



## **Food Hygiene Education: An urgent need among Indian young population**

**Rekha Rani, Rani Dubey**

Department of Education, Dr. Harisingh Gour Vishwavidyalaya, Sagar-470003, Madhya Pradesh, India

Email- [maxrekharani@gmail.com](mailto:maxrekharani@gmail.com)

### **Abstract**

*India ranked second in terms of the largest population of world after china. As the population of India is increasing the demand of the food is also increasing year by year. The food safety is one of the critical issues in India. As well as, the incidences of food borne illness are increasing. Hence, we need to understand the role of food hygiene practice, knowledge and attitudes of student and young population to reduce the food bore illness. This articles critical explored the need of food hygiene education for the students, and young population of India. We have also explored the various educational materials of food hygiene and safety that can be used in the schools and colleges to create the awareness and knowledge of the food hygiene. This article will helpful to the various government, and non government schools, colleges and young people by providing the knowledge about the food hygiene.*

**Keywords:** Food hygiene, Education, Knowledge, Food practice, Food safety

The term hygiene originates from the Greek “Hygeia,” the goddess of health (Motarjemi, 2016). It can be defined as “the principles for maintaining health and the practice of these”. Therefore, food hygiene can be interpreted as “all the principles and practices relating to food which are essential for maintaining health”. The Codex Alimentarius Commission (CAC) is an international body which sets the standards for foods, defines food hygiene as “all conditions and measures necessary to ensure the safety and suitability of food at all stages of the food preparation process” (Motarjemi, 2016). Food hygiene is a broad topic. Hence, the term food hygiene covers two major concepts, (1) food safety and (2) food suitability. According to the CAC, food safety is “the assurance that food will not cause harm to the consumer, when it is prepared, served and eaten” whereas food suitability is “the assurance that food is acceptable for human consumption” (Motarjemi, 2016; Tehet *al.*, 2016). Indirectly, it refers to aspects of



quality such as absence of spoilage, absence of foreign bodies (flies, hair etc.), food authenticity (ensuring that it is not adulterated), cultural and religious acceptability.

Food safety is an important side in public health. WHO (2004) identifies foodborne disease outbreaks and epidemic, including those arising from natural, accidental and deliberate contamination of food, as major global public health threats in the 21st century. WHO has estimated that up to 30% of people in industrialized countries may suffer from foodborne illness each year (WHO, 2014). In the United States of America, it was estimated that each year there were around 9.4 million cases of foodborne diseases causing 55,961 reported hospitalizations and 1,351 deaths (Scallan, Griffin, Angulo, Tauxe, & Hoekstra, 2011). Much worse, undocumented cases are likely to be even greater in developing countries where hundreds of millions of people suffer from diarrhea, the most common symptom of foodborne illnesses. An estimated 1.8 million people die every year from diarrhea diseases, mostly due to food and drinking water contamination (WHO, 2004). Apart from the human suffering, the economic and social impact of foodborne diseases is enormous.

Globally, the incidences of foodborne illness are increasing and therefore we need establish the cause and preventive measures are warranted. To begin, there have been advances in the control of foodborne hazards as well as improvements in food inspection and surveillance systems (FAO, 2003).

Studies have shown that consumers' knowledge about procedures are important in preventing foodborne diseases (Arendt et al., 2013, Osaili et al., 2011, Sharif and Al-Malki, 2010, Yasemin et al., 2013). Previous studies also found out that knowledge, attitude and practice are the key factors in preventing the occurrence of food poisoning (Angelillo, Foresta, Scozzafava, & Pavia, 2001; Thomai, Georgiadis, Pentieva, McKevitt & Iossifidou, 2012; Patil, Cates, & Morales, 2005).

In the local context, Malaysia is not spare from these foodborne diseases. Every now and then, we hear of school children suffering from foodborne diseases due to the food they consume in school canteens. Thus a study on the knowledge, attitudes and practice pertaining to food safety is warranted in view of the lack of awareness on the importance of food safety knowledge.

The research aim is to evaluate food safety knowledge of current tertiary students, and to identify the relationships between socio-demographic factors and knowledge related to food





cleanliness and safety. Finally factors determinating knowledge related to food safety was examined.

Everybody have the right to expect the food they eat is safe and suitable for consumption. Food is a nutritive product that people eat or drink in order to maintain life and growth. Every day, millions of people get sick from the food that they eat throughout the world. This is called as food-borne illness and can be fatal. Global occurrence of foodborne illness is of public health importance as both developed and developing countries faced this situation (Tehet *al.*, 2016; Stratevet *al.*, 2017).

