Study on the Awareness and Practice Regarding Safe Food Handling Practice among Women above the Age of 18 years of Rural Urban & Tribal Areas in Kannur District

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ABSTRACT

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The importance of safe food handling is to teach everyone mainly those handling kitchen in how they can help to prevent contaminants from getting onto the food. Today more than ever, we are threatened with the possibility of food poisoning and lethal bacteria that have proved to be extremely deadly. We need to make the people aware on how to prevent these problems and learn how to combat them by taking as many precautious measures as possible.

Objectives of the Study

- To assess the knowledge of women regarding safe food handling practices in tribal urban & rural area.
- To identify the practice regarding food hygiene in women of rural urban & tribal area.

Methodology: Descriptive cross sectional study design. Community based study in Kannur District involving women who handles the kitchen above the age of 18 years using self administrated structures questionnaire.

Results: The study conducted among 150 women above the age group of 18, with 50 each from rural urban and tribal group and the results were analysed.

Conclusions: Among the study population of 150 women, each from Urban, Rural and Tribal areas, it was found that 30% of the tribal population was unaware of safe food handling practices while only 4% and 12% of urban and rural population respectively were unaware of it.

Keywords: Food handlers, Personal hygiene practices, Safe food handling

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INTRODUCTION

"Practice good personal hygiene. Wash your hands before you eat. Be aware of good clean water and food sources" - James Wright

Food hygiene is a broad term used to describe the preservation and preparation of foods in a manner that ensures the food is safe for human consumption. This process of kitchen safety includes proper storage of food items prior to use, maintaining a clean environment when preparing the food, and making sure that all serving dishes are clean and free of bacteria that could lead to some type of contamination.

Food sanitation also extends to keeping the preparation area clean and relatively germ-free. In other words sanitary food handling practices can prevent food borne diseases to a great extent.

Food safety is a scientific discipline describing handling, preparation, and storage of food in ways that prevent food borne illness. This includes a number of routines that should be followed to avoid potentially severe health hazards.

Food a Potential Source of Infection & is Liable to Contamination by Microorganisms at any Point during its Journey from Producer to Coonsumer

Food can transmit disease from person to person as well as serve as a growth medium for bacteria that can cause food poisoning. In developed countries there are intricate standards for food preparation, whereas in lesser developed countries the main issue is simply the availability of adequate safe water.

The food storage aspect of food hygiene is focused on

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maintaining the quality of the food, so that it will be fresh when used in different recipes. Preventing cross contamination is also an important aspects of food hygiene. Cross contamination can occur when cooking and preparation utensils are used with more than one type of food at a time.

Contaminated food represents one of the greatest health risks to a population and is a leading cause of disease outbreaks and transmission. Food that is kept too long can go bad and often contain toxic chemicals or pathogens, and food – stuffs that are eaten raw, such as fruits or vegetables, can become contaminated by dirty hands, unclean water or flies and other such vectors, Improperly prepared food can also cause chemical poisoning. Half cooked or over cooked food for example hard boiled eggs and over cooked meat are bad for health.

Hygiene is an essential part of healthy living. Not just selecting the right food choice but also cooking & consuming them in a hygienic was is equally important in preventing the infectious diseases. One does not have to spend a fortune for healthy hygienic Food handling practices.

The five key principles of food hygiene, according to WHO, are

- Prevent contaminating food with pathogens spreading from people, pets and pests.
- Separate raw and cooked foods to prevent contaminating the cooked foods.
- Cook foods for the appropriate length of time and at the appropriate temperature to kill pathogens.
- Store food at the proper temperature.
- Use safe water and raw materials.

The importance of safe food handling is to teach everyone mainly those handling kitchen in how they can help to prevent contaminants from getting onto the food. Today more than ever, we are threatened with the possibility of food poisoning and lethal bacteria that have proved to be extremely deadly. We need to make aware the people in how to prevent these problems and learn how to combat them by taking as many precautious measure as possible.

