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"*Sthaulya* and *Kruccha Vyavayata*: An Integrative Ayurvedic and Modern Perspective on Obesity-Induced Sexual Dysfunction"

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Abstract

Background: Obesity (*Sthaulya*) is a growing global health concern linked to multiple systemic complications, including sexual dysfunction. Ayurveda describes a comparable condition, *Kruccha Vyavayata*, resulting from disturbances in metabolic and reproductive processes.

Objective: To explore the relationship between *Sthaulya* and Kruccha Vyavayata through an integrative Ayurvedic and modern scientific perspective.

Methods: A narrative review was conducted using classical Ayurvedic texts and contemporary biomedical literature to analyze conceptual and mechanistic correlations.

Results: *Sthaulya* is characterized by *Agnimandya*, *Meda Dhatu Vriddhi*, and *Srotorodha*, leading to impaired nourishment of *Shukra Dhatu* and resultant sexual dysfunction. Modern evidence supports this through mechanisms such as hormonal imbalance, endothelial dysfunction, inflammation, and reduced physical capacity. Clear parallels were observed between Ayurvedic concepts and biomedical findings.

Conclusion: *Sthaulya* contributes significantly to sexual dysfunction via interconnected metabolic and functional disturbances. An integrative approach combining Ayurvedic principles with modern insights may enhance management and improve reproductive health outcomes.

Keywords: *Sthaulya*, Kruccha Vyavayata, Obesity, Sexual Dysfunction

INTRODUCTION

Obesity has emerged as one of the most significant global health challenges of the 21st century, with a rapidly increasing prevalence across both developed and developing countries. The World Health Organization (WHO) recognizes obesity as a major risk factor for a wide spectrum of disorders, including metabolic, cardiovascular, and reproductive diseases.[1] While its association with conditions such as diabetes and hypertension is well established, the impact of obesity on sexual and reproductive health has gained increasing attention in recent years.

Sexual dysfunction in obese individuals is multifactorial, involving complex interactions between hormonal imbalance, endothelial

dysfunction, chronic inflammation, and psychological factors[2,3] .Reduced testosterone levels, impaired vascular perfusion, and decreased physical endurance collectively contribute to diminished sexual performance and satisfaction[4,5]. Despite substantial advances in biomedical research, the understanding of obesity-related sexual dysfunction often remains fragmented and primarily symptom-oriented.

Ayurveda offers a comprehensive and systemic perspective on this condition. *Sthaulya* is described as a *Santarpanajanya Vyadhi*, resulting from excessive intake of *Guru*, *Snigdha*, and *Madhura Ahara*, along with sedentary lifestyle practices such as *Avyayama* and *Divaswapna*[6,7]. These factors lead to *Kapha Dosha* predominance, *Agnimandya* (metabolic impairment), and excessive accumulation of *Meda Dhatu*, ultimately disrupting physiological homeostasis. Importantly, classical texts explicitly describe *Kruccha Vyavayata* (difficulty in sexual activity) as a complication of *Sthaulya*, indicating an early recognition of the link between metabolic excess and reproductive dysfunction[6].

The Ayurvedic framework explains this association through mechanisms such as *Srotorodha* (channel obstruction) and *Dhatu Apushti* (impaired tissue nourishment), leading to dysfunction of *Shukra Dhatu*, which governs reproductive capacity and vitality. These concepts demonstrate notable parallels with modern pathophysiological mechanisms, including vascular insufficiency, hormonal dysregulation, and systemic inflammation[8].

However, despite these conceptual similarities, a comprehensive integrative analysis correlating Ayurvedic principles with contemporary biomedical evidence remains limited. Bridging this gap is essential for developing a more holistic understanding of obesity-related sexual dysfunction and for identifying multidimensional therapeutic strategies.

Therefore, the present review aims to critically analyze the relationship between *Sthaulya* and Kruccha Vyavayata by integrating classical Ayurvedic concepts with modern scientific evidence, thereby providing a unified framework for understanding its pathogenesis and clinical implications.

