A Study On The Effect Of Integrated Yoga On Pregnancy Complications

Dr. Radhika Chandrakar*, Purnendra Chandrakar**, Riddhi Sahu***

** Assistant Prof., Dept. of yoga, Shri Rawatpura Sarkar university, Raipur, Chhattisgarh, India.*
***Research scholar, Dept. of yoga, Shri Rawatpura Sarkar university, Raipur, Chhattisgarh, India.*
****Research Scholar, Dept. Of Yoga and Human Consciousness, Dev Sanskriti Vishwavidyalaya,Gayatrikunj, Shantikunj, Haridwar, Uttarakhand, India.*

Abstract

Background- *For any woman, becoming a mother is a joyous occasion for her and the whole family but during pregnancy, some discomforts are encountered due to hormones and other changes in the body. Regular yoga exercises and follow up had a positive impact on results regarding outcome improvement and reduced complication rate.*

Objective- *The purpose of the present study was to assess the effect of yogic package on pregnancy complications.*

Method- *In this study, 80 primigravida (age group of 20-30 years) have been taken, belonged to urban area of Chhattisgarh and purposively selected, then subjects randomly divided in two groups, control group (n=40) and experimental group (n=40). The control group did not take any package. They were instructed to just walk in the morning for 10 minutes. To assess their general health, the researcher has communicating time to time to the subjects. Then the experimental group was divided into Subgroups so that all subjects can be accessed. Each group had taken the yogic practices for 6 days in a week. They performed 45 minutes yoga included physical posture, breathing, chanting of mantra and relaxation techniques.*

Findings- *Results shows that p<22.84 and significant at 0.001 significant level. Hence yogic practices significantly increase the level of health and decrease the pregnancy complications in the experimental group as compared to control group.*

Conclusion- *The findings suggest that yogic package are very effective for mother, it decrease the level pregnancy complications and provide better health during pregnancy and after delivery.*

Keywords- *Primigravida, Yoga, Pregnancy Complications, Health.*

Introduction

Pregnancy is a very precious and important event in a woman's life. The concept of limiting the number of children is vital to an Indian woman today; hence pregnancy is no longer as casual a matter as it used to be decades ago. Today one can plan to become pregnant when needed and take good care to have a normal child. It is true that the development of the baby is affected by several maternal as well as foetal factors. Hypertension, diabetes, malnutrition, chronic renal disease etc. can cause harmful effects on the foetus. Similarly, chromosomal anomalies in the embryo and infections in the mother are known to cause several birth defects. These are prone to several complications in the new born period and even later in childhood. Apart from these causes, tension, fear, anxiety and chronic stress in the mother can cause serious problems, resulting in poor outcomes. (Narendran, Nagrathan, & Narendra, 2008)

Some statistics shows the level of social difficulties during pregnancy. In Chhattisgarh, 20%, 16% and 16% of the women experienced pregnancy, delivery and post delivery complications respectively. The pregnancy complication varies from the lowest of 16 percent in Bilaspur and Rajnandgoan and the highest of 43 percent in Mahasamund. (Sardana, 2016)

Complications of pregnancy may include high blood pressure of pregnancy, gestational diabetes, iron-deficiency anemia, and severe nausea and vomiting among others. ("What Are Some Common Complications Of Pregnancy?") Delivery before 39 weeks by labor induction or caesarean section is not recommended unless required for other medical reasons. (WHO, 2014) Complications during pregnancy may affect both women's health and the outcome of the pregnancy adversely. Early detection of complications during pregnancy and their management are important components of the safe motherhood programme. In the survey, all the eligible women who had given last live or still birth during the three years preceding the survey were asked if at any time during the pregnancy, they had experienced any of the following pregnancy related problems such as swelling of hands and feet, paleness, visual disturbance, vaginal bleeding, convulsions, weak or no movement of foetus, abnormal position of foetus and other problems. About 20 percent of the women experienced at least one pregnancy related problem. The proportion was higher among urban women (23%) than among rural women (19%) (Sardana, 2016) as well as Högberg, (2005) reported that annually more than half a million women die worldwide due to pregnancy complications. These disorders affect over 15% of pregnancies in developing countries, resulting in negative maternal and perinatal outcomes.

