A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME REGARDING FOOD POISONING AND ITS PREVENTION AMONG THE MESS WORKERS OF SELECTED NURSING INSTITUTIONS AT BELLARY, KARTNATAKA.

[1]Nibu G Philip

[1]Assitant Professor
[1]Department of Medical Surgical Nursing
[1]Baba Moni Ji Maharaj College of Nursing, Bathinda, Punjab, India

Abstract : This study was conducted to evaluate the effectiveness of structured programme regarding food poisoning and its prevention among the 50 mess workers of selected nursing institutions at Bellary, Karnataka. One group pre test post test pre experimental design was selected for the study. A non probability convenient sampling technique was used to select the sample for study. A structured interview schedule was used to collect data from the subjects. The findings of the study were, during pre test, out of 50 mess workers 10 (20%) of subjects had poor knowledge, 30(60%) had average knowledge, 10(20%) had good knowledge and none had very good knowledge regarding food poisoning and its prevention. After structured teaching programme about 36 (72%) had very good knowledge, 14 (28%) had good knowledge and none had average and poor knowledge regarding food poisoning and its prevention. It shows effectiveness of S.T.P among mess workers regarding food poisoning and its prevention. A significant association was found between knowledge level and demographic variables such as age educational status and residential background. The study was concluded that structured teaching programme was effective in enhancing the knowledge of mess workers regarding food poisoning and its prevention.

IndexTerms **-Food poisoning, contamination, food handlers, prevention, mess workers and structured teaching programme.**

I. INTRODUCTION

Food is the prime necessity of life. The food we eat is digested and assimilated in the body and used for its maintenance and growth. Food also provides energy for doing work. A considerable amount of information is now available on nutritive value of foods and nutritional requirements.[1]

Food poisoning is a general term for health problems caused by eating contaminated food. Food may be contaminated by bacteria, viruses, toxins from the environment, or toxins within the food itself. Many kinds of food poisoning are caused by bacteria. The most common of these bacteria are Salmonella, Staphylococcus aureus, Escherichia coli, Shigella and Clostridium botulinum. Food and water can also be contaminated by other agents, such as viruses, heavy metals such as lead, cadmium, and mercury and poisons produced within the food itself.[2]

An estimated 76 million cases of food poisoning occur each year in the United States. The great majorities of these cases are mild and cause symptoms for only a day or two. Some cases are more serious, Centers for Disease Control estimates that there are 3, 25,000 hospitalizations and 5,000 deaths related to food poisoning each year. The most severe cases tend to occur in the very old, the very young and those who have an illness already that reduce their immune system function and healthy people expose to very high dose of organism.[1]

Food handlers are those persons who are connected with cooking, serving or distribution of food. They can spread disease by their unhygienic habits. The diseases likely to be spread by food handlers are typhoid, diarrhea and dysentery, viral hepatitis and intestinal worms.[3]

Careless food handling creates conditions for the growth of bacteria that make people sick. Food can be contaminated at many different points during its trip from farm to table. Vegetables that are eaten raw, such as lettuce, may be contaminated by bacteria in the soil in which they were grown. They can also be contaminated during washing and packing. Home canning can also lead to food poisoning. Foods may be cooked at too low a temperature or for too short a time, Bacteria may not be killed. Cooked foods can also become contaminated in other ways. There are disease causing bacteria everywhere in the environment.[4]

Before, after and at the time of preparation of food, Mess workers will be less care of themselves about their personal hygiene, raw food materials and may be suffering from some communicable diseases because of their lack of knowledge or illiteracy. Sometimes they will not maintain least hygiene too this will leads to causation of food poisoning.[5]

1.1 Need for the study:

During the early 21st century, food borne diseases can be expected to increase, especially in the developing countries. These vary from climatic changes, changes in microbial and other ecological systems, to decreasing fresh water supplies. Meeting the huge challenges of food safety in the 21st century will require the application of new methods to identify, monitor and assess the food borne hazards. This needs to be done through legislative measures where suitable, but with much greater reliance on voluntary compliance and education of consumers and professional food handlers.[4]

