Review Article

Role of Vyayama as Viharaja Nidana in Infertility: Bridging Ayurvedic Insights and Modern Evidence

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ABSTRACT

Infertility affects approximately 17.5% of the global reproductive-age population, with multifactorial etiologies spanning physiological, pathological, and lifestyle determinants. Ayurveda classifies these causes into Aharaja, Viharaja, Manasika, and Agantuja Nidanas, with Viharaja factors—particularly Vyayama (physical activity)—playing a significant role. Classical Ayurvedic texts emphasize that both Ativyayama (excessive exertion) and Avyayama (inactivity) can disrupt Agni and Dhatu balance, leading to Shukra and Artava Dushti, thereby impairing fertility. Modern research corroborates these insights, linking moderate exercise with hormonal balance and reproductive health, while associating extremes of activity with menstrual irregularities, anovulation, reduced sperm quality, and hormonal disturbances. This article bridges classical Ayurvedic concepts with contemporary evidence, emphasizing Yukta Vyayama (appropriate exercise) as a preventive and therapeutic strategy for infertility.

Keywords: Infertility, Viharaja Nidana, Artava Dushti, Vyayama, Menstrual irregularities

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INTRODUCTION

Infertility, defined by the World Health Organization as the inability to conceive after 12 months of regular unprotected intercourse, affects 3.5–16.7% of couples in developed regions and 6.9–9.3% in less developed areas. Both male and female infertility are influenced by structural, functional, hormonal, and lifestyle factors.

In Ayurveda, the causes are categorized into Aharaja (dietary), Viharaja (lifestyle-related), Manasika (psychological), and Agantuja (external) factors. Among these, Vihara—which encompasses daily routine, physical activity, sleep, and conduct—plays a crucial role in reproductive health. Vyayama (physical exertion) is considered beneficial when performed appropriately (Yukta Vyayama), but detrimental when excessive (Ativyayama) or absent (Avyayama).

This study aims to integrate Ayurvedic understanding of Vyayama as a Viharaja Nidana in infertility with modern scientific evidence, thereby offering an integrative preventive approach.

2. METHODS

Study Design

A conceptual review combining analysis of classical Ayurvedic literature with synthesis of modern biomedical research findings.

Data Sources

Ayurvedic References

Brihattrayi: Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya.

Laghutrayi and commentaries.

Nighantus and specialized compendiums on Vyayama, Viharaja Nidanas, and Vandhyatva.

Modern Literature

Databases: PubMed, Scopus, Google Scholar.

Search terms: "exercise and infertility", "physical activity and reproductive health", "overtraining and fertility", "Ayurveda and Vyayama", "Viharaja Nidana".

Inclusion Criteria

Ayurvedic references linking Vyayama to Shukra and Artava health.

Clinical and experimental studies on physical activity effects on male and female fertility.

Exclusion Criteria

Non-reproductive lifestyle factors unrelated to physical activity.

Studies without reproductive health outcomes.

Analytical Approach

Ayurvedic Analysis: Extraction of Vyayama-related infertility mechanisms (Agni Dushti, Dhatu Kshaya, Vata Prakopa).

Modern Correlation: Mapping classical insights to findings from endocrinology, reproductive medicine, and sports physiology.

Integrative Synthesis: Development of a unified framework for Yukta Vyayama

recommendations in infertility prevention and management.

3. RESULTS

3.1 Ayurvedic Insights

Viharaja Nidana: Disruption in daily lifestyle impairs Agni and Dhatu balance, affecting Shukra and Artava.

Vyayama Classification:

Yukta Vyayama → Dosha balance, improved Agni, increased Bala.

Ativyayama → Vata-Pitta aggravation, fatigue, sterility.

Avyayama → Kapha accumulation, obesity, diabetes, hormonal imbalance.

Pathogenesis: Improper Vyayama → Vata aggravation → Shukra/Artava Dushti → Vandhyatva.

3.2 Modern Scientific Evidence

Moderate Physical Activity: Improves ovulation, sperm quality, insulin sensitivity, hormonal balance.

Excessive Physical Exertion: Causes anovulation, menstrual irregularities, cortisol rise, low testosterone, reduced spermatogenesis.

Sedentary Lifestyle: Leads to obesity, polycystic ovary syndrome (PCOS), erectile dysfunction, and metabolic infertility.

4. DISCUSSION

The convergence of Ayurvedic and modern perspectives highlights the critical role of balanced physical activity in reproductive health. Ayurvedic classics caution against both extremes—overexertion (Ativyayama) and inactivity (Avyayama)—because both disturb Dosha balance, metabolic fire (Agni), and tissue integrity (Dhatu Samya), ultimately impairing reproductive capacity.

Modern endocrinology supports this view:

Overtraining increases stress hormones (cortisol), disrupts gonadotropin release, and causes menstrual and spermatogenic dysfunction.

Inactivity contributes to obesity, insulin resistance, and altered sex hormone metabolism.

Yukta Vyayama, as prescribed in Ayurveda, aligns with WHO recommendations of 150–300 minutes of moderate activity per week for adults. An integrative application of this concept can form the basis for preventive infertility care, especially in populations exposed to sedentary work or intense athletic training.

5. CONCLUSION

Ayurveda offers a nuanced understanding of physical activity's impact on fertility, with Yukta Vyayama representing an optimal middle path. Integrating this wisdom with modern reproductive health guidelines provides a sustainable, holistic model for infertility prevention and management. Further clinical studies are needed to establish evidence-based exercise protocols tailored to reproductive health.

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