EFFECTIVENESS OF ACHARYA TECHNIQUE ON REDUCTION OF BACK PAIN AMONG THE INDUSTRIAL WORKERS

Dissertation Submitted To

THE   TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY CHENNAI

IN PARTIAL FULFILLMENT OF REQUIREMENT FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING
APRIL 2012.

A STUDY TO ASSESS THE EFFECTIVENESS OF ACHARYA TECHINIQUE ON REDUCTION OF BACKPAIN AMONG THE INDUSTRIAL WORKERS IN A.V.THOMAS LEATHER INDUSTRY, GUINDY, CHENNAI 2011-2012.

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ABSTRACT

Back pain is the most common reason for consultation in all the countries. It interferes with a person's quality of life and general functioning. The nature cure of Save India association guides the back pain patient for Acharya technique which consists of internal rotation, external rotation of a foot for 3 to 5 minutes every day for a week will help to reduce the back pain effectively.

The focus of the study was to evaluate the level of reduction of back pain among the industrial workers, with back pain. Hypothesis of the study was there is no significant relationship between the Acharya technique and level of back pain among the industrial workers. The conceptual fame work developed for the study was based on the modified Wiedenbach's helping Art of clinical nursing model. An extensive review of literature, professional experience and expects guidance helped the investigator to design the methodology.

The study was conducted by adopting the pre experimental one group pre intervention posttest design. The study was carried out with 50 participants who fulfilled the inclusion criteria. The investigator introduced herself to the industrial workers and explained the purpose of the study to ensure better cooperation. Purposive sampling technique was used to select the samples. Written consent was obtained from the industrial workers.

Every Wednesday the investigator collected data from 11 to 13 participants by using Visual Analogue Scale to assess the pre intervention level of back pain among the industrial workers. Acharya technique which consists of internal rotation, external rotation, flexion, extension was demonstrated for 3 to 5 minutes to the industrial workers and they were asked to perform the same technique for 3 to 5 minutes for seven days. At the end of seventh day the post intervention level of back pain among the industrial workers was assessed.

Analysis revealed that the paired 't' test value of 18.03 was highly significant at the level of $p<0.001$. Thus it indicates the effectiveness of Acharya technique on reduction of back pain among the industrial workers.

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CHAPTER – I

INTRODUCTION

THREE MINUTES A DAY KEEP DOCTORS AWAY

Mr. Acharya

Pain is not only a physical response it also involve mind to play an important role in how oneself perceive the pain. One of the world's leading organizations in the area of pain research the International Association for the study of pain has defined pain as, 'An unpleasant sensory and emotional **e**xperience associated with actual or potential tissue damage or described in terms of such damage'. In this definition it shows that pain is not only a signal that the body sends out in response to a certain trigger a sensory experience but also an emotional experience. In other words, how the mind responds to pain is an important aspect of how one perceives pain.

Back pain is not only the pain in the back, but it is also an emotional process we may have heard of people overcoming great pain when their mind was focused on something else. This is a great example of how the mind or emotions can influence the pain experience. Secondly the definition of the International Association for the study of pain, shows that pain could be, necessarily associated with tissue damage. This refers to the difference, explained above, between acute pain and persistent or chronic pain.

Back pain is a too familiar problem that can range from a dull, constant pain to a sudden, sharp pain that leaves people incapacitated. It can come on suddenly from an accident, a fall, or lifting some thing heavy or it can develop slowly, perhaps as the result of age related changes to the spine.

Back pain is pain felt in the back that usually originates from the Muscles, Nerves, bones, Joints or other structures in the Spine. According to times of India Back pain is one of the most common complaints among people of all classes, affecting both men and women, earlier it was only for old age but back pain has now become a major cause for concern for the late 20's to 40's age group, back pain affects any of the 26 bones connected by muscles ligaments and discs that constitute

the spine. Back Pain was highly prevalent with an annual prevalence varying from 73% to 76%. A large percentage (38%) indicated the same intensity of back pain.

A research was conducted by Cecil. G, (2006) at university of north Carolina in chapel hill, United states to find the prevalence of chronic, impairing back pain in the state, the results showed that the pain was increased from 3.9 to 10.2 percent from 1992 to 2006 thus the study concluded that back pain increases promptly each year in both the sexes, across all ages, racial and ethnics.

Nearly 5 million working days were lost as a result of back pain in 2003 to 2004. This means that on any one day 1% of the working population are on sickness leave due to a back problem, back pain is the number two reason for long term sickness in much of the United states. In manual labor jobs, back pain is the number one reason. the changing nature of the state's workforce with a decline in the percentage of manufacturing jobs and an increase in construction and service industry jobs over the time span concerned may be another possible factor. Back pain is a very common problem in their lives. It results in the losses of millions of man hours and billions of dollars worth of productivity annually worldwide. Patients are advised bed rest and light work. Painkillers, ointments or massages provide only temporary relief. The damage to the spinal area continues to result in a slow and steady degeneration of the affected area of the spine and the back.

A survey to elicit information on factors related to the causes of back pain in industrial workers was made. Questionnaire was sent to 1000 workers in various industrial occupations among that 509 industrial workers responded well. In this population, back injuries were more frequent among women. Most employees sustaining back injury subsequently returned to their original job.

Physical exercise can be a very effective method to reduce the back pain and discomfort that long term pain sufferer's experience, alternative therapies can help to release muscle tension, correct posture, relieves pain, and prevent long term back problems by improving muscle strength and joint stability. Many people find pain relief by using hot and cold packs on the sore area. Special exercises, such as ones designed of the specific problem by a physical therapist, can help to strengthen the

core abdominal muscles and back muscles, to reduce back pain and making the back stronger.

Since 4 out of 5 persons suffer from back pain the founder of Acharya technique for back pain and Spinal & Nervous rejuvenation, found a simple 3 to 5 minute relaxation exercise for a week which cured back pain completely without medicines or surgery which were recommended by top orthopedics.

The Nature Cure Save India Association has been working in this field to revive those natural instincts and behavioral patterns to mitigate common ailments, and pains and other health problems without any medicines, yoga and other therapies. It has succeeded in doing that to a large extent by helping to cure patients with acute pains in the back, and other spinal problems. Health of the spine is the key to good health, both physical and mental, or else, a man is called spineless.

Those natural instincts and behavioral patterns are now codified into Acharya technique for back pain and Spinal & Nervous rejuvenation. The Save India association is also holding free weekly camps so that all those who are suffering from Back pains and other health problems can learn them and help themselves to enjoy perfect health and that too, without any depressions, fatigues or tension. Those persons who are needy and are tired of running from pillar to post and have spent a lot in treating back pain, can now hope to enjoy optimum health through this nature cure therapy which can rightly be called a therapy beyond all therapies.

After many years of suffering from debilitating back pain, Mr. Acharya set his mind and energy towards finding a natural cure as an alternative to painkillers, medications and surgery. The result of many years of personal trial end error was born in the form of Acharya Technique for Back pain and Spinal & Nervous rejuvenation. Over the last seven years, through the Nature Cure Cell of the Save India Association, he has taught the technique to thousands of people who have improved their quality of life by eliminating back pain caused by various factors.

NEED FOR THE STUDY

Back pain affects at least 80% of the population in during any one year up to a half of the adult population 15% to 49 % will have back pain. It is common in individuals who lead sedentary lives and in those who engage in manual labor. It can occur at any age but is most prevalent during the third to sixth decades of life.

Back pain should be viewed as a medical disorder, with the goal being to return to regular physical activity as quickly as possible and to enable the patient to receive the most beneficial care at optimal times. In up to 80% of patients back pain, a precise anatomical cause cannot be localized.

Back pain is the most common site for pain in younger and middle adults. The prevalence of physical disability rises with age, approximately 60 % of women aged over 45 reports some physical limitations as a common cause of sick leave and long time out of employment was due to back pain for the active working population. Back pain is a major health and socio economic problem throughout Europe. The lifetime prevalence has been estimated at anything between 50% to 90%. In any one year, the incidence of back pain is reported to be 5% of the population. $2/3^{rd}$ of workers consider themselves at risk of back pain in the work place. Number of industries such as agriculture and construction are perceived to carry higher risk, such risk perception appear well founded in that incidence of back pain at work high and is the most frequent problem.

A most recent survey from ten years ago, found that the most common work related health problem was back pain affecting 30% of workers. Survey in Spain found that the most important work related physical problems derive from maintaining the same posture and carrying out repetitive tasks. The out come of the survey showed that 22.9% workers lead to back pain.

Our bodies naturally change as we grow older. Some of these changes are experienced as a result of day to day living while others are brought on from continued lifestyle choices such as smoking, lack of exercise and carrying excess weight. Regardless of what causes these changes, they can sometimes lead to painful and even debilitating health conditions.

While creating the various living species which number 84 million according to Indian scriptures and which number has now been confirmed by scientists too, God infused in them certain instinctive traits to keep them going and even to mutate according to challenges unfavorable to their existence. God also infused those survival instincts in man too. But in his enthusiasm to discover new things and new knowledge man lost many of those instincts that kept him healthy and, so to say 'kicking'. But the animals, the birds and other species did not forget theirs. So they live much better and healthier lives than man, although they don't have state of the art hospitals and specialist doctors to treat them.

The Bone and Joint Decade Report, (2005) states that, "Most episodes of low back pain settle after a couple of weeks but many have a recurrent course with further acute episodes affecting 20 to 44% of patients within one year in the working population and lifetime recurrences of up to 85%. Back pain is the second leading cause of sick leave. In the United Kingdom, 12.5% of all sick days were found to be related to back disorders. Figures for Sweden are similar with an estimated 13.5% of sick days said to be the result of back problems. The economic cost of back pain to society in then Netherland has been estimated to be 1.7% of the gross national product.

Some exercise which are time consuming, tiring and require hours of daily practice for months if not years. Once you learn the Acharya technique for back pain for 3 t0 5 minutes every day the results will be within a week with few details of do's and don'ts including some simple precautions, it can be practiced in the comfort of the home.

When the researcher came across this incidence and prevalence of back pain and the recent back pain statistical information found that the industrial workers is more on the risk zone to back pain . This aroused the interest for the researcher to create awareness among the industrial workers. Hence the researcher felt the need to create awareness among the industrial workers indirectly through the health care providers regarding Back pain.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of Acharya technique on reduction of back pain among the industrial workers in A. V. Thomas leather industry, Guindy, Chennai.

OBJECTIVES

1. To assess the level of back pain among the industrial workers.
2. To assess the level of back pain among the industrial workers after Acharya technique.
3. To determine the effectiveness of Acharya technique on reduction of back pain among the industrial workers.
4. To associate the pre intervention and post intervention level of back pain among the industrial workers with their demographic variables.

OPERATIONAL DEFINITIONS

Effectiveness : Refers to a outcome of Acharya technique on reducing the level of back pain among the industrial workers.

Back pain : Refers to a pain on back experienced by the industrial workers related to their occupation.

Acharya Technique: Refers to the relaxation technique with 3 to 5 minutes foot exercise which includes internal rotation, external rotation, flexion, and extension of foot for a week to reduce back pain.

Industrial workers: Refers to the employees working in leather industry with in the age group between 25 to 45 years who had experienced back pain.

HYPOTHESIS

There is no significant relationship between the Acharya technique and level of back pain among the industrial workers

DELIMITATIONS

- The study was delimited to 4 weeks of data collection.
- The study was delimited to females
- The study was delimited to only 50 members.

CHAPTER– II

REVIEW OF LITERATURE

Review of literature refers to an extensive, exhaustive and systematic examination of publications relevant to the research project (Polit and Hungler)

This chapter deals with review of literature related to the problem statement. It has helped the researcher to understand the impact of problem under study. It has also enabled the researcher to design the study to develop the tool and plan for data collection procedure and to analyze the data.

PART I : REVIEW OF RELATED LITERATURE

Back Pain among adulthood is an important concern, approximately 50% of all working people suffer back pain symptoms for at least some time during any given year. Experts believe that a major contributory factor to this is modern tendency to lead a sedentary life at both work and home. In particular persist back pain more than 3 months, can have a significant impact on people lives. In frequently reduce their quality of life and adversely affects their family and social relationship. A few studies suggested that psychological factor such as job stress and dysfunctional family relationship may correlate closely with back pain. For most type of common back pain the nature cure Save India Association located in Pune, advises just 3 to 5 minutes natural relaxation exercises for a week to reduce the back pain, so that further degeneration process is arrested and the damage already done is slowly reversed over period of time as per the natural healing processes in the human body.

- Literature related to complementary and alternative therapies on back pain.
- Literature related to back pain
- Literature related to back pain among industrial workers.
- Literature related to Acharya technique

PART II : CONCEPTUAL FRAME WORK

PART-I

Literature related to complementary and alternative therapies for back pain

Cox. H, et al., (2011) conducted a randomized controlled triad study to compare the effectiveness of yoga and usual care for back pain among 313 adults in 13 non National Health Service premises in United Kingdom. Roland and Morris disability questionnaire was used to collect the pain score and general health assessment. The results showed that Roland and Morris score of yoga therapy for 3months was 2.17 which showed that it was lowered in yoga group at, where else the score of usual care for 6months was 1.48. The study concluded that offering 12 week yoga programme to adult with back pain led to greater improvement than usual care.