Having accepted the goal of health for all by the year 2000, most countries have stated are in the process of enunciating, their health policies, preparing their strategic plans, and formulating appropriate programme. Primary health care has been adopted as the most appropriate approach to achieve this goal. The provision of adequate and wholesome food free from harmful ingredients is one of the essential components of primary health care. Illness resulting from eating contaminated food is perhaps the most widespread health problem in the contemporary world. Contamination of food is serious health problem. Many countries are becoming increasingly aware of this situation and have established in the process of establishing and strengthening national programmes in response to this challenge.[6]

Food poisoning can occur in any age group or population. People most at risk for serious complications due to food poisoning include older adults, pregnant women, infants, children and people who have compromised immune system. Diagnosing food poisoning and its root causes begins with taking a thorough personal and family medical history, including symptoms and completing a physical examination.[7]

An analysis study was conducted in cooper hospital among 250 cases of food poisoning in children for a period of two years in India. The total incidence of poisoning was 11.9%, much higher as compared to the other series of these 58.4% were seen in the age group of 1-4 years. Male to female ratio was 1.7: 1. Incidence of food poisoning was 48.8% followed by that of kerosene 24%, pesticides 9.6%, chemicals and medicaments 8.4%, plant 3.6% and animal bites 3.2%. Overall mortality was 0.8%. However in view of rising incidence of food poisoning, a health education of parents for adoption of simple home safety measures should be promoted.[8]

More than 250 known diseases can be transmitted through food. The CDC estimates unknown or undiscovered agents cause 81% of all food borne illnesses and related hospitalizations. In India the total mortality rate was found to be15.4%. The incidence of food poisoning was 48.8%, followed by that of kerosene poisoning 24%.[9] Additionally there are new global threats to the world food supply through terrorist action using food toxins as weapons. According to World Health Organization, food and water borne diarrheal diseases are the leading cause of illness and death in less developed countries, killing approximately 3.8 million people annually, most of whom are children.[10]

The current medical nursing literature reflects the prevalence of food poisoning among mess workers. Based on the literature and investigator experiences the investigator feels that it is important to create awareness among mess workers to reduce the mortality and morbidity. So the knowledge of mess workers may be applied in early recognition of the symptoms of food poisoning helps in selecting for early medical validation. Hence the investigator planned to impart the knowledge by conducting structured teaching programme to the mess workers.

II. METHODOLOGY

2.1 Research approach: An evaluative research approach was chosen to assess the knowledge of mess workers regarding food poisoning and its preention.
2.2 Research design: Evaluative research design was chosen for the study.
2.3 Research setting: The study was conducted at selected nursing institution hostel mess of Bellary, Karnataka, India.
2.4 Variables under study:
2.4.1 Independent variable: Structured teaching programme regarding food poisoning and its prevention among the mess workers.
2.4.2 Dependent variable: In this study, assessing the level of knowledge regarding food poisoning and its prevention among the mess workers.
2.5 Population:
2.5.1 Target Population: Mess workers of nursing institutions at Bellary.

2.5.2 Accessible Population: 50 mess workers of selected nursing institution hostel messes at Bellary.
2.6 Sample and sampling technique:
2.6.1 Sample: Mess workers of selected nursing institution hostel messes.
2.6.2 Sampling technique: Convenient sampling was used for the selection of subject.
2.6.3 Sample size: 50 mess workers (n=50).
2.7 Data collection procedures:

Investigator personally visited each respondent and explained the purpose of the study. The respondents were assured anonymity and confidentiality of the information provided by them and an informed consent was obtained. Interviews were conducted during their leisure time. Data was collected with the help of the socio-demographic profile and knowledge

questionnaire regarding food poisoning. The data collection process was terminated after thanking participant for their participation and co-operation.

Description of the data collection tool:

In this study the data collection tools were consisted of 2 parts covering the following areas.

I. **Socio-demographic data:** It contains eight (8) questions selected on background factors such as age, gender, religion, educational status, type of family, residential background, source of information regarding food poisoning and habits.

II. **Preparation of knowledge questionnaire:** Knowledge questionnaire consisted of 42 items regarding prevention of food poisoning.

Scoring:

Scoring for the present study wass, each question has multiple choices of four different answers with one correct option and each correct answer considered one mark and the wrong answer carries zero mark. The maximum score was 42 and minimum score was (0) zero.

