

**AN EVALUATION OF YOGA'S IMPACT ON PELVIC PAIN AND MENTAL HEALTH
AFTER PREGNANCY**

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ABSTRACT

Pregnancy is a special time for a woman and her family. A pregnant woman's emotions, social relationships, and ties to her family undergo a lot of changes during pregnancy. Pregnant women often experience high levels of stress as a result of these shifts. Stress can be dangerous to pregnant women if it builds up to an unbearable degree, resulting in symptoms such as exhaustion, insomnia, anxiety, headaches, and backaches. This study aims at examining the “**AN EVALUATION OF YOGA'S IMPACT ON PELVIC PAIN AND MENTAL HEALTH AFTER PREGNANCY**”. Author specially finds out the correlation level of mental health/pelvic pain and yoga interventions among the pregnant women post pregnancy. Respondents are selected using convenience sampling methodology and for data collection a Self-structured questionnaire is prepared. The collected data is analyzed using different frequency tables and graphs and for testing the hypothesis correlation test is applied. Study findings establishes that “there is a significant correlation between the levels of mental health/pelvic pain and yoga interventions among the pregnant women post pregnancy”. Yoga appears to be safe and beneficial for pregnant women, according to studies. The study results can be used by pregnant women, nursing hospitals and yoga centers for framing strategies to promote using yoga for mental and physical health of pregnant women. The study also suggested ways to improve mental health of pregnant women and also to reduce pelvic pain post pregnancy.

Key words: Yoga, Mental Health, Pelvic Pain, Post Pregnancy etc.

INTRODUCTION

Pregnancy is a special time for a woman and her family. A pregnant woman's emotions, social relationships, and ties to her family undergo a lot of changes during pregnancy. Pregnant women often experience high levels of stress as a result of these shifts. Stress can be dangerous to pregnant women if it builds up to an unbearable degree, resulting in symptoms such as exhaustion, insomnia, anxiety, headaches, and backaches. For a family, pregnancy is a priceless blessing, and the arrival of a child is eagerly anticipated. A woman might feel proud of herself if she is able to have a good and happy pregnancy, both physically and mentally. As a result, pregnant women are also at risk for problems or excessive hazards. This can make individuals anxious and even depressed, lowering their overall well-being on both a mental and physical level.

For pregnant women in rural and urban regions alike, antenatal care for pregnant women has evolved over the years to focus on a more complete and holistic approach. Pregnancy-related mortality and morbidity have been reduced thanks to the implementation of the "Sustainable Development Goal (SDG)" programme. Low back pain, hypertension, edoema and anaemia are all common symptoms of pregnancy that can affect a pregnant woman's psychological state. According to certain studies, up to half of Indonesian pregnant women suffer from depression and other mental health issues. Anxiety and depression affect about 2% of the global population. This is a huge concern for midwives, who are trying to reduce the rate of maternal illness and mortality. In truth, many expectant mothers are still unaware of the various treatment options available for mental illness. Midwives in particular have a reputation for being apathetic when it comes to dealing with patients' mental health issues.

Prenatal yoga and other complementary therapies have been developed and studied to improve pregnant women's mental and physical wellbeing. Many women are unaware of prenatal yoga due to lack of information and lack of support from their families. There is still a long way to go in helping pregnant women's mental health. A sound body and a sound mind go hand in hand. As a result, a

good pregnancy begins with a healthy mind. As a result of this issue, we are interested in studying the effects of prenatal yoga on pregnant women's mental health.

Pregnancy-related pelvic pain is a common complaint, as discussed in earlier chapters. Pregnancy-related pelvic pain is reported by up to 80% of women. During the first trimester, it may be an indication that your body is adjusting to the impending arrival of your child. In later stages of pregnancy, the ligaments in the abdomen might stretch, resulting in pain. PGP, or pelvic girdle pain, arises when the ligaments that support the pelvic bones loosen owing to a pregnancy hormone known as relaxing, which can also be an indication of SPD (symphysis pubis dysfunction).

