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EFFICACY OF ANTENATAL YOGA FOR IMPROVEMENT IN QUALITY OF LIFE – A PILOT STUDY

Sujata Vithalrao Cowlagi*, Prof Vivek Maheshwari**

*Research Scholar, Department of Ashtanga Yoga, Lakulish Yoga University, Ahmedabad

**Provost, Lakulish Yoga University, Ahmedabad

Correspondence email: yogawithsujata@gmail.com Mobile: +65 81180154

ABSTRACT

Pregnancy is a unique phase in the life of a woman. This exciting and vulnerable time initiates many changes at a physical, psychological, and emotional level. The aim of this study was to investigate the efficacy of integrated yogic practices on the quality of life among pregnant women. For this pilot study, we enrolled 20 pregnant women who were between 9 and 25 weeks at gestation. Single group pre-post design was used. An integrated yoga module specially developed for antenatal conditions was administered over a 12-week integrated yoga module to the participants. Quality of Life Scale was used as a tool of assessment. Data was collected at base and at the end of 12 weeks after the protocol was administered. Paired sample T-test was applied using SPSS software to analyze this data. Statistical analysis of the data collected, demonstrated that value of t test was 3.177 which was significant at 0.01 level The findings showed that yoga intervention was efficacious in improving the Quality of Life. No adverse effects of yoga were observed among those who practiced yoga during pregnancy. The results demonstrate that antenatal yoga may be an effective intervention to enhance quality of life. More rigorous studies over a longer duration with larger sample sizes would be required to establish a definitive connection between yoga intervention and quality of life among antenatal cohort.

Keywords: antenatal, pregnancy, quality of life, integrative yoga protocol

I- INTRODUCTION

Pregnancy is a very special phase in the life of a woman. It is also fraught with many changes and vulnerability at a physical, mental, emotional, and psychological level. During this period of nine months, there are hormonal changes that cause immense fluctuations in the moods and emotions of a pregnant woman. It is common for women to experience physical discomforts, such as back pain, swelling, and nausea during this time. They may also experience a feeling of worry, depression, anxiety, or a general fear of the unknown (Wyszynski et al., 2021). This could often also manifest as mental stress. (Glover et al., 2010) Several mind-body therapies such as progressive muscle relaxation, tai chi, yoga, biofeedback, and guided imagery are used to mitigate maternal and antenatal-related conditions(Oyarzabal et al., 2021). Among complementary therapies, (Adams et al., 2009) yoga practice shows encouraging results. (Pais et al., 2021; Sun et al., 2010). The ancient and rich yoga tradition of India is a complete holistic system that offers a wide spectrum of mechanisms and techniques to support pregnant women. (Rakhshani et al., 2015)

AIM AND HYPOTHESIS:

The aim of this study was to explore the feasibility of integrated yogic practices on improvement in quality of life among pregnant women.

1. Null Hypothesis (H0): Integrated antenatal yoga protocol will not have a significant impact on the overall quality of life among pregnant women.
2. Alternative Hypothesis (HA): Integrated antenatal yoga protocol will have a significant impact on improving the overall quality of life among pregnant women.

PREVALENCE:

According to World Health Organization (WHO) and Ante Natal Care document, health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. According to the WHO, a positive pregnancy experience is defined as maintaining physical and sociocultural normality

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maintaining a healthy pregnancy for mother and baby (including preventing and treating risks, illness, and death) having an effective transition to positive labour and birth, and achieving positive motherhood (including maternal self-esteem, competence, and autonomy).

DIMENSIONS OF HOLISTIC HEALTH:

Holistic health does not mean merely physical well-being, rather; it encompasses mental, emotional, social, and spiritual aspects of a person. The Taittiriya Upanishad describes a human being to be having five layers or (Desikachar, n.d.) *Pancha Koshas* from gross to subtle comprising of the material or gross body Anamaya Kosha, the vital or instinctual component Pranamaya Kosha, the mental or psychological component Manomaya Kosha, the intellectual component Vigyanmaya Kosha, and the fifth aspect of pure bliss and happiness Anandmaya Kosha.

