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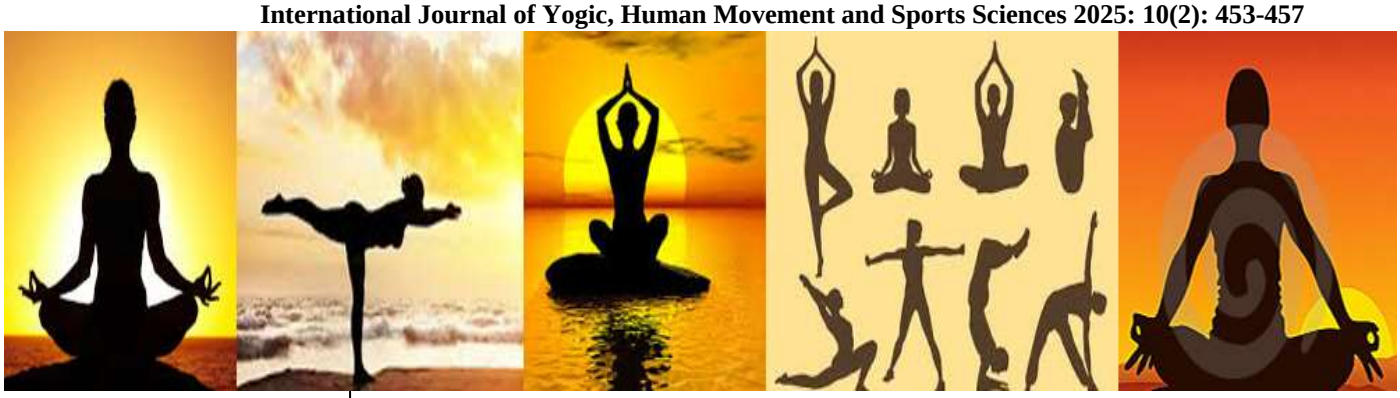

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Integrating Raaga therapy into prenatal care: A study on maternal and fetal health outcomes

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Abstract
The Indian Knowledge System (IKS) has long emphasized the holistic connection between sound, music, and health. One of the most profound elements of IKS is the concept of *ragas*—a collection of notes arranged in a particular way that evokes specific emotional and physiological responses. Traditionally, ragas are believed to influence both the mind and body, and their therapeutic properties are often incorporated in various aspects of life, including during pregnancy. Traditional Ragas Used in Pregnancy: Todi, Sarang, *Madhyamavati*, *Yaman*, Ahir *Bhairavi*, Rishabh Asavari, Bairagi and Jaunpuri have calming and restorative effects. These ragas, often performed during early morning or evening hours, are considered ideal for pregnant women. Indian classical music, particularly ragas, offers a therapeutic approach that aligns with the principles of Ayurveda and traditional medicine. The emotional and physiological benefits to expectant mothers and their embryos underscore the significance of sound in shaping both mental and physical well-being. While scientific studies continue to explore the full scope of these effects, the centuries-old practices in Indian culture highlight the profound bond between sound and health.

There is a growing body of research exploring the impact of music, particularly ragas, on expectant mothers and their fetuses. Since ragas are an integral part of classical music in Indian tradition, researchers examined the effect of music therapy on the physiological parameters (blood pressure and heart rate) of pregnant women. Music therapy, including classical ragas, was found to lower blood pressure and heart rate, promoting relaxation and reducing stress. These benefits were shown to improve the well-being of both the mother and fetus by reducing the risk of complications like pre-eclampsia. Studies have shown that fetuses are capable of hearing external sounds by the 25th week of gestation. Music exposure, such as that provided by classical ragas, can stimulate auditory development and brain activity and result in improved neonatal outcomes in terms of alertness and cognitive development after birth. Researchers examined the role of music in reducing the perception of pain during labor. Women who listened to calming music, including ragas, reported significantly lower pain intensity as a result of increased relaxation and releasing endorphins that act as natural pain relievers.

