A PRE – EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRETCHING EXERCISES ON JOINT PAIN AMONG OBESE WOMEN IN SELECTED AREA AT VELLORE

BY

POORNIMA. I

A Dissertation submitted to

THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY,

CHENNAI - 32

In partial fulfillment of the requirement for the Degree of

MASTER OF SCIENCE IN NURSING

APRIL – 2016

CERTIFICATE

Certified that this is a Bonafide work of

POORNIMA. I

Arun college of nursing, Vellore.

Submitted in partial fulfillment of the requirement for the degree of

Master of Science In Nursing

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY, CHENNAI - 600032.

COLLEGE SEAL

Signature   -------------------------------------

PROF.Mrs.J.SUNITHA PRIYADARSHINI, M.Sc (Nursing), M.Sc (Psy)., P.hD.,

Principal, Arun college of Nursing,

Vellore District, Tamilnadu.

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Branch –I, Medical Surgical Nursing,

Arun College of Nursing,

Vellore -632 001.

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Approved by Dissertation Committee

Research Guide

Prof.Mrs.J. Sunitha Priyadarshini, M.Sc(N),M.Sc(psy)., P.hD ------------------

Principal, Arun college of Nursing ,

NO, 15, Thiyagarajapuram ,Vellore - 632 001 .

Clinical Speciality Guide

Mrs. Gomathy. V. M.Sc (Nursing) , -----------------

Associate Professor ,

HOD, Department of Medical Surgical Nursing ,

Arun College of Nursing, Vellore – 632001.

Clinical specialty Co- Guide

Mrs. Rajeshwari, M.Sc (N), Lecturer -----------------

Medical Surgical Nursing

Arun College of Nursing, Vellore – 632001

Medical Guide

Mr. Dr.Manogaran -----------------

MBBS, D.C.A.A.M.A

Chief Medical Officer,

Arun Multispecialty Hospital, Vellore- 632 001

A Dissertation submitted to

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BY

POORNIMA.I

M.SC.(Nursing) Degree Examination

Branch-I, Medical Surgical Nursing,

Sub- Specialty- Orthopedic Nursing,

Arun College of Nursing,

Vellore- 632001.

A Dissertation submitted to **THE TAMILNADU Dr.M.G.R MEDICAL UNIVERSITY, CHENNAI**. In partial fulfillment of the requirement for the degree of MASTER OF SCIENCE IN NURSING, APRIL – 2016

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INTERNAL EXAMINER   EXTERNAL EXAMINER

Signature   Signature

DECLARATION

I hereby declare that the present dissertation entitled "**A PRE – EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF STRETCHING EXERCISES ON JOINT PAIN AMONG OBESE WOMEN IN SELECTED AREA AT VELLORE"** is the outcome of the original research work undertaken and carried out by me ,under the guidance of **Prof . Mrs J . Sunitha Priyadarshini ,MSC (N), Msc (Psy), PhD.,** Principal and Department of Nursing Research, Arun college of Nursing and, **Mrs. Gomathy.V. M.Sc (N)** Associate professor **HOD of Medical Surgical Nursing,** Arun college of Nursing Vellore, and **Mrs. Rajeshwari Lecturer** in **Medical Surgical Nursing** Arun college of Nursing.

I also declare that the material of this has not been found in any way, the basis for the reward of any degree or diploma in this university or any other universities.

POORNIMA.I

Msc (N) II Year

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ABSTRACT

A pre - experimental study to assess the effectiveness of stretching exercises on joint pain among obese women in selected area at Vellore.

The objectives of the study were,

1. To assess the pre test and post test level of joint pain among obese women,

2. To evaluate the effectiveness of stretching exercise on joint pain among obese women.

3. To find the association between the pre test and post test level of joint pain among obese women in selected demographic variables.

4. To find the association between the pre test and post test level of joint pain among obese women in selected clinical variables.

The research approach was evaluative and Research deaign used was pre - experimental involving only one group pre test and posttest design.Purposive sampling technique was adopted to choose. Joint pain was assessed by Lysholm Knee Scoring scale. Stretching exercise was done daily 8 minutes.

Major findings of the study are

Demographic variables showed that 11 (36.7%) of obese women participated in the study were in the age group of above 59 years. Majority 16 (53.7%) of obese women were Hindus. One third 13(43.3%) of obese women were illiterate. More than of 20(66.7%) obese women were non-vegetarian. Majority of 13 (43.3%) of obese women

participated in the study were married. More than half 17 (56.7%) obese women were implemented family planning method.

Clinical variables showed the majority 12 (40%) whose BMI is 30.0-39.9 waist circumstances is extremely high 10 (33%) of obese women. All obese women do not have maximum resistance 8(27%). Majority of obese women were partly depended 11(37%). Majority of obese women have duration of joint pain less than 1 to 5 years 14 (47%). Majority of obese women are using comfort devices as pillows 26 (90%) and some are using back rest 3(7%) and sand bag 1 (3%).

Before stretching exercises out of 30 obese student none of them had mild joint pain. 7% had moderate joint pain 93% had sever joint pain. But after stretching exercises 10% have moderate pain and none of them had sever joint pain. The comparison using paired t-test is 25.90^{***} which proved highly significant of p<001.Hence H01 stated earlier there is significant difference between the level of Joint pain among obese women before and after stretching exercises "is accepted".

The study revealed that there is significant association between the selected demographic variable and their post test level of joint pain among elderly. Statistical significance was calculated using chi square test hence H02 stated earlier ''there is no significant association between the post test level of joint pain among elderly and selected demographics'' is accepted .

There is significant association between the selected clinical variable and their post test level of joint pain. Statistical significance was calculated by using chi -

square test. Hence H03 is stated earlier. ''There is no significant association between the post test level of joint pain among obese women and selected clinical variable '' is accepted .

RECOMMENDATIONS

> ➤ Similar kind of study can be conducted to a large group to generalize the findings.

> ➤ The same study can be repeated by using the true experimental design.

> ➤ Same study about the effectiveness of stretching exercise can be under taken for the following conditions, relief of arthritis pain, joint pain, knee pain.

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KEY WORDS

Demographic Variables

Age	-	Age
Religion	-	Rl
Educational status	-	Es
Occupation	-	Oc
Family Planning	-	Fp
Calcium intake	-	Ct
Marital Status	-	Ms
Family planning	-	Fp
Menopause	-	Mp
Child bearing	-	Cb
Number of children	-	Nc

Clinical Variables

Body mass index	-	BMI
Waist circumference	-	WC
Mobility status	-	MS
Duration of Joint pain	-	DJ
Swelling	-	SW
Comfort devices	-	CD
Joint affected	-	JA
Type of pain	-	TP
Walk with support	-	WS
Stairs can you claim	-	SC

CHAPTER -I

Introduction

CHAPTER -II

Review of Literature

CHAPTER – III

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CHAPTER – I

INTRODUCTION

Background of the study

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Pain is an abstract concept which refers to a personal, private, and sensation of hurt, a harmful stimulus with signal current or pattern of responses which operate to protect the organism from harm.

Joint pain is a common musculoskeletal complaint now a day's people are suffering. It includes injuries and acute or chronic inflammation of the joint, tendons, and surrounding ligaments. Everyone has experienced some type or degree of pain.

A person in pain feels distress or suffering and seeks relief. Pain is much more than a physical sensation caused by specific stimulus. The pain experience is complex, involving physical, emotional and cognitive components. Pain is subjective and highly individualized. Pain cannot be objectively measured, only the client knows whether pain is present.

A sudden environment such as extreme cold or heat and extreme of humidity can affect the characteristics of pain. e .g – sudden exercise on a hot day can cause a muscle spasm .physical and emotional stressors can also precipitate pain. Factors like sleep appetite, concentration, work, school ,interpersonal relationships, marital relationship, sex, home activities, driving ,walking ,leisure activities, emotional status influences pain .

Alih. Mokdad 2013, measured the prevalence of obesity is increasing in the united states. To estimate the prevalence of obesity among adult peoples in 2011. Random digit telephone survey of 1,95.000 sample was collected in the states participating in the risk factors surveillance system. BMI ,based on self reported weight and height was taken. In 2011 the prevalence of obesity BMI > 30 was 20 .9% ,19 .8% in 2010 and it increases up to 5 .6% in 2012. Increased cholesterol level 2.72% ,high blood pressure 1.88% and joint pain people around 4 .19% people are affected. Since the percentage is 45 to 58 % and 2010 over weight is 65.9% men and 49 .9% women.

Pain can be described in terms of duration (acute pain, chronic pain) origin (cutaneous, deep, somatic, visceral) and location (radiating, referred pain, intractable pain, neuropathic pain). Acute pain is a short term feeling of pain felt in response to an easily identifiable cause. It might be caused by surgery, some kind of trauma or an acute illness. Chronic pain lasts for a prolonged time period, and its cause is not amenable to specific treatment. It is associated with prolonged tissue pathology or pain that persists beyond the normal healing period for an acute injury or disease.

Ann Inter med (2008) a study shows that 47.5 million United States adults (21,8%)reported a with joint pain and we identified through incident report and find out. Among adults reporting a disability, the most commonly identified limitations were difficulty climbing a flight of stairs (21 .7 million ,10.0%) and walking 3 city blocks (22.5 million ,10.3%). That means that 1 in 10 adults have trouble while walking a distance equal to walking from the parking lot of back of a store or through mall.

The total annual incremental cost of health care due to joint pain ranges from 560 billion to 635 billion in the United States, which combines the medical cost of pain care and the economic cost related to disability days and productivity. More than half of all patient experienced pain in the last days and although therapies are, present to alleviate most pain, research shows that 50 -75% of die in moderate to severe pain.

In 2013 study was conducted by nearly 51.5% of the respondent reported some form of pain. The prevalence sites of pain includes knee pain 12.6%, Low back pain 8.9%,general body pain 7.8%, multiple joint pain 14.2% and pain in legs 2.7%. Musculoskeletal pain in men and women were 32.7% men's are affected and 53.7% of women's are affected from musculoskeletal pain.

Joint pain is the sensation of discomfort, inflammation, soreness ,stiffness in a joint or joints. Joint pain is a symptom of a wide variety of mild to serious   disease. Joint   pain   can   result   from   infection, trauma, malignancy ,autoimmune disease and other abnormal processes.

Joint pain indicate a relatively benign condition such as mild sprain. Joint pain can result of a moderate disorder such as bursitis, ankylosing spondylitis, a moderate ligament sprain or a dislocation. Joint pain can also accompany serious condition that   can even be life threatening. These include rheumatoid arthritis, leukemia or bone cancer.

The incidence of Musculo skeletal disorder as per the study was 12 .8% among the 6034 screened villages. The study also   revealed a symptom –

Related Diagnosis could be offered while degenerative disorder (29%) and soft tissue rheumatism (20%)were commonly seen. Inflammatory arthritis (11%) and Rheumatoid arthritis (4%) in particular ,was seen in significant & unexpected proportion. Adults who are overweight or obese should try to lose 5% to 10% of their current weight over 6 months. Arthritis affecting approximately 27 million of people in India.

According to Rochester Mink every pound of excess weight exerts about 4 pounds of extra pressure on knees. so a person who is 10 pounds overweight has 40 pounds of extra pressure on his knees, if a person is 100 pounds overweight, that is 400 pounds of extra pressure on his knees.

Over all 22 .7% (52.5 million) of adults reported doctor diagnosed arthritis, with significantly higher age adjusted prevalence in women (23.9%) than men (18.6%).Arthritis prevalence increase with age and was higher among women than men in every age group. Between 2010 and 2012 around 52.5 million people are not affected. The age adjusted prevalence of arthritis increases as BMI 16 .3% among normal/underweight adults of 28.9% among obese people.

According to Indian Rheumatology Association statistics 2011, 49.8% of the total population is over the age of 60 years suffering from severe joint pain, among these 15% of the population have some degree of limitation of movement and 6% cannot perform daily activities.

Exercises a physical activity that is planned, structured and repetitive for the purpose of conducting any part of the body. Exercise is used to improve

health, maintain fitness and is important as mean of physical rehabilitation. It plays a major role in healing of disease. Therapeutic exercise program are developed to improve joint range of motion and muscle strength. Before beginning the exercise programs the client must be aware of limiting factors such as pain and the inability to relax. Immobility disrupts normal metabolic functioning, decreasing the metabolic rate.

Stretching exercise if people are doing properly it increases flexibility. According to M.Alter, benefits of stretching mainly includes enhanced physical fitness to improve skilled movement, reduced risk of injury to joints, muscle fitness, reduced risk of injury to joints, muscles and tendons. Common mistakes made when stretching are inadequate rest between workouts, overstretching and performing the wrong exercise.

Several studies state that long period of bed rest have psychological effect on both clients and family members. At least 2 -3 immediate family members, have to go through emotional, physical and psychological training. Comprehensive educational program for client and family of caregivers should begin throughout care. Educating the researcher regarding various aspects of health care management helps them improving recovery and they can prevent the complications.

The nurse has an important role in multidisciplinary pain management. The nurse's responsibility include, pain assessment, administering therapies, monitoring side effect and teaching the patient and valuating feedback.

There are number of home remedies non – pharmacological intervention therapy that pain reduces the pain and that can be used in combination with pharmacological measures. Nurses are ethically and legally responsible for managing pain and reliving suffering. Effective pain management not only reduce physical discomfort but also improves quality of life and promotes earlier movement.

Stretching is useful for both injury prevention and injury treatment. If done properly, stretching increases flexibility and this directly translates into reduced risk of injury. The reason is that muscle tendon group with a greater range of motion passively will be less likely to experience tears will used actively. It is very important to relax during the stretching routine .It should not be a rushed event.

Although physical activity and exercise have been shown to benefit people with arthritis by improving pain, function and mental health, many people with arthritis report no leisure time physical activity 24% of adults with diagnoses arthritis report no leisure time physical activity, a considerable higher proportion compared with adults without arthritis (18 .6%).

The age adjusted prevalence of arthritis increase as body mass index increases from 16 .3% among normal, underweight adults to 28 .9% among obese adults. Excess weight also contributes to activity limitation. Among normal \underweight adult with arthritis ,38.2% report arthritis attributable activity limitation. Compared to 44.8% among obese adults with arthritis .Losing even modest amount of weight can reduce your risk of getting arthritis, and improve arthritis, pain function and quality of life if you are living with arthritis.