One of the major public-health problems in developing countries is the prevention of the food borne disease. In a recent report of World Health Organization (WHO), it was revealed that every year, 1.5 million cases of food borne disease are reported in developing countries. Unfortunately, this figured remained constant for almost 20 years (WHO, 2015). Each year, 2.5 million people die because of food borne disease (diarrhea) and most of the cases involved in the children (Tehet *al.*, 2016; Stratevet *al.*, 2017). However, these numbers do not reflect the actual data because in the official reports, only the reported cases are recorded. Therefore, the importance of unreported cases should not be ignored (Ovcaet *al.*, 2014). In India, the burden of food-borne diseases is not known, as most of them either go unrecognised or unreported, or are not investigated, and may be visible only if associated with a major public health or economic impact (WHO, 2015). The total number of the food poisoning cases are mostly reported from the rural zones (94970) as compared to urban zones (23050) (NFBDSP Statistics, 2018).

The most critical factor responsible to cause foodborne illness is inadequate food hygiene. The main causes of disease (cholera, diarrhea, typhoid, dysentery, viral hepatitis A and food poisoning) that are caused by intake of the foods that had been contaminated due to the inadequate food hygiene practices (Tehet *al.*, 2016). Understanding food-related risks due to the unhygienic condition is critical for the health of the food preparers and the health of others (Ovcaet *al.*, 2014).

When the consumers prepared food at home, most of them practice a variety of poor and bad hygiene (Tehet *al.*, 2016). It is important to stress here that 95.4% peoples are failing to implement basic food hygiene practices at home. It shows that most of the consumers are lacking





the knowledge about food hygiene and food safety and the awareness is also required to know that how to practice it in daily activities (Tehet *al.*, 2016).

Food handlers (such as students, workers, parents who prepare and/or serve prepared food) and consumers are important factors in foodborne disease occurrences due to mishandling of food during preparation, processing or storage. It was reported that proper knowledge, attitude, and practice of food hygiene and safety among food handlers can contribute to reduce the food poisoning. The awareness of food hygiene among the food handlers is one of the significant factors in the food safety education (Mullanet *al.*, 2013; Stratevet *al.*, 2017).

Therefore, in the present circumstances, we are curious to know the level of the food hygiene awareness among our society. We are also curious to know the attitude and practices level of our society in regards of food hygiene. Therefore, this topic was selected as a research problem on the basis of above given statement. Secondary level students are belongs to that age group, where they are more curious about everything. Hence, the food hygiene knowledge can be effectively transmitted to the children's at this stage. Most of the children start cooking and serving at this age. Therefore, children of this age need to be aware of food hygiene, so that they can make changes in attitude and practices towards food hygiene. If secondary level students become aware of food hygiene then it can be expected that they can make their family and society aware of food hygiene.

Hence, the main motivation of the study is the misunderstanding of responsibility towards food hygiene and gaps in knowledge and practices that promoting us to continued research with secondary level students. The purpose of this study was to gain insight into the experiences of secondary level students with food, their understanding of food-related risks, food hygiene awareness, attitudes, and practices in India.

Unklesbayet *al.* (1998) used a surveyto assess attitudes, practices, and knowledge of food safety of college students in three U.S. geographic locations. Eight hundred twenty-four students completed the questionnaire during classroom periods. Data were analyzed to obtain total attitude, practice, and safety scores, with emphasis given to analyzing differences among disciplines and demographic characteristics. Result of the study indicates the women who had





enrolled in a college course that included food safety information had significantly ( $\leq 0.05$ ) higher attitude and practice scores.

**Wilcock et al. (2004)** studied the effect of consumers' attitudes towards the food safety and hygiene issues. This review highlights the diverse range (based on a variety of factors, including demographics and socio-economic status) of the consumer (children, young and old) attitudes towards the safety and hygiene of food. The relationship between consumer attitudes, knowledge and behaviour regarding food safety is also studied. It was concluded that there exists the need for professional assistance for consumers regarding food safety and hygiene issues.

**Byrd Bredbenner et al. (2009)** explored the effective educational interventions that address the food safety informational needs of youth, a greater understanding of their knowledge and skills. This study also explored the food handling responsibilities of middle school youth and obstacles they face in practicing safe food handling and develop recommendations for the design of food safety interventions for youth. Most youth reported that they prepared food at least once weekly and rated learning to prevent foodborne illness as important. Nearly all were interested in learning about food safety. Parents highly rated the importance of and degree to which they wanted youth to learn about food safety. Parents felt that their children had moderate levels of food safety knowledge, and food safety education needed to be taught and reinforced in school and at home. After having reviewed youth and parent data, food safety experts proposed recommendations for youth focused food safety education that paralleled current consumer food safety initiatives.

**Stein et al. (2010)** studied the food safety knowledge, attitudes, and behaviours of undergraduates ( $n=1122$ ) on an urban college campus using a survey tool. Data obtained showed that students were not actually engaging in safe food handling practices. Students were particularly lacking food hygiene knowledge.