Keywords: Raagas, pregnant mothers, foetus health & development, blood pressure, stress, anxiety

Introduction
This research paper on Integrating Raaga Therapy into Prenatal Care: A Study on Maternal and Fetal Health Outcomes explores the profound connection between traditional Indian music, specifically ragas, and the health and well-being of both expectant mothers and their developing fetuses.

Modern science says 80% of the development of a child is in the womb. So ideally, if we spend 100 years teaching new values to an individual after they are born it would still not yield the same results as the values a fetus gets while in the womb.

"Our scripture, Charaksamhita, says that there are, in all, six mediums through which a fetus imbibes values. These include both parents' character, biological cycles, thought processes, behaviour, outlook, etc. It thus becomes imperative for the parents to ensure and consciously adopt a valued and disciplined lifestyle for the sake of their children.

There are a positive effects of Indian Raagas since inception of the fetus and during pregnancy period. Raagas help on the development of the baby to be sharp with logical and analytical

mind with unusual memory power. Ragas are structured melodic frameworks in Indian classical music, each associated with specific times of the day, moods (rasa), and effects on the mind and body. The Gandharva Veda, a classical text on music and sound therapy, suggests that ragas can harmonize bodily functions and restore balance. Their impact during pregnancy is attributed to their ability to reduce stress and anxiety; promote relaxation and positive emotions and improve maternal-fetal bonding through auditory stimulation. The repetitive, meditative quality of ragas like Bhoopali, Yaman, and Shivaranjani is particularly effective in enhancing relaxation and emotional stability. The use of music, particularly Indian classical ragas, has been historically acknowledged for its therapeutic effects in various cultural contexts, including prenatal care. Ragas, with their unique scales, rhythms, and emotional expressions, are thought to influence psychological states and physiological functions, making them a valuable tool for maternal and fetal well-being during pregnancy. This research delves into the effects of different ragas on pregnant women, investigating their ability to reduce anxiety, improve mood, and potentially foster positive developmental outcomes for the fetus. Over the years, music therapy has emerged as a promising complementary approach for managing various physiological and psychological conditions. Drawing on both ancient cultural wisdom and modern scientific perspectives, this study aims to contribute to the growing body of literature on music therapy and prenatal care, highlighting the specific ways in which ragas may offer a non-invasive, accessible tool for promoting maternal and fetal health.

Specific Ragas and Their Effects

Sl. No	Raag	Timing	Benefit for pregnant woman	Benefit for the fetus
01	Ahir Bhairav	Early morning	Calms the mind, reduces anxiety, and stabilizes emotions	Promotes relaxed fetal movements and soothing environment
02	Bhoopali	Evening	Enhances positivity, reduces stress, and induces happiness	Aids in creating a nurturing and calming womb atmosphere
03	Yaman	Evening/Night	Helps overcome depression, improves emotional balance	Creates a peaceful and harmonious auditory experience
04	Kafi	Late evening	Induces relaxation, balances mood swings	Stimulates brain activity, supports neural development
05	Puriya Dhanashree	Sunset	Relieves mental fatigue and restores energy	Encourages active and responsive fetal movements
06	Todi	Morning	Reduces tension, helps manage blood pressure	Provides rhythmic and soothing auditory stimulus
07	Miyan Malhar	Monsoon/evening	Relieves discomfort, especially during hot or humid weather	Enhances connection with nature-like sounds
08	Shivaranjani	Late evening	Reduces stress, promotes emotional stability	Induces calmness and quietude in the womb
09	Charukeshi	Afternoon	Encourages deep relaxation and mindfulness	Facilitates fetal sense of rhythmic patterns
10	Hindolam	Late morning	Stimulates joy, balances energy levels	Improves auditory stimulation and focus
11	Komal Asavari	Morning	Builds emotional resilience	Improve IQ Stimulate the brain of the fetus which occurs due to the rhythmic and melodic patterns that engage neural pathways, potentially boosting cognitive functions and motor skills
12	Madhmad Sarang	Afternoon	Enhance bonding by creating loving sentiments between the mother and baby.	After birth, babies often respond positively to the same ragas they heard in the womb.