The discomfort is modest for the majority of women, but it can be severe and even incapacitating for a small percentage. Pregnancy can cause significant pelvic pain for some women. PGP is characterized by a variety of distressing symptoms brought on by the stiffness or unequal movement of the pelvic joints, particularly those in the back or front of the pelvis. As soon as possible, get a diagnosis to avoid long-term pain and discomfort. To alleviate or lessen discomfort, increase muscle function, and stabilize the pelvic joint in yoga and physiotherapy, respectively.

Late pregnancy is the most typical time period for pelvic girdle pain (PGP), which is also known as symphysis pubis dysfunction (SPD). Your pubic bone, which is located at the level of your hips, may cause pain in your lower back or the area between your anus and vagina. Your thighs may also be affected. Your pelvic area may also feel like its grinding or clicking. Although PGP is safe for you and your baby, it can be quite painful for pregnant women.

Yoga's goal is to bring the body and mind together in a way that is beneficial to one's health. Asanas (postures), pranayama (breathing exercises), and meditation are common components of yoga in various forms (dhyana). Yoga gives women a way to take control of their own health and well-being because it may be done in a group setting or on one's own dime. Yoga postures allow for the identification and stretching of the pelvic floor muscles as well as the strengthening and stretching of the pelvic floor synergists of the hip and back. According to one theory, the pelvic floor muscles may be impacted by the obturator fascia in the hip muscles, such as the obturator internus. Finally, yoga can help reduce the sensitivity of the nervous system. In prior research of yoga practitioners, it was discovered that practising yoga increased strength, flexibility, and cardiorespiratory capacity as well as decreased sympathetic nervous system activity, inflammatory markers, and cortisol levels.

The data collected is processed and analyzed in order to achieve the research's purposes, and it is presented in a logical order in various areas of the study. The purpose of this study is to examine the data obtained in order to determine the Impact of Yoga on Mental Health and Pelvic Pain - Post Pregnancy”.

REVIEW OF LITERATURE

PREGNANCY AND PELVIC PAIN

Curtis et al. (2012) reviewed published papers between 2015 and 2020 to see if yoga might be an effective technique during pregnancy or postpartum. Research published between January 2015 and June 2020 was retrieved from PubMed, EBSCO, Wiley and Science Direct databases. A total of 14 studies with 1116 participants each matched the inclusion criteria. It was found to have a substantial impact on reducing the number of caesarean sections performed ($P = 0.002$), labour pain ($P = 0.001$), anxiety ($P = 0.003$), and depression ($P = 0.001$). Psychological well-being, immunological function, and embryonic growth inside the womb all saw substantial gains (all $P < 0.05$). Yoga appears to be beneficial for both pregnant and postpartum women, according to the research. More high-quality and well-controlled randomised controlled studies are needed to better understand the benefits of yoga therapies for pregnant women at different stages of pregnancy.

Ayanniyi, Sanya, and Ogunlade (2006) studied the prevalence of back pain among pregnant women and its pattern. 2,187 pregnant women were surveyed using a closed-ended questionnaire that had been pretested. Pregnancy-related back pain characteristics, prevalence, and type data were collected. It was shown that 52.5% of pregnant women suffered from back pain. 66.4 percent of the PW had low back pain, 24 percent had posterior pelvic pain, and 9.6 percent had high back pain among those with back pain. Pregnancy-related back pain was alleviated for about half of the women who sought help.

Malmqvist et al. (2012) conducted the study to determine the prevalence of low back pain (LBP), pelvic pain (PP), and lumbopelvic pain (LPP) during pregnancy. Those who were fluent in the Norwegian language and had given birth at Stavanger University Hospital were invited to participate in this study. Participants in the study (569) were women who were at least 36 weeks pregnant and carrying a singleton. Data on the mothers' demographic characteristics, pain patterns, and intensity were gathered by means of a questionnaire that was sent out. The Oswestry Impairment Index was used to determine the degree of disability. Pregnancy-related pelvic pain was experienced by around half of the women. Pregnant ladies with moderate to severe LBP were reported by 10 percent of the women. Pregnant women who suffer from moderate to severe pelvic discomfort report a significant decline in their general well-being.

