

**EFFECTIVENESS OF YOGA ON MINOR PHYSICAL
PROBLEMS AMONG ANTENATAL MOTHERS.**

By

Kavitha. P

**A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R MEDICAL
UNIVERSITY, CHENNAI, IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR DEGREE OF MASTER OF
SCIENCE IN NURSING**

MARCH 2011

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DECLARATION

I hereby declare that the present dissertation entitled “**EFFECTIVENESS OF YOGA ON MINOR PHYSICAL PROBLEMS AMONG ANTENATAL MOTHERS**” is the Outcome of the original research work undertaken and carried out by me, under the guidance of Prof. S. Anigrace Kalaimathi M.Sc(N) PGDNA., DQA., Ph.D., Principal and Prof.S.Kanakambujam M.Sc., M.Phil., Ph.D., Head of the Department of community Health Nursing, MIOT College of Nursing, Chennai. I also declare that the material of this has not formed in any way, the basis for the award of any degree or diploma in this university or other universities.

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II Year M.Sc., (N)

ACKNOWLEDGEMENT

I sincerely extend my thanks to Managing Trustee of MIOT Educational Institution for providing me an opportunity to do post graduate in Nursing.

I owe my whole hearted gratitude and sincere thanks to Prof.S.Anigrace Kalaimathi M.Sc (N)., PGDCA., DQA., PhD., Principal and Research Guide, MIOT College of Nursing for her valuable guidance, innovative suggestions, constant motivation and extreme patience.

I am highly indebted to Prof. S. Kanakambujam M.Sc., (N), M.Phil., PhD., Head of the Department of Community Health Nursing MIOT College of Nursing for her valuable suggestions, timely help, constant guidance, unceasing motivation and willing to help all the time.

I express my genuine gratitude to Dr. K. Sanmugavalli M.B.B.S Medical Officer, Kundrathur Primary Health Centre for having given me permission to conduct this study at Primary Health Centre, Kundrathur and her valuable suggestions and guidance.

I am grateful to Prof. N. Jayasri, M.Sc., (N), M.Phil., Ph.D., Vice-Principal MIOT College of Nursing for her valuable suggestions and guidance for this study.

I am grateful to Prof. Dr, Amalraj, M.Sc., Ph.D., Biostatistician for this help in Statistical analysis.

I extend my thanks to Dr. Babu, Head, Yoga Mission International, Chennai, for his valuable suggestions and encouraging guidance for this study.

My heart felt gratitude to Mrs.M. Kavitha., M.Sc., (N) Lecturer, MIOT College of Nursing for her guidance and support throughout the study.

I express my thanks to Ethial committee experts for Ethical clearance to this study.

I extend my thanks to all other respected faculties MIOT College of Nursing for their guidance and support for this study.

I thank Mrs. Bhuvaneshwari, M.L.I.S., Librarian for her constant help in reviewing the literature during the course of my work. With deep gratitude, I acknowledge my friends and classmates for their concern & contribution.

I have much pleasure in expressing my cordial appreciation and thanks to all the antenatal mothers who participated in the study for their interest and co-operation.

I would fail in my duty if I forget to thank my loved ones behind the scene, I am grateful to my parents, Mr. Palani and Mrs. Suseela for their constant support and motivation. I express my heartfelt thanks to my beloved sister Ms.Saraswathi who supported me in all stages of work, and her constant encouragement and motivation enabled me to complete this study.

Above all millions of thanks to the Almighty Lord who granted me grace and physical strength and helped me to complete the dissertation.

ABSTRACT

A pre experimental study to assess a study to assess the effectiveness of Yoga on Minor Physical Problems Among Antenatal Mothers Attending Antenatal Outpatient Department In Kundrathur Primary Health Centre.

Conceptual framework adopted for this study was general system theory. The research design used in this study was one group pretest, posttest design. The samples were selected by using convenient sampling technique. The sample size consisted of 90 antenatal mothers. The instrument used for the data collection was numerical rating scales to assess the level of low back pain, level of edema, level of leg gramps among antenatal mothers. The interventional strategy consisted of yoga which simple posture to relax, leg folding, leg cross, leg straight leg sideward, chair twisting, Triangle posture, calf stretch sitting on heal exercises. Data was collected for a period of 6 weeks among antenatal mothers. The collected data were analysed by using descriptive statistics (frequency percentage, mean and standard deviation) and inferential statistics ('t' test and Chi-Square) to test the study hypothesis.

Major Study Findings

Regarding to the effectiveness of yoga on minor physical problems among antenatal mothers. The Post test mean value was lower than the pre test mean value regarding low back pain, leg edema, leg gramps among antenatal mothers. The obtained 't' value for low back pain 7.584 was significant at P=0.00 level. The obtained 't' value for leg edema 4.08 was significant at P=0.00 level. The obtained 't' value for leg gramps 4.76 was significant at P=0.00 level. There is no

association between effect of yoga on minor physical problem among antenatal mothers with their selected demographic variables.

Yoga is becoming increasingly accepted everywhere as part of self care during pregnancy and preparation for childbirth and motherhood. So, yoga must be taught in the antenatal period and can be practical from early pregnancy.

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CHAPTER - I

INTRODUCTION

“Birth is an experience that demonstrates that life is not merely function and utility but form and beauty”

– Christopha Largen.

The reproductive process through which a new baby is conceived, incubated and ultimately born into the world. Pregnancy is a unique, exciting and often joyous time in a woman’s life, as it highlights the woman’s amazing creative and nurturing powers while providing a bridge to the future.

Pregnancy comes with some cost, however, for a pregnant woman needs also to be a responsible woman so as to best support the health of her future child. The growing fetus depends entirely on its mother’s healthy body for all needs. Consequently, pregnant woman, must take steps to remain as healthy and well nourished as they possibly can.

Every mother would like to gift of her child. One of the most important gifts can give her unborn child is good exercise and healthy nutrition and also good habits. These gifts start the day conceive one of the greatest gift the mother can give her unborn baby is by way of starting a safest and most effective program – Yoga.

Yoga favours the regeneration of reproductory cells, tissue and glands and by revitalizing the body it helps the individual cope with life problems, save

physical, mental energy, fortifies the mind and memory calms the nerves and leads one to attain peace.

Narendran Shamanthakamani, et al., (2005) stated that yoga practice among mothers during pregnancy is safe. Yoga improves birth weight decreases preterm labour and decrease Intra Uterine Growth Retardation either in isolation (or) associated with Pregnancy Induced Hypertension.

Any E. Beddoe (2009) stated that women practicing mindful yoga in their second trimester reported significant reduction in physical pain and women in third trimester fact that reduction in stress and anxiety during labour.

Chantharapal (2008) stated that Yoga program during pregnancy decrease the pain and maternal discomfort and reduce the duration of first stage of labour.

Sun VC (2000) stated that practice of Yoga during pregnancy decreasing the discomforts associated with pregnancy and increasing childbirth rely efficacy.

Women are often apprehensive about child birth because they think chance of dying while giving birth and child birth causes mother great physical pain infact one should begin by telling that giving birth is one of the most natural things in the world and that the practice of Yoga helps the future mother to overcome her fear, prepare her effectively for the event.

The art of Yoga is becoming increasingly accepted everywhere as part of self care during pregnancy and preparation for childbirth and motherhood. Yoga during pregnancy offers many physical, psychological and emotional benefits.

Practicing Yoga during pregnancy alleviate the discomforts in each trimester and provide more benefits both before, during and after pregnancy and pregnant women can gain additional benefits from practicing yoga like normal delivery prevent complication during labour.

Practice of Yoga develops ability to relax and helps them learn the required patience and calm so that mother can co-operate more effectively at the moment of birth.

Need For Study

Pregnancy is one of most important events that happen in women. During pregnancy women feel anxious and apprehensive as they receive lots of advice and medical information. The mother is carrying a new life within her, her body must make certain adaptations, these adaptations of the body can be very annoying and by some intervention that help the pregnant mother to carry her pregnancy more comfortable and safely. Changes of body during pregnancy can bring minor problems that cause irritation and discomforts.

Pregnancy is a wonderful time in a women life, but many changes that take place in a women's body may be uncomfortable. Nutrition, exercise, rest and daily care will help with most of the aches and strains of pregnancy. Having an established regimen can alleviate most discomforts. Percentage distribution of minor physical problems during pregnancy in India.

Low Back Pain	-	76.4%
Leg Edema	-	80%
Leg cramps	-	76%
Heart Burn	-	75%
Constipation	-	40%
Insomnia	-	78%
Deep vein thrombosis	-	0.5%
	-	http://www.yoga/preg .

Complementary therapies to help pregnancy more relaxing and fulfilling. Many women choose to complement traditional medicine with alternative treatments during their pregnancy. Alternative therapies can relax and heal the body and spirit and make pregnancy more enjoyable. There are many different forms of complementary therapy but one of the more popular one is prenatal Yoga.

Arlene M. Wallace CNM, MS et al, (2005) conducted a study “Yogic exercises and physical discomfort during pregnancy”. This study analysis relationships among yogic exercise and physical discomforts during pregnancy by comparing groups of exercising and non exercising pregnant women. The group of women who exercised had statistically significant lower physical discomfort scores than the group of women who did not yogic exercise. The findings suggest that exercise during pregnancy is associated with lower discomfort scores.

Huch Renate, erkkola Risto(2007) conducted a study “Pregnancy and yogic exercise, a short review”. This study analysis the effect a yogic exercise has on the outcome of the pregnancy. Yogic exercise also promotes a positive emotional state

and prevents some of the typical physical problems experienced during pregnancy, such as backaches, leg cramps and swollen legs. It is concluded that yogic exercise is not harmful to the mother or her fetus.

Beth lewis et al., (2008), conducted a study, “Effect of Yogic exercise during pregnancy on material outcomes”. This examining the effect of yogic exercise on minor discomforts and other issues associated with pregnancy over all, the evidence indicates that yogic exercise during pregnancy is safe and perhaps even reduces the risk of minor discomforts.

Yoga is the project way to stay flexible create energy, relieve stress and prepare for birth. Yoga has increased in popularity in recent years and shown to lower blood pressure, improve sleep indigestion, strength muscles and points increase flexibility. The reduction of the strain during pregnancy is essential which is done by gentle exercise and relaxation. This must be taught in the antenatal period and can be practical from early pregnancy. During pregnancy, many women develop backache because of hormonal and postural changes.

Yoga is also exercise and relaxation technique which control the body and mind of women and alleviate the discomforts caused by pregnancy.

In our country most of the pregnant women were not aware about yoga, practice and benefits during pregnancy. There is a need for action. This promoted me to do research to assess the effect of Yoga on minor physical problems among antenatal mothers.

Problem Statement

A study to assess the effectiveness of yoga on selected minor physical problems among antenatal mothers attending antenatal out patient department in Kundrathur PHC.

Objectives

To assess the selected minor physical problems among the antenatal mothers.

To find out the effectiveness of yoga on selected minor physical Problems among the antenatal mothers after practice.

To associate the effect of yoga on selected minor physical problems with selected demographic variables.

Operational definition

1. Effectiveness

It is a desire to decrease the minor physical problems after yoga practice.

2. Minor physical problem

It refers to selected minor physical problems like legcramps, legedema, low back pain.

3. Yoga

In this study refers to yoga exercises like calf stretch, leg side split, sitting on heel, leg cross, leg straight, leg sideward, chair twisting, triangle posture, during pregnancy.

4. Antenatal mothers

Antenatal Mothers whose gestational age above 12 weeks to 40 weeks

Hypothesis

There is a significant difference pre and post yoga measure in relation to minor physical problems among antenatal mothers.

Assumption

Practicing of yoga may bring physical, economical, psychological and spiritual well being among the antenatal mothers.

Practicing of yoga may reduce the minor physical problem among antenatal mothers.

Delimitaion

The study delimited to the antenatal mothers attending outpatient department in primary health center at Kundrathur.

The period of study delimited to 6 weeks

The sample size was limited to 90.

Projected Outcome

- The result of the study will provide information on yoga practices during pregnancy helps to decrease the minor physical problem among antenatal mothers.
- The result obtained will give confidence among community health nurse to treat minor physical problems during pregnancy with yoga exercise.
- The result of the study will help the health team members to motivate the antenatal mothers to practice yoga during pregnancy to reduce minor physical problems.