The yogic and ayurvedic (Frawley & Kozak, 2001) approach to holistic health(Koppikar, 2008; Rasane & Bhangale, n.d.) during pregnancy emphasise harmony and balance in various aspects such as diet, (Girija, 2008; Muktabhant et al., 2015) lifestyle(Caldecott, 2006), sleep (Bacaro et al., 2020), rest, exercise, and breathing. (Telles & Singh, 2013)

INTEGRATED YOGIC PRACTICES FOR PREGNANCY:

The etymological root of the word yoga in Sanskrit is to unite or yoke. According to one of many definitions (Satyānanda, 2009; Vivekananda, n.d.) of yoga,"Samatvam yoga uchchyate" (*Bhagavad-Gītā As It Is*, n.d.)Yoga means balance and equanimity.

Yoga affects the physical and the mental health aspects of a person. (Büssing et al., 2012) (Menezes et al., 2015). Antenatal yoga is a non-pharmacological intervention (Evans et al., 2020), that is cost-effective and is relatively easy to administer. An integrated yoga module for pregnancy consists of five important components: asana (Sengupta, 2014), (Saxena et al., 2017), pranayama, (Mooventhan & Khode, 2014) yoga nidra (Toosi et al., 2014) or deep relaxation, meditation (Chung et al., 2012) and chanting (Frawley, 2010). The above-mentioned aspects provide a framework on which are based the techniques and mechanisms(Oakley & Evans, 2014) that provide a sense of confidence, optimism and balance during pregnancy. (Shim & Lee, 2012)
The antenatal yoga protocols (Corrigan et al., 2019) are designed to keep the safety and well-being of women to be at the forefront. A positive approach to pregnancy (Mangala Gowri et al., 2019) and specifically designed modules taught in a structured manner consistently, tend to improve birth outcomes(Narendran et al., 2005).

II- RESEARCH METHODOLOGY

SUBJECTS: Twenty subjects were recruited for the study from two maternity clinics in Gandhinagar, Gujarat.

INCLUSION CRITERIA

1. Women who tested for positive pregnancy
2. Pregnant women who gave free consent and were willing to participate in the study.
3. Women from nine weeks of pregnancy to twenty-five weeks of pregnancy.

EXCLUSION CRITERIA

1. Patients who were diagnosed as having high risk or those with comorbidities.
2. Those carrying twins or multiple zygotes.
3. Those who were on psychiatric medication.
4. Those living outside Gandhinagar
5. Those beyond twenty-six weeks of gestation.

INFORMED CONSENT: A signed informed consent form in Gujarati, Hindi, and English was obtained from the participants before they were accepted into this study.

DESIGN: The pilot feasibility study was conducted with single group pre post research design. The study was conducted in Gandhinagar. Impact of Intervention was assessed as per the schedule given below:
a. Basal Assessment: 0-day (i.e., onset of the experiment)
b. Final Assessment: 03 months i.e. 90 days

TOOL OF ASSESSMENT: The efficacy of the intervention was assessed by using the Quality of Life Scale by Sarika Sharma and Dr. Nakhat Nasreen from the National Psychological Corporation of India in Agra. This

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scale is accepted for its validity and reliability. Attributes pertaining to quality of life, such as stress, depression, anxiety, physical wellbeing and happiness are evaluated on this scale.

YOGA PROTOCOL: The integrated yoga module was developed to include asanas, pranayama, meditation, relaxation and chanting specifically suitable for pregnancy. In addition to the protocol, participants of the study also received a lecture on antenatal care, diet, nutrition, and the philosophy of yoga.

INTERVENTION: Participants practiced the integrated antenatal yoga protocol five days a week. The protocol was delivered online via Zoom in one hourly session twice a week and using video tutorials three times a week for 12 weeks consecutively. The online format was adopted due to the prevailing Covid-19 pandemic scenario and in keeping with safety norms of social distancing as stipulated by the government. Another factor in the decision to deliver the protocol online was that some of the participants were not vaccinated and therefore more susceptible to contracting infection. Participants preferred being able to practice from the comfort of their home and compliance was good. The participants also got a copy of the yoga protocol in the form of a handout. Follow-up was done three times a week.

