OF THE PROBLEM

“A study to assess the effectiveness of acupressure on low back pain and disability among female school teachers in selected school at Trichy.”

OBJECTIVES OF THE STUDY

1. To assess the level of low back pain and disability among female school teachers.
2. To assess the effectiveness of acupressure on low back pain among the female school teachers.
3. To assess the effectiveness of acupressure on disability among the female school teachers
4. To find the association of pretest level of low back pain among the female school teachers, with their selected demographic variables in the experimental group.
5. To find the association of pretest level of disability among the female school teachers, with their selected demographic variables in the experimental group.
6. To find the correlation between low back pain and disability among female school teachers in the experimental group.

RESEARCH HYPOTHESES

H1: There will be a significant reduction in low back pain among female school teachers who receive acupressure.

H2: There will be a significant reduction in disability among female school teachers who receive acupressure.

H3: There will be a significant association between pre test level of low back pain and selected demographic variables of female school teachers who receive acupressure.

H4: There will be a significant association between pre test level of disability and selected demographic variables of female school teachers who receive acupressure.

H5: There will be a significant correlation between low back pain and disability among female school teachers in the experimental group.

OPERATIONAL DEFINITIONS

EFFECTIVENESS

The extent to which acupressure becomes successful in reducing low back pain and disability among school teachers.

LOW BACK PAIN

An unpleasant sensory feeling, muscle tension or stiffness below the costal margin and above the gluteal folds perceived by the school teachers measured with numerical pain scale.

DISABILITY

A condition of being unable to do activity in usual way due to low back pain perceived by the school teachers measured with modified Bournemouth questionnaire.

ACUPRESSURE

Firm pressure given by the fingers of the researcher over the back points, hand and the toe points for five minutes duration once a day for 9 sessions. On alternative days from day 1 to day 18, for a period of 18 days. It is a form of touch therapy that utilizes principle of acupuncture. The exact points on the body are stimulated with firm finger pressure to relieve low back pain.

SCHOOL TEACHER

A person who teaches or instructs the school students as a full time employee in Higher Secondary schools and perceiving low back pain and disability, in selected schools at Trichy.

ASSUMPTIONS

- Female school teachers working for long standing hours experiences low back pain and disability.
- Acupressure improves the tone of supportive muscles and relieves low back pain and disability.
- Acupressure will reduce low back pain and disability among female school teachers.

DELIMITATION

- The study is limited to only female school teachers
- The study is limited to 4 weeks period of time.
- The study is limited to selected age group between 25-60years.

PROJECTED OUTCOME

The findings of this study revealed the effectiveness of acupressure in reducing the low back pain and disability among female school teachers experiencing pain. If found to be effective, this intervention could be incorporated as one of the nursing measures to reduce pain among patients experiencing low back pain.

CHAPTER-II

REVIEW OF LITERATURE

The review of literature is defined as a broad, comprehensive, systematic & critical, Review of scholarly publication, unpublished materials and personal communication. It helps the researcher to develop insight into problems stated. The present chapter discusses the review of literature pertinent to the study. The literature review is discussed under the following headings.

PART - I

SECTION-A Literature related to prevalence of low back pain.

SECTION-B Literature related to acupressure

**SECTION-C Literature related to the effectiveness of
acupressure on low back pain**

SECTION-A Literature related to prevalence of low back pain.

Mohammed A.Mohens Badpei (2014) found through a cross sectional study the prevalence and risk factors for low back pain in teachers the association of individuals and occupational characteristics in 22 primary and high schools in Iran.586 asymptomatic teachers were selected randomly and data on personal, occupational , pain intensity and functional disability as well as the prevalence and risk factors of low back pain were collected. The conclusion was the prevalence of back pain in teachers was to be high.

Chong EY, Chan AH (2010) conducted study on subjective health complaints of teachers from primary and secondary schools in Hong Kong and got the result that, the 10 most frequently reported health complaints among the teachers were tiredness, eyestrain, anxiety, sleep problems, voice disorder, shoulder pain, neck pain, headache, cold/flu, and lower-back pain.

Nurul Izzah Abdul Samad et al (2010) conducted a study to determine the prevalence of low back pain and the associated risk factors among primary school teachers in Malaysia. Through this study he concluded that the prevalence of low back pain was 40.4%. Teachers with poor mental health status had higher risk of developing low back pain.

Jefferson Paixão Cardoso et al (2009) studied the prevalence of musculoskeletal pain among teachers and found out that there was a high prevalence of pain in lower limb (41.1%) and low back pain (41.1%) than upper limb (23.7%). The prevalence of musculoskeletal pain was associated with the following occupational variables: working over five years at the school, high level of physical exertion, not having a paid activity other than teaching, and reporting heat in the classroom.

Erika Nelson-Wong et al (2007) studied postural control strategies during prolonged standing, is there a relationship with low back discomfort And revealed that the findings suggest an apparent increase in co-activation at the hip in individuals with increased low back discomfort when exposed to a prolonged standing task. This factor appears to be a useful predictive variable in identifying which individuals will develop low back discomfort with standing.

SECTION-B Literature related to acupressure

Gardner (2010) conducted a study to assess the relative merits of applying acupressure among a group of stroke patients. A specific form of acupressure known as Jin Shin was given to 16 stroke survivors for course of 2 weeks, A consistent benefit in relation to heart rate was found during acupressure intervention. The study concluded that active acupressure, reduced heart rate significantly more than placebo acupressure during treatments.

Farton(2010) conducted a comparative study in Department of Rehabilitation, Kaohsing Medical University in Taiwan to determine the efficacy of medications versus acupressure among 28 patients with chronic headache. Baseline measures of self-appraisal scores and headache related quality of life were documented at the beginning of the study and after 1 month of treatment. Pain ratings based on visual analog scale was found to be significantly lower in acupressure group. The study concluded that acupressure can be used as an alternative therapy for conventional medicine.

Nina(2009) conducted a study in Taiwan to assess the effect of acupressure for insomnia. A total of 50 men & women with insomnia were selected as participants in a randomized controlled trial. Half of the study volunteers were provided with standard acupressure on HT1 points of both wrists. The control group received only light touch at the same wrist acupoint. The duration of the study was 1 week & researchers utilized Athens Insomnia scale and patient Questionnaires as a means of quantifying pre-test and post-test sleep quality. The study concluded that acupressure was effective in reducing insomnia.

Niyx(2001) conducted a study in Mexico State University on the effectiveness of acupressure among nurses who are continuously exposed to stressful environment. Twelve samples were chosen for the study. One group pretest – post test design was used. The results concluded that there was an overall reduction in anxiety, headache, work stress and anger after the acupressure therapy.

SECTION-C Literature related to the effectiveness of acupressure on low back pain

Purepong N (2015) investigated the effects of an acupoint-stimulating lumbar backrest on pain and disability in office workers who suffering from low back pain (LBP) as well as the preference influence on pain and disability. Sixty-four participants were randomly assigned to two groups: one with no intervention (n=32) and another with 1 month of back rest use (n=32). These findings suggested 1-month of acupressure backrest use could improve LBP conditions.

Yeh CH (2015) investigated the feasibility effects of randomized clinical trial (RCT) was designed for 4-week auricular point of acupressure (APA) for chronic low back pain (CLBP). Participants were randomized to either true APA (true acupoints with taped seeds on the designated ear points for CLBP) or sham APA (sham acupoints with taped seeds but on different locations). Pre test was done. Participants in the true APA group who completed the APA treatment had a 70% reduction in worst pain intensity, a 75% reduction in overall pain intensity, and a 42% improvement in disability. The findings of the study showed a reduction in pain intensity and improvement

in physical function suggesting that APA auricular point of acupressure a promising treatment for patients with CLBP.

Kim et al (2013) identified through RCTS, comprising 275 participants, which reported on the use of acupressure for the treatment of chronic low back pain and routine physical therapy. Both trials showed significant effects on pain reduction, compared to the routine physical therapy ,the meta analysis conducted ,demonstrated acupressure to be superior to physical therapy in terms of pain reduction [N=275;SMD-0.71;95%,CI-0.96 to 0.47;P<0.00001].

HISEIH LL et al (2011) conducted a randomized controlled trial in orthopedic clinic in Taiwan to evaluate the effectiveness of acupressure in terms of disability, pain scores, and functional status. 129 patients with chronic low back pain. With the intervention of acupressure and physical therapy for one month. The mean total Roland and Morris disability questionnaire score after treatment was significantly lower in the acupressure group than in the physical therapy group. Acupressure conferred an 89% reduction in significant disability compared with physical therapy. Acupressure was effective in reducing low back pain in terms of disability, pain scores.

Yeh-eh-all (2010) conducted a prospective randomized controlled trial of a week regimen for chronic lower back pain. In total,19 adult patient with chronic lower back pain - 15 females ,4 males ,average age=47 years range 20-70 years , the results indicated that acupressure at 4 weeks had greater and statistically significant ($p<0.05$) reduction in worst pain (70% vs. 26%) decrease and over all intensity (75%vs 29% decrease).

Yip YB, Tse SH(2010) conducted a randomized controlled trial study to assess the effect of acupoint stimulation with electrodes combined with acupressure using an aromatic essential oil (lavender) for low back pain at Hong Kong. 8-session of acupressure with lavender oil over a 3-week period was given. The control group received usual care. Treatment were assessed in pain intensity (by Visual Analogue Scale) The scores for the intervention and control groups were 6.38 and 5.70 out of 10, respectively. Results show acupressure with aromatic lavender oil were an effective method for LBP relief.

Hrieh LL, Kuoch (2004) compared the efficacy of acupressure with that of physical therapy in reducing low back pain conducted a randomized control trial in an orthopedic hospital in Taiwan. Total 146 participants with chronic low back pain were randomly assigned to acupressure group [69] physical therapy group [77]. The mean post treatment pain score after week treatment [2.28, SD=2.62] in acupressure group was significantly lower than in physical therapy group [5.05, SD=5.11] The results suggest that acupressure is effective alternative medicine in reducing low back pain.

