

## ORIGINAL ARTICLE

## Knowledge on Food Safety among Women in a Community

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## ABSTRACT

**Introduction:** Safe food is necessary for good and healthy living. Consumption of unsafe food can cause number of foodborne diseases which mainly affects infants, young children, elderly and ill people. Food prepared and eaten at home is also a major source of foodborne diseases. In many households, often women prepare meals for family members. To protect their family's health and well-being, it is important for women to have basic knowledge of food safety. This study was carried out with the aim of assessing knowledge on food safety among women in a community.

**Method:** A descriptive cross-sectional study was conducted among 97 women in a community. Face to face interview schedule was used to collect data by using self-developed structured questionnaire. Data analysis was done using descriptive and inferential statistics in SPSS version 26.

**Result:** More than half (55.7%) of the respondents had adequate knowledge while less than half (44.3%) of the respondents had inadequate knowledge on food safety. There was statistically significant association between level of knowledge on food safety with age ( $p=0.035$ ) and educational status ( $p=0.002$ ).

**Conclusion:** More than half of the respondents had adequate knowledge on meaning, importance and consequences of food safety. Despite of this, there is inadequate level of knowledge regarding measures of food safety such as separation of food, cooking of food and storage of food. Moreover, this study showed that there was statistically significant association between level of knowledge on food safety with age and educational status.

**Key words:** Food Safety; Knowledge; Women

## INTRODUCTION

Food safety refers to the conditions and practices needed during food preparation, production, processing, storage and distribution to make sure the food is clean, safe and suitable for people to eat<sup>1</sup>.

Every year, an unsafe food causes the loss of about 33 million healthy life years worldwide. Globally, it is estimated that almost 1 in 10 people fall ill after eating contaminated food each year, resulting in 420,000 deaths. Foodborne illness is a major public health issue that leads to many sickness and death. Foodborne illnesses are common in under-five children, which accounts for 40% of burden with 125,000 deaths every year<sup>2</sup>.

Food contamination is directly linked to the health status of food handlers especially women, their hygiene practices and how well they understand and follow food safety rules. Good food safety practices protect family's well-being and help to prevent foodborne illnesses caused by ingestion of contaminated or mishandled food<sup>3</sup>. Food prepared and eaten at home is also a major source of foodborne diseases<sup>2</sup>. According to WHO, about 30-40% of foodborne disease cases start in home. A study conducted in India showed that 13.2% of food poisoning cases occur in households, and 40% are caused by food cooked at home<sup>4</sup>. A cross-sectional study conducted in India among 400 adult women to assess the level of food safety awareness and attitude showed that 50% had adequate knowledge regarding food safety practices. About 76.5% of women had no knowledge about temperature of refrigerator and 32.3% of women were not aware that overcooking reduces nutritive value<sup>5</sup>. A study conducted in Nepal among 335 women regarding food safety showed that only 21.20% had adequate knowledge, while 78.80% had poor knowledge

of food safety. Among the women, only 20.30% knew that vegetables and fruits could not be made germ free by washing only with fresh water, only 42.10% knew that cooked foods should be thoroughly reheated and only 7.80% knew that contaminated food might not have changed colour, odour or taste<sup>3</sup>.

Foodborne diseases cause serious economic losses, estimated at about 2.9 billion dollars every year. These illnesses affect young children, the elderly and the sick the most leading to about 2.2 million deaths annually in developing countries, including 1.9 million children<sup>6</sup>.

Globally, the prevalence of foodborne illnesses is rising and is also a major public concern. However, the majority of women have lack of adequate knowledge on food safety measures, which reduces their quality of life. If women have adequate knowledge about food safety, they can protect themselves and their families from risk food borne diseases if women have adequate knowledge about food safety at home. This study aimed to identify the level of knowledge on food safety among women in a community and its associated factors.

## METHODS

A descriptive cross-sectional study design was used. The data were collected by using non-probability purposive sampling technique to sample size. A total of 97 respondents were selected. A self-developed structured questionnaire was used as instrument for data collection. The instrument consists of the following two parts:

Part I: It consists of questionnaire related to socio demographic variables, which include age, ethnicity, marital status, educational status, occupational status, income, number of family members, presence of children and food safety training.

Part II: It consists of questionnaire related to meaning,

importance, risk factors, measures and consequences of food safety. Each question will carry 1 mark for a correct answer and 0 marks for an incorrect answer.

**Ethical Considerations**

Ethical approval of the research proposal from the institutional review committee (IRC) of NECHO was taken for the study before data collection. The purpose of the study was explained and written consent was obtained from every respondents before data collection. Confidentiality was maintained throughout the study.

**Data Collection and Analysis**

Data was collected by the researcher using face-to-face interview schedule to gather information on food safety from (2082-08-23 to 2082-09-06). Data were entered in Statistical Package for Social Sciences (SPSS) version 26 for further analysis. Data were analysed using descriptive statistical methods (median interquartile range, frequency and percentage) and inferential statistics (Chi-square test fisher exact test) measured the association between level of knowledge on food safety and the selected demographic variables.

**RESULTS**

Socio-demographic variables of the respondents revealed that more than half (58.8%) of the respondents belong to age group of 25-44 years and few (18.6%) of the respondents belong to age group of 18-24 years. Majority (75.3%) of the respondents belong to Janajati group and very few (3.1%) of the respondents belong to Dalit group. Less than half (48.5%) of the respondents had secondary education and very few (5.2%) of the respondents had no education. More than half (50.5%) of the respondents were homemaker and very few (4.1%) of the respondents were student.