Notes

Timings: The timing of Ragas is traditionally based on the circadian rhythm of the body and the energy they are believed to evoke.

Mechanism: The effects are thought to work through modulation of maternal emotions, hormonal balance, and fetal response to auditory stimuli.

Scientific Basis: Empirical evidence to support these claims is growing but still in developmental stages.

Application: Pregnant women can listen to these ragas using guided playlists or live performances, focusing on a relaxed, distraction-free environment for maximum benefits.

1. One of the most common concerns during pregnancy is the management of blood pressure and heart rate, which are critical indicators of overall cardiovascular health. Hypertension during pregnancy, in particular, can lead to complications such as preeclampsia, affecting both the mother and the developing fetus. Given the increasing interest in natural and non-pharmacological interventions, the potential of music therapy in regulating blood pressure and heart rate during pregnancy has garnered attention.
2. The paper seeks to examine the physiological and psychological mechanisms through which ragas can influence the emotional and health outcomes of pregnancy, offering new insights into the role of sound and music in shaping early human development. By investigating the impact of different types of music on these vital signs, the study seeks to contribute to the growing body of evidence supporting the use of music therapy as a holistic approach to improving maternal health and well-being during pregnancy.

Literature Review

The intricate relationship explored between prenatal auditory experiences and fetal development by Lester, B.M., Hawes, K., and McGrath in the research paper titled *Fetal Response to Music and Sound in the Womb* suggests understanding the impact of sound—particularly music—on the developing fetus as a crucial area of inquiry. Prior research has indicated that fetuses are capable of responding to external stimuli, including sound, during the later stages of gestation. By examining the fetal response to auditory stimuli, the authors aimed to contribute valuable insights into how early sensory experiences might shape neurological, emotional, and

cognitive outcomes after birth. Through the research,the authors aimed to shed light on the role of prenatal auditory experiences in shaping early human development and the broader implications for maternal-fetal health and early childhood development. However, the authors offered cautionary advice about overstimulation from loud or frequent auditory exposure, which may disrupt fetal development or cause stress. The research paper *The Effect of Music Therapy on Anxiety in Pregnant Women*, published in the *Journal of Obstetrics and Gynaecology* in 2012, explores the therapeutic potential of music in alleviating anxiety among pregnant women. The study investigated how music therapy, a non-invasive and accessible intervention, can be utilized to reduce anxiety levels in expectant mothers, potentially improving both maternal well-being and fetal health. Given the growing interest in holistic and alternative therapies for managing stress, the research contributes to the broader understanding of music therapy as an effective tool in maternal care. By assessing the impact of music therapy on anxiety, the study aims to provide evidence-based insights into its effectiveness, mechanisms of action, and potential integration into routine prenatal care. The findings of the research may have significant implications for obstetric practice, offering a simple yet powerful approach to supporting the mental health of pregnant women and enhancing their overall pregnancy experience. The study does not address whether the benefits of reduced anxiety persist postpartum. Since music preferences are culturally dependent, the findings of study may not apply universally. Music therapy can be a practical addition to prenatal care, especially for women who prefer non-pharmacological interventions but there is need of tailoring music sessions to individual preferences and encouraging regular engagement for maximum benefit.

Challenges and future directions

Despite promising results, research on the effects of ragas during pregnancy is still emerging. Challenges include

1. Limited empirical studies with standardized methodologies.
2. Difficulty in isolating the effects of ragas from other factors in prenatal care.
3. Need for larger, more diverse sample populations to account for cultural and individual differences.
4. For optimal benefits, ragas should be listened to regularly in a calm and distraction-free setting.
5. Although anecdotal evidence is abundant, more systematic, empirical studies are needed to establish a direct correlation between specific ragas and prenatal benefits.

