

Consumers Perspective towards Consumption of Street & Restaurant Food and its Perceived Hygienic Consciousness among the Residents of Aligarh City

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Abstract: *Objective:* Safety of the street foods is an important aspect in the field of nutrition security. This study is a onetime observational cross sectional, field survey based study undertaken to know the consciousness level of individuals about food safety, quality and hygiene of street Vendor Food and restaurant food. *Material method:* The study was conducted in Aligarh city in India. Fifty individuals selected randomly from study population. Detail of the population and houses of the area were taken from Aligarh Municipal Corporation. Face to face interview was performed using a structured pretested questionnaire. *Results:* The study revealed that the students who were Graduate among differentiated educational groups had more consumption of street food as compared to restaurant food. Males had more consumption of street food as compare to female. Most of the individual who belong to low SES were consumed more street food as compare to high SES. It was found that the sixty four percent individuals were consciousness about the hygiene of the street vendor food while thirty six were not consciousness. Quality consciousness for food was also eighty two percent however eighteen percent were not quality consciousness. Chi square test is significant as the p value is 0.04. *Conclusion:* It can be concluded from above study that street vendor food was more consumed by the low socioeconomic individuals and students as compare to restaurant food. In addition the students had been more conscious towards hygiene and quality of food. The study premises that there is an urgent need to supervise quality and safety of street foods for healthy population and a strong nation.

Keywords: Hygiene, Street foods, Rrestaurant food

1. Introduction

Unani System of medicine always focuses on balance in food and drink. According to AllmaNafees in KulliyatNafeesi (Nafeesi principles) prescribed diet should be easy to digest and hygienic in its content. Change in life style or sedentary life style is the real sense essential factor for street food. Due to the fact that the consumers do not have time for cooking at home, the changes in consumption habits of the society, cultural interactions, fast living, and the contribution of women to work life are influencing and changing the nutrition style in crowded cities. (1-2)

In the present era, people favor to buy food sold on the streets to meet their nutrition needs outside the home. Street foods are being prepared and sold at places like streets, schools, train stations, bus terminals, entertainment and festival areas where people are crowded. These foods and drinks can be consumed in the run without requiring any processing or preparation afterwards. (3-5) Aligarh city is well known for prepared food. There are a lot of people consuming vendor's food. Upper fort area is well known for this type of dishes. That's why this specific area was selected for the study.

In India, food vending on streets concerns to unorganized sector of food processing where sometimes poor hygiene and inappropriate sanitation measures may cause contamination of food products. The sickness is induced in the people if they eat street food contaminated with physical,

chemical or biological hazards. Some of the life threatening food borne diseases which cause great harms to people and nation are *Salmonellosis*, *Botulism*, etc. The study evidences that consumers can be potential educators who can inculcate knowledge and good practices related to food safety among vendors and peers. Particularly, improving students' knowledge about food safety is an issue that needs to be considered. Food vendors, on the other hand can be motivated through consumers. The school and university setting can be an effective place to reach and teach the young students with food safety concepts (6). There is a need for developing food safety educational programs that cover key food safety concepts for promoting public health

The Food Safety and Standards Act of 2006 became operational in the entire country initiating a new era of food safety in India. The Act is expected to ensure improved quality of food for the consumers by laying down science based standards for articles of food and to regulate their manufacture, storage, distribution, sale and import to ensure availability of safe and wholesome food for human consumption. Several other first-time changes the new law is expected to incorporate are: registration of street food vendors with the state health departments; authority given to the individual citizens to get the food testing done as per the guidelines laid down by the Food Safety and Standards Authority of India (FSSAI) (7).

