Migration Letters

Volume: 20, No: S11 (2023), pp. 1115-1119

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Microbes Causing Food Poisoning In Canned Food

Turki.A.Alosaimi[1], Moua.F.Aljuhani[2], Wafa.M.Albeladi[3], Yasamiyan.H.Saleem[4], Abdulaziz.A.Alzahrani[5], Faisal.A.Alzahrani[6], Ali.H.Alkhatim[7], Farah.E.Alessa[8],Sultan.F.Alharbi[9], Esraa.S.Alhawashim[10], Naif.A.Alzahrani[11], Zekreat.H.Alsadah[12], Fatima.M.Al Ibrahim[13], Narjes.A.Alturaifi[14], Fatimah.J.Al Salim[15], Zainab.A.Al Raheb[16], Raniah.A.Al Raheb[17], Maryam. N.Al Slail[18], Adel.S.Alsaedi[19], Abdullah.M.Alotaibi[20]. Mubarak.S.Alshahrabi[21], Abdullah.D.Alasmari[22], Mariam.A.Alyamani[23]. Rafat.F.Dahwah[24].

Abstract:

The aim of the current study is to know the microbes that cause food poisoning in canned food, the role of the microbe that causes food poisoning in canned food, the impact of the microbe that causes food poisoning on human health, 500 questionnaires were distributed (the target population is residents of the city of Mecca), and responses were obtained from the researcher's email (from age 25-55years in Mecca). The data was collected and analyzed through the use of a table, the Excel 2010 program, a pie chart, and a photo graph of the data.

Keywords: *Microbes, causing, food poisoning, canned food.*

1-Introduction:

Food-borne illness or food poisoning is a group of symptoms resulting from food poisoning contaminated with bacteria, or food produced by these organisms. Food poisoning also results from food contaminated with various types of viruses, germs, parasites, and a toxic chemical substance, such as poisoning resulting from fungal food. It is said that Food poisoning may be explained if it happens that the appearance of the disease may appear in more than one person eating the food. Laboratory studies have included that laboratory food is the main cause of poisoning in the method of cultivating artisanal bacteria, and food poisoning resulting from bacteria is the main cau[1]se in more than 80% of cases. Gold poisoning [(1)(2)(3)]. Foodborne illness,

Specialist laboratory at Directorate of health affairs in Mecca[1]
Technician laboratory at Ibn sina Hospital[2]
Specialist laboratory at king Abdulaziz Specialist hospital[3]
Specialist laboratory at king Abdulaziz Specialist hospital[4]
Laboratory specialist at Al-Yamamah hospital (second health cluster)[5]
Laboratory specialist at Al-laith Gerneral Hospital [6]
Laboratory technician at Maternity hospital in Dammam[7]
Laboratory specialist at Maternity and children's Hospital in Dammam[8]
Laboratory specialist at Al-Yamamah hospital[9]
Laboratory specialist at Maternity and children's hospital in Dammam[10]
Laboratory specialist at Maternity and children's hospital in Dammam[11]
Laboratory specialist at Laboratory technician at the regional laboratory in Dammam[13]
Laboratory specialist at Qatif central Hospital[14]
Laboratory technician at regional laboratory and blood bank in Dammam[15]
Laboratory specialist at Comprehensive examination center[16]
Laboratory specialist at AL – Khobar health network[17]
Laboratory specialist at comprehensive examination center [18]
Laboratory technician at king Abdul-Aziz Hospital[19]

