CHAPTER II

REVIEW OF LITERATURE

A review of previous studies on street food vending is necessary to enable us to have a view of different scholars and reporters. The knowledge so obtained will be useful to go indepth and find out the unknown and unexplored areas. The earlier studies made on street food vending and related areas are briefly reviewed here. Many authors have dealt extensively on the subject of safe food. To my humble knowledge, this is almost the first research work concerned with street food vending in Madurai District. Hence the researcher has made an attempt to review the various studies on this subject which are published in various journals, books and reports.

Grace P. Perdigon (1986) in his study “Street Vendors of Ready-to-Eat Food: As a Source of Income and Food for Low Income Groups”, mentioned that the daily net income of the food vendors ranged from a low P.10 per day to as higher than P.500 per day. Street vending was found to be a
source of family meals. Majority of the vendors were married. They were income earners and food provider. The vending places were congested and pothered. The vending operation were assisted by their kin or some hired workers. The vendors sold food every day of the week, putting in 12 or more hours of work per day. The working capital was taken from the operator’s personal savings or sari ling sikap.¹

Ma Patrocinio E. de Guzman et al., (1987) in their article “Street Foods in the Philippines Health, Nutrition, Management and Livelihood Aspects”, revealed that the initial capital investment of most street food business come from loans from relatives, friends or money lenders. The daily operating expenses range from P.10 to P 1000. The schedule of street food business vary with the size of operation and appeared to vary with the location of the service and the type of food sold. Some of them operated for 24 hours. They appeared to be mostly migrants from the provinces. Simple foods are served in street food services. These include fried and boiled snacks and other packed snacks, beverages soups, ices, native cakes, grilled items, sandwiches, fish, cooked vegetables, eggs, fruits and bakery products. They prepare the street foods in their homes. They just transported these to the place or street. They used to serve in china plates with stainless steel spoons and forks. Glass tumblers were used for serving water. Use of plastic plates and tumblers was

not found. Storing of foods was not commonly done in street food stalls. Street foods were handled with bare hands and unclean utensils, serving of food directly from the cooking pot, using of plastic wrappers and improper grooming among food handlers were observed. Cleanliness of food preparation and service area were also not properly maintained.²

Vashit P.D., (1990) in his article “In formal sector – A Tool for Poverty Eradication”, analyses that the importance, definition and the problems of informal sector. In a developing country like India, where the pressure of population is overall on the increase, the development of the informal sector can go a long way in employment generation and consequent eradication of poverty. The author puts forth a few suggestions for promoting this sector. The sector needs strong support from the government in terms of product promotion programme, entrepreneurial development, subsidies and incentives.³

Friedman, Michelle and Hambridge (1991) in their article “The Informal Sector, Gender and Development”, emphasizes that the conception of work – (used in much research) has made it possible to overlook unpaid work done by women, simply by considering it as a part of the household’s repetitive task. Such gender bias based on the assumption that men alone are

household breadwinners, was also expressed in the use and equate methodology to collect information not capturing “a multitude of small irregular ways in which women often contribute to domestic incomes”. Not only the researcher but male and female informants also failed to recognize the importance of women’s work and thus the significance of their contributions to the economy of the poor has continually been underestimated. We examine here the structural factors which eventually determine women’s work in the informal sector, and which refer to the overall social, economic and political conditions that exist in a particular society at a certain historical movement.4

Rita Hutabarat L.S., (1994) in her article “Street Foods in Bangkok – The Nutritional Contribution and the Contaminants Content of Street Foods”, revealed that Bangkok has 20,243 registered street vendors. About 30 percent of all the street vendors sold prepared food. Street food vendors outnumber other-than-street vendors who sell such things as food ingredients. Socio-economic conditions have made vending an essential part of the city’s life. The problems commonly associated with street vending relate to cleanliness of the city environs and the orderliness of the city’s activities. The location of vending activities near to university, school, and busy locations like shopping and market areas, places of recreation and

transportation terminals tend to create problems of cleanliness. The main types of foods are snacks, meals and beverages. The ambulatory category of vendor had equipment and facilities that were usually of small scale. Food was most usually sold on wooden bowls or plates, aluminum plates and bowls, and traditional earthenware. This category of vendor carried washing water in a small plastic bucket. There are vendors having a movable rig, insulated box for ice storage, a stove for heating food, and a washing basin. Some of them are having cooking utensils, tables and benches as well as having serving facilities.