The area (Mahasamund dist.) has been chosen for the research work, the problem percentage is high in this region. Statistics represent that Mahasamund has 43 percent of the incidence of pregnancy complications that is high as compared to the other districts. **(**Sardana, 2016)

Complications During Pregnancy

Morning sickness usually appears in the early months of pregnancy and rarely lasts beyond the third month. Often it requires no treatment or can be relieved by such simple measures as eating dry crackers and tea before rising. (Pregnancy, n.d.).

Hormone-related delayed gastric emptying, cardiac sphincter relaxation, and stomach displacement by the growing uterus contribute to reflux could be caused of heartburning. **Constipation:** The woman should increase fiber and fluid intake. She also may use stool softeners.

Muscle cramps: The woman may relieve the so-called charley horse that occurs during sleep by dorsiflexing the foot of the affected leg. A calcium-phosphorus imbalance may contribute to increased frequency of this problem, although the causes are not clear.

Back pain: Growing anterior mass, shift in centre of gravity, and increased lumbar curve contribute to backaches. To relieve discomfort, the pregnant woman should wear well-fitting, low-heeled shoes and perform exercises that increase abdominal muscle tone.

Dependent oedema: Pedal oedema is a common third-trimester complaint related to decrease venous return from the extremities. She should report promptly any oedema of the face, hands, or sacral area to facilitate early diagnosis and management of pregnancy-induced hypertension.

Varicose veins: Decreased venous return from the extremities and compression of vascular structures by the growing uterus aggravates any weakness in the vascular walls and valves. Varicosities often occur in the legs, vulva, and pelvis.

Haemorrhoids: Temporary symptomatic relief may be obtained by Sits baths and analgesic ointments. The woman also should be instructed in how to reinsert the haemorrhoid with a well-lubricated finger, holding it in place for 1 to 2 min before releasing the pressure.

Vaginal discharge: A normal increase in vaginal discharge occurs during pregnancy. Common perinea hygiene usually is effective as a comfort measure; douching is contraindicated during pregnancy. The woman should contact her primary caregiver promptly if profuse, malodorous, or blood-tinged discharge occurs.

Dyspnoea: Shortness of breath occurs as the growing uterus presses on the woman's diaphragm. Elevation of the head and shoulders may provide some relief. The dyspnoea disappears when lightening occurs.

Pruritus: The normal stretching of the skin may generate itching on the breasts, abdomen, and vulva. Pruritic urticarial papules and plaques of pregnancy is the most common benign dermatitis of pregnancy. Occurring in

the third trimester, it usually resolves spontaneously after delivery. The patient is instructed to inform her primary caregiver if vulvo vaginal itching occurs in conjunction with an increase or alteration in vaginal discharge. (Pregnancy, n.d.)

C-section delivery - In today's situation when the access to obstetric care is growing day by day there has been a concern over the rising caesarean rates over the world. Caesarean section is the surgical Intervention in case of serious delivery complications. This surgical procedure has been saving lives for a long period of time. The concern for the caesarean rates is due to its rapid increase over the period.