CHAPTER - II

REVIEW OF LITERATURE

This chapter deals with literature review which serves a number of important functions in the research process it elicits the activities done by the researchers in identifying and searching for information related to the present study and developing an understanding at the state of knowledge on yoga among antenatal mother.

Yoga is practiced by all age groups. Some studies highlighted Yoga benefits during pregnancy, meaning of yoga, practice of yoga.

The literature consists of

Section 1: Meaning of Yoga

Section 2: Practice of Yoga

Section 3: Yoga benefits among antenatal mothers.

Section 4: Yoga and Minor discomforts

Section 1: Meaning Of Yoga

Kamer tsutomu Muratakoji, Suzuki Nobutaka (2004) conducted a study “The meaning of Yoga combination – A discussion of immunological change in Yogic practice. They examined changes of electroencephalographs and cellular immunity before, during and after yoga exercises in an endeavor to detect any

correlation between them. During the pranayama period, observed a positive correlation between the change in abundance of activated alpha waves and ratio of change in Nlcachiot and changes in number of T lymphocytes. There findings suggests that yoga creates a stress – Free and mentally concentrative state which activates the functions of NK Cells and T-lymphocytes within a short period of time.

Laura Sevika Douglaes, Subhas R, Tiwari (2008) conducted a study Integrating yoga cikitsa in west challenges and future directions. They examined acceptance of yoga in the west come challenges to western understanding of what healing is, and how healing happens. Suggestions are made for how contemporary yoga therapists can actively promote the traditional practices of yoga.

Wang, Shu – ming (2009) conducted study “Backaches related to pregnancy. This study analysis Gestational backache a substantial problem and can have a significant impact on a pregnant woman’s daily activities. Non-pharmological complementary treatments such as yoga may become the first line of treatment options. Education is still the first line of intervention for preventing backaches related to pregnancy.

Varrassig, Bazzano, Edwardo WT (2008) conducted a study of “effects of yoga on maternal plasma beta endorphin levels and perception of labor pain. This study analysis thirty six women in their second (or) third pregnancies were studied in two groups were studied in two groups to determine whether plasma alpha – endorphin levels could be elevated by yoga exercise conditioning during pregnancy. Findings shows blood was sampled for levels of beta – endorphin

cortisol, human growth tissue and plasma beta-endorphin was found elevated compared to controls in patients who exercised throughout pregnancy.

Janet A. Dipietro et al (2005), conducted a study “Fetal responses to induced maternal relaxation during pregnancy”. This study analysis to induced maternal relaxation during the 32nd week of pregnancy, the 18 minute guided imagery relaxation manipulation generated significant changes in maternal heart rate, significant alterations in fetal neurobehavioral were observed including increased FHR variabilities, suppression of fetal motor activity.

Section 2: Practice of Yoga

Gurjeet S. Birdee et al (2005), conducted a study “characteristics of Yoga users: Results of a National survey” In 2002, Yoga users were predominately Caucasian (85%) and Female (46%) with a mean age of 39.5 years compared to non-yoga users. Yoga users were more likely female. A majority of yoga users 61% felt yoga was important in maintaining health through only 25% disclosed yoga practice to their medical professional findings found that yoga users are more likely to be white, female, young and college educated. Yoga users report benefit for musculoskeletal condition and mental health.

Section 3: Yoga Benefits Among Antenatal Mothers

Eun Sunji, Kyoul Ja Cho, Hyun Jeong Kwon (2008) they conducted a study “Effects of yoga during on weight Gain Delivery experience and infants birth weight” The study analysis the nonequivalent control group pretest. Post test design was used participants were the healthy pregnant women. Where pre-

pregnancy BM, was normal gestational period was more than 20 weeks and conclude that yoga during pregnancy managed weight gain of mothers. Therefore this study suggests that yoga during pregnancy to promotes stabilization can be beneficial. For maintaining healthy weight, decreasing labour pain and discomfort after delivery for pregnant women.

Narendran Shamanthakamani (2005) conducted a study “Efficiency of Yoga on pregnancy outcomes”, the study analysis 169 women in the yoga group and 166 women in the control group. Yoga practice including physical postures, breathing and meditation were practical by the yoga group one hour daily. The control group worked 30 minutes twice a day during the study period and conclude that integrated approach to yoga during pregnancy is age it improves birth weight, decreases preterm labor and decreases IUGR either in isolation (or) associated with PIH, with no increased complication.

Chuntharapat S. Petpichetchian W. Halthakit U (2008) conducted a study of “Yoga during pregnancy. Effects on maternal comfort, labour pain and birth outcomes”. This study examined using 74 prim gravid women who were equally divided into two groups. A variety of instruments were used to assess maternal comfort, labor pain and birth outcomes. The experimental group was found to have higher levels of maternal comfort during later and experienced less subject evaluated pain than the control group.

Satyapriya M, etal (2009) conducted a study of “Effect of integrated yoga on stress and heart rate variability in pregnant women”. This study analysis 122 healthy women recruited between 18th and 20th week of pregnancy practicing yoga

and deep relaxation (or) standard prenatal exercises 1 hr daily and conclude that Yoga reduces perceived stress and improves adaptive autonomic response to stress in healthy pregnant women.

Mette Juhl et al., (2008) conducted a study “Physical exercise (yoga) during pregnancy and the risk of preterm birth” this study shows self reported data on physical exercise (yoga) during pregnancy reduced risk of preterm birth among the almost 40% of women who engaged in some kind of exercise during pregnancy do not indicate adverse effects of exercise on the risk of preterm birth.

Amy E. Beddoe (2009) conducted a study “The effects of mind fullness – based yoga during pregnancy on maternal psychological and physical distress”. This study analysis women practicing mindful yoga in their second trimester reported significant reductions in physical pain from baseline to post intervention compared with women in the third trimester where pain increased. Women in the third trimester showed greater reductions in perceived stress and trait anxiety.

Dr. Shamathakamani Narendran (2004) conducted a study “Care of the unborn child with yoga in the prevent age”. This study analysis yoga for pregnancy comprehensively deals with medical facts about pregnancy, effects of stress on pregnancy, information about anatomical, physiological changes and adaptations to pregnancy and also complication. It gives a complete knowledge of modified let of yoga practices and conclude with confidence that yoga practices are safe, effective and beneficial and also help in easy delivery.

Sun YC et al (2009) conducted a study effects of a “Prenatal yoga programme on the discomforts of pregnancy and maternal child birth self efficiency in Taiwan” This study include 88 primigrandas who had not engaged in yoga. 45 in control group and 45 in experimental group and findings shows women who took part in the prenatal yoga programme reported significantly fewer pregnancy discomforts than the control group.

Subbadra Evans et al. (2008), conducted study “Using the biopsychosocial model to understand the health benefits of yoga”. They prepare an analogue between the physical psychological and spiritual effects of practice as espoused in yoga traditions and the biopsychosocial model of health. Physical systems activated through yoga practice include musculoskeletal, cardiopulmonary, autonomic nervous system and endocrine functioning psychological benefits include enhanced coping, self-efficacy and positive mood. Spiritual mechanisms that can be understood within a western medical model include acceptance and mindful awareness language used to discuss yoga, scientific studies and reflection of western preconceptions about health and healing. Yoga need not be divested of its spiritual heritage to live alongside biomedical approaches to health.

Clara So Lewis (2008) conducted a study “Life chances and wellness, meaning and motivation in the yoga market” this study analyses the meanings and motivations brought by individuals to the vinyasa yoga practice this case study argues that social integration, economic privilege, childhood experience and cultural values instigate and sustain this particular exercise and wellness habit.

These findings complicate the common sense belief that lifestyle choices are solely a reflection of individual character and responsibility.

Mary R. Taylor (2006) conducted a study that participated perspectives on a yoga intervention for pregnant women. A study analysis the effects of 10 weeks of yoga practice on pregnant women, qualitative analysis of participants exit interviews provided information not captured in quantitative measures, including perceptions of the yoga intervention and suggestions for improving the study protocol. The women reported feeling relaxed and able to reduce stress and manage their pregnancy.

Sigma theta Tau (2007) conducted a study on yoga and mindfulness intervention for stress, Anxiety and Back Pain in Pregnant Women. A study analysis the stress and anxiety in a variety of pregnancy and birth outcomes suggests the potential for stress reduction an appropriate intervention during pregnancy. The results evaluate whether a mindfulness meditation and yoga intervention decrease stress, anxiety, insomnia and back pain and increase mindfulness.

The practice of yoga and mindfulness may moderate the stress response and provide new coping skills. The pregnant women are being recruited and randomized into two groups. The experimental group attain yoga practice. The control group attend group sessions to discuss health related topics. The evaluation of efficacy as well as feasibility of prenatal yoga as a nursing intervention for pregnant women will be described

Sasi.G. Mohan (2005) conducted a study effectiveness of yogic techniques in the mangament of anxiety. The study analysis efficacy of yoga among adults for managing and anxiety. The results indicated a significant rate of improvement in yoga subjects who completed the prescribed length (5 months) of yoga practice.

Diane L. Padden, MN, CRNP (2006) conducted a study [The Role of the Advanced Practice Nurse in the Promotion of Yogic Exercise](#). The study analysis regular participation in yogic activity essential component of a healthy lifestyle. Despite evidence of the benefits of yogicl activity -- both physiological and psychological -- few Americans engage in regular yogic exercise essential that all healthcare providers routinely assess and counsel patients about the frequency, duration, type, and intensity of their yogic exercises activity.

Advanced practice nurses (APNs) can take an active role in meeting the nation's goals of Healthy People 2010 to improve health, fitness, and quality of life through daily activity. APNs can inspire patients to adopt positive attitudes about the value of yogic exercise -- attitudes that will ultimately translate into health benefits across the life span.

Lorenzo A Gordon et.al (2006) conducted a study [Effect of yogic exercise during pregnancy](#) . Yoga has been shown to be a simple and economical therapeutic modality that may be considered as a beneficial adjuvant. This study investigated the impact of Hatha yoga and conventional physical training (PT) exercise regimens on improving health status during pregnancy.

The study demonstrate the efficacy of Hatha yoga exercise on discomforts during pregnancy suggest that Hatha yoga exercise and may have therapeutic preventative and protective effects during pregnancy.

Berk, Bonnie (2006) conducted a study *Recommending Exercise During Pregnancy*. A study analysis For centuries, philosophers and physicians alike attributed difficult childbirth to a sedentary lifestyle; however, not much was known about the effects of exercise in pregnancy, so it was hard to recommend exercise based on scientific evidence. Research in the area of exercise in pregnancy has evolved significantly over the last several decades.

The good news is current research indicates that exercise during pregnancy is safe, it is complementary. This article reviews the physiologic concerns of exercising during the childbearing year, maternal benefits of exercise, and offers state-of-the-art guidelines for exercise during pregnancy.

Section 4: Yoga on Minor Discomforts

Elden H, Et .al (2005) conducted a study “Effects of Yogic exercises as adjunct to standard treatment in pregnant women with pelvic gridle pain”. This study analysis to compare the efficacy of Yogic exercises for pelvic gridle pain during pragnang in 24 maternity care centres in sweden among 386 pregnant women. Finding shows yogic exercises constitute efficient complements to standard treatment for the management of pelvic gridle pain during pregnancy.

Michel Tournaire and Anne Theau Yonneau(2006) conducted a study of “Yoga approaches to back pain relief during Pregnancy”. This study analysis only

randomized controlled trials with outcome measures for back pain. According to the randomized control trails, they conclude that for the decrease of back pain.

Kanodia AK, Legedza AT, Davis RB, Eisenberg DM(2010) conducted a study “Perceived benefit of complementary and Alternative medicine(CAM) for back pain”. This study analysis a various CAM therapies for back pain using relaxation techniques, herbal therapy, Yoga, Accupuncher. The majority of people who weel CAM for back pain perceived benefit.