REVIEW OF LITERAURE

1. A case study was conducted on Food safety related perceptions and practices of mother in Hyderabad, India, 2007, showed that over 90% wash hands before feeding children, eating, serving or cooking food, but usage of soap is very limited. Over 60% store leftover cooked food at room temperature as a majority (82%) does not own refrigerators. High incidence of food borne illnesses was reported in the families (21%) and community (12%).
2. A study was conducted on knowledge and practice regarding food hygiene in rural villages of Humla and Mugu, Mid west, Nepal, 2009. From the baseline survey it emerged that 55% of respondents knew about the importance of food covering i.e. to protect it from flies (24% for women and 76% for men), and 12% to keep the food safe (33% for women and 6% foremen). In the end line survey the knowledge level was increased.
3. A study was conducted on knowledge, attitude and practices of food handlers in food sanitation in a metropolis in South eastern Nigeria, 2009 Almost half (48.4%) of the respondents had poor knowledge of food sanitation. And it found that no significant difference in attitude and practice between trained and untrained food handlers. A study was conducted on Food Safety Knowledge and Practices among Women Working in Alecandria University, Egypt 2009. The highest percentage of food poisoning cases (46.8%) was belonging to staff members and 39.7% were in the age group <10 years. Half of the cases resulted from eating outside home compared to 16.7% from eating at home. The mean score percentage of the total safety Knowledge of the sample was 67.4 compared to 72.0 for their safety practices. The highest knowledge score was in personal hygiene (73.8) while the highest practice score was in cooking (77.5). The lowest Knowledge score was in food preparation (59.8) whereas the lowest, practice was in purchasing and storage (62.7). The highest scores of the total food safety practices and their parameters were among clerks except in practising safe purchasing and storage where the highest mean score was among staff members (66.5 +/-12.8) with significant differences among jobs except in practicing personal hygiene. The inconsistencies between Knowledge and practices emphasize the need for implementing repeated food safety education programs.
4. A study was conducted on the evaluation of food hygiene knowledge, attitudes, and practices of food handlers' in food business in Turkey, 2005. The study demonstrated that food handlers in Turkish food businesses often have lack of knowledge regarding the basic food hygiene (critical temperatures of hot or cold ready to eat foods, acceptable refrigerator

temperature ranges, and cross contamination etc.). There is an immediate need for education and increasing awareness among food handlers regarding safe food handling practices.

5. A study was conducted on Food safety knowledge and practice among elderly people living at home in Urban Nottingham. A large proportion of elderly people (70% in this study) keep their refrigerator at a temperature too warm to inhibit the growth of micro organisms, including Escherichia coli. The health impact of storing food at the wrong temperature may be mitigated by the frequency of food shopping, and hence the turnover of food products in the refrigerator.

OBJECTIVES OF THE STUDY

- To assess the knowledge of women regarding safe food handling practices in tribal urban & rural area.
- To identify the practice regarding food hygiene in women of rural urban & tribal area.

METHODOLOGY

Study Design: Descriptive cross sectional study design.

Setting of the Study: Community based study in Kannur District.

Study Population: women above the age of 18 years. Who handles the kitchen

Inclusion Criteria: Women above 18 years who are living in selected area & handling kitchen and those women who are willing to participate.

Exclusion Criteria: Those who are not available at the time of data collection and those who are willing to participate in the study.

Study Period: July 15, 2015 to September 12, 2015.

Sampling Size: 150 subjects

Method of Data Collection: Self administrated structures questionnaire. In tribal areas one to one interview method on the basis of pretested questionnaires were used in case of illiterate persons.

Study Tool 1

Part A : Performa for collecting demographic data.

Part B : Structured questionnaire to assess the awareness regarding safe food handling practices.

Part C : Structured questionnaire to assess the practice regarding safe food handling practices.

Statistical Analysis: Data entered in MS Excel and analysed on SPSS. all qualitative variables will be express results. X^2 test will be used as test of significance to look attitude and practice of safe food handling practice.

Ethical Consideration: Will be obtained from the institution's ethical committee after stating the purpose of the study. Verbal consent will be obtained from study participants.

RESULTS

The study conducted among 150 women above the age group of 18, with 50 each from rural urban and tribal group the following results were obtained.