- There is a risk of surgical mistakes, nicks and lacerations that may damage other organs and cause complications. (Davis, 1999)
- Cesarean patients have twice the risk of rehospitalization for conditions such as uterine infection, obstetrical surgical wound complications, thromboembolic conditions (blood clots), gallstones and appendicitis in the following year. Deep venous closts can travel to the lungs and brain causing pulmonary embolism or stroke, respectively. (Lydon-Rochelle, 2000)
- There is a risk of a negative reaction to the anesthesia administered in order to perform the surgery or a negative reaction to pain medication given after the procedure.
- Potential chronic complications from scar tissue adhesions include pelvic pain, bowel problems, and pain during sexual intercourse. (Ryding, Wijma, & Wijma, 1998) Scar tissue and chronic adhesions make future cesareans more difficult to perform, increasing the risk of injury to other organs. The risk of secondary infertility, miscarriage and ectopic pregnancy and unexplained stillbirth in subsequent pregnancies is also increased after a cesarean section.
- The total recovery time after a caesarean can extend from weeks to months, which affects many aspects of a woman's life. It can influence the bonding between mother and baby, particularly if there are complications. One in 14 women who had caesarean births report incisional pain six months or more after the operation. (Sakala, Declercq, & Corry, 2002)

Risks of Caesarean and Complications for the Baby:

Babies born by cesarean have a high risk of respiratory distress syndrome (RDS), which can be fatal and a high risk of asthma. (Buhimschi, Buhimschi 2006) A baby removed surgically could be at risk for prematurity and low birth weight and may experience respiratory problems as a result of under-developed lungs and may need to spend time in intensive care. They may also have difficulties with jaundice, dehydration, infection, feeding, blood sugar levels and maintaining body temperature. Later in life, preterm babies are also more prone to learning problems at school age.

Babies born by cesarean are five times more at risk of PPH. Pulmonary hypertension (PH or PHT) is an increase in blood pressure in the pulmonary artery, pulmonary vein, or pulmonary capillaries. (Levine, Ghai, Barton, & Strom, 2001). babies born by cesarean. Babies born surgically are 50% more likely to have lower APGAR scores babies birthed vaginally. (Annibale, 1995). Cesareans may delay the early mother-newborn interaction, the initiation of breastfeeding. (Rowe-Murray & Fisher, 2002)

In addition, the pregnancy complications increasing rapidly as well as the C-section delivery occurs commonly. Now a day's c section delivery occurs commonly than normal delivery, off course it has many complications such as delayed recovery, less attachment, backache, general health related issue etc.

Yogic practices and pregnancy outcomes-

Regular yoga exercises give an opportunity to create a world for the baby that is healthy and peace full by coordinating movement, breath and awareness, addresses health and wellbeing on several levels: physical, emotional, psychological and spiritual. Because of its many benefits, yoga is becoming increasingly accepted everywhere as part of self-care during pregnancy and preparation for childbirth and motherhood. (Tejwani, Roy & Mishra, 2013) Yoga is the best means towards a preparation for pregnancy and child birth. (Bhavanani, 2010)

A study by Narendran, Nagarathna, Narendran, Gunasheela, & Nagendra, (2005) reported that the efficacy of yoga on pregnancy outcomes with 335 women, who are enrolled between 18 and 20 weeks of pregnancy in a prospective, matched observational study. Yoga practices, including physical postures, breathing, and meditation were practiced by the yoga group one hour daily, from the date of entry into the study until delivery. The control group walked 30 minutes twice a day (standard obstetric advice) during the study period. Finally given conclusion shown that an integrated approach to yoga during pregnancy is safe. It improves birth

weight, decreases preterm labor, and decreases intrauterine growth retardation (IUGR) either in isolation or associated with pregnancy-induced hypertension (PIH), with no increased complications.

We found a similar study by Narendran, Nagarathna, Gunasheela, & Narendra, (2005) examined on 68 women were in the yoga-group and 53 women in the control-group, which have 18-20 weeks of gestation. Yoga practices including physical postures, breathing and meditation were practiced by the yoga-group, one hour daily, from the date of entry into the study until delivery. The control-group walked half an hour twice a day during the study period. Finally, they found that integrated approach of yoga practices during pregnancy is safe and beneficial. Increase the birth weight through yoga and Occurrence of complications of pregnancy (PIH, IUGR and PTD) shows lower trends in Yoga-Group. They suggested that Yoga by its holistic approach to health appears to be safe in pregnancy and leads to improved outcomes.

