

## South Karnataka Silk Industry: A Sociological Exploration of Women's Health and Wellbeing

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### Abstract:

*This study examines the sociological dimensions of women's health and wellbeing in the South Karnataka's silk industry, leveraging secondary data and existing literature. The cultivation and production of silk through the rearing of silkworms, not only plays a crucial role in promoting regional economic development, but also holds immense potential for empowering women. The study is mainly based on the secondary data regarding the participation of women in Sericultural operations in South Karnataka. Women constitute 60% of the sericulture workforce (Central Silk Board, Bengaluru, 2022) and 70% of women workers experience occupational health issues (ILO), 45% lack access to healthcare services (WHO). This research investigates the prolonged exposure to hazardous chemicals and poor working conditions, limited access to healthcare services, particularly reproductive healthcare, intersectional disparities in health outcomes based on caste, age, and education, work-life balance, and access to healthcare faced by women workers. The findings highlight significant correlation between workplace conditions, social support, and women's physical and mental wellbeing. The study identifies policy gaps and recommends interventions to improve women's health outcomes and promote gender-sensitive industrial practices. This study underscores the need for evidence-based interventions to address the sociological determinants of women's health in South Karnataka's silk industry.*

**Keywords:** Women's health, wellbeing, silk industry, South Karnataka, sociological exploration, occupational health, work-life balance.

## Introduction:

Sericulture is an agro-based, labour-intensive industry that centres on rearing silkworms to produce raw silk—the filament unwound from cocoons. Its principal activities include cultivating food plants for silkworms, rearing the larvae, and reeling cocoons to obtain silk filament for subsequent processing and weaving. These processes link agricultural and industrial work, making sericulture a hybrid rural livelihood activity. Sericulture is predominantly village-based and home-oriented, enabling participation by both skilled and unskilled family members regardless of gender or age. It suits marginal and small landholders because it requires relatively low capital, has a short gestation period, and can generate steady year-round income. Technological improvements have also enabled more intensive cultivation and higher productivity, increasing the sector's revenue potential. Sericulture integrates agricultural and industrial processes through silkworm cultivation for raw silk production, encompassing food-plant farming, larval rearing, cocoon reeling, and fabric processing. This village-based, family-oriented activity supports marginal farmers with low capital requirements, rapid returns, and year-round income potential, enhanced by technological advancements in cultivation techniques.

India ranks second globally in silk output after China, employing millions across thousands of villages, with Karnataka, Andhra Pradesh, and Tamil Nadu leading mulberry production that accounts for 95% of national raw silk. Women constitute over 60% of the workforce across these operations, performing labour-intensive tasks that sustain rural households while reinforcing traditional gender roles. Karnataka alone produces nearly half of India's mulberry silk, making South Karnataka districts like Ramanagara, Mandya, and Chikkaballapur central to this agro-industry that blends economic opportunity with gendered vulnerabilities.

## Historical Development in South Karnataka

Karnataka sericulture has history of more than 215 years. The Tiger of Mysore “Tippu Sultan” is the father of the Karnataka Silk industry. He wanted “Mysore to be the foremost among silk producing nations”. The dream of this great ruler eventually came true and established Sericulture in Channapatana. Since its inception Channapatana silk farm is working on Silk

seed breeding and breeding experiments. Karnataka's sericulture legacy spans over two centuries, originating in 1785 when Tipu Sultan initiated training programs in Bengal to establish silk production in his Mysore kingdom. Formal operations began around 1800 near Channapatana, followed by Bangalore's first filature in 1860 under Italian technical expertise. The sector gained institutional structure as an independent department in 1914 during British administration and flourished under Mysore ruler Nalvadi Krishnaraja Wadiyar with engineer M. Visvesvaraya's modernization efforts.

Known as India's "Silk Bowl," Karnataka generates substantial rural employment through its renowned Mysore silk, celebrated for exceptional durability, lustrous finish, and intricate designs in vibrant sarees that support countless middle- and lower-income families.