Parthasarthy. G., (1996) in his article “Unorganized Sector and Structural Adjustment” addresses the issues of relative efficiency of the organized and the unorganized sectors, the exploitation of unorganized sector by the organized, and the big gap between the profession and the performance in relation to public support to the unorganized sector. This study also focuses on the adverse implications of structural adjustment for the unorganized sector and street food vendors, the unprotected and neglected workers who sit and toil on the platform or near waste disposal place to sell their food product.

Navin Chandra (1996) in his paper “The Organizing Question and the Unorganized Labour Organizing Unorganized Workers”, points out


that over 90 percent of the workforce lack the power of organization. The
unorganized sector constitutes 91.5 percent while the organized labour
comprises 8.5 percent of the labour force. The author has also points out that
95.8 percent of the female labour force is employed in the unorganized sector,
only 4.2 percent of the female force is employed in the organized sector. He
examines various models in economic theory and their implications for
unionization.7

Requirements for Street Vended Foods”, studied about in the hygienic
handling of street vended foods and the attention to containers of pastes,
sauces and other food activities, monitoring them for pathogen growth and
visible deterioration of water used for drinking and preparation of beverages.
Water used for this purpose should be potable water. Water used for washing
utensils, food and hands should be safe and should not be reused. Ice to be
used in beverages and food should be prepared from potable water and should
be transported and stored in a hygienic manner. Foods to be eaten, raw should
be prepared with special attention to cleanliness. Preparing and processing of
food are to avoid direct and indirect contact between raw and cooked or
prepared food which will be consumed without further heating. The vehicle
used for transport should be clean and should not carry animals. Prepared

7 Navin Chandra, “The Organizing Question and the Unorganized Labourers – Organizing the
food should be kept at a temperature of at least 60°C to prevent microbial growth. Handling of cooked foods should be kept to a minimum to reduce the likelihood of introducing pathogens. Vending units should be designed and constructed so that they are easily cleaned and maintained. Equipment, utensils and other containers should be made of materials which do not release toxin or hazardous chemicals into food and beverages. Raw meat, poultry or fish should be handled carefully; their preparation should be carried out using separate equipment and utensils. Food handlers should be educated to wear clean and proper clothing according to prevailing local standards. Food handlers should wash their hands with soap and water after engaging in any activities that are likely to introduce biological, chemical or physical hazards. Food should be prepared and sold in a clean well-lit place protected from strong sun, dust, rain and wind.8

Jeemol Unni (1998) in his article “Wages and Employment in the Unorganized Sector Issues in Wage Policy”, analyses the wages and employment scenario in the unorganized sector with seven sections. The study analyses the development of polices for the protection of unorganized sector workers in India in the context of International Labour Organizations and its recommendations. Trend in wages in the organized and unorganized sectors in seven states of India is also undertaken for analysis. A study of

wages in the unorganized sector is also undertaken in Ahmedabad city as also a study of prescribed minimum wages in Gujarat. The intensity of employment and incomes in organized and unorganized sectors, the issues concerning of home workers and piece rate wages, and the need for meaningful wage policy were also emphasized by the author.9

Freese E. et al., (1998) in their article “The Microbiological Safety of Typical Guatemalan Foods from Street Vendors; Low Income Homes and Hotels”, mentioned that Guatemalan meals significantly (P<0.05) lower Aerobic Mesospheric plate (APC) were found in home – prepared than in street food or hotel-prepared food. But there were no significant difference in coliform counts of Escherichia coli (E. coli) counts among the sources of the meals. Comparison of the typical meals with western-style foods of the same food group showed significantly higher counts in the meat group for the typical meal and in the plant group for the western meal. The analysis showed higher counts for components that were not heated (example avocado cream and tomato sauce) than those that were heated (grilled beef and tortillas).10

Kakar D.A., and Udipi S.A., (1998) in their article “Microbiological Quality of Fried Ready-to-Eat Foods Sold in Mumbai City”, studied about 3 varieties of ready-to-eat fried foods sold at railway stalls,

small shops and street vendors in Mumbai city were examined for microbiological safety. Samosa from street vendors showed higher counts of all organisms but only the counts of total faecal coliforms were statistically significant and Batatawada from street vendors also showed higher counts. But the difference was not significant.¹¹

Ma Patricia V., Azanza and Arlyn I.G., (1998) in their article “Microbial Hazards of Street Vended Grilled Chicken Intestine” found out that street vending of grilled chicken is popular in the Philippines. The easy affordability of the commodity makes it appealing to the public, but hazardous to a large portion of the population. The unsanitary use of the sauces poses health risks to consumers. Hazards associated with the street vending:- contamination present in the raw chicken intestine, contamination from contact surfaces during pre-cooking, additional contamination from food colors.¹²