It has been suggested that performing a warm up and cool down before and after sporting activity can help reduce the incidence of injury and promote recovery following training. Central to these practices is improving flexibility through stretching. Here we guide you through the science of stretching, explain the various techniques for the level of stretching appropriate to requirement, and provide a comprehensive program me of stretches.

Lack of flexibility is one of the most frequent causes of poor performance and inefficient technique. By increasing flexibility in the upper and lower body the climber will reduce the risk of injury increases recovery. Although even individual's flexibility is somewhat genetic, it is possible for everyone to make scientific gains in their flexibility .

Stretching and flexibility exercises should be performed for a minimum of 8 minutes before aerobic exercise. The main purpose is to keeping muscles supple increasing range of motion of joints, enhancing flexibility, improving co –ordination, increasing blood flow to muscles and preventing injuries. Recent center for disease control and prevention of health statistics data suggest the pain of cause and most people for United States b adults report. Low back pain is around 28% and knee pain 19 .5%, finger pain 7 .6% and shoulder pain 9.0%.

The researcher, considering the effectiveness of stretching exercise , medical properties to relieve pain and no side effect. This along with the use of wide range of pharmacological and non pharmacological therapies promoted the researcher to evaluate the effectiveness of stretching exercise mainly effective in reducing Joint pain.

Need for the study

Ann Inter med (2008) a study shows that 47.5 million United States adults (21,8%)reported a with joint pain and we identified through incident report and find out. Among adults reporting a disability, the most commonly identified limitations were difficulty climbing a flight of stairs (21 .7 million ,10.0%) and walking 3 city blocks (22.5 million, 10.3%). That means that 1 in 10 adults have trouble while walking a distance equal to walking from the parking lot of back of a store or through mall.

The total annual incremental cost of health care due to joint pain ranges from 560 billion to 635 billion in the United States, which combines the medical cost of pain care and the economic cost related to disability days and productivity. More than half of all patient experienced pain in the last days and although therapies are, present to alleviate most pain, research shows that 50 -75% of die in moderate to severe pain.

An estimated 20% of American adults (42 million people)report that pain or physical discomfort disrupts their sleep a few night a week or more. Among the major adjustment of chronic joint pain suffers have made are such serious steps as taking disability leave from work (20%)changing jobs altogether (17%)getting help with activities of daily living (13%)and moving to a home that is easier to manage (13%) of cases.

Along with the aging of the population, the prevalence of doctor diagnosed arthritis is expected to increase in the coming decades. By the year 2030, an estimated 67 million (25% of the projected total adult population)

older will have diagnosed as arthritis. Compared with the 52 .5 million adults in 2010 -2012. Also by 2030 an estimated 25 million adults(37% of adults with arthritis or 9.3% of all cases) will report arthritis activity limitations.

The age adjusted prevalence of arthritis increases as body mass index increases from 16.3% among normal /underweight older to 28.9% among obese people. Excess weight also contributes to activity limitation. Among normal, underweight adult with arthritis, 38.2% report arthritis attributable activity limitation compared to 44.8% among obese adults with arthritis. Losing even modest amount of weight can reduce your risk of getting arthritis, and improve arthritis pain ,function and quality of life if you are living with arthritis.

Although physical activity and exercise have been shown to benefit people with arthritis by improving pain, function and mental health, many people with arthritis report no leisure time physical activity 24% of people have diagnosed. Higher proportion compared with adults without arthritis (18.6%). Low level of physical activity place individual with arthritis at further risk of inactivity associated condition such as diabetes obesity and functional limitation .

A cross sectional descriptive study was conducted to assess the health problems and socio economic status, Sreepur Thana Bangladesh in 2007. The study population included those aged 40 years or more. A   total of 226 respondents were selected purposively and interviewed using pre - test questionnaire. The mean age of the respondents was found to be 50 years. Mean family size and monthly income were estimated to be 5 . 31 and 5. 85 respectively .More than half (64.2%) of the responds are illiterate. Results shown

that 80% of them are unemployed and 67 .3% were found to be dependent on their family members . Among these , most of them (65 .5%) were found to be suffering from joint pains.

In a conference held on behalf of world arthritis Day confesses that in 1 in every 10 patient department all over Tamilnadu among adult population aged 40 years and older reports of one or other symptoms of joint pain cases and there was a raising incidence of arthritis in younger aged and even lesser ones (Karthikeyan, 2010) .

The world wide statistics in 2008 shows that, among total population, 40% of people at age above 50 years, suffer from severe joint pain, 70% of the population have some degree of limitation s of movement and 25% cannot perform daily activities.

Joint pain is estimated that upto 1 in 20 people in UK may be affected and at some point of life .Most people got joint pain in the age group of 50 and above. This condition more common in women than men The annual incidence rate in general population is 3 - 5 % and upto 20% of people are affected. (Henricus , 2006)

The study was selected out of the investigators personal experience with stretching exercise for the treatment of Joint pain. It showed a greater difference in reducing the level of joint pain and this inspired the investigator to take up this as a study for the benefit of obese women who are vulnerable to Joint pain. The researcher more considering moreover many evidence suggest that the long term use of routine drugs which were used in the treatment of

joint pain had many side effects which disable a patient chronically. This along with the use of wide range of pharmacological and non pharmacological therapies prompted the researcher to evaluate the effectiveness of stretching exercise reducing joint pain among obese women.

STATEMENT OF THE PROBLEM

A pre –experimental study to assess the effectiveness of stretching exercises on joint pain among obese women in selected area at Vellore .'

OBJECTIVES

1. To assess the pre test and post test level of joint pain among obese women.

2. To evaluate the effectiveness of stretching exercise to reduce   joint pain among obese women.

3. To find the association between pre test and post test level of joint pain among obese women with selected demographic variables.

4. To find the association between the pre test and post test level of joint pain among obese women with selected clinical variables.

NULL HYPOTHESIS (H0)

1. There will be no significant difference between   pretest and post test level of joint   pain after doing stretching exercise.

2. There will be no significant association between pre test and post test level of pain with selected demographic variables.

3. There will be no significant association between pre test and post test level of pain with selected clinical variables.

OPERATIONAL DEFINITION

Effectiveness

It refers to the extent to which the stretching exercise are effective which is assessed and measured by Lysholm Knee Scoring.

Stretching Exercise

In this study stretching exercise are exercise that strengthen the Joint muscle which improves physical activity which decreases Joint pain and provide comfortable muscle tone. Stretching exercise are hamstring stretches, quadriceps stretches calf stretches.

Joint pain

Joint pain refers to the pain felt the knee joint which grading less 64 using Lysholm knee scoring scale

Obese Women

All female genders whose BMI 25.0 to 40 and above.

ASSUMPTIONS

1) Obese women experience joint pain.
2) After performing stretching exercise, the joint pain reduced.

DELIMITATION

The study was limited to,

- Obese women with joint pain in selected area Vellore.
- A period of 15 days

CONCEPTUAL FRAMEWORK

The conceptual framework for research study presents the measure on which the purpose of the study is based. The framework provides the perspective from which the researcher views the problem. It helps to express abstract ideas in more readily understandable on precise from than the original conceptualization.

This study is based on the concept that the effectiveness of stretching exercise will reduce the level of joint pain and thus enhance individual wellbeing. The researcher adopted the modified Ernestine Wiedenbach's helping ard clinical nursing theory in 1964 for nursing, which desired situation and a way to attain it .It directs action towards the explicit goal.

This theory has three factors,

1) Central purpose

2) Prescription

3) Reality.

CENTRAL PUROPSE

It referred to accomplish the overall goal towards which a nurse strives, it transcends the immediate indent of the assignment or task by specifically directing activities towards the patient good . In my study the central purpose is to reduce Joint pain .

PRESCRIPTIONS

This refers to the physiological, physical, emotional and spiritual factored that come into play in situation involving nursing action. The five

realities identified by Widen Bach are agent, recipient, goal, means activities and framework.

Agentis the practicing nurse or a design who has personal attributes, capacities, capabilities, commitment and competence to providing nursing care. In this study the researcher is the agent.

Recipient is the patient who has personal attributes, problems, aspirations, Capabilities, and ability to cope. The recipient is the one who receives a nurse's action . In this study, goal is reduction of joint pain among obese women .

Goal is the nurse's desired out come through action. These direct action and suggest the reason for taking those actions. In this study, goal is reduction of joint pain among obese women.

Mean are the activities and devices used by the nurses to achieve the goal. In this study stretching exercise is done to the obese women with an advantage of reducing joint pain.

Framework refers to the facilities in which nursing is practiced. This study frame work referred to the poigaie.

The conceptualization of nursing according to this theory consists of three following steps.

The practice of nursing comprises a wide variety of services each directed toward the attainment of its three components.

Step 1 :   Identification of the need for help

Step 2 :   Ministration the need for help

Step 3 :   Validation that the need was met

IDENTIFICATION OF THE NEED FOR HELP

This step determine a patient need for help based on the existence of need, whether the patient realize the need, which prevents the patient from meeting the need and whether the patient cannot meet the need alone. In selective study joint pain patients who are suffering from pain in one or the joint and those who have physical limitation as a result of pain in their activity of daily living are not possible to get adequate pain relief and comfort in their living. Joint pain patients are identified based on inclusive criteria and exclusive criteria. Purposive sampling technique was used to assign patients into the experimental group. General information of obese women with joint pain was collected and pre assessment on level of pain is assessed.

MINISTERING THE NEED FOR HELP

Refers to provision of needed help My study after the pre assessment of the level of joint pain, stretching exercise was done to 40 year elderly with joint pain in the experimental group.

VALIDATING THAT THE NEED FOR HELP WAS MET

Study refers to a collection of evidence that shows a patient's needs have met and his functional ability has been restored as a direct result of the nurse's action. This study accomplished by means of post assessment of the level of joint pain perception after doing stretching exercise.

CHAPTER – II
REVIEW OF LITERATURE

This chapter deals with an extensive review of literature to gain deeper insight into the problem as well as to collect maximum relevant information for building up of the study. The literature review is an extensive, systematic and critical review of the most important published scholarly on a particular topic.

This literature directs the researcher to design the study and interpreting the outcomes. The primary purpose is to gain broad background or understanding of the information that is available related to the problem. The review helps investigator in developing a deeper insight into the concept of effectiveness of stretching exercise and in gaining information on trends in various related studies in this area. The most common usage of the term review of literature is to refer to that section of research study in which the researcher describes the link between previously existing knowledge in current study.

The literature reviews obtained in the study were organized and presented in the following sections.

1) Literature related to incidence and prevalence of joint pain among obese women.

2) Literature related to joint pain among obese women.

3) Literature related to effectiveness of stretching exercise on joint pain among obese women.

4) Literature related to effect of stretching exercise in reducing joint pain among obese women.

LITERATURE RELATED TO INCIDENCE AND PREVALENCE OF JOINT PAIN AMONG OBESE WOMEN

This chapter provides some finding from the literature on the prevalence of joint pain seen in clinical practice that may affect general population. The findings include a literature based discussion on risk factors associated with the onset of joint pain including personal, occupational and psychosocial working factors.

Prevalence of joint pain in the general population

Chronic joint pain has large health care costs and the major health of affected individuals, including absence from work and disability. Joint pain complaints may have an unfavorable outcome, with only about 60% of all new episodes of joint pain complaints presenting in medical practice showing a complete recovery within few months. After 1 month these proportion increases to 72%. Most of the joint pain prevalence is derived from population -based research. The easiest method for obtaining information about musculoskeletal pain the use of specially designed self - administered questionnaires that seek specific information from the responding participants was conducted by **Havsold et al 2007**, the sample size was 29,026 and prevalence of joint pain was estimated to be 15.4% in men and 29.9% in women who reported weekly episodes of pain.

Sueleme Barros de Lorena 2012,conducted study says that 6,794 items are selected. In these study there was a significant improvement in all studies regarding pain ,besides as related to quality of life and physical condition. The

method and timing of intervention varied widely, there was poor mention of parameters used in stretches and absence of physical examination.

Pope et al 2009 ,performed a study with total level of people suffering in community from joint pain to be as greater as 30% of the population. Pope et al further suggest that most of these will not seek help for their condition so it is important to determine joint pain prevalence in order to impact on the population. The patient was randomly selected between 30 to 70 years. This participation was asked to fill out a questionnaire. The initial response was 66% and the post test survey respond was around 80% underwent an interview. The current study findings support the fact that Joint pain continues to be an important clinical, social and economic burden and public health problems affecting the population of the entire world.

Horschhorn, Walker J 2008, Measured the prevalence and troubleshoot or burden of musculoskeletal pain ,including the joint, in different age group by means of cross – sectional post survey of 4,409 adults registered with 16 Medical Research Council General practice Research Framework Practice. The survey achieved a response rate of 60% of people are get affected. Frequency of chronic pain. overall and troublesome problem pain by location and age was calculated. The level of pain was assessed by following categories not at all troublesome, "slightly troublesome" "moderately troublesome very troublesome" and 'extremely troublesome'. A total 167 studies from 45 countries were identified. The study concluded that Joint pain was shown to be a major problem throughout the world, with the highest prevalence among female individuals and those aged 40- 70 years.

Parsons et al 2007 , measured a random sample of 6000 persons aged 25 years chose by the authors , with the survey achieving a response rate of 46 .8%. The findings from the study found that almost of the Netherland population aged 30 years and over reported musculoskeletal pain during the past 12 months. 66.8% reported musculoskeletal pain during the survey and 44 .6% reported musculoskeletal pain lasting longer than three months. The joint pain is one of the most common problem among people. The prevalence of chronic joint pain was determined to be 24 .2% are get affected.

LITRETURE RELATED TO JOINT PAIN AMONG OBESE WOMEN

Alih .Mokdad 2013, measured the prevalence of obesity is increasing in the United States .To estimate the prevalence of obesity among adult peoples in 2011. Random digit telephone survey of 1,95.000 sample was collected in the states participating in the risk factors surveillance system. BMI ,based on self reported weight and height was taken. In 2011 the prevalence of obesity BMI > 30 was 20 .9%, 19 .8% in 2010 and it increases b up to 5 .6% in 2012. Increased cholesterol level 2.72%, high blood pressure 1.88% and joint pain people around 4 .19% people are affected. Since the percentage (%) around is 45 to 58 % and 2010 over weight is 65.9% men and 49 .9% women.