Lisa Li-Chen Hsieh(2004) selected 188 participants from among the outpatients of a specialist orthopedic clinic in Taiwan., The mean scores in the study were 28.4 (SD 16.9) for the acupressure group and 48.0 (SD 22.9) for the physical therapy group, with a significance level of 5%. 64 participants in acupressure group and 65 participants in physical therapy group. Each participant received 6 sessions within one month. This study shows that acupressure is more efficacious in alleviating low back pain and disability than physical therapy, as measured by pain visual analogue scale, and Oswestry disability questionnaire.

Swen et al (2004) examined the effectiveness of auricular acupressure therapy using magnetic pellets to give pressure for the elderly suffering from low back pain (LBP). 60 participants suffering from LBP were randomly allocated to receive auricular acupressure therapy on a 3-week basis using either Semen Vaccariae (control group=30), magnetic acupressure (experimental group=30). Effects were evaluated using the Chinese Pain Intensity Verbal Rating scale (VRS). Findings of this study demonstrated that auricular acupressure therapy using magnetic pellets significantly reduce the pain intensity level of LBP than control group.

The reviewed literature showed the promising effect of acupressure on low back pain and this study proposes to evaluate the effect of acupressure on low back pain and disability.

PART- II

CONCEPTUAL FRAMEWORK

The conceptual framework of the study was derived from the modified Wiedenbach's Helping Art of clinical Nursing theory (1964). According to the theory, the nursing is involved in three components.

- ❖ Identifying a need for help
- ❖ Ministering needed plan
- ❖ Validating that need for help was met

In this study the nurse investigator attaining the goal through 3- steps of Wiedenbach's Helping Art of clinical nursing theory.

STEP- I

IDENTIFYING A NEED FOR HELP

General Information

For collecting general information the investigator collect information, generally through Demographic variable and through pre-test collect information about the level of low back pain and disability of No, mild, moderate and severe and worst.

The Central Purpose

According to the theory, the central purpose refers to what the nurse wants to accomplish. It is the overall plan towards nurse strives. It transcends the immediate intend of the assignment or task by specially directing activities towards the clients goal.

In this study the central purpose was the reduction of low back pain and disability.

The Prescription

According to the theory the prescription refers to the plan of care for patients. It specifies the nature of action that will fulfill the nurse's central purpose and the rationale for that action. After the acupressure is established, the nurse can implement it through the nursing care plan.

STEP-II

MINISTERING NEEDED PLAN

The nurse formulates a plan for meeting the clients need for help based on available resources. What the clients thinks, knows, can do and has done plus what the nurse thinks, knows, can do and has done; the nurse presents the plan to the patients and the patient's response to it.

In this study the acupressure intervention is the implementation of experimental group who have perceived back pain.

Realities

It refers to the physical, physiological, emotional and spiritual factors that come into play in a situation involving nursing action. Wiedenbach's defines the 5- realities as agent, recipient, goal, need and framework.

The agent who is the practicing nurse and her delicate characterized by personal attributes, problems, capacities and commitment and conference to provide nursing care. In the study it refers to the researcher; direct all action towards the goal.

In this study recipient are the school teachers who have perceived low back pain and disability.

The goal is the nurse's desired outcome the nurse wishes to achieve. In this study it refers to the reduction of low back pain and disability.

The mean comprise the activities and devices used by the nurse to achieve the goal. This includes specific skills, procedures, techniques and devices that

may be used to facilitate nursing practiced. In this study the intervention of acupressure using the fingers of the researcher to give pressure.

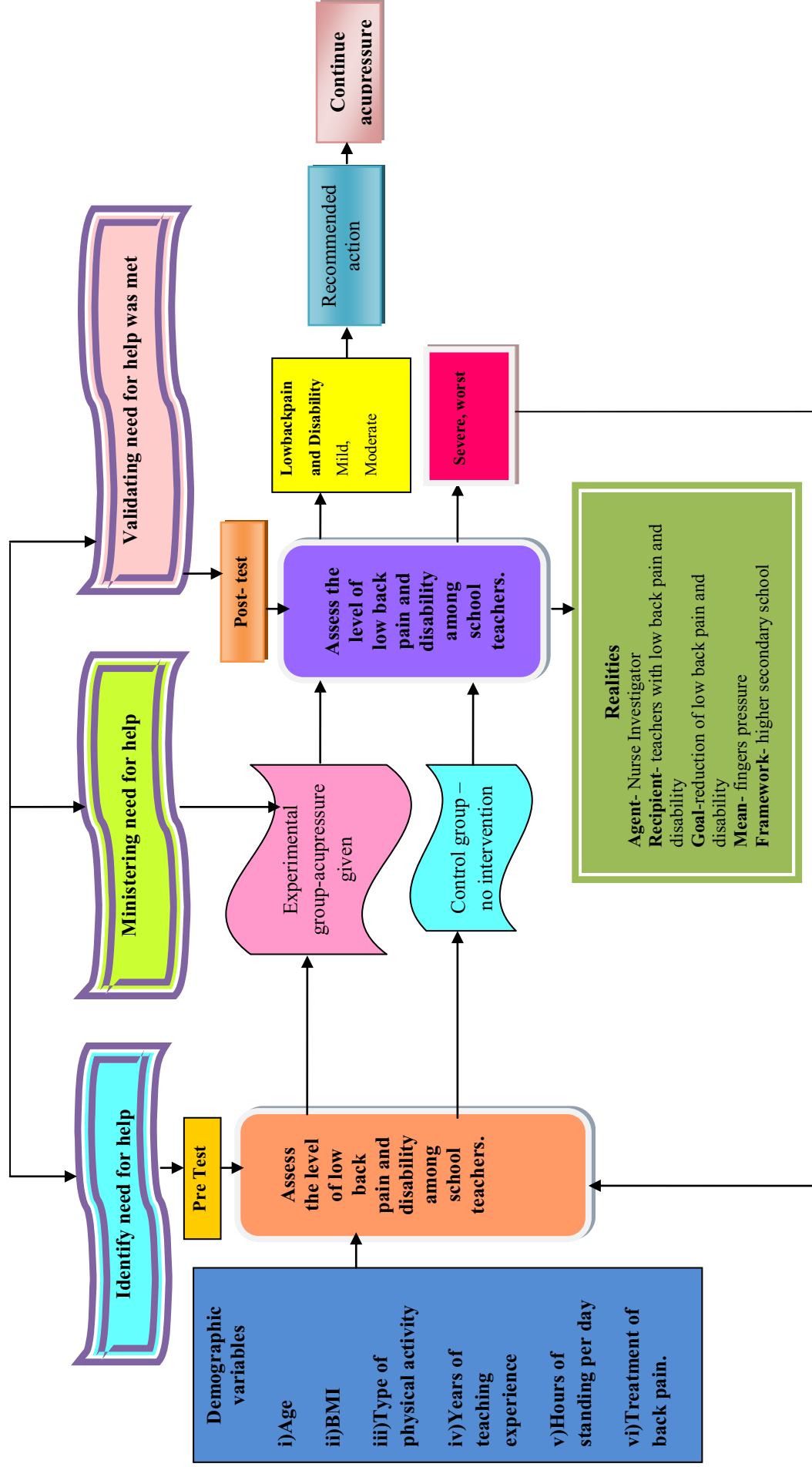
The framework consists of the human, environment, professional and organizational facilities. In this study female school teachers with low back pain and disability working at Higher Secondary School at Trichy.

STEP-III

VALIDATING THAT THE NEED FOR HELP WAS MET

The nurse perceives the patient's behavior consistent or inconsistent with the nurse's concept of comfort of capability. It refers to a collection of evidence that shows patients need have been met and that her functional ability has been restored as a direct result of the research action. It is based on patient's oriented evidence. This step involves post-test assessment and that score after ministering analysis to infer the outcome.

FIG 1 WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY



CHAPTER-III

RESEARCH METHODOLOGY

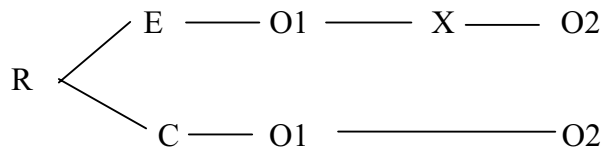
This chapter describes the methodology followed to assess the effectiveness of acupressure on low back pain and disability among female school teachers.

RESEARCH APPROACH

Evaluative Research approach.

RESEARCH DESIGN

True experimental pretest and post test control group design.



R - Randomization

E - Experimental group

C - Control group

O1 -Pretest-assessment of low back pain and disability

X - Intervention- application of acupressure on the acu points

O2 - Posttest-assessment of low back pain and disability.

VARIABLES

DEPENDENT VARIABLES

Low back pain and disability.

INDEPENDENT VARIABLE

Acupressure.

SETTING

Higher Secondary School in Melapudur at Trichy district.

STUDY POPULATION

Female school teachers with low back pain and disability.

SAMPLE

Samples are female school teachers with low back pain and disability working in school.

SAMPLE SIZE

Sample size 60; 30 for experimental group,30 for control group.

SAMPLE TECHNIQUE

Simple random sampling technique.

CRITERIA FOR SAMPLE SELECTION**INCLUSION CRITERIA**

1. Female school teachers with low back pain and disability.
2. Age group between 25-60 years.
3. Teachers willing to participate.

EXCLUSION CRITERIA

1. Teachers not willing to participate.
2. Teachers who are having other type of back pain.
3. Teachers who are chronic ill.

DESCRIPTION OF TOOLS

SECTION –A

Interview guide which consist of questions to collect the demographic data.

SECTION –B

The numerical pain scale to assess the low back pain among female school teachers. The scores ranging from 0-10 and the pain level as self reported by the teachers.

GRADING PROCEDURE

LEVEL OF PAIN	SCORE
No PAIN	0
MILD PAIN	1-3
MODERATE PAIN	4-6
SEVERE PAIN	7-9
WORST PAIN	10

SECTION – C

Modified Bournemouth questionnaire was used to assess the disability among female school teachers. The scores ranging from 10-80 and the disability level as self reported by the teachers.

