

Effects of Yoga Technique/ Routine Care on Back Pain in Pregnancy

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ABSTRACT

LBP is normal during pregnancy and affects about 50% of pregnant women. Yoga is a common method of exercising the mind to relieve unidentified low back pain. This paper is intended to analyse the impact of yoga / routine treatment on back pain through an experimental study with the structured questionnaire using Likert scale. The study was performed on 50 pregnant women as per the inclusion criteria which revealed that the reduction in back pain in pregnant women was substantially influenced in yoga (p-value <0.005). The study showed that the impact of yoga was important in minimising lower back pain and enhancing lower back functionality.

Keywords: Low back pain, Yoga therapy, Pregnancy

I INTRODUCTION

Pregnancy is a word used for a foetus' tenure inside the womb or uterus of a woman.

Pregnancy literally implies that biomechanical and physiological improvements arise quickly as the body adapts to accommodate the growing foetus. Woman has multiple pregnancies and a number of physical and emotional signs will correlate with them. Help, equipment, services and acceptable forms of exercise and exercise quantities during pregnancy should be given for expectant mothers to minimise the likelihood of accidents and boost prospects of successful pregnancies and childbirth.

The time between the last menstrial periods of delivery is typically about 40 weeks, or sometimes only 9 months. Three segments of pregnancy, or trimesters, are referred to as health care professionals. The key events are listed below in each quarter (Office on Women's Health, 2010).

(a) First Trimester (Week 1 to Week 12)

The pregnancy activities begin with the conception in which a sperm penetrates an embryo. The fertilised egg (referred to as zygote) then enters the fallopian tube of women into the womb and inserts into the uterine wall. Zygote is a community of cells comprising the embryo and the placenta later. The placenta binds the mother with the foetus and fills the foetus with oxygen and nutrients (ACOG, 2015).

(b) Second Trimester (Week 13 to Week 28)

- (i) The standard ultrasound plan for searching for birth defects between 18 and 20 weeks will also diagnose a baby's sex.
- (ii) A woman will start to experience activity at 20 weeks.
- (iii) Footprints and fingerprints formed at 24 weeks, foetuses sleeping and waking periodically.

(c) Third Trimester (Week 29 to Week 40)

- (i) The bones are fragile and still almost total at 32 weeks and the eyes will open and shut.
- (ii) Infants born before 37 weeks are known as early childhood children. These kids are increasingly at risk for disorders such as defects in puberty, vision and hearing and

cerebral paralysis. Children born in the time of pregnancy between 34 and 36 weeks are known as late premature (Spong et al., 2013).

- (iii) Children who have been born between 37 and 38 week spans of birth, historically known as "early term," are also more likely to pose health threats than children who were born at age 39 or older, which is currently deemed complete (CDC, 2015).
- (iv) The complete term is known for infants born 39 and 40 weeks in pregnancy. Full-term babies had greater health effects than younger or later infants delivered in some instances. Thus, it is better to allow the lungs, brain and liver time of the child to completely mature at or after 39 weeks as there is no earlier medical justification to have delivery (CDC; ACOG, 2015; NICHD, 2013).
- (v) The late word shall be considered for infants born 41 weeks to 41 weeks and 6 days.
- (vi) Infants born 42 weeks later are declared to be after term (NICHD, 2013).

(d) Back pain during pregnancy:

During pregnancy a woman will have a few irritating concerns, which are not harmful but may need some attention to cope with pregnancy problems. These involve back pain, cramps, urinary frequency and incontinence, sickle and heartburn, varicose veins, constipation, bloating and thrush. May include where back pain is too common among pregnant woman which affects their movements and routine activities (Cunningham et al., 2014)

In addition, discomfort arises on the sacroiliac spine where the pelvis crosses the spine. There are several potential explanations for this. Commonly known causes of Back Pain in Pregnant Women are:

- (i) **Weight gain:** Women usually gain between 10 and 15 kg during a stable pregnancy. This weight must be supported by the neck. This can add to lower back discomfort. The growing weight of the baby and womb often places strain on the blood vessels and nerves in the pelvis and back.