Shu-Ming Wag M.D, etal (2005) conducted a study “Complementary and Alternative medicine for low back pain in Pregnancy: A Cross Sectional Survey”. This study analysis to identify common treatments used for low back pain during pregnancy. Results shows that the majority of Pregnant women who participated in the survey (61.7%) reported that they would accept complementary and alternative medicine therapy as treatment for LBP during Pregnancy. Among that they found. Accupunture(44.6%) relaxation(42.%) Yoga(41%) were the most common CAM therapies recommended for LBP in Pregnancy.

Satine Hartman, Renate Huch (2005) conducted a study “Response of Pregnancy Yogic exercises session”. This study analysis a effect of yogic exercises. Session on uncomplicated dependent edema in Pregnancy. Leg Edema was measured by water displacement Volumetry and limb circumference among second on third trimester Pregnancy, before and after Yogic exercise session conclude that yogic exercise session is a safe, Effective and enjoyable for reduction of gestational dependent edema.

RadDord JA, Landorf KB, Buchtinder R, Cook C (2005) conducted a study “ Effectiveness of Calf muscle stretching for the short-term treatment of Leg edema” This study analysis leg edema one of the most common problem during Pregnancy. Treatment of the condition usually conservative, they performed a participant-blinded randomized trial to assess the effectiveness of calf muscle stretching for leg edema. The intervention period was two week. Results shows that short- term treatment of leg edema, a two-week stretching program provides statistically significant benefit in leg edma.

Huch Renate, erkkola Risto(2007) conducted a study “Pregnancy and yogic exercise, a short review”. This study analysis the effect a yogic exercise has on the outcome of the pregnancy. Yogic exercise also promotes a positive emotional state and prevents some of the typical physical problems experienced during pregnancy, such as backaches, leg cramps and swollen legs. It is concluded that yogic exercise is not harmful to the mother or her fetus.

Coppin RJ, Wickle DM, little PS(2006) conducted a study “Managing leg cramps. Calf stretching exercises a randomized controlled trial. This study analysis to assess the effect of Calf stretching exercises on cramps. Design was randomized controlled trial, one hundred clients selected undertake the exercises freely. Results shows calf stretching exercises are effective in reducing the frequency or severity of night cramps.

The convenience sample was comprised of 31 women who participated in Yogic exercises and 22 women who did not.

Beth Lewis et al (2008), conducted a study, “ This effect of yogic exercise during pregnancy on material outcomes”. This study examining the effect of yogic exercise on minor discomforts, gestational diabetes, weight gain, later and birth and other issues associated with pregnancy. Overall, the evidence indicates that yogic exercise during pregnancy is safe and perhaps even reduces the risk of minor discomforts and gestational diabetes.

Robert Kirby and Rachael Birmingham (2003) conducted a study “Yogic exercise in Pregnancy: physical benefits”. This study analysis that involvement in yogic exercise during pregnancy is associated with perception of reduced minor discomforts. As well, studies of childbirth stress have indicated that women who practiced yogic exercise during pregnancy reported less effort and lowered experience of pain in the birth process.

NYT NEWS SERVICES : The Hindu, June 19, 2010 gave information about “yoga’s benefits outweigh risk for pregnant women”. It discussed a yoga is safe for pregnant women, as long as they approach the activity with reasonable caution and moderation, experts say.

“Women who are expecting can benefit greatly from exercise, especially yoga-they just need to be aware of the limitations. “A pregnant woman’s body goes through a lot of changes that will alter the way she practices yoga, whether she is a veteran or a beginner.

As a fitness alternative, yoga allows pregnant women to maintain an exercise programme without harming their baby or their heart according to the

American Academy of orthopaedic surgeons (AAOS) and, overall, the benefits of such a low-impact regimen out-weight the risks.

However, maintaining correct yoga positioning is critical to ensuring general safety and avoiding muscle or joint injury, organization pointed out.

Nevertheless, the AAOS says that if performed properly, yoga affords expectant mothers a good opportunity to build strength and flexibility, while achieving a measure of relaxation and breath control.

“One of the best aspects of yoga is being in control of your body and having the ability to do each movement at your own pace”.

The AAOS recommends that those interested in practising yoga should consult their physician first and make sure they work with a qualified instructor. Proper warm ups and attire are important as well, and pregnant women should take care to remain properly hydrated and avoid forms yoga such as Bikram – also called “hot” yoga that can unduly raise their body temperature.

CONCEPTUAL FRAMEWORK

Polit and Hungler (2008) state that a conceptual framework is interrelated concepts on abstractions that are assembled together in some rational scheme by virtue of their relevance to a common scheme, it's a device that helps to stimulate research and the extension of knowledge by providing both direction and impetus. The present study was aimed at determining the effectiveness of yoga on minor physical problems among antenatal mothers.

The conceptual framework of this study was derived from Ludwig van Bertalanffy general system theory (1968). According to this theory, a system consisting of a set of interacting components within the boundary that filters the type and rate of exchange with the environment. All living systems are open in that there is continuous exchange of matter, energy and information. Open systems have varying degrees of interaction with the environment from which the system receives input and gives back output.

Input:

Though the process of selecting the system regulates the types and amount of input received. Some type of input score used immediately in their original state. Input refers to the learner / target group with their characteristics level of competencies needs and interest. In this study input refers to background factors of antenatal mother and existing minor physical problems.

Throughput:

Denotes the different operational procedures in the overall programme implementation. The interventions that have been taken place are pretest on minor physical problems teach the yoga and post test on minor physical problems.

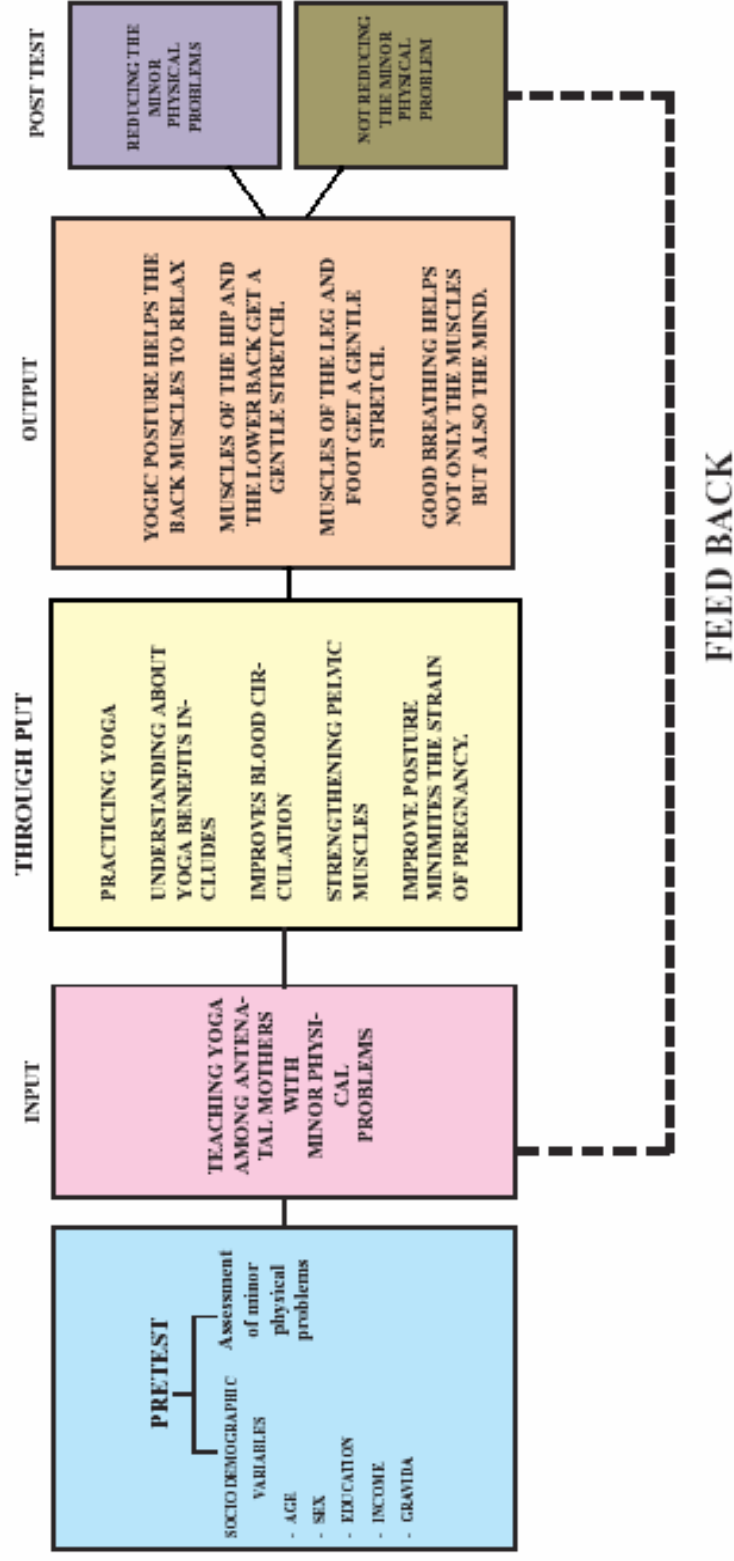
Output:

A system exports products in a process known as output. In this study the output encompasses the reduced minor physical problems aspects as reduced (or) not reduced after yoga practice among antenatal mothers. The information are continually processed through the system and released as output in an altered state.

Feedback:

It emphasizes to strengthen the input and throughput, if there is any inadequacy in output. In this study, feedback is needed for reduced (or) not reduced minor physical problems after yoga practice. It refers to the response of the system. Feedback may be positive, negative (or) neutral.

CONCEPTUAL FRAMEWORK BASED ON THE GENERAL SYSTEM THEORY BY BERTALENFFY



CHAPTER – III

RESEARCH METHODOLOGY

This Chapter describes the methodology followed to assess the effectiveness of minor physical problems among antenatal mothers attending antenatal outpatient department at Kundrathur Primary Health Centre.

The phase of the study deals with research approach, research design setting of the study, population, sample, criteria for sample selection, sample size, sampling, sampling technique, development and description of the tool, content validity, reliability of the tool, pilot study, procedure for data collection and plan for data analysis.

Research Approach

The research approach used in this study was quantitative approach.

Research Design

The research Design used in this study was Pre experimental Design.

One group	Pre test 01	Intervention X	Post test 02
Antenatal mothers with minor physical problems	Assessment of minor physical problem	Teachnig Yoga	Assessment of minor physical problems after Yoga practice

Setting

The study was conducted in the out patient department of Kundrathur PHC .It is a rural center with is 40 beded and enhanced with MCH & General health facilities of treatment of minor physical problems, Lab , Pharmacy and specifically maternity facilities Including labour, LSCS and family planning. Monday & Tuesday conducting antenatal clinic which is about 80-100 mothers coming for antenatal check-up.

Population

All antenatal mothers

Sample

The sample consists of antenatal mothers who are attending antenatal outpatient department in Kundrathur PHC, whose gestational age above 12weeks.

Sample size

The sample size selected for this study was 90 antenatal mothers attending antenatal outpatient department in Kundrathur PHC, whose gestational age above 12weeks.

Sampling Technique

The samples selected by using a convenient sampling technique.

Criteria For Sample Selection

Inclusion criteria:

Antenatal mothers of 2 and 3 trimesters (gestational ages above 12 weeks)

Antenatal mothers who are willing to participate in the study.

Antenatal mothers with minor physical problems.

Exclusion Criteria:

Antenatal mothers who are not willing to participate in the study.

Antenatal mothers who are having obstetrical and medical complication.

Data Collection Tool

Description of Data Collection Tool

As the study aimed at evaluating the effectiveness of yoga among antenatal mothers with minor physical problems, the data collection instruments were developed through extensive review of literature, in consultation with the experts and with opinion of faculty members.

The instrument used in study were demographic variables proforma, rating scales on low back pain, leg edema, leg gramps.

Demographic Variable Proforma

The demographic variables included in the proforma were age, religion, education type of family, famil income, source of information, gravida.

Rating Scales

Rating scale for low back pain

Rating scale for Leg edema

Rating scale for leg cramps

Validity and Reliability

The tool was developed through a review of literature. For content validity and the instrument was reviewed by experts in the area of the study.