SUM OF SCORES MULTIPLIED BY 10

SCORE	LEVEL OF DISABILTY
0-10	NO DISABILITY
11-30	MILD DISABILITY
31-50	MODERATE DISABILITY
51-70	SEVERE DISABILITY
71-80	WORST DISABILITY

CONTENT VALIDITY

The content validity of the tool was established on the opinion of four experts. Numerical pain scale for pain and modified Bournemouth questionnaire for disability was finalized for this study.

PILOT STUDY

The pilot study was done at Government school at Chittur in Pudukottai between 06-07 -2015 to 12-07-2015 to test the feasibility, relevance and practicability. Permission was sought from the Headmistress of the school. The objectives of the study were explained to the headmistress. The purpose of the study was explained to the school teachers with low back pain and disability, and got the consent from the samples. In this study 6 teachers with low back pain were selected. 3 teachers for the experimental group and 3 teachers for control group. As the pilot study was feasible it was decided to precede the main study without any modification.

DATA COLLECTION PROCEDURE

Data collection was done from 1-10-2015 to 30-10-2015 at St. Anne's Girls Higher Secondary School, Trichy with the permission from the Headmistress. The teachers were screened for the pretest of low back pain

disability selected by random sampling method. Data were collected all the days except Sundays. The purpose of the study was explained and written consent was obtained from all teachers before the study. 60 teachers with low back pain and disability were assessed using the numerical pain scale and modified Bournemouth scale. 30 alternative samples were selected odd members were experimental group and even members were control group. Pretest level of low back pain and disability was assessed for both the groups on the first day. Then applying acupuncture intervention was given only to the experimental group once a day for 5 minutes for 18 days and each completed 9 sessions of acupuncture. The post test level of low back pain and disability was assessed for both the groups by using the numerical scale and modified Bournemouth disability scale on 18th day.

PLAN FOR DATA ANALYSIS

It was planned to use descriptive and inferential statistics for data analysis.

DESCRIPTIVE STATISTICS

1. The frequency and percentage distribution will be used to analyze the demographic variables and the level of low back pain and disability among the female school teachers with low back pain
2. Mean and standard deviation will be used to assess the pre test and post test pain scores.

INFERENCEAL STATISTICS

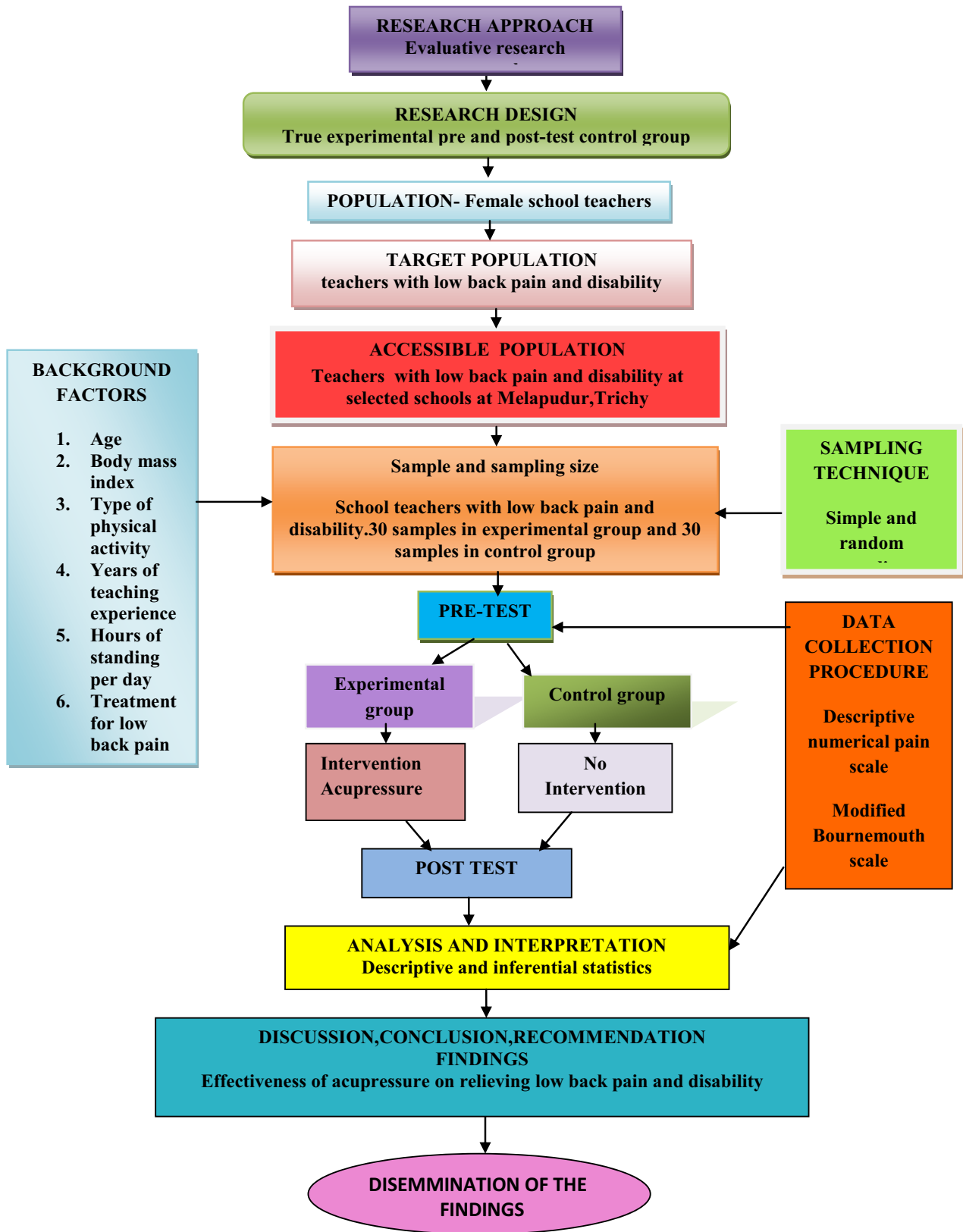
1. Paired 't' test to compare the pretest and posttest mean score.
2. Chi-square test to find out the association of pre test level of low back pain and disability with the selected demographic variables.

3. Karl Pearson's correlation to find the relation between low back pain and disability among school teachers in experimental group.

ETHICAL CONSIDERATION

The study was conducted after getting approval from the Ethical Committee, Thanthai Roever College of Nursing Perambalur. Permission was obtained from the Headmistress of the School, Trichy. Consent was obtained from each study subject before collecting data .Confidentiality was maintained though out the study.

FIG 2 SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 school teachers with low back pain and disability, to assess the effectiveness of acupressure on low back pain and disability. The data collected for the study was grouped and analyzed as per the objectives set for the study. The findings based on the descriptive and inferential statistical analysis are presented under the following sections.

ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sessions.

- Section A:** Description of the demographic variables of female school teachers with low back pain and disability.
- Section B:** Pretest and post test level of low back pain and disability among female school teachers in experimental and control group.
- Section C:** Effectiveness of acupressure on low back pain and disability among female school teachers in the experimental and control group.
- Section D:** Correlation between low back pain and disability among female school teachers in experimental and control group.
- Section E:** Association of pre test level of low back pain and disability among female school teachers with their selected demographic variables in the experimental group.

SECTION A

**Table 1: Frequency and percentage distribution of demographic variables of female school teachers in the experimental and control group
N = 60(30+30)**

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Age in years				
25 - 40	0	0.00	0	0.00
41 - 50	13	43.33	12	40.00
51 - 60	17	56.67	18	60.00
Body Mass Index				
Underweight	2	6.67	3	10.00
Normal weight	14	46.67	11	36.67
Over weight	13	43.33	14	46.67
Obesity	1	3.33	2	6.67
Type of physical activity				
Sedentary work	11	36.67	12	40.00
Moderate work	17	56.67	17	56.67
Heavy work	2	6.67	1	3.33
Years of teaching experience				
<5 years	0	0.00	0	0.00
5 - 10 years	5	16.67	5	16.67
11 - 20 years	21	70.00	23	76.67
>20 years	4	13.33	2	6.67

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Hours of standing per day				
<2 hours	0	0.00	0	0.00
2 - 8 hours	30	100.00	28	93.33
>8 hours	0	0.00	2	6.67
Treatment for low back pain				
Yes	4	13.33	2	6.67
No	26	86.67	28	93.33

The table shows that in the experimental group majority 17(56.67%) were in the age group of 51 – 60 years, 14(46.67%) have normal weight, 17(56.67%) were moderate worker, 21(70%) had 10 – 20 years of teaching experience, almost all 30(100%) were standing 2 – 8 hours per day and 26(86.67%) had not taken treatment for low back pain.

Whereas in the control group, majority 18(60%) were in the age group of 51 – 60 years, 14(46.67%) have overweight, 17(56.67%) were moderate worker, 23(76.67%) had 10 – 20 years of teaching experience, 28(93.33%) were standing 2 – 8 hours per day and 28(93.33%) had not taken treatment for low back pain.