Quinn. f, et al., (2011) Conducted a study to investigate complementary and alternative medicine used by physiotherapist for the treatment of back pain in united kingdom, Questionnaire method was used to collect the data ,The results showed that the most common complementary and alternative medicine is used by physiotherapist were Acupuncture 46.9%and massage 2.1%. The study concluded that physiotherapist perceived acupuncture was more to be effective than massage in the treatment of back pain. The study concluded that all the and complementary alternative medicine has its own benefits towards back pain

Lam. P, et al., (2011) conducted a randomized controlled trial study to determine the effectiveness of tai chi exercise on persistent back pain among 160 volunteers between the age groups of 18 to 70 years with persistent back pain in general community setting in Sydney .The results showed that 10 week tai chi exercise reduce the back pain symptoms from1.7 point to 1.3 point. The study concluded that tai chi exercise was a safe and effective intervention for back pain.

Kim. J, et al., (2011) conducted a study to determine the effectiveness and safety of wet cupping treatment for persistent nonspecific back pain among 32 participants in clinical research centre of Korea Institute of Oriental medicine, Korea. The results showed that pain score was decreased from16 to 9 after the wet cupping intervention. The study concluded that wet cupping method was effective and safety method for treating persistent non specific back pain.

Press. Y, et al., (2011) conducted a cross sectional study to identify the patients visit to the complementary medicine clinic for back pain among 395 patients with the age groups of 18years and older in Israel. The results showed that 50.9% patients with back pain reported that complementary medicine result in better physical strength, 31.3% says that it leads to better mental state, and 22.7% patients hoping that complementary medicine will prevent invasive procedure. The study concluded that due to all the benefits provided by the complementary medicine without any invasive procedure   make the patients to choose it as best choice to visit the complementary medicine clinic.

Davis. R, et al., (2011) conducted a study to determine the effectiveness of complementary and alternative medicine to treat back pain among 6% of United State population. The results showed that a benefit of yoga, taichi, acupuncture was 95% benefit for back pain. The study concluded that complementary and alternative medicine was more effective to treat back pain among general population of all people with back pain in United States.

Kahh. J, et al., (2011) conducted a randomized controlled trial study to compare the effectiveness of massage and usual care for back pain among 401persons with 20 to 65 years of age with back pain in a integrated health care centre at Washington. The results showed that adjusted mean Roland Disability score of relaxation group was 2.9 points lower in back pain persons, and 2.5 points lower in the structural massage group than usual care groups. The study concluded that structural massage was more effective than usual care.

Cook. A, et al., (2010) conducted a study to assess whether yoga is effective for treating back pain among 210 participants in group health Research Institute, United States. The results revealed that by continuous yoga therapy 170 participants were relieved from back pain and 40 participant's reports that they are having moderate back pain. The study concluded that yoga act as a therapeutic option for treating back pain without any side effects.

Cathy. W, et al., (2010) conducted a randomized clinical trial study to analyze the effect of acupuncture from data receiving acupuncture among 477 participants with back pain in group research institute, United States of America.

Telephone interview was used to collect the data. The results showed that about 90% of participants reported that acupuncture was a very effective treatment for treating back pain.

Aplin. J, et al., (2010) conducted a pragmatic randomized controlled trial study to assess the efficacy of yoga for the treatment of chronic back pain with usual care group among 286 department of health science Newyork. The results showed that with 12 week follow up data 90% of patient in the yoga group and 60% of patient in the usual care group. The study concluded that yoga was very efficient to the health science student to increase the class attendance.

Rollman. B, et al., (2010) conducted a randomized controlled study to determine the impact of an eight week mindfulness program for back pain among 40 participants in community dwelling older adults, division of general internal medicine, United States. The results showed that 88% of participants continued to meditate for 4 months as follow up after meditation program. The study concluded that meditation program had a beneficial effect in treating back pain.

Hopton. A, et al., (2010) conducted a study to assess the common treatment reaction and the impact on willingness to try acupuncture again among 133 patient of department of health science, United kingdom. The result showed that 84% are willing to try again 16% was unwilling to try acupuncture. The study concluded that treatment reaction was associated with patient willingness to try acupuncture again.

Davis. R, et al., (2009) conducted a pilot randomized controlled trial study to assess the feasibility of studying yoga among 30 people with age of 44 years in minority population with back pain in two community health centers, Boston and Massachusetts. The results showed that Roland scores for yoga decreased from 14.5 to 8.2 compared to usual care this made them to study yoga. The study concluded that minority population with back pain was moderately feasible to study yoga and may be more effective for reducing back pain.

Smith. P, et al., (2008) conducted a factorial randomized trial study to determine the effectiveness of Alexander technique, massage therapy and exercise among 579 patients with recurrent back pain in 64 general practices in England. The

result showed that Alexander technique with 6 to 12 month courses achieved 72% when compared to that of massage and exercise. The study concluded that this technique will also improve the quality of life significantly.

Bell. J, et al., (2008) conducted a study to evaluate a effectiveness of massage therapy in increasing range of motion and decreasing back pain among population with back pain for 9 months. The results showed that massage therapy was effective at reducing back pain intensity and increasing range of motion throughout the 10 weeks study for 45mins therapy. The study concluded that massage therapy was more effective in treating back pain.

Baxter. G, et al., (2008) conducted a study to investigate current management of back pain by reflexologist among 500 members from the international institute of reflexology, United Kingdom. The results showed that response rate was 50%, majority respondents were female (95%). The respondents perceive reflexology to have positive effects on relieving 94% of back pain. The study concluded that reflexology to be an effective therapy for back pain.

Liu. M, et al., (2008) conducted a study to observed therapeutic effect of small needle knife comprehensive therapy on non specific back pain patient among 305 cases in department of rehabilitation medicine, China. The results showed that needle knife therapy was treated with small needle knife releasing therapy, blocking and functional training shows the result as 50%. The study concluded that small needle knife comprehensive therapy can significantly improve back pain.

Wong. T, et al., (2007) conducted a study to examine the effectiveness of auriculo therapy using magnetic pellets for the elderly people suffering from back among 67 participants with 60 years old in Chinese university of Hong Kong. The results showed that 30 elder people were selected as control group and by using semen vicariates therapy was given for 3 weeks in the same way 30 experimental groups were received magnetic pellets therapy. The study concluded that auriculo therapy using magnetic pellets significantly reduce the back pain.

Witt. C, et al., (2007) conducted a prospective non randomized comparative study to compare anthroposphic treatment like eurhythmy, rhythmical massage or art

therapy, counseling, anthroposophic medication versus conventional treatment of back pain among 62 consecutive outpatients from 38 medical practices in Germany. The results showed that anthroposphic treatment patients show 85% success when compared to that of conventional patient is 54% success. The study concluded that anthroposophic therapy for back pain was associated with good improvement.

Martimo. K, et al., (2007) conducted a randomized controlled trial study to determine the effectiveness of manual material handling advice and training and the provision of assistive device in preventing and treating back pain among 772 employees in Finnish institute of occupational health, Finland. The results showed that 500 employees who used manual material handling advice and training showed an effective outcome when compare to that of non users.

Literature related to Back Pain

Jones. G, et al., (2011) conducted a prospective cohort study to determine the prevalence of disabling and non-disabling back pain risk factors among older adults of aged group more than 75years. The study was conducted in, university of Aberdeen United states. The results showed that prevalence of disabling and non disabling back pain was 6% and 23%. The study concluded prevalence of non disabling back pain did not vary significantly across age (p=0.34). but the prevalence of disabling back pain increased with age.

Moroder. P, et al., (2011) conducted a retrospective study to evaluate the extent of sedentary life style and the 12 month prevalence of Back Pain among 103 medical students. The results showed that they were approximately 2.5 times less physically active than the 107 physical education. The study concluded that the sitting position is no longer considered as a risk factor for few back pain.

Spine. P, et al., (2011) conducted descriptive study to overview epidemiological feature burden and current management of Back pain among, general population, working population, school children and pregnant women aged between 15 to 69 years in Iran. The study was conducted in Department of physical therapy, Iran. The results showed that general population, Working population, school children and pregnant women with Back Pain was found to be 14.4% to 84%.

Wiad. K, et al., (2011) conducted a study to find the incidence of back pain among 10% of population with the age group of 35 and 55 years in European countries. The results showed that 15 to 40% of Population experience back pain every year. The study concluded that back pain and spinal deformities resulting from long lasting overload with their typical presentation.

Ferrira. G, et al., (2011) conducted a cross sectional study to identify the prevalence of special pain among 972 adults aged between 20 and 69 years of both sexes in residents of urban area, Brazil. The results showed that the prevalence of spinal pain was 63.1% being lower back the most prevalent condition female gender is 1.24 (40%). The study concluded that the prevalence of back pain is important as it is associated with activity limitation and with health care utilization.

Mostafa. G, et al., (2006) conducted a cross sectional study to determine the prevalence of Back pain among 18,031 Iranian industrial workers at Iran. Standardized Nordic Questionnaire method was used to collect the data. The results showed that 78% participated in the study population young males, female more than 30years,the prevalence back pain among males 20% and female 27%. The study concluded that the low back pain was more prevalent among women's related to physical and psychosocial factors on the workers.

Tuncer. T, et al., (2005) conducted cross sectional study to estimate the prevalence of back pain among 3,215 residents aged 16 years or order in urban population of Turkey. The results showed that the crude life time was 12 month and point prevalence of Low Back Pain was 46.6%. The study concluded that point prevalence of Low Back Pain is higher in Turkey.

Aaohn. J, et al., (2004) conducted a cross sectional study to document the prevalence rate of back pain among licensed nurses and nursing aids at University of Florida, USA. The results showed that, Heavy Work Loads with containers shift increased the prevalence of Low Back Pain in Licensed & Nursing aids, The study recommended that practice of ergonomic intervention will decrease the prevalence of Low Back Pain.

Muller. R, et al., (2004) conducted a study describe the prevalence and determents of Low Back Pain. The study was conducted in School of Public health and Tropical Medicine among 3000 Australian adults in the age group of 18 to 45 years. The results showed that 10.5% had experienced high intensity pain and 95% had experienced high disability Low Back Pain. The study concluded better understanding of the Magnitude of the Low Back Pain Problem in Australian adults.

Spine. P, et al., (2003) conducted a cross sectional study to assess the occurrence of Back Pain among 745 young adolescents in the area of two Regional Health Center, Netherland. The results showed that back pain complaints were reported by about 45% of young adolescents. The study concluded that psychomotor factors appear to be more strongly related to the occurrence of back pain in young adolescents

Lassen. C, et al., (2002) conducted a study to find the occurrence of non specific low back pain among adolescents of age group 14-16 years the study was conducted in Bispebjerg hospital Kobenhavn. The results showed that minimal physical activity, intensive sports, genetics, psychosocial factors are with high Impact towards Back Pain. The study conducted that the casual relations are not clear for the morbidity related to Back Pain in adolescents.

Literature related to back pain among the industrial workers

Young. A, et al., (2011) conducted a longitudinal research study to discuss about the emerging trends and promising new direction among primary care research members, Hopkinton. The study concluded that field of primary care Back Pain research often seems to progress slowly to improve Back Pain research and Primary care practice.

Murtezaine. A, et al., (2010) conducted a longitudinal study to investigate the occurrence of back pain sickness and absence among 489 workers aged 18-65 years at Kosovo Energetic Corporation in Kosovo. The results showed that the main risk factors for sickness absence were extreme trunk flexion 95% very extreme trunk flexion 95% exposure to whole body vibration on 95%. The study concluded that

increasing social support in the work environment may have effects in reducing sickness absence from low back pain.

Higuchi. Y, et al., (2010) conducted a quantitative study to assess the low back pain severity by assessment scales like pain intensity, pain interference among 773 male workers in the car manufacturing industry, Japan. The study concluded the risk factor effect and also remedial measures for occupational low back pain and evaluating their efficacy.

Weiner. S, et al., (2010) conducted a cross sectional study to analyze the prevalence and debilitation of low back pain among patients of occupational and Industrial orthopedic center, New York. The study concluded that passive treatment should be kept to a minimum and the active treatments are more effective in improving function and return to work.

Eurpain. J, et al., (2010) conducted a comparative study to find the relationship of clinical findings in low back pain between the normal population of physiotherapist and engineering Industry among 902 industry workers from finish Institute of occupation health, Finland. The results showed that minor and severe clinical findings of physiotherapist are 2.7 and of engineering industry are 3.8. The study concluded that back pain predicted more among engineering employees related to their activity.

Fernandez. R, et al., (2009) conducted a cross sectional study to examine the interaction between physical and psychosocial demands of work associated back pain among 577 plastic industry workers in the metropolitan area of the city of Salvador, north east Brazil. The results showed that the multiple logistic regression analysis showed that 95% material management was positively associated with back pain. The study concluded that material handling by Industrial workers leads to high prevalence of back pain.

Jensen. I, et al., (2008) conducted a prospective cohort study about the psychosocial factors predicting to future onset of disabling back pain among 4800 Iranian industrial workers, Iran. The results showed that the participation rate was about 88%. A total of 52 new episodes of disabling Back Pain were observed during

the 1 year incident. The study concluded that indicating a substantial potential for disease prevention and health promotion at the work place.

Wang. D, et al., (2007) conducted a study towards the low back pain and its cause among 299 female workers in flat grained veneer wood industry, china. The results showed that prevalence of fatigue complaint in selecting, remanding and sticking workers was 68.8%, 66.7% and 59.0%. The study concluded that bending posture is common among female workers especially those who work in selecting and remanding and might be the major causes for the high prevalence of back pain.

Becker. P, et al., (2007) conducted a cross sectional study to indentify the prevalence and association of Back Pain to family, and workplace related to psychosocial risk factors among 366 steel plant workers, Africa. The results showed that point prevalence was 35.8% and 15.3% family support 1.97% working tasks. The study concluded that good control on the job and good family will reduced the experience of back pain.