Patricia V.A., and Arlynn I.G., (1998) in their article, “Microbial Hazards in Street Vended Fish Balls in the Philippines”, revealed that fish ball street vendors have already became permanent fixtures in the main commercial street of the Philippines, particularly in Manila. The study identified some microbial hazards associated with the street vending.

operations of fish balls and its different sources. They were found to contain detectable levels of coliforms and salmonella. These levels of microbial contaminations in the sources increased over the 6 hours vending operation. The hands of fish ball vendors were also shown to contain increasing amount of microbial contaminants throughout the vending operations.\footnote{Oguntona, C.R.B., Razaq M.A., and Akintola T.T., (1998) in their article “Pattern of Dietary Intake and Consumption of Street Foods among Nigerian Students”, described that the major dietary sources of nutrient for both groups were cereals, roots, tubers and legumes. Energy intake by males was significantly higher than intake by female. Street food contributed 50.3 and 8.3 percent of total energy to male and female subjects respectively. Intakes of minerals and vitamins were generally below the RDA except for Ca and Vitamin A. Female had significantly higher intakes of fathoming and Vitamin A than males. Overall, the contribution of street food to the RDA ranged from 23 percent to 80 percent.}{13}

Chauliac M. et al., (1999) in their article “Differences in the Composition of Children’s Breakfast in Bamako, Mali: a Social rather than Economic Phenomenon”, studied that more than 92 percent of the children ate breakfast. Out of these around 73 percent ate porridge, 33.5 percent bread without or with spread, 24.1 percent had something else (leftovers) and 28.7 percent.
percent drank coffee with milk. Porridge, the traditional breakfast was eaten more frequently in under privileged districts. Composition of breakfast depended on type of residential district and not on socio-economic status. Evolution of eating habits appeared to be through social modeling.\(^\text{15}\)

Mohan B.E. et al., (1999) in their article “Surveying Vendors of Street Food” analyses the safety of the street vended food. The vendors have good knowledge of food safety and cholera but persist in unsafe practices. Around 87 percentage of the vendors used stored water, usually in wide mouthed vessels prone to contamination. Data for public health planning and intervention can be gathered rapidly with this method of surveying street vendors.\(^\text{16}\)

Umoh V.J., and Odoba M.B., (1999) in their article, “Safety and Quality Evaluation of Street Foods Sold in Zaria, Nigeria”, suggested that it is necessary to educate street food vendors and the public on the importance of environmental sanitation and safe food handling practices in order to reduce the risk of food borne pathogenic diseases.\(^\text{17}\)

Vasana Chinvaralcorn (1999) in his article “Cleaning up the Streets”, observed that 3000 food vendors had displayed the green star logo on


their stalls. Street food has long suffered the notoriety of being unclean. Both the sellers and customers are typically poor and with low levels of education, appear to be less concerned with sanitation issues. More than 3600 food vendors are registered with the local authority, staking their claims in 287 authorized spots in Bangkok. A few of the vendors are having their own spot and the majority of them do not have own spot.\textsuperscript{18}

Azanza M.P., Gatchalian C.F., and Ortega M.P., (2000) in their article, “Food Safety Knowledge and Practices of Street Food Vendors in a Philippines University Campus”, dealt on health and personal hygiene, good manufacturing procedures, food contamination, waste management and food legislation. Their study found that vendors were not knowledgeable in terms of food legislations and waste management. A significant gap between knowledge and practice were established, attributed primarily to the tendencies of street food vendors to compromise food safety for financial reasons. Confusion in food legislation was established in the test microcosm because the purveyor of food safety regulations was not the local government health unit but the business concession office of the campus administration.\textsuperscript{19}

Leila Salaverria and Tina Santos (2000) in their article “Caloocan Vending Program: Makati City Clears its Sidewalks”, reveal that

\textsuperscript{18} Vasana Chinvaralcorn, “Cleaning up the Streets”, \textit{Bangkok Post}, October 18, 1999, pp.1-7.