A review by Kawanishi, Hanley, Tabata, & Saijo, (2015) they also suggest that prenatal yoga may help reduce pelvic pain. It may also improve mental condition (stress, depression, anxiety, etc.), physical condition (pain and pleasure at the delivery, etc.), and prenatal outcomes (obstetrical complications, delivery time, etc.).

A study by Rakhshani et al., (2012) reported that the effects of yoga in prevention of pregnancy complications in high-risk pregnancies for the first time. 68 high-risk pregnant women and were randomized into yoga and control groups. The yoga group (n = 30) received standard care plus one-hour yoga sessions, three times a week, from the 12th to the 28th week of gestation. The control group (n = 38) received standard care plus conventional antenatal exercises (walking) during the same period and they also concluded that yoga can potentially be an effective therapy in reducing hypertensive related complications (pregnancy induced hypertension (PIH), preeclampsia, gestational diabetes (GDM) and intrauterine growth restriction (IUGR)) of pregnancy and improving fetal outcomes (APGAR scores).

Methodology-

Purposive sampling technique and control- experimental research design has been adopted in this study. The total sample pregnant woman covered for the purpose of the present study belongs to the urban area of Chhattisgarh state, dist. – Mahasamund. Which are between 20-30 years of age group and the total population of sample are 80, and randomly divide into two groups control group (n=40) and experimental group (n=40).

INCLUSION CRITERIA	EXCLUSION CRITERIA
• Age limit 20-30, • Primigravida • Urban area patient • Regular ANC patient	• OVC (ovarian cystic patient) • HIV, TB • ART(artificial retrograde technique) • Over reproductive age • Under/over weight • DM (diabetes mellitus) • Hypertension • Systemic diseases

Intervention

Researcher has initially selected the subjects from private and govt. Hospitals which have been fulfilled inclusion and exclusion criteria of the study and selected samples have to received antenatal check-ups per month. Then subjects randomly divided in two groups, control group and experimental group. The control group did not take any package. To assess their general health, the researcher has communicating time to time to the subjects. Then the experimental group was divided into Subgroups so that all subjects can be accessed. Each subgroup had taken the yogic practices for 6 days in a week. The intervention time was 45 minutes for yogic package, the Yogic practices are-

Table: yoga practice

MODULE OF YOGA PRACTICES FOR PREGNANCY				
Practices	**Rounds**	**Timing** (Total 45 minutes)	**MONTH**	
			4-6	**7-9**
grīvāsanchālana	8(in each stages)	5 minutes	✓	✓
skandhacakrāsana	8 (in each direction)	5 minutes	✓	✓
cakkī chālāsana	5 (in each direction)	5 minutes	✓	×
tītalī asana	50-70	5 minutes	✓	✓
Naḍi-śodhan prānāyāma	8 rounds ratio 1:1:1	5 minutes	✓	✓
om chanting	25 rounds	5 minutes	✓	✓
Yognidrā	1 round	15 minutes	✓	✓
✓- To be practiced		×- not to be practiced		

All the subjects in the experimental group practiced grīvāsanchālana, skandhacakrāsana, cakkī chālāsana, tītalī asana, Naḍi-śodhan prānāyāma, om chanting and Yognidrā during 4th to 6th month of pregnancy. They practiced yoga 6 days per week. cakkī chālāsana has stopped during 7th to 9th month because this asana was quite difficult to practiced during last 2 months. The time has reduced for yoga nidra because they felt difficulty in lying down for long time. Rest of the practices kept continue up to the delivery (grīvāsanchālana, skandhacakrāsana, tītalī asana, Naḍi-śodhan prānāyāma, om chanting and Yognidrā).

After delivery noted the record of the Pregnancy outcome and the General Health Questionnaire has been filled up after 20 days of delivery.