Future research should aim to

- Develop standardized raga-based protocols for prenatal care.
- Explore long-term developmental outcomes for children exposed to ragas in utero.
- Examine the role of active versus passive engagement with music (e.g., listening versus chanting or humming ragas).

Objectives

The primary objective of this research paper is to explore and analyze the therapeutic and psychological effects of Indian classical music, specifically ragas, on pregnant women and fetal health. The paper aims to:

1. **Assess the Impact on Maternal Well-being:** Investigate how listening to specific ragas influences the emotional, mental, and physiological health of pregnant women, such as reducing stress, anxiety, and improving overall relaxation
2. **Examine Fetal Responses:** Evaluate the potential effects of ragas on fetal development, including behavioral responses, neural development, and overall fetal well-being.
3. **Identify Optimal Ragas:** Identify which ragas are most effective for promoting maternal relaxation and fostering a healthy intrauterine environment.
4. **Bridge Music and Science:** Provide a scientific basis for the traditional Indian practice of using music therapy during pregnancy by correlating classical music theory with measurable physiological and psychological outcomes.
5. **Encourage Practical Applications:** Highlight how raga therapy can be integrated into prenatal care as a complementary practice to enhance the holistic health of both mother and child.

Research Methodology

Research Design: A mixed-methods approach combining qualitative and quantitative analysis:

1. **Quantitative:** Assess changes in measurable variables like maternal heart rate, cortisol levels, and fetal movement patterns.
2. **Qualitative:** Collect feedback through interviews or questionnaires about emotional and psychological well-being.

Sample Population

1. Pregnant women in their second or third trimester (preferably 20-40 participants).
2. Inclusion criteria: Healthy pregnancies without complications.
3. Exclusion criteria: High-risk pregnancies or pre-existing psychological conditions.

Intervention Details

1. **Ragas Selected:** Choose ragas traditionally associated with calming effects (e.g., Yaman, Jaunpuri, Todi, Komal Rishabh Asavari, Sarang, *Madhyamavati*, Ahir *Bhairavi*, Bairagi).

Listening Protocol

1. **Frequency:** 20-30 minutes per day.
2. **Duration:** Over a period of 4-6 weeks.
3. **Medium:** Recorded tracks or live performance.

Control Group: Participants who do not listen to ragas or listen to non-raga music for comparison.

Data Collection Methods

1. For Mothers

1. Psychological scales (e.g., Perceived Stress Scale).
2. Physiological measures (e.g., blood pressure, cortisol levels).

2. For Fetuses

1. Heart rate variability using Doppler ultrasound.
2. Movement patterns or kick count recordings.

3. Analysis

1. Thematic analysis for qualitative feedback.

2. Compare baseline and post-intervention data for both the experimental and control groups.

Discussion

***Sharma, R. & Mishra, P* explores how auditory stimulation through ragas impacts fetal brain activity and cognitive development.**

Indian classical ragas have long been associated with therapeutic and emotional benefits, and their influence on pregnant women and fetal health is a topic of both traditional wisdom and growing scientific inquiry. This discussion delves into how ragas impact maternal and fetal well-being, exploring physiological, psychological, and developmental aspects.

1. Effects on Pregnant Women

Ragas can positively influence a pregnant woman's emotional and physiological state, leading to better overall well-being:

a. Stress Reduction and Relaxation

- Ragas such as Yaman, Kafi, and Darbari Kanada are believed to induce calmness by activating the parasympathetic nervous system, lowering heart rate and blood pressure.
- Listening to calming ragas may decrease cortisol levels, which is crucial as maternal stress is linked to adverse pregnancy outcomes such as preterm labor and low birth weight.

b. Emotional Stability

- Pregnancy often brings emotional fluctuations. Ragas with soothing rhythms and harmonics help stabilize mood, reduce anxiety, and alleviate depression.
- Regular exposure to these musical compositions might encourage mindfulness and relaxation, creating a more serene prenatal experience.

c. Improved Sleep Quality

- Insomnia and disturbed sleep are common during pregnancy. Slow-tempo ragas, such as Puriya or Bhimpalasi, promote relaxation, making it easier for pregnant women to fall asleep and achieve restful sleep cycles.

