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## **KAP on Microbial Contamination and Food Safety of Packed Food Products among Working Young Adults**

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### **ABSTRACT**

Access to sufficient amounts of safe and nutritious food is key to sustaining life and promoting good health. Unsafe food containing harmful bacteria, parasites and other chemical substances causes more than 200 diseases, ranging from diarrhoea to cancers. It creates a vicious cycle of disease and malnutrition, particularly affecting infants, young children, elderly and the patients. Food can be contaminated at any time during harvesting, transport, processing and storage. Consumer awareness about food safety and practice of good hygiene, handling and storage of packed food also plays a major role in bringing safe food to the plate. Therefore, the present study aimed to know the knowledge, attitude and practice of consumers on microbial contamination and food safety of packed food products in the market among working young adults. The data was collected from 91 participants of age group between 18 to 30 years of both genders with varied occupation from different geographical areas of the country to examine their attitude and awareness on microbial contamination from packed food items. The results revealed that majority of the subjects that is, 86.8% were aware whereas, 13.2% subjects were not aware about microbial contamination from packed food items. 74.7% and 79.1% read food labels and checked for damaged products during purchasing of packed food items respectively. 89% of the consumers used food products before its expiry date. Merely 35.2% followed first-in first-out rule on regular basis. 28.6% of the subjects stored milk and meat in the same compartment of refrigerator. 79.1% practiced closing lids of food items while storing in the refrigerator, 94.5% cleaned packaged whole cereals, pulses and seeds before cooking or preparing dishes and 70.3% immediately transferred food items from package to tight lid containers after purchasing from the market or using once.

Keywords: Microbial contamination, Food safety, packaged food, food spoilage.

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### **1. INTRODUCTION**

Food spoilage is a metabolic process where the food product becomes unfit or unsuitable for consumption by the consumer. It is due to microbes takes place when an undesirable microorganism exists in the manufactured food which makes it unfit for the consumers (Petrucci *et al.*, 2017; Houghton, 2016). Food spoilage is a major issue in food industry and nowadays tonnes of food are spoiled due to microorganisms. These microorganisms are initially not a part of food but they come from various sources such as water, soil, humans, machines and food packaging. If food packaging is not done properly then it can become a major concern to food spoiling. (Hemangni Pawar *et al.*, 2021). In today's world it is almost next to impossible to imagine food without a packet. Food and packet goes hand in hand. Whether it is grains freshly from the farm or just cow-milk or food from a processing plant it become packed form of food everywhere (Gupta *et al.*, 2017). It protects food from contamination due to environment and other influences (such as odors, shocks, dust, temperature, physical damage, light, microorganisms, and humidity). But food packaging has its negative effects also. Almost 25% of food spoiling is because of its packaging. Recently packaging has been found to be a great source of contamination in itself because of the migration of substances from the packaging into food. Microorganisms may cause health-threatening conditions directly by being ingested together with contaminated food, or indirectly by producing harmful toxins and factors that can cause food borne illness. (Academic Press, 2017). In this current study aimed to know the knowledge, attitude and practice of consumers on microbial contamination and food safety of packed food products in the market among working young adults.

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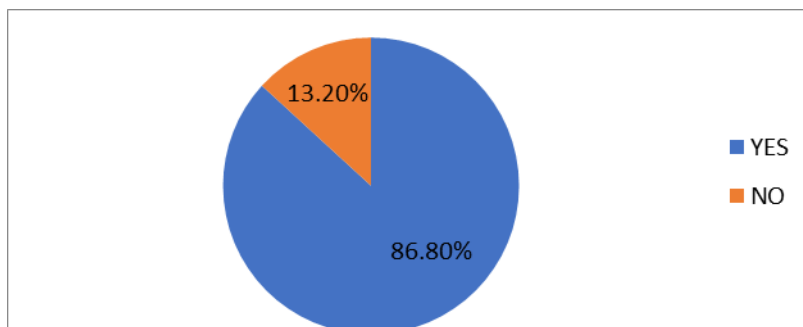
### **2. Methodology**

The study was conducted among working young adult age between 18 to 30 years old of both gender having varied occupation from different geographical areas of the country to examine their attitude and awareness of microbial contamination from packaged food items. Information was collected by direct face to face interview method by using questionnaires. A total of 91 adults were participated.

The questionnaire consisted of questions to analyse knowledge, attitude and practice of microbial contamination of packaged food items. The questionnaires were analysed by using Microsoft Excel sheets and the results were expressed in percentage and mean with standard deviation.

### 3. Result and Discussion

#### 3.1 Knowledge about microbial contamination from packed food items.



**Figure 1: Knowledge about microbial contamination from packed food items.**

This figure 1 pie chart revealed that 86.8% were aware and 13.2% were not aware about microbial contamination from packaged food items.

#### 3.2 Practice of good food handling and storing behaviors

Food safety and hygiene are very important aspects of food production, processing and consumption. In the absence of proper hygiene and safety protocols, the entire food chain right from the farmer who grows the food till the consumer who eats it is compromised. Food safety lapses like contamination and spoiling of foods are the major health risks. There are many ways in which a perfectly safe food product can turn hazardous. Cross contamination from animal matter, lack of hygiene among workers in processing plants, poor sanitation procedures, inadequate preservation techniques and low-quality packaging can all adversely affect the shelf life of a food product. **Consumer Awareness Is Key**, the end user or the customer who buys the food product for consumption also needs to be aware of good food use, preparation and storage methods.<sup>6</sup>

**Table 1: Practice of good food handling and storing behaviors.**

Food handling and storing practices	No of responses (n=91)					
	Yes		No		Sometimes	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
1. Reading of food labels (manufactured and expiry date) before purchasing packaged food products	68	74.7	2	2.1	21	23.1
2. check for damaged products and puffiness in tetra-packs (milk and fruit juices)	72	79.1	4	4.3	15	16.5
3. Using food products even after its expiry date	2	2.1	81	89	8	8.8
4. Follow first-in first-out rule while using the bulk purchased food items	32	35.2	27	29.7	32	35.2
5. Storing milk and raw meat products in the same compartment of refrigerator	26	28.6	53	58.2	12	13.2
6. Closing lids of food items while storing in the refrigerator	72	79.1	5	5.4	14	15.4
7. Cleaning packaged whole cereals, pulses and seeds before cooking or preparing dishes	86	94.5	2	2.1	3	3.2
8. Transferring food items from packages to tight lid containers after purchasing or using once	64	70.3	8	8.8	19	20.9

Table 1 revealed that majority of respondents 74.7% and 79.1% read food labels and checked for damaged products during purchasing of packaged food items respectively and majority (89%) used food products before its expiry date. When asked about following first-in first-out rule equal no of respondent (35.2%) followed it regularly, and sometimes then 29.7% did not follow at all.

Majority (58.2%) stored milk and meat in different refrigerator compartment whereas 28.6% stored in the same compartment. Majority of respondents (79.1%) practiced Closing lids of food items while storing in the refrigerator, 94.5% of them reported that they will clean the packaged whole cereals, pulses and seeds before cooking or preparing dishes and 70.3% of the respondents will transferring the food items from packages to tight lid containers after purchasing or using once.

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#### 4. Conclusion

The present study shows that majority of the consumers were aware about the microbial contamination and food safety related to packaged food items. Among the most relevant results it was found that most people practiced reading food labels and checking for damaged products before purchasing packaged food items. Also majority of the respondent practiced cleaning and proper storing of packaged food items. Whereas, first-in first-out rule was practiced only by few people on regular basis.

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