## Women's Role and Labour Division

Women play a key role in sericulture industry. In India, women are mostly found as the major activist in sericulture. Women dominate sericulture operations, contributing 60% of total labour in mulberry cultivation (58.4%), silkworm rearing (54.13%), reeling, and weaving—tasks requiring patience and manual dexterity that align with cultural expectations of feminine capabilities. They manage routine activities like leaf preparation, feeding larvae, bed cleaning, and cocoon mounting alongside domestic responsibilities, creating a "double burden" of productive and reproductive labour essential to household survival and industry functionality. Women are the proud of silk industry. Women are channelled into tasks perceived as requiring 'patience' and 'delicate hands', such as silkworm care and fine thread reeling, reinforcing essentialist notions of female nature while assigning men the roles involving machinery, marketing and formal transactions. The women and silk are the two sides of the same coin and hence quoted as 'silk is by the women, for the women and of the women' (G S Geetha).

The production process consists of a long chain of interdependent and specialized operations. The major activities involved in a sericulture industry are:

- Cultivation of silkworm food plants
- Rearing of silkworms for the production of raw silk
- Reeling the cocoons for unwinding the silk filament
- Other post-cocoon processes such as twisting, dyeing, weaving, printing and finishing.

According to Lakshmanana, the human labour employed in mulberry sericulture is 41.54 per cent by males and 58.4 per cent by females in mulberry cultivation, and 45.87 per cent male

and 54.13 per cent female in silkworm rearing. Despite this centrality, women's socio-economic empowerment remains limited by intersecting barriers of caste hierarchies, poverty, low education levels, restricted credit access, and insecure land tenure. Labor studies confirm their disproportionate involvement in mature garden maintenance and post-cocoon processing within cottage units, where they generate critical income for family nutrition and children's education yet possess minimal control over earnings or decision-making.

- 📚 ILO (1985). *Women, Work and Health*. This foundational study analyses how gendered labour conditions expose women to repetitive stress, chemical hazards, and poor ergonomics. It highlights how informal-sector environments intensify health risks, especially for women engaged in manual, low-paid work. The book outlines the link between workplace structures and chronic health problems such as fatigue, anaemia, and musculoskeletal disorders. Its insights into reproductive health hazards align closely with risks faced by women in silk-reeling units. The study also critiques policy gaps that leave women workers unprotected. Its global perspective helps contextualize regional challenges in Karnataka's silk industry. Overall, the text provides a vital framework for understanding labour-induced health inequalities.
- 📚 Banerjee, N. (1998). *The Weaving of Life: Women's Work in South Asia*. This ethnographic study explores women's participation in traditional textile economies, revealing layered forms of exploitation and resilience. Banerjee documents bodily strain, long hours, and occupational fatigue common in weaving and reeling communities. She highlights how caste, gender, and class jointly shape labour conditions and mobility. The book's detailed analysis mirrors the experiences of women in South Karnataka's silk clusters. It also discusses wage disparities and the undervaluing of women's labour. Banerjee's focus on dignity and survival strategies deepens understanding of wellbeing. Overall, the work offers a culturally grounded perspective on women's textile-based livelihoods.
- 📚 Patel, V. (2002). *Gender and Labour in India*. Patel critically examines gendered divisions of labour and systemic inequalities across India's workforce. She explains how women in informal industries face unstable employment, low wages, and occupational hazards. The analysis of workplace vulnerabilities parallels the realities of sericulture and silk-reeling workers. Patel's discussion of structural constraints—like mobility limits and wage hierarchies—applies strongly to Karnataka's silk sector. Her focus on social norms and gendered expectations enriches wellbeing analysis. The book also highlights policy failures that disproportionately affect women labourers. Overall, it offers a strong sociological foundation for studying women's work conditions.