Figure 2a Percentage distribution of age of female school teachers

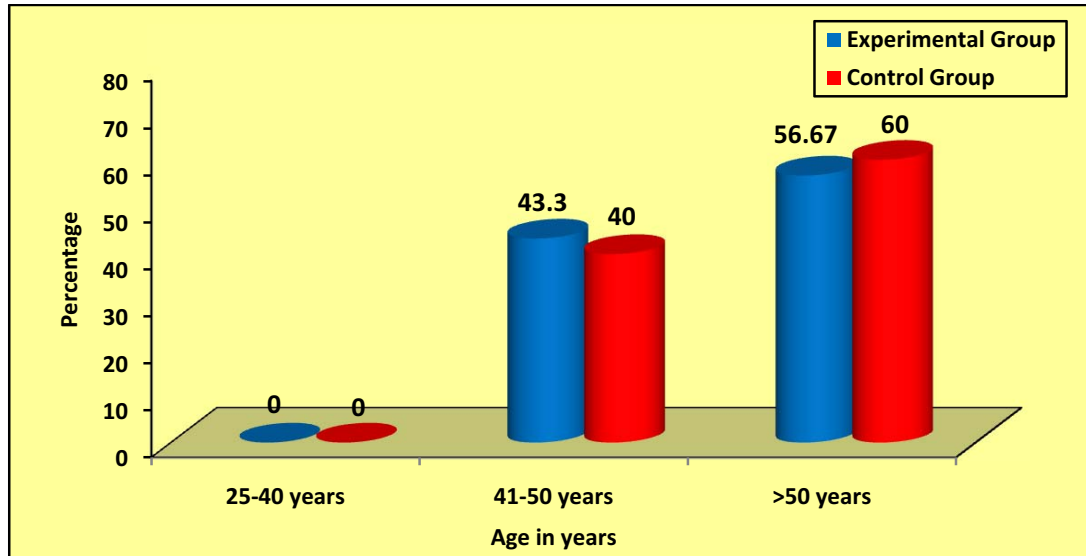


Figure 2b Percentage distribution of body mass index of female school teachers.

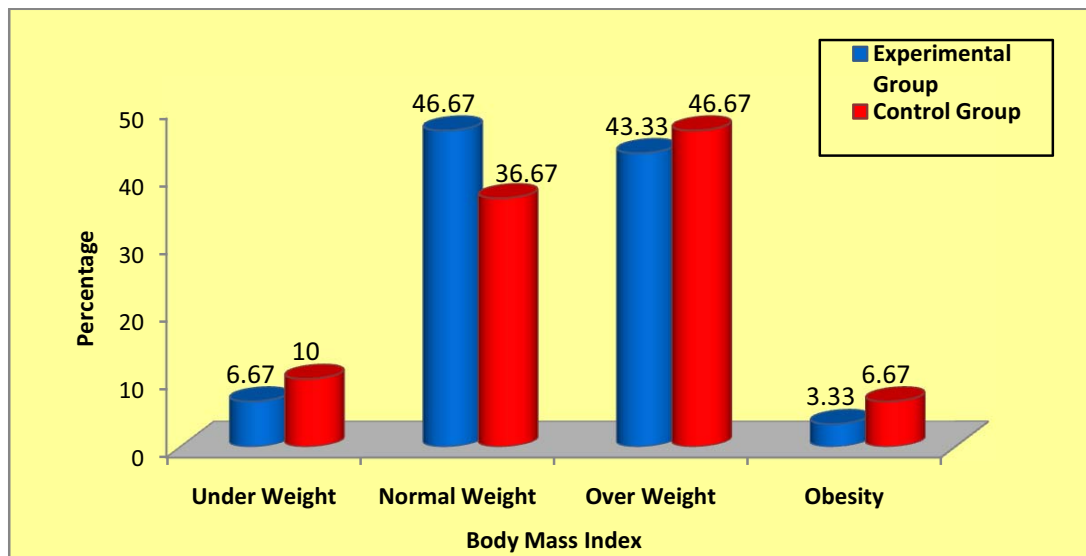


Figure 2c Percentage distribution of type of physical activity among female school teachers

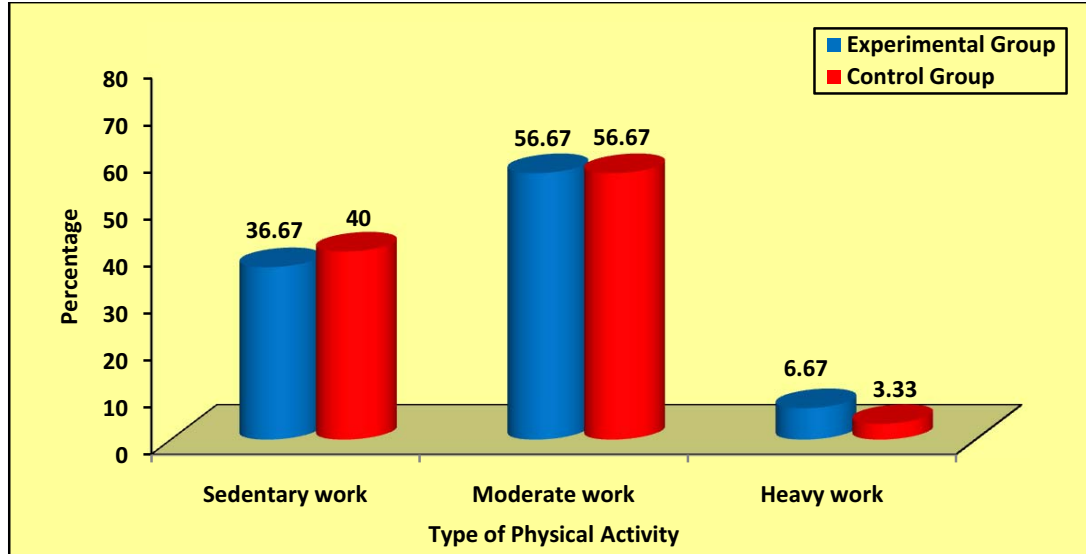
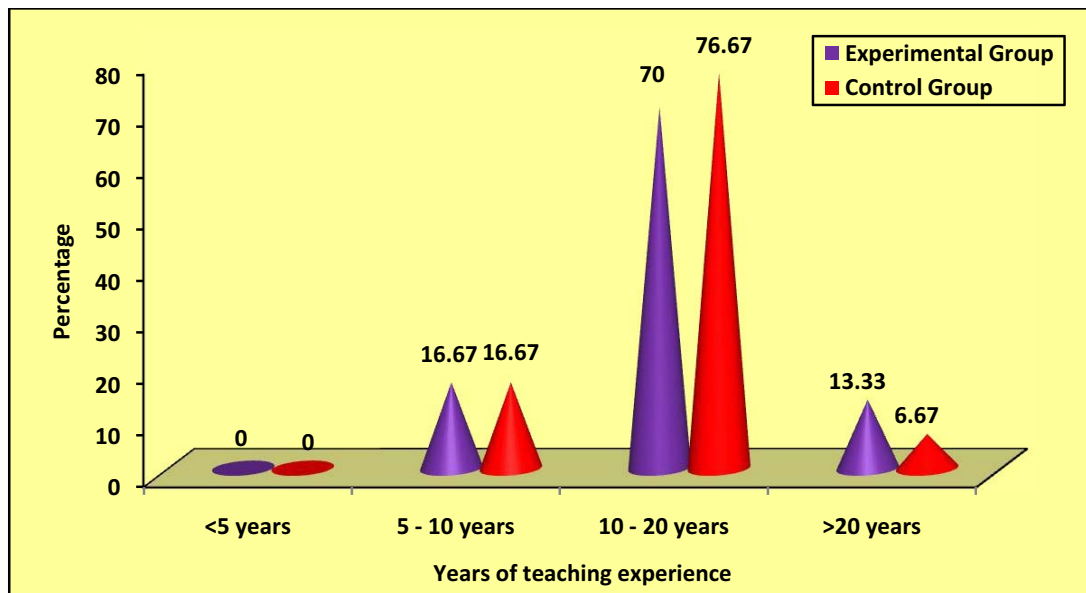


Figure 2d Percentage distribution of years of teaching experience among female school teachers.



SECTION B

Table 2: Frequency and percentage distribution of pretest and post test level of low back pain among female school teachers in experimental group.

n = 30

Low Back Pain	No pain (0)		Mild (1 – 3)		Moderate (4 – 6)		Severe (7 – 9)		Worst (10)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Pretest	0	0	0	0	13	43.33	17	56.67	0	0
Post Test	0	0	28	93.33	2	6.67	0	0	0	0

The table shows that in the experimental group, majority of school teachers 17(56.67%) had severe low back pain and 13(43.33%) had moderate low back pain in the pretest. Whereas after the intervention of acupressure in the post test, majority 28(93.33%) had mild low back pain and only 2(6.67%) had moderate low back pain.

Table 3: Frequency and percentage distribution of pretest and post test level of disability among female school teachers in experimental group.

n = 30

Disability	Mild (10 – 30)		Moderate (31 – 50)		Severe (51 – 70)		Worst (71-80)	
	No.	%	No.	%	No.	%	No.	%
Pretest	3	10.0	10	33.33	17	56.67	0	0
Post Test	29	96.67	1	3.33	0	0	0	0

The table shows that in the experimental group, majority of school teachers 17(56.67%) had severe disability, 10(33.33%) had moderate disability and 3(10%) had mild level of disability in the pretest. Whereas after the intervention of acupressure in the post test, majority 29(96.67%) had mild disability and only 1 (3.33%) had moderate level of disability.