Pierce et al. (2012) studied to examine the prevalence and type of lumbar back pain and pelvic girdle pain (lumbo-pelvic pain-LPP) during pregnancy. Few pregnant women reported discomfort in the symphysis pubis or pelvic girdle, but most had low back pain in the lower back and sacroiliac region. In this descriptive cross-sectional study, the pattern and characteristics of LPP were examined. The study included pregnant women in their third trimester. To compile information on expectant moms' demographics, a poll was administered to expectant respondents. The results of the survey were utilised to identify mothers who were experiencing lumbar pain. A body diagram was then utilised to identify between lumbar low back pain, sacroiliac pain, pelvic girdle discomfort, or a combination of all three. In order to quantify pain severity, researchers used the Visual Analogue Scale and the Oswestry Disability Index. During pregnancy, 71% of women reported experiencing lumbo-pelvic pain (LPP), which was linked to multiple pregnancies and a history of LPP. The daily routines of mothers with LPP were disrupted. Only a small percentage of women with LPP symptoms and functional impairment received therapy for their specific symptoms.

Ramachandra et al. (2015) did this investigation to find out how common musculoskeletal dysfunction is during pregnancy. Content validation and translation into the local language were both performed on a questionnaire designed to determine if it contained any questions about musculoskeletal dysfunction. 261 primiparous pregnant women were given the survey in their native language. Sixty-four and a half percent of the mothers complained of cramps in their calves. Thirty-seven percent of women reported foot discomfort, and thirty-three percent reported low back pain when pregnant, respectively. In the second trimester, 47.8% of women reported calf discomfort, 42% reported low back pain, and 37% reported pelvic girdle pain. It was found that factors including musculoskeletal dysfunctions and general discomforts impair daily activities during pregnancy. The common discomforts of pregnancy need to be studied by health professionals in order to develop a complete programme for prevention and treatment during the various trimesters of pregnancy.

Kokic (2017) examined the impact of a prenatal exercise programme on the discomfort in the lower back and pelvis. The experimental group (20) and the control group (45 women) were selected at random (22). In addition to a daily brisk walk of 30 minutes, the study participants engaged in twice weekly fitness instruction that included both aerobic and resistance activities. Pregnancy-related lumbopelvic pain was evaluated using a numeric rating scale (NRS), the Roland-Morris Disability Questionnaire (RMDQ), and the Pelvic Girdle Questionnaire (PGQ). Participants in the control group received usual prenatal care and maintained a normal level of activity. The exercise responses were effectively monitored at an intensity of 13–14 using the Borg Rating of Perceived Exertion scale (RPE). There were no side effects associated with the fitness programme. Study and control groups had no significant differences in lumbopelvic discomfort during pregnancy. However, the percentage of women in the experimental group who experienced pain was lower than that of the women in the control group (55%). (81.8 percent). Study participants' lumbopelvic pain had significantly decreased by the third trimester (the 36th week of gestational age, or GA), according to the results of the pain evaluation. Pelvic girdle pain symptoms improved, as did PGQ score and decreased level of impairment (RMDQ) at 36 weeks.

PREGNANCY AND YOGA

Hamdiah et al. (2017) studied prenatal yoga to see how it affected the blood pressure, anxiety, and heart rate of primigravida women. Purposeful sampling was used to choose 39 first-time mothers, all

of whom had given birth. HRSA (Hamilton Anxiety Rating Scale) was employed in the experiment. Prenatal yoga reduced systolic blood pressure ($P=0.045$), anxiety ($P=0.005$), and foetal heart rate ($P=0.010$) statistically significantly. Prenatal yoga had no effect on diastolic blood pressure, according to a study with a p-value of 0.586 (significant difference >0.05). Prenatal yoga had a substantial impact on systolic blood pressure, anxiety levels, and the foetal heart rate in first-time mothers, according to the study's findings.