Table 1. Age Distribution of females handling distribution with respects to area they belong

Area	Age				Total
	18 – 20	21 – 25	26 – 30	>35	
Tribal	6 12.0%	33 66.0%	3 6.0%	8 16.0%	50 100.0%
Rural	3 6.0%	43 86.0%	4 8.0%	0 .0%	50 100.0%
Urban	0 .0%	17 56.0%	12 24.0%	10 20.0%	50 100.0%
Total	9 6.0%	104 69.3%	19 12.7%	18 12.7%	50 100.0%

About 66%, 86%, 56% of women who handles kitchen from tribal, rural, urban belongs to the age group of 21 – 25 yrs. i.e. a majority of 69.3% out of 150 who handles kitchen hails from this age group **(table 1).**

Table 2. Educational qualifications and area wise distribution

Area	EDUCATIONAL QUALIFICATION					Total
	Illiterate	SSLC	+2	Degree	PG	
Tribal	2 4 .0%	7 14.0%	5 10.0%	19 38.0%	17 34.0%	50 100%
Rural	0 .0%	0 .0%	0 .0%	26 52.0%	24 48.0%	50 100%
Urban	0 .0%	4 8.0%	1 2.0%	20 40.0%	25 50.0%	50 100%
Total	9 6.0%	104 69.3%	Total	9 6.0%	104 69.3%	150 100%

Table 3. Socio Economic Status Distribution

Area	Socio Economic Status		
	APL	BPL	Total
Tribal	35 70.0%	15 30.0%	50 100.0%
Rural	43 86.0%	7 14.0%	50 1 00.0%
Urban	46 92.0%	4 8.0%	50 100. 0%
Total	124 82.7%	26 17.3%	150 100.0%

Most of the women from tribal regions are degree graduates ie. 38% while 52% of rural also are degree pass outs 50% of the urban population is constituted by post graduates **(table 2).**

About 70% of tribal, 92% unbrand 86% of rural belong to the APL category **(table 3).**

Table 4. Personal hygiene awareness as a part of safe food handling

Area	Personal hygiene is a part of safe food handling practice		
	Yes	No	Total
Tribal	10 20.0%	40 80.0%	50 100.0%
Rural	50 100.0%	0 .0%	50 100.0%
Urban	50 100.0%	0 .0%	50 100. 0%
Total	110 73.3%	40 26.7%	150 100.0%

100% of urban and rural population considers personal hygiene as a part of safe food handling practice **(table 4)**[4]

Table 5. Awareness about duration of hand wash

Area	Duration of Hand washing				Total
	10 Sec.	20 Sec.	1Min	don't know	
Tribal	12 24.0%	2 4.0%	26 52.0%	10 20.0%	50 100%
Rural	28 56.0%	11 22.0%	10 20.0%	1 2.0%	50 100%
Urban	4 8.0%	38 76.0%	3 6.0%	5 10.0%	50 100%
Total	44 29.3%	51 34.0%	39 26.0%	16 10.7%	150 100%

100% of urban and rural population considers personal hygiene as a part of safe food handling practice **(table 5)**

Table 6. Refrigerator used or not

Area	Refrigerators usage		Total
	Yes	No	
Tribal	30 60.0%	20 40.0%	50 100.0%
Rural	43 86.0%	7 14.0%	50 100.0%
Urban	50 100.0%	0 .0%	50 100. 0%
Total	123 82.0%	27 18.0%	150 100.0%

100% urban population use refrigerator while only 60% of tribal population use refrigerator **(table 6)**.

52% of the tribal, 86% rural, 84% of the urban population considers colour of cooked food as a reliable indicator **(table 7).**

Table 7. Considers colour of the cooked food as reliable indicator or not

Area	Considers colour of the cooked food as reliable indicator or not		Total
	Yes	No	
Tribal	24 48.0%	26 52.0%	50 100.0%
Rural	7 14.0%	43 86.0%	50 100.0%
Urban	8 16.0%	42 84%	50 100. 0%
Total	39 26.0%	111 74.0%	150 100.0%

Table 8. Awareness on reheating food

Area	Awareness on reheating food				Total
	Boil	Boil & Simmer for 2Min.	Boil & Simmer for 5 Min.	Simmered only	
Tribal	15 30%	13 26%	13 26%	9 18%	50 100%
Rural	12 24%	15 30%	18 36%	5 10%	50 100%
Urban	8 16%	18 36%	14 28%	10 20%	50 100%
Total	35 23.0%	46 30.7%	45 30.0%	24 16.0%	150 100%