Makati city government recognizes that the proliferation of sidewalk vending is a social phenomenon brought about by the problem of massive unemployment and widespread poverty, and also recognize that they cannot just sit down and do nothing.20

Poh-See-Toh and Birchenough A., (2000) in their article “Food safety knowledge, attitudes, culture and environmental impact on hawkers in Malaysia”, studied the street food marketers in Kuala Lumpur. The paper analyses demography, working environment, ignorance based constraints on food handling and practices, which may lead to food borne illnesses. Malay and Indian hawkers were better informed than Chinese hawkers, and hawkers selling foods at designated sites or in better-developed environments demonstrated better knowledge of HOCCP than hawkers by the roadside. Hawkers with upper or lower secondary school education had better knowledge scores than those with primary school education or no education. Strong statistical relationships were found between knowledge and attitude scores.21

Ramesh V.B., and Kavita W., (2000) in their study “Profile of Street Foods Sold in Asian Countries” describe the uses and retail of street foods in Asian countries. Aspects considered include a historical perspective

21 Birchenough, A; and Pon-see-Toh; “Food Safety Knowledge and Attitudes Culture and Environment Impact on Hawkers in Malaysia”, Food Control, Vol.11, No.6, 2000, pp.447-452.
on street food retailing in Asian countries, socio economic aspects of street food retailing, (employment, economics, consumer spending, street food franchises, costs of street foods, role of women in the street food industry) profile of street food retailers (age, migration, income, training, personal hygiene) profile of street food consumers in various Asian countries, types of street foods available in Asian countries (range, street foods for special occasions, seasonal changes in street food retailing, preparation and processing methods, packaging, use of left over foods, water facilities, disposal of waste, location of vending vehicles) quality of street foods in Asia (physical, chemical and nutritional quality, microbiological quality of beverages, vegetables and fruits, water, meals, desserts and ice creams, incidence of food borne diseases and HACCP studies of street foods) and legislations regarding street food retailing in Asian countries.\(^{22}\)

Ramesh V.B., and Kavita W., (2000) in their review “Street Foods in Latin America” analyse socio-economic aspects of the street food industry in Latin America. They studied about the street food vendors, consumers, type of street foods available, quality of street foods and suggestions for improvement of street foods in Latin America.\(^{23}\)


Taylor D.S., et al., (2000) in their review "Street Foods in America – A True Melting Pot" described a historical perspective of street food retailing, types of street foods available in American cities, nutritional analysis of selected street foods, preparation and processing of street foods, microbiological quality of street foods, regulatory issues surrounding street food retailing and profiles of street food retailers and consumers.\(^{24}\)

Harjit S. Anand (2000) in his article "Employment Generation in the Informal Sector – Strengthening of Institutional Arrangements" explores the nature of the relationship between the organized and unorganized sectors in India in terms of employment and elastic nature of information.\(^{25}\)

Ng Kar Year (2001) in his report "Illegal Hawkers to Get Licenses", described the issuance of licenses is also subject to the condition that the applicant must be a Malaysian citizen of 18 years of age and above, business activities should not obstruct traffic, the nature of the business should be legal, size of stall shall not exceed 300 square feet, hawkers must be registered with the city hall and the Federal Territory Hawkers Association, hawkers must adhere to relocation orders without compensation and stall must be neat and clean. Presently, there are 32, 120 registered hawkers in Kuala Lumpur.\(^{26}\)


\(^{26}\) Na Kar Year, “Illegal Hawkers to get Licenses”, The Sun Newspaper, Vol.76, No.59, September 26, 2001, p.3.
Pooina and et al., (2001) in their article “Prevalence and Growth of Pathogens on Salad Vegetables, Fruits, and Sprouts”, reports that different types of raw vegetables, fruits and sprouts from beans or chickpeas were obtained from street vendors and were tested for Aerobic Plate Counts (APC). APC in salad vegetables, fruits and sprouts were in the range 10^5 – 10^10, 10^6 – 10^8 and 10^9 – 10^12 cfu/g. respectively.\(^{27}\)

Raghuramaiah. B., (2001) in his article “Indian food regulations in the global context” described that effect of globalization of food trade on the Indian food regulatory system are considered with respect to, food safety, consumer protection, restrictive policies on additives and pesticide residues, the definition of natural and artificial, codex alimentations commission rulings FDA regulation and the need to improve both the health of the Indian population (Via improved drinking water, street food quality and post harvest technologies) and inward investment in the Indian food industry.\(^{28}\)

“National Policy on Street Vendors – 2001” of the Ministry of Urban Development of Poverty Alleviation says that Mumbai has the largest number of street vendors and women constitute a large chunk of street vendors. In almost every city, urban vending is not only a source of


employment, but provide affordable services to the majority of the urban population.