Literature related to Acharya Technique

Mirajkar. S, (2000) had shared about the experience of the Ex Honorable Prime Minister Atal Bihari Vajpayee's, Complaints of Back Pain. As he was 70 years, surgery has been planned to cure his back ache then he came to know about Acharya technique. By practicing Acharya technique, he was cured from Back Pain.

Indra. R, (1996) had published her own experience as an article in The Indian Express on September 20. She was suffering from Backache since 2 years. Through Save India Association she underwent, Acharya technique for about one month. She had cured from back pain and many other aliments by the same nature cure technique. This made her to share her experience to publish the article to make others know about the effectiveness of Acharya technique in reduction of back pain.

Herald. M, (1996) had assessed that in an Institute of Orthopedics in Pune, only surgeries is been carried out for severe back pain, when nothing else can be done. Later they have realized that self cure of Acharya technique has helped nearly 600 patients to cure themselves within 5 minutes for every day.

Shrivastan. B, (1996) had observed that from the Army Wives Warfare Association members had the problem of back pain from the college days to the age of 60. Then they have found the effectiveness of Acharya technique on reducing back pain. They started practicing Acharya technique and got relieved from the back pain.

All the above literature showed that all the complementary and alternatives therapies had its own effectiveness in the reduction of back pain, in the same way Acharya technique a foot exercise was an effective relaxation technique which helps in the reduction of back pain.

PART-II

CONCEPUTAL FRAMEWORK

The conceptual frame work is adopted for the present study is based on Wiedenbach's helping art of Clinical Nursing Theory (1964). It describes a desired situation and a way to attain it. It directs action towards the explicit goal. This theory has three factors, Central purpose, prescription and realities. A nurse develops a prescription based on a central purpose and implements it according to the realities of the situation.

The model adopted for this study is a modified form of Wiedenbach's helping art of Clinical nursing Theory. Investigator adopted this model and perceived apt in enabling to assist the effectiveness of Acharaya technique in reduction of back pain, This model views the Industrial workers as an individual unique experience who are in need for relief from back pain.

CENTRAL PURPOSE

In this model the central purpose refers to, what the investigator wants to accomplish it is the overall goal towards which a investigator strives it transcend the immediate intent of the assignment or task by specialty directing activities towards the industrial workers good. The central purpose of the study is to reduce the back pain of the industrial workers. The investigator planned the prescription that will fulfill the central purpose reduction of back pain by identifying the various means to achieve a goal. Thus the investigator selected a Acharaya technique a relaxation technique for reducing the back pain.

The conceptualizations of nursing practice according to this theory consist of three steps which are as follows,

- Identifying the need for help
- Ministering the need for help
- Validating the need for help.

IDENTIFYING THE NEED FOR HELP

Assessment of demographic variables like Age, educational status, marital Status, type of family, nature of working area, monthly income, and duration of back pain experience was done by pre assessment of back pain by using Visual Analogue Scale.

MINISTERING THE NEED FOR HELP

The Realities identified is

Agent	:	Investigator
Recipient	:	Industrial workers
Goal	:	Reduction of back pain
Means	:	Providing Acharya technique for 3 to 5 minutes every day for a week.
Environment	:	A. V. Thomas leather industry rest room

VALIDATING THE NEED FOR HELP

It refers to evaluate the effectiveness of the prescription or intervention by level of back pain reduction, effectiveness of Acharya technique and level of satisfaction of the industrial workers towards the intervention. The post intervention level of back pain was assessed by Visual Analogue Scale. The result shows in the reduction of level of back pain, there were some members with moderate reduction of back pain and some with no reduction of back pain who will be again reinforced on Acharya technique on reduce the level of back pain.

CENTRAL PURPOSE
Effective Management on reduction of back Pain among the industrial worker.

Identifying the need for help

Ministering the need for help

Validating the need for help

Assessment of demographic variables like age, education status, martial Status, type of family, nature of work, monthly Income, duration of back pain experience.

Agent	Recipient	Environment
Investigator	Industrial worker	A. V. Thomas leather industry, Guindy

Post intervention level of back Pain was assessed by Visual Analogue Scale

Reduction in the level of back Pain

Moderate and No Reduction in level of back Pain

Pre intervention Level of back Pain was assessed by Visual Analogue Scale.

MEANS
Performing Acharya technique for 3 to 5 minutes every day for a week

FIG 1: MODIFIED WIEDENBACH'S HELPING ART OF CLINICAL NURSING THEORY (1964)

CHAPTER – III

METHODOLOGY

For every piece of research work, the methodology of investigation of vital importance. The success of any research depends largely upon the suitability of the tool and the techniques that the researcher follows together adequate data. Research methodology involves systematic procedures, which the researcher starts from initial identification of the problem to its final conclusion. The role of methodology consists of procedure and technique for conducting a study.

This chapter deals with the description of methodology adopted for the study, which includes research design, population, sample, sampling techniques, sample size for sample selection, description of the instrument, data collection procedure and plan for data analysis.

RESEARCH DESIGN

The research design used for the study was pre experimental one group pre test post test research design. This design was used to assess the effectiveness of Acharya technique on reduction of back pain among the industrial workers.

SETTING OF STUDY

The study was conducted in A. V. Thomas leather industry in Guindy, Chennai. They have four branches in Kovur, Gerugambakkam and Porur. The total number of workers of the industry is 300 members. Among that 200 members are females, and 100 members were males. The industry has different departments like tailoring, cutting and packing section. The industry has all the facilities like separate dinning room, rest room, recreational room, first aid room. The industry has good production.

POPULATION

The population selected for the study was all the industrial workers who had back pain, working in A. V. Thomas leather industry, Guindy, Chennai.

SAMPLE

The study sample comprised of the industrial workers who had back pain and who fulfilled the inclusion criteria in A. V. Thomas leather industry, Guindy, Chennai.

SAMPLE SIZE

The sample size was 50, within the age group of 25 to 45 years.

SAMPLE TECHNIQUE

Purposive sampling technique was used to select the samples among the population.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

- Industrial workers within the age of 25 to 45 years.
- Industrial workers who were females.
- Industrial workers who were willing to participate in the study.

Exclusion Criteria

- Industrial workers who were pregnant.
- Industrial workers with restricted leg movement and surgical intervention in the knee, other orthopedic problems.
- Industrial workers who had any problems like heart disease, spinal injury and hypertension
- Industrial workers who had dysmenorrhea.

DESCRIPTION OF THE INSTRUMENT

The instrument was developed after the literature review of guidance from the experts, this consist of three parts

PART – I

Demographic variables such as age, marital status, educational status, type of family, natural of working areas and duration of pain experience.

PART II

Wewers and Lowe's (1990) Visual Analogue Scale is a horizontal line, 10mm in length anchored by words descriptors at each end, The patient marks on the line the point that they feel represents their perception of their current state, the score is determined by measuring in millimeters from the left hand end of the line to the point to the patient marks.

Score	Description
• 0-2	no pain
• 3-4	Uncomfortable
• 5-6	Dreadful
• 1-2	Annoying
• 7-8	Horrible
• 9-10	Agonizing

PART III

Acharya Technique

It consists of internal rotation, external rotation, flexion and extension of foot for 3 to 5 minutes for a week to reduce the back pain.

VALIDITY

The content of the instrument was validated by experts from the field of Community Health.

RELIABILITY

Reliability was assessed by using inter rater method. The 'r' value was 0.8 hence the tool was considered reliable to conduct this study.

ETHICAL CONSIDERATION

The study was conducted after the approval of dissertation committee. A formal written permission was obtained from the executive manager of A.V. Thomas leather industry at Guindy, Chennai.

The industrial workers were clearly explained about the study purpose and procedure. A formal written consent was obtained from the samples the usual assurance of the anonymity and confidentiality was obtained

PILOT STUDY

The pilot study period was 18.4.2011 to 24.4.2011. The investigator went to the A. V. Thomas leather industry for selecting the industrial workers. A formal consent was obtained from the executive manager of A. V. Thomas leather industry at Guindy, Chennai. The study was carried out with 5 industrial workers who fulfilled the inclusion criteria. The investigator introduced herself to the industrial workers and purpose of the study was explained to them to ensure better co-operation. Written consent was obtained from them, purposive sampling technique was used for selecting the industrial workers.

Visual Analogue Scale was used to assess the pre intervention level of back pain among the industrial workers. Acharya technique which consist of internal rotation, external rotation, flexion, extension was demonstrated for 3 to 5 minutes to the industrial workers and they were asked to perform the same technique for seven days for 3 to 5 minutes. By the end of the seventh day the post intervention level of back pain was assessed by using the same scale. The collected data were tabulated and analyzed, the instrument used for the study was reliable and appropriate.The 'r' value was 0.8. This trial revealed that clarity, feasibility, reliability, practicability in all aspect to conduct the main study.

DATA COLLECTION PROCEDURE

A Formal written permission is obtained from the General Manager of A. V. Thomas leather industry, Guindy, Chennai. Self introduction was given and followed by adequate information and explanation given to the industrial workers, regarding the importance of Acharya technique on reduction of Back Pain. The study was carried out with 50 industrial workers who fulfilled the inclusion Criteria, The data were collected for the period of 4 weeks from 1.6.2011 to 30.6.2011 every wednesday the investigator collected data from 11 to 13 participants by using Visual Analogue Scale to assess the pre intervention level of back pain. Acharya technique which consist of internal rotation, external rotation, flexion, extension was demonstrated for 3 to 5 minutes to the industrial workers and they were asked to perform the same technique for 3 to 5 minutes for seven days. At the end of the seventh day to assess the post intervention level of back pain among the industrial workers was assessed.

DATA ANALYSIS

Demographic variables were computed by using descriptive and inferential statistics. Frequency and percentage distribution was used to determine demographic variables. Mean and standard deviation was used to assess the pre intervention and post intervention level of back pain among the industrial workers. Paired 't' test was used to evaluate the effectiveness of Acharya technique among the industrial workers. Chi square test was used to associate effectiveness of Acharya technique among the industrial workers with their demographic variables.

A study to assess the effectiveness of Acharya technique on reduction of back pain among the industrial workers in A.V Thomas leather Industry, Guindy, Chennai.

Research design	⇒	Pre experimental one group pre test post test design
Target Population	⇒	Industrial workers with back pain
Sample	⇒	The industrial workers with back pain in A.V Thomas leather industry
Sample Size	⇒	50 industrial workers who fulfilled the inclusion criteria
Sampling Technique	⇒	Purposive sampling technique
Tool for Data Collection	⇒	Visual Analogue Scale
Data collection Procedure	⇒	Pre assessment, Acharya technique for 3 to 5 minutes every day for a week and post assessment.
Analysis and Interpretation	⇒	Descriptive and inferential statistics

Result

Fig 2: Schematic representation of research methodology adapted in this study.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 50 industrial workers to evaluate the effectiveness of Acharya technique on reduction of Back pain in A.V.Thomas leather industry Guindy, Chennai. Descriptive and Inferential statistics were used to analyse the data. As per the objectives of the study the interpretation has been tabulated and organized as follows.

Section A :   Frequency and percentage distribution of demographic variables among the industrial workers with back pain.

Section B: Frequency and percentage distribution of pre intervention level of back pain among   the industrial workers.

Section C: Frequency and percentage distribution of post intervention level of back pain among the industrial workers

Section D: Frequency and percentage distribution of pre intervention and post intervention level of back pain among the industrial workers.

Section E: Comparison of mean and standard deviation between pre intervention and post intervention level of back pain after Acharya technique among the industrial workers.

Section F: Association of pre intervention level of back Pain among the industrial workers with their demographic variables.

Section G: Association of post intervention level of back pain among the industrial workers with their demographic variables.

SECTION A

Table 1: Frequency and percentage distribution of demographic variables among the industrial workers with back pain.

N=50

S.No.	Demographic variables	Frequency	Percentage
1.	**Age**		
	25-30 years	11	22
	31-35 years	9	18
	35-40 years	18	36
	41-45years	12	24
2.	**Type of Family**		
	Nuclear Family	30	60
	Joint Family	20	40
3.	**Marital Status**		
	Married	48	96
	Unmarried	2	4
4.	**Educational Status**		
	No Formal Education	6	12
	Higher Secondary	44	88
5.	**Nature of working area**		
	Tailoring	11	22
	Cutting	11	22
	Packing	28	56
6.	**Monthly Income**		
	Below Rs. 3000	5	10
	Rs.3001 to Rs.4000	7	14
	Rs.4001 to Rs.5000	15	30
	Above Rs. 5000	23	46
7.	**Duration of back Pain Experience**		
	6 months to 1 year	26	52.0
	2-3 years	19	38.0
	4-5 years	3	6.0
	>5 years	2	4.0

Table 1 represents the frequency and percentage distribution of demographic variables of the industrial workers.

With respect to the age of industrial workers, majority 18 (36%) were in the age group of 35 to 40 years, 12 (24%) were in the age group of 41 to 45 years. Considering the age at back pain among the industrial workers 11 (22%) of 25 to 30 years, 9 (18%) of 31 to 35 years.

Related to type of family of the industrial workers 30 (60%) of them were in joint family, 20 (40%) of them were in nuclear family. In accordance with martial status of the industrial workers majority 48 (96.0%) were married where as 2 (4%) were unmarried.

Related to educational status of industrial workers majority of 44 (88%) were with qualification of Higher Secondary, and 6 (12.0%) were no formal education, none of them were graduates and others.