Ann Intern Med 2012, performed a study on persons with 45 .4 kg(100 Ib) or more above desirable weight exponential increases in mortality and serious morbidity compared with normal person. The presence of complication and risk factors along with obesity increases the mortality further. A critical level of body weight 60% or more above desirable weight, the most important

are unexplained death and functional limitation activities of living. Recent epidemiological data on extreme obesity and data of cardiac dysfunction show impaired quality of life in young morbidly obese patient.

AmayJankle Andrea T Kozak 2009,conducted a study on both pain and overweight, obesity are critical issues. Research reviewed in this article suggest that half of the patient who seen obesity treatment report moderate to severe pain. Cross sectional studies show support for a relationship between obesity and severe pain condition low back pain 19 – 23% over and joint pain 43 -47% and some evidence shows that a dose response relationship between BMI and pain. Finally, on observation from a few studies have demonstrated that treatment for obesity reduce pain secondary to weight loss around 76 -87 % of people.

LijingLayan, Martha L Daviglus 2009 study to assess the relationship of BMI with health related quality of life among adults. The study was conducted in Chicago Association Detection Project in Industry study (1998 to 2005). The response rate was 60% and the sample included 3981 male and 3099 female responded. Over weight was associated with impaired physical wellbeing among men only. Scores for women were underweight 50.8%, 62 .7% (normal weight), 60 .5% (over weight) and 52% are (obese) respectively.

Michale C. Nevitt 2008, according to observational studies of risk factors obesity is the number of preventable cause of joint pain in women and it ranks second in men. Weight loss is recommended for over persons with knee. Studies suggest that weight loss may prevent the worsening of joint pain. These studies have methlodigically limitation, and there are non randomized

controlled trial groups of weight loss that show a reduction of joint pain in treatment compared with control group. S o samples collected in that 19 samples found, that obese women reduced weight up to 5 kg in 4 months duration of time. Combined diet and exercise will be helpful to reduce weight and improvement in joint pain and disability.

Oliver, Susan A : Felson, David T 2008, study was conducted on evaluating the hand, knee joints and weight, however it was assessed through X ray or been cross sectional, or both of the result has been inconsistent. We assessed the association between BMI , and incidence rate 134 matches case - control pairs of women, who were part of study. We identified incident rate cases of hands, knee joint in women age group $30 - 89$ years After controlling of cholesterol content food, smoking status and lack of exercise obesity rate is decreased. Odds ratio ranged from 3 .0 to 10 .5 % is reduced at all joint studies.

Peter F .M Verhaaak, Jan J Kerssens, Jorst Dekker 2007, studies concerning chronic pain among adults are discussed . To this end, studies focusing on chronic pain, reporting prevalence at a population or primary health care level including subjects aged between 18 to 75 years have been collected and analyzed. Focus of analysis was on research method. Prevalence varied between 2% to 20% of the population. Non Randomized Method used for telephone survey and postal survey $(> 1$ month > 3 month > 6 month) clearly explained the difference in prevalence in various studies.

John G.KRAL 2005, the prevalence of the study was based on cross sectional study carried out in urban area. A joint pain in women aged around

40 years around total 260 women were interviewed out of which 123 (47 .3%) women were found to be suffering from joint pain. Prevalence of joint pain found to be increased with age. The study involved 389 subjects with BMI of 28 or above with self reported with knee joint pain. At the end of the study the trial was a significant reduction of joint pain. After doing exercise pain is reduced to people.

A. M Glenny, so Meara, A – Meara2003, the study was conducted with 97 papers were identified as meeting inclusion criteria. The quality of the randomized controlled trials identified was not always of a high standards. The expectation of community based interventions, the sample size for the studies include were in general small . Droup out 97% of the included studies. The results are reported for each intervention type and the overall implications and then discussed as a whole. At the end of the study regular exercise and diet will help the person to reduce obesity.

LITERATURE RELATED TO EFFECTIVNESS of STRETCHING EXERCISE IN REDUCING JOINT PAIN AMONG OBESE WOMEN

Decoster 2012 , reviewed the literature to assess the effects of different hamstring stretches on flexibility. They found 28, studies incorporating 1, 338 healthy subjects. Although they noted a relatively poor over all subject quality, they concluded that hamstring stretches does increases joint ROM range of motion in a variety of stretching techniques, position and duration.

Harvey 2010,conducted the literature to assess whether stretching protocols are able to generate lasting increases in a flexibility across several

joints. They found 13 studies of which 4 were rated as per quality. The reviews found that the overall results of the moderate quality studies that regular stretching can increase joint stiffness. Joint range of motion (ROM) by a mean 8 degrees for $>1\backslash$day after stopping stretching.

Len. Kravitzphd 2008 , shown the minor difference in joint structure and connective tissue anatomy, women have slightly greater range of motion than men for most joint motions. With a sample of 190 male and female subjects ranging from 18 to 88 years. Bell and Hoshizaki 1999 measured 17 joint action in 8 specific joint . In assessment of the upper body joints (shoulder, elbow . wrist , trunk and neck) of group of 41 subjects aged 25 to 35 years. Doriot and Wang 2006 also found females to have significantly greater range of motion in several joint action.

Radford 2007, performed a systematic review of randomized trials that randomized trials that investigated the effects of static calf stretches compared with no stretching . They found 5 trials for their meta analysis, which showed that calf muscle stretching increases ankle dorsa flexion particularly when performed for >30 minutes total stretching exercise.

NilzaAparecida de AlmediaCarvalho 2005,study was assessed by prospective case series was to assess the efficiency of a guidance manual for patient with joint range of movement, muscle strength and function. Among 38 adults with >45 years old who were referred to the physiotherapy services and study was conducted. Patient received guidance for the practice of specific physical exercise and manual with instruction, on how to perform the exercise. They were evaluated for pain ,range of motion movement, muscle strength.

These evaluation were performed before they received by the manual and 3 months later. Patients were seen monthly regarding improvement in their exercising abilities.

Rubini, costa, Gomes 2004, was performed although stretching are recommended as part of any comprehensive training program, better ways to include them in a training session. while viewing the acute effects of stretching before strength training the research indicates the stretching decrease the maximal strength from 4 .5 to 28% group with total stretching from 120 to 3600 seconds, and for optimal flexibility increases 4 stretches 30 seconds totally .There is no significant consensuses in the research for underlying mechanism explaining force production loss of muscle after stretching .

Voorrips, Kerrign, Misner 2003,performed a study on physically active individual have greater flexibility in the joints they regularly utilize as compared to the physically inactive counter parts . Voorrips conformed with the population of 50 mature women (mean age 40 years) that those subjects who regularly did more walking . In 5 year long term study with 12 women aged 50 – 71 years showed that regular exercise 3 times per week for 5 years increased shoulder and hip range of motion significant ally (3% - 22%) in various action). They recommends the prevention and rehabilitative exercise programs should include activities that promote the maintenance of flexibility.

LITERATURE RELATED TO ALTERNATE THERAPIES IN REDUCING JOINT PAIN AMONG OBESE WOMEN

M .Barnes. MA, Eve Powell Griner, PhD, Kim Mc pan 2008, the report present the selected estimates of complementary and alternative medicines among US adults .Data for the US civilian non - Institutionalized population were collected using computer assisted personal interviews. Sixty - two percent of adults used during the past 12 months the definition , 36% of adults used sample therapies during the past 12 months were use of (43 . 0%) , natural products (18 .9%) , breathing exercise (11.6%) , medication (7.6%) yoga (5 .1%), massage (5 .0%) and diet based on therapies (3 .5%). After doing alternative therapies patient can able to work comfortably .The most ofter used to treat back pain . joint pain and shoulder pain.

Barbar Bloom 2004 , performed a study this reports presents selected estimates of Complementary and Alternative Medicine (CAM) use among U . S adults and children, using data from 2004. In 2004 almost 4 out of 10 adults used complementary and alternative medicine in the past 12 months, with the most commonly used therapies being nonvitamin, nonmineral , natural products (17 .7%) and deep breathing exercise (12 . 7%). American Indian or Alaska native adult (50 .3%) and while adult (43 .1%) were more likely to use complementary and alternative medicine.

Asian adults (39 .9%) or black adults (25 .5%) Result from 2003 found that approximately one in nine adults (11 .8%) used complementary and alternative medicine in the past 12 months, with the most commonly used therapies. Between 2002 to 2005 increased use was seen among adults for acuputure,

deep breathing exercise, massage therapy, medication, naturopathy and yoga. Complementary and alternative medicine used for joint pain. Shoulder joint and knee pain. From 2002 to 2005 (9 .5% to 2 .0%) pain was reduced to people .

Sheikh ZA Karachi 2003, an experimental study was conducted to evaluate the effectiveness of stretching exercise in reducing joint pain among patient suffering from several years conducted in US (2002). The sampling technique used was purposive sampling. The study consists of a sample size 41 women with an average of 41 years of age. They were subjected to do stretching exercise twice daily for 5 days. The tool used was Visual Analogue Scale & questionnaire. The results of 5 days showed that significant of pain (80%) reduction of pain in experimental group.

Joost Dekker 2002, an experimental study was conducted to evaluate the effectiveness of massage in the reduction of joint pain among people in Kerala (2002) India. This study was done on 60 samples (30 – experimental and 30 control group) The experimental group received massage for 1 – 2 minute with an assessment period of 15 to 20 minutes for 15 days. Post assessment was carried out for experimental group and control group by means of numerical pain scale after observation period. The result showed that massage can reduce joint pain among patients (86%) and minimizes the use of analgesics along with enhanced client comfort.

CHAPTER -III

RESEARCH METHODOLOGY

Methodology of research indicates the general pattern for organizing the procedure for empirical study together with the method of obtaining valid and reliable data for problem under investigation.

The present study is designed to evaluate the effectiveness of stretching exercise of obese women with joint pain. This chapter deals with description of the research approach, research design. Criteria for sample selection, variables of the study, pilot study main study and techniques of data collection procedure and summary.

RESEARCH APPROACH

Research approach tells the researcher from when the data is to be collected, how to collect and how to analyse them. It also suggest the possible conclusion and help the researcher in answering specialist questions in the most accurate and efficient way. (**Rossgrippa and Gorneylucero**). Evaluative researcher approach was used for this study.

RESEARCH DESIGN

Research design is the plan, structure and strategy of investigation of answering question is the overall plan or blue – print the researcher to select to carry out their study (**BT Basvanthappa**).

Study subject	Pre test	Intervention	Post test
Experimental group	01	X	02

01 - Pre assessment of joint pain among obese women.

X - Stretching exercise on joint pain among obese women.

02 - Post assessment of joint pain among obese women.

VARIABLES

Variables are defined as the characteristics, properties, traits or attributed of a person or thing observed in a study (**Polit and Hungler**).

Independent variables

Independent variable is the variable stands alone and doesnot depend on any other. It influence the dependent variable (**Polit and Hungler**).Independent variable was the stretching exercise among obese women.

Dependent variables

Dependent variable is the variable that the researcher is interested in understanding or predicting **(Polit and Hungler)**. In this study dependent variable was Joint pain among obese women.

Research Setting

The population of the study includes all the obese women who are suffering from Joint pain.The setting of the study refers to the area where the study is conducted . The study was conducted at Poigai in Vellore district, Tamilnadu.

SCHEMATIC DIAGRAM
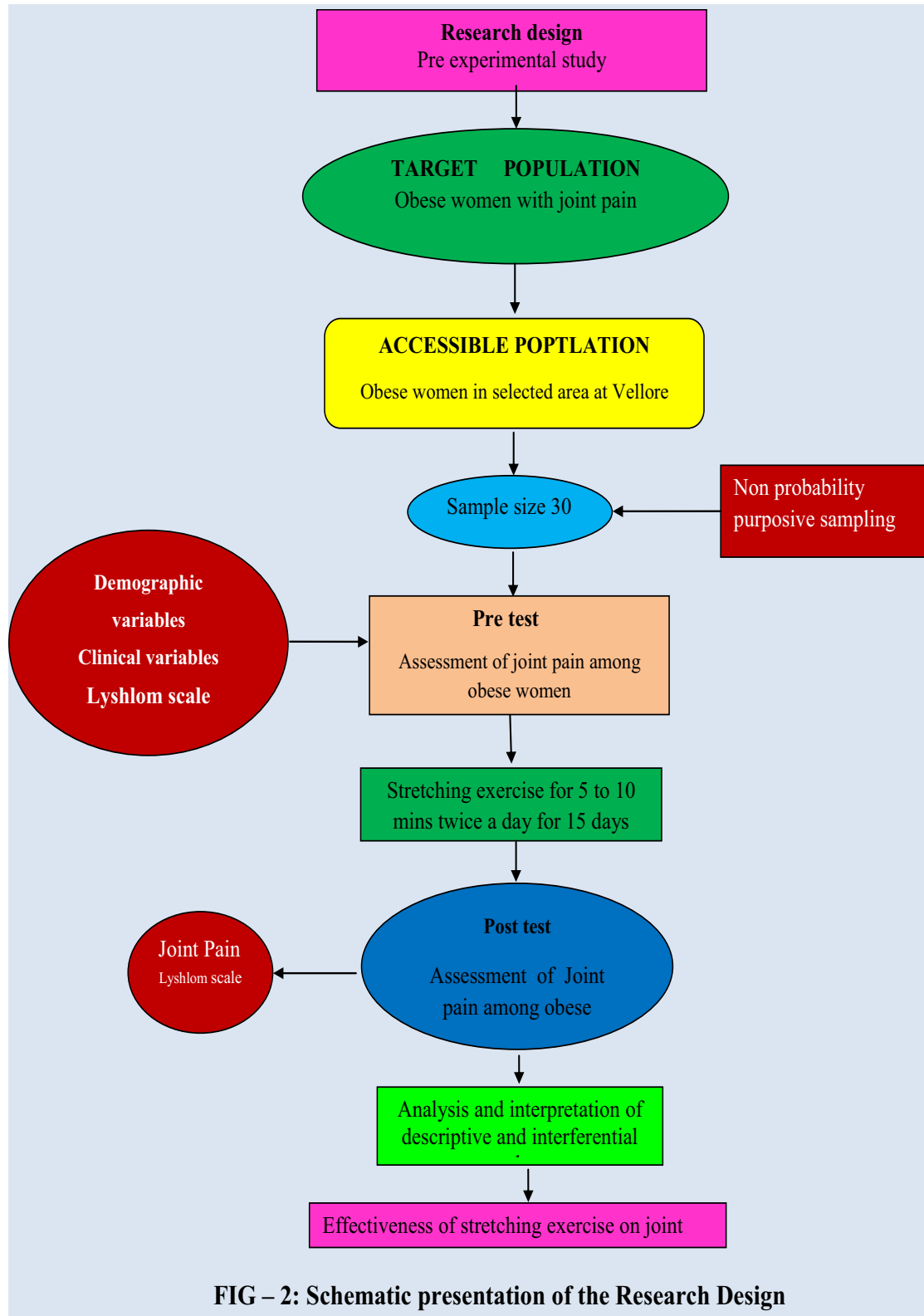
FIG – 2: Schematic presentation of the Research Design

Population

Population refers to a total category of persons or objects that meets the criteria for study established by the researcher, any sets of persons, objects or measurements having observable characteristics in common. (**BT Basvanthappa**)

Target population

The target population refers to the population that the researchers wishes to study the population about which researcher wishes to make a generalization.