Data Collecton Tool- CMI health questionnaire:

The Cornell medical index known as C.M.I. is a four-page sheet. The term health questionnaire explains the nature and purpose of the form to the patient. It contains 195 questions. It is prepared by Narendra Nath Singh, Dwarika Prasad and Santosh Kumar Verma. A to L section is called physical distress section (pages first to second of the test) and M to R section is called emotional or psychological distress section (page fourth of the test).

Discomfort in their experiences to properly form the subjects of English was difficult to understand. So, into this research hindi translation of the CMI questionnaire form has been used.

Statistical Technique-

In this study used the independent sample t- test.

Hypotheses And Result table –

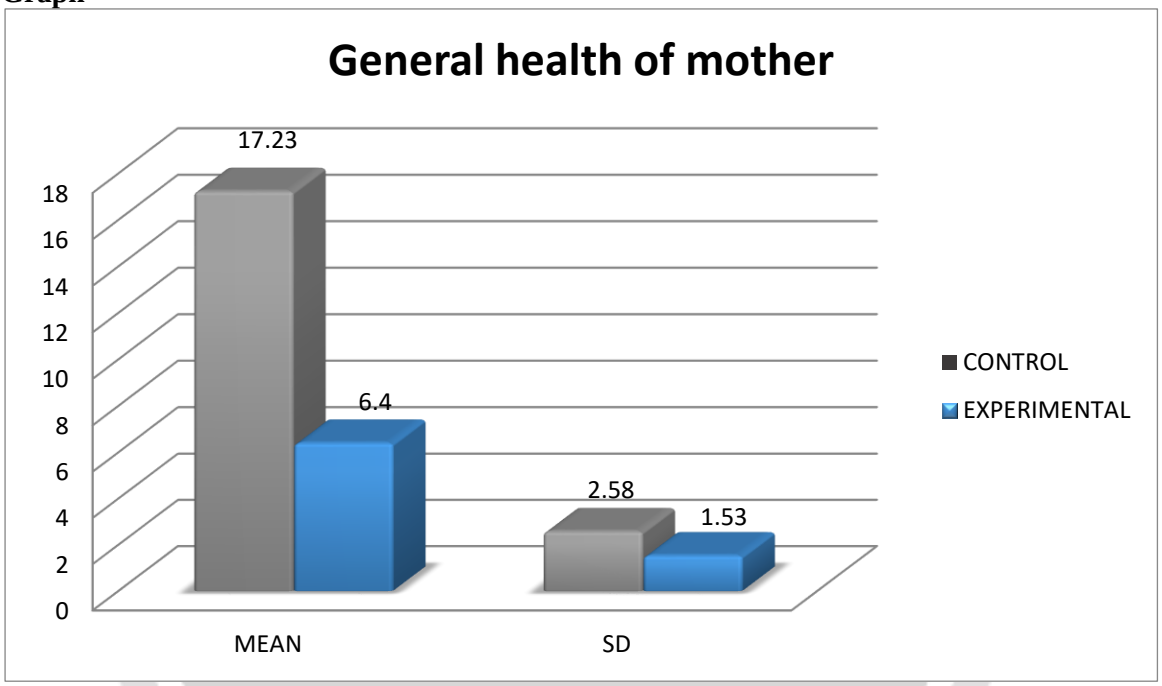
The practice of yogic- spiritual package will Increase general health of subjects.

General health of mother-

Groups	N	Mean	SD	SED	Df	t- value	Significant level
Control	40	17.23	2.58	0.47	78	22.84	0.001
Experimental	40	6.40	1.53				

This table shows that p<22.84, significant at 0.001 significant level.

Graph-



The result (table and graph) shows that directional hypothesis is accepted. A general problem of mother is high in control group as compare to experimental group. Hence yogic- spiritual intervention significantly increase the general health and decrease the complications of mother in the experimental group as compared to control group.