Figure 3 Percentage distribution of pretest and post test level of low back pain among female school teachers in experimental group

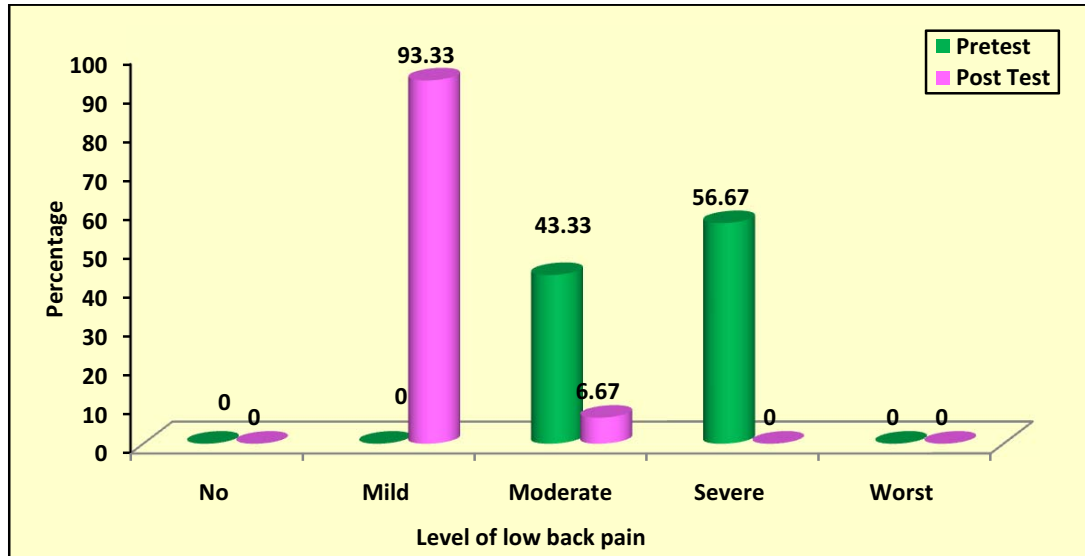


Figure 4 Percentage distribution of pretest and post test level of disability among female school teachers in experimental group

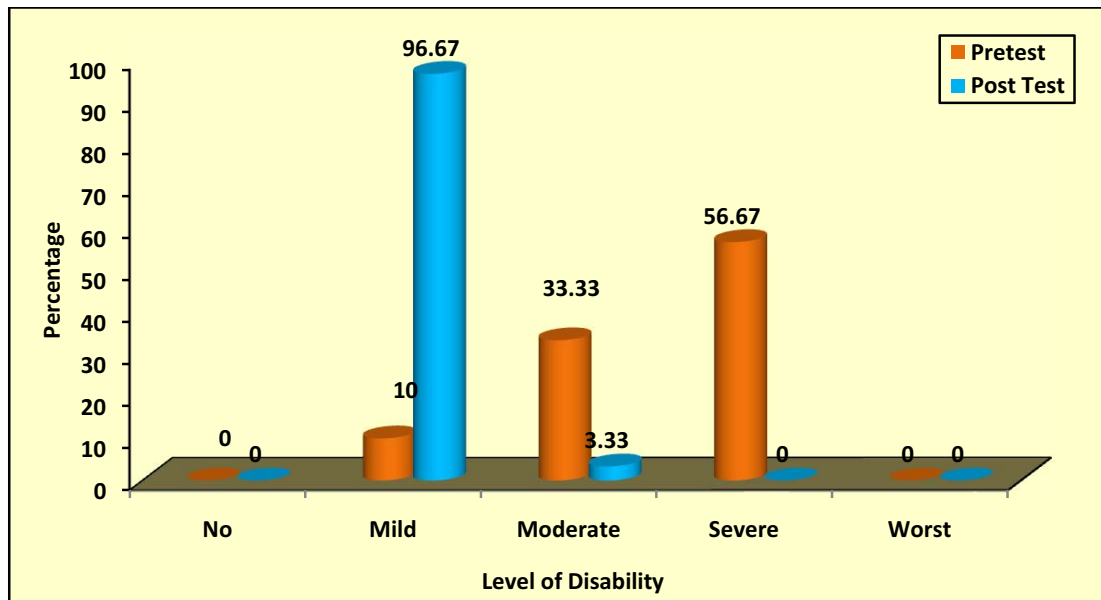


Table 4: Frequency and percentage distribution of pretest and post test level of low back pain among female school teachers in control group.

n = 30

Low Back Pain	No pain (0)		Mild (1 – 3)		Moderate (4 – 6)		Severe (7 – 9)		Worst (10)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Pretest	0	0	0	0	16	53.33	14	46.67	0	0
Post Test	0	0	0	0	6	20.0	24	80.0	0	0

The table shows that in the control group, majority of school teachers 16(53.33%) had moderate low back pain and 14(46.67%) had severe low back pain in the pretest. Whereas in the post test, majority 24(80%) had severe low back pain and 6(20%) had moderate low back pain.

Table 5: Frequency and percentage distribution of pretest and post test level of disability among female school teachers in control group.

Disability	No (0-10)		Mild (11– 30)		Moderate (31 – 50)		Severe (51 – 70)		Worst (71-80)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Pretest	0	0	2	6.67	12	40.0	16	53.33	0	0
Post Test	0	0	3	10.0	5	16.67	21	70.0	1	3.33

n = 30

The table 5 shows that in the control group, majority of school teachers 16(53.33%) had severe disability, 12(40%) had moderate disability and 2(6.67%) had mild level of disability in the pretest. Whereas in the post test, majority 21(70%) had severe disability, 5(16.67%) had moderate disability, 3(10%) had mild disability and only 1 (3.33%) had worst level of disability.

Figure 5 Percentage distribution of pretest and post test level of low back pain among female school teachers in control group

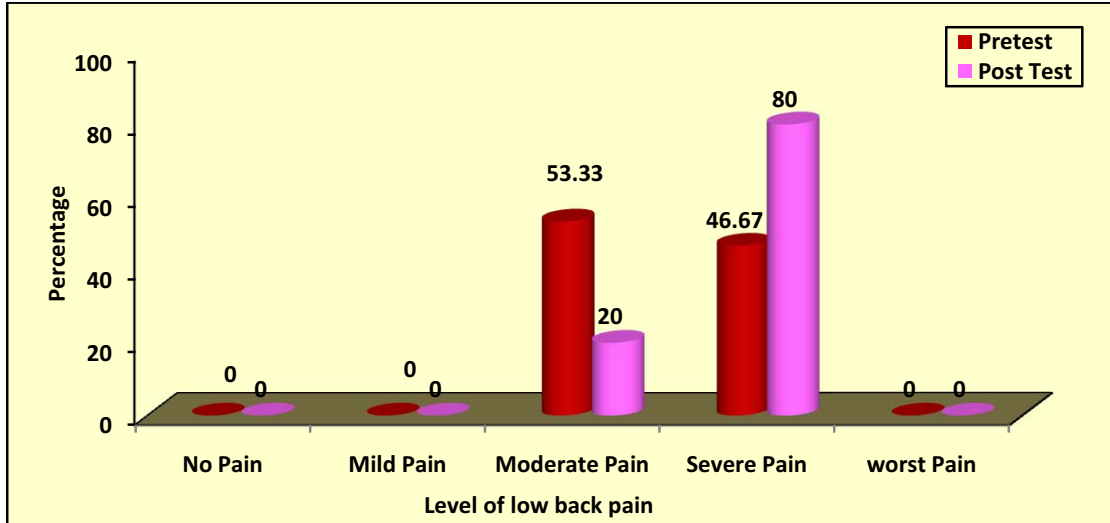
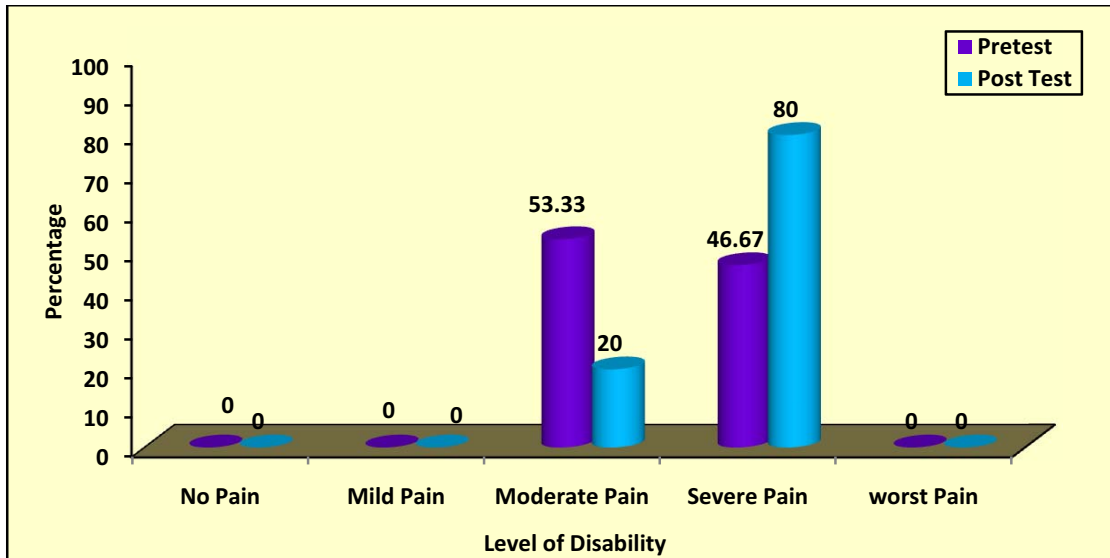


Figure 6 Percentage distribution of pretest and post test level of disability among female school teachers in control group.



SECTION C

Table 6: Comparison of pretest and post test mean score of low back pain and disability among female school teachers in the experimental group.

n = 30

Variables	Total Score		Mean	S.D	Mean Difference	Paired 't' Value
Low back pain	10	Pre test	6.60	1.47	4.5	t = 21.119 p = 0.000, S***
	10	Post test	2.10	0.99		
Disability	80	Pre test	48.90	11.90	32.57	t = 16.851 p = 0.000, S***
	80	Post test	16.33	6.47		

***p<0.001, S – Significant

The table shows that the pretest mean score of low back pain in the experimental group was 6.60 ± 1.47 and the post test mean score was 2.10 ± 0.99 . The calculated paired 't' value 21.119 was found to be statistically significant at $p < 0.001$ level.

The table also depicts that the pretest mean score of disability in the experimental group was 48.90 ± 11.90 and the post test mean score was 16.33 ± 6.47 . The calculated paired 't' value 16.851 was found to be statistically significant at $p < 0.001$ level.

The above findings indicates that the intervention acupressure administered to the school teachers with low back pain and disability had significant reduction in their of low back pain and their disability also reduced significantly. This proves that acupressure had significant effect in reducing the low back pain and disability among female school teachers.

Table 7: Comparison of pretest and post test mean score of low back pain and disability among female school teachers in the control group.