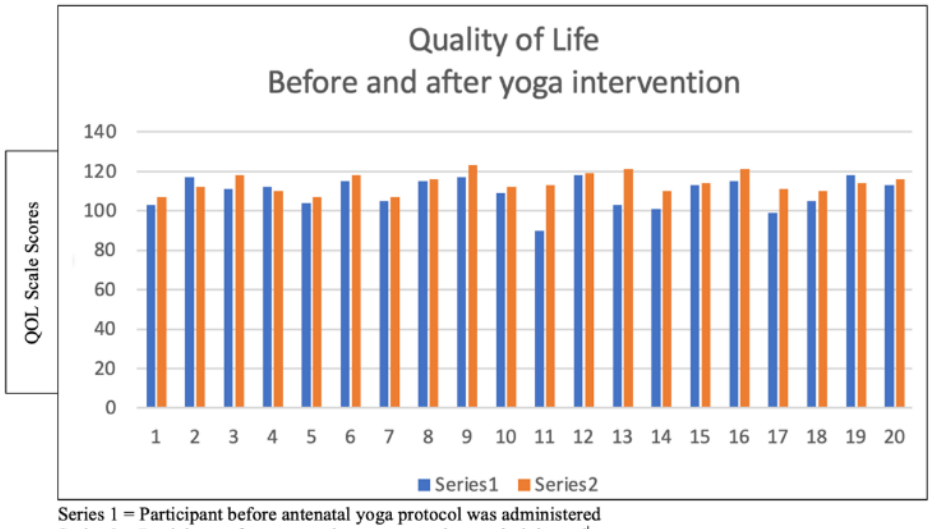
DATA COLLECTON AND STATISTICAL ANALYSIS: Data was collected after participants signed a consent form. The objectives of the study were explained to participants. The paired t test was used to analyse the data that was collected.

III- RESULTS

PHASE	MEAN	S.D.	DEGREE OF FREEDOM (df)	SEM	T VALUE	LEVEL OF SIGNIFICANCE
Pre Experiment	109.15	7.60	19	1.70	2.82	Significant at 0.01 level
Post Experiment	113.95	4.90	19			

The mean value at basal assessment was 109.15, after the yoga intervention module, the mean value increased to 113.95. Standard deviation before experiment was 7.60 and post experiment was 4.90. The standard error of mean was 1.70 before yoga protocol was administered and 1.10 after the three month yoga intervention. Standard error of difference was1.511

The value of t test is 2.82 which is significant at 0.01 level ($P < 0.01$). The result shows that there is a statistically significant difference in quality of life after integrated yoga practice among pregnant women.



Series 1 = Participant before antenatal yoga protocol was administered
Series 2 = Participant after antenatal yoga protocol was administered

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IV- DISCUSSION

There were no adverse effects observed during or after the practice. This feasibility study and its results could form the basis of a more detailed investigation on the psychological impact and wellbeing of an integrated yoga protocol on pregnant women. The practical application of it could have broader ramifications. The design and mechanisms of this study could be replicated by other researchers. Results of this pilot study could be useful to policy makers, healthcare professionals, yoga teachers and allied stakeholders, in addition to pregnant women.

Evidence-based research points to asana (Sengupta, 2014), breathing and exercise during pregnancy being associated with health benefits for both the mother to be, and the unborn child. (Babbar & Chauhan, 2015; Bungum et al., 2000; Gong et al., 2015) Yoga enhances physical health (Bojja & Jayashree, K. and Vijayaraghavan, R., 2019)and mental health(Evans et al., 2020) during pregnancy. Women with a normal pregnancy are recommended to engage in at least 30 minutes of moderate exercise on most if not all days of the week. (*ACOG Releases Updated Guidance on Exercise in Pregnancy and Postpartum, Includes Recommendations for Athletes*, n.d.) Studies indicate that a combination of both aerobic and muscle strength (Bhardwaj & Nagandla, 2014) physical activity supports the recommendation for regular strength training to be included for pregnant and postpartum women. (Bull et al., 2020)