However, in developing countries spend an important amount of their budget for eating outside; street food has become an alternative eating trend. In Latin America

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people spend nearly 30% of their budget for street food. (8-12)

Millions of people grasp diseases originating from food sources and thousands of deaths occur in world (13). The wide consumption of street food around the world increase the importance of safety and health issues (14). Street foods are not reliable; they also carry diseases originating from food sources in many countries. (15-18) One of the reasons for spreading of diseases originating from food sources is that street food sellers do not have sufficient information about food safety. Besides, in various researches made in some countries, insufficiencies were found out relating with application of hygiene and sanitation, preparation of food, food safety rules and knowledge of street food sellers. Poor hygiene, difficulty in obtaining drinking water, not removing wastes and similar environmental problems and the fact that street food are exempt from legal legislations, all these factors increase risks in ensuring food safety. (19-26)

Food originated pathogens are seen as a health threat during preparation and protection stages depending on the type of food. Abibo and Lowatt (2015) conducted a study and stated that food processing places, restaurants, food sellers, schools, and houses are influential in development of diseases originating from food. Street food safety is influenced starting from the quality of raw materials to food processing and storing. Besides the fact that raw materials used in these products are of poor quality, these foods are stored under wrong and unsafe conditions for a long time. Selling points of street food have a limited infrastructure as regards to clean drinking water, toilets, freezing-ice creams, disinfection, hand washing, and removal of wastes. In most cases, since water does not come from taps constantly, water storage is required and this kind of water is not appropriate for hand or dish washing, cooking, or drinking, and contamination factors occur. Besides, street food is subject to the contact of insects, rodents, domestic and other animals and unfavorable environmental conditions like air pollution. (27,28)

The hygiene and sanitation of vending sites have always been a matter of concern for public health. The unavailability of potable and running water; inappropriate space for cooking and washing of food supplies and utensils; washing hands and dishes in buckets and bowls; are some of the commonly observed practices of street food vendors. Leftovers if not handled properly may attract rodents and insects which increases the chances of food contamination thereby multiplying the risk of food borne hazards. Consumers are frequently unaware of their role in the prevention of foodborne diseases and underestimate the incidence of foodborne diseases and the frequency of serious consequences (29)

In 2002, Coca-Cola reported that China, India, and Nigeria were some of its fastest-growing markets: markets where the company's expansion efforts included training and equipping mobile street vendors to sell its products. (30) The hepatitis A virus can be spread through improper food handling and poor food hygiene. (31) As early as the 14th century, government officials oversaw street food vendor activities. (32) With the increasing pace of globalization and tourism, the safety of street food has become one of the major

concerns of public health, and a focus for governments and scientists to raise public awareness. (33-36) However, despite concerns about contamination at street food vendors, the incidence of such is low, with studies showing rates comparable to restaurants. (37). In the late 1990s, the United Nations and other organizations began to recognize that street vendors had been an underused method of delivering fortified foods to populations, and in 2007, the UN Food and Agriculture Organization recommended considering methods of adding nutrients and supplements to street foods that are commonly consumed by the particular culture.

2. Research Methodology

The study, exploratory and empirical in design, assessed the awareness levels of the consumers regarding the safety of street food. The knowledge, attitude and practices of the students of higher educational institutions as consumers and labourers from the same area were studied. The study brings to notice the importance of raising the awareness levels of consumers of street foods for the prevention of incidence of food borne diseases. A sample of 50 students and workers aged between 16 to 31 years students were studying in educational institutions in Aligarh city, both private and affiliated to government, was taken. Given the focus of the study on the microenterprise of street food vendors in the Aligarh city, the city was divided into different zones to ensure that the sample is geographically representative of the street food consumer's population in Aligarh. The consumers were selected purposively based on accessibility, availability and willingness to participate in the study.

3. Results and Observations

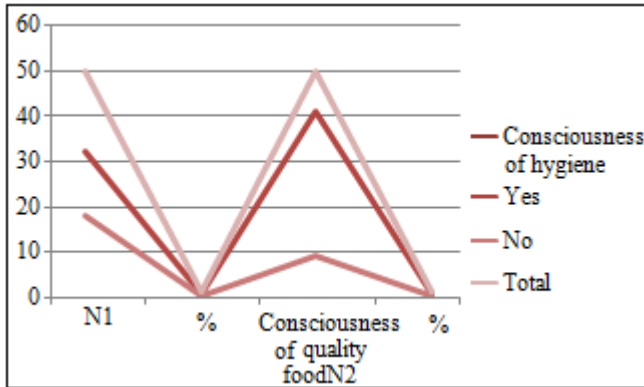
Table 1: Distribution of Socio Demographic Profile of Studied population