Variables	Total score		Mean	S.D	Mean Difference	Paired 't' Value
Low back pain	10	Pre test	6.50	1.33	-0.66	t = 4.551
	10	Post test	7.16	1.08		p = 0.000, S***
Disability	80	Pre test	49.46	11.09	-2.64	t = 1.662
	80	Post test	52.10	13.30		p = 0.107, N.S

n = 30

***p<0.001, S – Significant, N.S – Not Significant

The table shows that the pretest mean score of low back pain in the control group was 6.50 ± 1.33 and the post test mean score was 7.16 ± 1.08 . The calculated paired 't' value 4.551 was found to be statistically significant at $p<0.001$ level.

The table also depicts that the pretest mean score of disability in the control group was 49.46 ± 11.09 and the post test mean score was 52.10 ± 13.30 . The calculated paired 't' value 1.662 was not found to be statistically significant.

The above findings indicates that there was no significant difference in the level of low back pain among school teachers in the control group and there was no improvement in the level of disability among female school teachers in the control group.

Table 8: Comparison of post test mean score of low back pain and disability among female school teachers between the experimental and control group.

N = 60(30+30)

Variables	Group	Mean	S.D	Unpaired 't' Value
Low back pain	Experimental	2.10	0.99	t = 18.848
	Control	7.16	1.08	p = 0.000, S****
Disability	Experimental	16.33	6.47	t = 13.242
	Control	52.10	13.30	p = 0.000, S****

****p<0.001, S – Significant

The table shows that the post test mean score of low back pain in the experimental group was 2.10 ± 0.99 and the post test mean score in the control group was 7.16 ± 1.08 . The calculated unpaired 't' value 18.848 was found to be statistically significant at $p<0.001$ level.

The table also depicts that the post test mean score of disability in the experimental group was 16.33 ± 6.47 and the post test mean score in the control group was 52.10 ± 13.30 . The calculated unpaired 't' value 13.242 was found to be statistically significant at $p<0.001$ level.

The above findings indicate that the intervention acupressure administered to the female school teachers in the experimental group with low back pain and disability had significant reduction in their level of low back pain and their disability also reduced significantly. This proves that acupressure had significant effect in reducing the low back pain and disability among school teachers in the experimental group than the female school teachers in the control group.

SECTION D

Table 9: Correlation between low back pain and disability among female school teachers in experimental group.

n = 30

Variable	Mean	S.D	'r' Value
Low back pain	2.10	0.99	r = 0.872** p = 0.000, S
Disability	16.33	6.47	

**p<0.01, S – Significant

The table shows that the post test mean score of low back pain in the experimental group was 2.10 ± 0.99 and the post test mean score of disability was 16.33 ± 6.47 . The calculated Karl Pearson's Correlation value of $r = 0.872$ shows a positive correlation between low back pain and disability. This clearly indicates that when the low back pain decreases their disability also decreases.

SECTION E

Table 10: Association of pretest level of low back pain among female school teachers with their selected demographic variables in the experimental group.

n = 30

Demographic Variables	Moderate (4 – 6)		Severe (7 – 9)		Chi-Square Value
	No.	%	No.	%	
Age in years					$\chi^2=1.033$
25 - 40	-	-	-	-	d.f=1
41 - 50	7	23.3	6	20.0	p = 0.310
51 - 60	6	20.0	11	36.7	N.S
Body Mass Index					$\chi^2=4.469$
Underweight	2	6.7	0	0	d.f=3
Normal weight	7	23.3	7	23.3	p = 0.215
Over weight	4	13.3	9	30.0	N.S
Obesity	0	0	1	3.3	
Type of physical activity					$\chi^2=2.865$
Moderate work	7	23.3	10	33.3	d.f=2
Heavy work	2	6.7	0	0	p = 0.239
Sedentary work	4	13.3	7	23.3	N.S

Demographic Variables	Moderate (4 – 6)		Severe (7 – 9)		Chi-Square Value
	No.	%	No.	%	
Years of teaching experience					$\chi^2=1.115$ d.f=2 p = 0.573 N.S
<5 years	-	-	-	-	
5 - 10 years	3	10.0	2	6.7	
10 - 20 years	9	30.0	12	40.0	
>20 years	1	3.3	3	10.0	
Hours of standing per day					-
<2 hours	-	-	-	-	
2 - 8 hours	13	43.3	17	56.7	
5 hours	-	-	-	-	
Treatment for low back pain					$\chi^2=3.529$ d.f=1 p = 0.060 N.S
Yes	0	0	4	13.3	
No	13	43.3	13	43.3	

N.S – Not Significant

The table shows that none of the selected demographic variables had shown statistically significant association with pretest level of low back pain among female school teachers in the experimental group.

Table 11: Association of pretest level of disability among female school teachers with their selected demographic variables in the experimental group.

n =30

Demographic Variables	Mild (10 – 30)		Moderate (31 – 50)		Severe (51 – 70)		Chi-Square Value
	No.	%	No.	%	No.	%	
Age in years							$\chi^2=0.335$ d.f=2 p = 0.846 N.S
25 - 40 years	-	-	-	-	-	-	
41 - 50 years	1	3.3	5	16.7	7	23.3	
51 - 60 years	2	6.7	5	16.7	10	33.3	
Body Mass Index							$\chi^2=6.104$ d.f=6 p = 0.412 N.S
Underweight	0	0	1	3.3	1	3.3	
Normal weight	3	10.0	4	13.3	7	23.3	
Over weight	0	0	4	13.3	9	30.0	
Obesity	0	0	1	3.3	0	0	
Type of physical activity							$\chi^2=3.395$ d.f=4 p = 0.494 N.S
Moderate work	3	10.0	6	20.0	8	26.7	
Heavy work	0	0	1	3.3	1	3.3	
Sedentary work	0	0	3	10.0	8	26.7	
Years of teaching experience							$\chi^2=4.950$ d.f=4 p = 0.292 N.S
<5 years	-	-	-	-	-	-	
5 - 10 years	1	3.3	2	6.7	2	6.7	
10 - 20 years	2	6.7	5	16.7	14	46.7	
>20 years	0	0	3	10.0	1	3.3	

Demographic Variables	Mild (10 – 30)		Moderate (31 – 50)		Severe (51 – 70)		Chi-Square Value
	No.	%	No.	%	No.	%	
Hours of standing per day							
<2 hours	-	-	-	-	-	-	-
2 - 8 hours	3	10.0	10	33.3	17	56.7	
>8 hours	-	-	-	-	-	-	
Treatment for low back pain							
Yes	0	0	1	3.3	3	10.0	$\chi^2=0.831$ d.f=2 p = 0.660 N.S
No	3	10.0	9	30.0	14	46.7	

***p<0.001, *p<0.05, S – Significant, N.S – Not Significant

The table shows that none of the demographic variables had not shown statistically significant association with pretest level of disability among female school teachers.

CHAPTER V

DISCUSSION

This chapter highlights the discussion of the data analyzed based on the objectives and hypothesis of the study.

The first objective of the study was to assess the level of low back pain and disability among female school teachers.

In experimental group, in pretest majority of school teachers 56.67% had severe and 43.33% had moderate level of low back pain. In post test majority 93.33% had mild and only 6.67% had moderate low back pain.

In experimental group, in pretest majority of school teachers 56.67% had severe 33.33% had moderate and 10% had mild level of disability. In post test majority 96.67% had mild and only 3.33% had moderate level of disability.

In control group, in pretest level of low back pain majority of school teachers 53.33% had moderate, 46.67% had severe pain. In post test majority 80% had severe and 20% had moderate low back pain.

In control group the pre test 53.33% had severe, 40% had moderate 6.67% had mild level of disability. In the post test majority 70% had severe, 16.67% had moderate, 10% had mild and 3.33% had worst level of disability.

The second objective of the study was to assess the effectiveness of acupressure on low back pain among the female school teachers.

The post test mean score of low back pain in the experimental group was 2.10 ± 0.99 and in control group was 7.16 ± 1.08 , the calculated 't' value 18.846 was statistically significant at $p < 0.001$ level. Based on the study findings the stated hypothesis **H1: There will be a significant reduction in low back pain among female school teachers who receive acupressure** was accepted.

The third objective of the study was to assess the effectiveness of acupressure on disability among female school teachers.

The post test mean score of disability in experimental group was 16.33 ± 6.47 and in control group it was 52.10 ± 13.30 , the calculated 't' value 13.242 was statistically significant at $p < 0.001$ level. Based on the study findings the stated hypothesis **H2: There will be a significant reduction in disability among female school teachers who receive acupressure** was accepted.

The fourth objective of the study was to find the association of pretest test level of low back pain among the female school teachers, with their selected demographic variables in the experimental group.

There was no significant association found between age, body mass index, type of physical activity, years of teaching experience, hours of standing per day and treatment for low back pain and a pretest level of low back pain at $p < 0.001$. Hence the stated hypothesis **H3: There will be a significant association between pre test level of low back pain and selected demographic variables of female school teachers who receive acupressure** was not accepted.

The fifth objective of the study was to find the association of pretest test level of disability among the female school teachers, with their selected demographic variables in the experimental group.

There was no significant association found between age, body mass index type of physical activity, years of teaching experience, hours of standing per day and treatment for low back pain with pretest level of disability at $p < 0.001$. Hence the stated hypothesis **H4: There will be a significant association between pre test level of disability and selected demographic variables of female school teachers who receive acupressure** was not accepted.

The sixth objective of the study was to find the correlation between low back pain and disability among female school teachers in the experimental group.

The post test mean score of low back pain in the experimental group was 2.10 ± 0.99 and the post test mean score of disability was 16.33 ± 6.47 . The calculated Karl Pearson's Correlation value of $r = 0.872$ shows a positive correlation between low back pain and disability. This clearly indicates that when the low back pain decreases their disability also decreases. Hence the stated hypothesis **H5: There will be a significant correlation between low back pain and disability among the female school teachers in the experimental group** was accepted.

CHAPTER VI

SUMMARY, IMPLICATIONS LIMITATIONS, RECOMMENDATIONS AND CONCLUSION

This chapter is divided into two sections in the first section, summary of the study, findings and conclusion is presented. In the second section the implication in various areas of nursing practice, nursing education, nursing administration, nursing research and recommendation for further study.