The practice of Yoga is shown to be effective in managing common conditions(Carlson et al., 2004) such as back pain during pregnancy (Crow et al., 2015; Hu et al., 2020; P. A. Kinser et al., 2017; Pennick & Liddle, 2013; Wang et al., 2005) Antenatal yoga shows improved relaxation(Smith et al., 2011; Toosi et al., 2014), reduction in stress (Bershadsky et al., 2014; Field et al., 2013), depression(Davis et al., 2015; Kinser & Masho, 2015), (Bhartia et al., 2019; Chen et al., 2017), better delivery outcomes(Wadhwa et al., 2020) (Campbell & Nolan, 2019; Chuntharapat et al., 2008); and management of labour pain (Bolanthakodi et al., 2018)(Styles et al., 2019). Yoga during pregnancy is associated with a lowered risk of preeclampsia, hypertension and gestational diabetes mellitus.(Smith et al., 2020) Even in the case of high-risk pregnancies, yoga has been found to be a beneficial therapeutic tool (Dangel et al., 2020), (Deshpande et al., 2013), (Mooventhan, 2019).
This analysis supports the theory that antenatal yoga is efficacious in enhancing the quality of life. The findings of this pilot feasibility program demonstrate consistency with similar other studies done in this area. In one study (Rakhshani et al., 2010) yoga practice significantly improved quality of life domains such as physical domain ($P = 0.001$), psychological domain ($P < 0.001$), social domain ($P = 0.003$), and environmental domains ($P = 0.001$) compared to those who did not get yoga intervention. In another review of 13 studies done on quality of life, (Liu et al., 2019) found that yoga significantly brought about an improvement in QOL compared to other forms of exercise such as aerobics and resistance training.

V- CONCLUSION

As the p-value is below the significance level (0.01), it demonstrates that the observed difference in the quality of life after the integrated yoga module practice is unlikely to have occurred by chance alone. Based on the analysis of data sets, the p-value indicates that there is evidence to reject the null hypothesis and confidently support the alternative hypothesis that the integrated yoga practice had a significant effect on the quality of life among pregnant women.
In conclusion, the results of this pilot study show that an integrated yoga module developed for the antenatal cohort is viable, feasible, and may be effective as a holistic, non-pharmacological intervention in the enhancement of quality of life.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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REFERENCES

1. *ACOG Releases Updated Guidance on Exercise in Pregnancy and Postpartum, Includes Recommendations for Athletes*. (n.d.). Retrieved January 24, 2022, from https://www.acog.org/en/news/news-releases/2020/03/acog-releases-updated-guidance-on-exercise-in-pregnancy-and-postpartum

