DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING

PHYSICS FACULTY RESEARCH SPOTLIGHT IN THE NEWS MEDIA

👨‍🍳 HEALTH AT RISK IN COMMUNITY KITCHENS!

Dr. Sudeep Kumara K, Assistant Professor in the Department of Physics, Dayananda Sagar University, authored a vital study on air pollution in community kitchens of Dakshina Kannada. The findings reveal hazardous PM levels affecting kitchen workers' health. The study was featured in The Hindu & Times of India on 19th June 2025. It emphasizes the need for urgent action on ventilation and clean fuel use. Published in Environmental Monitoring and Assessment (Feb 2025), the work underscores Dr. Sudeep's commitment to impactful, community-relevant research.

☠️ AIR POLLUTION LEVELS

$PM_{2.5}$: Up to 418 µg/m³ (Safe: ⩽25 µg/m³ – WHO)

PM_{10}: Up to 434 µg/m³

PM_{1}: Up to 286 µg/m³

⚠️ HEALTH RISK INDICATORS

Hazard Quotient (HQ):

$PM_{2.5}$: Up to 13.7 (Safe < 1)

Excess Lifetime Cancer Risk (ELCR): (10× above safe limit!)

Community kitchen chefs in DK exposed to high levels of particulate matter: Study

A collaborative study on air pollution in 15 such kitchens in the district was done by Mangalore University, IIT Bombay and University of Miami

June 19, 2025

The Hindu Bureau
MANGALURU

A collaborative study on air pollution levels in 15 community kitchens in Dakshina Kannada district where large-scale cooking is done reveals that chefs are exposed to high levels of particulate matter (PM).

The study titled 'Assessment of health risks due to the inhalation of respiratory particulate matter generated in the community kitchens' was carried out by Mangalore University in collaboration with IIT-Bombay and University of Miami, U.S.

It was published online in the *Journal of Environmental Monitoring and Assessment*, Springer in March 2025.

The study was done by Sudeep Kumara, a post-doctoral fellow at Mangalore University; N. Karunakara, Coordinator of the

Recommendations and findings

Particulate matter size fraction	Concentration values (micrograms per cubic metre) WHO* (recommended)	USEPA* (recommended)	Community kitchens of Dakshina Kannada (mean value)
PM2.5	5	9	111
PM10	15		139

*USEPA – United States Environmental Protection Agency; *WHO – World Health Organisation

The study is the first of its kind to meticulously investigate the exposure of workers in Indian community kitchens to various size fractions of particulate matter, say the researchers.

searchers to establish the essential database on air pollution levels in community kitchens, for which previous studies were non-existent.

per cubic metre, and 62-434 microgram per cubic metre, respectively with corresponding geometric mean values of 74 microgram per cubic metre, ill

ventilation systems in reducing inhalation-related health risks and ensuring safer indoor conditions for kitchen workers. It also lays the groundwork for large-scale environmental health monitoring, adaptable to diverse climatic and infrastructural conditions across India and beyond.

The observations of the study reveal that the current exhaust systems installed in the community kitchens are not optimal for air cleaning. The study has recommended that the authorities concerned take note of these findings and develop relevant guidelines to improve air quality in community kitchens.

The study has recommended that 'a comprehensive, long-term study of indoor air pollution, especially cooking related, to generate a robust database is important'.

"This study is the first of its kind to meticulously investigate the exposure o

Health risks found in community kitchens: Study

TIMES NEWS NETWORK

Mangaluru: The collaborative research study on community kitchens in India revealed that professionals such as cooks, serving staff, cleaners, and supporting staff are exposed to higher concentrations of particulate matter (PM).

The findings are published in the study titled 'Assessment of health risks due to the inhalation of respiratory particulate matter generated in the community kitchens' by Dr K Sudeep Ku-

A community kitchen

bloodstream.

The continuous monitoring allowed researchers to establish the essential database on air pollution levels, for which previous studies

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✅ CALL TO ACTION

🚪 Ventilation Upgrades (Chimneys, fans)

🔄 Cleaner Fuel Transitions

👨‍⚕️ Occupational Health Monitoring

🛡️ Protective Gear for Chefs

🚨 KEY MESSAGE

All kitchens exceeded safe limits—regardless of fuel type! Workers are breathing dangerous air daily.

⭐ CONGRATULATIONS ⭐

SUDEEP KUMARA K., ET AL. (2025) ENVIRONMENTAL MONITORING AND ASSESSMENT, 197(2), 159.