Socio demographic Profile	N	%
Age groups in years		
19-28	29	58%
28-37	14	28%
37-46	7	14%
Sex and occupation		
Male	32	64%
Female	18	36%
Students	36	72%
Workers	14	28%
Socio economic groups		
High	9	19%
Middle	20	40%
Low	21	41%
Educational Status		
High School	3	6%
Intermediate	12	24%
Graduate	33	66%
Post graduate	2	4%

Table 2: According to Consciousness of hygiene and Quality of Food

Consciousness of hygiene	N1	%	Consciousness of quality food N2	%
Yes	32	64%	41	82%
No	18	36%	9	18%
Total	50	100%	50	100%

It was found that the sixty four percent individuals were consciousness toward hygiene of the street vendor food while thirty six were not found consciousness. Quality consciousness for food is also eighty two percent however eighteen percent were not quality consciousness. That means, better the quality of food of street vendor, more is the attraction. In the other words, food quality or taste of food has an overriding effect over all other considerations.



Graph 1: According to Consciousness of hygiene and Quality of Food

Chi square test is significant as the p value is 0.04; this shows the association of consciousness and Quality of food among the individuals of Aligarh city.

Table 3: Distribution of Street Vendor and restaurants food consumption in study population

According to sex	N1 Steet food		N2 Restaurant		N	%
Male	21	42%	11	22%	32	64%
Female	8	16%	10	20%	18	36%
Total	29	58%	21	42%	50	100%

The study revealed that the percentage of people who opt for food from street vendor outnumber the percentage of people who prefer to go to restaurant only. It was found that the consciousness among men toward the street vendor food is more than the women.

Table 4: Association of Street Vendor and restaurants food consumption with Socio Demographic factors

Sociodemographic factors	N1 Street food		N2 Restaurant		N	%
Students	20	40%	16	32%	36	72%
Workers	10	20%	4	8%	14	28%
Total	30	60%	20	40%	50	100%

The study revealed that the students were more attracted towards street food as compare to the restaurant food however workers consumed less street food as compare to students.

Table 5: Association of Street Vendor Food consumption with Basal Metabolic Rate

BMI	N	%
16-21	18	36%
21-26	24	48%
26-31	8	16%
Total	50	100%

The study revealed that the individuals having the age group 21-26 years were more BMI as compare to other. Chi square test showed the results were statistically significant $P = 0.003(P < 0.05)$

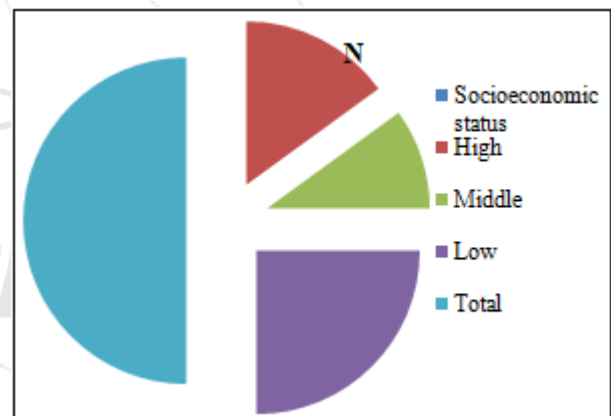
Table 6: Association of consumption of Street Vendors food with Educational status

Educational status	N1 Street Food	N2 Restaurant	N	%
High School	0	3	3	6%
Intermediate	7		12	24%
Graduate	21	12	33	66%
Post graduate	1	1	2	4%
Total	29	21	50	100%

The study revealed that the students who were graduate among different educational Groups were more consumed street food as compared to restaurant food.

Table 7: Association of Street Vendor Food consumption with Socio-economic status

Socioeconomic status	N	%
High	15	30%
Middle	10	20%
Low	25	50%
Total	50	100%



Graph 2: Graphical representation of Association of Street Vendor Food consumption with socioeconomic status

The study revealed that the individuals having low socioeconomic status were more consumed the street vendor food as compare to other status probability = 1.000 the results were statistically not significant.