The Reliability of the tool was established by conducting the pilot study and tool was tested by using interrater method. The Reliability of the tool in low back pain was found $R = 0.97$ leg edema was found $R = 0.93$ leg cramps was found $R = 0.94$ which indicates that rating scale is reliable.

Pilot Study

The Pilot study was conducted on a sample of 6 antenatal mothers at Mugalivakkam Primary Health Centre. The results showed that the instrument valid and reliable.

Data Collection Procedure

Data collection is the gathering of the information needed to address a research problem. The data collection was done for six weeks. Formal permission to conduct the study was obtained from the medical officer of Kundrathur Primary Health Centre. The participants were selected based on the selection criteria. The data was collected in the following pattern.

The sample was selected from the out patient department and a good rapport was established with the participants. The purpose of the study was explained and written consent was obtained.

Rating scales on low back Pain, Leg edema, leg cramps used to assessed minor physical problems in pre test. Yoga was taught to antenatal mothers and post test was done last week of data collection period.

Human Rights protection

The pilot and main study were conducted only after approval of the research proposal by the college of nursing and institutional ethical commitee. Permission was obtained from the concern head of department to conduct the study. Written consent was obtained from all the subjects who participated in the study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

The Chapter deals with analysis and interpretation of data collected from samples of 90 antenatal mothers with minor physical problems to evaluate the effectiveness of Yoga in reducing minor physical problems like Low Back Pain, Leg Edema, Leg Cramps.

The Purpose of analysis was to reduce the data to manageable and interpretable form so that the research problems can be studied and tested.

The analysis and interpretation of data of this study are based on data collected by using scales among antenatal mothers with minor physical problems.

The study findings are presented in section as follows:

- Section I : Distribution of Demographic Variables of antenatal mothers with minor physical problems.
- Section II : Assessment of Minor physical Problems. Among antenatal mothers
- Section III : Assessment of effectiveness of yoga among antenatal mothers with minor physical problems.
- Section IV : Association of effectiveness of Yoga among antenatal mothers with minor physical problems with selected demographical variables.

Section I

The Section deals with distribution of demographic variables of antenatal mothers with minor physical problems.

Table 1: Frequency and Percentage Distribution of Demographic Variables among Antenatal Mothers

Demographic Variables	Antenatal Mothers	
	No.	%
1. Age in years		
a) Below 20 yrs	15	16.7
b) 21 - 25 yrs	56	62.2
c) 26 – 30 yrs	17	18.9
d) Above 30 yrs	2	2.2
2. Religion		
a) Hindu	82	91.1
b) Christian	5	5.6
c) Muslim	3	3.3
3. Education		
a) Illiterate	1	1.1
b) Primary	18	20.0
c) Secondary	58	64.4
d) Graduate	13	14.4
4. Type of Family		
a) Nuclear family	34	37.8
b) Joint family	56	62.2
5. Family Income		
a) Rs. 5000 - 10000	47	52.2
b) Rs. 10001 - 15000	43	47.8
6. Source of information		
a) Yes	32	35.6
b) No	58	64.4
7. Gravida		
a) Primi	64	71.1
b) Multi	26	28.9

The data presented in above table that reveals with regard to age the majority of antenatal mothers 56(62.2%) belonged to age group of 21-25 years, 82(91%) were hindu religion, regarding education of antenatal mothers 58(64.4%) had secondary education, 56(62.2%) belonged joint family, regarding family income majority 47(52.2%) of antenatal mothers had the income of Rs. 5000-10000 per month, 58(64.4%) antenatal mothers known about yoga , with regards gravida majority of antenatal mothers 64(71.1%) were primi. This clearly indicates that there was a need to educate yoga among antenatal mothers.

Section II: This Section deals with assessment of minor physical problems among antenatal mothers

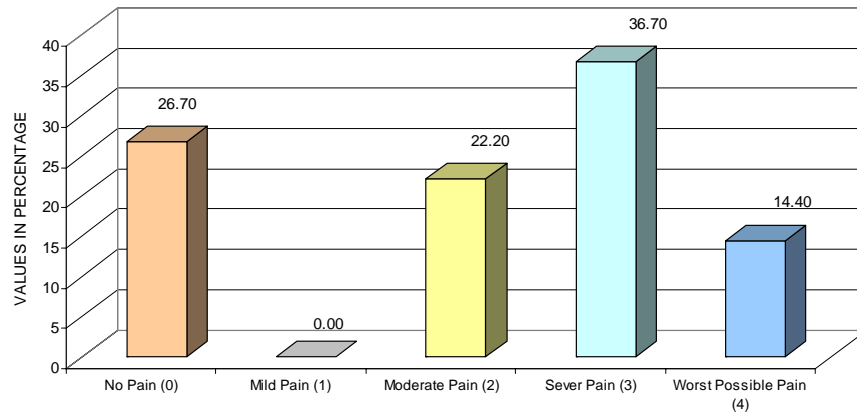


Figure 1

Percentage distribution of lowback pain among antenatal mothers in pretest

The Figure 1 depicts the score obtained the level of low back pain experienced among antenatal mothers in pre test. Out of 90 mothers 13(14.4%) had worst possible pain, 33(36.7%) had severe pain, 20(22.2%) had moderate pain, 24(26.4%) had no pain.

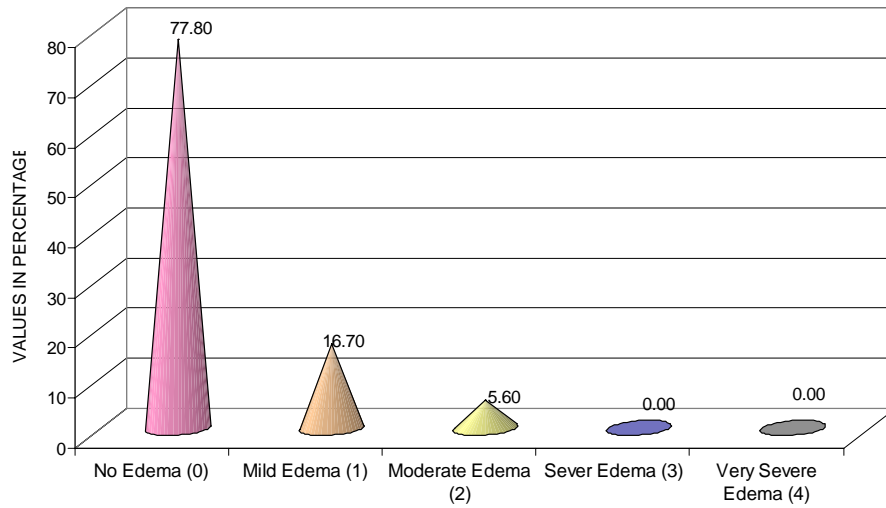


Figure 2
Percentage distribution of leg edema among
antenatal mothers in pretest

The above Figure 2 shows that the level of leg edema among antenatal mothers in pre test. Out of 90 mothers 5(5.6%) had moderate edema, 15(16.7%) had mild edema, 70(77.8%) had no edema.

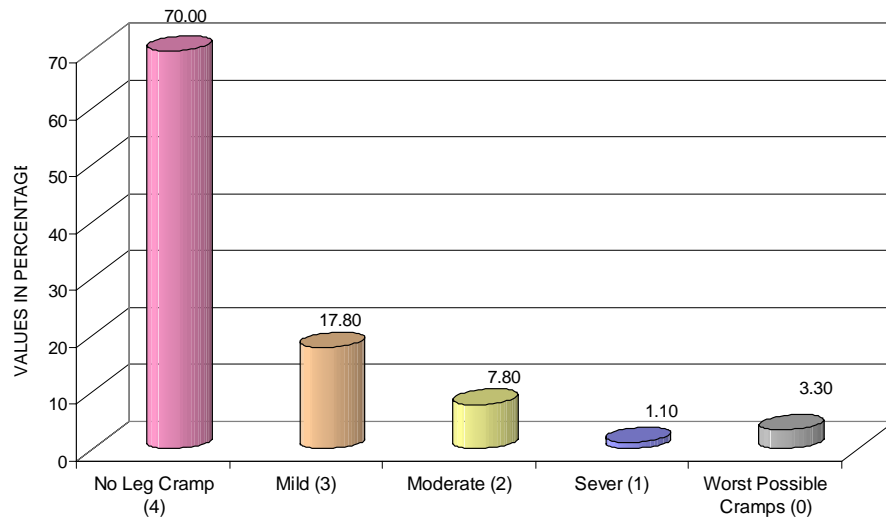


Figure 3
Percentage distribution of leg cramps among
antenatal mothers in pretest

The above Figure 3 shows that the level of leg cramps among antenatal mothers in pre test. Out of 90 mothers 3(3.3%) had worst possible cramps, 1(1.1%) had severe cramps, 16(17.8%) had mild cramps, 63(70.0%) had no leg cramps. This clearly indicates that there was a need teach yoga among the antenatal mothers to reduce minor physical problems.

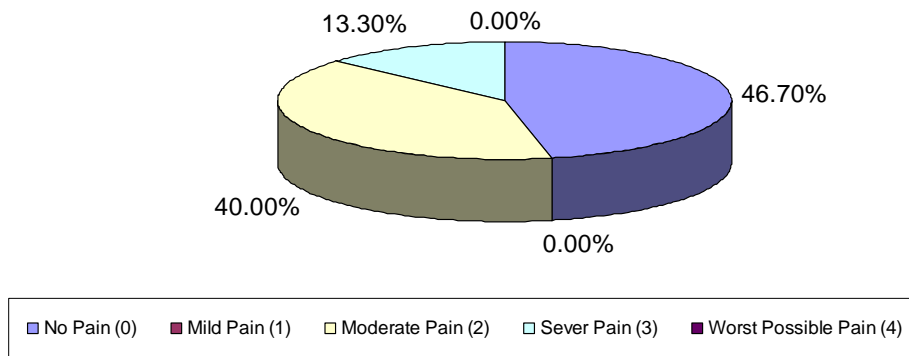


Figure 4
Percentage distribution of lowback pain among
antenatal mothers in posttest

The above Figure 4 depicts the score obtained the level of low back pain experienced among antenatal mothers in post test. Out of 90 mothers 12(13.3%) had severe pain, 36(40.0%) had moderate pain, 42(46.7%) had no pain.

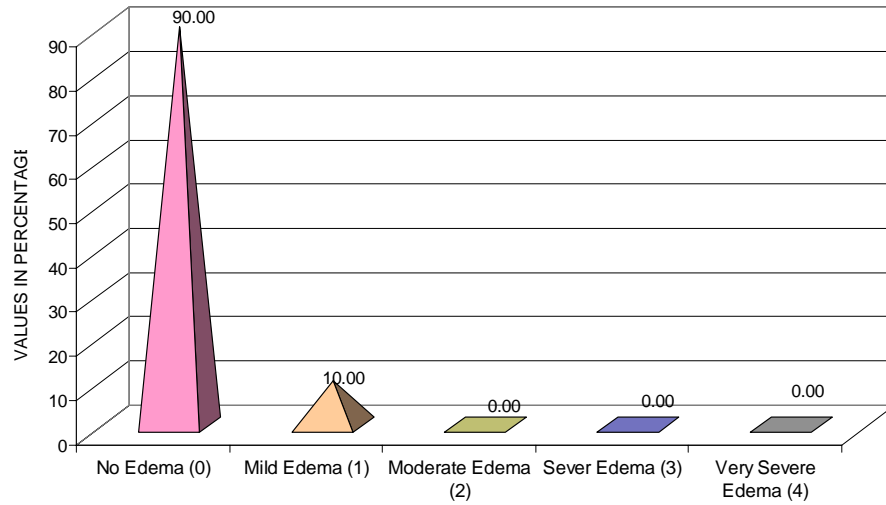


Figure 5

Percentage distribution of leg edema among antenatal mothers in posttest

The above Figure 5 shows that the level of leg edema among antenatal mothers in post test. Out of 90 mothers 9(10.0%) had mild leg edema, 81(90.0%) had no leg edema.