ShilpaBabbar et al. (2016) conducted a study to evaluate the benefits of prenatal yoga practise for women with low back pain, stress, anxiety, depression, and insomnia. Pregnancy-related stress, anxiety, and depression, as well as symptoms of labour and delivery, restlessness, and fatigue, are all typical topics for prenatal assessments. Pregnant women who practised yoga once a week for seven weeks saw a significant decrease in their anxiety levels.

Field T (2016) discovered that yoga was more beneficial than either a standard treatment or a waitlist-based treatment in alleviating back pain. Yoga has a positive impact on a variety of medical and psychological issues. Some examples are post-traumatic stress disorder (PTSD), pregnancy-related depression (prenatal and postpartum), and tension and anxiety throughout the pregnancy.

Davis K et al. (2015). Studied Pregnant women with symptoms of depression and anxiety but However, prenatal yoga only considerably exceeded therapy as usual when it came to reducing the negative effects of anxiety and depression, according to the results of this study.

Kawanishi Y et al. (2015) conducted a study that included pregnant women, a random control trial, and yoga intervention. Prenatal yoga has been shown to alleviate pelvic pain, according to the research. It also enhances a woman's emotional and physical well-being (relieving worry, stress, and depression, for example), as well as her baby's health and development.

James Newham (2014) researched that 59 first-time mothers were asked to self-report their emotional status. Postpartum depression can be prevented by reducing stress, anxiety, and depression in pregnant women by using yoga during their pregnancies, according to a study.

Qinxian Jiang et al. (2014) Sufferers of depression or lumbo-pelvic discomfort can comfortably practise yoga. Yoga, a form of therapy, is superior to conventional prenatal activities in terms of effectiveness. Yoga is a safe and effective treatment option for pregnant women, according to experts

Field T et al. (2012) a 12-week yoga or massage treatment regimen reduced melancholy, anxiety, back pain, and leg pain in 84 prenatally depressed women.

Sun YC et al. (2010) found that yoga during pregnancy helps to reduce pregnant discomforts and improves childbirth self-efficacy in 88 primigravida women at 26 to 28 weeks of gestation.

Jean Byrne (2008) Many of the common discomforts of pregnancy can be alleviated by practising yoga throughout pregnancy, such as back pain, sleeplessness, heartburn, and sciatica. Posing in a way that supports optimal birth position for the pregnant child is possible through the use of Principles of Optimal Fetal Positioning.

Pennick and Young (2008) experiment conducted on pregnant women found that when compared to women receiving standard care, 60 percent of those who took part in a yoga intervention reported less pelvic and back pain after practicing stretching exercises.

Chen PJ et al (2017) conducted a longitudinal research on Pregnant women at 16 weeks of gestation were randomly assigned to one of two groups using Clinstat block randomization). The twenty-week intervention included two weekly yoga sessions, whereas the control group received only regular prenatal care. Every four weeks between 16 and 36 weeks of pregnancy, salivary cortisol and immunoglobulin levels were measured in participants before and after yoga. Following yoga, salivary cortisol levels were lower in the intervention group ($p=0.001$), whereas immunoglobulin A levels rose ($p=0.001$). Long-term salivary immunoglobulin A levels were greater in the intervention group than in the control group ($p=0.018$). Children born in the intervention group weighed more ($p<0.001$) than those in the control group. They came to the conclusion that prenatal yoga considerably lowered the stress of pregnant mothers and improved their immune system.

Kawanishi et al (2016) we used logistic regression models to take into account potential confounders in our analysis of 2692 women. Prenatal Yoga was linked to a decreased likelihood of

ritodrine hydrochloride use, according to the researchers (0.77; 95 percent CI 0.61-0.98). Prenatal Yoga is a great alternative therapy for expectant moms.

Kusaka M et al. (2016), in hospital, 60 healthy primiparas tested without issues in a pre-experimental one-group pre- and post-test. As part of the study, participants were required to practise yoga at home from the 20th week of pregnancy to the time of delivery. They came to the conclusion that the stress-relieving properties of yoga can be felt immediately during pregnancy.