Interpretation and Discussion

After the analysis of results it has been observed that asana, pranayama, Om chanting and yoga nidra together are useful in bringing out significant changes on pregnancy outcomes of 20-30 age group of primigravida of this study.

In current research, we found that experimental group showed less difficulty during pregnancy by Butterfly posture and churning pose. Experimental group have shown the faster recovery time, increases maternal- child bonding, increase normal delivery rate and less complications than control group.

Nadishodhan pranayama provided calmness and supply oxygen in whole body. As they found in her research findings Bhuvaneshwari, Mohandasskurup, Vishwanathan, & Sridevi, (2013) said that om chanting is to empower the mother and the foetus, to attain natural delivery and to reduce the fetal abnormalities and maternal obstetrical complications.

Result shows that the hypothesis "The practice of yogic package will Increase the general health of mother" has been accepted at .001 level of confidence. That means in this research we found that a well tailored yogic

package which consists of asana (grīvāsanchālana skandhacakrāsana cakkī chālāsana tītalī asana), pranayama (Naḍi-śodhan prānāyāma), om chanting and Yognidrā improves the general (physical and mental) health of pregnant mother."

Yogic practices improved the strength, will- power and flexibility of the mother and found that the level of complications during pregnancy and labor is less than control group. The patients of intervention group discussed that these asanas released tension, heaviness and stiffness in the head, neck and shoulder region. Butter fly and churning mill pose are excellent asana. They toned the muscles of pelvis and abdomen and prepared them for the normal delivery and best for recover body after delivery.

Saraswati, (2005) said that Yogic practices improves the postnatal recuperation and Dorle, (2016) suggests that Omkar chanting helps to lower the blood pressure, reduce mental tension and stress. It also helps to improve the function of the heart by gently massaging it. Chanting OM also helps in the spiritual development of the baby because of the sound and positive vibrations. Yoga nidra can help to direct mental attention around the body, bringing relaxation, restoration and healing to every cell. (Dinsmore-Tuli, 2010)

During yoga nidra child listen the heart beat of the mother and feels comfortable. It also helps to increase the mental peace and calmness in the mother. yoga did not affect only the mother, while they affect the both, the mother and child.

Yoga during pregnancy is safe and yogic practices reduce the intrauterine growth retardation (IUGR), pregnancy-induced hypertension (PIH), PTD. (Narendran, Nagarathna, Narendran, Gunasheela, & Nagendra, 2005), stress, anxiety (stillman, 2016), prenatal yoga may help reduce pelvic pain (Kawanishi, Hanley, Tabata, & Saijo, 2015) and reduce negative mood during pregnancy (Vieten & Astin, 2008). It may also improve mental condition (stress, depression, anxiety, etc.), physical condition (pain and pleasure at the delivery, etc.), and prenatal outcomes (obstetrical complications, delivery time, etc.) and improve mental health of mother (Smith, Hancock, Blake-Mortimer, & Eckert, 2007). Duncan & Bardacke, (2009) also said that increases mindfulness, maternal well-being and positive effect of pregnancy and decreases the anxiety, depression, and negative effect of pregnancy through yoga.

The integrated yoga in an efficacious means of improving the quality of life of pregnant women and enhancing certain aspects of their interpersonal relationships (Rakhshani, Maharana, Raghuram, Nagendra, & Venkatram, 2010) and increased maternal-fetal attachment (Muzik, Hamilton, Lisa Rosenblum, Waxler, & Hadi, 2012).

Conclusion

Complications during pregnancy may affect both women's health and the outcome of the pregnancy adversely. Early detection of complications during pregnancy and their management are important components of the safe motherhood program.

Regular yoga exercises and follow up had a positive impact on results regarding outcome improvement and reduced complication rate. Regular yoga exercises gives an opportunity to create a world for the baby that is healthy and peace full by coordinating movement, breath and awareness, addresses health and wellbeing on several levels: physical, emotional, psychological and spiritual. Because of its many benefits, yoga is becoming increasingly accepted everywhere as part of self-care during pregnancy and preparation for childbirth and motherhood. (Tejwani, Roy, & Mishra, 2013). Yoga is the best means towards a preparation for pregnancy and child birth.