The right to carry on any legal trade or business is mentioned in Article 19(1). Hawking on street pavements, if properly regulated, cannot be denied on the sole ground that the streets are meant exclusively, for vehicular and pedestrian passing and no other use. Article 39 (a) and (b) of the Indian Constitution clearly mentions that the state shall in particular direct its policy so that, (a) the citizen, men and women equally have their right to have adequate means of livelihood. (b) The ownership and control of the material resources of the community are so distributed as best to sub serve the common good.29

Nidan (2002) in their article “National Alliance of Street Vendors”, report that there is a constant fear of eviction, exploitation by police officials, municipal authorities and extortionists in the face and the eyes of street vendors. Hawkers were more or less then same as in other streets. Amritsar, a mixture of old and new architecture has many old alleys where it is impossible for anyone to stand, but vendors use that little space for their livelihood. The strength of street vendors is near about 2000 and only 1500 are organized. They face harassment from police and Municipal authorities. In Gurdaspur they are harassed by administration and also by burglars. The

national alliance of street vendor’s activists help these vendors and brief them on their objectives and activities. It is an association to help them.30

Alice Escalante de cruz (2002) in her article “The Street Food Sector in Asia and the Pacific” reported on the growth of the street vendors and the growing number of urban poor and the mobilization of women into the work force. Street foods are not only far cheaper than restaurants or fast food joints, but actually much more cost-effective than even home prepared food. Many women are participating in the economy and this has constrained their ability to prepare elaborate meals for their families at home, this necessitating them to procure street foods as a supplement to other home cooked food. The street food trade provides numerous employment opportunities. Street food vending has been known to generate income a few times above those on the poverty line in many developing countries. The street foods trade has provided income to many small farmers who supply these food vendors with local produce thus stimulating and generating employment in the agricultural sector. The consumer generally welcomed street vended foods as a source of easy accessibility, relatively safe, affordable, nutritious and delicious, be it snacks, supplement or full meal.31

David Heymann (2002) in his article “Food Safety, An Essential Public Health Priority”, mentioned that annual mortality on account of food and water-borne infectious diseases in developing countries amounts, to the high 2.1 million deaths, mainly of infants and children. In industrial countries microbiological food borne illnesses affect up to 30 percent of the population. Every year 20 out of each million inhabitants die from food borne diseases. The human health effects of chemical contaminants of food such as dioxins range from various cancers, damage to the nervous system, diseases of the immune system, reproductive disorders to interference of infant and child development. In the industrial countries the present atmosphere creates wariness in consumers vis-à-vis food safety and a severely compromised confidence of these consumers in the existing food control system. In developing countries the visible and endemic burden is large, mainly lack of awareness in both the consumers and the politicians.32

Das Mohapatra A., et al., (2002) in their article “Microbiological Evaluation of Street Foods in Bhubaneswar” studied about Bacteriological quality of the street foods gupchup (panipuri) chat, dahibara and ice cream sold in Bhubaneswar. Highest bacterial load was recorded in panipuri followed by chat, ice cream and dahibara. The coliform count of these street food samples exceeds the acceptable limit prescribed by the WHO suggesting

that street foods may be a cause of chronic intestinal ailments amongst the working class of the city.33

Garbin B. et al., (2002) in their article “Food and Environmental Hygiene”, described that tests on the street vended ready to eat foods (sandwiches, ice-cream and sorbets) and the vendors of such foods were carried out to assess the microbiological quality of these foods. The study shows that the poor microbiological quality of these street foods constitutes a potential hazard to public health, that the extent of this hazard varies between the cities studied, and that vendor’s health education in food safety is a crucial factor in the prevention of food borne infections.34

Greg Roche (2002) in his paper “The development and implementation of the New Australian food safety standards” observed that the major food processors supported the food safety reforms, including food safety programmes such as meaning of safe and suitable food. There are three steps in food safety programmes viz., interpretation and application, audit and the food safety programme standard. This standard sets out specific food handling controls related to the receipt, storage, processing, display, packaging, transportation, disposal and recall of food, construction of food

premises, including water supply, sewerage, garbage, ventilation and lighting, floors, walls and ceilings of food premises.\textsuperscript{35}

Hartwig DE Haen (2002) in his article "Food Safety Regulators" observed that the threat to public health from food borne microbial pathogens occurs in both developed and developing countries with the greatest impact on children, pregnant women, the poor and the elderly. Chemical hazards are another significant source of food-borne illness. Public concern has been heightened by recent episodes of new microbiological and chemical contamination of foodstuffs. Consumers are constantly raising their expectations with regard to food safety. In developing countries the main problem remains hunger and malnutrition. Almost 800 million people were suffering from insufficient dietary intake, but unsafe food is of increasing concern to them as well.