26% of tribal, 36% of rural and 28% urban practice boiling and simmering for 5 minutes **(table 8)**

Table 9. Hand washing practices before cooking

Area	Hand washing practices before cooking		Total
	Yes	No	
Tribal	47 94%	3 6%	50 100.0%
Rural	50 100%	0 .0%	50 100.0%
Urban	50 100%	0 0%	50 100%
Total	147 98%	3 2%	150 100%

100% of rural 96% of urban 94% of tribal practice hand washing before cooking **(table 9).**

Table 10. Hand washing practices after cooking

Area	Hand washing practices after cooking		Total
	Yes	No	
Tribal	41 82%	9 18%	50 100.0%
Rural	47 94%	3 6%	50 100.0%
Urban	50 100%	0 .0%	50 100.0%
Total	138 92.0%	12 8.0%	150 100.0%

100% of the urban population, 82% of the tribal & 94 of rural practice hand washing practice after cooking **(table 10).**

Table 11. Cleans knife after each use

Area	Cleans knife after each use		Total
	Yes	No	
Tribal	47 94%	3 6	50 100.0%
Rural	50 100%	0 .0%	50 100.0%
Urban	50 100%	0 .0%	50 100.0%
Total	147 98.0%	3 2.0%	150 100.0%

100% of the urban population, 94% of the tribal population has the practice of cleaning knife after each use **(table 11)**[1]

Table 12. Fate of left over food

Area	Fate of left over food				Total
	Refrigeration	Heated & Used	Both	Throw away	
Tribal	7 14%	21 42%	15 30%	7 14%	50 100%
Rural	3 6%	14 28%	29 58%	4 8%	50 100%
Urban	21 42%	11 22%	14 28%	4 8%	50 100%
Total	31 20.7%	46 30.7%	58 38.7%	15 10.0%	150 100%

28% of the urban 58% of the rural, 30% of the tribal practice both refrigeration and reheat and use the left over food **(table 12).**

Table 13. Maximum duration of storage of food

Area	Maximum duration of storage of food			Total
	1 Day	2-3 Day	3 Days	
Tribal	42 84%	7 14%	1 2%	50 100.0%
Rural	41 82%	9 18%	0 .0%	50 100.0%
Urban	46 92%	4 8%	0 .0%	50 100.0%
Total	129 86.00%	20 13.3%	1 .7%	150 100.0%

92 of the urban 82% of the rural and 84 of the tribal store food form maximum of 1 day **(table 13).**

DISCUSSION

A case of study was conducted on Food and safety related perceptions and practices of mothers in Hyderabad, India, 2007.[1] Quantitative data collected from respondents (n=90) using a Knowledge, Attitudes, Beliefs and Practices (KABP) Questionnaire, showed that over 90% washed hands before feeding children, eating, serving and cooking food. While in the study 100% of rural and urban population wash their hands before consuming food and 98% of tribal population wash hands before.

Consuming And 94%, 96%, & 100% of rural, urban & tribal wash hands before cooking.

A case study was conducted on Food safety related perceptions and practices of mothers in Hyderabad, India, 2007, Quantitative data collected from respondents (n=90) using a Knowledge, Attitudes, Beliefs and Practices (KABP) questionnaire, showed that over 60% store leftover cooked foods at room temperature as a majority (82%) does not own refrigerators ie, 41 5f. While in this study, it was found that 100% of urban population & rural population own refrigerators and only 60% of tribal population own refrigerators, out of which 84% of urban population, 100% of rural 60% of tribal population is aware of optimum temp of refrigerators.

A study was conducted on Food safety knowledge and practice among elderly people living at home in Urban Nottingham. A large proportion of elderly people (70% in this study) keep their refrigerator at a temperature too warm to inhibit the growth of microorganisms, including Escherichia coli,. In the study here conducted it was found that 84% of urban population, 100% of rural 60% of tribal population is aware of optimum temp A study was conducted on knowledge and practice regarding food hygiene in rural villages of Humla and Mugu, Mid West Nepal, 2009 For the practice of food covering, direct observation it emerged that 67% of households are covering their food. While in the study conducted it was found that food of refrigerator.