The group of population that the researcher aims to study and to whom the study findings will be generalized. In this study target population comprised of obese women above 40 years who are suffering from joint pain .

Accessible population

The accessible population refers to the aggregate of cases which conform to the designated criteria and which to accessible the researchers as a pool of subjects for the study. Accessible population in this study was obese women with joint pain who are residing at Vellore.

Sample & sample size

According to Talbot, sample is a proportion of the population that has been selected to represent the population of interest. The sample selected from the obese women who are having mild to severe pain joint pain, and samples were 30 obese women who met the inclusive criteria.

Sampling technique

Sampling technique refers to process of selection of portion to the population to represent the entire population non probality purposive sampling technique was used for this study.

Non probality sampling are those in which the sample elements are arbitrary selected by the samples because in his judgment the element thus chosen will most effectively represent the population (**BT Basvanthappa**).

SAMPLE SELECTION CRITERIA

Inclusive criteria

➢ Obese women who were willing to participate in the study .

➢ Obese women who were having joint pain.

➢ Obese women whose age group >30 years.

Exclusive criteria

➢ Obese women who have mental and physical illness during data collection .

➢ Obese women with fracture and recently undergone for surgery.

SELECTION AND DEVELOPMENT OF STUDY INSTRUMENT

Based on the review of literature and expert opinion the data collection instrument is prepared to conduct this study. The instrument consisted of three sections with multiple choice question .Demographic and clinical variables and Lyshlom knee scoring scale .

Demographic Variable Performa for obese women include age, religion, marital status, education, source of income, food habits child bearing age, menopause attained, type of family planning method used.

Clinical Variable Performa consisted of anthropometric, which include height, weight, and body mass index. Whether maintaining normal body mechanism, mobility status, duration joint of pain and swelling, use of comfort devices, which joint is affected, swelling, type of pain, do you walk with support, how many stairs can you climb .

TEGNER LYSHOLM KNEE SCORING SCALE

Knee joint pain scale was developed by Lysholm in 1982 It is used to evaluate outcomes of knee pain.   The present scale includes 8 items limp, support, instability, pain, swelling, stair climbing, squatting. Maximum score and each response to the 8 items, of a possible score of 100. A score of 100 means no symptoms of disability.

Excellent 95 – 100, Good 84 - 94, Fair 65 - 83, Poor less than 64. The Lysholm knee pain scale takes 5 to 10 minutes for a patient to complete and is the only reliable and valid region - specific measure for the joint pain .

Validity of study instrument

Content validity refers to the degree to which the test actually measure or is specifically related to the traits for which it was designed **(polit).**The tools were submitted to experts in the field of nursing and medicine to establish the content validity. Based on the experts suggestions the researcher finalized the tool for the original study.

Reliability

Reliability is the extent to which instrument yields the same results on repeated measures **(BT Basvanthappa**).

The method adopted for testing reliability of was inter rater method and reliable $\tau =0.83$ reliability and practicability of was the tested through pilot study and used for main study. The study was proved to be reality.

Pilot study

(Polit & Beck 2004) said that pilot study is a miniature of some parts of actual study, in which the instrument is administered to the subject drawn from the actual population.

Pilot study, is a small scale preliminary study conducted in order to evaluate feasibility, time, cost, adverse events and affect size in an attempt to predict an appropriate to predict an appropriate sample size and improve upon the study design prior to performance of a full scale research project .

The pilot study was conducted, it was a trial run, done for preparation for the major study, the pilot study was conducted on eight obese women with joint pain using non - probability purposive sampling technique. Formal permission was obtained from the authorities and subjects prior to the pilot study .Effectiveness of stretching exercise on joint pain among obese women was assessed this showed feasibility and significance in conducting study.

DATA COLLECTION PROCEDURE

A formal permission was obtained from the principal and research committee of Arun college of nursing to conduct study in Poigai at Vellore District. The data was collected in the month of July 2015. The permission was obtained from the Primary Health center and panchyatthalivar to conduct my research study. The main aim of the study was to assess the effectiveness of stretching exercise on joint pain among obese women. The participants were selected by using non –probability purposive sampling ,and the obese women were selected on the basis on inclusive criteria, The purpose of procedure was explained properly in their own language ,consent were taken from obese women with joint pain, the confidentiality assurance was given .The researcher used demographical variables data to collect baseline data of each obese women with joint pain , and the pre –assessment level of pain was measured by using clinical variables , to assess the joint pain among obese women Lysholm Knee Scoring Scale was used. The procedure was scheduled in twice a day with the duration of 10 - 15 minutes for fifteen days . Post test assessment was done on sixteen day by using Lyshlom knee scoring scale and throughout the procedure participants maintained good communication & very co –operative .

PLAN FOR DATA ANALYSIS

Data analysis enables the researcher to organize ,summarize , evaluate, interpret and communicate numerical information. The data collected from obese women were analyzed by using descriptive and interferential statistics. Descriptive statistics like frequency distribution percentage, Mean standard deviation and interferential statistics like chi square test and paired t value were used to analyze the data.

CHAPTER – IV

ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of the data collected. The analysis is defined as the methods of organizing data in such way that the research question can be answered .

Interpretation is the process of making sense of result and examining in simplification of the findings with in a broader context .

This chapter includes both descriptive and inferential statistics .Statistics is a field of study concerned with technique or method of collection of data , classification summarizing , interpretation , drawing inferences , testing of hypothesis

ORGANIZATION OF FINDINGS

The findings of the study were organized and presented under the following headings.

> ➢ Frequency and percentage distribution of demographic variables under obese women with joint pain.
>
> ➢ .Frequency and percentage distribution of clinical variables among obese women with joint pain .
>
> ➢ Frequency and percentage distribution of level of joint pain before and after stretching exercise among obese women with joint pain .
>
> ➢ Comparison of mean and standard deviation of pre test and post test level of joint pain among obese women .

- Association between selected demographic variables and post test level of joint pain among obese women .

- Association between selected clinical variables and post test level of Joint pain among obese women

Table 1   Frequency and percentage distribution of Demographic Variables of Obese Women with Joint Pain(age, religion, educational status, occupation, marital status, food habits, calcium intake, family planning)

(N= 30)

S.NO	Demographic variables		Frequency (n)	Percentage (%)
1	**Age**	40-49 years 50-59 Years Above 59 years	9 10 11	30.0 33.3 36.7
2	**Religion**	Hindu Christian Muslim Others	16 3 8 3	53.3 10.0 26.7 10.0
3	**Education**	Illiterate Secondary Higher secondary Degree	13 10 4 3	43.3 33.3 13.3 10.0
4	**Occupation**	Unemployment Coolie Business Professional	14 12 4 0	46.7 40.0 13.3 0.0
5	**Food habits**	Vegetarian Non vegetarian	10 20	33.3 66.7
6	**Calcium take**	Diet Tablets	21 9	70,0 30.0
7	**Marital status**	Married Unmarried Divorced Separated Widow	13 3 8 2 4	43.3 10.0 26.7 6.7 13.3

S.N0	Demographic variable		Frequency (n)	Percentage (%)
8	**Family planning**	Temporary	4	13.3
		Permanent	17	56.7
		Not applicable	9	30.0
9	**Menopause**	Yes	16	53.3
		No	14	46.7
10	**Child bearing**	Below 20 years	12	40.0
		20-25 years	12	40.0
		26-30 years	6	20.0
		Above 30 years	0	0.0
11	**Number of children**	Above 2 children	13	43.3
		2 children	7	23.3
		1 children	5	16.7
		None	5	16.7

Table 1-.Revealed that in **Figure 3** represent the percentage distribution of obese women with Joint pain in relation to age. Majority 11(36.7%) **Figure 4**observed the percentage distribution of obese women with Joint pain in relation to religion. Majority Hindus 16(53.3%) **Figure 5** Shows the percentage distribution of obese women with Joint pain in relation to educational status degree 3 (10.0%) . **Figure 6** depicts the percentage distribution of obese women with Joint pain in relation to occupation 14 (46.7%) **Figure 7**showed the percentage distribution of obese women with Joint pain in relation to family planning 17 (56.7%).

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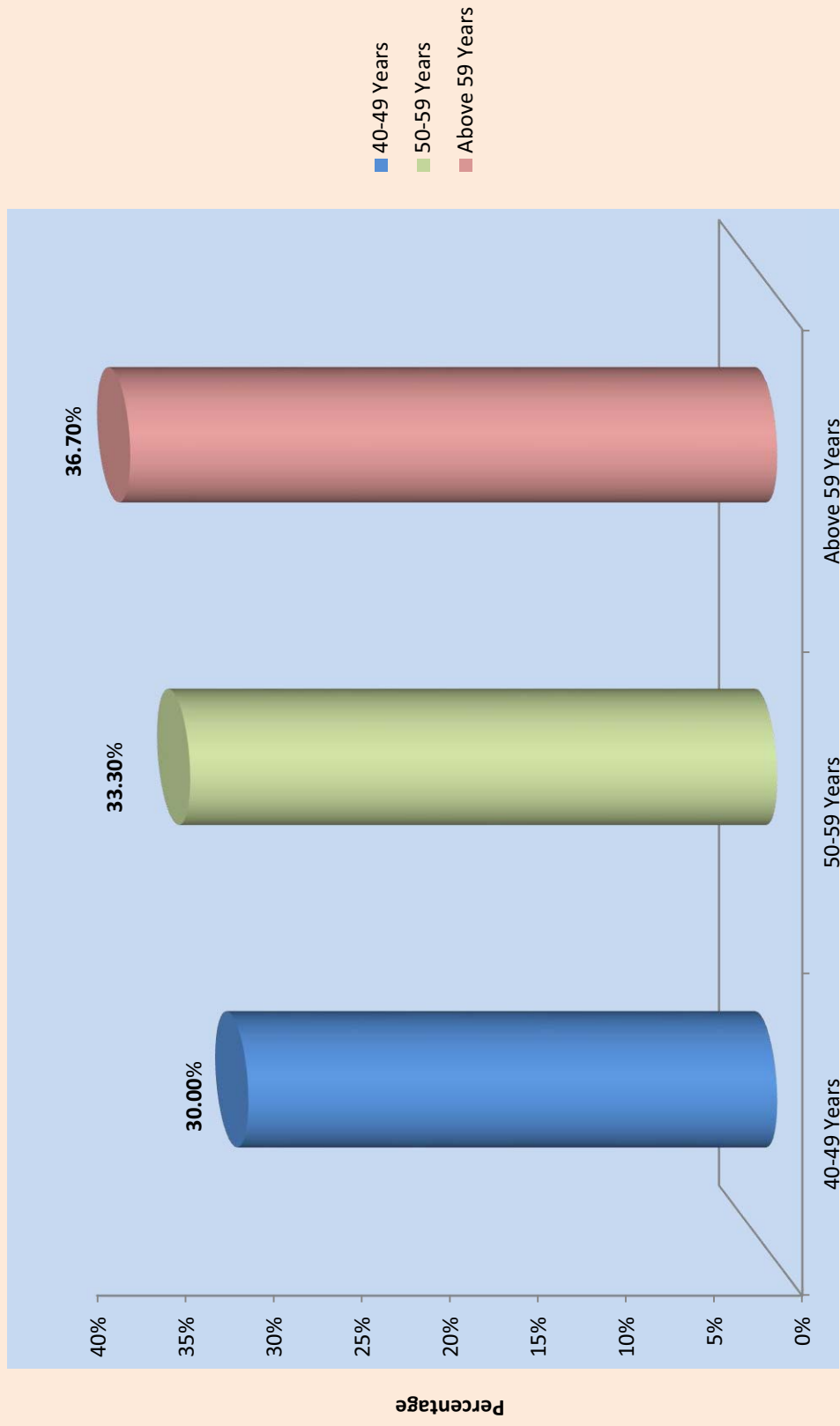
Fig 3: Percentage Distribution of Demographic Age In Years of Obese Women With Joint Pain