Sharma M and Branscum P, yoga is a potential intervention for pregnant women. Six articles from the United States, six from India, two each from Taiwan and Korea, and one each for Korea and Thailand met the inclusion criteria. Ten of the fifteen trials found improvements in the outcomes of birth.

Polis RL et al. (2015) pregnant women between the 35th and 37th weeks of gestation were assessed during a 1-on-1 yoga session. In the end, they found that 26 yoga postures were safe for pregnant women and their unborn foetuses.

RESEARCH OBJECTIVE

1. To assess the level of Mental health and Pelvic pain for post pregnancy conditions.
2. To determine the effectiveness of Yoga on Mental health on pregnant women.

NEED FOR THE STUDY:

Since the previous two to three decades, the prevalence of post-pregnancy depression and pelvic discomfort has increased. Postpartum depression and anxiety are sometimes referred to as the "Baby blues" by non-medical people. Pelvic pain is also a common post-pregnancy ailment. Pregnancy-related symptoms that are common in postpartum women include insomnia, anxiety, depression, dissatisfaction and pelvic gridle pain. The pelvic pain, stress, and eventual anxiety brought on by the aforementioned variables will all be lessened as a result of this study.

RESEARCH METHODOLOGY

During the postpartum period, low back and pelvic pain is common, and some authors believe that this is due to the physical changes that occur during this time. In this regard, it is necessary to perform research that investigates the impact of therapeutic activities on the prevention and treatment of Post Pregnancy low back and pelvic discomfort. Yoga can be used to prevent and treat low back and pelvic discomfort after childbirth, and a systematic review of this practice is needed. The title of present research is **Impact of Yoga on Mental Health and Pelvic Pain - Post Pregnancy** .All of the pregnant women in Rajasthan's Udaipur district comprised the study's subject population.

DATA ANALYSIS

Table 1: Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Age	120	1	3	1.62	.553
Education Status	120	4	8	6.89	1.208
Age at Marriage	120	1	4	2.68	.722
Yearly Family Income	120	1	5	3.63	1.256
Valid N (listwise)	120				

Mean, standard deviation and number of respondents participated were presented in the descriptive statistics table, for the personal profile of respondents. Highest Mean value is observed for education status (6.89).

