

Hygiene Practices and Microbial Quality of Street-Vended Foods: A Cross-Sectional Study

Elif Demir*

Department of Public Health and Food Safety, Istanbul University of Health Sciences, Istanbul, Turkey

DESCRIPTION

Street-vended foods are an essential part of urban food culture in many countries, including Turkey, offering affordable and accessible meals to a large segment of the population. However, the informal nature of street food vending often means that hygiene and safety standards are inconsistently applied or poorly regulated. This study presents a cross-sectional analysis of hygiene practices among street food vendors and evaluates the microbial quality of food sold in various districts of Istanbul. With a growing urban population and the increased consumption of ready to eat street foods, understanding potential public health risks associated with these food sources is critical.

The study involved structured observations and microbial sampling from 75 street food vendors operating in busy areas such as transit hubs, university campuses, and public parks. Foods commonly sold, including doner kebabs, simit (Turkish bagels), rice with chickpeas, meat-stuffed pastries, and grilled corn, were collected under aseptic conditions for laboratory analysis. Simultaneously, data were gathered on hygiene practices including hand washing, utensil cleanliness, storage conditions, waste management, and vendor awareness of food safety. A standardized hygiene checklist was used, based on national food safety guidelines issued by the Turkish Ministry of Health.

Microbiological analysis targeted common foodborne pathogens and indicators of hygiene, including total Viable Bacterial Count (TVC), *Escherichia coli*, *Staphylococcus aureus*, *Salmonella* spp., and yeast and mold counts. The results showed that 48% of food samples exceeded acceptable limits for at least one microbial parameter. TVC ranged from 10^3 to 10^7 CFU/g, with the highest counts observed in rice-based dishes and meat-containing items. *E. coli* was detected in 22% of the samples, suggesting fecal contamination or inadequate hand hygiene. *Staphylococcus aureus*, a marker for improper food handling, was found in 18% of samples, particularly in foods that were prepared ahead of time and left uncovered. *Salmonella* spp. were isolated in 7% of meat samples, indicating a serious food safety concern, especially

in products like doner kebabs, where the cooking and reheating process is often inconsistent.

Observational data revealed a general lack of adherence to basic hygiene practices. Only 34% of vendors were seen washing hands between handling money and food, and just 21% used gloves or utensils consistently. Many used the same cloth for cleaning surfaces and drying hands, while only a small proportion had access to clean water for washing utensils. About 55% of the vendors stored ingredients in open containers, exposed to dust, insects and fluctuating temperatures. Waste was often disposed of nearby or in open bins, contributing to an unhygienic environment conducive to microbial contamination. Vendor interviews indicated low levels of formal training in food safety; only 17% reported having ever attended a food hygiene workshop.

Despite these challenges, a significant number of vendors expressed willingness to improve practices if provided with guidance and resources. Some vendors had improvised basic hygiene measures such as using hand sanitizers or covering foods with plastic films. The affordability and popularity of street food among consumers create an imperative to enhance safety without compromising accessibility. There is also a strong cultural component to street vending in Turkey, with many vendors following traditional methods of preparation that may not align with modern food safety standards.

The public health implications of consuming contaminated street food are substantial, particularly in densely populated urban settings. Foodborne illnesses caused by pathogens such as *Salmonella* or *E. coli* can lead to outbreaks with serious consequences, especially for children, the elderly and those with weakened immune systems. Furthermore, poor hygiene practices can contribute to the spread of antimicrobial-resistant bacteria through the food chain. Strengthening regulatory oversight, providing targeted hygiene training, and developing low-cost interventions such as clean water supply and waste disposal infrastructure are essential steps toward safer street food vending.

Correspondence to: Department of Public Health and Food Safety, Istanbul University of Health Sciences, Istanbul, Turkey, E-mail: elif.demir@iuhs-tr.org

Received: 03-Jan-2025, Manuscript No. JFMSH-25-37784; **Editor assigned:** 06-Jan-2025, PreQC No. JFMSH-25-37784 (PQ); **Reviewed:** 20-Jan-2025, QC No. JFMSH-25-37784; **Revised:** 27-Jan-2025, Manuscript No. JFMSH-25-37784 (R); **Published:** 03-Feb-2025. DOI: 10.35841/2476-2059.25.10.335.

Citation: Demir E (2025). Hygiene Practices and Microbial Quality of Street-Vended Foods: A Cross-Sectional Study. J Food Microbiol Saf Hyg. 10:335.

Copyright: © 2025 Demir E. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

In conclusion, this cross-sectional study highlights significant hygiene deficiencies and microbial contamination risks associated with street-vended foods in Istanbul. The presence of pathogenic bacteria and high microbial loads in a considerable portion of sampled foods reflects the urgent need for structured public health interventions. While street food remains a vital economic activity and an important cultural tradition, ensuring

its safety requires coordinated efforts between food safety authorities, municipalities, public health educators, and the vendors themselves. Investing in vendor education, improving access to sanitation facilities, and introducing simple regulatory frameworks could greatly enhance the microbial quality of street-vended foods, ultimately protecting public health while preserving the vibrancy of Turkey's street food culture.