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Short Communication

An Assessment on sanitary survey condition on food establishment

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Abstract

Food can be subjected to contamination with toxic substances and pathogenic organisms during production, transportation, preparation, storage and service. The consumption of contaminated food that contains sufficient quantities of pathogenic organisms and toxic substances will result in foodborne disease. Other factors in the prevalence of foodborne disease are the lack of knowledge on the part of food handlers and negligence in safe food handling. It is estimated that in developing countries up to 70% of cases of diarrheal disease may be caused by contaminated food. Food prepared in large quantity is liable to contamination and to the rise of foodborne diseases if the strictest principles of hygiene are not maintained. Unless hygienic food handling and preparation is ensured in mass catering establishments, the health of large number of consumers will be in endanger as similar type of food prepared in the same kitchen by the same food handler is eaten at a time.

Keywords: Food Hygiene, food borne pathogens, food borne diseases, neurotoxin and prevalence

Introduction

An adequate supply of safe, wholesome and sound food is essential to the health and well being of man (1). However, there are several occasions that food affects the health of many people throughout the world due to contamination (2). Contaminants present in food may arise during food preparation and processing, from industrial pollution of the environment and from agricultural practices and food preparation. Food contamination is in no way restricted to the industrial countries-infact the problem of developing countries is severe due to difficulties in securing optimal hygienic practices (1). Despite the great advance made in modern technology, producing safe food and keeping food safe remains a worldwide public health problem (3). With poor or non-existent reporting systems

in most countries reliable statistics on foodborne diseases are not available and their magnitude is therefore difficult to estimate (3). However, estimates indicated that out of the 1.5 billion global annual cases of diarrhea about 70% or 1.05 billion cases are thought to be caused by biological contamination in food. Globally the incidence of foodborne diseases may be 300 to 350 times higher than the number of reported cases (2). In U.S.A alone, an estimated 76 million people got sick from foodborne disease in 1999, out of which 5000 of them died. Although no estimation can be made for the developing countries, it is believed that the prevalence of foodborne diseases in these regions of the world is even greater (3).

With the increase in urbanization, industrialization and tourism, mass catering establishments are becoming increasingly popular in both industrialized and developing countries. Mass catering establishment operations, by reason of their scale and complexity, have the potential to produce even more disastrous consequences for health, if the strictest principles of hygiene are not maintained (1). In 1969/70 there were about 737 outbreaks of foodborne disease with 52,011 cases reported to the U.S Centers for Disease Control and Prevention (CDC). Of those 33% of outbreaks occurred at restaurants, cafeterias and delicatessens (4). A summary of the results of a study of almost 1500 general and family outbreaks of foodborne disease which occurred in England and Wales between 1970 and 1982 revealed that the largest proportion (58%) of the incidents studied occurred from food prepared in restaurants, hotels, clubs and the like (9). Among foodborne disease outbreaks that occurred in Poland in 1990-92, 8.2% of the outbreaks occurred from food prepared in restaurants, bars, and café (3). Thus, situations where food is prepared in quantity for a large number of people are most likely to give rise to most food poisoning (5). Developing countries are affected by a wide range of foodborne diseases. Cholera, compylobacteriosis, E.coli, gastroenteritis, salmonellosis, shigellosis, typhoid and paratyphoid are few examples (3).

In Ethiopia, according to the Ministry of Health annual report of 2003/04, dysentery and gastroenteritis were among the ten top diseases of outpatient visits although the report did not include all regions activity (10). The number of cases associated with foodborne diseases is highly underestimated due to poor reporting, documentation and poor health seeking behavior of patients. In Tigray Regional State, of all diseases reported from governmental health institutions in 2003/04 gastroenteritis, ameobiasis, bacillary dysentery, typhoid, helminthiasis and other intestinal parasitic infections account 18.4% or 345,959 cases (6). Foodborne disease occurs in mass catering establishment that is not complying with sanitary and hygienic food handling and preparation. Interventions that focus on the improvement of these factors are believed to reduce the incidence of foodborne diseases (5). Unfortunately, the premises of mass catering do not have all the necessary basic sanitary amenities required for production of safe food (7). Studies conducted in Addis Ababa (1994) and Zeway (2001) revealed that poor repair condition of premises, inadequate sanitary facility, improper waste management and inadequate client's hand washing basin and utensil washing sinks were common features of catering establishments (8,9).

Food handlers have a basic responsibility to maintain a high degree of personal hygiene and food handling practice (4); but they have almost no knowledge about the ways and means of food contamination, and usually have low standards of personal hygiene for the tasks they are expected to perform (12). A study conducted in Addis Ababa revealed that only 50% of food handlers have had a satisfactory and 46% were found without any kind of protective outer garment (10). Another study done in Awassa and Zeway showed that the prevalence of intestinal parasitic infection and some obvious form of active skin and respiratory infection among food handlers were 63% and 14.8% respectively (9,11). It is well known that perishable foods should be kept at a temperature either below 40C or at not less than 600C in order to prevent the growth and multiplication of bacteria (4). However, a study conducted in Addis Ababa showed that about 60% of public catering establishments did not have refrigerators; even around 47% of those establishments that had refrigerator could not adjust the temperature properly. In fact one third of the establishments were found with spoiled perishable foodstuff (10).

Food utensils used in the preparation of food can act as a source of contamination. Unclean and/or ineffectively washed and sanitized food utensils are potential risks for food contamination (12). So the sanitary quality of food utensils requires due attention and needs regular monitoring. The effectiveness of washing and sanitizing of food utensils can be determined by visual inspection and laboratory methods. However, the standard measure is bacteriological swab test which is an effective tool for monitoring and measuring food utensil sanitation, though it will not be affordable for routine monitoring activity. A standard plate count of less than 100 colonies per utensil or less than 100 colonies per 50 cm2 of surface swabbed and the absence of coliforms indicates a satisfactory washing and sanitizing as well as handling and storage procedures (3).

Socio-demographic condition of owners and food handlers, environmental factors like housing condition, availability of toilet facility, liquid and solid waste management, water supply, and infestation of vectors are some of the factors that affect food safety (4, 7). Having concrete information on the status of these factors in mass catering establishment is crucial to evaluate the undergoing hygiene education and regulatory activity in the area as well as to design appropriate strategy to improve the sanitary condition so as safeguard the health of the public particularly in our set up where mass catering establishments are flourishing and less attention is given to the sanitary condition.

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