METHODOLOGY

The association between obesity and sexual dysfunction has been increasingly explored in modern biomedical research, while classical Ayurvedic literature has long recognized a similar relationship in the context of *Sthaulya* and *Kruccha Vyavayata*. A critical review of both domains reveals significant conceptual overlap along with important gaps in integrative understanding.

- **Brihatrayi Perspective**

1. **Charaka Samhita**

" अतिस्थूलस्य तावदायुषो ह्रासो जवोपरोधः कृच्छ्रव्यवायता दौर्बल्यं दौर्गन्ध्यं स्वेदाबाधः क्षुदतिमात्रं पिपासातियोगश्चेति भवन्त्यष्टौ दोषाः|"(Charaka Samhita, Sutra Sthana 21/4)[6]

Interpretation: Reduced lifespan, restricted activity (*Javoparodha*), difficulty in sexual activity (*Kruccha Vyavayata*), weakness, foul body odor, excessive sweating, and increased hunger and thirst.

2. **Sushruta Samhita**

(Sutra Sthana 15/37)[9]
Sthaulya is described as *Meda Dhatu Vriddhi* with *Dhatu Vaishamya*, leading to reduced strength and vitality.

3. **Ashtanga Hridaya**

(Sutra Sthana 11/10, 14/31)[7]
Describes *Kapha–Meda predominance*, heaviness, and reduced activity contributing to decreased functional efficiency.

- **Laghutrayi Perspective**

4. **Madhava Nidana (34/3)** [10]

"क्षुद्रश्वास – तृषा – मोह – स्वप्न – क्रथन – सादनैः |

युक्तः क्षुत्स्वेद – दौर्गन्ध्यैरल्पप्राणो अल्पमैथुनः ॥ ३ ॥

Interpretation: Dyspnea on exertion, excessive sweating, increased hunger and thirst, and reduced sexual activity (*Alpa Maithunata*).

5. **Bhava Prakasha (Madhyama Khanda)** [11] Bhavaprakash of Bhava Mishra, Madhyam and Uttara Khanda, Volume II, Chapter 39
   Describes *Sthaulya* as *Meda Vriddhi* associated with reduced activity and vitality.

🔷 Samprapti (Pathogenesis)

"शुक्राबहुत्वान्मेदसाऽऽवृतमार्गत्वाच्च कृच्छ्रव्यवायता II(Charaka, Sutra Sthana 21/4)

Meaning: Excess *Meda* obstructs channels leading to impaired *Vata* movement, metabolic dysfunction (*Agnimandya*), and defective *Dhatu Poshana*.

🔷 Modern Correlation

Ayurvedic Concept	Modern Equivalent
Meda Vriddhi	Adiposity
Agnimandya	Metabolic dysfunction
Srotorodha	Endothelial dysfunction
Shukra Kshaya	Hormonal imbalance
Javoparodha	Reduced stamina

NIDANA (CAUSES)

Shloka (Charaka Samhita)

"तदतिस्थौल्यमतिसम्पूरणाद्गुरुमधुरशीतस्निग्धोपयोगादव्यायामादव्यवायाद्दिवास्वप्नाद्धर्षनित्यत्वाद-चिन्तनाद्बीजस्वभावाच्चोपजायते| तस्य ह्यतिमात्रमेदस्विनो मेद एवोपचीयते न तथेतरे धातवः॥"

Meaning: Excess intake of heavy, unctuous, and sweet foods along with lack of exercise and day sleep leads to *Sthaulya*.