which is colloquially referred to as food poisoning [4], represents any illness resulting from eating contaminated foods. We note here that there are two types of food poisoning: infection poisoning and toxin poisoning. Food infections indicate the presence of bacteria or other microbes that cause infection in the body after eating. As for body toxicity, it refers to the ingestion and digestion of toxins found in foods, including toxins (in English: exotoxins), which are protein biological toxins produced by some living organisms, including plants and animals, such as castor seed toxin. This state of toxicity occurs even if the microbe causing the production is the toxin is no longer present or unable to cause infection. Despite the commonly used term, food poisoning, most cases are caused by a variety of pathogenic bacteria, viruses or parasites, all of which contaminate food, [5] rather than chemical or natural toxins. Canned foods or shelf steady canned foods are crowded in hermetically sealed vessels and are commercially antiseptic [6]. Canning is meant to damage hurtful microbes in food, however, with inadvisable handling, cans be upbringing grounds for microbes. Canning damage the microbial polluted; however, outputs undergo microbial deterioration and could reason food borne disease an outcome of under processing, unsuitable cooling infection of the can resulting from seepage and preprocess damage. Some canned foods extradite low-heat curing and as such are prone to infection by large number of various microorganisms' kinds. dishonorable containers are a popular place due to shortcoming or bottleneck in the industry, improperly closed can or cans damaged due to bad packaging/ transmission in such a style as to allow recontamination of the can contents following the temperature process (post-processing contamination). Canned foods have been reported to be contaminated mainly by spore forming bacteria of the genera Bacillus, Clostridium and Desulfotomaculum [7]. If the contaminant is a pathogen and the food is capable of supporting its growth, a health danger exists [6,8,9]. B. coagulans and B. stearothermophilus have been implicated in canned tomato juice and milk rise flat acid spoilage with acid but no gas production from carbohydrate [10,11]. B. cereus and B. licheniformis contaminate milk causing broken cream and soft coagulum with blown cans [11,12]. Food poisoning by C. perfringens has been reported, poisoning has been linked most often with meat and gravies, however, C. perfringens spores are also found in milk and cheese and could grow to reason food poisoning [13,14]. Toarmina and Diorsa (2004) reported on the putrefaction and excessive gas formation of canned meat and sea foods caused by Clostridium sporogenes [15]. contamination of fermented Spanish olives "Zapateria" and blast (rancidity and off- aroma) of chocolate candies have been related with C. bifermentans and C. sporogenes [16,17]. Thermophilic spore formers may be more widespread in under processed foods than mesophiles because they are more heat reluctant, C. thermosaccharolyticum and C. thermoaceticum have been implicated in pollution of canned foods [18,19]. Botulism is the most dreaded form of food poisoning and the botulinum toxin from C. botulinum is one of the most potent [13]. The ICMSF (International Commission on Microbiological Specifications for Foods) (1986) do not backing nursery tests for canned foods for obvious reasons. It is however necessary for low acid canned foods that do not receive full botulinum cook; it is evenly of use to manufacturers to watch contamination direction over long period of time and to monitor pathogens like staphylococci and Salmonella typhi that will not make gas in many canned products [6].

2-Material and Methods:

Laboratory technician at king Abdul-Aziz Hospital[20]
Laboratory specialist at toxicology services department in Asir [21]
Laboratory specialist at toxicology services department in Asir [22]
Laboratory specialist at king Abdul-Aziz hospital in Jeddah [23]
Laboratory technician at kuday health and immigration center[24]

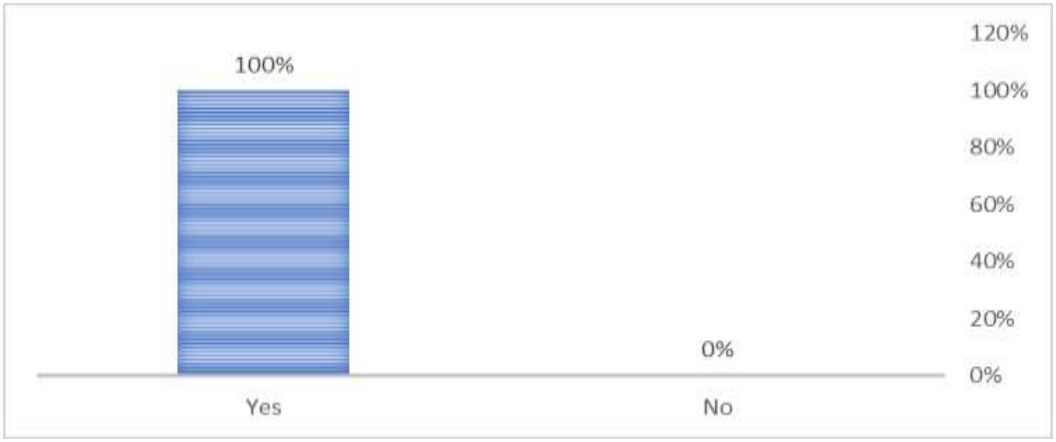
The study started in (the holy city of Mecca in Saudi Arabia), began writing the research and then recording the questionnaire in June 2023, and the study ended with data collection in October 2023. The researcher used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (Microbes causing food poisoning in canned food). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation [(20)], And use the Excel 2010 Office suite histogram to arrange the results using: Frequency tables Percentages [(21)]. A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because the questionnaire consisted of ten questions, all of which were closed. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere [(22)]

3- Results and discussion:

The percentage of approval to participate in the research questionnaire was 100%, and the percentage of participants according to their age was as follows: 0% from 25-34 years old, 50% from 35-44 years old, and the same for those 45-55 years old 50%, and all their genders. They are 100% male, 100% Saudi by nationality, 50% by university level, and 50% postgraduate and doctoral. As for their job professions, they were all 100% government employees. When moving to the questionnaire questions and the participants' responses to them, they were as follows: The first question: There are ten types of microbes that cause food poisoning, and they are as follows: Clostridium perfringens, Staphylococcus aerus, Bacillus cerus, Salmonella, Shigella, Clostridium botulinum, Escherichia coli, etc.? Yes 100% and no 0%. The second question: What are the symptoms of food poisoning: nausea, abdominal pain, colic, vomiting, diarrhea, intestinal inflammation, fever, headache? Yes 100% and no 0%. Question Three: Mostly food-borne diseases are poisoned from mishandling, improper preparation and preparation, and poor storage of food? Yes 100% and no 0%. Question Four: Food-borne illness is a group of symptoms resulting from eating food contaminated with bacteria and toxins? Yes 100% and no 0%. Question five: Is food poisoning caused by bacteria the main cause of more than 80% of food poisoning cases? Yes 100% and no 0%. Question Six: Is food poisoning due to changes in the form of canned food? Yes 100% and no 0%. Question Seven: Does the expiration date on food cans have a role in food poisoning? Yes 100% and no yes 0%. Question Eight: Salmonella food poisoning is considered the most common type of food poisoning? Yes 100% and no 0%. Question 9: Symptoms of food poisoning begin about 12 to 24 hours after eating contaminated food? Yes 100% and no 0%.