4. Discussion

The hygiene and sanitation of vending sites have always been a matter of concern for public health. Moreover, the street food vendors work against many challenges and limitations. But it is the consumers who are frequently unaware of their role in the prevention of food borne diseases and underestimate the incidence of foodborne diseases and the frequency of serious consequences. There is a need for developing food safety educational programs that cover key food safety concepts for reducing the incidence of food borne diseases and promotion of public health.

As per our study it was found that the sixty four percent individuals were consciousness toward hygiene of the street

vendor food while thirty six were not conscious. Quality consciousness for food is also eighty two percent however eighteen percent were not quality consciousness. Result was statistically significant. Another study conducted by Parveen Pannuet al in Delhi zones in DU Journal of Undergraduate Research and Innovation revealed that most of the consumers (75%) had some knowledge about food borne diseases and 92.2% reported that they washed hands before eating, a definite good food-safety practice. 77% of the consumers exhibited awareness about cooking and serving food in clean utensils 60.6 % consumers were following good food safety related practices. Among the five zones, South zone had maximum number of consumers (76%) in the good practice category. Many consumers knew the importance of using safe and potable water and were conscious that any negligence may cause health risks. 73% consumers had knowledge about importance of using safe water and 75.6% consumers had positive attitude towards ensuring the use of safe water for street food related purposes. In practice, 74.2% consumers were observing whether the food vendor was using safe and potable water. Our study according to questionnaire revealed similar findings.

According to our study in Aligarh city the individuals having low socioeconomic status were more consumed the street vendor food as compare to other status. However the results were statistically not significant. Another study conducted by Aloia et al. (Nutrition Journal 2013,) in Chandigarh, indicates that people from a high income neighborhood dined out more frequently and were more likely to perceive Western-style food as fast food, while people from the low-income neighborhood were more likely to identify food sold by street vendors as fast food. The findings are similar that low income groups were consumed more street food.

According to the Indian Fast Food Market Analysis report, India's fast food market is growing quickly, at a rate of 30-35% per year [39]. It has been suggested that rapid urbanization, swift economic growth, and increase in average income in India will lead to an increase in consumerism [40]. In the past few decades, fast food (food prepared in a restaurant with limited service staff and from which the majority of meals are consumed off premises) has been implicated as one of the contributors to increased population rates of obesity [41-44]. In this regard we can compare both the trends as our study focused on street vendor food consumption that is more in low status peoples however fast food trends were more pronounced in high socioeconomic individuals leading to life style disorders in Indian cities.

Our study revealed that the individuals having the age group 21-26 years were have more BMI as compare to other. The trends of BMI are also increased in 16-21 years age group. This association may be due to students and labours who were working continuously consume more street food as compare to high age groups. However in an international study conducted in Ghana the trends of BMI were different. This study has identified that 6-7-year-old children who consumed fast-food frequently had higher BMIs than those who consumed fast-food infrequently. This association was

independent of the affluence of the country and of similar magnitude in boys and girls. By contrast, adolescents who self-reported that they frequently ate fast-foods tended to have lower BMIs, with the exception of male adolescents from low-GNI countries, where there was no association between fast-food consumption and BMI. (45)

5. Conclusion

It can be concluded from our study that the individuals were conscious about hygiene and quality of food. In spite of that there is need to spread awareness related to food safety to ensure that good practices are inculcated in the consumers. The consumers need to be more aware about the consequences of health hazards which occur due to poor hygiene and negligence towards food safety. The study has exposed that knowledge about a good practice does not automatically leads to adoption of the improved behaviour. It is the need of hour to indulge healthy habits in the consumers for promotion of the health of the community.

In other aspect Indians from a high-income neighborhood were more familiar with fast food as it is defined in the West, and they dined at fast food restaurants more frequently. Furthermore, they were more likely to report that they enjoy eating at Western-style fast food restaurants compared to their low-income neighborhood counterparts. On the other hand, Indians living in a low-income neighborhood were more likely to buy and report food sold by street vendors as compare to fast food. Overall, consumption of fast food was low among a population of Indians from Aligarh city while street vendor food is mostly consumed.

The findings of the study would help in planning health intervention programs for food handlers for their improvement of knowledge, attitude and practice towards food-borne diseases and food safety in Aligarh city. It will be a step towards reduction in food-borne diseases.

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