- (ii) **Posture changes:** The centre of gravity changes conception. This means that the pregnant woman starts to change her stance and her manner of moves – sometimes without knowing it. Back pain or strain may result.
- (iii) **Hormone changes:** Her body produces hormones called relaxation during pregnancy which causes ligaments to relax in the pelvic region and the articulations to lose in preparation for the birth process. The same hormone can affect ligaments, which loosen the spine and cause instability and discomfort.
- (iv) **Muscle separation:** When the uterus extends, the middle of the seam may be divided by two parallel muscle sheets (the rectal abdominal muscles), extending from the rib cage through the pubic bone. This breakup can aggravate back pain.
- (v) **Stress:** Emotional discomfort in the back, which may sound like back pain or back spasms, may trigger muscles strain. Pregnant women can notice that back pain improves during stressful pregnancy.

II LITERATURE REVIEW

In Yogic terms this vital life force or energy is called 'prana'. And many other terms are used like the Chinese name it as 'chi' or the Japanese term it as 'ki'.

Yoga as a system of thought and Sadhana has a primary reference to the philosophical system that flows from the teachings of the ancient India yoga philosopher, Patanjali Maharshi Patanjali is believed to have completed his Yoga sutra around the 3rd or 4th century BC but archaeological evidences and the study of ancient scriptures suggest that yoga was sadhana in ancient India as early as 3000 BC.

The word Yoga derives from the root "Yuj" which means 'to yoke', 'tomaster', 'to control'. Yoga is the fact of yoking; of placing under the yoke, of mastering. For this reason, the following 'Sutra'; "YOGAS CITTAVRTTI NIRODHAH", defines yoga as the restraint of the mental processes (Tola Fernando et al., 1991). The way to realize and experience it (the union of Atman and the self-hood), is to make the mind absolutely pure. Yoga has also been defined as wisdom or awareness of functioning, harmony and moderation between practices (Lyenkar et al., 2006). Out of that yoga practice that the perfection in knowledge-of-the diffusion comes about. And so, it is said by the teacher(s); "Yogas tattva-jnane-rtha" means, 'Yoga is for the purpose of knowledge of truth'. The goal of yogic life is truly infinite with vistas of achievement which are so vast that we can't even comprehend them.

This mechanism calms muscle stress and align the body's essential strengths. Yoga manages the respiration when maintaining the corpse in those places. The critical energy sources are moving routes.

Yoga postures, however, naturally push and stretch certain nerves, muscles and pathways so that the energy may flow easily and relieve the stress in the points. This mechanism balances the whole body and helps it to repair itself.

The great sages of the east were masters of preventive health care. They were able to determine imbalances through traditional diagnostic methods, and thus avoid sickness. They knew Postures, certain breathing exercises, and natural diets to balance out specific conditions.

There is a great deal more to yoga than relaxing and versatility — while these two are the key explanations that an individual should just imagine pursuing yoga. There are some other advantages that might not be well known: better balance and strength, Ease of menopause effects, Energy boost, Metabolism improve and weight loss, cardiovascular health improved.

Walking and cycling, stretching, water, Qi, and yoga have both been documented to be healthy through breastfeeding. Aerobics have been documented as healthy (Kim et al., 2012; Vallim et al., 2011).

The incidence of back pain has been examined in 855 pregnant women who have obtained birth follow-up every 2nd week, from the 12th week of pregnancy. The prevailing 9-month duration was 49%, with a prevailing 22-28% between 12th week and delivery. Due to 22% of women experiencing discomfort at weeks 12 of birth, the rate of 6 months was 27%. The pain was categorised into three categories on the basis of pain drawings; pain was concentrated in the sacroiliac areas in one category and intensified through pregnancy; pain either diminished in the other categories, or did not shift. Just 10 women (1 percent) experienced real dermatomal sciatica. Back concerns before birth, such as young age, multiplicity and multiple physical and psychological causes, raised the likelihood of back pain.

According to the prior evidences, the results of research suggest yoga to be a promising as preventive therapy in high-risk pregnancy. In the background of the above this research was designed to explore the effects of yoga on back pain during pregnancy.