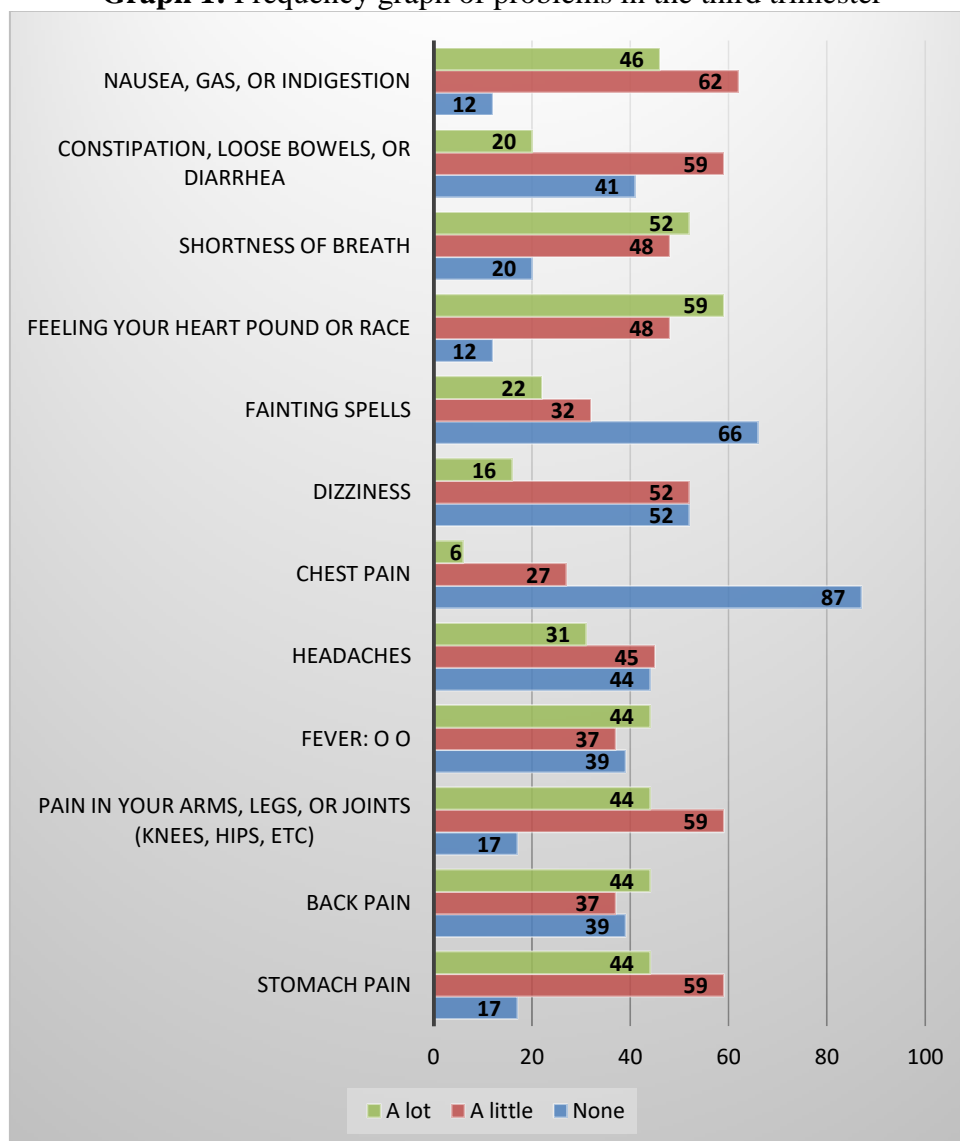
PROBLEMS FACED IN THE THIRD TRIMESTER

Table: 2 Frequency table of problems in the third trimester

Problem	None	A little	A lot	Total
Stomach pain	17	59	44	120
Back pain	39	37	44	120
“Pain in your arms, legs, or joints	17	59	44	120

(knees, hips, etc.)”				
Fever	39	37	44	120
Headaches	44	45	31	120
Chest pain	87	27	6	120
Dizziness	52	52	16	120
Fainting spells	66	32	22	120
Feeling your heart pound or race	12	48	59	119
Shortness of breath	20	48	52	120
Constipation, loose bowels, or diarrhea	41	59	20	120
Nausea, gas, or indigestion	12	62	46	120