FAO observe that most of the traditional food control systems have had a sartorial or fragmented structure, with different ministries or agencies being responsible for food control. Even if such a system put emphasis on the necessary multi-disciplinary approach to food safety, it can face difficulties in co-ordination or uneven regulation. There is need to establish and upgrade food safety control systems. Low income countries have no other choice than to proceed step by step and to invest first where

there is a pressing need to guarantee compliance to their export products with regard to international standards.  

Jose Luis Flores Luna (2002) in her paper "Communication and Participation - The Experience in Mexico", mentioned that food-borne diseases, although difficult to quantify, are considered relevant for the health of Mexican population. Acute infections diseases transmitted by bacteria, parasites and viruses through one of the possible routes, food, are a relevant cause of morbidity. Food safety is crucial for Mexico’s development because it has an impact on the health of the population, job creation, investment inflow, fair trade of food and globally, on the efficiency and productivity of the nation. While contaminated food is a concern involving the functions and responsibilities of different sectors, co-ordination, in integrating strategy, an explicitly definition of responsibilities to achieve food safety from the farm to the table; and design of models which allow to measure the contribution of food safety to the objectives of the policy of each participating organization are needed.  

Mamdouh Gabr (2002) in his article "Improving Efficiency and Transparency in Food Safety System", mentioned in his keynote address that there is a need to bridge the gap between policy and practice and between

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theory and reality. In developing countries, the situation is worse. Infrastructure may be lacking. There is much other competing health, social and economic priorities. Public awareness of the dangerous consequences of unsafe food is low.

People react indifferently to safe control measures. Socio-cultural factors, poverty, illiteracy, and resistance to certain endemic food borne pathogens are among many causes that contribute to this indifference. Because of economic or political factors, decision makers may be reluctant to take action to raise public awareness.38

Mbaganie – Mwangi A., et al., (2002) in their article “Do street food vendors sell a sufficient variety of foods for a healthful diet? The case of Nairobi” examine whether these vendors sell sufficient variety of foods for a healthful diet. Nearly 53 percent of vendors sold foods of only 1 food group, with 44 percent selling cereal products and 36 percent only selling carbohydrate-based foods. The percentage of vendors selling foods of >1 food group was higher in the industrial area than the slum and lower – middle-income areas. Micronutrient-rich and mixed nutrient foods were associated with female vendors.39

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Mitsuhiro Ushio (2002) in his article “Food Safety Regulatory Issues” expressed an important point of Japanese food safety programme based on the Food Sanitation Law. Healthy hazards are not completely controlled, despite comprehensive and intensified regulations. Take food poisoning, which is a long-standing challenge in food safety regulation. 1960 incidents and 40 thousand patients were reported in 1997. The increase of allergic diseases and increasing consumer concerns of allergies caused by food consumption were reported. Some foods can cause severe illness and in some cases, a life-threatening allergic reaction. Government regulatory systems can provide a framework for maintenance of food safety across the food continuum “from farm to table”.

Regulatory requirements establish limits and responsibilities, but are of little value without effective contributions by all the stakeholders. Food processing and transportation industries must assess where food safety may be jeopardized at critical points in food production and transport and take appropriate measures to control these potential hazards. Retail establishments, restaurants and other food vendors must also understand how to ensure proper sanitary practices and temperature controls.40


of Public Health”, pointed out that the microbiological quality of papaya slices requires significant improvement. Using vendor training and adjustment of storage conditions to limits pathogen proliferation.41

Orriss G.D., (2002) in his paper “Food Safety Capacity Building” revealed that the food supply systems in developing countries are often fragmented involving a multitude of middlemen. This exposes it to various types of contamination and fraudulent practices. Besides the public health implications, adulteration and fraud are of significant concern. In developing countries, people spent almost 50 percent of their earnings on food and among lower income households this figure may rise to above 70 percent. The globalization of the food trade and the development of international food standards have also raised awareness of food safety in developing countries.42

Patience Mensah, et al., (2001) in their study on “Street Foods in Accra, Ghama: How Safe Are They?” found out that street food trade was conducted by children aged ≥ 10 years and by women aged ≤ 52 years. Of the total vendors 33.3 percent have received no formal education. Nevertheless they exhibited good hygienic behavior as indicated by the high prevalence of hand washing and personal care.