- ✚ Nagaraj, K. (2005). *Silk in India: Tradition and Transition*. This book provides a comprehensive history of India's silk industry, with emphasis on regional variations and technological change. Although not centred on women, it offers crucial background on production processes shaping labour conditions. Nagaraj highlights how modernization altered traditional reeling and weaving practices in South Karnataka. His analysis helps situate women workers' health issues within broader industrial transitions. The book explains how shifts in technology affect workload, exposure, and productivity. Its economic and cultural insights enrich understanding of the industry's structure. Overall, it gives essential context for analysing women's wellbeing in silk units.
- ✚ Kannan, K. P. (2007). *The Invisible Workers: Women in India's Informal Economy*. Kannan exposes the hidden labour contributions of women in informal sectors, where exploitation and insecurity are widespread. His analysis of low wages, absence of social security, and poor working conditions mirrors the situation of Karnataka's silk workers. The book highlights how invisible labour burdens intensify health risks and stress. Kannan also discusses the dual load of household work and wage labour borne by women. His critique of institutional neglect reveals systemic barriers to wellbeing. The text offers a sharp understanding of gendered marginalization. Overall, it strongly supports sociological analysis of sericulture labour.
- ✚ Parikh, I. (2010). *Body, Labour and Stress: Women Workers in India*. Parikh investigates the physical and psychological pressures experienced by women engaged in labour-intensive industries. She documents musculoskeletal disorders, chronic fatigue, and stress-related ailments common among manual workers. These findings correlate closely with health problems in silk-reeling and twisting units. Parikh also explores how repetitive tasks and poor ergonomics worsen long-term wellbeing. Her analysis of emotional stress and workplace anxiety enhances understanding of mental health dimensions. The book underscores the need for better workplace design and protective measures. Overall, it offers a direct health-focused framework for silk industry research.
- ✚ Kapadia, K. (2011). *Women in the Indian Economy*. Kapadia examines the socio-economic positioning of women in India, emphasizing labour participation, autonomy, and wellbeing. She analyses wage inequality, financial dependence, and restricted mobility—patterns evident among silk workers. The book discusses how structural barriers limit women's access to opportunities and resources. Kapadia's insights into gendered economic vulnerabilities align with conditions in South Karnataka's sericulture belt. Her focus on agency and empowerment enriches wellbeing discussions. The text also critiques policy shortcomings affecting women's labour rights. Overall, it helps frame women's silk work within broader economic structures.

✚ Srivastava, A. (2014). *Work, Health and Environment: Old Problems, New Solutions*. Srivastava provides an interdisciplinary examination of occupational health hazards across diverse industries. The book analyses exposure to dust, heat, chemicals, and noise—risks common in silk reeling and dyeing units. It offers practical frameworks for assessing workplace safety and environmental conditions. Srivastava also highlights the need for regulatory reforms to protect women workers. His emphasis on prevention and technology-based solutions is relevant to the silk sector. The discussion of health monitoring and welfare improves understanding of wellbeing outcomes. Overall, the book is highly applicable to women's health research in sericulture.

### Objectives:

The present study has been taken up with the following objectives.

- To study the health issue of working women in sericulture
- To understand the medical facilities for working women in the silk industry
- To analyse the women empowerment in rural areas of South Karnataka

### Methodology:

This study is a secondary-data, literature-based sociological analysis synthesizing government reports, sectoral statistics, academic article, and industry publications relevant to South Karnataka sericulture.

- Secondary Data: Websites
  - i. South Karnataka District-wise Sericulture websites and Central Silk Board reports for workforce and production statistics.
  - ii. Articles from various field on sericulture – peer-reviewed articles and theses on sericulture, occupational health, gendered labour, and rural livelihoods.
  - iii. All sources will be cited appropriately and the study uses publicly available secondary data only; on primary data collection or human-subject interaction is involved.

### Limitations:

- Reliance on Secondary sources may limit the ability to capture current, localized conditions or undocumented informal work.
- Variability in data quality and inconsistent disaggregation by gender, caste, or age across sources may constrain some intersectional analyses.

## Occupational Hazards and Health Risks

Sericulture exposes women—particularly those aged 30-40, representing the majority of workers—to diverse physical, chemical, ergonomic, and psychological hazards across production stages. Physical strains from repetitive motions, awkward postures, heavy lifting, and sharp machinery cause musculoskeletal disorders and injuries, while prolonged fine work leads to eye strain. Chemical exposures include toxic dyes (aniline, formaldehyde), pesticide residues on cocoons, and finishing agents during processing.