A study conducted among street vendors in New Delhi, it was found that awareness was found high in age group 25-30, but in our study it is found that the awareness & practice is approximately similar in age groups above 21-35.

CONCLUSIONS

Among the study population of 150 women, each from Urban, Rural and Tribal areas, it was found that 30% of the tribal population was unaware of safe food handling practices while only 4% and 12% of urban and rural population respectively were unaware of it.

Another important finding was that among the tribal population 80% of them were unaware that the personal hygiene was a part of safe food handling practices while 100% of the rural and urban were aware of it. About 84% and 86% of urban and rural population

considered colour of cooked food as reliable indicator which is considered as a false assumption by the WHO Guidelines for safe food handling.[2]

100% of all the three categories had the practice of keeping the food covered and washing hands after going to toilet and consuming food. Only 96% an d 94% of the urban and tribal population respectively practiced washing hands before cooking. 100% of the rural practiced hand washing before consuming food but this value is found to be lower in tribal population.

Moreover taking into comparison of sociodemographic factors it has been found that awareness & practice is low in the age group below 21 years, and in the BPL families. Therefore stress should be laid to increase the awareness and practice in this age group.

Therefore the main stay of stress should be made in addressing the tribal population on the concept of importance of personal hygiene in safe food handling practices and stress to be given on the importance of safe food handling practices in all the three communities.

RECOMMENDATIONS

*Increase the level of awareness on the knowledge of safe food handling practices in tribal pockets.

QUESTIONNAIRE

SECTION A: Sociodemographic Details

1. Age
   a) 18-20 [ ] b. 21-25 [ ] c. 26-34 [ ] d.> [ ]
2. Level of Education
   a) illiterate [ ] b) Till SSLC [ ] c. +2 d. Degree [ ] e. PG [ ]
3. Socio economic Status
   APL [ ] b. BPL [ ]

SECTION B: Awareness Regd Food Handling

A. Personal Hygeine

4. Have you heard of safe food handling practices?
   Y [ ] N [ ]
5. Do you believe that personal hygiene in a part of safe food handling practices.
   Y [ ] N [ ]
6. Duration of hand washing is
   ` 10 sec [ ] b. 20 sec [ ] c. 1 min [ ] d. 5 min [ ]
7. Kitchen should be well lit ventilated
   Y [ ] N [ ]

B. Food Storage

8. Vegetables and fruits should be washed before using
   Y [ ] N [ ]
9. Raw meat/8fish should be washed before storing for future use
   Y [ ] N [ ]
10. Do you use refrigerators
    Y [ ] N [ ]
11. Are you aware of optimum temperature of refrigerators
    Y [ ] N [ ]

C. Food Cooking

12. Are you aware of safe internal minimum temperature
    Y [ ] N [ ]
    (safe internal minimum temperature is the that temperature that is required to provide/render the food properly cooked & freed from contamination)
13. Do you consider colour attained during cooking as a reliable indicator
    Y [ ] N [ ]
14. Drinking water is boiled till
    a. Till boils [ ] b. 100C [ ] c. 50C [ ]

D. Reusde Of Cooked Food

15. On reheating food should be brought to
    a. Boil only [ ] b. Boiled & simmered for 2 min [ ]
    c. boiled & simmered for 5 min [ ] d. Simmered only [ ]

SECTION C: Practice Regd Safe Food Handling Practices

A. Personal Hyged

16. Do you wash hands before cooking?
    Y [ ] N [ ]
17. Do you wash hands before consuming food?
    Y [ ] N [ ]
18. Do you wash hands after going to toilet?
    Y [ ] N [ ]
19. Do you wash hands after cooking?
    Y [ ] N [ ]

B. Food Storage

20. Food is kept covered
    Y [ ] N [ ]
21. Raw Meat is separated from other foods
    Y [ ] N [ ]

C. Food Cooking

22. Do you use separated cutting board for waw meat & other perishables
    Y [ ] N [ ]
23. Do you clean knife after each use
    Y [ ] N [ ]

D. Reuse of Cooked Food

24. reft-over are
    a. refrigeration [ ] b. heated & use [ ]
    c.both & b [ ] d. throw away [ ]
25. Maximum duration of storing any cooked food
    a. 1 day [ ] b. 2-3 days [ ] c. >3 days

END NOTE

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