2. Adams, J., Lui, C.-W., Sibbritt, D., Broom, A., Wardle, J., Homer, C., & Beck, S. (2009). Women's Use of Complementary and Alternative Medicine During Pregnancy: A Critical Review of the Literature. *Birth*, *36*(3), 237–245. https://doi.org/10.1111/j.1523-536X.2009.00328.x
3. Babbar, S., & Chauhan, S. P. (2015). Exercise and yoga during pregnancy: A survey. *The Journal of Maternal-Fetal & Neonatal Medicine: The Official Journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*, *28*(4), 431–435. https://doi.org/10.3109/14767058.2014.918601
4. Bacaro, V., Benz, F., Pappaccogli, A., De Bartolo, P., Johann, A. F., Palagini, L., Lombardo, C., Feige, B., Riemann, D., & Baglioni, C. (2020). Interventions for sleep problems during pregnancy: A systematic review. *Sleep Medicine Reviews*, *50*, 101234. https://doi.org/10.1016/j.smrv.2019.101234
5. Bershadsky, S., Trumpfheller, L., Kimble, H. B., Pipaloff, D., & Yim, I. S. (2014). The effect of prenatal Hatha yoga on affect, cortisol and depressive symptoms. *Complementary Therapies in Clinical Practice*, *20*(2), 106–113. https://doi.org/10.1016/j.ctcp.2014.01.002
6. *Bhagavad-gītā As It Is*. (n.d.). Retrieved August 28, 2021, from https://vedabase.io/en/library/bg/
7. Bhardwaj, A., & Nagandla, K. (2014). Musculoskeletal symptoms and orthopaedic complications in pregnancy: Pathophysiology, diagnostic approaches and modern management. *Postgraduate Medical Journal*, *90*(1066), 450–460. https://doi.org/10.1136/postgradmedj-2013-132377
8. Bhartia, N., Jain, S., Shankar, N., Rajaram, S., & Gupta, M. (2019). *Effects of Antenatal Yoga on Maternal Stress and Clinical Outcomes in North Indian Women: A Randomised Controlled Trial*. *20*(1), 5.
9. Bojja, M., & Jayashree, K. and Vijayaraghavan, R. (2019). Effectiveness of antenatal exercises and yoga on biophysiological parameters like temperature, pulse, respiration and blood pressure among antenatal women. , *International Journal of Development Research Vol. 09, 09*, 6.
10. Bolanthakodi, C., Raghunandan, C., Saili, A., Mondal, S., & Saxena, P. (2018). Prenatal Yoga: Effects on Alleviation of Labor Pain and Birth Outcomes. *Journal of Alternative and Complementary Medicine (New York, N.Y.)*, *24*(12), 1181–1188. https://doi.org/10.1089/acm.2018.0079
11. Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J.-P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., … Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, *54*(24), 1451–1462. https://doi.org/10.1136/bjsports-2020-102955
12. Bungum, T. J., Peaslee, D. L., Jackson, A. W., & Perez, M. A. (2000). Exercise During Pregnancy and Type of Delivery in Nulliparae. *Journal of Obstetric, Gynecologic & Neonatal Nursing*, *29*(3), 258–264. https://doi.org/10.1111/j.1552-6909.2000.tb02047.x
13. Büssing, A., Michalsen, A., Khalsa, S. B. S., Telles, S., & Sherman, K. J. (2012). Effects of Yoga on Mental and Physical Health: A Short Summary of Reviews. *Evidence-Based Complementary and Alternative Medicine*, *2012*, 1–7. https://doi.org/10.1155/2012/165410
14. Caldecott, T. (2006). *Ayurveda: The Divine Science of Life*. Elsevier Health Sciences.
15. Campbell, V., & Nolan, M. (2019). "It definitely made a difference": A grounded theory study of yoga for pregnancy and women's self-efficacy for labour. *Midwifery*, *68*, 74–83. https://doi.org/10.1016/j.midw.2018.10.005
16. Carlson, K. J., Eisenstat, S. A., M.D, S. A. E., & Ziporyn, T. D. (2004). *The New Harvard Guide to Women's Health*. Harvard University Press.
17. *Census of India: Sample Registration*. (n.d.). Retrieved September 23, 2021, from https://censusindia.gov.in/Vital_Statistics/SRS/Sample_Registration_System.aspx
18. Chen, P.-J., Yang, L., Chou, C.-C., Li, C.-C., Chang, Y.-C., & Liaw, J.-J. (2017). Effects of prenatal yoga on women's stress and immune function across pregnancy: A randomized controlled trial. *Complementary Therapies in Medicine*, *31*, 109–117. https://doi.org/10.1016/j.ctim.2017.03.003
19. Chung, S.-C., Brooks, M. M., Rai, M., Balk, J. L., & Rai, S. (2012). Effect of *Sahaja* Yoga Meditation on Quality of Life, Anxiety, and Blood Pressure Control. *The Journal of Alternative and Complementary Medicine*, *18*(6), 589–596. https://doi.org/10.1089/acm.2011.0038
20. Chuntharapat, S., Petpichetchian, W., & Hatthakit, U. (2008). Yoga during pregnancy: Effects on maternal comfort, labor pain and birth outcomes. *Complementary Therapies in Clinical Practice*, *14*(2), 105–115. https://doi.org/10.1016/j.ctcp.2007.12.007
21. Corrigan, L., Eustace-Cook, J., Moran, P., & Daly, D. (2019). The effectiveness and characteristics of pregnancy yoga interventions: A systematic review protocol. *HRB Open Research*, *2*, 33. https://doi.org/10.12688/hrbopenres.12967.2
22. Cowlagi S & Maheshwari, V. (2023) Antenatal yoga : A protocol for healthy pregnancy International research journal of management sociology & humanities. Volume 14, Issue 8 ISSN 234-9359 Pages 145-161DOI: 10.32804/IRJMSH