In Accordance with nature of working area of the industrial workers majority 28 (56%) were in packing area where as 11 (22%) were in tailoring area and 11 (22%) were in cutting area. In concern with monthly income of the industrial workers, majority of them 23 (46%) belong to the income group of above Rs. 5000, 15 (30%) of them belongs to the income group of Rs. 4000 to Rs. 5000 and 7 (14 %) of them belong to the least income group of Rs. 3000 to Rs. 4000 and 5 (10%) of them belongs to the income group of Rs .3000.

Regarding duration of back Pain experience of the industrial workers, majority 26 (52%) had 6 month to 1 year back pain experience, 19 (38%) had 2 to 3 years back pain experience , 3 (6%) had 4 to 5 years back pain experience and 2 (4%) had more than 5 years back pain experience.
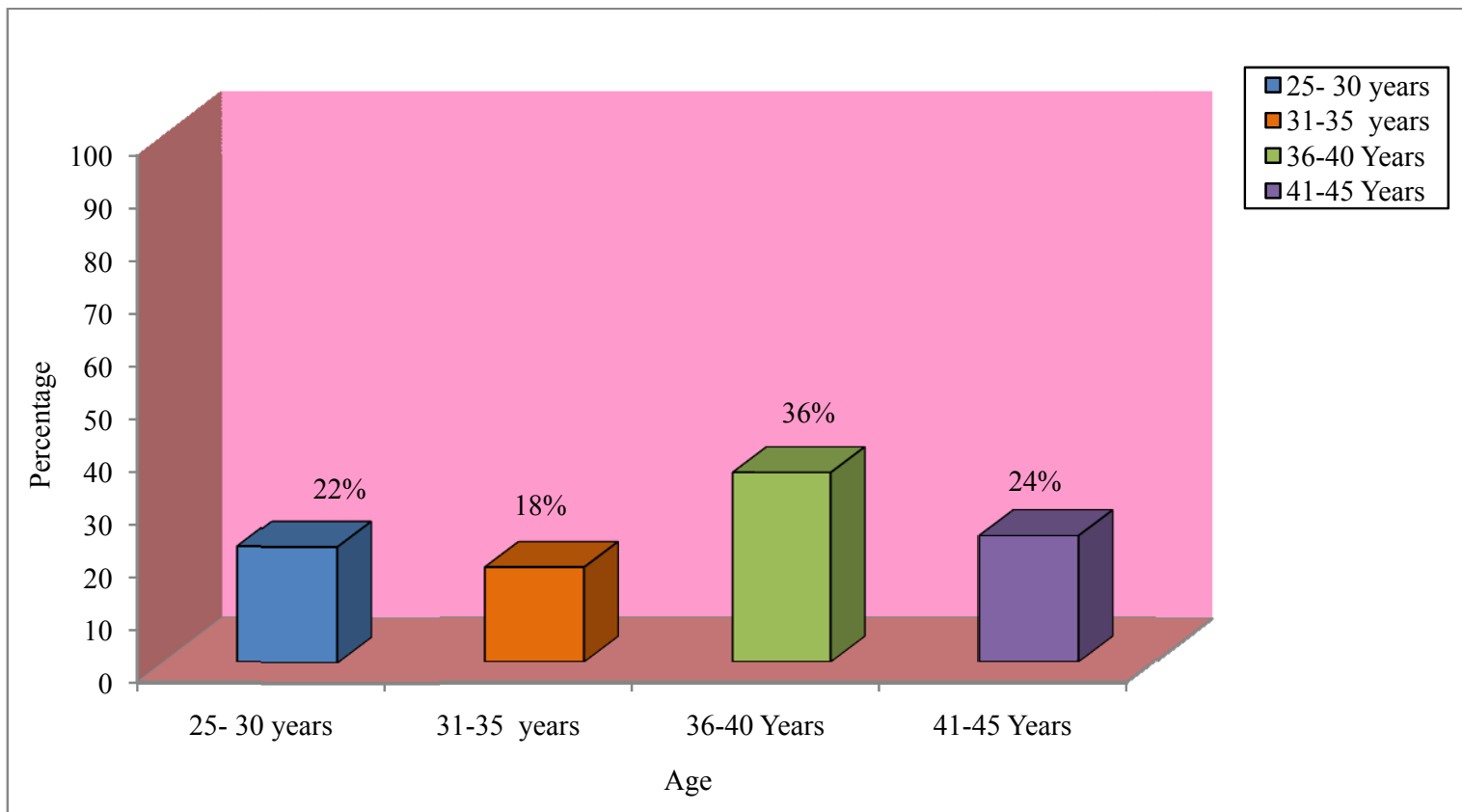
Fig 3: Percentage distribution of age among the industrial workers
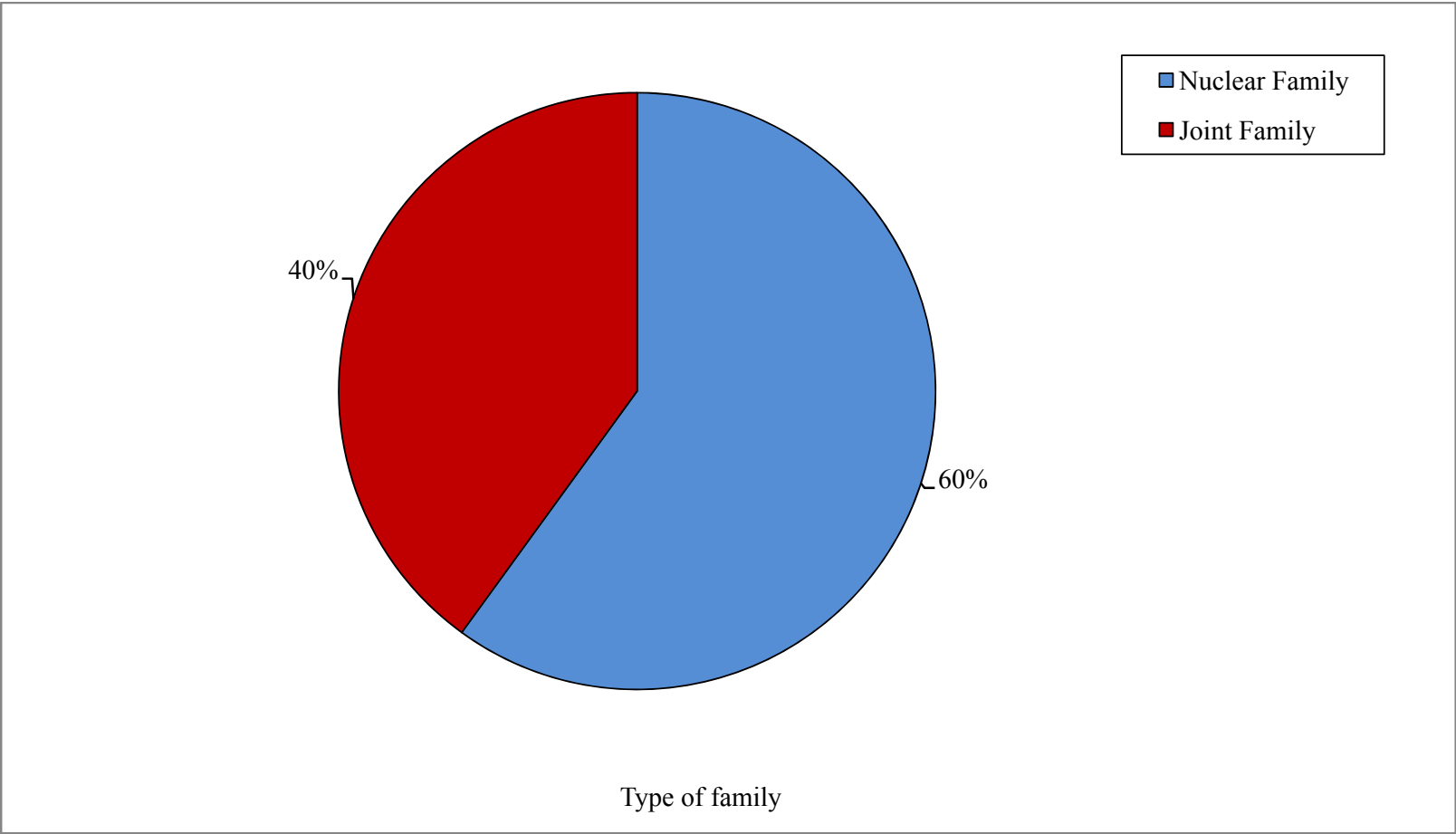
Fig 4: Percentage distribution of type of family among the industrial workers
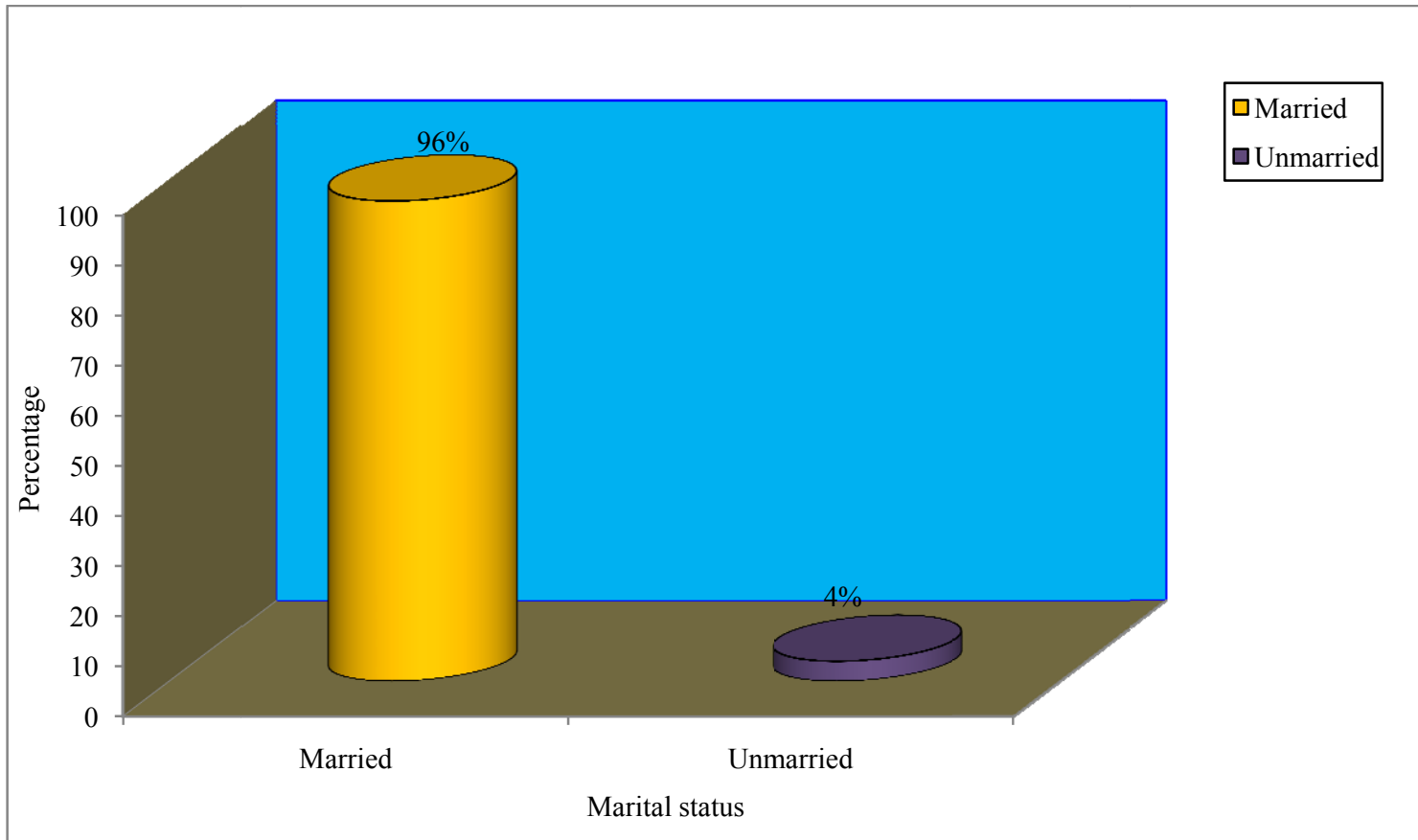
Fig 5: Percentage distribution of marital status among the industrial workers