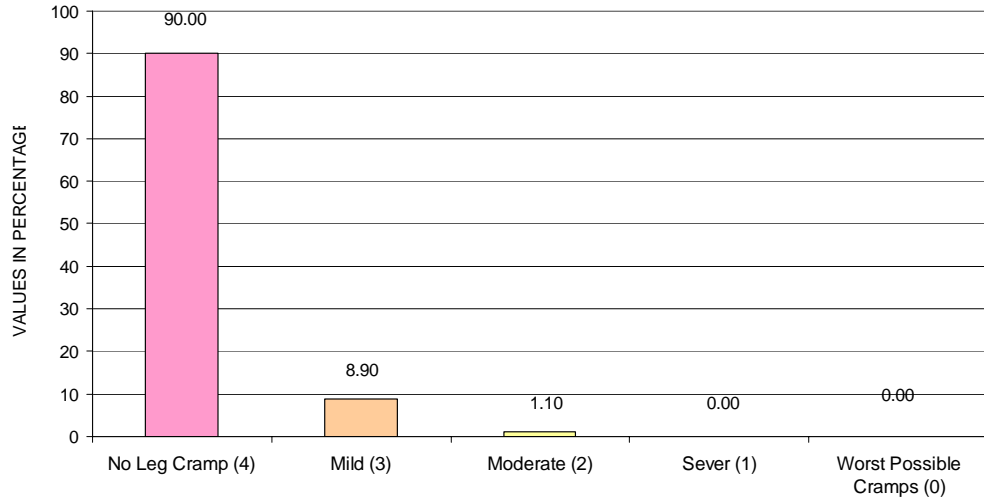


Figure 6
Percentage distribution of leg cramps among
antenatal mothers in posttest

The above Figure 6 shows that the level of leg cramps among antenatal mothers in post test. Out of 90 mothers 1(1.1%) had moderate leg cramps, 8(8.9%) had mild leg cramps, 81(90.0%) had no leg cramps.

Section III: This Section deals with assessment of effectiveness of yoga among antenatal mothers with minor physical problems.

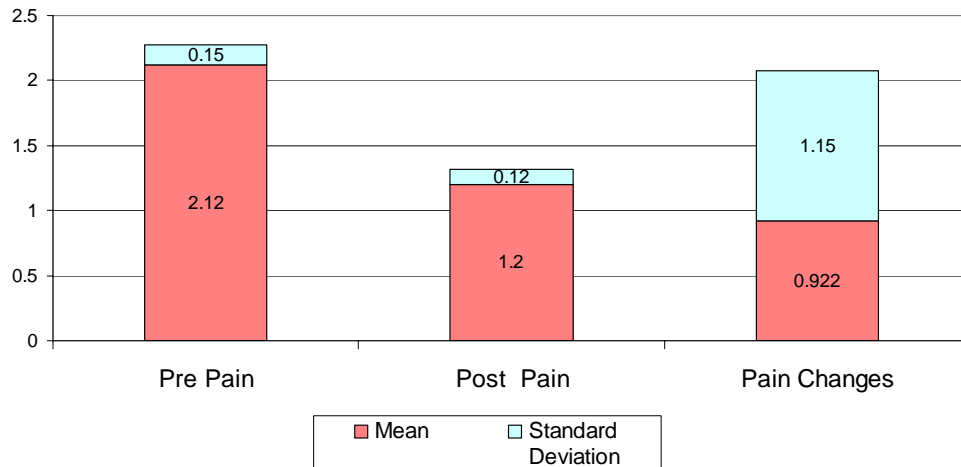


Figure 7

Effectiveness of lowback pain score among antenatal mothers

(t = 7.584, P=0.000)

Figure 7 reveals that pain score in pre test (2.21) mean score and the standard deviation value (0.15). Post test (1.20) mean score and the standard deviation value (0.12). The mean difference between pre test and the post test was 0.922 and standard deviation difference was 1.15. The obtained t' value was 7.584 significant at P=0.00.

There is a significant difference between post pain it was inferred that Yoga is effective in reducing low back pain among antenatal mothers.

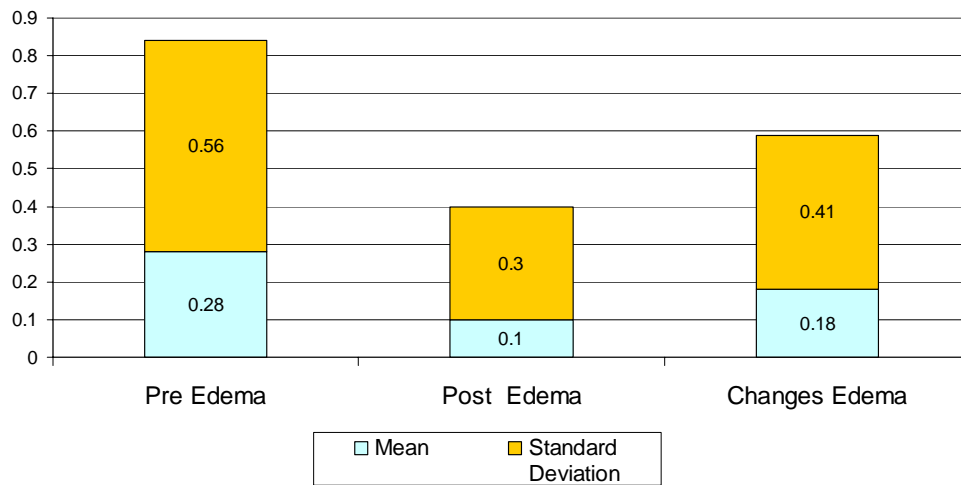


Figure 8

Effectiveness of leg edema among antenatal mothers

$t = 4.087, P=0.000$

Figure 8 reveals that leg edema score in pre test (0.28) mean score and the standard deviation value (0.56). Post test (0.10) mean score and the standard deviation value (0.30). The mean difference between pre test and the post test was 0.18 and standard deviation difference was 0.41. The obtained t' value was 4.087 significant at $P=0.00$.

There is a significant difference between post leg edema it was inferred that Yoga is effective in reducing leg edema among antenatal mothers.

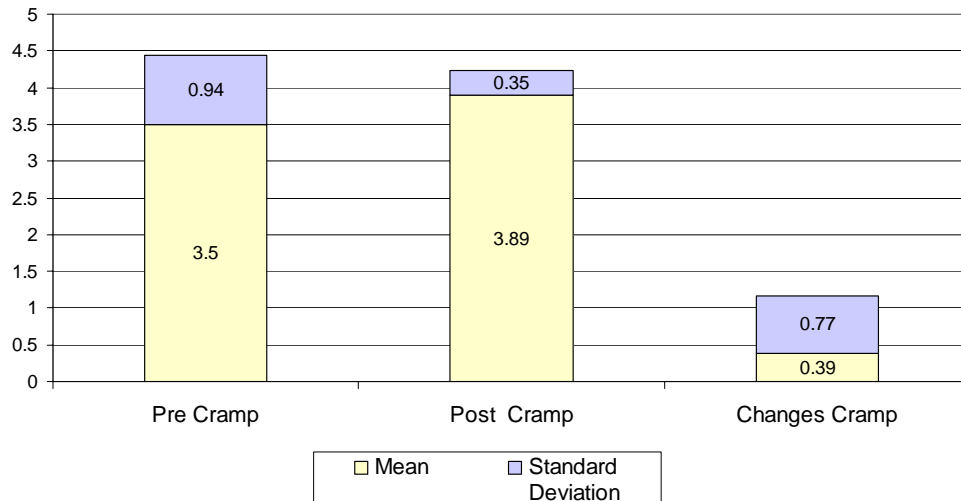


Figure 9

Effectiveness of leg cramps among antenatal mothers

(t = 4.763, P=0.000)

Figure 9 reveals that leg cramps score in pre test (3.50) mean score and the standard deviation value (0.94). Post test (3.89) mean score and the standard deviation value (0.35). The mean difference between pre test and the post test was 0.39 and standard deviation difference was 0.77. The obtained t' value was 4.763 significant at P=0.00.

There is a significant difference between post leg cramps it was inferred that Yoga is effective in reducing leg cramps among antenatal mothers.

Table 2 : Association between Level of Pain in Pre Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Pain		Moderate Pain		Severe Pain		Very Severe Pain		Chi Square value & P value
	No.	%	No.	%	No.	%	No.	%	
1. Age in years									$\chi^2 = 7.438,$
a) Below 20 yrs	4	26.7	4	26.7	4	26.7	3	20.0	d.f = 9
b) 21 - 25 yrs	14	25.0	11	19.6	23	41.1	8	14.3	P=0.592 (N.S)
c) 26 – 30 yrs	4	23.5	5	29.4	6	35.3	2	11.8	
d) Above 30 yrs	2	100.0	0	0.0	0	0.0	0	0.0	
2. Religion									$\chi^2 = 5.928,$
a) Hindu	22	26.8	16	19.5	32	39.0	12	14.6	d.f = 6
b) Christian	1	20.0	2	40.0	1	20.0	1	20.0	P=0.431(N.S)
c) Muslim	1	33.3	2	66.7	0	0.0	0	0.0	
3. Education									$\chi^2 = 13.794,$
a) Illiterate	0	0.0	0	0.0	1	100.01	0	0.0	d.f = 9
b) Primary	8	44.4	3	16.7	3	6.7	4	22.2	P=0.130(N.S)
c) Secondary	12	20.7	16	27.6	21	36.2	9	15.5	
d) Graduate	4	30.8	1	7.7	8	61.5	0	0.0	
4. Type of Family									$\chi^2 = 2.181,$
a) Nuclear family	8	23.5	6	17.6	13	38.2	7	20.6	d.f = 3
b) Joint family	16	28.6	14	25.0	20	35.7	6	10.7	P=0.536 (N.S)
5. Family Income									$\chi^2 = 2.147,$
a) Rs. 5000 - 10000	11	23.4	11	23.4	16	34.0	9	19.1	d.f = 3
b) Rs. 10001 – 15000	13	30.2	9	20.9	17	39.5	4	9.3	P=0.543 (N.S)
6. Source of Information									$\chi^2 = 4.416,$
a) Yes	12	37.5	4	12.5	11	34.4	5	15.6	d.f = 3
b) No	12	20.7	16	27.6	22	37.9	8	13.8	P=0.220 (N.S)
7. Gravida									$\chi^2 = 5.451,$
a) Primi	21	32.8	12	18.8	21	32.8	10	15.6	d.f = 3
b) Multi	3	11.5	8	30.8	12	46.2	3	11.5	P=0.142 (N.S)

It can be inferred from table 2 that there was no significant association between the demographic variables and level of low back pain among antenatal mothers in pre test.

Table 3: Association between Level of Pain in Post Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Pain		Moderate Pain		Severe Pain		Chi Square value & P value
	No.	%	No.	%	No.	%	
1. Age in years							$\chi^2 = 4.277$,
a) Below 20 yrs	9	60.0	4	26.7	2	13.3	d.f = 6
b) 21 - 25 yrs	23	41.1	25	44.6	8	14.3	P=0.639
c) 26 – 30 yrs	8	47.1	7	41.2	2	11.8	(N.S)
d) Above 30 yrs	2	100.0	0	0.0	0	0.0	
2. Religion							$\chi^2 = 1.296$,
a) Hindu	39	47.6	32	39.0	11	13.4	d.f = 4
b) Christian	2	40.0	2	40.0	1	20.0	P=0.862
c) Muslim	1	33.3	2	66.7	0	0.0	(N.S)
3. Education							$\chi^2 = 4.936$,
a) Illiterate	1	100.0	0	0.0	0	0.0	d.f = 6
b) Primary	10	55.6	4	22.2	4	22.2	P=0.552
c) Secondary	25	43.1	26	44.8	7	12.1	(N.S)
d) Graduate	6	46.2	6	46.2	1	7.7	
4. Type of Family							$\chi^2 = 1.067$,
a) Nuclear family	16	47.1	12	35.3	6	17.6	d.f = 2
b) Joint family	26	46.4	24	42.9	6	10.7	P=0.587
							(N.S)
5. Family Income							$\chi^2 = 0.649$,
a) Rs. 5000 - 10000	23	48.9	17	36.2	7	14.9	d.f = 2
b) Rs. 10001 - 15000	19	44.2	19	44.2	5	11.6	P=0.723
							(N.S)
6. Source of Information							$\chi^2 = 0.222$,
a) Yes	16	50.0	12	37.5	4	12.5	d.f = 2
b) No	26	44.8	24	41.4	8	13.8	P=0.895
							(N.S)
7. Gravida							$\chi^2 = 3.152$,
a) Primi	32	50.0	22	34.4	10	15.6	d.f = 2
b) Multi	10	38.5	14	53.8	2	7.7	P=0.207
							(N.S)

It can be inferred from table 3 that there was no significant association between the demographic variables and level of low back pain among antenatal mothers in post test.