People bought street foods held in open or protected structures. The surroundings of the vending sites were clean. Only 3.4 percent was classified as dirty. At total of 17.9 percent of vendors associated diarrhoea with germs but none was aware that dirty lands were a risk factor of diarrhoea. A total of 511 menu items were tested. Out of that 69.7 per cent of food samples were detected to contain mesospheric bacteria. B cereus, S aureus and enter bacteria were found in 5.5 percent, 31.9 percent and 33.7 percent respectively.43

Pooja Bajaj et al., (2002) in their article “Safety of Street Foods: Case Study of a Food Plaza in Delhi” studied on safety of street foods sold in a food plaza in Delhi. Each stall was assessed and scored for a range of facilities and food handling practices, including layout, water supply, equipment, and utensils, waste disposal facilities, storage, preparation and dish washing. Samples of foods sold and water used at the outlets were analyzed for microbiological quality. Coliforms were found in 41.7 percent of food samples analyzed; but were not detected in any tap water or stored water. Recommendations are made for improving food safety at the stalls. These include safety and hygiene training for food handlers and the introduction of an improved licencing system.44

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Ponsee-Toh (2002) in his article “Knowledge and Practices of a Control Authority – Impact on the Environment and Food Safety” described that experience and background education were used as determinants of food safety practices and knowledge of the control authority. Education training is significant than staff resources relating to environmental health, food safety and food borne illness and their control. Information is provided on the control aspect within the hawker industry, with the view of protecting the public from health hazards arising from the hawker’s practices and consumption of hawker foods.45

Stuart A. Slorah, (2002) in his paper “Integrated approaches to the management of food safety throughout the food chain” presented some observation related to management of food safety. In Sweden the primary goal of food safety risk management is to protect public health from risks. The main responsibility for food safety ties with those who produce, process and trade in food, farmers, fishermen, slaughter house operators, food processors, wholesale and retail traders, and caterers. Consumers are responsible for food hygiene in the home and for ensuring food storage facilities. There are approaches and needed measures to eliminate or control the source of contamination, processing to reduce containment levels and

measures to identity and separate contaminated food from food which is suitable for human consumption.\textsuperscript{46}

Thomas J. Billy (2002) in his paper “Reduction of Food-Borne Hazards, Including Microbiological and Others, with Emphasis on Emerging Hazards” discusses that risk management strategies contributed to food safety in U.S.A. It had a positive effect, a 44 percent decline in illness between 1989 and 1993. Healthy people objective is an initiative coordinated by the U.S. department of health and human Services that sets goal every 10 years for a variety of health concerns, including targets for the reduction of food-borne illnesses. The incidence of Listeria Monocytogenes (LM) decreased from 0.7 cases of infection per 100,000 in 1987 to 0.5 case in 1996. The target for 2010 is 0.25 case per 100,000 with a 50 percent improvement.\textsuperscript{47}

World Food Summit (WFS) (2002) in its paper “Consumers and Food Security” described that the growing movement of people, live animals and food products across national boundaries, as well as the rapid pace of urbanization in developing countries, changes in food handling, dietary change and the emergence of new pathogens contribute to greater food handling and dietary changes. The relative importance of these risks varies according to the climate, food, practices, level of income and social


infrastructure. Seventy percent of diarrhoea diseases are caused by food contaminated with microorganisms.\(^48\)

Lameiro – Rogrigus K., et al., (2003) in their article “Hygienic-Sanitary Conditions of Street Food from Brazil” suggest that the hygiene practices of street food vendors in Pelotas are inadequate. Result, a high proportion of ready-to-eat foods are of unsatisfactory microbiological quality.\(^49\)

Sathisbabu H.N., and Rati E.R., (2003) in their article “Prevalence of Yersinia enterocolitica in Panipuri”, described that different samples of Panipuri from the street vendors in the surrounding area of Mysore city when analyzed for mesophilic aerobes, coliforms and Yersinia spp, the masala samples showed high levels of contamination and they showed positive reactions to auto agglutination and crystal violet binding tests.\(^50\)