Method of data analysis:

- Description of sample characteristics, Baseline data containing sample characteristics (socio-demographic data) was analyzed using frequency and percentage.
- The knowledge of the mess workers was analyzed using frequency, percentage, mean percentage and standard deviation.
- Association between knowledge scores and selected demographic data such as age, gender, religion, educational status, type of family, residential background, source of information regarding food poisoning and habits was found out by using Chi-Square test. The level of significance would be set at $p<0.05$ level to test the significance of association.

III. RESULTS

Frequency and percentage distribution of demographics variables.

Table 1: Distribution of mess workers of the selected nursing institutions according to socio-demographic variables (n=50)

Variables	No of respondents	Percentage
Age in years		
a. 15-25 years	09	18.0
b. 26-35 years	15	30.0
c. 36-45 years	17	34.0
d. 45 years & above	09	18.0
Gender		
a. Male	20	40.0
b. Female	30	60.0
Religion		
a. Hindu	26	52.0
b. Christian	8	16.0
c. Muslim	16	32.0
Educational status		
a. No formal education	18	36.0
b. Primary education	13	26.0
c. Secondary education	16	32.0
d. PUC & above	3	6.0
Type of family		
a. Nuclear	28	56.0
b. Joint	22	44.0
Residential background		
a. Urban	28	56.0
b. Rural	22	44.0
c. Slum	0	0
Source of Information regarding food poisoning		
a. TV	18	36.0
b. Radio	13	26.0
c. News papers	19	38.0
Habits		
a. Smoking	20	40.0
b. Drinking alcohol	13	26.0
c. Chewing tobacco	17	34.0

Total	**50**	**100**

With regard to their age, The majority 34% of the mess workers were of 36-45 years in age, and minority 18% were in above 45 years and 15-25 years of age, with regard to their gender, majority 60% of the samples were females and the rest 40% were males. considering their religion 52% were Hindus, 16% were Christians and 32% were Muslims. Out of 50 mess workers, 36% had no formal education, 26% had primary education, 32% had secondary education and 6% had PUC and above education. with regard to their family, 56% belong to nuclear family and 44% were with joint family. considering their residential background, 56% were from urban areas, 44% were from rural areas and none are from slums. With regard to their habits, 40% of the samples had the habit of smoking, whereas 26% had habit of drinking alcohol and 34% had habit of chewing tobacco.

Table 2: percentage distribution of pretest knowledge scores regarding food poisoning and its prevention among the mess workers.

Sl.no	Level of knowledge	No. of mess workers	Percentage
1.	**Poor knowledge**	**10**	**20**
2.	**Average knowledge**	**30**	**60**
3.	**Good knowledge**	**10**	**20**
4.	**Very good knowledge**	**0**	**0**
	Total	**50**	**100**

The above table reveals the over all pre test knowledge on food poisoning and its prevention among mess workers. In general 20.0% of mess workers are having poor knowledge, 60% of them having average knowledge and 20% of them having good knowledge and none of them having very good knowledge. In 50 samples majority of them had average knowledge regarding food poisoning and its prevention

