

## **Food Safety Knowledge and Practices of Low Educational Background Women in Bhubaneswar City**

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### **ABSTRACT**

Health is a major economic issue for slum women. The present study was “food safety knowledge and practices of low educational background women in Bhubaneswar city, Odisha”. Slum women’s are less educated and less empowered. Thus, they cannot articulate their needs, requirements and aspiration for better livelihoods. Food safety, an increasingly important public health issues refers to the conditions and practices that preserve the quality of food to prevent contaminator microbes or toxic chemicals resulting in food borne illness. Ensuring food safety at the household level is well accepted and an understanding of the status of the food handling knowledge and practices is needed. The aim of the present study was to examine knowledge and practices related to food safety among women responsible for preparing at home in slum area. One hundred fifty samples were selected using simple random sampling method. The study attempts to explore the personal profile of the respondents, family information, food related attitude, cooking, storing and hand washing practices, and food safety knowledge and attitude of respondents. The major findings of this study are found as most of the respondents hand washing only water without soap and sanitizer before cooking and only one third of respondent always check expiry date before purchasing the food products. Finally it is suggested that there is need for health education programme (regarding food safety practices) recommended to build awareness among the household methods.

**Key Words :** Food safety, Knowledge, Practices, Women

### **INTRODUCTION**

Urbanization is an index of industrialization which is the bed rock of economic growth. Growing urbanization is a significant Phenomenon of the 20th century. According to UN estimate, the India’s urban Population will be 634 million by 2030 (Sundaram, 2012). In India slum as an urban issue was the result of rapid urbanization after independence. Industrialization and modernization here contributed to the upliftment of rural areas to urban areas with classes - upper, middle and lower classes. Poor people coming into urban areas in search of better living and employment are used to live in those areas where cost of living is low. Illiteracy, migrenisation in occupation and lack of training in jobs have contributed to the growth of slum areas. Run- down and congested

housing, overcrowded population lack of proper health and sanitations are the physical features of every slums, but sociologically each slum represents sub-culture.

Education plays an important role in the development of the society. General educational level of the slum dwellers is poor. They do not send their children to school. Due to the low level of income they do not spent money on education. Low educational levels are barriers in the field of the working and earning money. Due to lack of educations facility they are working as informal labourers and gains less amount of money. Poverty, or low incomes, adversely affect the quality and quantity of education. Nijama *et al.* (2003, p. 8) found that due to lack of proper living conditions slum children are vulnerable to diarrhoea, typhoid, malaria and other such diseases.

Food is a basic human need and consumption and

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safe food is essential for avoiding foodborne illnesses. Once food enters the home, there are a series of steps that individuals take in preparing it prior to consumption, including cleaning, cooking, serving and in some cases, storing, based on the findings from a literature review by FANTA (Woldt and Moy, 2015). According to several studies, the number of food borne illness incidences in the under developed and developing countries are higher than in the developed countries have more food borne illness agents, less medical care, and lower standards of food safety. Food safety is an important global issue with international trade and public health implications (Buzby, 2001).

Current studies on foodborne illness have created a gap in the literature by focusing on food handler knowledge, food handler attitudes and practices (Clayton and Griffith, 2008). In analysing food handler attitudes and practices, behavioural and cognitive theories have served as the theoretical framework for this research study.

#### **Objectives:**

- To assess the personal and family demographic profile of the respondents.
- To determine level of food safety awareness among slum women.
- To focus on the food handling practices of slum women.

#### **Hypothesis:**

This study had the following hypotheses:

- The slum women have high level of awareness on the different measures of food safety.
- Food handling behaviours of the participants vary significantly among participants with different educational backgrounds.
- There will be discrepancies between the food safety knowledge and food handling behaviour of the participants.

### **METHODOLOGY**

Research described as a careful search or enquiry and an end over to discover new idea by scientific study during a course of critical investigation. Methodology is a systematic, theoretical analysis of the methods applied to a field of study. It comprises the theoretical analysis of the body of methods and principles associated with a branch of knowledge.

This cross sectional study was designed to assess

the personal food safety knowledge and experience of food handling practices conducted in purposively selected two urban slums (Biseswar baste and Patharabandha baste) in Bhubaneswar city of Orissa state in India. A total of 150 slum dwellers were purposively selected for this study. A semi structured pre-tested questionnaire was used to collect data from face to face interview. Information regarding the personal profile of respondents, types of fuel used to cooking, preserving raw ingredients of food, hand washing practices, food safety knowledge about activities of personal hygiene, and level of education were collected.