SAMPRAPTI (PATHOGENESIS)

Shloka

अव्यायाम – दिवास्वप्न – श्लेष्मलाहारसेविनः |
मधुरो अन्नरसः प्रायः स्नेहान्मेदः प्रवर्धयेत् ॥ १ ॥
मेदसा आवृत मार्गत्वात् पुष्यन्त्यन्ये न धातवः | (Madhav nidan 34/1-2)

Santarpana (Overnutrition)
↓
Kapha Vriddhi
↓
Agnimandya
↓
Meda Dhatu Vriddhi
↓
Srotorodha
↓
Dhatu Apushti
↓
Shukra Kshaya
↓
Kruccha Vyavayata

Study Design

This study is a **narrative review** conducted to analyze the relationship between *Sthaulya* (obesity) and *Kruccha Vyavayata* (sexual dysfunction) through an integrative approach combining Ayurvedic and modern medical perspectives.

Data Sources

The study is based on a comprehensive review of both classical Ayurvedic literature and modern scientific sources.

- **Ayurvedic texts:** Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Madhava Nidana, and Bhava Prakasha along with their commentaries.
- **Modern sources:** Standard medical textbooks such as Harrison's Principles of Internal Medicine, Guyton and Hall Textbook of Medical Physiology, and Robbins Pathologic Basis of Disease.
- **Electronic databases:** PubMed and Google Scholar.

Search Strategy

Relevant literature was searched using keywords such as "Obesity," "Sexual dysfunction," "Erectile dysfunction," "*Sthaulya*," "Kruccha Vyavayata," "Shukra Dhatu," and "Agnimandya."

Articles were selected based on their relevance to the topic. Additional references were identified through manual searching of bibliographies.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Classical references describing *Sthaulya* and its complications
- Articles related to obesity and sexual dysfunction
- Review and clinical studies relevant to the topic
- Articles published in English

Exclusion Criteria:

- Irrelevant studies
- Duplicate articles
- Non-English articles without proper translation

Data Collection and Analysis

Relevant information was collected and categorized under Ayurvedic concepts such as *Nidana*, *Samprapti*, and *Dhatu–Srotas involvement*, along with modern pathophysiological mechanisms.

A comparative analysis was performed to identify correlations between Ayurvedic and modern concepts, and findings were presented in an integrated manner.

DISCUSSION

The present review establishes a clear and clinically significant relationship between *Sthaulya* and *Kruccha Vyavayata*, supported by both classical Ayurvedic literature and modern biomedical evidence. The findings from *Brihatrayi* and *Laghutrayi* consistently indicate that obesity is not merely a disorder of excessive body weight but a systemic condition affecting metabolic, functional, and reproductive health.

Classical references, particularly Charaka Samhita (Sutra Sthana 21/4), explicitly describe *Kruccha Vyavayata* as a complication of *Sthaulya*, highlighting reduced sexual capacity as a direct consequence of metabolic imbalance [1]. Similarly, Madhava Nidana describes *Alpa Maithunata* in obese individuals, reinforcing the clinical oshukraqbservation of diminished sexual activity [4]. These descriptions demonstrate that the impact of *Sthaulya* on reproductive function was well recognized in classical Ayurvedic texts.

The pathogenesis of *Sthaulya*, as described in Ayurveda, revolves around *Santarpana*, leading to *Kapha Vriddhi* and *Agnimandya*. This results in excessive accumulation of *Meda Dhatu*, which obstructs physiological channels (*Srotorodha*)[6,10]. The classical concept—*"मेदसा आवृतमार्गत्वात् वातस्य गमनावरोधः"*—provides a crucial insight into the mechanism of disease progression, where obstruction by Meda disrupts the normal movement of Vata, leading to impaired metabolism and defective nourishment of subsequent Dhatus. As *Shukra Dhatu* is the final and most refined tissue, it becomes particularly vulnerable to such disturbances, resulting in *Shukra Kshaya* and subsequent *Kruccha Vyavayata*.

Modern biomedical science offers parallel explanations for these observations. Obesity is associated with hormonal dysregulation, particularly decreased testosterone levels due to increased aromatization in adipose tissue[5,11,12]. This directly affects libido and reproductive capacity. Endothelial dysfunction, characterized by impaired nitric oxide-mediated vasodilation, leads to reduced blood flow to genital organs, contributing to sexual dysfunction[4,13]. These mechanisms closely correlate with the Ayurvedic concept of *Srotorodha*.