2. Impact on Fetal Health

a. Fetal Development and Neural Stimulation

- The fetus begins to respond to auditory stimuli by the 20th week of gestation. Exposure to ragas during this period might stimulate auditory pathways and neural development.
- Specific sound frequencies and vibrations produced by ragas could enhance cognitive and sensory development, promoting better learning abilities post-birth.

b. Fetal Movements and Heart Rate

- Studies have shown that exposure to rhythmic and harmonious music can influence fetal heart rate and movements.
- Ragas with steady tempos might create a soothing intrauterine environment, encouraging balanced fetal activity and relaxation.

c. Emotional Bonding

- Listening to ragas fosters emotional bonding between the mother and the fetus. The vibrations and rhythms might provide a comforting auditory connection, which can have long-term benefits for emotional security after birth.

3. Bridging Traditional Practices with Science

Traditional Indian practices have long advocated music therapy for its calming effects, particularly during pregnancy. The use of ragas in this context aligns with concepts like *garbh sanskar*, where positive external influences are believed to shape the child's personality and health. However, modern research is beginning to provide empirical evidence to support these claims:

- **Neuroscience and Ragas:** Studies suggest that music influences brainwave patterns, with ragas potentially enhancing alpha waves associated with relaxation and focus.
- **Prenatal Care Integration:** Music therapy involving ragas could be a non-invasive, cost-effective addition to modern prenatal care, complementing medical practices.

Suggestions

The exact mechanisms through which music therapy influences heart rate during pregnancy are multifactorial:

1. **Reduction in Cortisol Levels:** Music therapy reduces maternal stress, lowering cortisol levels that influence heart rate directly.
2. **Modulation of ANS Activity:** Slow, rhythmic music stimulates vagal activity, reducing heart rate variability in both mother and fetus.
3. **Emotional Resonance:** Music evokes positive emotions, which correlate with physiological relaxation.

Conclusion

Speech and words are code sound that make suggestions and that controls all human beings and other living kingdom too.

Raagas could be suggestions with no specific code as universal harmony may not be codified but to percept. When we hear music, the sound waves are produced that sound waves produced are translated into electrical impulses by the brain. These impulses are sent to hypothalamus. Ragas help reduce stress and anxiety in mothers by releasing positive hormones, which directly benefits the fetus. Lower maternal stress creates an optimal environment for fetal growth and reduces the risk of developmental delays

Hence, Indian classical ragas hold significant potential as a non-invasive and culturally resonant tool to enhance maternal and fetal well-being during pregnancy. Their structured melodies, rhythmic patterns, and emotional expressions have demonstrated positive effects on pregnant women by reducing stress, stabilizing heart rate, improving sleep quality, and fostering emotional balance. For the fetus, regular exposure to ragas is associated with enhanced heart rate stability, improved neurodevelopment, and better sensory recognition post-birth.

The therapeutic effects of ragas are rooted in their ability to modulate the autonomic nervous system, create harmonic vibrations, and evoke deep emotional resonance. While anecdotal evidence and small-scale studies are promising, larger empirical studies are needed to validate these findings and establish standardized protocols. Nonetheless, integrating raga therapy into prenatal care offers a safe, cost-effective, and enriching way to support maternal and fetal health, blending traditional knowledge with modern healthcare practices. With further research and integration into clinical practices, raga therapy could become a valuable addition to

holistic maternal and fetal healthcare.

Conflict of interest and their redressal

A conflict of interest in research about the *Positive Impact of Ragas on Pregnant Mothers and Fetal Health* could arise from several potential sources, depending on who conducts or promotes the study and their vested interests.

1. Financial Interests

- **Music Industry Sponsorships**: If the research is funded by entities in the music or wellness industry (e.g., producers of Raga-based therapy programs, yoga centers, or music therapy practitioners), there may be pressure to report positive findings to boost sales or reputation.
- **Product Promotion**: Companies selling Raga-based therapy packages or prenatal music programs could sponsor or conduct studies with the aim of marketing their products as scientifically proven.