RELIGION

Hindu
Christian
Musclim
Others

53%

27%

10%

10%
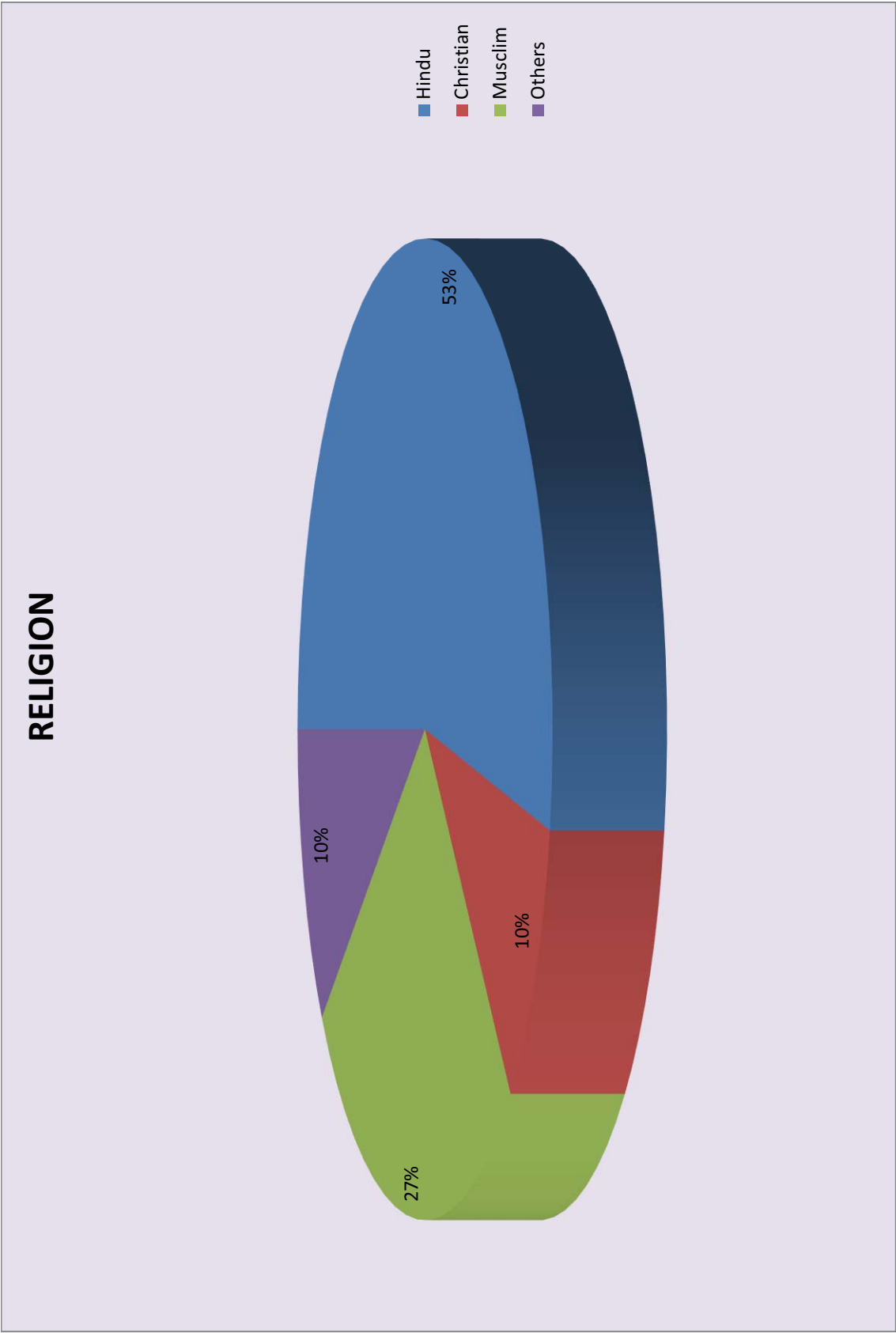
Fig 4: Percentage Distribution of Demographic Variable of Religion of Obese Women With Joint Pain

41

EDUCATIONAL STATUS
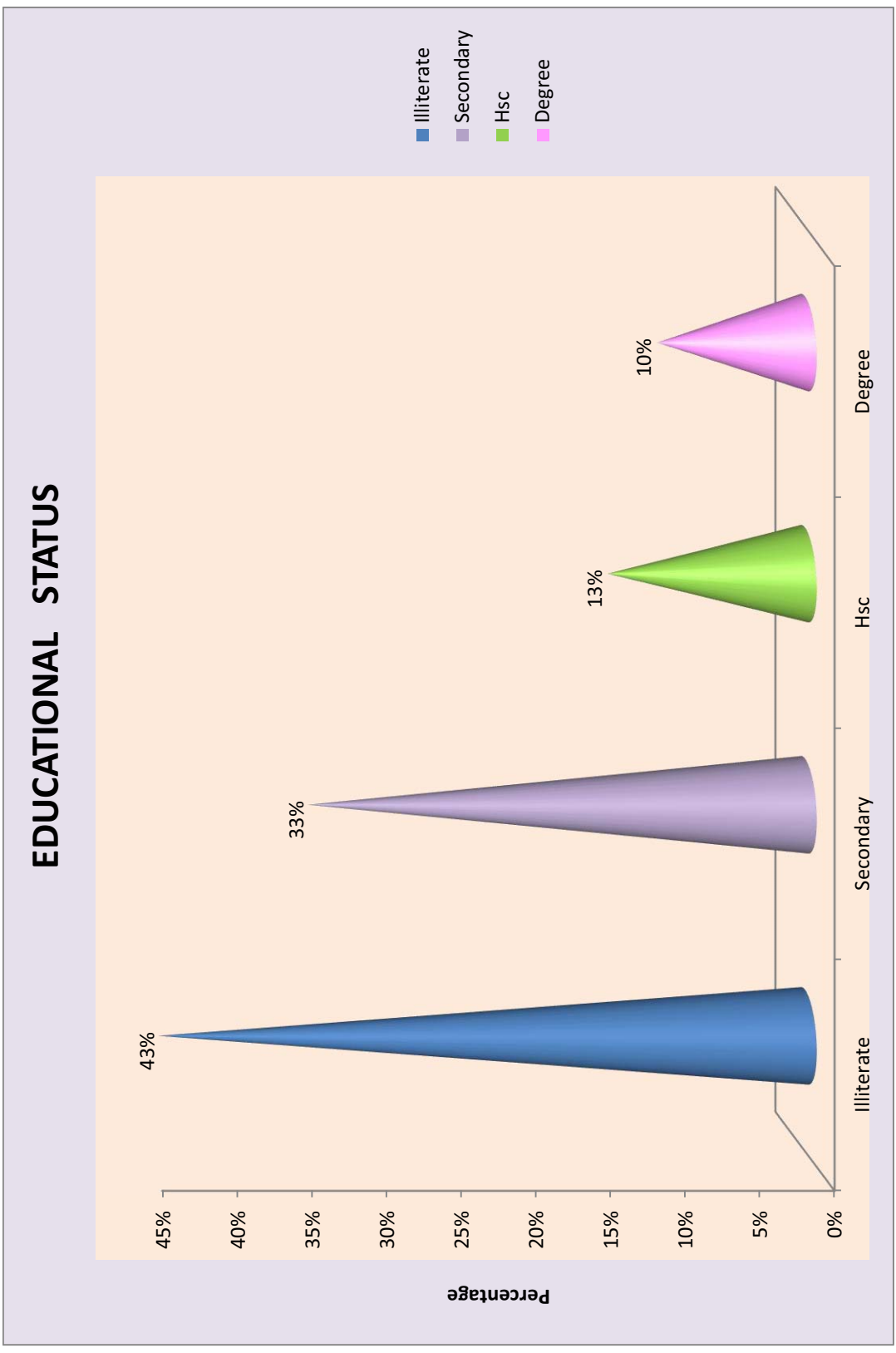
Fig 5: Percentage Distribution of Demographic Variable of Educational Status of Obese Women With Joint Pain

42

OCCUPATION DISTRIBUTION

Unemployed — 47%
Coolie — 40%
Business — 13%
Professional — 0%

Legend: Unemployed, Coolie, Business, Professional

Percentage (Y-axis: 0% to 50%)
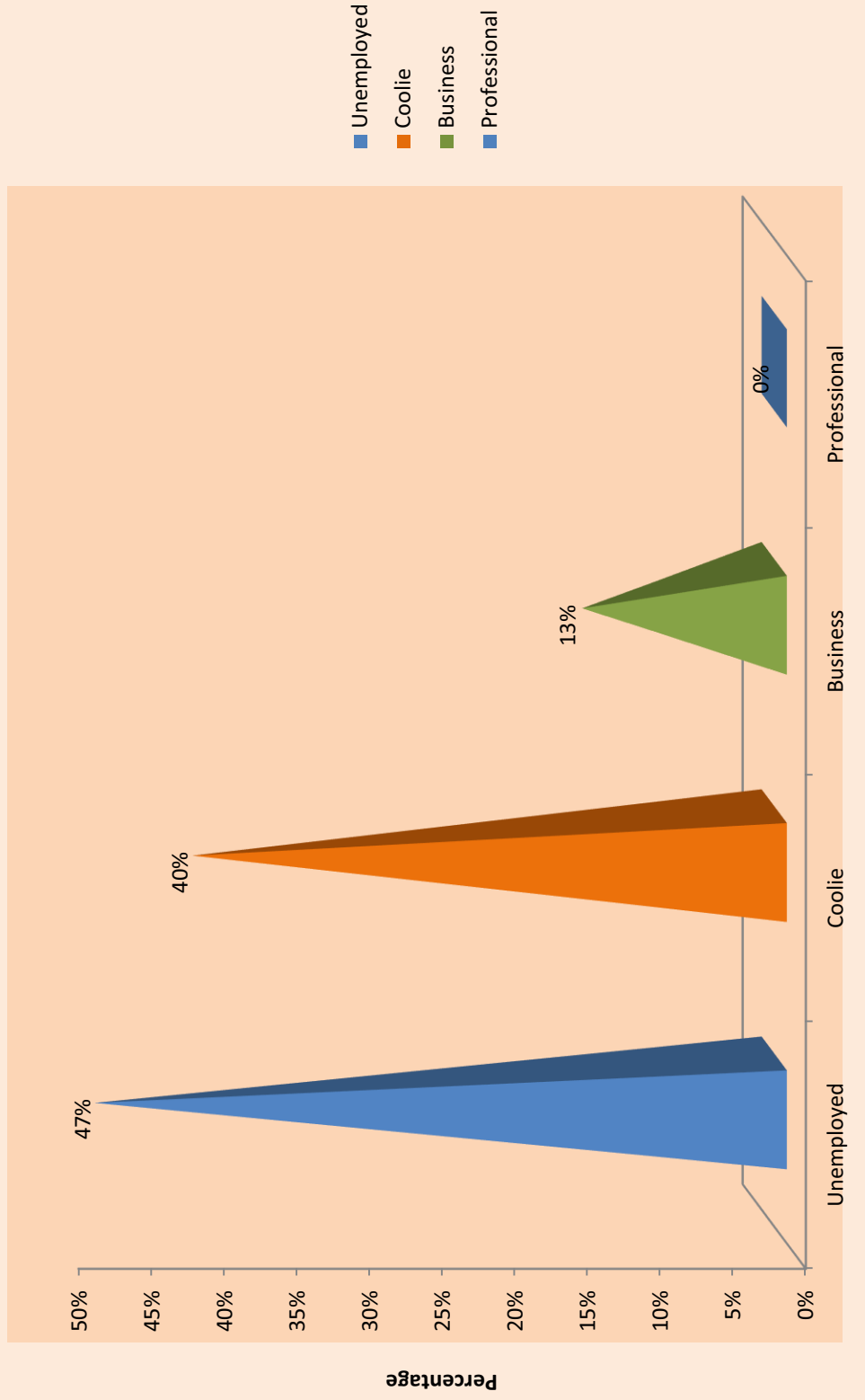
Fig 6: Percentage Distribution of Demographic Variable of Occupation Distribution of Obese Women With Joint Pain

43

Percentage distribution of demographic variable-Family Planning

Temporary
Permanent
Not applicable

57%
13%
10%

Percentage

60%
50%
40%
30%
20%
10%
0%

Temporary   Permanent   Not applicable
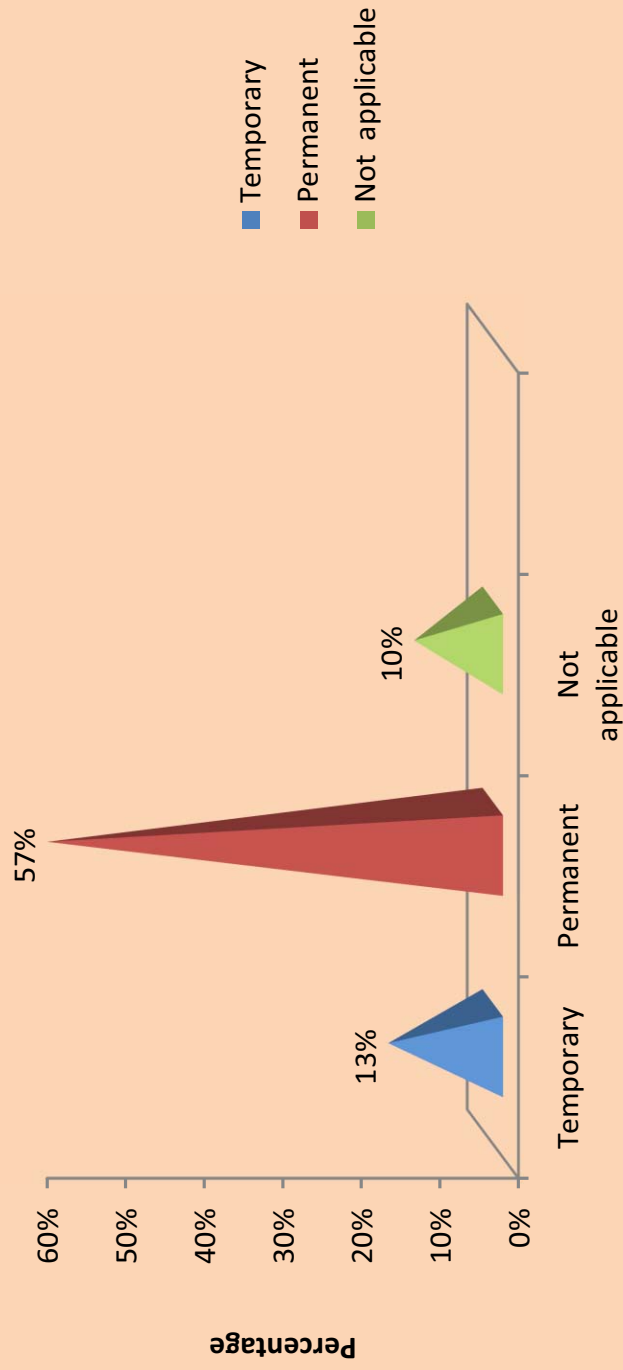
Fig 7: Percentage Distribution of Demographic Variable of Family Planning Among Obese Women With Joint Pain

