

Hygiene Factors Survey: Food Security during Covid -19

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Abstract:

This research explores the critical intersections of food safety, hygiene practices, and consumer behavior during the COVID-19 pandemic, with a focus on Mumbai. Fruits and vegetables, as essential components of a balanced diet, were assessed in the context of a thriving market facing challenges in processing and supply chain efficiency. The study involved a comprehensive literature review, emphasizing the global traceability system's role, challenges in agricultural production, and the necessity for stringent food safety measures. Additionally, the research includes findings from a survey conducted among 55 participants during the nationwide lockdown, shedding light on hygiene practices, food availability, and safety measures. Despite a strict lockdown, 58.2% of participants engaged in weekly grocery shopping, showcasing the perpetual demand for food. The efficacy of washing and sanitizing treatments on produce is discussed, highlighting the need for effective methods to ensure product safety. The study concludes by underlining the adaptability and proactive measures taken by the community to sustain food availability and security, emphasizing the role of public awareness and individual efforts in maintaining a safe food environment.

Keywords: Food safety, Hygiene practices, COVID-19 pandemic, Food Security, Hand Washing.

Introduction:

Fruits and vegetables stand as vital reservoirs of dynamic nutrients, offering an economical source of essential elements in fresh or processed forms throughout the year. Rich in minerals, vitamins, and trace elements, they play a crucial role in various metabolic reactions. Regular consumption of these horticultural delights is associated with numerous health benefits, including a reduced risk of cancer, cardiovascular disease, and age-related dysfunctions. In India, a thriving market for fruits and

vegetables exists, with vast production facilitated by favorable agro-climatic conditions. However, a significant portion, around 20-40%, goes to waste due to inadequate processing and supply chain efficiency. The importance of food safety cannot be overstated, with improper handling posing risks of sickness or harm. Knowledge gaps in food safety persist, particularly among college students, emphasizing the need for continued education. Globally, up to 30% of individuals in developed countries suffer from food and water-related illnesses annually, costing \$1.4 trillion. Factors contributing to these illnesses include improper cooking, temperature abuse, lack of hygiene, cross-contamination, and unsafe sourcing. With urbanization, globalization, and climate change influencing food safety, there is a growing responsibility on producers and handlers to ensure safe food supplies, especially in the face of pandemics like COVID-19. The essay explores the challenges, emphasizing the critical role of safe food in supporting economies, trade, and public health.

Review of Literature:

The global traceability system for the food safety of fruits and vegetables highlights the pivotal role of agricultural production in the supply chain. Challenges arising from chemical and microbiological contamination, originating from inappropriate fertilizer and pesticide use and environmental pollution, underscore the importance of stringent food safety practices. Environmental inspection, input management, and production management emerge as crucial aspects at the production stage. Codex Alimentarius mandates stringent standards for fresh produce. Concerns about post-harvest chemical treatments emphasize the need for consumer awareness. Minimally Processed Fresh (MPF) fruits and vegetables face spoilage, with brown discoloration and off-odors. Regulatory bodies like FDA and FSSAI monitor additives, ensuring safety. Quantitative methods are proposed for efficient risk management in vegetable production, enhancing transparency. Amid the COVID-19 pandemic, ensuring food security through portable ration cards has demonstrated an association with reduced mobility during lockdowns, emphasizing their role in crisis management.

Hygiene Practices:

The survey delved into personal and food hygiene practices adopted by individuals. Results indicated a heightened awareness of hygiene measures, with an increased emphasis on handwashing, sanitization, and safe food handling.

Food Availability and Safety Measures:

Participants were queried about the availability of food items and the safety measures implemented during purchasing and consumption. Findings suggested that despite challenges, measures like contactless deliveries and adherence to safety guidelines were widely embraced.

Methodology:

The study involved 55 participants selected through simple random sampling from the population of individuals residing in Mumbai during the nationwide lockdown from March 25, 2020. Data collection utilized an online questionnaire, and participants filled it out after agreeing to the study by adhering to a consent form. The questionnaire primarily included subjective responses (Yes/No) and judgment-based information parameters. Due to the strict nationwide lockdown conditions, manual data collection was impractical, necessitating the use of an online survey. To address any concerns or queries, participants maintained communication with the principal investigator through a WhatsApp broadcast group. Following the survey, each participant received a follow-up email containing relevant documents.