The collected data were compiled, coded and analysed in accordance to the objectives of the study. The statistical measures such as, number, percentage, distribution, range were used for describing the data for clarify of understanding tables were also used for presenting data.

### **RESULTS AND DISCUSSION**

Presentation of the findings is the heart of any research paper. In this chapter, the result give a summary of all the raw data with the help of tables and the discussion acts as a narrative providing all the details, evidence needed by the reader to understand the Purpose behind the study.

#### **Demographic profile of the respondents:**

Table 1 depicts the demographic profile of the respondents who fall under different category of age group, educational qualification and occupational status.

Education plays an important role in the consumption, knowledge regarding food groups, food selection and processing etc. slum is the poorest selection of the society and it is expected that majority of the respondents are illiterate. Illiteracy means lack of education, which is the Major cause of faulty food consumption. From the above Table 1, it is observed that most of the respondents *i.e.*, 43.33 % were illiterate, 14.66 % were primary school, 10 % were studied at upper primary and 25.33% went to at high school and very lowest of the respondents 6.66 % were studied in +2 and above classes.

The sources of income from occupation for living is closely associated with status factors. In slum area people are very poor so women are work many other way's and reach some money for helping family. From the above table shows that 61.33% of women were working many other ways like, shop keeper, tailoring, sweeper, and

**Table 1 : Demographic profile of the respondents**

Sr. No.	Variable	Number	Percentage	
1.	Age	18-20 Years	5	3.33 %
		21-30 Years	50	33.33 %
		31-40 Years	51	34 %
		41-50 Years	35	23 %
		Above 51 Years	9	6 %
		Total	150	100
2.	Educational qualification	Illiterate	65	43.33 %
		1-5 Class	22	14.66 %
		6-7 Class	15	10 %
		8-10 Class	38	25.33 %
		+2 and above	10	6.66 %
		Total	150	100
3.	Occupation status	House Wife	46	30.66%
		Private Employee	12	8 %
		Other Works	92	61.33 %
		Total	150	100

household maid servant. 8% of women were in private job in many companies, offices, and hospitals. 30.66% of the total sample belong to house wife. So it was indicated that majority of the respondents were of low income with low level of education.

**Family information of respondents:**

The general information of the respondents who fall under different category *i.e.* type of the family, type of houses, family’s monthly income is given in the Table 2.

The type of family is one of the important socio economic variables. The above Table 2 explains out of the 150 families, 93.33% was nuclear family and very low that is 6.66% of respondents were from joint family.

In slum area the living condition of people were very poor. So people used different types of houses. On the basis of house type, the respondents were classified in to

three categories as shown in Table 2. It was observed that 86% of the people lived in asbestos. House, and 12.66% people lived in kwacha house and only 1.33% people lived in packka house. Only two samples from the all total 150 Samples lived in packka houses.

Survey results showed that monthly income of family in the study area ranged from Rs. 5000 to Rs 20000. On the basis of monthly income, the respondents were classified in to 4 categories in the Table 2. It showed that the highest proportion 70% of respondents had Rs. 6000 to Rs. 1000 thousand income group, and only 4.66% percentage of people are in above Rs. 15000 income in the family per month.

**Cooking and storing attitude of respondents:**

Table 3 gives the distribution of respondent by the type of fuel used. The study area, women used fuel mostly

**Table 2 : Family information of respondents**

Sr. No.	Variables	Number	Percentage	
1.	Type of family	Nuclear	140	93.33%
		Joint	10	6.66%
		Total	150	100
2.	Type of house	Kachha	19	12.66%
		Asbestous	129	86%
		Packka	2	1.33%
		Total	150	100
3.	Family income	< Rs. 5000	5	3.33%
		Rs. 6000 – Rs. 10000	105	70%
		Rs. 11000 – Rs. 15000	33	22%
		Above 16000	7	4.66%
		Total	150	100

for household cooking. Cooking fuel was depended on the different type of fuel like fire wood, coal, kerosene, Gas and electricity. In urban area electric bill was high in amount that is only 15 Families of total respondents sometimes used electric hitter. Only 7.33% of respondent used coal for cooking because they opined that coal is very time consuming coal as fuel was used only outside of the home. So in rainy season they used to face many problem. 16.66% of respondents used wood fuel for cooking. 21.33% of respondent used to kerosene stove for cooking. The majority of the women 44% of the total respondents used gas for cooking gas as it was suitable for many Respondents because many women are doing some work to maintain her Family income. So they did not have much time for cooking. So majority of women were suggested that fuel to be used for cooking.