Table 2 Frequency and percentage of clinical variables of obese women with Joint pain(BMI, waist circumference, muscle strength, mobility status, duration of Joint pain, swelling, use of comfort devices) (N=30)

S.No	Clinical Variables	Frequency(n)	Percentage (%)
1	**Body Mass Index**		
	a)25.0 – 29.9 Overweight	8	27
	b)30.0 – 39.9 obese	12	40
	c)40 and aboveMorbid obese	10	30
2	**Waist Circumference**		
	a)High	7	23
	b)Very High	13	43
	c)Extremely High	10	33
3	**Muscle Strength**		
	a)Maximal Resistance	8	27
	b)Against Gravity	11	37
	c)No Contraction	11	37
4	**Mobility Status**		
	a)Independent	9	30
	b)Partly dependent	11	37
	c)Dependent	10	33

Table 2 revealed that **Figure 8** Showed the percentage and frequency distribution of obese women having Joint pain in relation to their BMI 12 (40%) 30.0 to 39.9. **Figure 9** depicts the percentage and frequency distribution of obese women in relation to their waist circumference. 13 (43%) very high. **Figure 10** represents the percentage and frequency distribution of obese women in relation to their Muscle Strength 11 (37%) no contraction. **Figure 11** observed the percentage and frequency distribution of obese women in relation to their duration of Joint pain 14 (47%) Moderate. **Figure 12** depicts the percentage and frequency distribution of obese women in relation to their swelling 13 (43.0%) Moderate
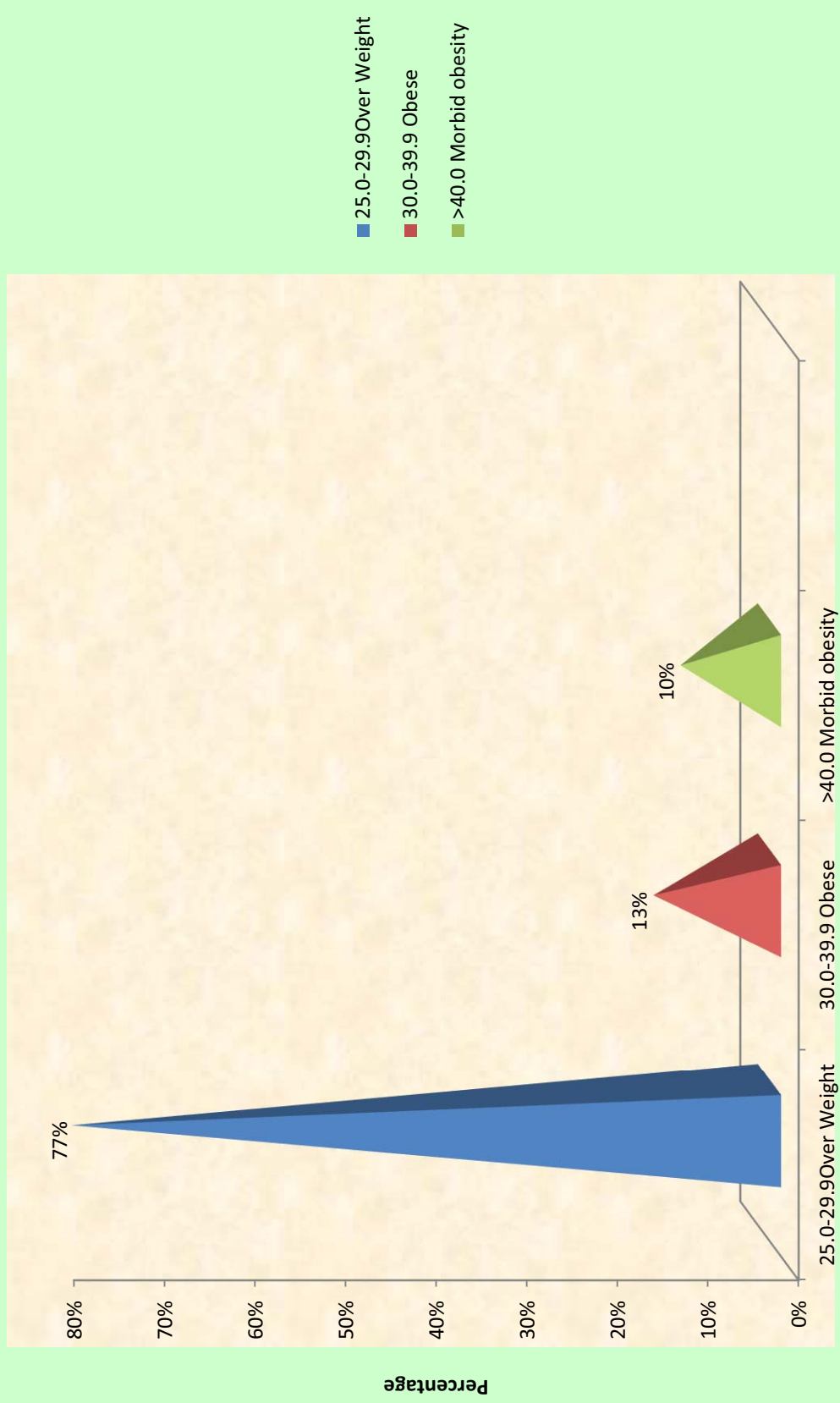
Fig 8: Percentage Distribution of Clinical Variable of BMI Among Obese Women With Joint Pain
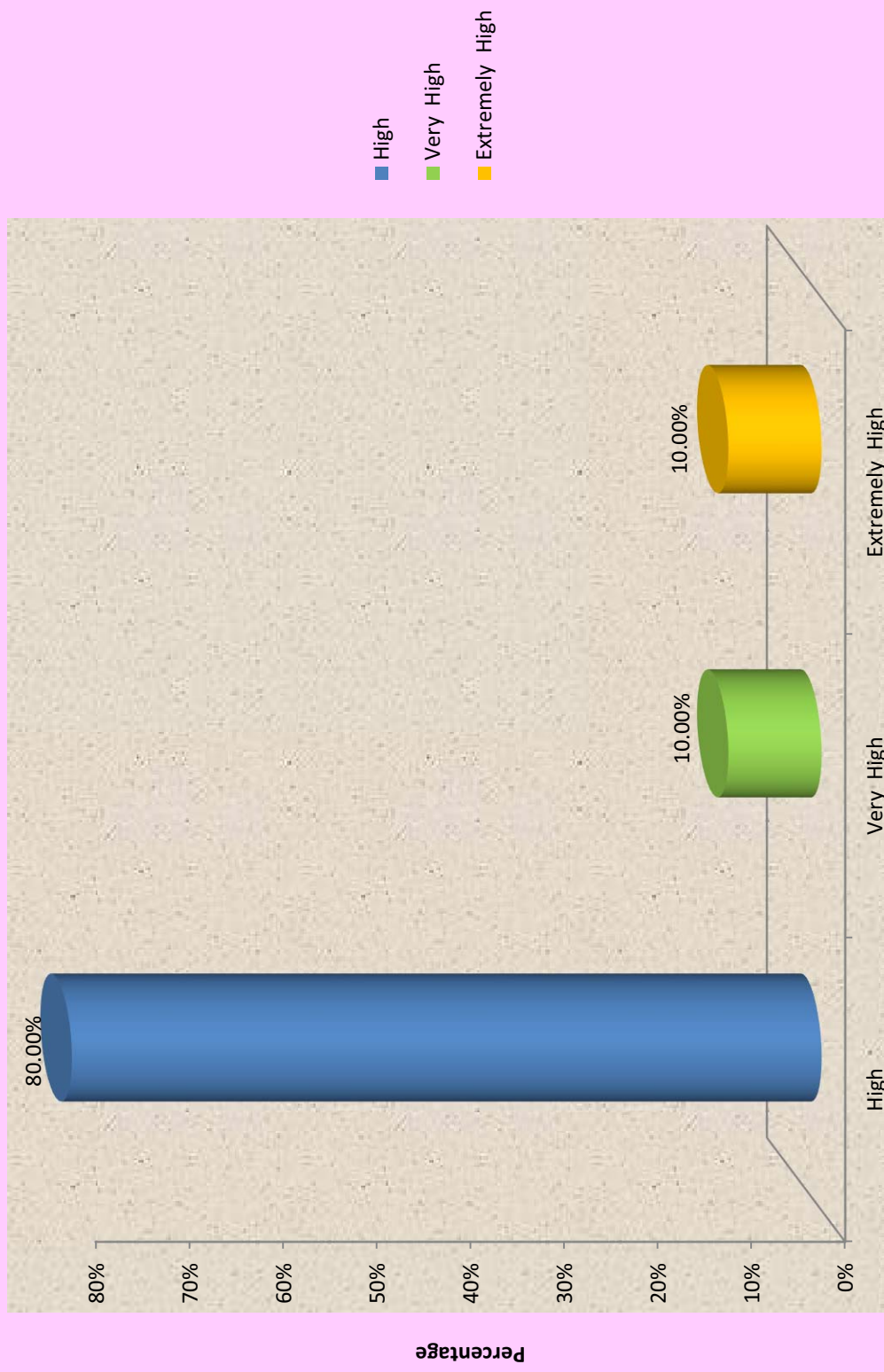
Fig 9: Percentage Distribution of Clinical Variable of Waist Circumference Among Obese Women With Joint Pain

MOBILITY STATUS

87%

7%

7%

- Independen
- Partlydependent
- Dependent
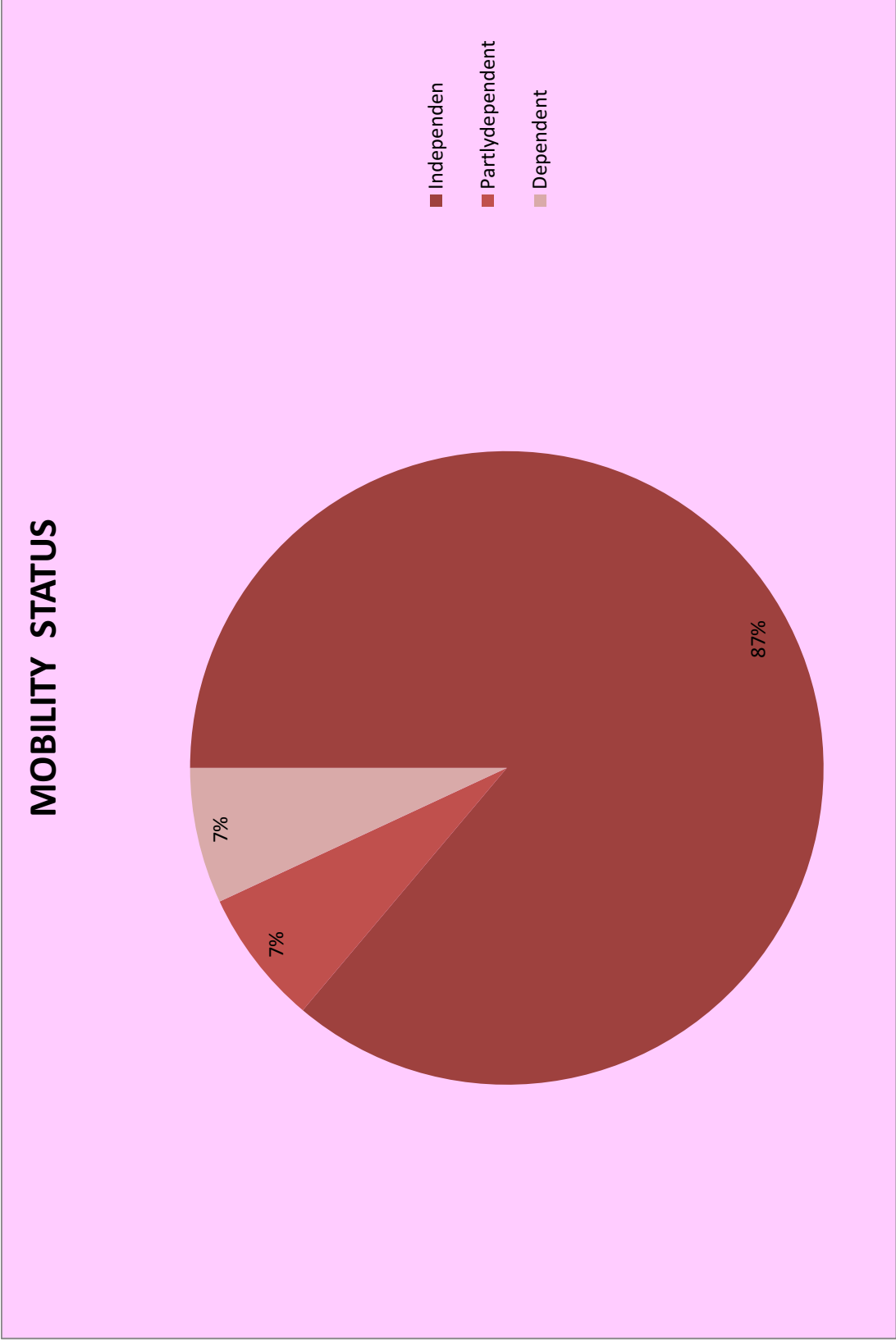
Fig 10: Percentage Distribution of Clinical Variable of mobility status Among Obese Women