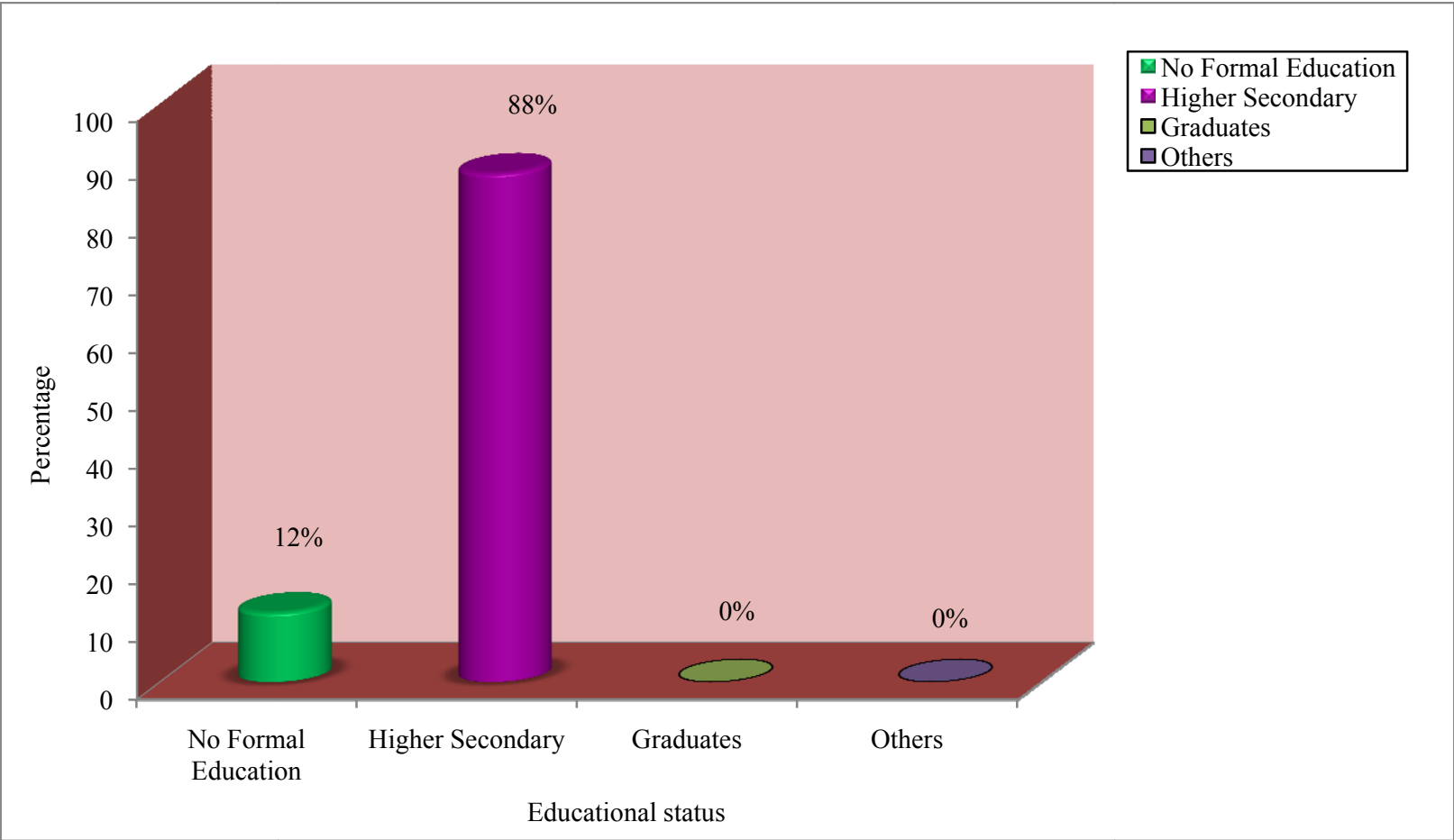
Fig 6: Percentage distribution of educational status among the industrial workers
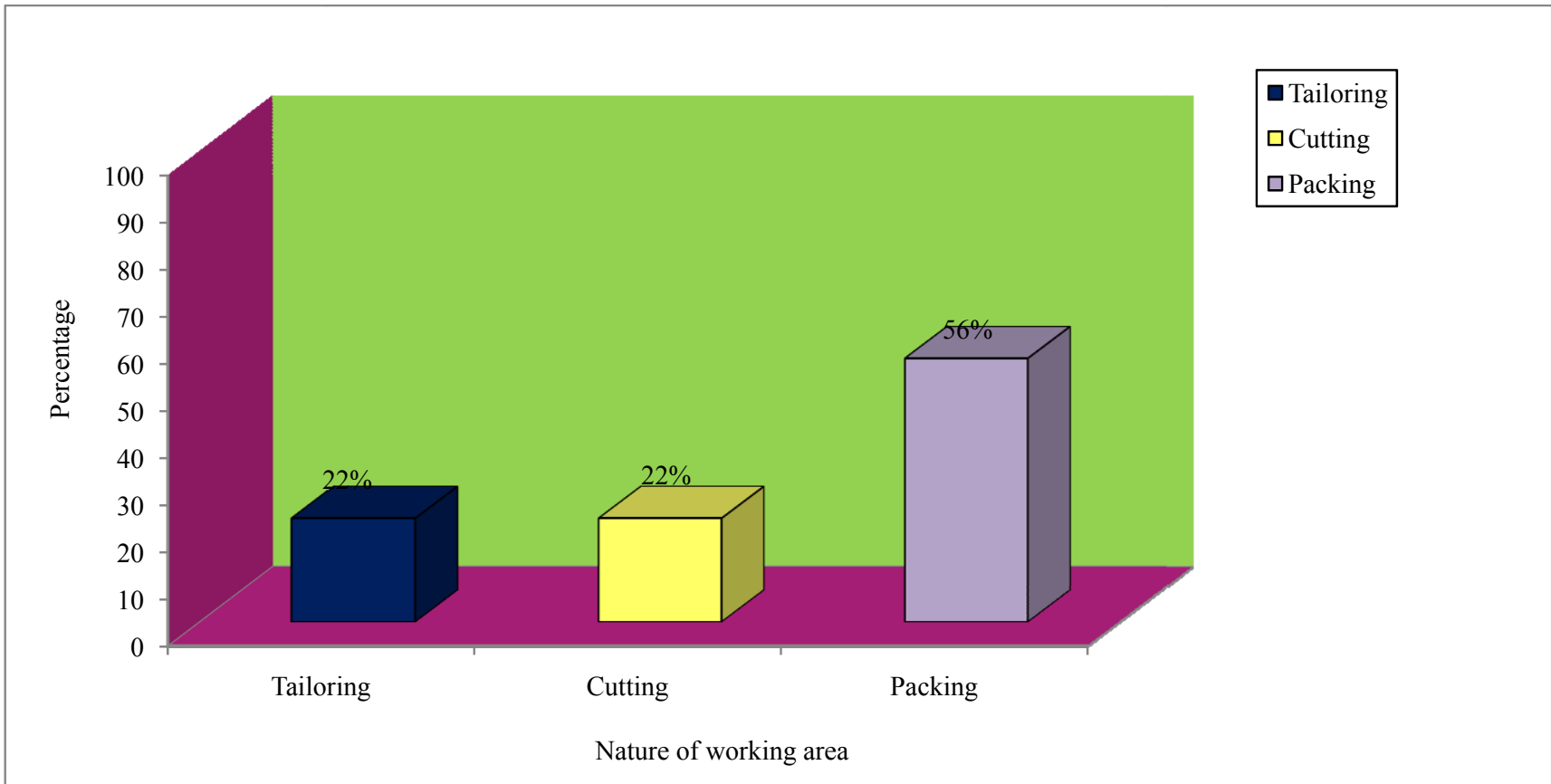
Fig 7: Percentage distribution of nature of working area among the industrial workers.
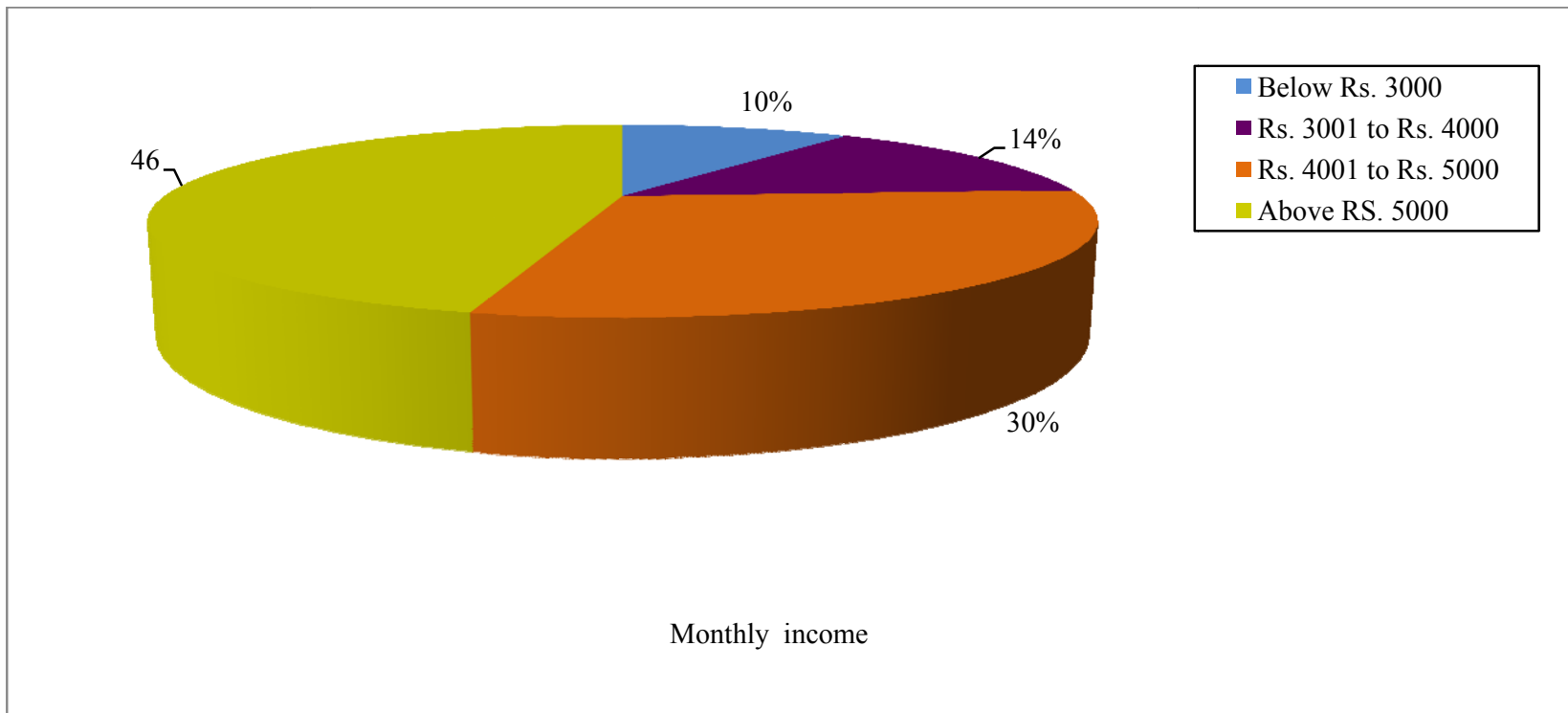
Fig 8: Percentage distribution of monthly income among the industrial workers
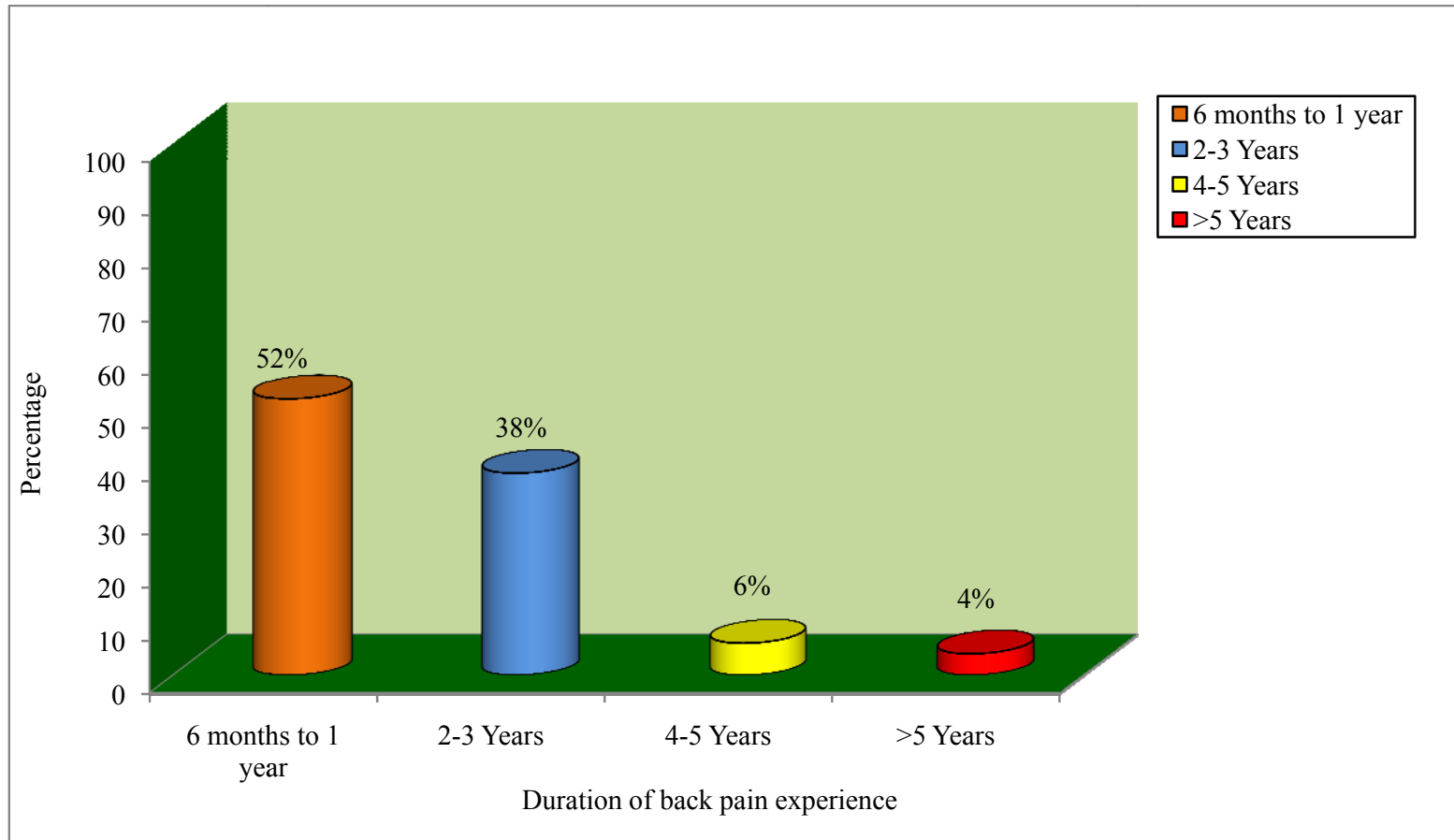
Fig 9: Percentage distribution of duration of back Pain experience among the industrial workers

SECTION –B

Table 2: **Frequency and percentage distribution of pre intervention level of back pain among the industrial workers**

N=50

Level of back Pain	Pre intervention	
	Frequency	**Percentage**
No back Pain	0	0
Mild back Pain	2	4
Moderate back Pain	9	18
Severe back pain	39	78

Table 2 represents, the frequency and percentage distribution of pre intervention level of back pain among the industrial workers, in pre intervention level 2 (4%) of the industrial workers had mild back pain and 9 (18%) of them had moderate back pain, 39 (78%) of them had severe back pain and none of the industrial workers had no back pain.