Usha Chandrasekhar, Kowsalya S., and Pramila Latha (2003) in their article, “Proximate Composition, Microbial and Chemical Contamination of Street Vended Foods Versus Homemade and Restaurant Foods from Kochi, Kerala”, mentioned the presence of non-permitted colour, artificial sweeteners, adulterant oils and the poor sanitary quality of the food. Hazard Analysis Critical Control Point (HACCP) analysis of Bengal gram curry

showed high microbial counts in raw and soaked samples. (The hygienic practices adopted by vendors and restaurant personnel were far from satisfactory. Though foods from all sources were nutrient, dense, homemade foods were less expensive and superior in quality to both restaurant and street foods). Alice Escalante de Cruz, (2004) in her report “A Lifeline for Street Food Vending”, studied about Asian-Pacific region in four countries – Bangladesh, India, Philippines and Vietnam. The report examined the efficacy of existing policies and regulations for street food vending, emphasizing food safety and to develop the welfare of street food vendors. Vendors of street food provide affordable food for all classes of the society. Street foods can be the least expensive source of a nutritionally balanced meal away from home. One out of 60 people in Calcutta, one in every 800 in Hyderabad and one in every 503 in Mumbai are involved in the street food vending business. A large number of people who have migrated from villages to cities – end up making a living as street food vendors. Nearly 91 percent of the street food vendors are women because street food vending, provides an important source of income for women. But in countries like Bangladesh where the dominant custom is based on an Islamic tradition, men vendors are 99 percent. Many of the street foods are vended around unclean areas, near

the canal or drainage, sewerage, garbage disposal, manhole and toilets. Vendors in the areas chosen will be trained in food handling and personal hygiene.52

Corinna Hawkers (2004) in his book “Marketing Food to Children – The Global Regulatory Environment” described that, the World Health Organization (WHO) has prepared a draft global strategy on diet, physical activity and health. Many countries have in place a range of regulations applicable to the marketing of food to children. But, there are also gap and variations in the existing global environment. The regulatory environments is evolving new regulations are continually being proposed and developed, industry is making new efforts, and consumer and public health groups are making new demands.

The marketing of food products to children in the school environment, is in the form of direct advertising, indirect advertising or product sales, to television advertising in terms of the amount of controversy that it has attracted in recent years. 33 percent of the countries were identified as having any form of regulation of this type and only a handful of countries place any restrictions on the sales of selected food products in schools.53

Duraisingam P., (2004) in his report “To Ensure the Safety of Street Food in India”, studied about safe food, drinking water, nutritious food and unhygienically prepared street foods. FEDCOT to create awareness of the right to food safety and security, a sense of safe and nutritious food, to provide education, information and empowerment, to provide facilities to get cheaper and pure food for poor and commuters. Night food stalls are very popular in cities, town and tourist center. Vendors are situated on the pavements, on roadside, outside market, office or shopping complexes on beaches, in parks and other places where the demand for quick, cheap food exists.\(^5\)

Holy A. Von (2004) in his article “Street Food Vending” stated that, sales of street vended foods are increasing in several countries and offer stakeholders in the industry a wide range of economic benefits. This article discussed potential public health problems that may be associated with this trend. Out-breaks of food borne diseases connected to street food consumption are considered together with studies into the safety of street foods and attempts to regulate street vendors in Durban, South Africa.\(^5\)

Moushumi Ghosh and Abhijit Ganguli (2004) in their article “Microbiological Quality of Carrots Used for Preparation of Fresh Squeezed Street Vended Carrot Juices in India” observed that sources of high aerobic


counts and enterotoxigenic S. aurous were traced to unhygienic manual handling by middle level buyers while an increase in faecal coliforms to the ‘freshening’ or washing treatment applied to carrots by street vendors. These results demonstrate the poor microbiological quality of carrots, as well as the possible entry points of bacterial pathogens at several points during their course in the distribution chain and hence into carrot juice.\(^{56}\)

Subratty A.B., Beeharry P., and Chan-Sun M., (2004) in their article “A Survey of Hygiene Practices among Food Vendors in Rural Areas in Mauritius” reveals that food vendors were quite aware of the appropriate hygienic conditions required for handling and preparing foods. It was found that the majority of vendors did not put their knowledge into practice, as they perceived that their products were of relatively low risk to consumers. For over half of the vendor’s households, the main income was derived from street food vending. It is concluded that further health education is required for food vendors.\(^{57}\)

Hana Shiro et al., (2005) in their article “Microbiological Quality of Selected Street Foods” state that the foods were classified to food group and preparation site. In the analysis of the microbiological criteria, 35


percent of the samples were deemed to be unsuitable for consumption. Home made and cold sandwiches posed the highest risk to consumers.\textsuperscript{58}

Nierop W.V., et al (2005) in their article “Contamination of Chicken Carcasses in Gauteng South Africa”, studied about fresh and frozen chicken carcasses obtained from various retail sources in Gauteng. 32.3, 19.2, and 19.2 percent of carcasses tested positive for campylobactor, Listeria monocytogenes and salmonella respectively.\textsuperscript{59}