49

DURATION OF JOINT PAIN

Less than 1 year
1 - 5 year
5 years above

23.00%

47.00%

36.70%
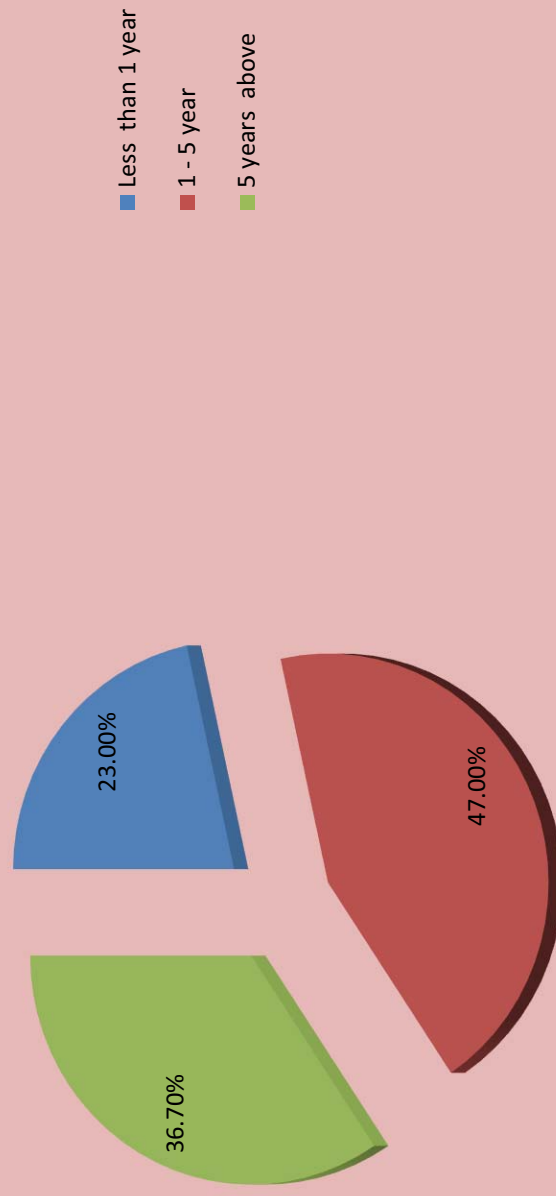
Fig 11:Percentage distribution of clinical variable of duration of Joint pain among obese women with Joint pain

50

SWELLING

Mild
Moderate
Severe

20.00%

43.00%

37.00%
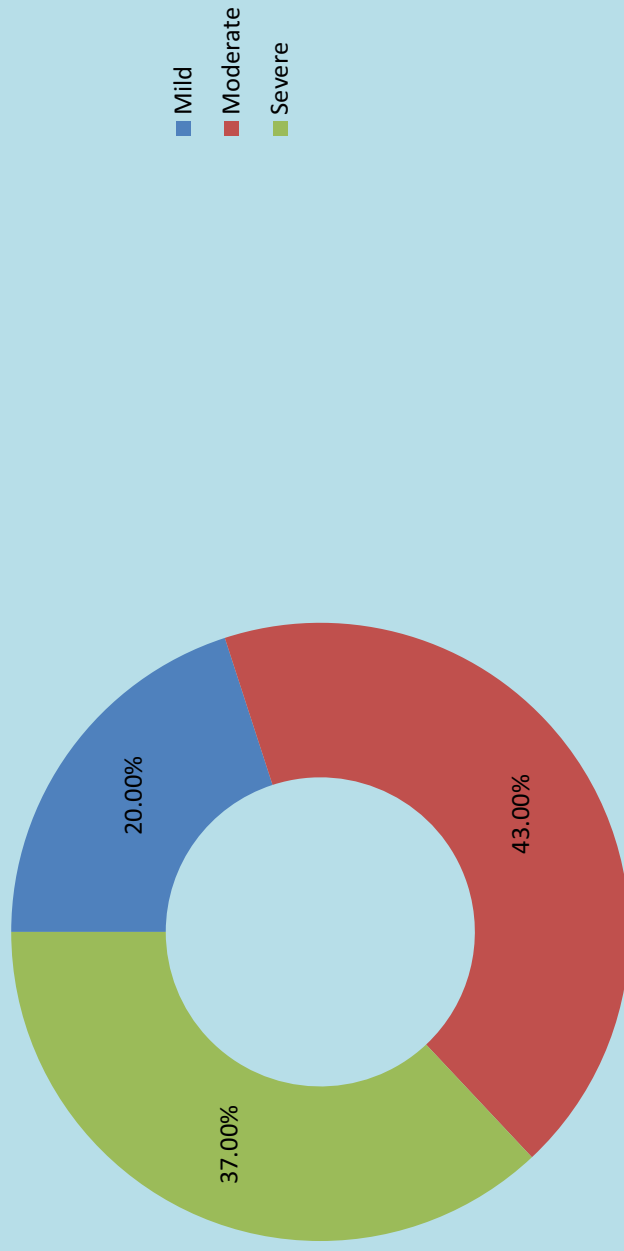
Fig 12: Percentage Distribution of Clinical Variables of Swelling Among Obese Women With Joint Pain.

Table – 3; Frequency and percentage distribution level of joint pain before and after stretching exercise for obese women

(N = 30)

Level of Joint pain	Pre test		Post test	
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)
Mild	0	0.0	27	90.0
Moderate	2	6.7	3	10.0
Severe	28	93.3	0	0.0
Total	30	100.0	30	100.0

Table – 3 .The majority of the obese women 28 are having are having severe pain (93.3%) , and moderate pain (6.7%) and mild pain is (0.0%) and none of them have mild pain .

In post test represented, after stretching exercise are having mild pain (90 .0%) , moderate pain (10.0%) and none of them had severe pain

PRE TEST AND POST TEST LEVEL OF JOINT PAIN AMONG OBESE WOMEN
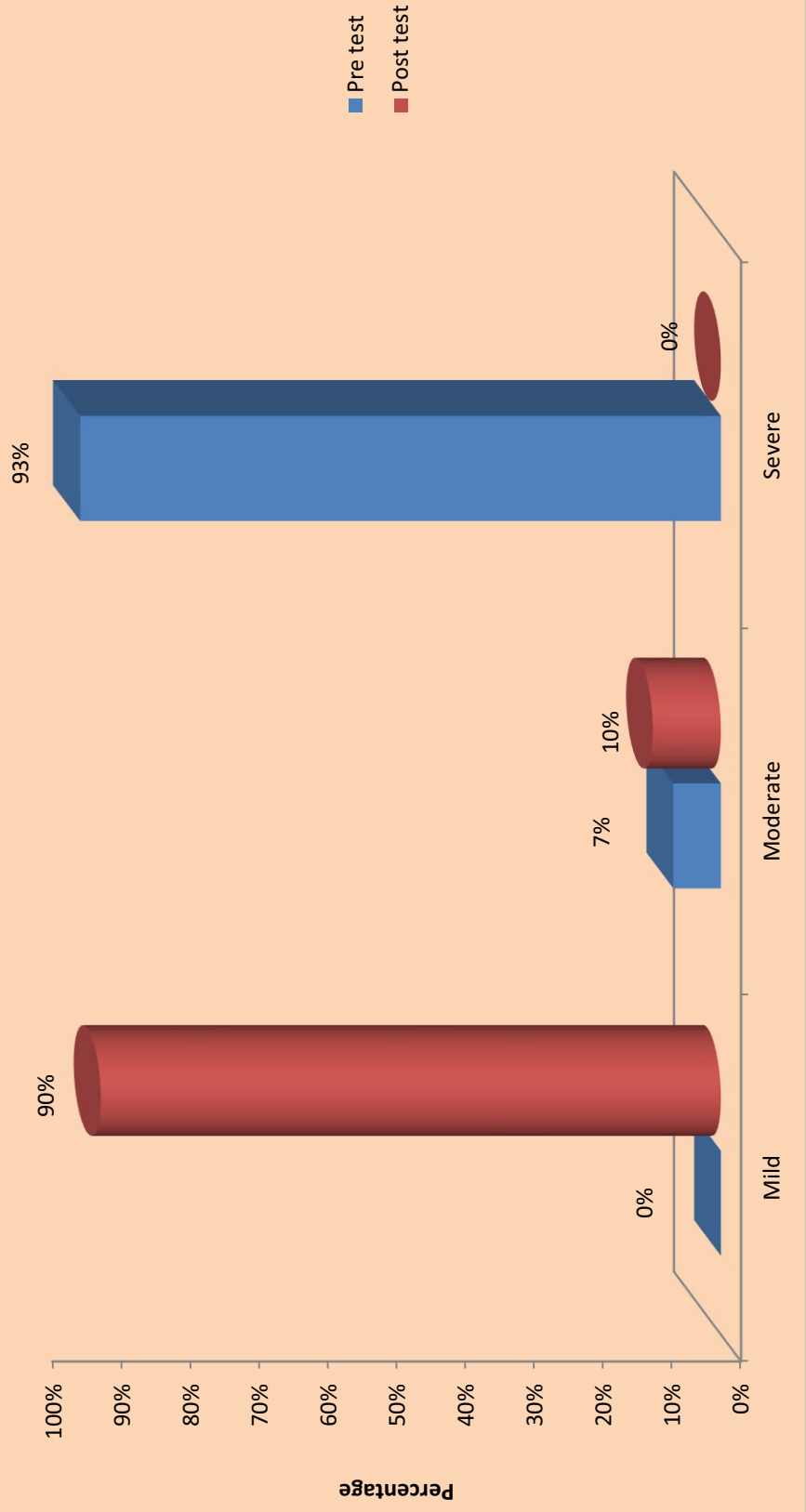
Fig 13: Comparison uf Pre Test And Post of Joint Pain In The Selected Samples

53

Table-4 ; Comparison of mean and standard deviation of pre test and post test level of joint pain among obese women

<div align="right">(N =30)</div>

Group	Mean	Standard Deviation	Standard Error Mean	't' test
Pre test	31.50	2.32	0.43	
Post test	17.03	1.61	0.30	25.90[***]
Improvement	14.47			

Table – 4 revealed the mean pain score . It could be referred from the above table that pre test level of pain score among obese women were high (mean 31.50 , SD 2.32) in comparison with score of post test level of pain (mean 17 .03 , SD 1. 63) and there is improvement in the level of pain score .

The result can be attributed to the effectiveness of stretching exercise with statistical significance of $p < 0.005$. Thus the null hypothesis H01 stated earlier "There is no significant difference level of joint pain among obese women before and after stretching exercise **is partially accepted**''

Table 5: Association between the post test level of joint pain among obese women with selected demographic variables

(N = 30)

Demographic Variable		Post Score				Chi-square test χ^2
		Mild		Moderate		
		Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	
Age	40-49	7	23.3%	2	6.7%	
	50-59	10	33.3%	0	0.0%	
	Above 50	10	33.3%	1	3.3%	2.615
Religion	Hindu	15	50.0%	1	3.3%	
	Christian	3	10.0%	0	0.0%	
	Muslim	6	20.0%	2	6.7%	2.917
	Others	3	10.0%	0	0.0%	
Education	illiterate	12	40.0%	1	3.3%	
	Secondary	10	33.3%	0	0.0%	
	Higher second	4	13.3%	0	0.0%	
	Degree	1	3.3%	2	6.7%	12.336 *
Occupation	Unemployed	14	46.7%	0	0.0%	
	Coolie	10	33.3%	2	6.7%	
	Business	3	10.0%	1	3.3%	3.148
	Professional	0	0.0%	0	0.0%	
Food Habits	Vegetarian	9	30.0%	1	3.3%	
	Non Vegetarian	18	60.0%	2	6.7%	1.10
Calcium take	Diet	20	66.7%	1	3.3%	
	Tablets	7	23.3%	2	6.7%	2.134
Marital status	Married	13	43.3%	0	0.0%	
	Unmarried	2	6.7%	1	3.3%	
	Divorced	8	26.7%	0	0.0%	8.704
	Separated	1	3.3%	1	3.3%	
	Widow	3	10.0%	0	3.3%	

Family planning	Temporary	3	10.0%	1	3.3%	
	Permanent	15	50.0%	1	6.7%	
	Non applicable	9	30.0%	2	0.0%	2.059
Menopause	Yes	14	46.7%	2	6.7%	
	No	13	43.3%	1	3.3%	0.238
Child bearing	Below 20 yrs	12	40.0%	0	0.0%	
	20-25 yrs	10	33.3%	2	6.7%	2.222
	26-30yrs	5	16.7%	1	3.3%	
	above 30	0	0.0%	0	0.0%	
No of children	Above 2	12	40.0%	1	3.3%	
	2 children	7	23.3%	0	0.0%	1.966
	1 child	4	13.3%	1	3.3%	
	none	4	13.3%	1	3.3%	

*The chi/Square statistic is significant at the 0.05 level

Table 5 Revealed that there is significant association between the selected demographic variable and their post test level of joint pain among elderly .Statistical significance was calculated using chi square test hence H02 stated earlier "there is no significant association between the post test level of joint pain among elderly and selected demographic variable is accepted".

Table – 6 Association between the post test level of joint pain among obese women with selected clinical variables

Clinical variables		Post Score				Chi – Square χ^2
		Mild		Moderate		
		Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	
Body Mass Index (BMI)	25.0 -29.9 over weight	21	70%	2	7%	
	30.0 – 39.9 Obese	3	10%	1	3%	0.50
	>40.0 Morbid obesity	3	10%	0	0%	
Waist circumference	High	23	77%	1	3%	
	Very High	1	3%	2	7%	0.13
	Extremely High	3	10%	0	0%	
Muscle Strength	Maximal Resistance	24	80%	2	7%	
	Against gravity	2	7%	0	0%	0.14
	No contraction	1	3%	1	3%	
Mobility status	Independent	6	20%	1	3%	
	Partly independent	12	40%	2	7%	0.67
	Dependent	9	30%	0	0%	
Duration of Joint pain	Less than 1 year	6	20%	1	3%	
	1-5 year	12	40%	2	7%	0.49
	5 years above	9	30%	0	0%	
Swelling	Mild	27	90%	2	7%	
	Moderate	0	0%	1	3%	0.08
	Severe	0	0%	0	0%	

Use of comfort devices	Pillows	26	87%	1	3%	
	Back rest	1	3%	1	3%	0.54
	Sand bag	0	0%	1	3%	
Which joint is affected	Upper Extremities	11	37%	3	10%	
	Lower Extremities	14	47%	0	0%	0.15
	Both	2	7%	0	0%	
Types of pain	No pain	17	57%	1	3%	
	Pricking pain	10	33%	1	3%	0.01
	Non radiating pain	0	0%	1	3%	

Table 6 revels that there is significant association between the selected clinical variables and they post test level of joint pain at p>0.05. Statistical significant was calculated using chi square test. Hence H03 stated earlier. There is no significant association between post test level of joint pain among obese women and selected clinical variables is partially accepted.

CHAPTER - V

DISCUSSION

This chapter presents the interpretation of the statistical findings.

The aim of the study was to assess the effectiveness of stretching exercise on Joint pain among obese women in selected area at Vellore. Total of 30 obese women were selected for the study. Pre test was conducted using Lyshlom Knee Scoring Scale. The duration of pre test ranged from 5 -8 minutes for each obese women.