**Table 3 : Type of fuel used to cooking**

Different type of fuel	Number	Percentage
1. Wood	25	16.66%
2. Coal	11	7.33%
3. Kerosene	32	21.33%
4. Gas	66	44%
5. Electricity	16	10.66%
6. Total	150	100

We used many methods are there to preserve the raw ingredients of food (drying, freezing, canning etc.). But slum people were very poor and of low income group. So they used only two method (drying, Freezing) and used to store raw ingredients of food. Majority 73.33% of the Respondents were not used freeze for Storing raw ingredients. So they were only used drying method. Only 4 (2.66%) of respondent used refrigerator for storing raw Ingredients like vegetables and fruits (Table 4).

**Table 4 : Preserving raw ingredients of food**

Sr. No.	Variables	Number	Percentage	
1.	Used refrigerator	Yes	32	21.66%
		No	116	77.33%
		Total	150	100
2.	Stored raw ingredients	Freezing	4	2.66%
		Drying	116	77.33%
		Both	30	20%
		Total	150	100

Cooking and storage of food practices exercised by the respondents are shown in the Table 5. It was found that 26.66% of respondents did not washed stored utensils

again before using in cooking. Though it was found out 93.33% of home makers stored foods in covered containers but they stored it in room temperature till consumption. 23.33% of the respondents informed that they consumed always left over foods with the next meal and 31.33% of the respondents consumed sometimes left over foods with the next meal. Similar result were found by Sudershan *et al.* (2009). In their study they found 86% of the respondents stored the leftover Food and 99% stored it in covered containers. Most of them 89% left stored Food at room temperature and consume stored food with next meal (67.8%), (Sudershan *et al.*, 2009).

**Table 5 : Practices of cooking and storing of food**

Variables	Rewashing utensil before cooking	Store food with covered container	Consume store food with next meal
1. Always	73.33%	93.33%	23.33%
2. Sometimes	–	6.66%	31.33%
3. Rairely	–	–	18.66%
4. Never	26.66%	–	26.66%
5. Total	100	100	100

This study revealed that 70% of the respondent practiced hand washing only with water and 25% of respondent practiced hand washing with soap and sanitizer and only 7(4.66%) of respondent did not practiced hand washing with soap and sanitizer 33.33% of respondent hand washing only water after handling raw meat, egg or fish. Washing hand with Soap and sanitizer after using toilet was practiced by 96% whereas only 4% of Women generally used only water for hand washing. Gas haw adagio and *et al.* reported that 11% of the food handler did not practice hand washing after using toilet, this shows that there was a need to give more emphasis on personal hygiene, self-Care and related practices of food handlers (Table 6).

**Table 6 : Hand washing practices**

Variables	Water only	With soap and sanitizer	Never	Total
Before cooking	70%	25.33%	4.66%	100
After handling raw meat, egg or fish	33.33%	66.66%	–	100
After using toilet	4%	96%	–	100
After touching hair and face	63.33%	6.66%	30%	100

**Food safety knowledge and attitude:**

Food should be washed well before cooking and

consumption to remove contaminants like pesticide reduces, parasites and other extraneous material however certain precaution need to be taken while washing and cutting to minimize the loss of nutrients. Vegetables and fruits should be washed thoroughly before cutting. Majority 78% of women in this Present study washed fruits and vegetables always and 18.66% of women washed fruits and vegetables sometimes because they have no time and only 1 of the women in all total of the respondent did not wash raw fruits and vegetables before cooking due to lack regarding education and awareness of washing practices of washing raw fruits and vegetables before using them.

**Table 7 : Wash raw fruits and vegetables before using it**

Variables	Number	Percentage
Always	121	80.66%
Sometimes	19	12.66%
Rairely	1	0.66%
Never	9	6%
Total	150	100

Practicing personal hygiene was ranked as the first set of behaviours in maintaining the safety of food and reducing number of food borne illness with washing hands before handling food received the highest rank (Medeiros *et al.*, 2001).

Table 8 shows that, majority of women recognised the importance of proper hand washing for Preparing safe food and cooked food should not be always tested by fingers or placing unclean spoons (44.66%) sometimes, (46.66%) of respondents were avoiding testing food by finger or unclean spoons. Only (2%) of respondents avoided testing cooked food by finger or unclean spoons. Because lack of education, awareness and unhygienic environmental condition.