SUMMARY OF THE STUDY

The main objective of the study was to evaluate the effectiveness of acupressure on low back pain and disability among female school teachers.

An evaluative approach, true experimental pretest and post test control group design was adopted for this study. 60 participants were selected through simple random sampling technique. Conceptual frame work “Wiedenbach’s Helping Art of clinical nursing theory” was used for this study.

The pre test was done for both the groups and intervention acupressure was given only to experimental group for 9 sessions spread over for 18 days. Post test was done for both the experimental and control group with numerical pain scale and modified Bournemouth questionnaire.

The study revealed the experimental post-test mean score on low back pain 2.10 was lesser than control group mean pain score 7.16. The calculated 't' value 18.848 was found to be statistically significant at $p < 0.001$ level.

The experimental post-test mean score on disability 16.33 was lesser than control group mean pain score 52.10. The calculated 't' value 13.242 was found to be statistically significant at $p < 0.001$ level. This proves that acupressure had significant effect in reducing the low back pain and disability among school teachers in the experimental group than the school teachers in the control group.

MAJOR FINDINGS OF THE STUDY

Majority of participants

- 56.67% in the experimental group and 60% in control group belong to the age group of 51 – 60 years,
- 46.67% in experimental group were normal weight and 46.67% in control group were overweight,
- 56.67% in both experimental and control group were moderate worker,
- 70% in experimental group and 76.67% in control group had 10 – 20 years of teaching experience,
- 100% in experimental group 93.33% in control group were standing 2 – 8 hours per day
- 86.67% in experimental group 93.33% in control group had not taken treatment for low back pain.

Findings related to study intervention

- In pretest in experimental group 56.67% had severe low back pain and 43.33% had moderate low back pain and in post test experimental group after the intervention of acupressure 93.33% had mild, 6.67% had moderate low back pain.
- In pretest in experimental group 56.67% had severe disability, 33.33% had moderate, and 10% had mild level of disability and in post test in

experimental group after the intervention of acupuncture, 96.67% had mild disability only one 3.33% had moderate level of disability.

- In pretest in control group 53.33% had moderate 46.67% had severe low back pain and in post test, in control group 80% had severe low back pain and 20% had moderate low back pain.
- In pretest in control group, 53.33% had severe , 40% had moderate and 6.67% had mild level of disability and in post test, in the control group 70% had severe, 16.67% had moderate, 10% had mild and 3.33% had worst level of disability
- The post test mean score of low back pain in experimental group was 2.10 and in control group was 7.16 .The calculated 't' value 18.848 was found to be statistically significant at $p < 0.001$.
- The post test mean score of disability in experimental group was 16.33 and in control group was 52.10. The calculated 't' value of 13.242 was found to be statistically significant at $p < 0.001$ level.

IMPLICATIONS

The following implications, which are of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research is derived from the study.

Implications for nursing practice

Nursing Practice

The nursing practice emphasizes the need to focus more on the evidence based and holistic practice through the various techniques that can bring about significant positive and psychological outcomes for patients with low back pain.

The nurses have a vital role in providing safe and effective nursing care to enhance the reduction of low back pain and disability among patients with back pain.

This can be facilitated by motivating the nurse to,

1. Learn about accurate assessment of pain level and disability with the use of numerical pain scale and modified Bournemouth questionnaire.
2. The practice nurse can use the acupuncture on patients with low back pain and its disability to reduce the pain level.
3. The study result helps the nursing personnel to include acupuncture as a nursing intervention in the management of pain among patients with low back pain and disability.
4. A protocol on implementation of acupuncture can be developed and used in all nursing care settings.
5. Teach the acupoints to the patients with low back pain about the effectiveness of pain and disability reduction.

Implications for nursing education

1. Professional nurse should be oriented, guided and trained in the application of acupuncture on low back pain and other common ailments.
2. Nursing students can be educated to use the acupuncture to reduce the pain among the patients with low back pain.
3. The effectiveness of acupuncture in reduction of low back pain and disability is to be published in the nursing journals to make awareness among nursing students.
4. Encourage the students for effective utilization of research based practices.
5. Nursing curriculum should include and incorporate practical training on complementary therapies.

Implications on nursing administration

1. Conduct in- service program and continuing nursing education program for nurses for effective management of low back pain and disability
2. The nurse educator can make awareness among staff nurses about significance of acupressure for reducing back pain and disability among patients with low back pain through workshops and seminars.
3. Ensure and conduct workshops, conferences, seminars non pharmacological methods to reduce low back pain.

Implications for nursing research

1. As a nurse researcher, promote more research on effective management for low back pain and disability in patients with back pain.
2. The nurse researcher can do this study with large population to generalize the findings.
3. Disseminate the findings of the research through conferences, seminars and publishing in nursing journals.
4. Promote effective utilization of research findings on low back pain.

RECOMMENDATIONS

The study recommends the following future research,

- The similar study can be conducted with larger samples for better generalization
- This study can be conducted as a longitudinal study.
- A follow up study can be conducted to find out whether the school teachers with low back pain and disability are practicing application of acupressure to reduce the level of low back pain and disability.

- A study can be conducted to assess the effectiveness of other complementary measures such as yoga ,music therapy, guided imagery for reduction of low back pain.

CONCLUSION

The study was conducted to find the effect of acupressure on low back pain and disability among female school teachers. Most of the teachers were cooperative and there was a significant reduction in the low back pain and disability. From the above findings it was evidenced that acupressure was effective on low back pain and disability.

REFERENCES

BOOK REFERENCES

1. Brunner & Suddrath "Text book of Medical surgical nursing" 13th edition. 2014 Wolters Kluwer Publications. India . 2000-2397.
2. Lewis "Text book of Medical Surgical nursing " 8th ed. 2011 Mosby publications USA 1675-1686.
3. Kozier & Erb's Fundamentals of Nursing 8th edition 2008 Dorling Kinder Scey India Pvt Ltd 1131-1190.
4. David E Brown, Randall D, Newman 2nd edition 2005 Orthopedic secrets published Jaypee publications, New Delhi 186,188
5. Jeffery,D.Plagzek,David ABoyce,"The Text book of orthopedic physical therapy secrets 2001 Jaypee publications, New Delhi 52-56.
6. John Ebinazer ,"the text book of orthopedics for nurses"1st edition Jaypee publications. New Delhi 32.
7. Agarwal,A.L.et.al. Introduction to acupressure India, 1987 Jaypee brothers, India 129
8. Polit Beck "Essentials of nursing Research" 7th ed. 2010 Wolters kluwer publications Newdelhi.- 36-45.
9. Mohan,Phipps "Text book of Medical Surgical nursing 8th edition Elseviewr India 1592-1593.
- 10.Spring house, Penninslvia."Mastering Medical Surgical nursing"P-539-541.

11. John Ebenezer Common orthopedic problems 1st ed. 2012 CBD publication. 63, 75.
12. BrainD'Orazio "Backpain Rehabilitation" Andover medical publishers. India 153,156.
13. Hanley&Belfur, "The Low Back pain hand book" , Jaypee brothers publishers 127,320.
14. Dr.AK.Mukherjee "Spine Injury & Disability" published by Vikhas publishing house 6,7.
15. Craig .Liebenson, "Rehabilitation of Spine a Practitioner Manual" p- 87,803,153,154.
16. Lorraine William ,Pedretti "Occupational therapy, practice skills for physical dysfunction".4th edition Mosby's Publication, Harcourt Brace& Company, 255,715,728.

JOURNAL REFERENCES

1. Wang TJ., "Effect of aquatic exercise programme" Journal advance Nursing 2007 Vol.7 141-152.
2. Ehrlich George E: "Low back pain." Bulletin of the World Health Organization 2003, 81:671-676.
3. Nachemson A, Jonsson E. (2000). "The Scientific Evidence of Causes, Diagnosis, and Treatment". Lippincott Williams & Wilkins, 165–183.
4. Volinn E. "The epidemiology of low back pain in the rest of the world." A review of surveys in low-and middle-income countries. Spine; 22:1747–1757.

5. Papageorgiou AC. "Estimating the prevalence of low back pain in the general population." evidence from the south Manchester pain survey. Spine.
6. P Shahul hameed "Prevalence of low back pain" International journal of scientific & technology research volume 2, Issue 7, July 2013.
7. Callaghan, M.J "The assessment of back rehabilitation groups" Journal of physiotherapy 1994, October, Vol .18, 10.
8. Baxter, "Clinical Management of Low back pain" 2011, March, Vol 20, No.3.
9. Esha Sharma. "To assess the effectiveness of acupressure" nursing and midwifery research journal 2014.
10. Singh A. Acupressure "Do it yourself therapy". Chandigarh publications 2010.
11. Anne F Mannion "Pain measurement in patients with low back pain, nature publishing group 2007610, .vol 3 no.11.
12. Kate beaton. "Treatment of non specific low back pain," International journal of General medicine 2013'.P.733.
13. Yilmaz,E &Dedeli,, "Effect of physical and psychosocial factors on occupational low back pain" 2012, 598-609.
14. Yue,P.,Liu "Neck /shoulder pain and low back pain among school teachers in China, prevalence and risk factors." BMC Public health 2012, 12,789.
15. Erick and Smith "A systemic review of musculoskeletal disorders among school teachers." 2011.

16. Journal of Manipulative and Physiological Therapeutics (Impact Factor: 1.48). 09/2014; 37(9). DOI: 10.1016/j.jmpt.2014.09.006.
17. “Prevalence of Low Back Pain and its Risk Factors among School Teachers” American Journal of Applied Sciences 7 (5): 634-639, 2010 ISSN 1546-9239.
18. Samuel, J. “Acupressure in the practice of Nursing” Nightingale nursing times. 2008 36-38.
19. Sok,S.R. “Effects of acupressure therapy on insomnia.” Journal of advanced nursing 2003.
20. Tsay,S.L “Acupressure and fatigue in patients with ESRD” International journal of nursing studies. 2004, 41.
21. Ferreria “Comparison of general exercise, motor control exercise and spinal manipulative therapy for chronic low back pain”. 2007 June, vol-55,No2.
22. Judith.A Chase “Low back pain” Journal of orthopedic nursing, , 1992 July ,voll 11.
23. Machoda “A study of client centered therapy vs exercise therapy for chronic low back pain”. European spinal Journal, 2007 July, vol20,No.7.
24. Bejia “Prevalence and factors associated with low back pain among hospital staff” journal of joint, bone and spine 2005.