**Table 1: Respondents' Level of Knowledge on Food Safety**

Level of Knowledge	Number	Percent
Inadequate Knowledge (<16)	43	44.3
Adequate Knowledge (≥ 16)	54	55.7
Total	97	100.0

**Md±IQR = 16±4**

Table 1 illustrates that more than half (55.7%) of the respondents had adequate knowledge on food safety while less than half (44.3%) of the respondents had inadequate knowledge on food safety. The respondent's level of knowledge was categorized on the basis of median score (16) in which total score was 23.

**Table 2: Association between Respondents' Level of Knowledge on Food Safety and Socio-demographic Variables**

Variables	Level of Knowledge		χ <sup>2</sup> - value	p - value
	Inadequate (%)	Adequate(%)		
<b>Age (in completed years)</b>				
≤ 24	6 (33.3)	12 (66.7)	6.713	0.035*
25-44	22 (38.6)	35 (61.4)		
≥ 45	15 (68.2)	7 (31.8)		
<b>Ethnicity</b>				

Variables	Level of Knowledge		χ <sup>2</sup> - value	p - value
	Inadequate (%)	Adequate(%)		
Janajati	36 (49.3)	37 (50.7)	2.971	0.085
Others####	7 (29.2)	17 (70.8)		
<b>Marital status</b>				
Married	34 (46.6)	39 (53.4)	0.603	0.438
Unmarried	9 (37.5)	15 (62.5)		
<b>Educational status</b>				
Basic education (1-8)	14 (63.6)	8 (36.4)	12.138	0.002*
Secondary education (9-12)	24 (51.1)	23 (48.9)		
More than secondary (Bachelors and above)	5 (17.9)	23 (82.1)		
<b>Occupational status</b>				
Professional /technical/managerial	7 (30.4)	16 (69.6)	2.531	0.282
Housewife	23 (46.9)	26 (53.1)		
Others####	13 (52.0)	12 (48.0)		
<b>Income status</b>				
Less than NRs. 20000	6 (42.9)	8 (57.1)	0.233	0.890
NRs. 20000-30000	15 (41.7)	21 (58.3)		
More than 30000	22 (46.8)	25 (53.2)		
<b>No. of family members</b>				
≤5	35 (46.1)	41 (53.9)	0.422	0.516
>5	8 (38.1)	13 (61.9)		
<b>Presence of children (less than 15 years)</b>				
Yes	25 (44.6)	31 (55.4)	0.005	0.942
No	18 (43.9)	23 (56.1)		
<b>Food safety training##</b>				
Yes	3 (60.0)	2 (40.0)	0.652	0.392
No	40 (43.5)	52 (56.5)		

\*Significant at p-value <0.05, ###Ethnicity others (Brahmin/Chhetri, Dalit), Occupation others (Sales and services, Agriculture, Student) ##Fisher's Exact Test <0.05

Table 2 shows that there is statistically significant association between the level of knowledge on food safety with age (p=0.035) and educational status (p=0.002).

**DISCUSSION**

The current study findings showed that more than half (55.7%) of the respondents had adequate knowledge on food safety. In contradiction to the study conducted in Nepal (Morang) showed that few (21.10%) of the respondents had adequate knowledge<sup>3</sup>.

This study showed that most (86.6%) of the respondents had knowledge that washing hands with soap and water is the best way to remove germs from hands which is supported by the study conducted in Saudi found that most (76%) of the respondents had knowledge of washing their hands with soap and water<sup>7</sup>. Click or tap here to enter text.

This study showed that most (82.5%) of the respondents had knowledge that raw and cooked foods should be separated to prevent transmission of germs in contrast with the study conducted in Jordan found that less than half (41.3%) of the respondents had knowledge that raw and cooked foods should be separated to prevent transmission of germs<sup>8</sup>.

In the current study, most (87.6%) of the respondents had knowledge that food should be cooked thoroughly to kill harmful germs which is supported by the study conducted in Saudi found that most (79.5%) of the respondents had knowledge that food should be cooked thoroughly to kill harmful germs<sup>2</sup>.

This study showed that majority (70.1%) of the respondents had knowledge that germs grow quickly when cooked meat is kept at room temperature overnight in contrast with the study conducted in Lebanon found that more than half (57.6%) of the respondents had knowledge that germs grow quickly when cooked meat is kept at room temperature overnight<sup>10</sup>.

In the current study, almost all 100 percent (91.8%) of the respondents had knowledge that fruits and vegetables should be washed before eating to remove dirt, chemicals and germs which is supported by the study conducted in Bangladesh showed that almost all 100 percent (98.9%) of the respondents had knowledge that fruits and vegetables should be washed before eating to remove dirt, chemicals and germs<sup>4</sup>.

In the present study, almost all 100 percent (94.8%) of the respondents had knowledge about the meaning of foodborne illness which is supported by the study conducted in Nigeria found that almost all 100 percent (91.2%) of the respondents had knowledge about the meaning of foodborne illness<sup>11</sup>.

## CONCLUSION

Based on the findings of the study, more than half of women have adequate knowledge on meaning of food safety, importance and consequences. However, there is still gap in knowledge about measures of food safety such as separation of food, cooking of food and storage of food. Moreover, this study shows that there is statistically significant association between level of knowledge on food safety with age and educational status.

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## AUTHOR CONTRIBUTIONS

Dewaki Laxmi Shrestha took the overall responsibility for the study, including conceptualization, methodology development, analysis, and finalization of the manuscript while Palmo Tamang led the preparation of the theoretical framework, methodology, tool preparation, data collection, data analysis, and report preparation.

## CONFLICT OF INTEREST

The authors declare no competing interests

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