**Godwin, Lizmitha (2011)** studied the nutritional and health status of women and preschool children in urban slums of Kochi. The results of the studied showed that people residing in slums had low socioeconomic status, poor housing and hygienic conditions.





Poonam (2012) was accessed the nutritional status, prevalence of common nutritional clinical signs and nutritional & health knowledge and awareness of the 900 adolescent girls of 10- 18 years age in Ambedkar Nagar district of Uttar Pradesh. Cross-sectional studies, employing direct observation cum guided interview schedule were employed in this study. Based on the study findings, it was concluded that the adolescent girls of studied district have poor nutritional status and not adequately aware of their increased nutritional needs for growth. In this study, it was concluded that there is a need to properly educate the adolescent girls regarding the nutritional knowledge, general health, food safety and food hygiene practices.

Lazouet *al.*, (2012) has studied a survey to assess the self-reported food safety knowledge and food-handling practices of Greek young adults and to explore the relationships between their food safety awareness and population characteristics. They completed a questionnaire containing food safety knowledge and food-handling questions. The results of the study indicate the need for educational initiatives tailored to develop the food safety knowledge and food-handling practices of young consumers.

Padma Parvathy, G (2012) studied the awareness, attitudes and practices of mothers towards the food safety knowledge. In this study, 1295 mothers in urban and 1390 mothers in the rural area were participated. As per the result of the study, the awareness of food hygiene and food borne diseases is based on locality of the mothers. The urban mothers are more aware about the food safety issues as compared to the rural mothers. This study shows that mothers in urban area are highly aware of safe food handling practices, whereas mothers in the rural area are not aware of safe food safety practices, and they follow unhygienic practices. These mothers should be educated about the bad hygienic practices to avoid food borne illness.

Bhatt, Suchi Rai (2015) study suggested the recommendations that there should be regular camp to educate people about various food safety, food hygiene, food adulterations and their impact on health. There should be regular food hygiene and food safety education awareness program for school going children's and college level students.

As it was observed during the preliminaries studies that there are very unhygienic practice has been performed during the preparation, handling and storage of the food in India. It





would be more interesting to find out major causative reasons to overcome these problems. As the young students are the potential candidate to get the proper information about the food hygiene awareness, practices, and attitudes. Hence, there is a need to study the current level of the food hygiene awareness, practices, and attitudes among the secondary school level students.

Secondary level students are considered to be the positive change agents in the youth and society. Hence, they also play an important role in the development of the any nation. The government of Indian and state governments is providing huge funds for health infrastructure, educational awareness, intervention programmes, campaigns and camps for citizens in a large scale. There are several campaign and programmes launched by FSSAI and ICMR for the hygienic awareness among the people of the country to avoid the food borne illness (WHO, 2015). It could also be stressed here that awareness, attitude and practices are crucial and perfect since it leads to permanent and long lasting results. If the secondary level students who are the future of India receive, understand and act upon messages of personal, and food hygiene management, they would also be able to influence members of their family and the community. Therefore, it is strongly believed that educating them about food hygiene practices is vital to bring any change and move towards hygienic and healthy foods. The efforts of the government on food and personal hygiene are very minimal and occasional, and follow up is not practiced. While considering personal hygiene and food hygiene their efforts are mostly through multimedia. They are not able to address the people individually especially in the rural areas. So the messages do not reach them to the extent of changing their attitude and practice regarding food hygiene. Hence, there is vast opportunity in the educating secondary level students about the food hygiene awareness & practices.

- ❖ The secondary level students are more curious about the new knowledge. Once they understand the need of food hygienic practices, they will continue to practice food-related behaviours at home as a presenters for family members or as employees in the food business sector. After habits are established, they tend to be long lasting and it is very difficult to alter at later life stages.





- ❖ When malnourished children are especially exposed to foodborne illness, they are at higher risk of mortality. However, those who survive may suffer from delayed physical and mental development, depriving them of the opportunity to reach their full potential in society.
- ❖ Poor food hygienic practice is often related to health damage or to the risk of death, risk perception is a factor that influences motivation and is an important aspect when investigating food safety knowledge and practices
- ❖ The study reveals the present status of the food hygiene awareness, attitude and practices among the secondary level students. This study could be able to address on two levels: food preparation at their current stage of development and food preparation responsibilities in the future.
- ❖ The studies of the food hygiene and safety education among the secondary level students are crucial for continuous food safety.
- ❖ This study will be helpful to explore the present situation of the food hygiene awareness, attitude, and practice in the Bulandshahr district. It might be helpful to increase the conscious and importance of the food hygiene among students, parent and society.

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