Graph 1: Frequency graph of problems in the third trimester



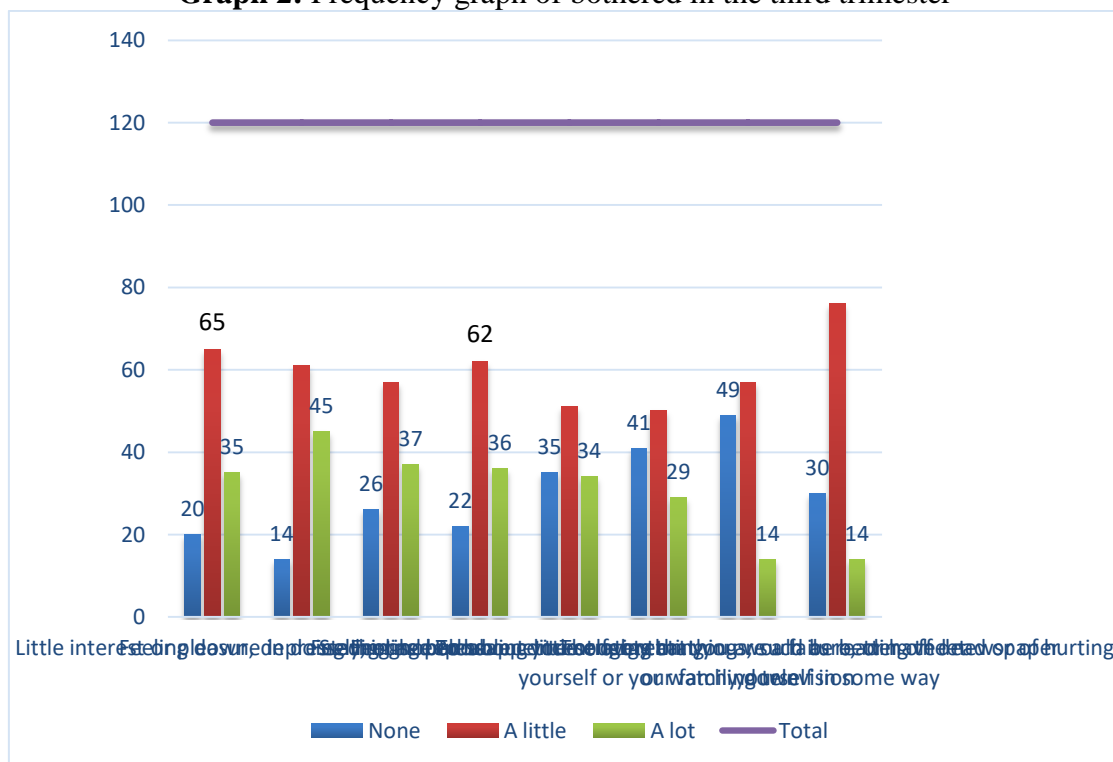
When respondents were asked about the extent of physical problems the respondents faced during their third trimester, the responses collected are shown above. From the data it can be seen that the problems that have increased in the third trimester are “Stomach pain, Back pain, Pain in your arms, legs, or joints (knees, hips, etc.), Feeling your heart pound or race, Shortness of breath and Nausea, gas, or indigestion”. Also, the problems that have decreased are recorded as Fever, Headaches, Chest pain and Dizziness. Thus, it can be noted that pain in stomach, back and joints have increased and thus pelvic pain in the last trimester also increases.

BOTHERED IN THIRD TRIMESTER

Table 3 Frequency table of bothered in the third trimester

Problem	None	A little	A lot	Total
Little interest or pleasure in doing things	20	65	35	120
Feeling down, depressed, or hopeless	14	61	45	120
Staying asleep	26	57	37	120
Feeling tired or having little energy	22	62	36	120
Poor appetite or overeating	35	51	34	120
Feeling bad about yourself, or that you are a failure, or have let yourself or your family down	41	50	29	120
Trouble concentrating on things, such as reading the newspaper or watching television	49	57	14	120
Thoughts that you would be better off dead or of hurting yourself in some way	30	76	14	120

Graph 2: Frequency graph of bothered in the third trimester

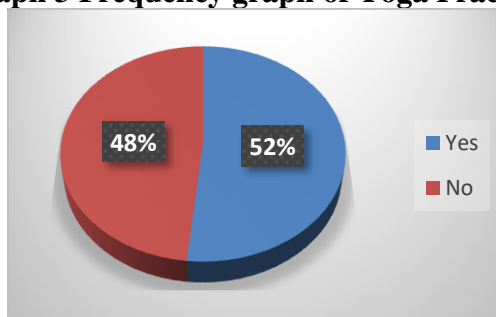


Further, when the respondents were asked about the extent to which the respondents have been bothered by various psychological problem. It can be seen form the results here that the problems that have shown increase in their intensity are “Little interest or pleasure in doing things, Feeling down, depressed, or hopeless, Staying asleep, Feeling tired or having little energy and Poor appetite or overeating”. The psychological problem that have been found decreased is “Feeling bad about yourself, or that you are a failure, or have let yourself or your family down, Trouble concentrating on things, such as reading the newspaper or watching television and Thoughts that you would be better off dead or of hurting yourself in some way”. Thus, the pregnant women become more emotionally vulnerable in their third trimester.