Fig 10: Percentage distribution of pre intervention level of back pain among the industrial workers

SECTION – C

Table 3: Frequency and percentage distribution of post intervention level of back pain among the industrial workers

N=50

Level of back pain	Post intervention	
	Frequency	Percentage
No back Pain	0	0
Mild back Pain	38	76
Moderate back Pain	10	20
Severe back pain	2	4

Table 3 represents the frequency and percentage distribution of post intervention level of back pain among the industrial workers. In post intervention level 38 (76%) of the industrial workers had mild back pain and 10 (20%) of them had moderate back pain, 2 (4%) of them had severe back pain and none of them had no back pain.

Fig 11: Percentage distribution of post intervention level of back pain among the industrial workers.

SECTION –D

Table 4: Frequency and percentage distribution of pre intervention and post intervention level of back pain among the industrial workers

N = 50

Level of back pain	Pre intervention		Post intervention	
	Frequency	Percentage	Frequency	Percentage
No back pain	0	0	0	0
Mild back pain	2	4	38	76
Moderate back pain	9	18	10	20
Severe back pain	39	78	2	4

Table 4 represents the frequency and percentage distribution of pre intervention and post intervention level of back pain after Acharya technique among the industrial workers. With respect to the pre intervention level of back pain among the industrial workers, 2 (4%) had mild back pain and 9 (18%) of them had moderate back pain, 39 (78%) of them had severe back pain and none of the industrial workers had no back pain.   Regarding 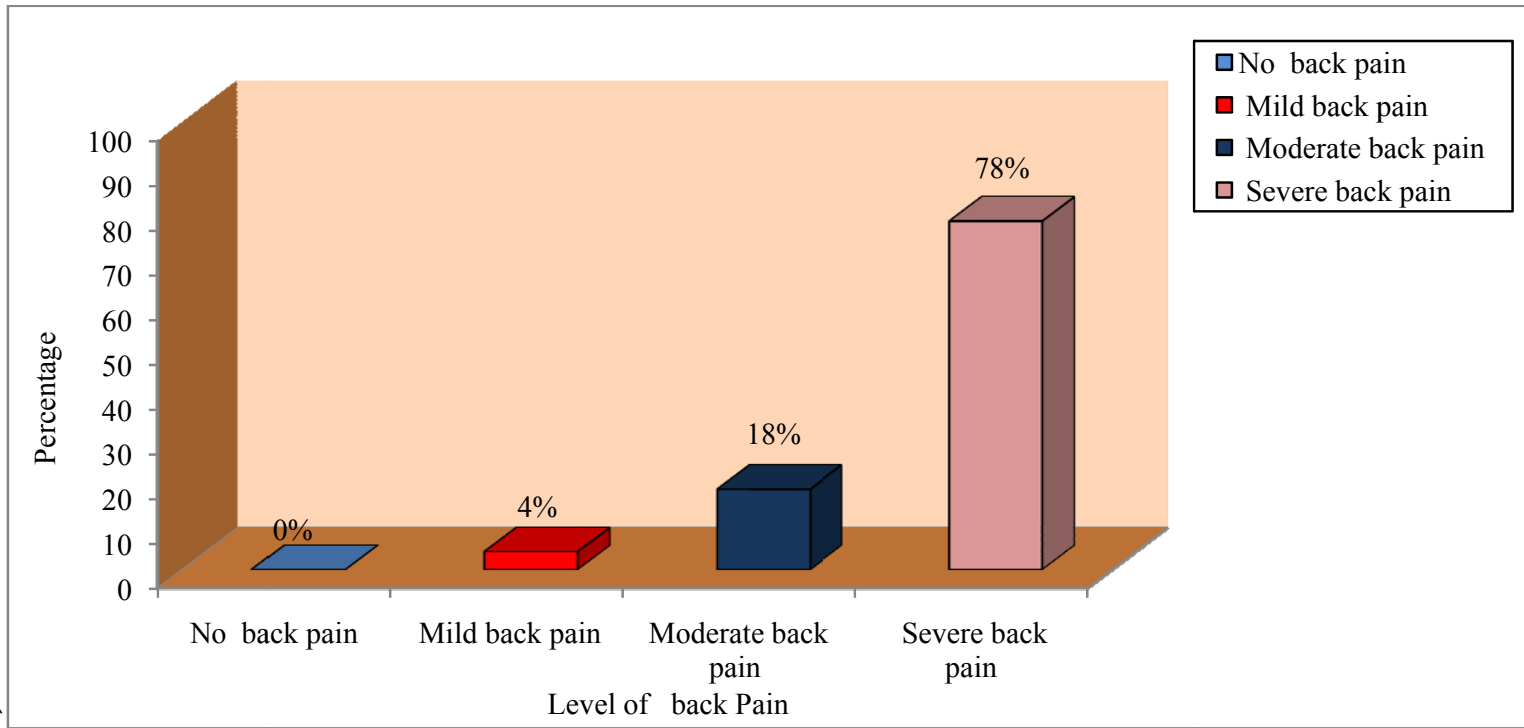the post intervention level of back pain among the industrial workers, 38 (76%) of the industrial workers had mild back pain and 10 (20%) of them experienced moderate back pain, 2 (4%) of them had severe back pain and none of them had no back pain.
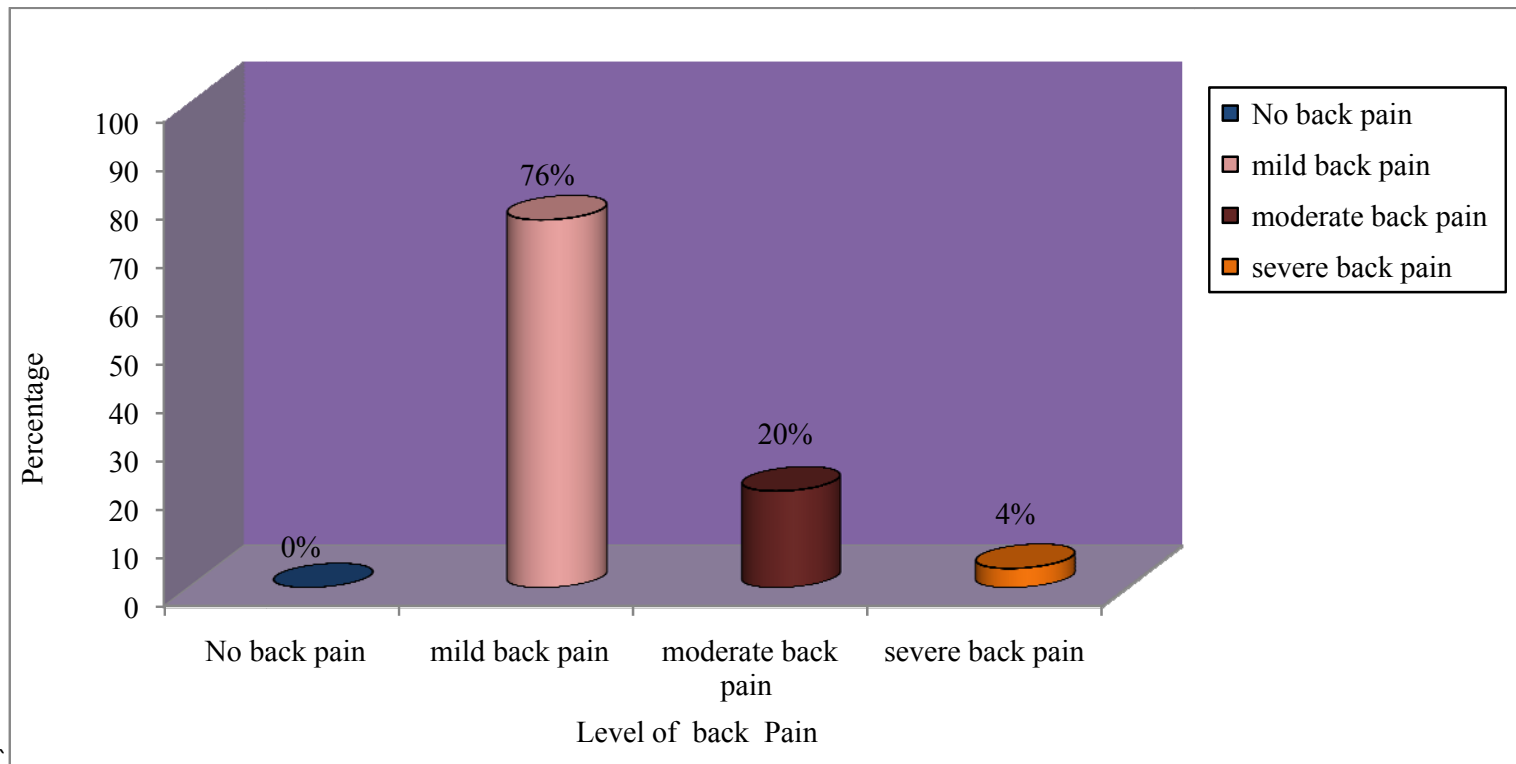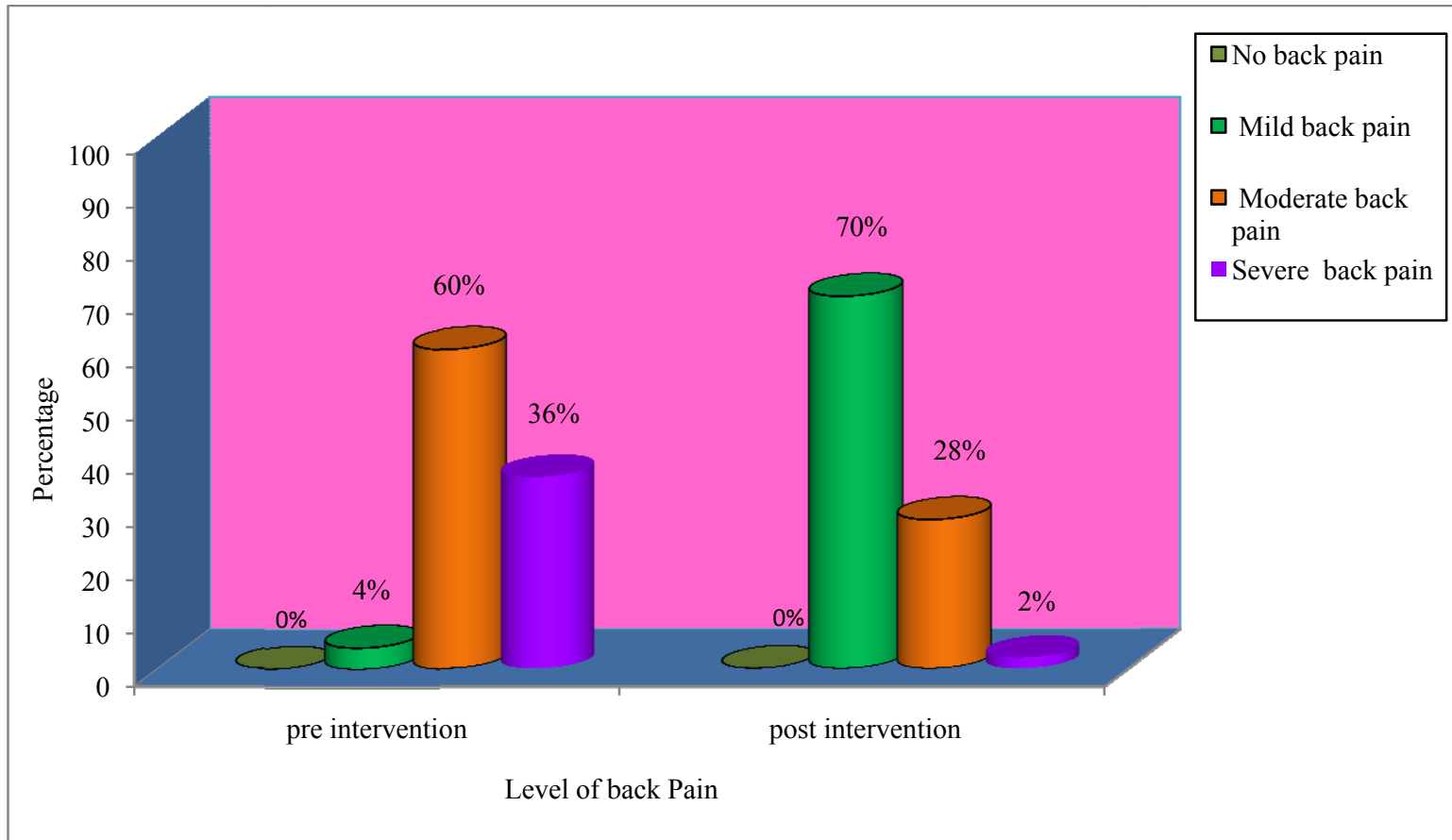
Fig 12: Percentage distribution of pre intervention and post intervention level of back pain among the industrial workers.