After pre test stretching exercise was conducted by self- administration. After 15 days, post test was conducted by using the same Lyshlom Knee Scoring Scale. From this study it showed significant changes in the reduction of Joint pain among obese women.

The results are discussed based on the objectives of the study.

OBJECTIVES

1) To assess the pre test and post test level of joint pain among obese women .

2) To evaluate the effectiveness of stretching exercise on joint pain among obese women .

3) To find the association between the pre test and the post test level of joint pain among obese women in selected demographic variables

4) To find the association between the pre test and post test level of joint pain among obese women in selected clinical variables.

This study was carried upon 30 participants who were joint pain among obese Women from selected area at Vellore. The effectiveness of stretching exercise on joint pain was assessed through post test after stretching exercise, twice a day for 15 days .

Demographic variables of obese women with Joint pain

First objective is to assess the pre test and post test level of Joint pain among obese women

The study revealed that mostof the obese women are suffering from joint pain around 30% of women 40 – 49 years , 33.3% around 50 – 59 years and above 59 years 36.7% are suffering .Majority of the religion are r 53.3%, Christian 10.0%, Muslim 26.7% and others around 10.0%. Education most of them are illiterate 43.3% , occupation of the women are not going for job 46.7%, food habits most of them are non vegetarian 66.7%, calcium intake   are taking through diet around 70.0%, marital status most of them are married   43.3%, family planning method used was 56.7% using permanent family planning method, child bearing age below 20 years 40.0% and number of children above 2 children is   43 .3% .

The above finding indicates that 50% were above 50 years. Pope et al study reported that 3 – 5% in the general population and upto 20% in those with diabetic   and   reported   prevalence of arthritis   according   to   World   health organization joint pain os slightly higher in women than men. The study have reported it has to be in 3.0% age group around 40 -49 around 3.7%   and 5.3% above   60 years . Norwegain country study found that   are independent 56.2% were

women and 36. 4% were men .It is important for particular age group for future research in promoting their wellness thus improving quality of life.

Clinical variables of the obese women with joint pain

The study revealed that majority of them was over weight around 77%, 30.39 were category as obese 13% and >40.0 Morbid obesity was around 10%, waist circumference was around 80% is high, muscle strength is maximal resistance around 83% mobility status most of them are 87%, duration of joint pain 1 to 5 years around 23%, swelling is very mild among most of the obese women 97%, use of comfort devices most people are preferring for pillow around 90% is maximum and 3% is minimum, upper extremities affected is 47% then lower extremities effected around 47% and both extremities affected around 7%obese women have no pain 60%, then pricking pain is 37% and non radiating pain is around 3% , most of the obese women without support they are walking around 87% , with the help of walking stick 10% and using tripod for walking 3%and obese women maximum can able to climb 5 stairs around 93% and some can able to climb 10 stairs was around 7% of obese women .

Aging is a natural process. It is an inevitable developmental phenomenon that brings about a number of changes in the physical, psychological, hormonal and social conditions. The aged citizens become increasingly dependent on others. As man grows, his reduced activities, income and consequent decline in the position of the family and society makes his life more vulnerable.

The world wide increases in the obese population coupled with economic, social and other changes have inevitably affected the needs for health care. The recent Indian census (2011) shows that among 1.2 billion , 40 million are obese. But around 30% of the obese women are suffering from different types of pain , muscle strength is week and most of them are having swelling in their extremities.

The most common distressing obese women problems such as severe joint pain and impaired mobility necessitates the dependence on others. usually health care professional and family members neglates these problems and leading to reduction in the quality of life. so the family members and obese women are thought about their health condition when they becoming obese should done regular health check and avoid taking unnecessary foods which is more rich in cholesterol, advice to take well balanced diet regular physical activity, this can help individual to maintain quality of life.

Second objective is to evaluate the effectiveness of stretching exercise on Joint pain among obese

The study concluded that the level of joint pain before doing stretching exercise is (M = 31.50 , SD = 2.32) and the posttest level of joint pain after doing stretching exercise is (M = 17.03 , SD = 1.61). The result can be attributed to the effectiveness of stretching exercise with the statistical significance of $p < 0001$. Thus the null hypothesis H01 stated earlier '' There is no significant difference between

the level of joint pain among obese women before and after doing stretching exercise '' is partially accepted.''

Lewis D et al. 2008 tried successfully stretching exercise as a treatment of musculoskeletal pain and arthritis patient. The study sample was 30 patient stretching exercise on painful joint and the result of posttest indicated a significant reduction of joint pain among selected sample .

Third objective to find the association between the post test level of joint pain among obese women with selected demographic variables

There is significant association between in the selected demographic variable and their post test level of joint pain among obese .There is significant association between the posttest level of joint pain. Statistical significance was calculated using chi square test H02 stated earlier ''there is no significant association between the post test level of joint pain among obese women and selected demographic variables '' is accepted.''

Oliver, Susan A : Felson, David T 2008, study was conducted on evaluating the hand, knee joints and weight, however it was assessed through X ray or been cross sectional, or both of the result has been inconsistent. We assessed the association between BMI , and incidence rate 134 matches case - control pairs of women, who were part of study. We identified incident rate cases of hands, knee joint in women age group 30 – 89 years After controlling of cholesterol content food, smoking status and lack of exercise obesity rate is decreased. Odds ratio ranged from 3 .0 to 10 .5 % is reduced at all joint studies.

Fourth objective to find the association between the post test level of joint pain among obese women with selected clinical variables

The is significant association between the selected clinical variables and their post test level of joint pain. There is significant associations in the post test level of joint pain among obese women p < 0.05. Statistical significance was calculated by using chi-square test. Hence H3 stated earlier. ''There is significant association between the post test level of joint pain among obese women in clinical variables'' is accepted .''

Alih .Mokdad 2013, measured the prevalence of obesity is increasing in the United States .To estimate the prevalence of obesity among adult peoples in 2011. Random digit telephone survey of 1,95.000 sample was collected in the states participating in the risk factors surveillance system. BMI ,based on self reported weight and height was taken. In 2011 the prevalence of obesity BMI > 30 was 20 .9%, 19 .8% in 2010 and it increases b up to 5 .6% in 2012. Increased cholesterol level 2.72%, high blood pressure 1.88% and joint pain people around 4 .19% people are affected. Since the percentage (%) around is 45 to 58 % and 2010 over weight is 65.9% men and 49 .9% women.

CHAPTER - VI

SUMMARY, CONCLUSION, IMPLICATIONS AND

RECOMMENTATIONs

This chapter deals with the summary, conclusion, implication, and recommendations of the study A pre - experimental study to assess the effectiveness of stretching exercise on joint pain among obese women in selected area at Vellore .

The main study was conducted in September 2015 to 2015 . Purposive sampling technique was used demographic data and clinical variables were collected. The instruments consist of two sections.

SUMMARY

The whole research works depends on the findings of study was to assess the effectiveness of stretching exercise among obese women with joint pain

OBJECTIVES OF THE STUDY

1) To assess the pre test and post test level of joint pain among obese women.

2) To evaluate the effectiveness of stretching exercise on joint pain among obese women.

3) To find the association between the pre test and post test level of joint pain among obese women in selected demographic variables.

4) To find the association between the pre test and post test level of joint pain among obese women in selected clinical variables.

NULL HYPOTHESIS (H0)

[1] There will be no significant difference between pretest and post test level of joint pain after stretching exercise .

[2] There will be no significant association between pre test and post test level of pain with selected demographic variables .

[3] There will be no significant association between pre test and post test level of pain with selected clinical variables .

Major findings of the study are,

Demographic variables showed that 11 (36.7%) of obese women participated in the study were in the age group of above 59 years. Majority 16 (53.7%) of obese women were Hindus. One third 13(43.3%) of obese women were illiterate. More than of 20(66.7%) obese women were non-vegetarian. Majority of 13 (43.3%) of obese women participated in the study were married. More than half 17 (56.7%) obese women were implemented family planning method.

Clinical variables showed the majority 12 (40%) whose BMI is 30.0-39.9 waist circumstances is extremely high 10 (33%) of obese women. All obese women do not have maximum resistance 8(27%). Majority of obese women were partly depended 11(37%). Majority of obese women have duration of joint pain less than 1 to 5 years 14 (47%). Majority of obese women are using comfort devices as pillows 26 (90%) and some are using back rest 3(7%) and sand bag 1 (3%).

Before stretching exercises out of 30 obese student none of them had mild joint pain. 7% had moderate joint pain 93% had sever joint pain. But after stretching exercises 10% have moderate pain and none of them had sever joint pain. The comparison using paired t-test is 25.90*** which proved highly significant of p<001.Hence H01 stated earlier there is significant difference between the level of Joint pain among obese women before and after stretching exercises "is accepted".

The study revealed that there is significant association between the selected demographic variable and their post test level of joint pain among elderly. Statistical significance was calculated using chi square test hence H02 stated earlier ''there is no significant association between the post test level of joint pain among elderly and selected demographics'' is accepted .

There is significant association between the selected clinical variable and their post test level of joint pain. Statistical significance was calculated by using chi - square test. Hence H03 is stated earlier. ''There is no significant association between the post test level of joint pain among obese women and selected clinical variable '' is accepted .

CONCLUSION

The following conclusion are drawn from the study,

The stretching exercise could be useful and safe foe obese women to reduce in joint pain. The excavated results supported that stretching exercise is one of the best method to reduce joint pain among obese women. The stretching exercise has

also shown that the reduction of joint pain and improves normal ability in daily activities.

NURSING IMPLICATIONS

The research has derived from the study the following application that are vital concern in the field of nursing education, nursing practices, nursing administration and nursing research.

NURSING EDUCATION

Nursing curriculum should ensure that students learns more about various modalities of care that include knowledge about the alternative and complementary system of medicine which can be incorporated with routine clinical care measure in the cure of various ailments .

It should encourage the student to exploit all possible methods of nursing care to relieve discomforts like pain and enhance comfort like stretching exercise is helpful in reduction of joint pain. The educational institutions can arrange for student participation in workshops, conferences where emphasis is given to multidisciplinary approach to management of pain in different clinical conditions.

NURSING PRACTICE

Many obese women are disabled and there are lack of activities of daily living due to joint pain. It was evident from present study that stretching exercise is effective in reducing joint pain. The therapy can also be implicated in ortho clinics and hospitals. Nurses working in the hospitals or nursing home should provide and use

complimentary therapy for pain reduction, educational programme in complimentary therapies can be designed to create awareness among nurse and public.

NURSING ADMINISTRATION

Conduct in - service education programme in effective management of pain by quality nursing care delivery.

Nursing administrator should collaborate with governing bodies as well as hospital administrator to formulate standard protocols and policies to integrate different modalities of care with routine clinical care modalities for effective patient. He can also conduct in service education programme in effective management of pain by introduction of quality nursing care delivery.

Nursing administrator should provide opportunities for nurses to attend training programme related to clinical practice and standard nursing care with emphasis to multidisciplinary treatment approaches and to introduce evidence based practices based on research findings in planning of care .

NURSING RESEARCH

One of the aim of nursing research is to expand and broaden the scope of nursing; findings of the study will provide baseline data about the pain perception and implication of stretching exercise. It can be used for further studies in this area.

Nursing research can encourage clinical nurse to apply the research findings in their daily care activities and can bring about new innovative technique to promote

comfort of the patient. The study also brings about the fact that more studies need to be done at different settings.

RECOMMENDATIONS

1) Similar kind of study can be conducted to a large group to generalize the findings.

2) The same study can be repeated by using the true experimental design.

3) Same study ''about the effectiveness of stretching exercise '' can be under taken for the following condition , relief of shoulder pain and other arthritis pain.

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PRE TEST ASSESSMENT: THE RESEARCHER COLLECTING

THE BASELINE DATA

POST TEST ASSESSMENT: THE RESEARCHER EXPLAINING ABOUT STRETCHING EXERCISES ON JOINT PAIN

ANNEXURE X
STRETCHING EXERCISE

DEFINITION

It is a form of physical exercise in which a specific muscle or tendon is deliberately fixed or stretched in order to improve muscles felt elasticity and achieve comfortable muscle tone. The result is a feeling of increased muscle control, flexibility and range of motion.

INDICATIONS

1. Essential for establishing normal range of motion of joints and soft tissue.

2. Decreasing risk of injury.

3. Prevent contractures and adaptive shortening.

4. Combats the effects of prolonged immobilization.

5. Optimal flexibility will reduce stressors to surrounding joints and tissues

CONTRAINDICATIONS

1. Around acutely inflamed or infected joints.

2. Patient who are already hyper mobile

3. Patient when shortened muscles are providing stability if normal joint stability is decreased with functional abilities .

4. Across a joint when a bony block prevents motion.

Quadriceps Stretches

     Origin   :   Combined rectus femoris and vastus muscle.

     Insertion   :   Tibial tuberosity

     Action   :   Knee extension, Hip flexion.

Procedure

1. Stand up and pull one leg behind you.

2. Hold 5 - 10 seconds and release

3. Repeat with other leg .

4. 5 to 10 minutes daily .

Hamstring Stretches

Origin   :   Tuberosity of ischium. linea aspera .

Insertion   :   Tibia, fibula

Action   :   Flexion of knee, extension of hip

Procedure

1) Sit on the chair and put one leg out.

2) Hold 5 – 10 seconds then release .

3) Repeat with other leg ,and then do it both the legs .

4) Repeat 5 times on each

Calf stretches (Gastronomies Muscle)

Origin   :   Superior to articular   surfaces of lateral condyle of

femur and medial   Condyle of femur .

Insertion   :   Tendon calcaneus into mid posterior calcareous .

Action   :   Plantar fiexes foot, flexes knee.

Procedure

1) While standing , place your hand in front of wall with arms
   outstretched , elbow straight .

2) Keeping your left knee slightly bent , the toes of right foot
   slightly turned inward . Move your right foot back one or two feet.

3) Place your right heel and foot flat on the procedure .

4) Keep your right knee straight and hold position for 10 - 30
   seconds .

5) Continuing to keep your right heel and foot on the floor , bend
   your right knee and hold 5 - 10 seconds and release .

6) Repeat the opposite leg.

7) Repeat 5 to 10 times on both legs .

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