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23. Cowlagi, S., Maheshwari, V., & Jain, D. (2023). Pranav-Omkar, The Primordial Mystic Sound: Significance, Occurrence, Efficacy, and Spiritual Ideals. In A. Mohammad (Ed.), Bharat Vishva Guru in Yoga Education (pp. 91-98). Sports Publication.
24. Cowlagi, S., & Maheshwari, V. (2023). Exploring new dimensions in Antenatal Yoga Education: Perspectives of Yoga Instructors Based on Global Survey. Indian Journal of Multidisciplinary Research, ..., 34-34.
25. Cowlagi, S & Maheshwari, V. (2023). Yoga way to better health: Role of yoga in antenatal care-a review: Vol. Chapter 7. ABS Books Delhi Pages 67-77 ISBN 978-94424-55-5
26. Crow, E. M., Jeannot, E., & Trewhela, A. (2015). Effectiveness of Iyengar yoga in treating spinal (back and neck) pain: A systematic review. *International Journal of Yoga*, *8*(1), 3. https://doi.org/10.4103/0973-6131.146046
27. Dangel, A. R., Demtchouk, V. O., Prigo, C. M., & Kelly, J. C. (2020). Inpatient prenatal yoga sessions for women with high-risk pregnancies: A feasibility study. *Complementary Therapies in Medicine*, *48*, 102235. https://doi.org/10.1016/j.ctim.2019.102235
28. Davis, K., Goodman, S. H., Leiferman, J., Taylor, M., & Dimidjian, S. (2015). A randomized controlled trial of yoga for pregnant women with symptoms of depression and anxiety. *Complementary Therapies in Clinical Practice*, *21*(3), 166–172. https://doi.org/10.1016/j.ctcp.2015.06.005
29. Deshpande, C. S., Rakhshani, A., Rakshani, A., Nagarathna, R., Ganpat, T. S., Kurpad, A., Maskar, R., Nagendra, H. R., Sudheer, D. C., Abbas, R., Raghuram, N., Anura, K., Rita, M., & Ramarao, N. (2013). Yoga for high-risk pregnancy: A randomized controlled trial. *Annals of Medical and Health Sciences Research*, *3*(3), 341–344. https://doi.org/10.4103/2141-9248.117933
30. Desikachar, K. (n.d.). *The Yoga of Healing: Exploring Yoga's Holistic Model for Health and Well-Being: An Introduction*. 41.
31. Evans, K., Spiby, H., & Morrell, J. C. (2020). Non-pharmacological interventions to reduce the symptoms of mild to moderate anxiety in pregnant women. A systematic review and narrative synthesis of women's views on the acceptability of and satisfaction with interventions. *Archives of Women's Mental Health*, *23*(1), 11–28. https://doi.org/10.1007/s00737-018-0936-9
32. Field, T., Diego, M., Delgado, J., & Medina, L. (2013). Yoga and social support reduce prenatal depression, anxiety and cortisol. *Journal of Bodywork and Movement Therapies*, *17*(4), 397–403. https://doi.org/10.1016/j.jbmt.2013.03.010
33. Frawley, D. (2010). *Mantra Yoga and the Primal Sound: Secrets of Seed (Bija) Mantras*. Lotus Press.
34. Frawley, D., & Kozak, S. S. (2001). *Yoga for Your Type: An Ayurvedic Approach to Your Asana Practice*. Lotus Press.
35. Girija, P. L. (2008). Diet and regimen during pregnancy. *Ancient Science of Life*, *28*(1), 40–43.
36. Glover, V., O'Connor, T. G., & O'Donnell, K. (2010). Prenatal stress and the programming of the HPA axis. *Neuroscience & Biobehavioral Reviews*, *35*(1), 17–22. https://doi.org/10.1016/j.neubiorev.2009.11.008
37. Gong, H., Ni, C., Shen, X., Wu, T., & Jiang, C.-L. (2015). Yoga for prenatal depression: A systematic review and meta-analysis. *BMC Psychiatry*, *15*, 14. https://doi.org/10.1186/s12888-015-0393-1
38. Hu, X., Ma, M., Zhao, X., Sun, W., Liu, Y., Zheng, Z., & Xu, L. (2020). Effects of exercise therapy for pregnancy-related low back pain and pelvic pain: A protocol for systematic review and meta-analysis. *Medicine*, *99*(3), e17318. https://doi.org/10.1097/MD.0000000000017318
39. Kinser, P. A., Pauli, J., Jallo, N., Shall, M., Karst, K., Hoekstra, M., & Starkweather, A. (2017). Physical Activity and Yoga-Based Approaches for Pregnancy-Related Low Back and Pelvic Pain. *Journal of Obstetric, Gynecologic, and Neonatal Nursing: JOGNN*, *46*(3), 334–346. https://doi.org/10.1016/j.jogn.2016.12.006
40. Kinser, P., & Masho, S. (2015). "I just start crying for no reason": The experience of stress and depression in pregnant, urban, African-American adolescents and their perception of yoga as a management strategy. *Women's Health Issues: Official Publication of the Jacobs Institute of Women's Health*, *25*(2), 142–148. https://doi.org/10.1016/j.whi.2014.11.007
41. Koppikar, V. S. (2008). Garbhini Paricharya (Regimen for the pregnant woman). *Ancient Science of Life*, *28*(1), 37–39.
42. Liu, N., Gou, W.-H., Wang, J., Chen, D.-D., Sun, W.-J., Guo, P.-P., Zhang, X.-H., & Zhang, W. (2019). Effects of exercise on pregnant women's quality of life: A systematic review. *European Journal of Obstetrics, Gynecology, and Reproductive Biology*, *242*, 170–177. https://doi.org/10.1016/j.ejogrb.2019.03.009
43. Mangala Gowri, Ar, S., & Bhavanani, A. B. (2019). *POSITIVE EUGENICS: AN ANCIENT INDIAN PERSPECTIVE*. 6.