So, after the testing of hypothesis, effectiveness of yogic package has been found in favor of increase mother's health and decrease pregnancy complications. Yoga is the best way for management for complications of pregnancy and child birth.

References-

Annibale, D. (1995). Comparative Neonatal Morbidity Of Abdominal And Vaginal Deliveries After Uncomplicated Pregnancies. *Arch Pediatr Adolesc Med*, 149(8),862. http://dx.doi.org/10.1001/archpedi.1995.02170210036006

Bhavanani, A. (2010). Yoga: a boon for maternal and child health. *ResearchGate*. Retrieved 14 December 2015, from http://www.researchgate.net/publication/237077468

Bhuvaneshwari, C., mohandasskurup, V., vishwanathan, s., & sridevi, v. (2013).garbh vidhya: we make brilliant child through proper training from foetus. *International Journal Of Biology, Pharmacy And Allied Sciences*, *2*(10), 1942-1955. Retrieved from http://ijbpas.com

Buhimschi, C. & Buhimschi, I. (2006). Advantages of Vaginal Delivery. Clinical Obstetrics And Gynecology, 49(1), 167-183. http://dx.doi.org/10.1097/01.grf.0000198186.71542.03

Davis, J. (1999). Management of injuries to the urinary and gastrointestinal tract during cesarean section. *Obstetrics and Gynecology Clinics Of North America*, 26(3), 469-480. http://dx.doi.org/10.1016/s0889-8545(05)70091-7

Dinsmore-Tuli, U. (2010). *Yoga for pregnancy and birth*. London: Teach Yourself.

Dorle, P. (2016). *Yoga and Pregnancy*. *Yogapoint.com*. Retrieved 5 April 2016, from http://www.yogapoint.com/articles/pregnancy_yoga.htm

Duncan, L. & Bardacke, N. (2009). Mindfulness-Based Childbirth and Parenting Education: Promoting Family Mindfulness During the Perinatal Period. *Journal Of Child And Family Studies*, *19*(2), 190-202. http://dx.doi.org/10.1007/s10826-009-9313-7

Högberg, U. (2005). The World Health Report 2005: "Make every mother and child count" – including Africans. *Scandinavian Journal Of Public Health*, *33*(6), 409-411. http://dx.doi.org/10.1080/14034940500217037

Kawanishi, Y., Hanley, S., Tabata, K., & Saijo, Y. (2015). Effects of prenatal yoga: a systematic review of randomized controlled trials. *Japanese Journal Of Public Health*, *65*(5), 221-231. http://dx.doi.org/DOI: 10.11236/jph.62.5_221

Levine, E., Ghai, V., Barton, J., & Strom, C. (2001). Mode Of Delivery And Risk Of Respiratory Diseases In Newborns. Obstetrics & Gynecology,97(6),1026. http://dx.doi.org/10.1097/00006250-200106000-00035

Lydon-Rochelle, M. (2000). Association Between Method of Delivery and Maternal Rehospitalization. JAMA, 283(18), 2411. http://dx.doi.org/10.1001/jama.283.18.2411

Muzik, M., Hamilton, S., Lisa Rosenblum, K., Waxler, E., & Hadi, Z. (2012). Mindfulness yoga during pregnancy for psychiatrically at-risk women: Preliminary results from a pilot feasibility study.*Complementary Therapies In Clinical Practice*, *18*(4), 235-240. http://dx.doi.org/10.1016/j.ctcp.2012.06.006

Narendran, s., nagarathna, r., & nagendra, h. (2008). *yoga for pregnancy* . banglore: swami vivekanand yoga prakashan. pp. 11,27,30,32,40,124-125,138.