Women workers face various health risks and hazards throughout the sericulture and silk production process, including;

### 1. Physical Hazards

- Musculoskeletal disorders: Repetitive tasks, awkward postures, and heavy lifting
- Cuts and injuries: Sharp machinery, spinning and weaving equipment
- Eye strain: prolonged focus on intricate tasks.

### 2. Chemical Hazards

- Dyeing chemicals: exposure to toxic substances like aniline, benzene and formaldehyde
- Pesticide residues: handling cocoons treated with pesticides
- Finishing chemicals: Exposure to chemicals during printing, washing, and finishing processes

### 3. Health Risks

- Respiratory problems: Inhalation of dust, fibers, and chemical fumes
- Skin conditions: Dermatitis, allergic reactions from dyeing chemicals
- Reproductive health issues: Prolonged exposure to harmful chemicals

### 4. Ergonomic and Psychological Hazards

- Work-related stress: Long working hours, intense workload
- Poor lighting and ventilation: Inadequate workplace conditions
- Lack of personal protective equipment (PPE): Insufficient safety measures

Respiratory problems affect 20-42% of workers through dust, fiber inhalation, and chemical fumes, compounded by poor workplace ventilation. Dermatological conditions prevail, with 21.5% experiencing skin itchiness, 20.6% dryness, 6.1% hot-water blisters, and 7.7% ulcers—symptoms statistically more pronounced among women for itching due to prolonged hand immersion. Reproductive health concerns arise from chronic chemical exposure, while long hours (often 12+) and inadequate lighting generate work-related stress without personal protective equipment.

In South Karnataka reeling units, patriarchal norms prioritize continuous productivity over health, delaying medical care amid volatile cocoon prices and debt pressures that undermine bargaining power. Lower-caste women face exacerbated vulnerabilities through exclusion from mechanization benefits and limited social support networks.

### **Sociological Analysis and Social Determinants**

Framed by WHO's social determinants of health framework—the circumstances of work, living conditions, and structural forces shaping daily lives—sericulture simultaneously generates livelihoods and perpetuates gendered health disparities. Women's earnings fund household essentials yet reinforce their confinement to hazardous roles, with caste, age, and education mediating access to care and protective measures.

Micro-level patterns reveal high musculoskeletal, dermatological, and respiratory morbidity tied to specific tasks like hot-water reeling and chemical handling, alongside psychological strain from balancing 12-hour shifts with family duties. Structural factors including insecure tenure, market instability, and normative expectations delay symptom reporting and treatment.

### **Conclusion**



This study focuses on understanding the various social and personal determinants of health that most affect women's wellbeing. The World Health Organisation defines the Social Determinants of Health as the conditions in which "people are born, grow, work, live, and age and the interactions of forces that shape the conditions of one's daily life."

South Karnataka's silk industry underscores sericulture's dual role in rural development and gender vulnerability reproduction, positioning it as a critical site for sociological inquiry into women's wellbeing. Essential interventions include workplace ventilation upgrades, subsidized protective equipment and mechanization, mobile reproductive health camps, and caste-inclusive cooperatives with insurance coverage. Gender-sensitive policies must address the "double burden" to convert economic participation into genuine empowerment and sustainable health outcomes.

Women's extensive participation in sericulture underlines their centrality to rural development, but their exposure to occupational hazards and constrained agency highlight the importance of addressing social determinants of health. 'South Karnataka Silk Industry' A Sociological Exploration of Women's Health and Wellbeing' can be framed through a multi-level analytical approach. At the micro level, life histories and workplace ethnographies can uncover how individual women balance sericulture work, domestic responsibilities and health-seeking practices. For many households, women's sericulture income is used for children's education, food security, and basic health expenses, contributing to incremental improvements in socio-economic status. Empirical research on sericulture workers documents a high prevalence of occupational health problems linked to specific tasks and workplace environments. Common conditions include musculoskeletal disorders from prolonged standing, awkward postures, and repetitive upper-limb movements during reeling and rearing; skin problems from frequent immersion of hands in hot water and contact with chemicals, and respiratory issues from exposure to vapours, smoke, and allergens.

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