44. Menezes, C. B., Dalpiaz, N. R., Kiesow, L. G., Sperb, W., Hertzberg, J., & Oliveira, A. A. (2015). Yoga and emotion regulation: A review of primary psychological outcomes and their physiological correlates. *Psychology & Neuroscience*, *8*(1), 82–101. https://doi.org/10.1037/h0100353
45. Mooventhan, A. (2019). A comprehensive review on scientific evidence-based effects (including adverse effects) of yoga for normal and high-risk pregnancy-related health problems. *Journal of Bodywork and Movement Therapies*, *23*(4), 721–727. https://doi.org/10.1016/j.jbmt.2019.03.005
46. Mooventhan, A., & Khode, V. (2014). Effect of Bhramari pranayama and OM chanting on pulmonary function in healthy individuals: A prospective randomized control trial. *International Journal of Yoga*, *7*(2), 104–110. https://doi.org/10.4103/0973-6131.133875
47. Muktabhant, B., Lawrie, T. A., Lumbiganon, P., & Laopaiboon, M. (2015). Diet or exercise, or both, for preventing excessive weight gain in pregnancy. *Cochrane Database of Systematic Reviews*. https://doi.org/10.1002/14651858.CD007145.pub3
48. Narendran, S., Nagarathna, R., Narendran, V., Gunasheela, S., & Nagendra, H. R. R. (2005). Efficacy of Yoga on Pregnancy Outcome. *The Journal of Alternative and Complementary Medicine*, *11*(2), 237–244. https://doi.org/10.1089/acm.2005.11.237
49. Oakley, S., & Evans, E. (2014). The role of yoga: Breathing, meditation and optimal fetal positioning. *The Practising Midwife*, *17*(5), 30–32.
50. Oyarzabal, E. A., Seuferling, B., Babbar, S., Lawton-O'Boyle, S., & Babbar, S. (2021). Mind-Body Techniques in Pregnancy and Postpartum. *Clinical Obstetrics and Gynecology*, *64*(3), 683–703. https://doi.org/10.1097/GRF.0000000000000641
51. Pais, M., Pai, M. V., Kamath, A., Bhat, R., Bhat, P., & Joisa, G. H. (2021). A Randomized Controlled Trial on the Efficacy of Integrated Yoga on Pregnancy Outcome. *Holistic Nursing Practice*, *35*(5), 273–280. https://doi.org/10.1097/HNP.0000000000000472
52. Pennick, V., & Liddle, S. D. (2013). Interventions for preventing and treating pelvic and back pain in pregnancy. In The Cochrane Collaboration (Ed.), *Cochrane Database of Systematic Reviews* (p. CD001139.pub3). John Wiley & Sons, Ltd. https://doi.org/10.1002/14651858.CD001139.pub3
53. Rakhshani, A., Maharana, S., Raghuram, N., Nagendra, H. R., & Venkatram, P. (2010). Effects of integrated yoga on quality of life and interpersonal relationship of pregnant women. *Quality of Life Research*, *19*(10), 1447–1455. https://doi.org/10.1007/s11136-010-9709-2
54. Rakhshani, A., Nagarathna, R., Sharma, A., Singh, A., & Nagendra, H. R. (2015). A Holistic Antenatal Model Based on Yoga, Ayurveda, and Vedic Guidelines. *Health Care for Women International*, *36*(3), 256–275. https://doi.org/10.1080/07399332.2014.942900
55. Rasane, S. R., & Bhangale, K. T. (n.d.). *Garbhini Paricharya according to various Samhita*. *32*, 4.
56. Satyānanda. (2009). *Asana pranayama mudra bandha* (4. ed., repr). Yoga Publications Trust.
57. Saxena, R., Gupta, M., Shankar, N., Jain, S., & Saxena, A. (2017). Effects of yogic intervention on pain scores and quality of life in females with chronic pelvic pain. *International Journal of Yoga*, *10*(1), 9. https://doi.org/10.4103/0973-6131.186155
58. Sengupta, P. (2014). The bliss yoga inculcates during the different stages of pregnancy. *International Journal of Pharmacy and Pharmaceutical Sciences*, *6*, 86–87.
59. Shim, C. S., & Lee, Y.-S. (2012). [Effects of a yoga-focused prenatal program on stress, anxiety, self confidence and labor pain in pregnant women with in vitro fertilization treatment]. *Journal of Korean Academy of Nursing*, *42*(3), 369–376. https://doi.org/10.4040/jkan.2012.42.3.369
60. Smith, C. A., Levett, K. M., Collins, C. T., & Crowther, C. A. (2011). Relaxation techniques for pain management in labour. *The Cochrane Database of Systematic Reviews*, *12*, CD009514. https://doi.org/10.1002/14651858.CD009514
61. Smith, C. A., Tuson, A., Thornton, C., & Dahlen, H. G. (2020). The safety and effectiveness of mind body interventions for women with pregnancy induced hypertension and or preeclampsia: A systematic review and meta-analysis. *Complementary Therapies in Medicine*, *52*, 102469. https://doi.org/10.1016/j.ctim.2020.102469
62. Styles, A., Loftus, V., Nicolson, S., & Harms, L. (2019). Prenatal yoga for young women a mixed methods study of acceptability and benefits. *BMC Pregnancy and Childbirth*, *19*, 449. https://doi.org/10.1186/s12884-019-2564-4
63. Sun, Y.-C., Hung, Y.-C., Chang, Y., & Kuo, S.-C. (2010). Effects of a prenatal yoga programme on the discomforts of pregnancy and maternal childbirth self-efficacy in Taiwan. *Midwifery*, *26*(6), e31-36. https://doi.org/10.1016/j.midw.2009.01.005
64. *Sustainable Development Goals | UNDP in India*. (n.d.). UNDP. Retrieved January 24, 2022, from https://www.in.undp.org/content/india/en/home/sustainable-development-goals.html