Table 4: Association between Level of Edema in Pre Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Edema		Mild Edema		Moderate Edema		Chi Square value & P value
	No.	%	No.	%	No.	%	
1. Age in years							$\chi^2 = 3.663$,
a) Below 20 yrs	12	80.0	2	13.3	1	6.7	d.f=6
b) 21 - 25 yrs	44	78.6	10	17.9	2	3.6	P=0.722
c) 26 – 30 yrs	13	76.5	2	11.8	2	11.8	(N.S)
d) Above 30 yrs	1	50.0	1	50.0	0	0.0	
2. Religion							$\chi^2 = 3.099$,
a) Hindu	65	79.3	12	14.6	5	6.1	d.f= 4
b) Christian	3	60.0	2	40.0	0	0.0	P=0.541
c) Muslim	2	66.7	1	33.3	0	0.0	(N.S)
3. Education							$\chi^2 = 10.859$,
a) Illiterate	1	100.	0	0.0	0	0.0	d.f= 6
b) Primary	16	0	2	11.1	0	0.0	P=0.093
c) Secondary	46	88.9	10	17.2	2	3.4	(N.S)
d) Graduate	7	79.3	3	23.1	3	23.1	
		53.8					
4. Type of Family							$\chi^2 = 0.723$,
a) Nuclear family	27	79.4	6	17.6	1	2.9	d.f= 2
b) Joint family	43	76.8	9	16.1	4	7.1	P=0.697
							(N.S)
5. Family Income							$\chi^2 = 1.139$,
a) Rs. 5000 - 10000	38	80.9	6	12.8	3	6.4	d.f= 2
b) Rs. 10001 - 15000	32	74.4	9	20.9	2	4.7	P=0.566
							(N.S)
6. Source of information							$\chi^2 = 0.076$,
a) Yes	25	78.1	5	15.6	2	6.3	d.f= 2
b) No	45	77.6	10	17.2	3	5.2	P=0.963
							(N.S)
7. Gravida							$\chi^2 = 4.791$,
a) Primi	46	71.9	14	21.9	4	6.3	d.f= 2
b) Multi	24	92.3	1	3.8	1	3.8	P=0.091
							(N.S)

It can be inferred from table 4 that there was no significant association between the demographic variables and level of leg edema among antenatal mothers in pre test.

Table 5: Association between Level of Edema in Post Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Edema		Mild Edema		Chi Square value & P value
	No.	%	No.	%	
1. Age in years					$\chi^2 = 1.583$,
a) Below 20 yrs	14	93.3	1	6.7	d.f=3
b) 21 - 25 yrs	51	91.1	5	8.9	P=0.663 (N.S)
c) 26 – 30 yrs	14	82.4	3	17.6	
d) Above 30 yrs	2	100.0	0	0.0	
2. Religion					$\chi^2 = 0.894$,
a) Hindu	74	90.2	8	9.8	d.f= 2
b) Christian	4	80.0	1	20.0	P=0.639 (N.S)
c) Muslim	3	100.0	0	0.0	
3. Education					$\chi^2 = 1.268$,
a) Illiterate	1	100.0	0	0.0	d.f= 3
b) Primary	17	94.4	1	5.6	P=0.647 (N.S)
c) Secondary	54	93.1	4	6.9	
d) Graduate	9	69.2	4	30.8	
4. Type of Family					$\chi^2 = 1.029$,
a) Nuclear family	32	94.1	2	5.9	d.f= 1
b) Joint family	49	87.5	7	12.5	P=0.310 (N.S)
5. Family Income					$\chi^2 = 0.242$,
a) Rs. 5000 - 10000	43	91.5	4	8.5	d.f= 1
b) Rs. 10001 - 15000	38	88.4	5	11.6	P=0.622 (N.S)
6. Source of Information					$\chi^2 = 0.345$,
a) Yes	28	87.5	4	12.5	d.f= 1
b) No	53	91.4	5	8.6	P=0.557 (N.S)
7. Gravida					$\chi^2 = 0.216$,
a) Primi	57	89.1	7	10.9	d.f= 1
b) Multi	24	92.3	2	7.7	P=0.642 (N.S)

It can be inferred from table 5 that there was no significant association between the demographic variables and level of leg edema among antenatal mothers in post test.

Table 6: Association between Level of Leg Cramp Grading in Pre Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Leg Cramp		Mild Leg Cramp		Moderate & Above Leg Cramp		Chi Square value & P value
	No.	%	No.	%	No.	%	
1. Age in years							$\chi^2 = 4.799,$
a) Below 20 yrs	13	86.7	1	6.7	1	6.7	d.f = 6
b) 21 - 25 yrs	36	64.3	11	19.6	9	16.7	P=0.570 (N.S)
c) 26 – 30 yrs	12	70.6	4	23.5	1	5.9	
d) Above 30 yrs	2	100.0	0	0.0	0	0.0	
2. Religion							$\chi^2 = 2.124,$
a) Hindu	56	68.3	15	18.3	11	13.4	d.f = 4
b) Christian	4	80.0	1	20.0	0	0.0	P=0.713(N.S)
c) Muslim	3	100.0	0	0.0	0	0.0	
3. Education							$\chi^2 = 7.404,$
a) Illiterate	1	100.0	0	0.0	0	0.0	d.f = 6
b) Primary	9	50.0	6	33.3	3	16.7	P=0.285 (N.S)
c) Secondary	43	74.1	7	12.1	8	13.8	
d) Graduate	10	76.9	3	23.1	0	0.0	
4. Type of Family							$\chi^2 = 0.013,$
a) Nuclear family	24	70.6	10	17.9	4	11.8	d.f = 2
b) Joint family	39	69.6	6	17.6	7	12.5	P=0.994 (N.S)
5. Family Income							$\chi^2 = 0.307,$
a) Rs. 5000 - 10000	33	70.2	9	19.1	5	10.6	d.f = 2
b) Rs. 10001 - 15000	30	69.8	7	16.3	6	14.0	P=0.858 (N.S)
6. Source of information							$\chi^2 = 0.608,$
a) Yes	21	65.6	7	21.9	4	12.5	d.f = 2
b) No	42	72.4	9	15.5	7	12.1	P=0.738 (N.S)
7. Gravida							$\chi^2 = 0.181,$
a) Primi	44	68.8	12	18.8	8	12.5	d.f = 2
b) Multi	19	73.1	4	15.4	3	11.5	P=0.913 (N.S)

It can be inferred from table 6 that there was no significant association between the demographic variables and level of leg cramps among antenatal mothers in pre test.

Table 7: Association between Level of Leg Cramp Grading in Post Test and Demographic Variables among Antenatal Mothers

Demographic Variables	No Leg Cramp		Mild & Moderate Leg Cramp		Chi Square value & P value
	No.	%	No.	%	
1. Age in years					$\chi^2 = 3.352,$
a) Below 20 yrs	15	100.0	0	0.0	d.f=3
b) 21 - 25 yrs	48	85.7	8	14.3	P=0.340 (N.S)
c) 26 – 30 yrs	16	94.1	1	5.9	
d) Above 30 yrs	2	100.0	0	0.0	
2. Religion					$\chi^2 = 2.376,$
a) Hindu	74	90.2	8	9.8	d.f= 2
b) Christian	5	100.0	0	0.0	P=0.305 (N.S)
c) Muslim	2	66.7	1	33.3	
3. Education					$\chi^2 = 0.859,$
a) Illiterate	1	100.0	0	0.0	d.f= 3
b) Primary	17	94.4	1	5.6	P=0.835 (N.S)
c) Secondary	51	87.9	7	12.1	
d) Graduate	12	92.3	1	7.7	
4. Type of Family					$\chi^2 = 0.084,$
a) Nuclear family	31	91.2	3	8.8	d.f= 1
b) Joint family	50	89.3	6	10.7	P=0.772 (N.S)
5. Family Income					$\chi^2 = 0.242,$
a) Rs. 5000 - 10000	43	91.5	4	8.5	d.f= 1
b) Rs. 10001 - 15000	38	88.4	5	11.6	P=0.622 (N.S)
6. Source of Information					$\chi^2 = 0.345,$
a) Yes	28	87.5	4	12.5	d.f= 1
b) No	53	91.4	5	8.6	P=0.557 (N.S)
7. Gravida					$\chi^2 = 0.096,$
a) Primi	58	90.6	6	9.4	d.f= 1
b) Multi	23	88.5	3	11.5	P=0.756 (N.S)

It can be inferred from table 7 that there was no significant association between the demographic variables and level of leg cramps among antenatal mothers in post test.

CHAPTER IV

DISCUSSION

The basic aim of the current study was to evaluate the effectiveness of yoga on minor physical problems among antenatal mothers. The study was conducted by using pre-experimental design. The Kundrathur Primary health centre were selected for conducting the study the sample size was 90 antenatal mothers.

Rating scales was used to assess the level of low back pain, level of edema, level of leg gramps among antenatal mothers before and after yoga intervention.

The response were analysed through descriptive statistics (mean, frequency, percentage and standard deviation) and inferential statistic ('t' test and chi-square) discussion on the finding was arranged on the objectives of the study.

The first objective of the study was to assess the minor physical problems like low back pain, level of edema, level of leg gramps among antenatal mothers. The study finding revealed that among 90 samples, 13 (14.4%) had worst possible pain, 33 (36.7%) had severe pain, 20 (22.2%) had moderate pain, 5 (5.6%) had moderate edema, 15 (16.7%) had mild edema, 70 (77.8%) had no edema, 1 (1.1%) had severe cramps, 7 (7.8%) had moderate gramps, 16 (17.8%) and mild cramps, 63 (70%) had no cramps in pretest (Figure 1,2,3)

There findings were supported by a study conducted by Michel Taurnaire and Anne Theau Yonneau (2006) who assed the level of low back pain during pregnancy 60 sample numerical rating scale was used to measure level of back

pain. The finding reveals that pain was continues during pregnancy among antenatal mothers.

The second objective was to evaluate the effectiveness of yoga on minor physical problems among antenatal mothers.

H1 : There is a significant difference pre and post yoga measure in relation to minor physical problems among antenatal mothers.

There was a difference in level of back pain between pretest mean score (2.21) and post test mean score (1.20) and obtained 't' value 7.58 was significant at $P=0.00$ level. There was a difference of level of edema between pretest mean score (0.28) and post test mean score (0.10), the obtained 't' value 4.08 was significant at $P=0.00$ level. There was a difference in level of leg gramps between pretest mean score (3.50) and post test mean score (3.89). the obtained 't' value 4.763 was significant at $P=0.00$ level. Which shows that the yoga was effective in reducing minor physical problems among antenatal mother (Figure 7,8,9)

There findings were supported by a study done by Elden H et.al., (2005) who did a study on effects of yogic exercises as adjunct to standard treatment in pregnant women with pelvic gridle pain among 386 pregnant women. Finding shows yogic exercise constitute efficient complements to standard treatment for the management of pelvic griddle pain during pregnancy.

There finding were also supported by a study done by satine Hartman, Renate Huch (2005) conducted a study response of pregnancy yogic exercises session on uncomplicated dependent edema in pregnancy. The level of edema

measured by limb circumference among second and third trimester pregnancy, before and after yogic exercise session is a safe, effective and enjoyable for reduction of gestational dependent edema.

These finding were also supported by a study done by Coppin RJ, Wickle DM (2006) conducted a study assess the effect of calf stretching exercises of gramps the sample consisted one hundred clients undertake the exercise freely results shows calf stretching exercises are effective in reducing the frequency (or) severity of leg gramps.