NET REFERENCES

- ❖ <http://www.sciencedaily.com/releases/2009/html>
- ❖ [https:// www.researchgatenet](https://www.researchgatenet)
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/2297865/
- ❖ <http://www.biomedcentral.com/1471-2474>
- ❖ bmc-musculoskeletal-disorders.biomedcentral.com
- ❖ googleweblight.com
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/15207999/
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/24115783/
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/22415783/
- ❖ www.raysahelian.com
- ❖ www.chiro.org
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/25358427/
- ❖ www.sciencebasedmedicine.org
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/23415783/
- ❖ bimidx.com
- ❖ <http://www.sciencedaily.com/releases/2006/html>
- ❖ www.painmanagementnursing.org
- ❖ www.sciencedirect.com
- ❖ www.ncbi.nlm.nih.gov/m/pubmed/17654426/
- ❖ www.acupressure.com
- ❖ acupressurepointguide.com
- ❖ www.modernreflexology.com
- ❖ <http://www.acupressure.com/articles>

ANNEXURE - I

LETTER SEEKING PERMISSION FOR RESEARCH PURPOSE

From

301411705
II year M.SC Nursing,
Thanthai Roever College of Nursing,
Perambalur

To

The Headmistress,
St.Annes Girls Higher Secondary School
Melapudur, Trichy.

Respected Madam/Sir,

I am doing II year M.SC Nursing in Thanthai Roever College of Nursing Perambalur, under the Tamilnadu Dr.M.G.R. Medical University Chennai. As a partial fulfillment of my M.Sc. (Nursing) Degree programme,I am going to conduct a study. AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE AMONG FEMALE SCHOOL TEACHERS WITH LOW BACK PAIN AND DISABILTY IN SELECTED SCHOOLS AT TRICHY.I would like to select for my data collection, as I understand that I may get many patients with osteoarthritis in your village. Hence I kindly request you to grant me permission to conduct my study in your village.

Thanking you

Place:

Yours sincerely,

Date :

30151105

ANNEXURE - II

**LETTER SEEKING EXPERT'S OPINION FOR CONTENT
VALIDATION**

From:

301511705

II year M.Sc.Nursing

Thanthai Roever college of Nursing

Perambalur

To:

Respected sir/madam,

Sub: Requisition for content validity of tool.

I am doing M.SC. Nursing II year in Thanthai Roever College of Nursing, Perambalur, under the Tamil Nadu Dr.M.G.R. Medical University Chennai. As a partial fulfillment of my M.SC Nursing Degree Programme,I am conducting a research on AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE AMONG FEEMALE SCHOOL TEACHERS WITH LOW BACK PAIN AND DISABILTY IN SELECTED SCHOOLS AT TRICHY. I am sending the content of the above stated for your expert and valuable opinion, I will be thankful for your kind consideration. Kindly return it to the undersigned.

Thanking you

Yours sincerely

301411705

Place:

Date:

ANNEXURE - III

EVALUATION CRITERIA CHECK LIST FOR VALIDATION

INTRODUCTION

The expert is requested to go through the following criteria for evaluation. Three columns are given for response and a column for the remark. Place tick mark in the appropriate column and given remarks.

INTERPRETATION OF COLUMN

Column I : Meets the criteria.

Column II : Partially meets the criteria

Column III : Does not meet the criteria

Sl.NO	Criteria	1	2	3	Remarks
1	Scoring - Adequacy - Clarity - Simplicity				
2	Content - Logical sequence - Adequacy - Relevance				
3	Language - Appropriate - Clarity - Simplicity				
4	Practicability - It is easy to score - Does it precisely - Utility				

Signature :

Any other suggestion :

Name :

Designation :

Address :

ANNEXURE - IV

LIST OF EXPERT'S OPINION FOR CONTENT VALIDITY

1. Prof.R.Punithavathy. M.Sc.(N)
Principal,
Thanthai Roever College of Nursing,
Perambalur.
2. Prof.V.J.Elizabeth.M.Sc.(N)
Vice principal,
Thanthai Roever College of Nursing,
Perambalur.
3. Dr.Rajina Rani M.Sc.(N), Phd
Principal,
RAASU Academy college of nursing
Poovanthi
4. Prof.M.Shanthi M.Sc (N)
Dr.G.Sagunthala college of Nursing
Tirchy.
5. Prof.K.S.Pushpalatha M.Sc (N)
Shanmuga College of Nursing
Salem.

ANNEXURE - V

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work **AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF ACUPRESSURE AMONG FEEMALE SCHOOL TEACHERS WITH LOW BACK PAIN AND DISABILTY IN SELECTED SCHOOLS AT TRICHY**. Done by 301411705 II year M.Sc. Nursing, in Thanthai Roever College of Nursing, Perambalur is edited for English language appropriateness.

Signature

ANNEXURE - VI

ஒப்புதல் படிவம்

பெரம்பலூர் தந்தை ரோவர் செவிலியர் கல்லூரியில் முதுகலை செவிலியர் பட்டப்படிப்பு பயிலும் ர.ஷெர்லி .:பரீடா மேபல் அவர்களால் நடத்தப்படுகின்ற, அக்குப்ரஷரால் முதுகுவலியை குறைக்கும் சிகிச்சை சம்பந்தமான ஆராய்ச்சியின் நோக்கத்தினைப் பற்றி எனக்கு தெரிவிக்கப்பட்டது. இதில் பங்கேற்பதற்கு எனக்கு எந்த ஆட்சேபனையும் இல்லை. மேலும் இந்த விவரங்களை வெளியிடுவதற்கும் அச்சிடுவதற்கும் முழு சம்மதம் அளிக்கிறேன்.

கையெழுத்து

பெயர் :

தேதி :

இடம் :

ANNEXURE-VII
DATA COLLECTION TOOLS

Section-A

DEMOGRAPHIC DATA

Kindly put a tick in the suitable choice:

1. Age in years

- a)25-40 years
- b)41-50 years
- c)51-60 years

2. Body Mass Index

- a)Under Weight
- b)Normal Weight
- c)Over Weight
- d)Obesity

3. Type of physical activity

- a)Moderate work
- b)Heavy work
- c)Sedentary work

4. Years of teaching experience

- a)< 5 years
- b)5-10 years
- c)10-20 years
- d)>20 years

5. Hours of standing per day?

- a) < 2 hours
- b)2-8 hours
- c)>8 hours

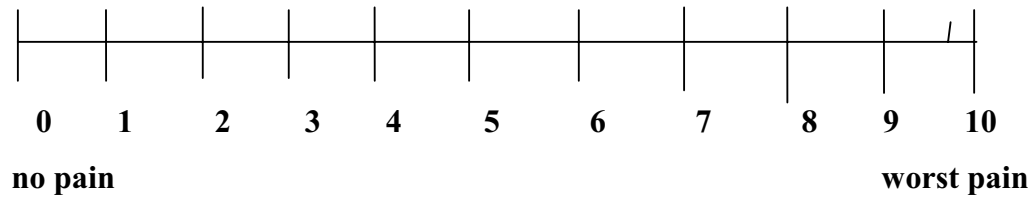
6. Are you on treatment for low back pain?

- a)Yes
- b)No

SECTION – B

NUMERICAL PAIN SCALE

Kindly rate your level of pain.



0-NO PAIN

1-3-MILD PAIN

4-6-MODERATE PAIN

7-10-SEVERE PAIN

SECTION-C

MODIFIED BOURNEMOUTH QUESTIONNARE

Kindly answer the questions by putting a circle in the boxes given below:

PAIN:

1. Over the past week, on average, how would you rate your low back pain?

0 no pain	1	2	3	4	5	6	7	8	9	10 Worst pain
-----------------	---	---	---	---	---	---	---	---	---	---------------------

2. Over the past week, to what extent you were able to bear the pain?

0 no pain	1	2	3	4	5	6	7	8	9	10 Not at all able to bear the pain
--------------	---	---	---	---	---	---	---	---	---	---

SLEEP AND REST:

3. Over the past week to what extent you were able to sleep at night without low back pain?

0 NO sleep	1	2	3	4	5	6	7	8	9	10 Sound sleep
------------------	---	---	---	---	---	---	---	---	---	----------------------

4. To what extent you have been compelled to take rest in between your work?

0 No compulsion	1	2	3	4	5	6	7	8	9	10 Almost compulsion
--------------------	---	---	---	---	---	---	---	---	---	-------------------------

ACTIVITIES:

JOB ORIENTED:

5. Over the past week how have you felt our work has affected your low back pain?

0 Not affected	1	2	3	4	5	6	7	8	9	10 Most affected
-------------------	---	---	---	---	---	---	---	---	---	---------------------

HOUSE HOLD:

6. How much your back pain did interfered with your daily house hold activities?

0 Not affected	1	2	3	4	5	6	7	8	9	10 Most affected
----------------------	---	---	---	---	---	---	---	---	---	------------------------

CONFIDENCE AND WELL BEING:

7. Rate your confidence on control of your low back pain on your own?

0 No confidence	1	2	3	4	5	6	7	8	9	10 Very confident
-----------------------	---	---	---	---	---	---	---	---	---	-------------------------

8. What is the extent of your overall well being?

0 poor	1	2	3	4	5	6	7	8	9	10 excellent
-----------	---	---	---	---	---	---	---	---	---	-----------------

SUM OF SCORES IMULTIPLIED BY 10

SCORING PROCEDURE:

0-10 - NO DISABILITY

10-30 - MILD DISABILITY

31-50 - MODERATE DISABILITY

51-70 - SEVERE DISABILITY

71-80 - WORST DISABILITY