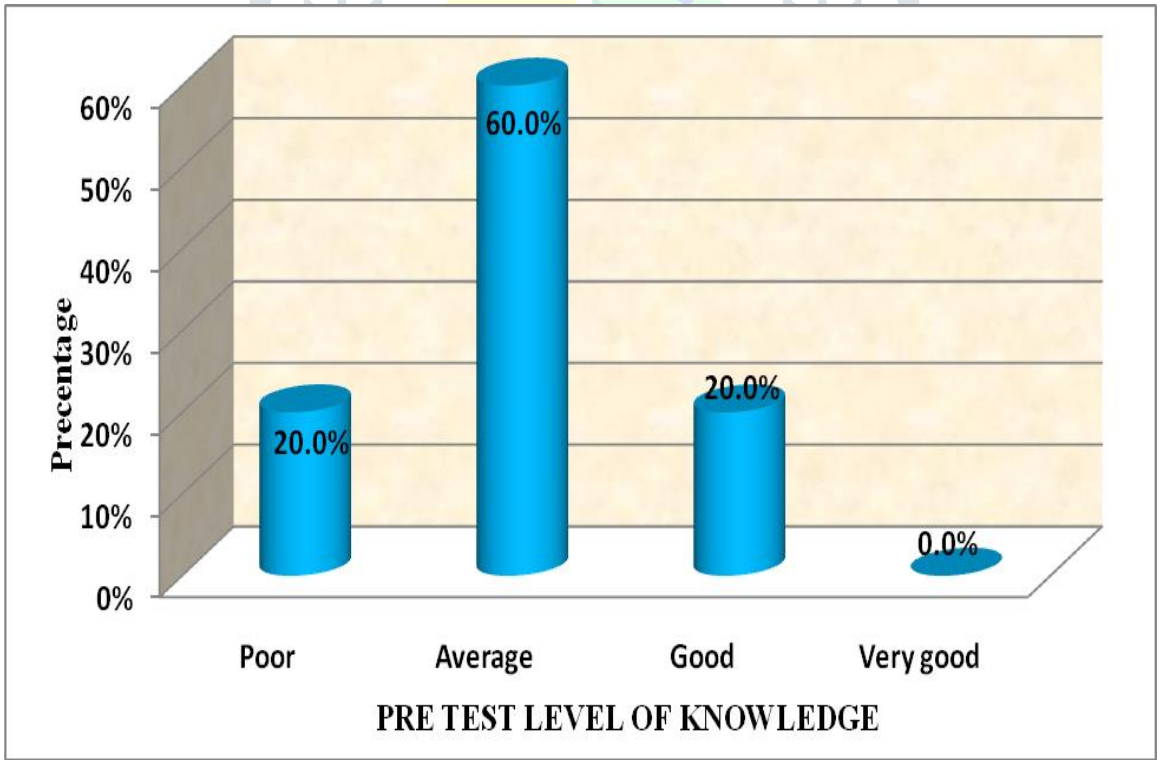

Fig: 1, Bar diagram depicting the assessment of pre test knowledge level percentage distribution of mess workers.

Table 3: Percentage distribution of posttest knowledge scores regarding food poisoning and its prevention among the mess workers.

Sl.no	Level of knowledge	No. of mess workers	Percentage
1.	Poor knowledge	0	`0
2.	Average knowledge	0	0
3.	Good knowledge	14	28
4.	Very good knowledge	36	72
	Total	50	100

The above table reveals the over all post test level of knowledge on food poisoning and its prevention among the mess workers. In general 28% of the mess workers are having good knowledge, 72% of them are having very good knowledge and none of them are having poor/average knowledge.

In 50 samples majority of 72% of mess workers had very good knowledge regarding food poisoning and its prevention.