**Table 8 : Avoid testing cooked food by finger**

Variable	Number	Percentage
Always	67	44.66%
Sometimes	70	46.66%
Rairely	10	6.66%
Never	3	2%
Total	150	100

Dirty and damp clothes are the perfect place for bacteria to breed. Towel can also spread bacteria. For example: if you wipe your hands on tea towel after you have touched raw meat, this will spread bacteria to the

towel. Then, if you use the tea towel to dry plate, the bacteria will be spread to the plate. So it is very important to use different cloths to different jobs. In this table depicts that majority of slum (80.66%) always used separate towel in the kitchen and 12% of respondent sometimes used separate towel in the kitchen. Because of the lack of money, lack of time and negligence they did not use separate towel in the kitchen and ideally tried to keep different cloths for different jobs. For example, use one cloths to wipe work tops and another to wash dishes. It is very important to wash kitchen towel and sponges regularly and leave them to dry before using them again. This helps to stop bacteria spreading (Table 9).

**Table 9 : Used separate towel in the kitchen**

Variables	Number	Percentage
Always	121	80.66%
Sometimes	19	12.66%
Rairely	1	0.66%
Never	9	6%
Total	150	100

In the Table 10 (5.33%) of the respondents very rarely pay attention to the smell and colour of food before using it. However only 38% of women everything checked the expiry date but only 20% of respondent did not check, very few rarely checked. Only 25.33% of respondents followed the storage of food, majority (35.33%) of respondents did not follow the storage and preparation instruction printed on the food due to lack of education as majority of the women were illiterate in this study.

Now a day’s education plays most important role for health. Women’s were selecting and cooking food for her family. In this table shows that total mean average score of food safety knowledge and attitude of women on the basis of their education and it was indicated that with M.E school or 6 to 7 class secured high mean score (1.99) than high school (1.67), primary school (1.77), illiterate (1.65) and low mean score (1.56) secured intermediate or +2 level women. This reveals that educated women of slum women had high level of significance in food safety and knowledge than illiterates (Table 11).

**Conclusion:**

Goswami and Manna (2013, p. 14) said that, the living conditions in slums have a direct impact on people’s health. Their low level of education and high fertility and

**Table 10 : Check smell, colour and expiry date of food**

Variables	Always	Sometimes	Rairely	Never
Attention to the smell and colour of food	66.66%	19.33%	5.33%	8.66%
Checking expiry date of food	38%	28.66%	13.33%	20%
Follow the storage and preparation instruction printed on the food	25.33%	28.66%	10.66%	35.33%
Total	100	100	100	100

**Table 11 : Comparison of women’s food safety knowledge and attitudes on the basis of their education**

Sr. No.	Education	Illiterate (N=65)	Primary School (N=22)	M.E School (N=15)	High School (N=15)	+2 and above (N=10)
	Food safety knowledge and attitude	Mean±(SD)	Mean±(SD)	Mean±SD	Mean±SD	Mean±(SD)
1.	Separate towel in the kitchen	1.23 (0.66)	1.27 (0.70)	2 (1.41)	1.27 (0.73)	1.1 (0.64)
2.	Wash fruits and vegetables before using	1.18 (0.38)	1.40 (0.59)	1.4 (0.69)	1.29 (0.61)	1 (0.90)
3.	Attention to the smell and colour of food	1.42 (0.82)	1.63 (1.13)	2.2 (1.31)	1.67 (0.97)	1.3 (1.55)
4.	Checking expiry date before using	2.12 (1.10)	2.40 (1.22)	2.7 (1.41)	1.9 (1.17)	1.9 (1.62)
5.	Follow instruction of storage and preparation food	2.56 (1.11)	2.77 (1.30)	2.9 (1.28)	2.32 (1.29)	2.5 (1.94)
6.	Store raw food separately in refrigerator	1.4 (0.50)	1.2 (0.44)	1.33 (0.57)	1.35 (0.78)	1.6 (3.06)
7.	Storage food in covered container	1.07 (0.25)	1.04 (0.21)	1 (0)	1.05 (0.22)	1 (2.71)
8.	Stored food with next meal	2.60 (1.07)	2.36 (1.13)	2.7 (1.49)	2.64 (1.08)	2.5 (2.76)
9.	Avoid testing food by fingers	1.57 (0.60)	1.90 (0.92)	1.6 (0.51)	1.75 (0.76)	1.4 (4.12)
10.	Served hot food every time	1.40 (0.82)	1.81 (1.13)	2.1 (0.15)	1.56 (0.80)	1.3 (4.45)
11.	Total average	1.65	1.77	1.99	1.67	1.56

mortality- all indicate that they need special attention in terms of public health, family planning and reproductive health programs. Rapid slummification has caused wide spread of environmental degradation in the urban city.

In order to meet the challenges of 21<sup>st</sup> century, the level of Education and growing awareness on food safety issues in household cooking and storage practices in slum areas to improve women and child health has Acquired important in our strategy for achieving millennium development goal And social development.

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