



### REVIEWER'S REPORT

Manuscript No.: IJAR- 50442

Date: 27/02/2025

**Title: "An In Vitro Study to Evaluate the Anti-Microbial Effect of Nagakesaradi Dhoopana Yoga in Hospital Room"**

**Recommendation:**

- ✓ Accept as it is .....
- Accept after minor revision.....
- Accept after major revision .....
- Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality	✓			
Techn. Quality		✓		
Clarity		✓		
Significance		✓		

Reviewer Name: Dr. S. K. Nath

Date: 28/02/2025

**Reviewer's Comment for Publication:**

The study effectively demonstrates that Nagakesaradi Dhoopana Yoga has antimicrobial properties and can serve as a potential alternative to chemical disinfectants in hospitals. The significant reduction in bacterial and fungal loads supports its role in preventing nosocomial infections. However, further research with larger sample sizes, long-term microbial monitoring, and clinical trials is needed to confirm its sustained effectiveness and safety in real-world hospital settings. Overall, this research provides valuable insights into Ayurvedic fumigation as a natural hospital disinfectant, with promising applications in infection control and public health.

### *Reviewer's Comment / Report*

This research investigates the antimicrobial efficacy of Nagakesaradi Dhoopana Yoga, an Ayurvedic fumigation method, in hospital rooms. Given the risks associated with nosocomial infections and the carcinogenic effects of chemical fumigants like formaldehyde, this study explores an alternative disinfection approach. The study involves fumigation of inpatient hospital rooms using Nagakesaradi Dhoopana Yoga and analyzes its impact on bacterial and fungal growth.

**Key Strengths**

- 1. Relevance to Hospital Infection Control:** Nosocomial infections are a global concern, and the study provides an alternative, natural disinfection method. The research directly compares microbial load before and after fumigation, strengthening its practical application.
- 2. Scientific Methodology:** The study follows a structured in vitro experimental design with microbial cultures from hospital rooms. Multiple swabs were collected before and after fumigation, ensuring an objective analysis of microbial reduction. The HPTLC and phytochemical analysis confirm the presence of bioactive compounds with antimicrobial properties.
- 3. Significant Findings:** The study demonstrates a notable reduction in bacterial and fungal colonies after fumigation. Bacteria such as *Staphylococcus aureus* and fungi like *Aspergillus niger* showed decreased growth. The research confirms both antibacterial and antifungal activity, supporting the efficacy of Ayurvedic fumigation.

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**4. Potential for Practical Implementation:** As chemical fumigation poses health risks, Nagakesaradi Dhoopana Yoga could be a safer alternative for disinfection in hospitals and clinics. The study provides data supporting its integration into hospital infection control protocols.

### Limitations and Areas for Improvement

**1. Limited Scope and Sample Size:** The study was conducted in only two inpatient rooms, limiting its generalizability. A larger sample size across multiple hospitals could enhance the study's reliability.

**2. Lack of Long-Term Microbial Analysis:** The research focuses on immediate microbial reduction but does not assess how long the effect lasts. Further studies could evaluate the duration of antimicrobial protection post-fumigation.

**3. Absence of Clinical Trials:** While the study effectively analyzes microbial reduction, no direct correlation to patient health outcomes is assessed. Clinical trials in occupied hospital wards could validate the real-world impact of this fumigation method.