SECTION –E

Table 5: Comparison of mean and standard deviation between pre intervention and post intervention level of back pain after Acharya technique among the industrial workers

N = 50

Assessment	Mean	Standard Deviation	Paired 't' value
Pre intervention	7.10	1.19	18.03***
Post intervention	3.14	1.20	

p<0.001

Table 5 represents the comparison of mean and standard deviation between pre intervention and post intervention level of back pain among the industrial workers. The mean value of pain score was reduced from 7.10 to 3.14 which showed a marked difference of 3.96 respectively and the standard deviation was reduced from 1.19 to 1.20 after administration of Acharya technique. The paired' test value of 18.03 was highly significant at p<0.001 level. It indicates that Acharya technique was more effective among the industrial workers with back pain.

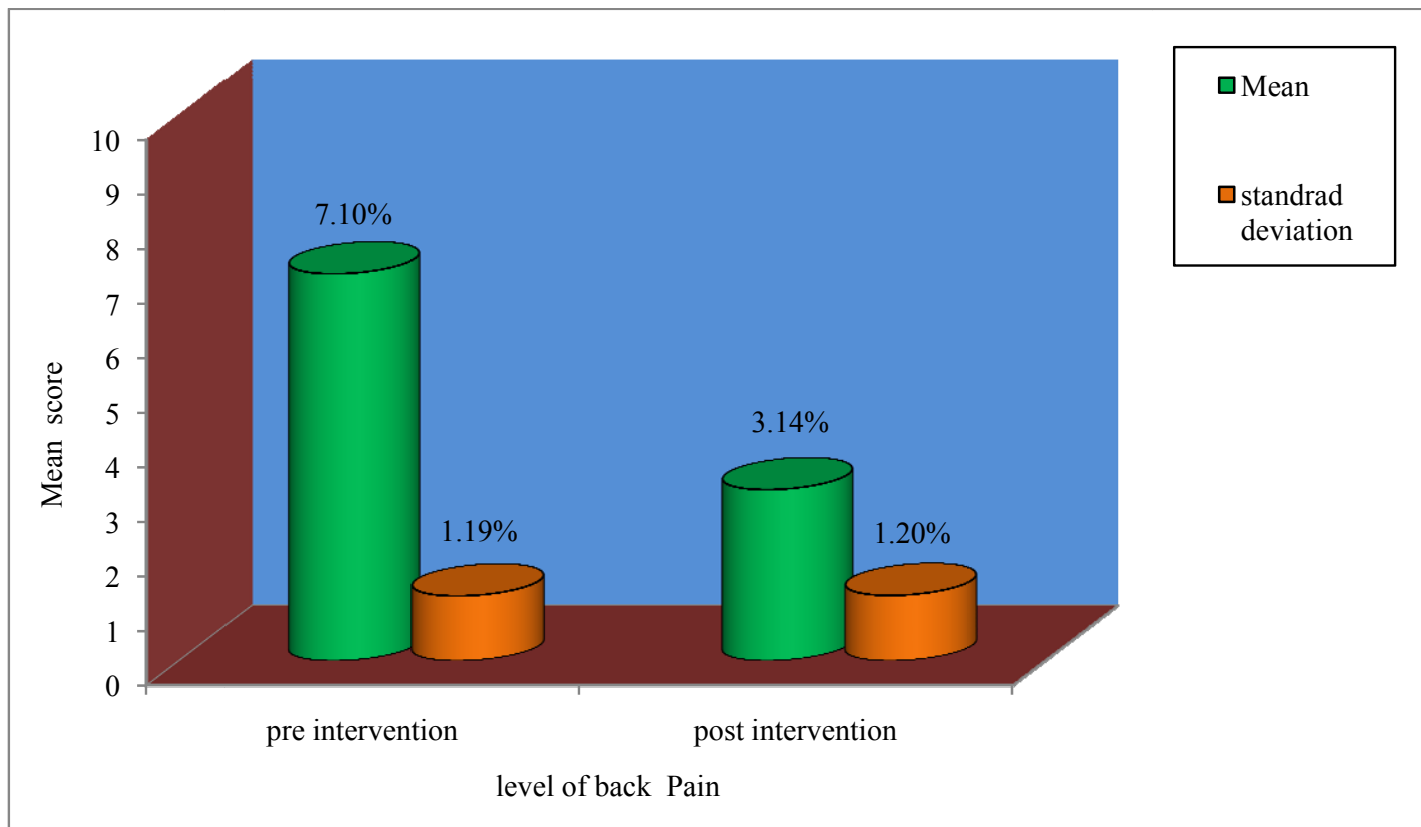**Fig13:** Comparison of mean and standard deviation of pre intervention and post intervention level of back pain after Acharya technique among the industrial workers.

SECTION –F

Table 6 : Association of pre intervention level of back pain among the industrial workers with their demographical variables

N=50

S.No.	Demographic Variables	Pre intervention Level of back Pain						Chi-square χ^2
		Mild		Moderate		Severe		
		n	%	n	%	n	%	
1.	**Age** 25-30 years 31-40 years 41-45 years	 0 1 1	 0.0 3.7 8.3	 1 7 1	 9.1 25.9 8.3	 10 19 10	 90.9 70.4 83.3	χ^2 = 3.54 d.f=4 NS
2.	**Type of Family** Nuclear Family Joint Family	 2 0	 6.7 0.0	 5 4	 16.7 20.0	 23 16	 76.7 80.0	χ^2 = 1.42 d.f=2 NS
3.	**Marital Status** Married Unmarried	 2 0	 4.2 0.0	 9 0	 18.8 0.0	 37 2	 77.1 100.0	χ^2 = 0.58 d.f=2 NS
4.	**Educational Status** No Formal Education Higher Secondary	 0 2	 0.0 4.5	 0 9	 0.0 20.5	 6 33	 100.0 75.0	χ^2 = 1.92 d.f=2 NS
5.	**Nature of working area** Tailoring Cutting Packing	 0 0 2	 0.0 0.0 7.1	 3 2 4	 27.3 18.2 14.3	 8 9 22	 72.7 81.8 78.6	χ^2 = 2.37 d.f=4 NS
6.	**Monthly Income** Below Rs. 3000 Rs.3001 to Rs.5000 Above Rs. 5000	 0 1 1	 0.0 4.5 4.3	 1 3 5	 20.0 13.6 21.7	 4 18 17	 80.0 81.8 73.9	χ^2 = 0.73 d.f=4 NS
7.	**Duration of back Pain Experience** 6 months to 1 year 2-3 years >3years	 1 1 0	 3.8 5.3 0.0	 8 1 0	 30.8 5.3 0.0	 17 17 5	 65.4 89.5 100.0	χ^2 = 6.41 d.f=4 NS

NS - Non Significant

Table 6 shows the association between pre intervention levels of back pain among the industrial worker with the demographic variables. None of the demographic variables were significantly associated with their pre intervention level of back pain. Statistical significance was calculated by using Pearson chi square test.

SECTION – G

Table 7: Association of post intervention level of back pain among the industrial workers with their demographic variables

N=50

S.No.	Demographic Variables	Post intervention Level of back Pain						Chi-square χ^2
		Mild		Moderate		Severe		
		n	%	n	%	n	%	
1.	**Age** 25-30 years 31-40 years 41-45 years	11 21 6	100.0 77.8 50.0	0 6 4	0.0 22.2 33.3	0 0 2	0.0 0.0 16.7	χ^2 =11.57 **d.f=4** **S***
2.	**Type of Family** Nuclear Family Joint Family	24 14	80.0 70.0	4 6	13.3 30.3	2 0	6.7 0.0	χ^2 = 3.15 d.f=2 NS
3.	**Marital Status** Married Unmarried	36 2	75.0 100.0	10 0	20.8 0.0	2 0	4.2 0.0	χ^2 = 0.65 d.f=2 NS
4.	**Educational Status** No Formal Education Higher Secondary	5 33	83.3 75.0	1 9	16.7 20.5	0 2	0.0 4.5	χ^2 = 0.35 d.f=2 NS
5.	**Nature of working area** Tailoring Cutting Packing	3 9 26	27.3 81.8 92.8	6 2 2	54.5 18.2 7.2	2 0 0	18.2 0.0 0.0	χ^2 = 20.51 **d.f=4** **S*** **
6.	**Monthly Income** Below Rs. 3000 Rs.3001 to Rs.5000 Above Rs. 5000	4 16 18	80.0 72.7 78.3	1 5 4	20.0 22.7 17.4	0 1 1	0.0 4.5 4.3	χ^2 = 0.44 d.f=4 NS
7.	**Duration of back Pain Experience** 6 months to 1 year 2-3 years >3years	21 15 2	80.8 78.9 40.0	5 4 1	19.2 21.1 20.0	0 0 2	0.0 0.0 40.0	χ^2 =18.97 **d.f=4** **S*** **

NS - Non Significant S-Significant

Table 7 shows the association of post intervention level of back pain among the industrial workers with their demographic variables.

The chi square value of 11.57 showed that p<0.05 there was a significant association of age and post intervention level of back pain after Acharya technique among the industrial workers with back pain.

With regards to nature of working area the chi square value 20.51 was highly significant at the level of p< 0.001. In concern with duration of back pain experience the chi square value 18.97 was highly significant at the level of P < 0.001.

There was no statically significant association found with other demographic variables, such as age, nature of working area, and duration of back pain experience.

CHAPTER – V

DISCUSSION

This chapter describes the result with respect to the objectives of the study and also compare the similar study with the present findings. The study aimed to assess the effectiveness of Acharya technique on reduction of back pain among the industrial workers in A. V. Thomas leather industry, Chennai.

The formulated hypothesis of this study was there is no significant relationship between the Acharya Technique and reduction of back pain among the industrial workers. The review of literature included was related researches which provide a strong foundation for the study including the basis for conceptual frame work and formation of tool.

The conceptual frame work for this study was developed based on Wiedenbach's helping art of clinical nursing theory. The research design used for this study was pre experimental one group pretest post test research design .It was carried out with 50 industrial workers who fulfilled the inclusion criteria. Purposive sampling technique was used to select the industrial workers. Written consent was obtained from the industrial workers.

Every wednesday the investigator collected data from 11 to 13 participants by using Visual Analogue Scale to assess the pre intervention level of back pain among the industrial workers. Acharya technique which consists of internal rotation, external rotation, flexion, extension was demonstrated for 3 to 5 minutes to the industrial workers and they were asked to perform the same technique for 3 to 5 minutes for seven days. At the end of the seventh day to assess the post intervention level of back pain among the industrial workers was assessed.

The data collected was analyzed with descriptive and inferential statistics. The frequency and demographic variables of the industrial workers with respect to the age of industrial workers, majority 18 (36%) were in the age group of 35 to 40 years, 12 (24%) were in the age group of 41to 45 years. Considering the age at back pain among the industrial workers 11 (22%) of 25 to 30 years 9(18%) of 31 to 35 years.

Related to type of family of the industrial workers 30 (60%) of them were in joint family, 20 (40%) of them were in nuclear family. In accordance with martial status of the industrial workers majority 48 (96.0%) were married where as 2 (4%) were unmarried.

Related to educational status of industrial workers majority of 44 (88%) were with qualification of Higher Secondary, and 6 (12.0%) were no formal education, none of them were graduates and others.

In Accordance with nature of working area of the industrial workers majority 28 (56%) were in packing where as 11 (22%) were in tailoring and 11 (22%) were in cutting area. In concern with monthly income of the industrial workers, majority of them 23 (46%) belong to the income group of above Rs. 5000, 15 (30%) of them belong to the income group Rs. 4000 to Rs. 5000 and 7 (14 %) of them belong to the least income group of Rs. 3000, to Rs. 4000 and 5 (10%) of them belong to the income group of Rs.3000.

Regarding duration of back Pain experience of the industrial workers, majority 26 (52%) had 6 month to 1 year back pain experience, 19 (38%) had 2 to 3 years back pain experience , 3 (6%) had 4 to 5 years back pain experience and 2 (4%) had more than 5 years back pain experience.

The analysis revealed The mean value of pain score was reduced from 7.10 to 3.14 which showed a marked difference of 3.96 respectively and the standard deviation was reduced from 1.19 to 1.20 after administration of Acharya technique. the paired 't' test of 18.03 was highly significant at $p < 0.001$ level. It indicates that Acharya Technique was more effective among the industrial workers with back pain.

The result of the study was discussed based on the objectives stated for the study.

The first objective was to assess the level of back pain among the industrial workers.

The pre intervention level of back pain among the industrial workers was assessed by Visual Analogue Scale which showed the results that 39 (78%) had severe pain, and 9 (18.0%) had moderate pain and 2 (4.0%) had mild pain none of them had no pain.

The study findings are consistent with the results of Maras's, described about the effect of psychosocial factors on low back pain among 4500 industrial workers, Iran. The Result showed that 85% participants reported current back pain a total of 52 new episodes of disabling back pain was also reported.

The study findings are consistent with the result of Elders. L, described the natural history of back pain by its prevalence, incidence, and reoccurrence among 288 scaffolders at Department of Public Health, Netherland. The results showed that prevalence rate was 22%, incidence rate was 20% to 28%, and reoccurrence rate were 64% to77% .The study concluded that the incidence and reoccurrence of back pain was related to the work related physical and psychosocial factors of the workers.