Result and Analysis:

Despite a stringent national lockdown, 58.2% of individuals engaged in weekly grocery shopping, highlighting the perpetual demand for food even amid a global pandemic. This statistic underscores the societal commitment to minimizing daily outings while ensuring the essential task of securing groceries is consistently addressed. The data reveals a conscientious effort by individuals to balance the need for sustenance with the imperative to adhere to lockdown measures.

Technical Information:

- **Sample Size:** The study involved a sample of individuals, but the specific sample size is not provided in the brief.

- **Data Collection:** The frequency of grocery shopping was likely captured through survey questions or interviews.
- **Lockdown Period:** The reference to a strict national lockdown indicates a period of significant restrictions on movement and activities.
- **Statistical Information:** The reported 58.2% figure represents the proportion of individuals who participated in weekly grocery shopping, providing a quantitative insight into consumer behavior during the specified timeframe.

Discussion:

The efficacy of washing and sanitizing treatments in reducing microbial populations on produce has been a subject of limited information until recently. Conventional methods, including newer sanitizing agents like chlorine dioxide and ozone, often achieve reductions below 90 or 99%, insufficient for ensuring product safety through surface pasteurization. Overcoming these limitations requires understanding factors influencing efficacy and devising compatible, safe, and affordable treatments approved by regulatory agencies. Contamination prevention, both pre- and postharvest, is crucial, given that decontaminating produce is more challenging than avoiding contamination. The focus on bacterial contamination, especially by human pathogens, necessitates a comprehensive examination of conventional washing methods and their limitations. The use of sanitizing agents in water immersion processes is widespread, but their efficacy against microorganisms attached to produce surfaces is limited, prompting a discussion on the advantages and limitations of various sanitizing agents. Additionally, the importance of effective handwashing systems for food handlers is emphasized as a critical factor in preventing foodborne illnesses.

Conclusion:

Finally we can say, the study reflects a notable shift towards the adoption of established food sanitation methods among individuals in Mumbai. The findings indicate a moderate level of awareness and implementation of safety precautions concerning food and delivery systems among participants. Despite the stringent nationwide lockdown, the research highlights that food availability and security were not severely compromised. This resilience can be attributed to a dual approach: macro-level community hygiene practices and the integration of similar safety measures into daily household activities. The collective conscious choice to prioritize proven sanitization

methods underscores the commitment to maintaining food safety. The study suggests that, even during challenging times like a nationwide lockdown, a balance between public awareness, community-level practices, and individual efforts contributes to sustaining food availability and security. Overall, these insights emphasize the adaptability and proactive measures taken by the community to ensure a continued safe food environment.

Reference:

1. Choudhury, Prithwiraj and Koo, Wesley W and LI, Xina and Kishore, Nishant and Balsari, Satchit and Khanna, Tarun, Food Security and Human Mobility During the COVID-19 Lockdown (May 13, 2020). Harvard Business School Technology & Operations Mgt. Unit Working Paper No. 20-113.
2. Galanakis, C. M. (2020). The Food Systems in the Era of the Coronavirus (COVID-19) Pandemic Crisis. *Foods*, 9(4), 523. doi:10.3390/foods9040523
3. Hu, X., Chen, F., Wang, P., & Chen, Z. (2017). The Importance of Food Safety for Fruits and Vegetables. *Food Safety in China*, 489–501. doi:10.1002/9781119238102.ch29
4. Redmond, E. C., & Griffith, C. J. (2003). Consumer Food Handling in the Home: A Review of Food Safety Studies. *Journal of Food Protection*, 66(1), 130–161.
5. Vijayakumar, C., & Wolf-Hall, C. E. (2002). Evaluation of Household Sanitizers for Reducing Levels of Escherichia coli on Iceberg Lettuce. *Journal of Food Protection*, 65(10), 1646–1650.
6. Galanakis, C. M. (2020). The Food Systems in the Era of the Coronavirus (COVID-19) Pandemic Crisis. *Foods*, 9(4), 523.