Narendran, S., Nagarathna, R., Gunasheela, S., & narendra, H. (2005). Efficacy of yoga in pregnant women with abnormal Doppler study of umbilical and uterine arteries. *Journal Of The Indian Medical Association*, *103*(1), 12-4.

Narendran, S., Nagarathna, R., Narendran, V., Gunasheela, S., & Nagendra, H. (2005). Efficacy of Yoga on Pregnancy Outcome. *The Journal Of Alternative And Complementary Medicine*, *11*(2), 237-244.http://dx.doi.org/10.1089/acm.2005.11.237

"Pregnancy". (n.d.) *Medical Dictionary*. (2009). Retrieved June 21 2016 from http://medical-dictionary.thefreedictionary.com/Pregnancy

Rakhshani, A., Maharana, S., Raghuram, N., Nagendra, H., & Venkatram, P. (2010). Effects of integrated yoga on quality of life and interpersonal relationship of pregnant women. *Qual Life Res*, *19*(10), 1447-1455. http://dx.doi.org/10.1007/s11136-010-9709-2

Rakhshani, A., Nagarathna, R., Mhaskar, R., Mhaskar, A., Thomas, A., & Gunasheela, S. (2012). The effects of yoga in prevention of pregnancy complications in high-risk pregnancies: A randomized controlled trial. *Preventive Medicine*, *55*(4), 333-340. http://dx.doi.org/10.1016/j.ypmed.2012.07.020

Rowe-Murray, H. & Fisher, J. (2002). Baby Friendly Hospital Practices: Cesarean Section is a Persistent Barrier to Early Initiation of Breastfeeding. Birth, 29(2), 124-131. http://dx.doi.org/10.1046/j.1523-536x.2002.00172.x

Ryding, E., Wijma, K., & Wijma, B. (1998). Experiences of Emergency Cesarean Section: A Phenomenological Study of 53 Women. Birth, 25(4), 246-251. http://dx.doi.org/10.1046/j.1523-536x.1998.00246.x

Sakala, C., Declercq, E., & Corry, M. (2002). Listening to Mothers: The First National U.S. Survey of Women's Childbearing Experiences. *Journal Of Obstetric, Gynecologic & Neonatal Nursing*, 31(6), 633-634. http://dx.doi.org/10.1111/j.1552-6909.2002.tb00087.x

Saraswati, S. (2005). *Asan pranayam mudra bandh*). Munger, Bihar: Yog publication trust. pp. 41,42,43,44,63-64.

Sardana, M. (2016). *reproductive and child health* . district level household survey (DLHS-2), chhattisgarh 2002-04. Retrieved from http://rchiips.org/pdf/rch2/National_Report_RCH-II.pdf , pp. 41,65,74,79.

Smith, C., Hancock, H., Blake-Mortimer, J., & Eckert, K. (2007). A randomised comparative trial of yoga and relaxation to reduce stress and anxiety. *Complementary Therapies In Medicine*, *15*(2), 77-83. http://dx.doi.org/10.1016/j.ctim.2006.05.001

Stillman, s. (2016). y*oga as a treatment for reducing maternal stress and negative birth outcomes* (undergraduate theses). Columbia University Academic Commons.

Tejwani, N., Roy, P., & Mishra, R. (2013). Role Of Yoga For Better Outcome Of Pregnancy.*NJIRM*, *4*(4), 12-15.

Vieten, C. & Astin, J. (2008). Effects of a mindfulness-based intervention during pregnancy on prenatal stress and mood: results of a pilot study. *Archives Of Women's Mental Health*, *11*(1), 67-74. http://dx.doi.org/10.1007/s00737-008-0214-3

“What Are Some Common Complications Of Pregnancy?”. *Nichd.nih.gov*. N.p., 2016. Web. 7 Aug. 2016.

World Health Organization (November 2014). "Preterm birth Fact sheet N°363". who.int. Retrieved 6 Jan 2016.