III OBJECTIVE AND METHODOLOGY

- (a) **Objective** - Investigate the impact on back pain during pregnancy from yoga techniques / routine treatment.

(b) **Methodology** - This was a basic experimental design for testing the efficacy of yoga during pregnancy. Study was carried out at the Rawal fertility clinic and at the SBPASS complete holistic therapy centre.

(i) **Research Subjects** - In this analysis, all women pregnant in quarter III were the focus demographic. 50 pregnant people were chosen by random selection in quarter III of this study. The conditions of inclusion were: pregnant women who had lower back pain and functional skills over the three-month span, were not provided a negative background of breastfeeding, were able to relate well, comply and were ready to respond.

(ii) **Intervention** - Yoga has been granted twice a week for three weeks to the yoga community. Yoga was performed at the SBPASS complete holistic therapy centre for 60 minutes every morning session. Yoga was a collection of warm-up, breathing (pranayama), and core motions such as Tadasana, Baddakosana, Parsvakonasana, Dandasana, Supthabaddakosana and Shavasana. Yoga has been performed by a maternity yoga specialist.

(iii) **Instrument** - Pressure in the back with a VAS was assessed. During the pre- and post-test pain and functional capacity were tested with a pre-structured questionnaire to gather knowledge sufficient to explore the

impact of yoga on back pain during pregnancy.

(iv) **Ethical Consideration** - The Ethical Committee has received ethical consideration for this study. Per respondent was signed with written informed consent in prior to data collection.

(v) **Data Analysis** - For statistical analysis of data, various methods such as percentage (%) analysis, Mean (M), Standard Deviation (SD) was used. ANOVA and t-test were used in computing significance of difference in mean values. (.05) level is used as cut-off for the testing of significance of difference used. All the statistical work has been done on computer using SPSS software under expert guidance and supervision.

IV FINDINGS AND ANALYSIS

The present study was aimed to explore the effects of yoga technique/routine care on back pain in pregnancy. The study was performed on 50 pregnant women as per the inclusion criteria. The mean age of the study respondents was 28.24 ± 4.04 years. The study respondents were similar with respect to socio-demographic and medical characteristics.

The results have signified that the majority of the study subjects have a good education qualification while there were only two respondents who're not graduated.

Table 1
Parity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Multiparous	17	34.0	34.0	34.0
	Null	33	66.0	66.0	100.0
	Total	50	100.0	100.0	

The results shown in above table has signified that 34% of the study respondents were multiparous, while 66% were null.

Table 2
Low Back pain?Pre-pregnancy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no pain	50	100.0	100.0	100.0

The results shown in above table has signified that the study respondents (100%) said that they had no low back pain before the pregnancy.

Table 3
Yoga:Pre-Pregnancy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no	50	100.0	100.0	100.0

From the above table, the study signified that none of the study subjects were practicing yoga in the past/before the pregnancy.

Descriptive information for the subjects participating in the study is presented in the table below (Table 4).

Table 4
Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Age	50	16.00	20.00	36.00	28.2400	0.57254	4.04848
Height (M)	50	0.35	1.40	1.75	1.6070	0.01061	0.07503
weight (KG)	50	35.00	50.00	85.00	65.3200	1.20083	8.49115
BMI m2	50	15.10	19.50	34.60	25.1100	0.38129	2.69612
Pre-session Back Pain intensity	50	8.00	1.00	9.00	5.0800	0.27081	1.91493
Pre-session Roland Morris Disability (RMQ)	50	5.00	18.00	23.00	22.5400	0.14627	1.03431
Pre-session Pregnancy Mobility Index	50	24.00	48.00	72.00	63.3600	1.12948	7.98662
Post-session Back pain intensity	50	1.00	0.00	1.00	0.2200	0.05918	0.41845
Post-session Roland Morris Disability (RMQ)	50	2.00	0.00	2.00	0.0600	0.04435	0.31364
Post-session Pregnancy Mobility Index	50	3.00	0.00	3.00	0.2000	0.09476	0.67006
Valid N (listwise)	50						

Table 5
Related Samples Wilcoxon Signed Rank test

Pre-session Back Pain intensity			Post-session Back pain intensity			p value
Mean	Standard Deviation	Median	Mean	Standard Deviation	Median	
5.08	1.91	5.00	0.22	0.42	0.00	<0.005

The above table has signified that there was a significant difference in pre-session and post-session back pain intensity (p-value <0.005).