The study findings are consistent with the results of Jones. R, describes the prevalence of back pain back pain and investigated risk factors back pain among 254 seafood processing factory workers in Thailand. A cross sectional study was carried out with a self-administered questionnaire. The Results showed that the Prevalence of. The point prevalence of back pain was 28.5 %. Risk factors for back pain were age over 40 year, poor health status, history of back injury, twisting posture at work, and slipping on wet floors. The study suggests that health promotion should focus on working conditions of industrial workers rather than individual life style in order to prevent back pain.

The second objective was to assess the level of pain among industrial workers after Acharya Technique.

The post intervention level of back pain among the industrial workers after Acharya technique was collected by visual analogue scale showed the results that 38 (76.0%) had mild back pain 10 (20.0%) had moderate back pain 2 (4.0%) had severe back pain and none of them had no back pain.

The study finding is consistent with a result of Press.Y, conducted a cross sectional study to characterize patients visiting the complementary medicine clinic for back pain among 395 patients aged 18years and older in Israel. The results showed that 50.9% patients with back pain claimed that complementary medicine result in better physical strength, 31.3% better mental state, 22.7% patients hoping that complementary medicine will prevent invasive procedure.

The study finding is consistent with a result of Davis. R, conducted a study to determine the effectiveness of complementary and alternative medicine to treat back pain among 6% of United State population. The results showed that benefits of yoga, taichi, acupuncture were 95% benefit for back pain. The study concluded that complementary and alternative medicine was more effective to treat back pain.

The third Objective was to determine the effectiveness of Acharya technique on reduction of back pain among the industrial workers.

The comparison of pre intervention and post intervention level of reduction of back pain among the industrial workers after Acharya technique was done by using Paired 't' test .There is a marked decrease in the mean value 7.10 in pre intervention level to 3.14 in post intervention level, the standard deviation is increased from 1.19 in pre intervention level to 1.20 in post intervention level and thus it indicates the effectiveness of Acharya technique on reduction back pain.

 The study findings are consistent with a result of Indira. R, had published her own experience as an article in The Indian Express on September 20. She was suffering from Backache since 2 years. Through Save India Association she underwent, Acharya Technique for about one month. She had cured from back pain

and many other aliments by the same nature cure technique. This made her to share her experience to publish the article to make others know about the effectiveness of Acharya technique in reduction of back pain.

The fourth objective was to associate the pre intervention and post intervention level of back pain among the industrial workers with their demographic variables.

In pre intervention level of back pain there was no significant association found with the demographic variables such as age, type of family, marital status, educational status, nature of working area, monthly income, and duration of back pain experience.

In post intervention level of back pain the analysis revealed that statistically significant association was established with their demographic variables such as type of family, marital status, educational status, and monthly income. By associating the study results in accordance with sex the female are more prone to get back pain in all condition when compare to that of male.

The study findings are consistent with a result of Baxter. G, conducted a study to investigate current management of back pain by reflexologist among 500 members from the international institute of reflexology, united kingdom .The results showed that response rate was 50%, majority respondents were female (95%). The respondents perceive reflexology to have positive effects on relieving 94% of back pain. The study concluded that reflexology to be an effective therapy for back pain.

The study findings are consistent with a result of Mostafa. G, conducted a cross sectional study to determine the prevalence of back pain among 18,031 Iranian industrial workers at Iran. Standardized Nordic Questionnaire method was used to collect the data. The results showed that 78% participated in the study population young males, female < 30 years, the prevalence of back pain among males 20% and female 27%. The study concluded that the low back pain was more prevalent among womens related to their physical and psychosocial factors.

The study findings are consistent with a result of   Kwiad. K**,** conducted a study on incidence of low back pain among 10% of population of age group of 35 and 55 years in European countries. Questionnaire Method was used to collect the data. The result shows that 15 to 40% of Population experience low back pain every year. The study concluded that back pain and spinal deformities resulting from long lasting overload with their typical presentation.

The study findings are consistent with a result of Leboeuf. C, conducted a cross sectional study to assess the occurrence of back pain was related to age and gender among 34,076 twins in Danish. The study result shows that   86% responded well according to the age 70% of people were positively seen, related to gender 80% of people were responded to back pain, The study concluded that back pain had equal chance for both age and gender.

CHAPTER – VI

SUMMARY, CONCLUSION, NURSING IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

The heart of the research project lies in reporting the findings of the study. This is the most creative and demanding part of the study. This chapter gives a brief account of the present study including the conclusion drawn from the findings, recommendations, limitations of the study, suggestions for the study and nursing implications. The present study was intended to know the effectiveness of Acharya technique on reduction of back pain among the industrial workers.

SUMMARY

Back pain is a common cause of affecting up to 80% people in the world at some point in their life time, back pain is not a specific disease rather, it is a symptom that may occur from a variety of different processes. Back pain had a major impact on productivity, through loss of workers in sick leave, there were many easy relief methods of back pain like massage therapy, Chiropractor Las Vegas exercise, physiotherapy, yoga exercise stretching exercise with low cost with out any side effect.

In 2002 the national health interview survey revealed that one in four adults (926.4%) in the United States had experienced back pain within three months this estimate corresponds to approximately 54 million people in the United States who have experienced back pain in the past three months. Back pain was the most commonly reported pain documented in the national health interview survey and is more common in adults over the age group of 45 years. Womens were more likely to report back pain than men.

The national health interview survey also looked at the distribution of back pain among the racial groups. American Indians and Alaska Natives had the highest prevalence of back pain, while Asian people had the lowest prevalence. With greater levels of education, the prevalence of back pain decreased. Comparatively back pain

prevalence decreased with increasing family income. Back pain also has a major social impact, back pain is the second leading cause of work absenteeism, and spine related symptoms account for approximately 20% of all lost work days.

For most type of common back pain, the nature cure of the save India association in Pune, advises just 3 to 5 minutes natural relaxation exercises every day for a week, by the founder of Acharya technique for Back pain and Spinal & Nervous rejuvenation. It has succeeded in doing that to a large extent by helping to cure patients with back pains by simple foot exercises. Health of the spine is the key to good health, both physical and mental, or else, a man is called spineless.

In my study this was carried out for the 50 female industrial workers who had back pain the out come of the result was satisfactory by the reduction of back pain among them through there regular practice.

The objectives of the study were

1. To assess the level of back pain among the industrial workers.
2. To assess the level of back pain among the industrial workers after Acharya technique.
3. To determine the effectiveness of Acharya technique on level of reduction of back pain among the industrial workers.
4. To associate pre intervention and post intervention level of back pain among the industrial workers with their demographic variable

The formulated hypothesis of this study was there is no significant relation ship between the Acharya technique and level of back pain among industrial workers. The review of literature included related researches which provide a strong foundation for the study including the basis for conceptual frame work and formation of tool.

The conceptual frame work for this study was developed based on Wiedenbach's helping art of clinical nursing theory. The research design used in this study was pre experimental one group pretest post test research design.

The study was conducted in A. V. Thomas leather industry, Guindy, Chennai. The sample size was 50 which were selected by purposive sampling technique under inclusion criteria. The investigator introduced herself to the industrial workers and explained the purpose of the study to ensure better co-operation. The data was collected by a Visual Analogue scale to assess the level back pain, It consists of demographic variables like age, marital status, educational status, type of family, nature of working area, monthly income, and duration of pain experience. The focus of the study was to evaluate the level of back pain among industrial workers. Written consent was obtained from the industrial workers.

The data collection tool was validated and reliability was established, after the pilot study the data collection for the main study was done. Every wednesday the investigator collected data from 11 to 13 participants by using Visual Analogue Scale to assess the pre intervention level of back pain among the industrial workers. Acharya technique which consists of internal rotation, external rotation, flexion, extension was demonstrated for 3 to 5 minutes to the industrial workers and they were asked to perform the same technique for 3 to 5 minutes for seven days. At the end of the seventh day the post intervention level of back pain among the industrial workers was assessed.

The data collected was analysed with descriptive and inferential statistics. The frequency and percentage distribution of demographic variables of the Industrial workers with respect to the age of industrial workers, majority 18 (36%) were in the age group of 35 to 40 years, 12 (24%) were in the age group of 41to 45 years. Considering the age at back pain among the industrial workers 11 (22%) of 25 to 30 years 9 (18%) were in the age group of 31 to 35 years.

Related to type of family of the industrial workers 30 (60%) of them were in joint family, 20 (40%) of them were in nuclear family. In accordance with martial status of the industrial workers majority 48 (96.0%) were married where as 2 (4%) were unmarried.

Related to educational status of industrial workers majority of 44 (88%) were with qualification of higher secondary, and 6 (12.0%) were no formal education, none of them were graduates and others.

In Accordance with nature of working area of the industrial workers majority 28 (56%) were in packing where as 11 (22%) were in tailoring and 11 (22%) were in cutting area. In concern with monthly income of the industrial workers, majority of them 23 (46%) belong to the income group of above Rs. 5000, 15 (30%) of them belong to the income group Rs. 4000 to Rs. 5000 and 7 (14 %) of them belong to the least income group of Rs. 3000, to Rs. 4000 and 5 (10%) of them belong to the income group of Rs.3000.

Regarding duration of back Pain experience of the industrial workers, majority 26 (52%) had 6 month to 1 year back pain experience, 19 (38%) had 2 to 3 years back pain experience , 3 (6%) had 4 to 5 years back pain experience and 2 (4%) had more than 5 years back pain experience.

The analysis revealed the mean value of pain score was reduced from 7.10 to 3.14 which showed a marked difference of 3.96 respectively and the standard deviation was reduced from 1.19 to 1.20 after administration of Acharya technique. The paired't' test of 18.03 was highly significant at $p < 0.001$ level. It indicates that Acharya technique was more effective among industrial workers.

CONCLUSION

From this study the researcher found that the industrial worker had mild, moderate, and severe back pain .This study was done to evaluate the effectiveness of Acharya technique among the industrial workers. The result of this study shows that there was a reduced level of back pain after the Acharya technique. Hence the Community Health Nurse plays a direct role in identifying and analysing back pain among the industrial workers.

 Hence the researcher found that there was a significant relation ship between Acharya technique and level of back pain among the industrial workers, thus the null hypothesis was rejected.

NURSING IMPLICATIONS

Nursing practice

The Community Health Nurse plays an important role in health care delivery system. The mode of primary management is promotion of awareness which can be achieved through health education or training. She needs to organize physical examination camps for industrial workers to identify back pain, and creating awareness to the industrial workers this is done by her because she works in close collaboration with the community. The community health nurse should focus the importance of back pain reduction.

Nursing Education

The nursing curriculum has to focus on enabling the nursing students to develop more skills in conducting physical assessment of back pain. The nurse educator should conduct conferences, workshops, and seminars, physical assessment can be hold for nurses to impact knowledge on back pain. The nurse educator should conduct in service education to update the knowledge of the nurses.

Nursing administration

The nurse administrators should support the staff members in conducting back pain assessment camps for the students. The nurse administrators should periodically organize formal demonstration on back pain assessment. The nurse administrators should provide an opportunity for t he students to attend training programmes on back pain assessment.

Nursing research

Extensive Research can be conducted for the industrial workers on awareness of back pain. The findings should be disseminated through conferences, seminars.

RECOMMENDATIONS

- The similar study can be done for the staff nurses.
- A similar study can be done among the large sample.
- The same study can be conducted in various settings.

LIMITATION

During the initial period of study the investigator faced difficulty to gather the people in time.

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APPENDIX -A

PART - I

DEMOGRAPHIC VARIABLES

1. **Age in years**
   a) 25-30
   b) 31-35
   c) 36-40
   d) 41-45

2. **Martial Status**
   a) Married
   b) Unmarried

3. **Educational Status**
   a) No formal education
   b) Higher secondary
   c) Graduate
   d) Others

4. **Type of family**
   a) Nuclear family
   b) Joint family

5. **Nature of working area**
   a) Tailoring
   b) Cutting
   c) Packing

6. **Monthly Income**
   a) Below Rs. 3000
   b) Rs. 3001 to Rs. 4000
   c) Rs. 4001 to Rs. 5000
   d) Above Rs. 6000

7. **Duration of pain experience**
   a) 6 months to 1 year
   b) 2 years to 3years
   c) 4 years to 5 years
   d) Above 5 years

PART - II

VISUAL ANALOGUE SCALE
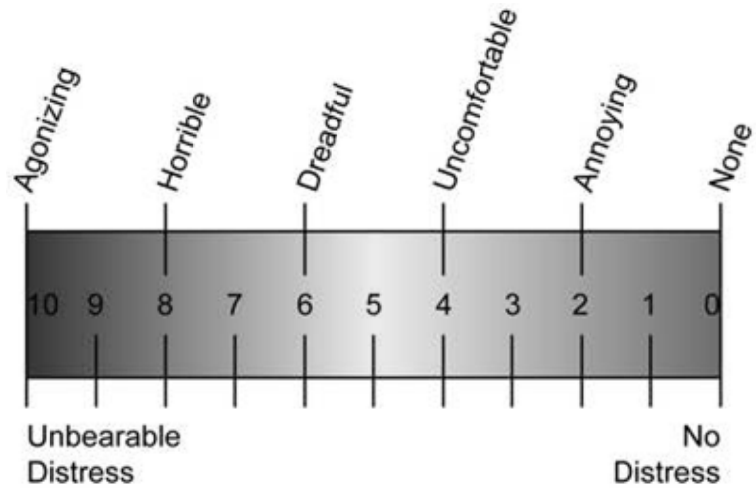
Score	Description
0	no pain
1-2	Annoying
3-4	Uncomfortable
5-6	Dreadful
7-8	Horrible
9-10	Agonizing

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