Additionally, chronic low-grade inflammation and metabolic disturbances described in obesity are well documented in standard pathology and physiology literature [8,12], which closely correlate with the Ayurvedic concepts of Agnimandya and Srotorodha.

Furthermore, reduced physical capacity observed in obese individuals aligns with Ayurvedic descriptions of *Javoparodha* and *Daurbalya*. Sexual activity requires adequate physical stamina, and decreased endurance

significantly contributes to impaired performance. Psychological factors such as depression, anxiety, and low self-esteem—commonly associated with obesity—further aggravate sexual dysfunction[14,15]. Ayurveda also acknowledges the role of *Manasika Bhava* in influencing reproductive health, indicating a holistic understanding of the condition.

An important point of convergence between Ayurveda and modern science is the concept of qualitative deficiency despite quantitative excess. In *Sthaulya*, although *Meda Dhatu* is increased, other Dhatus suffer from inadequate nourishment (*Dhatu Apushti*). This mirrors modern observations where increased adiposity coexists with hormonal deficiency and reduced physiological efficiency[5]. Thus, both systems emphasize that excess nutrition does not equate to functional health.

However, certain limitations must be acknowledged. Ayurvedic explanations are primarily qualitative and lack direct measurable parameters, whereas modern biomedical models provide quantitative and experimental validation. Conversely, modern approaches often focus on isolated mechanisms and may overlook systemic interconnections emphasized in Ayurveda. Therefore, an integrative approach combining both paradigms offers a more comprehensive understanding.

Overall, the present analysis suggests that *Sthaulya* contributes to sexual dysfunction through interconnected metabolic, structural, functional, and psychological pathways. The correlation between *Agnimandya*, *Meda Vriddhi*, *Srotorodha*, and *Shukra Kshaya* with modern mechanisms such as metabolic dysfunction, vascular impairment, and hormonal imbalance provides a strong foundation for integrative management strategies. Early intervention focusing on lifestyle modification, metabolic correction, and holistic care may significantly improve reproductive health outcomes.

CONCLUSION

Sthaulya is a systemic disorder that significantly affects both metabolic and reproductive health. Ayurvedic literature clearly describes *Kruccha Vyavayata* as a complication of *Sthaulya*, resulting from *Agnimandya*, *Meda Vriddhi*, *Srotorodha*, and *Shukra Kshaya*.

Modern evidence supports these concepts, demonstrating that obesity leads to sexual dysfunction through hormonal imbalance, vascular impairment, reduced physical capacity, and psychological factors.

The strong correlation between Ayurvedic principles and modern mechanisms highlights the relevance of an integrative approach. Early intervention through lifestyle modification and metabolic correction can play a key role in improving sexual health and overall quality of life.

FUTURE SCOPE

There is a need for **well-designed clinical studies** to evaluate the relationship between *Sthaulya* and *Kruccha Vyavayata* using both Ayurvedic and modern diagnostic parameters.

Future research should focus on developing **standardized assessment tools** that can integrate Ayurvedic concepts such as *Dhatu status*, *Agni*, and *Srotas Dushti* with measurable biomedical markers like hormonal levels and vascular parameters.

Interventional studies evaluating the effectiveness of **Ayurvedic therapies**, including *Agnideepana*, *Medohara*, *Rasayana*, and lifestyle modifications, in improving sexual dysfunction in obese individuals are also warranted.

Moreover, **multidisciplinary research models** combining Ayurveda, endocrinology, and psychology may provide deeper insights into the complex interplay between metabolism and reproductive health.

The development of **integrative treatment protocols** that address metabolic, psychological, and reproductive aspects simultaneously could significantly improve patient outcomes.

Finally, large-scale **longitudinal studies** are required to understand the long-term impact of

Sthaulya on reproductive health and the effectiveness of early interventions.

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