Table 6
Related Samples Wilcoxon Signed Rank test

Pre-session Roland Morris Disability (RMQ)			Post-session Roland Morris Disability (RMQ)			p value
Mean	Standard Deviation	Median	Mean	Standard Deviation	Median	
22.54	1.03	23.00	0.06	0.31	0.00	<0.005

The above table has signified that there was a significant difference in pre-session and post-session Roland Morris disability score (p-value <0.005).

Table 7
Related Samples Wilcoxon Signed Rank test

Pre-session Pregnancy Mobility Index			Post-session Pregnancy Mobility Index			p value
Mean	Standard Deviation	Median	Mean	Standard Deviation	Median	
63.36	7.99	66.00	0.20	0.67	0.00	<0.005

The above table has signified that there was a significant difference in pre-session and post-session pregnancy mobility index (p-value <0.005).

V DISCUSSION

The study was performed with an aim to explore the effects of yoga technique/routine care on back pain in pregnancy. The study was performed on 50 pregnant women as per the inclusion criteria. The mean age of the study respondents was 28.24 ± 4.04 years. The study respondents were similar with respect to socio-demographic and medical characteristics.

The findings revealed that the impact of yoga on lower back pain (p-value < 0.005) was important. Pregnancy back pain is the lumbosacral region pain. Alternative interventions to minimise low back pain during pregnancy were yoga (40.6 per cent) was reported in line with previous study (Wang et al. 2005). Yoga is a type of meditation that pregnant people should perform Yoga. In addition to promoting blood pumping, back pain, waist, aches and swelling, yoga will make the body more relaxed

and relaxing (Kozier 2008). Yoga should be practised routinely to boost the standing, to walk longer, to move quicker and to do it without leaving any discomfort afterwards. The role and usefulness of yoga will resolve issues correlated with the body's anatomical functions (Brayshaw, 2007). This research also indicates that Yoga has a big impact on enhancing lower back mobility.

The results have signified that the majority of the study subjects have a good education qualification while there were only two respondents who're not graduated. The results also signified that majority of the study subjects are unemployed. The study was performed on pregnant women during pregnancy most of the women don't prefer to work; this may be a reason behind the observed results. However, there is almost equal number of employed and unemployed respondents.

In our study it was found that the majority of the respondents (66%) have null parity and only 34% of the study respondents were multiparous. In our study it was found that none of the respondent was an active smoker, the study was performed on female respondents and this may be the reason of the majority of the non-smoker study subjects. Studies have reported that maternal smoking during pregnancy have several adverse effects on the baby health and also may result in a problematic delivery (Wehby et al., 2012).

The results shown in above table have signified that the study respondents (100%) said that they had no low back pain before the pregnancy. The results have also signified that none of the study subjects were practicing yoga in the past/before the pregnancy.

In our study, Roland Morris's injury ratings and maternity independence index (p -value < 0.005) have been shown to be important in pre-session and post-session variations. Results have showed an important disparity in the severity of the back pain (p -value < 0.005) before and during session. The results indicate that the enhancement in lower back functional capacity has a major impact in Yoga.

Pregnancy Yoga is one of the pregnancy treatment exercises to enhance pregnancy or childbirth in contrast with pregnant people who do not perform pregnancy workouts (Thompson, 2004). This is aligned with recent a study that has demonstrated that pregnancy yoga helps to alleviate back pain in pregnant women (Resmi et al., 2017).

VI CONCLUSION

It is concluded that the impact of yoga was important in minimising lower back discomfort and enhancing lower back functionality. It is also necessary for pregnant women to use this treatment to relieve back pain during pregnancy.

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