(Figure No.1)**.**

Figure No.1: Opinions and attitudes of participants in responding to the research questionnaire regarding their knowledge of the microbes that cause food poisoning in food cans.



4-Conclusion:

The extent of the seriousness of food poisoning, especially in canned food, and the extent of participants' knowledge of the microbes that cause food poisoning, the extent of their danger to people, their apparent symptoms according to the physical structure of each person, and the extent of the obvious impact on them as a result of food poisoning in canned food.

Acknowledgment:

To start with, I would like to Praise God and thank Dr. Anas S. Dablool, from Umm Al-Qura University (Public Health Department, Faculty of Health Sciences Al-leeth), Mecca, Saudi Arabia. And the researchers who make the project come to light.

References:

1- Salmonella Infection (salmonellosis) and Animals". Centers for Disease Control and Prevention. Archived from the original on 12/16/2016. Accessed on 08/12/2007.

2- Food poisoning: Causes. Mayo Clinic. Archived December 27, 2012 on the Wayback Machine.

3- Scallan E, Griffin PM, Angulo FJ, Tauxe RV, Hoekstra RM (2011). "Foodborne illness acquired in the United States—unspecified agents." Emerging Infectious Diseases. C. 17 p. 1: 16–22. DOI:10.3201/eid1701.P21101. PMC:3204615. PMID:21192849.

4- food poisoning" in Dorland's Medical Dictionary

5- US CDC food poisoning guide Archived January 13, 2018 on Wayback Machine.

6- ICMSF. Microorganisms in foods 2. Sampling for microbiological analysis. Principles and specific applications. Blackwell Scientific Publications. 1986**.**

7- James MJ. Spoilage of miscellaneous food. In Modern Food Microbiology, 4th edition, Nostraned Reinhold, New York. 1992; pp 245-246

8- Stersky A, Todd E, Pivnick H. Food poisoning associated with postprocess leakages (P.P.L) in canned foods. J. Food Protection 1980; 43: 465-467

9- Put HMC, Van-Doren H, Warner WR, Kruiswijk JTH. The mechanism of microbiological leaker spoilage of canned foods: Rev. J. Appl. Bacteriol. 1992; 35: 7-27

10- William C, Frazier D, Westhoff O. Food borne illness bacterial. In Food Microbiology 4th edition New York. 2006; pp 401-431

11- Oomus SJ, Van-Zuylen AC, Hehenkamp JO. The characteristics of Bacillus spores occurring in the manufacturing of canned products. Int. J. Food Microbiol. 2007; 120: 85-94

12- Arun KB. Food borne microbial pathogen, mechanism and pathogenesis. Purdie University Indiana USA. 2008; P. 276.

13- Donnelly LS, Busta FF. Anaerobe spore forming micro organism in dairy products. J. Dairy Sci. 1981; 64(1):161-166.

14- Granum PE. Clostridium perfringens toxins involved in food poisoning. Int. J. Food Microbiol. 1990; 10: 101-111.

15- Taormina PJ, Dorsa WJ. Growth potential of C. perfringens during cooling of cooked meats. J. Food Protect. 2004; 67(7): 11537-1547

16- Flacks L. Botulinum in New Zealand. New Zealand Med. J. 1985; 98: 892-893

17- Frazier C, Westhoft DC. Food Microbiology 3rd edition New York. 1986; pp 306- 317

18- Bryan FL. What Sanitarian should know about C. perfringens food borne illness. J. Milk Food Technol. 1969; 32: 383-389.

19- Mario PF, Don F. Food Microbiology. In public health and spoilage aspects 2nd edition. Westport New York. 1976; 356-379

20- Alserahy, Hassan Awad, et al (2008), The thinking and scientific research, Scientific Publishing Center, King Abdul-Aziz University in Jeddah, the first edition.

21-Al Zoghbi, Muhammad and AlTalvah, Abas (2000), Statistical system understanding and analysis of statistical data, first edition, Jordon- Amman.

22-Kadasah, N.A.; Chirwa, G.C.; et al. Knowledge, Attitude and Practice Toward COVID-19 Among the Public in the Kingdom of Saudi Arabia: A Cross-Sectional Study. Front. Public Health 2020, 8, 217.