Table 4: Frequency table of Yoga Practices

Yoga Practices					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	62	51.7	51.7	51.7
	No	58	48.3	48.3	100.0
	Total	120	100.0	100.0	

Graph 3 Frequency graph of Yoga Practices



When respondents were asked about do they find the yoga practices easy to follow. The results show that 52% of them finds it easy and 48% finds it difficult. Thus, a large number of respondents are finding yoga practices difficult to follow and therefore they need to be motivated and trained for performing yoga easily.

ANALYSIS OF POST PREGNANCY

This section analyses the post pregnancy experiences of respondents as follows;

To find the significant correlation between the level of mental health/pelvic pain and yoga interventions following hypothesis is framed;

H_{01} There is no significant correlation between the level of mental health/pelvic pain and yoga interventions among the pregnant women post pregnancy.

H_{A1} There is a significant correlation between the level of mental health /pelvic pain and yoga interventions among the pregnant women post pregnancy.

Table 5: Descriptive Statistics table

Descriptive Statistics			
	Mean	Std. Deviation	N
Mental health	3.54	.969	120
Pelvic Pain	3.59	.893	120
Post Pregnant Women	3.68	.918	120

Descriptive statistics for mental health and pelvic pain among the pregnant women post pregnancy are shown above. From the data it can be stated that mean value for pelvic pain is greater than that of mental health.

Table 6: Correlation table

Correlations				
		Mental health	Pelvic Pain	Post Pregnant Women
Mental health	Pearson Correlation	1	.694**	.757**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	111.792	71.542	80.125
	Covariance	.939	.601	.673
	N	120	120	120
Pelvic Pain	Pearson Correlation	.694**	1	.769**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	71.542	94.992	75.075
	Covariance	.601	.798	.631
	N	120	120	120
Post Pregnant Women	Pearson Correlation	.757**	.769**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	80.125	75.075	100.325
	Covariance	.673	.631	.843
	N	120	120	120

** . Correlation is significant at the 0.01 level (2-tailed).

Above table shows the correlations test applied to test the established hypothesis. From the results it can be stated that the sig value is less than .05 and therefore it can be stated that “there is a significant correlation between the level of mental health/pelvic pain and yoga interventions among the pregnant women post pregnancy”. Thus yoga has been proved to be an effective intervention for preventing and minimizing the pelvic pain and promoting good mental health among pregnant women during and post pregnancy.

CONCLUSION

Finally, the findings of this study show that a yoga programme has a positive impact on the health of prim gravid mothers and the quality of their babies' births. This study's findings show that yoga is well-suited to pregnant women and can be beneficial in ensuring a safe birth with the fewest inconveniences.

Pregnancy-related physiological reversals and complications that occur from the first through third trimesters. Doing yoga can help alleviate some of the discomfort that pregnant women experience, such as pelvic pain. Participants were given a pamphlet on yoga techniques and a 45 minute video as well as regular telephone follow-ups from the researcher. 4 times a week, between weeks 24 and 36, the expectant mother did a variety of exercises, including the pyramid and wide-leg squats as well as circular arm and shoulder movements to open the chest cavity. These exercises were found to be effective in reducing the discomfort of pregnancy and increasing one's level of autonomy during childbirth.

Limitations:

The study has following limitations;

1. The study has a limited sample size. As a result, extrapolating the findings to a larger population proves challenging.
2. It's also unclear what components of yoga are responsible for its positive effects on pregnant women, as there are no conventional prenatal yoga training programmes.
3. Participants biasness and there reluctancy to respond is also a major limitation.

Suggestions for Future research:

We provide the following recommendations for further research in light of the shortcomings of the current literature;

1. In order to give more trustworthy proof of the efficiency and applicability of yoga therapies, randomized controlled trials are required.
2. The present studies mostly examined how yoga could help postpartum women with their pelvic discomfort and mental health issues. “The benefits of yoga on various phases of pregnancy and various populations of pregnant women should be the focus

of future research”.

3. It is advised that more studies be conducted to clarify how yoga affects pregnancy, labour, and the foetus.
4. More regulated randomised controlled studies are needed to better understand the benefits of yoga therapies for pregnant women at different stages of pregnancy.

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