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65. Telles, S., & Singh, N. (2013). A review of the use of yoga in breathing disorders. *Recognizing and Treating Breathing Disorders: A Multidisciplinary Approach*, 275–282. https://doi.org/10.1016/B978-0-7020-4980-4.00027-7
66. Toosi, M., Akbarzadeh, M., Sharif, F., & Zare, N. (2014). The Reduction of Anxiety and Improved Maternal Attachment to Fetuses and Neonates by Relaxation Training in Primigravida Women. *Women's Health Bulletin*, *1*(1). https://doi.org/10.17795/whb-18968
67. Vivekananda, S. (n.d.). Patanjali yoga sutras. 143.
68. Wadhwa, Y., Alghadir, A. H., & Iqbal, Z. A. (2020). Effect of Antenatal Exercises, Including Yoga, on the Course of Labor, Delivery and Pregnancy: A Retrospective Study. *International Journal of Environmental Research and Public Health*, *17*(15), 5274. https://doi.org/10.3390/ijerph17155274
69. Wang, S.-M., DeZinno, P., Fermo, L., William, K., Caldwell-Andrews, A. A., Bravemen, F., & Kain, Z. N. (2005). Complementary and alternative medicine for low-back pain in pregnancy: A cross-sectional survey. *Journal of Alternative and Complementary Medicine (New York, N.Y.)*, *11*(3), 459–464. https://doi.org/10.1089/acm.2005.11.459
70. *WHO recommendations on antenatal care for a positive pregnancy experience*. (n.d.). Retrieved January 24, 2022, from https://www.who.int/publications-detail-redirect/9789241549912
71. Wyszynski, D. F., Hernandez-Diaz, S., Gordon-Dseagu, V., Ramiro, N., Basu, A., Kim, H. H., & Koenen, K. C. (2021). Frequency and source of worries in an International sample of pregnant and postpartum women during the Covid-19 pandemic. *BMC Pregnancy and Childbirth*, *21*(1), 768. https://doi.org/10.1186/s12884-021-04241-2