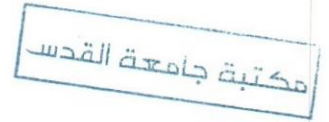


Al-Quds University
Deanship of Graduate Studies
Faculty of Public Health



***Food Safety in the West Bank:
Bacterial Contamination of Foods
Served in Restaurants***

By

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Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of
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Ibrahim Mohammad Yousef Atiya

August 2003

Dedication

TO

MY DEAR WIFE, BROTHERS AND

SISTERS FOR THEIR ENCOURAGEMENT,

WITH LOVE AND RESPECT

Declaration

I certify that this thesis submitted for the degree of Master in the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

Signed _____

A handwritten signature in blue ink, consisting of a large loop and several diagonal strokes, is written over a horizontal line.

Ibrahim Mohammad Yousef Atiya

Date : 31.8.2003

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ABSTRACT

Data of microbial food examinations recorded between 1996-2002 at Environmental Health Department, Ministry of Health were analyzed and studied for the microbial contamination in order to assess the role of different kinds of food in food poisoning occurrence. Food samples were collected from all districts of the West Bank. Most food samples were gathered from the major cities. A total of 3373 samples of different raw and ready to eat foods were gathered from restaurants. Hommous and raw cheese constituted 25 % and 16% of food samples, respectively. According to the Palestinian Standards, 27.5% of tested samples were contaminated. The percentage of contaminated samples were 57.7 % in food samples collected from restaurant, 16.5 % in food industries and 16.6 % of different food types collected from the market. *Salmonella* was detected in 13 food samples; most of them were raw meat collected from Jenin district.

الخلاصة

تقوم هذه الدراسة الى معرفة نسبة التلوث في الأغذية التي يتناولها الناس وتأثيرها على الصحة العامة مقارنة بحالات التسمم التي تحصل بين متداولي الأغذية .

ان المعلومات المعطاه عن الأغذية المفحوصة هي من سجلات دائرة صحة البيئة في وزارة الصحة

سنة 1996 – 2002 أي خلال سبعة سنوات من العينات التي جمعت من جميع محافظات الضفة

الغربية وهي عشر محافظات . وهذه العينات كانت من الأغذية المستوردة ، والمصنعة محليا ،

والمطاعم ، الا أن التركيز في هذه الدراسة كان على العينات التي جمعت من المطاعم وهي 3373

عينة من المواد الأولية والمواد الجاهزة ، وخاصة المطاعم الشعبية ومحلات الحلويات . فمثلا هناك

حوالي 25% من العينات كانت من الحمص الجاهز للأكل ، و 16% من الجبنة البيضاء ومن محلات

بيع الكنافة . وجميع هذه العينات فحصت ميكروبيولوجيا .

وحسب المواصفات الفلسطينية فان نسبة التلوث بشكل عام في جميع العينات المفحوصة هي 27.5% .

بحيث كانت نسبة التلوث في عينات المطاعم 57.5% ومن المصانع المحلية حوالي 16.5% ومن

العينات التي جمعت من السوق ومنها المستوردة 16.6% .

لقد وجدت السالمونيلا في 13 عينة من اللحوم الطازجة ومعظمها جمعت من محافظة جنين .

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CHAPTER ONE

1. INTRODUCTION

1.1. Statement of the problem:

The aim of this study is to determine the severity of food poisoning in the West Bank. To do so food factories, restaurants, markets throughout the West Bank produce and serve popular foods that can be made at home also, were targeted and samples were collected and tested for microbiological contamination.

1.2. Significance:

There are restaurants which serve foods that are cheap and liked by almost everyone, visited by a large number of the population which would give us a good indication of how safe is the food served, and how severe is the problem of food poisoning.

How this will be of use to the population? Safety and good hygienic conditions of these restaurant will have an impact on the control FP,FI

1.3. Objectives:

The objectives of the study include estimating the degree of contamination of popular foods, the safety of foods, the hygienic

practices of food handlers, the spreading of food borne illness in the West Bank, and proposing some solutions to the problems inflicted by the food industry.

1.4. Target groups:

Parameters studied were Total Plate Count, Total Coliforms, and Fecal Coliforms, *Salmonella* *Staphylococcus aureus* and Yeasts and Molds. Samples were collected from food factories, restaurants, and the market and tested for microbiological contamination. Internationally-recognized methods will be utilized to collect and test the samples such as Food and Drug Administration (FDA), Association of Official Analytical Chemists (AOAC), French Standard Institute (AFNOR), and World Health Organization (WHO).

1.5. Limitations:

- 1-One of the limitations of this study is that it will not cover all kinds of foods consumed by the Palestinian population, but covers only some of these foods.
- 2- Another limitation is that this study will show that there is a problem of food poisoning, but it will not show the severity of this problem.
- 3- Data collected was based on a design determined by other researchers, which limit the type of data analysis discussion.

CHAPTER TWO

2. LITERATURE REVIEW

Food poisoning is an illness caused by eating contaminated food. Incidents of food borne disease in the West-Bank are on the average of about 571 cases annually caused by microbiological contamination reported by Preventive Medicine Department-Ministry of Health Table (1). These numbers reported only from governmental hospitals. No real numbers of cases are reported because not everyone affected visits a doctor, and doctors in the private sector do not keep records and do not report these cases. Some cases may not be recognized as food borne illness, but it is generally believed that in developed countries less than 10%, or even only 1% of cases of food borne illnesses ever reach official statistics (WHO). Food borne diseases were estimated to cause approximately 76 million illnesses, 325,000 hospitalizations, and 5,000 deaths in the United States annually (1). In England, for example, there are about 80,000 cases per year, and incidence of food borne disease in Venezuela 140 cases per 100,000 populations (2).