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To assess the Knowledge Regarding Food Safety and Hygienic Practices among Dairy Plant Worker in Indore, MP

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Abstract

Ensuring food safety and hygiene practices in the dairy industry is crucial for the production of safe and reliable dairy products. This research paper aims to assess the knowledge and hygiene practices of dairy plant workers regarding food safety. The study was conducted at Saachi Doodah Dairy in Indore, Madhya Pradesh, with a sample size of approximately 49 workers involved in various roles. A self-structured and pre-tested questionnaire was used to collect data on food safety knowledge and hygiene practices. The research revealed that dairy plant workers have a strong understanding of food safety principles and good hygiene practices. However, there were knowledge gaps regarding food borne illnesses and pest control measures. Immediate action is required to address these gaps through regular training programs covering essential topics.

Keywords: Dairy industry; Dairy plant workers; Food safety; Hygiene practices; Knowledge gaps.

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INTRODUCTION

Ensuring food safety is a critical role in the food industry, encompassing all phases of the food chain from production to consumption. The dairy industry, specifically milk production, plays a vital role in the food supply. However, milk can act as a medium for spreading bacteria and other micro-organisms if proper milking practices are not followed.[1] This research aims to provide an introduction to food safety and hygiene knowledge among dairy workers, highlighting the importance of food safety in the dairy industry and addressing potential hazards associated with dairy products.

Food safety is a scientifically describing that handling, preparation, and storage of food in ways that prevent food borne.[1] This comprises a number of routines that should be followed to avoid potentially severe health hazards. In this way food safety often overlays with food defences to prevent harm to consumers.[4] The paths within this line of thought are safety between industry and the market and then between the market and the consumer. In considering industry to market practices, food safety considerations include the origins of food including the practices relating to food labelling, food hygiene, food additives and pesticide residues, as well as policies on biotechnology and food and guidelines for the management of governmental import and export inspection and certification systems for foods.[8] In considering market to consumer practices, the usual thought is that food ought to be safe in the market and the concern is safe delivery and preparation of the food for the consumer. Overall, awareness of food safety knowledge and hygiene practices can have a significant impact on the quality and safety of dairy products, as well as the success of dairy businesses.[2]

While increasing used of effective technologies, good practices and awareness contributes to reduce incidence, poor quality water, reduced profit margins and increased pollution can lead to increased food and water borne diseases.[2] In poor countries, it is estimated that more than half a million children die every year from diarrhoea. Much of this can be attributed to food and especially animal source food. The WHO estimates of the global burden of foodborne disease is that every year 1 in 10 people become ill from eating contaminated food and 48 million people become ill with foodborne illness, of which 420,000 die each year. As a result of which 33 million healthy lives are lost. In India, most outbreaks of food borne disease are not identified or investigated and can be resolved only after health or economic damage has occurred.[9] Food poisoning outbreak cases have increased from 50 in 2008 to 312 in 2017 in India. Food production operator have the main responsibility to provide safe food to consumer and the workers also plays a crucial role in the preventions of foodborne diseases outbreaks.[5]

METHODOLOGY

A descriptive cross-sectional study was conducted between January and May 2023 at Sanchi Doodah Dairy in Mangalyaan, Indore, Madhya Pradesh. A self-structured and pre-tested questionnaire was used to collect data from approximately 49 workers involved in various roles within the dairy plant. Random purposive sampling technique was employed for sample selection. A pilot study was conducted on 20 samples to assess workers' knowledge of hygienic milk production practices, including food safety related questions and hygiene practice assessment. Data was tabulated in Microsoft Excel sheet. Analysis was done using power BI tool. Results were expressed in terms of percentages, tables, pie charts and graphs using appropriate statistical tests.

RESULT

The results of demographic table, Gender (male 91%) and (Female 9%) that indicate that the majorityof respondents were male, reflecting the gender distribution within the dairy plant workforce. The age distribution shows 16-25 (21%), 25-35 (24%,), 35-45 (24%), 45-55 (24%) and 55-65 (7%) a relatively even representation across different age groups, allowing for a comparison of awareness and adherence to food safety protocols. Most workers had 10-20 years of experience, indicating their valuable knowledge and expertise infood safety practices specific to the dairy industry. Regarding food safety knowledge, (100%) workers demonstrated good understanding of temperature control, separation of raw and cooked foods, storage tanks, milk storage, and milk transportation. However, there was a significant knowledge gap regarding pest control and awareness of food borne diseases, which calls for targeted training programs in these areas. In terms of hygiene practices, (100%) workers exhibited positive behaviour, including maintaining personal hygiene, wearing uniforms, masks, and caps, and practicing proper hand hygiene. They also refrained from consuming food or beverages within the workplace and avoided smoking in the working area. However, a small percentage (7%) of workers did not undergo pre-employment health assessments.

DISCUSSION

This research is based on the study on assessing food safety knowledge and hygiene practices among dairy's workers. The objectives of this research were to assess the knowledge regarding food safety and hygiene practices among workers.

The data on knowledge of food safety shows

that 100% workers had positive response regarding food safety. This result indicates that all respondents have higher level of knowledge in food safety measures. Similar research conducted by Hamed A.F, Mohammed N.A. *et al*, in 2019 in Suhag Governorate, Egypt. This study found that 79.1% of the food handlers had a positive attitude towards food safety, while 20.9% had a negative attitude. They also found that food handlers who had a higher level of knowledge were more likely to report good food safety practices.

On the other hand, the same data also inferred that the knowledge of pest control and foodborne disease among workers. 80% workers had knowledge about pest control, whereas 20% were not having sufficient knowledge about pest control. Besides, allworkers have no knowledge about foodborne disease which indicates a significant gap among the workers regarding these crucial aspects of food safety. Previous research done in Ethiopia by Getachew, L., Seblewongle., K. *et al* in 2018 found that the majority of dairy farmers had low levels of awareness regarding milk born. The researchers suggest that to improves dairy farmers awareness and knowledge and provide training programs. This study also highlighted the importance of addressing the knowledge gaps and improving practices to ensure the production of safe and high quality of milk.

CONCLUSION

In conclusion, the knowledge of food safety and hygiene practices among dairy plant workers plays a crucial role in ensuring the production of safe and high quality dairy products.[3] This research shed light on a concerning issue regarding the knowledge of food safety and hygiene practices among dairy plant workers. Through my research and analysis, it is evident that workers have strong understanding of food safety principles, such as proper handwashing, sanitation procedures, and personal hygiene, which is essential for maintaining a clean and hygienic working environment. It is alarming to note that a significant portion of the workers lacked awareness regarding foodborne illnesses, while a small percentage had limited knowledge regarding pest control measures.[4] The research revealed that dairy plant workers have a strong understanding of food safety principles and good hygiene practices. However, there were knowledge gaps regarding foodborne illnesses and pest control measures. Immediate action is required to address these gaps through regular training programs covering essential topics.[9] Enforcing strict adherence to food safety standards and regulations, along with continuous improvement practices, can enhance food safety and hygiene in dairy plants. Future research should focus on detailed analysis of specific areas where workers lack knowledge or have misconceptions to identify root causes and provide insights for targeted interventions. By prioritizing the knowledge of food safety and hygiene practices, dairy plant operators can produce safe and reliable dairy products, ensuring consumer confidence and protecting public health.

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