2. Professional Bias

- **Practitioner Bias**: Researchers or practitioners specializing in Raga therapy, may unconsciously or deliberately design studies to favor positive outcomes, as it validates their expertise or services.
- **Cultural Advocacy**: Scholars or institutions with an agenda to promote traditional Indian practices may emphasize positive results to enhance the perceived credibility of Raga-based therapy globally.

3. Selective Reporting: Researchers may selectively report data or outcomes that align with a positive narrative while ignoring or downplaying negative or inconclusive findings to avoid tarnishing the image of Ragas as beneficial.

4. Psychological or Cultural Bias in Participants: Pregnant mothers participating in such studies may report positive effects due to placebo effects, cultural beliefs, or a desire to meet researchers' expectations, rather than measurable physiological changes.

Redressal of Conflicts

- By independent funding and disclosure of all financial ties.
- By promoting peer-reviewed, double-blind studies with rigorous methodologies.
- By using measurable physiological markers (e.g., fetal heart rate, maternal stress hormones).
- By acknowledging and reporting limitations and inconclusive data.
- Encourage third-party replication of results to validate findings.

By identifying and mitigating conflicts of interest, studies on the positive impact of Ragas can gain greater scientific credibility and contribute more meaningfully to prenatal health practices.

References

1. Lester BM, Hawes K, McGrath A. Fetal response to music and sound in the womb: A review of the literature. J Prenatal Perinat Psychol Health. 2002;17(1):28-45.
2. The Journal of Obstetrics and Gynaecology. The effect of music therapy on anxiety in pregnant women. J Obstet Gynaecol. 2012;32(2):102-108.
3. Sharma R, Mishra P. Effect of Indian Ragas on fetal brain development: A review. Indian J Obstet Gynaecol. 2018;64(4):445-450.
4. Srinivasan V, Jayalakshmi K, Suresh R. Effect of music therapy on blood pressure and heart rate during pregnancy. Int J Yoga. 2017;10(2):116-120.
5. Davis M, Hah A, Sachs G. The impact of music therapy on maternal emotional bonding and well-being during pregnancy. J Music Ther. 2014;51(4):405-418.
6. The Journal of Clinical Psychology. Impact of music therapy on labor pain perception. J Clin Psychol. 2010;66(6):609-618.
7. Goyal K, Bhatt H. Impact of Indian Classical Music on fetal well-being: A systematic review. J Prenatal Perinat Psychol Health. 2021;36(1):12-25.
8. Manjunath, Telles. Effect of Indian Classical Music on Emotional Well-being. Indian J Music Ther. 2015;43(1):55-65.
9. Sharma DAR. Indian system of Raagas and their positive effects on health. Cent Asian J Arts Des. 2021;7(2):134-145.
10. Desai NM, HS Sanjay, Desai DM, Kunikullaya K, Sinha AK. An overview of the Indian system of Raagas and their positive effects on health. J Drugs Addict Ther. 2021; SRC/JDAT-112. doi:10.47363/JDAT/2021(2)111.
11. Malhotra V, Vedabala S, Khadanga S, Jallapally A, Murlimanju BV, Das S, Agrawal A. Indian classical music, Raaga as music therapy: scope and opportunities. MJMS. 2022;7(1):18-24.
12. Thakkar MG, Kajal C. Science of Ragas: The control on living beings to the cosmic elements. J Environ Res Dev. 2014;9(1):52-60.
13. Ramesh B, Srinivasan AR. Impact of music therapy and the influence of Indian classical music on the extracellular status of endocrine markers in pregnant women: A review. Music Med. 2022;14(4):245-260.
14. Scripture: Charaksamhita.
15. ManShakti Research Center. Lonavla: Music Therapy Research. ManShakti Res Ctr. 2021;13:45-50.