The third objective of the study was to determine the association between minor physical problems among antenatal mothers with their selected. Demographic variables like age, religion, education, type of family, family income, source of information, gravida. The present study finding revealed that the level of back pain, leg edema, leg gramps and selected demographic variables was not significant at $P < 0.05$ level. (Table 2,3,4,5,6 & 7)

Practicing Yoga during pregnancy alleviate the discomforts in each trimester and provide more benefits both before, during and after pregnancy and pregnant women can gain additional benefits from practicing yoga like normal delivery prevent complication during labour.

CHAPTER VI

SUMMARY, CONCLUSION AND RECOMMENDATION

The Chapter presents a brief accounts of the present study. Conclusions are drawn from the finding and the implications of the results are stated. It also includes recommendations for future research in this area.

Summary of The Study

The present study was to assess the effectiveness of yoga on minor physical problems among antenatalmothers attending outpatient department at Kundrathur primary Helath Centre.

The objectives of the study are

To assess the minor physical problems among the antenatal mothers.

To find out the effectiveness of yoga on minor physical problems among the antenatal mothers after practice.

To associate the effect of yoga on minor physical problems with selected demographic variables.

It was a pre experimental study conducted at Kundrathur primary health centre. The research design used in this study was one group pretest, posttest design.

The samples were selected by using convenient sampling technique. The sample size consisted of 90 antenatal mothers. The instrument used for the data

collection was numerical rating scales to assess the level of low back pain, level of edema, level of leg gramps among antenatal mothers.

The instrument used to collect the data comprises of four sessions. Part I deal with the demographic data, part II consist of rating scale to assess the level of low back pain, Part III consist of rating scale to assess the level of leggramps among antenatal mothers. The interventional strategy consisted of yoga which simple posture to relax, leg folding, leg cross, leg straight leg sideward, chair twisting, Triangle posture, calf stretch sitting on heel exercises.

The content validity was checked by experts in the field of Nursing and yoga. Data was collected for a period of 6 weeks among antenatal mothers.

The collected data were analysed by using descriptive statistics (frequency percentage, mean and standard deviation) and inferential statistics ('t' test and Chi-Square) to test the study hypothesis.

Major study findings

Among antenatal mothers majority were under the age group of 21-25 yrs, Hindu, Secondary education, joint family, Primi gravida.

Regarding the low back pain, majority of them had worst possible pain, Severe pain, moderate pain in pretest and severe pain, moderate pain, no pain in post test. Regarding the leg edema level majority of them has moderate edema, mild edema in Pretest and mild edema and no pain in Post test. Regarding the leg

gramps level majority of them had severe gramps, moderate gramps, mild gramps in Pre test and moderate gramps, mildgramps no gramps in Post test.

With Regard to the effectiveness of yoga on minor physical problems among antenatal mothers. The Post test mean value was lower than the pre test mean value regarding low back pain, leg edema, leg gramps among antenatal mothers. The obtained 't' value for low back pain 7.584 was significant at P=0.00 level. The obtained 't' value for leg edema 4.08 was significant at P=0.00 level. The obtained 't' value for leg gramps 4.76 was significant at P=0.00 level.

The association between effect of yoga on minor physical problem among antenatal mothers with their selected demographic variables. The results revealed that there was no significant association between the level of low back pain, leg edema, leg gramps with their age, Religion, Education, type of family, family income gravida among antenatal mothers.

Conclusion

The main conclusion drawn from this present study was that most of the antenatal mothers had severe and moderate pain, mild edema, mild and moderate gramps after received the yoga intervention for a month.

Their low back pain, leg edema, leg gramps level was reduced significantly this ensure that yoga intervention surely lowered the back pain, leg edema, leg gramps level among antenatal mothers. The long term effect of yoga promotes maternal health and prevent maternal complication. After the completion of the study, subjects were encouraged to practice regularly and advice to taught others.

Limitations

- 1) The investigator should have control on teaching specific yoga according to the minor physical problems.
- 2) The setting of the study was selected due to the convenience of the researcher hence the findings can be generalized only to the selected setting.
- 3) Some antenatal mothers on constant reinforcement only participated in the study.
- 4) Some antenatal mothers expressed practicing yoga was time consuming.

Nursing Implication

The treatment of minor physical problems during pregnancy which there were lot of myths in most parts of the world. The recent knowledge about the treatment of minor physical problems had revolutionized in the last few years regarding yoga and also account for the decreasing maternal mortality rate in many countries.

Implication for nursing practice

This study will provide an insight to all nursing personal (Hospital OPD, Community) to give appropriate measures related to minor physical problems during pregnancy.

The study signifies the importance of teaching yoga of antenatal mothers with minor physical problems by the health workers working in primary health centers and out patient department.

Video shows and demonstration can be arranged for antenatal mothers with minor physical problems.

Implication for nursing education

The study had clearly proved that yoga were effective in regarding minor physical problems during pregnancy. To practice this, the nursing personnel equipped with adequate knowledge regarding antenatal yoga.

The study revealed the importance of including it in the curriculum for both B.Sc Degree and Diploma in Nursing because all nursing personnel needs to have adequate skill in antenatal yoga.

Nursing students must be posted in primary health center to gain more skill in implementing yoga and assessing its effects among antenatal mothers with minor physical problems.

Preparation of audio-visual aids on yoga can be included as one of the requirement of nursing curriculum.

Short-term courses can be started to train nurses in antenatal care with emphasis on yoga.

Implication for nursing research

This study could be a baseline for future studies to build upon.

Extensive research must be conducted in this areas to identify the psychological effect of yoga in improving health status of antenatal mothers.

This study also brought the fact that more studies need to be conducted by comparing the antenatal exercises and yoga in improving health status of antenatal mothers.

Implication for nursing administration

The nurse administrator should arrange continuing education programme for nursing personnel regarding antenatal yoga.

The nurse administrator arrange for workshop on various alternative treatment of reducing minor physical problems during pregnancy.

Arrange training programme for all health workers regarding prenatal yoga.

Arrange and Display pamphlets, Charts, Postures in every ward.

Periodic conferences, Seminar, Symposium can be arranged regarding prenatal yoga.

Recommendation

Similar kind of study can be conducted for a larger group.

- 1) A Similar study can be conducted to find out the effectiveness of yoga on Normal Labour.
- 2) Similar kind of study can be conducted for antenatal mothers who are having other minor physical problems.
- 3) The same study can be conducted by practicing yoga for longer duration.

- 4) A follow up study can be done to find out whether the clients are practicing yoga regularly.
- 5) A comparative study can be done to the effectiveness of antenatal exercise and antenatal yoga.
- 6) A study can be done to evaluate the mothers with labour pain who practicing antenatal yoga during pregnancy.

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APPENDIX A

Permission To Contact Research Study at Kundrathur

From

Ms. Kavitha.P
M.Sc(N) II-Year,
MIOT College of Nursing,
Mugalivakkam,
Chennai

To

The Medical Officer Incharge
Primary Health Centre,
Kundrathur,
Chennai.

Sub,

Permission to conduct the study in Primary Health Centre at Kundrathur.

Ms. Kavitha II year M.Sc Nursing Student MIOT CON, Chennai. In partial fulfillment M.Sc (N), I have a plan to conduct a study on the topic mentioned below. I assure that I will not interfere with routine activity of your center. Kindly permit me to conduct the study.

A study to assess the effectiveness of yoga on minor physical problems among antenatal mothers who are attending antenatal out patient department at Kundrathur, Primary Health Centre.

Thanking You,



Yours truly,

P.KAVITHA

மேம்படுத்தப்பட்ட அரசு
ஆரம்ப சுகர்தார நிலையம்
குன்றத்தூர், சென்னை-69.
காஞ்சிபுரம் மாவட்டம்

APPENDIX B



14.04.2010

To Whom It May Concern:

This is to confirm that Ms **P. Kavitha** Final Year MSc Nursing students of MIOT College of Nursing successfully completed her 20hrs **Clinical Yoga Training on Prenatal Yoga Asana Techniques** for the purpose of her Academic Dissertation need from 5th April- 10th April'2010.

Thank you,

For Yoga Mission International

Shameem Iqbal
Program Director

YOGA MISSION @ Meera School of Yoga
26, Krishna Street, Nungambakkam,
(Near. Valluvarkottam) Chennai - 600 034.
Phone : 98419 98149 / 90944 60800
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YOGA MISSION INTERNATIONAL

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Ph: +91-0-98414 50455 Email:yogadetail@gmail.com, Web:www.yogamission.in

APPENDIX C
INFORMED CONSENT

I am **Ms. P.Kavitha**, student of MIOT COLLEGE OF NURSING, Chennai.

As a part of my studies a research on **“A study to assess the effectiveness of yoga on selected minor physical problem among antenatal mothers attending antenatal outpatient department in Kundrathur PHC”**

The findings of the study will be helpful in utilizing the intervention for antenatal mothers with minor physical problem.

I hereby seek your consent and cooperation to participate in the study. Please be frank and honest in your response. The information collect will be kept confidentially and anonymity will be maintained.

Signature of the Investigator

I hereby consent to participate and undergo the study.

Place :

Signature of the Participant.

Date :

APPENDIX D

Demographic data:

Sample No.

1. Age of the mothers
 - (a) Below 20 years
 - (b) 21-25 years
 - (c) 26-30 years
 - (d) above 30 years

2. Religion
 - (a) Hindu
 - (b) Christian
 - (c) Musilm
 - (d) Other

3. Educational Status of antenatal mother
 - (a) illiterate
 - (b) Primary education
 - (c) Secondary School
 - (d) Graduate.

4. Type of family
 - (a) Nuclear family
 - (b) Joint Family.
 - (c) Extended Family

5. Total Family income per month
 - (a) Rs. 5000 – 10000
 - (b) Rs. 10001 –15000
 - (c) Rs. 15000 and above.

6. Marital Status
 - (a) Married
 - (b) Unmarried
 - (c) widow
 - (d) separated

7. Do you know that you can practice yoga while pregnant? (Yes/No) if

Yes Source of information about yoga

(a) TV (b) Newspaper (c) Radio (d) magazine e) Internet

8. Gravida

(a) Primi gravida (b) Multi gravida

9. Did you have any complication during present pregnancy?

a. obstetric complication

i. Pregnancy induced hypertension

ii. oligo hydraminos

iii. Antepartum hemorrhage

iv. Multiple pregnancies

b. Medical Complication

i. Diabetes mellitur

ii. Hypertension

iii. infection

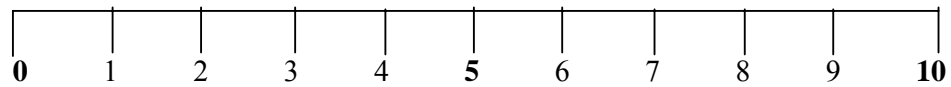
c. unknown

APPENDIX E

DATA COLLECTION TOOLS

WILLIAMSON PAIN SCALE FOR LOW BACK PAIN

0 – 10 Numeric Pain intensity Scale



No

Moderate

Worst

Pain

Pain

Possible

Pain

0 - No Pain

1 to 3 - Mild pain

4 to 6 - Moderate pain

7 to 9 - Sever pain

10 - Worst possible pain

Ruchiegal Edema Scale

- 1+ - Slight pitting / 2mm, disappears rapidly
 - 2+ - some what deeper pit / 4 mm disappear in 10 to 15 sec
 - 3+ - deep pit / 6mm, may last >1 minute
 - 4+ - very deep / 8 mm last 2-5 minutes, deep extremity grossly distorted.
-
- 1+ - mild edema
 - 2+ - moderate edema
 - 3+ - severe edema
 - 4+ - very severe edema

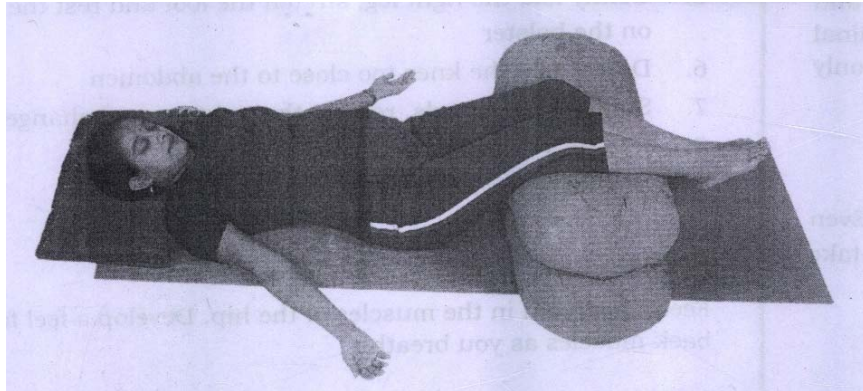
Robert Henderson Leg Cramps grading

- 4 - None
 - 3 - Rare cramps, related to voluntary muscle activity
 - 2 - Spontaneous cramps one to seven times weekly
 - 1 - More than one cramp per day / seven per week
 - 0 - Activity interrupted by seven cramps on multiple occasion daily.
-
- 4 - no leg cramp
 - 3 - mild
 - 2 - moderate
 - 1 - severe
 - 0 - worst possible cramps

YOGA FOR BACK ACHE

- Simple posture to relax
- Leg folding
- Leg cross
- Leg straight
- Triangle posture
- Chair twisting
- Side Shavasana

SIMPLE POSTURE TO RELAX



Method :

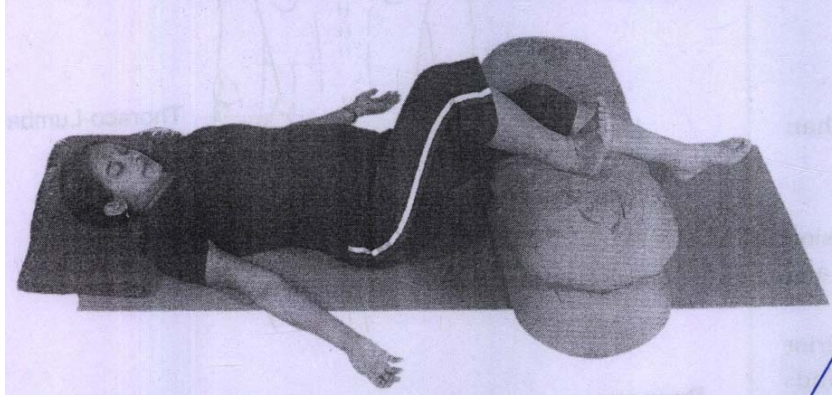
1. Sleep on your back keeping two bolsters under the knee
2. Keep an appropriate neck support
3. The bolsters helps the pelvis to tilt so that the low back can properly rest.
4. Rest the arms by the side of the trunk and relax them
5. Relax the legs also

6. Watch your breathing – make it a little slower and deeper than normal.
7. Breathing should be calm without any undue force
8. Once in about 5 breaths, do the following – as your exhale contract the urinary and anal sphincters and pull them slightly inward. As you inhale release them.
9. Stay for about 5-10 minutes.

Use :

As the pregnancy progresses, the back naturally get stressed because of increase in weight. This posture helps the back muscles to relax.

LEG FOLDING



Method

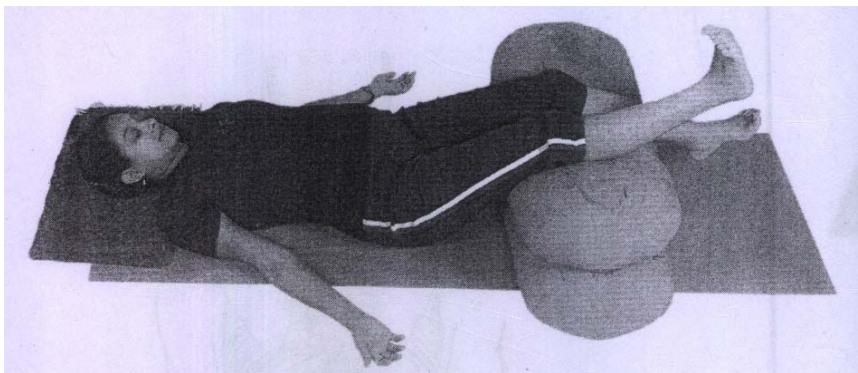
1. Lie on your back keeping two bolsters under the knee
2. Keep an appropriate neck support
3. The bolsters help the pelvis to tilt so that the low back can properly rest.
4. Rest the arms b the side of the trunk and relax them.

5. Gently fold the right leg, stretch the foot and rest the right heel on the bolster.
6. Do not fold the knee too close to the abdomen.
7. Stay for 10 seconds, release the right leg and change side
8. Repeat 3-4 times
9. Breathing should be slow, deep and relaxed.

Use

Muscles of the hip and the lower back get a gentle stretch.

LEG STRAIGHT



Method

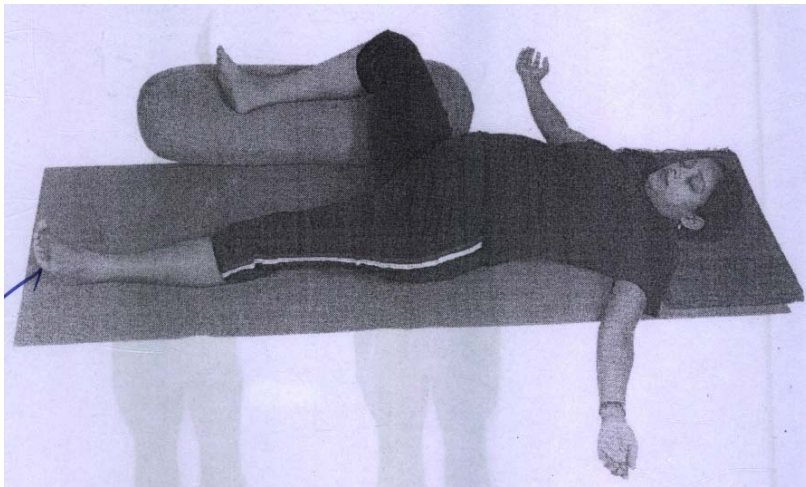
1. Lie on your back keeping two bolsters under the knee
2. Keep an appropriate neck support
3. The bolsters help the pelvis to tilt so that the low back can properly rest
4. Rest the arms by the side of the trunk and relax them.

5. Gently stretch the right leg straight resting the knee on the bolsters
6. Pull the knee cap and stretch the heel
7. Stay for 10 seconds, releases the right leg and change side
8. Repeat 3-4 times
9. Breathing should be slow, deep and relaxed.

Use :

This posture is very good for the muscles for the leg. The thigh and the calf muscles are toned. Knee, hip and the lower back get a gentle stretch.

LEG SIDEWARD



Method

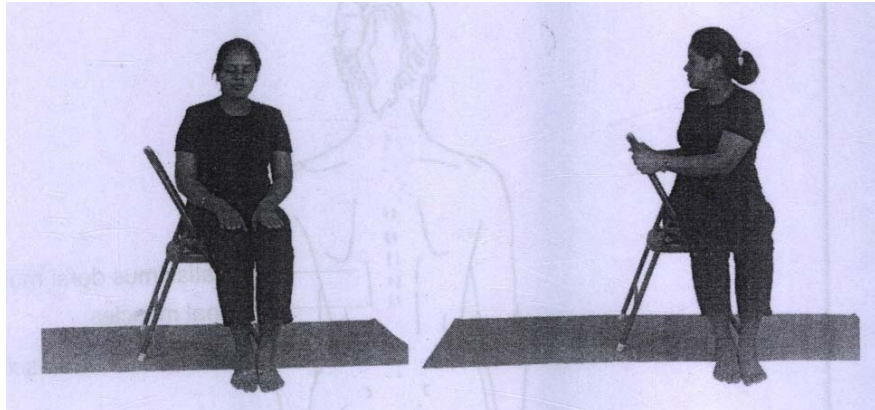
1. Lie on your back keeping a bolster on each side
2. Fold right leg and rest it on the bolster
3. Position the knee and the lower legs on the bolster

4. Keep the left leg straight
5. Stay for 30-60 seconds with slow and deep breathing
6. Slowly take out the right leg, stretch it forward
7. Change on the other side
8. Repeat and relax

Use :

This tones the muscles of the legs. Hip and back also are benefited.

CHAIR TWISTING



Method

1. Sit sideward to your right side on a chair keeping the spine upright.
2. Hold the top of the chair from both hands
3. Take a deep breath, exhale and turn the trunk and the neck
4. Lift the navel and chest up, relax the shoulders and keep the elbows closer to the trunk.

- a. Ensure that the trunk does not lean to a side
 - b. Rest the foot completely
 - c. Keep the shoulders even
5. Stay with deep slow breathing for 15-20 seconds
 6. Change side and repeat twice

Use

Twisting postures are very helpful in relieving the stiffness of back and neck. The hip muscles also get a good stretch.

SIDE SHAVASANA



Method

1. Lie on your back
2. Keep a bolster on your left side
3. Turn to your left, fold the right leg and rest it on the bolster
4. Try to keep the thigh in line with the hip and knee bent at right angle.

5. Keep an appropriate support for the neck
6. Relax the arms
7. Stay with slow and deep breathing for about 3-4 minutes
8. Slowly getup.

Use :

This gives good relief for the lower back muscles. This is of great significance towards the later part of pregnancy as the loading on the lower back increases

YOGA FOR LEG EDEMA AND LEG CRAMS.

- Calf Stretch
- Leg side split
- Sitting on heel

CALF STRETCH



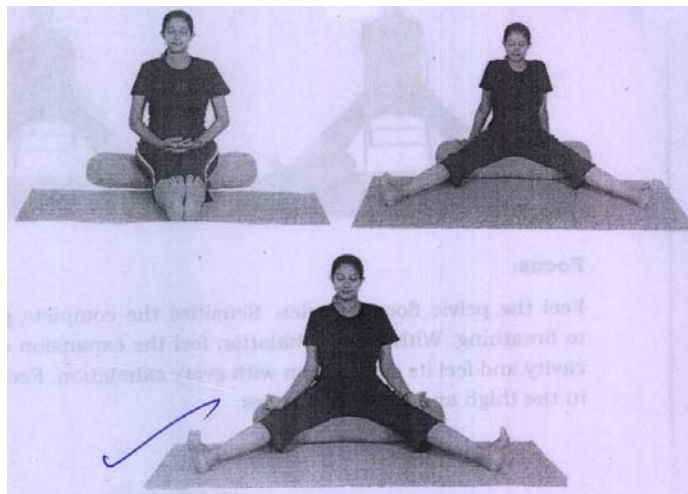
Method

1. Keep a chair a front with its seat facing the wall
2. Hold the top of the chair
3. Move the right leg forward and rest the right foot against the leg of the chair (ie. Keep the right foot at an inclination)
4. Move the left leg about 2 feet away, press the toes and lift the help up.
5. Straighten both legs, tighten the knees and move the trunk towards the chair.
6. Stay for 10-20 seconds
7. Change side and repeat 3-4 times

Use

This is a very good stretch for the calf muscles. Practice of this prevents the leg cramps.

LEG SIDE SPLIT



Method

1. Place a bolster against the wall
2. Sit on the bolster with hips and upper back touching the wall
3. Stretch both legs forward
4. Spread both legs apart as much as possible
5. Keep both legs straight
6. Tighten the knee caps and stretch the heels
7. Ensure that the spinal column is upright.
8. Stay with slow and deep breathing for about 1-2 minutes
9. As you exhale, gently contract the urinary and anal sphincters; release them as you inhale. This procedure can be adapted at every alternate cycles of breathing.
10. Join both legs and relax.

Use

The muscles of the leg get well toned

SITTING ON HEEL



Method

1. Round-fold a blanket and keep it on a mat
2. Kneel down with ankles supported on the blanket.
3. Join the heels
4. Keep the knees closer to each other
5. Keep one more folded blanket on the heels, flex the knee and sit on the heels.
6. Spinal column should be upright.
7. Relax the arms and stay with slow breathing for about 1-2 minutes (if you are comfortable you can stay 3-5 minutes)
8. Slowly get up and relax.

Use

This posture is good for the spinal muscles. The spine can easily be help upright in this posture. It also helps the legs and the foot.