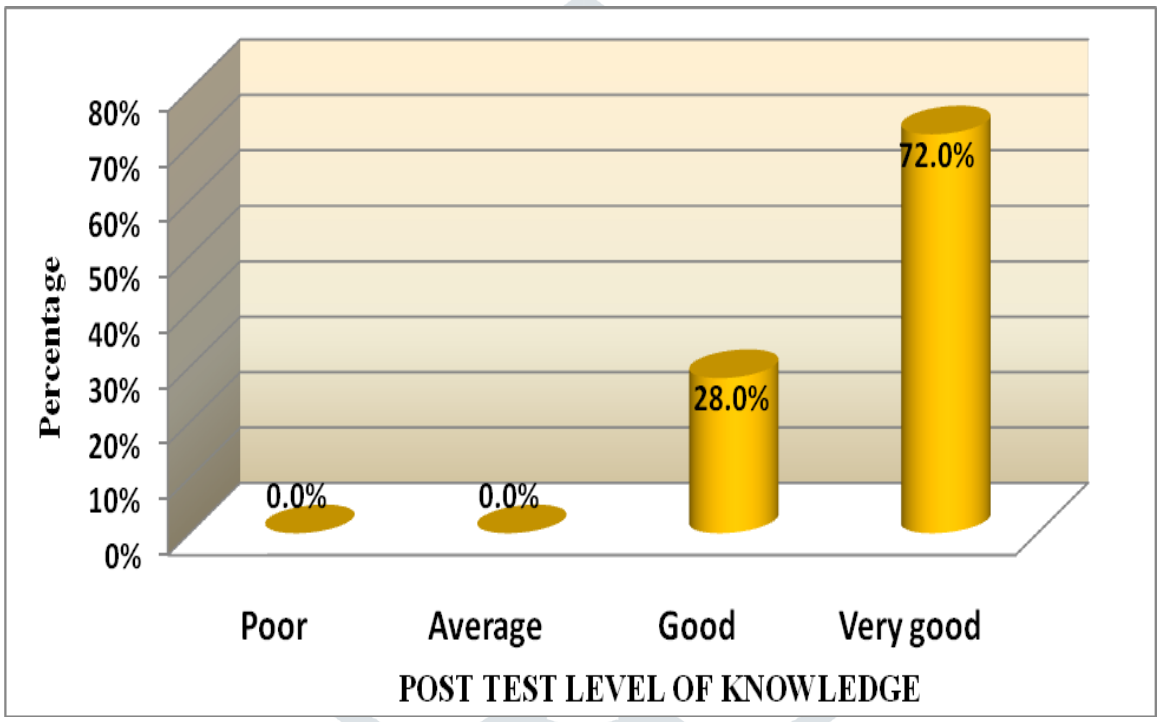

Fig 2: Bar diagram depicting the assessment of post test knowledge level distribution of mess workers.

Table 4: Comparison of over all knowledge scores regarding food poisoning and its prevention between pre test and post test.

Sl.no	Test	No. of mess workers	Mean	SD	Paired t-test
1.	Pre test	50	17.22	6.74	t=21.61 P=0.001*** significant
2.	Post test	50	33.78	3.49	

* Significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P≤0.001

The above table reveals the comparison of over all knowledge score between pre test and post test. On an average the mess workers had a pre test mean score of 17.22 and SD of 6.74 and a post test mean score of 33.78 and SD of 3.49. The difference between the pre test and post test mean score is 16.56. Pared t test value 21.61.The difference between pre test and post test knowledge score is large and is statistically significant. Differences between pre test and post test score was analyzed using paired t-test.

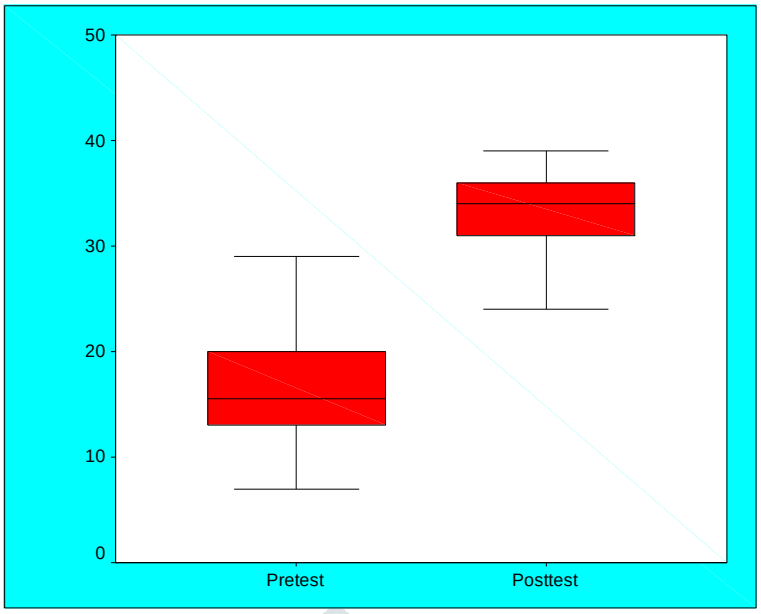

Fig 3: Comparison of mess workers pretest and posttest mean knowledge score regarding food poisoning and its prevention.

Table 5: Comparison of level of knowledge regarding food poisoning and its prevention among the mess workers with respect to pre test and post test scores.

Sl.no	Level of knowledge	Pre test		Post test		Pearson Chi-square test
		No. of mess workers	Percentage	No. of mess workers	Percentage	
1.	Poor knowledge	10	20	0	0	$\chi 2=66.37$ P=0.001*** Significant
2.	Average knowledge	30	60	0	0	
3.	Good knowledge	10	20	14	28	
4.	Very good knowledge	0	0	36	72	

* Significant at P≤0.05, ** highly significant at P≤0.01, *** very high significant at P≤0.001

Table no.5 shows the mess workers knowledge score regarding food poisoning and its prevention in pre test and post test mean

Before the STP, 20% of mess workers are had poor knowledge, 60% of them were had average knowledge and 20% of them were had good knowledge and none of them were had very good knowledge. In overall 60% of mess workers had average knowledge based on pretest score.

After the administration of STP, 28% of mess workers are had good knowledge, 72% of them had very good knowledge and none of them had poor and average knowledge. Pearson Chi-square test was used to test statistical significance.

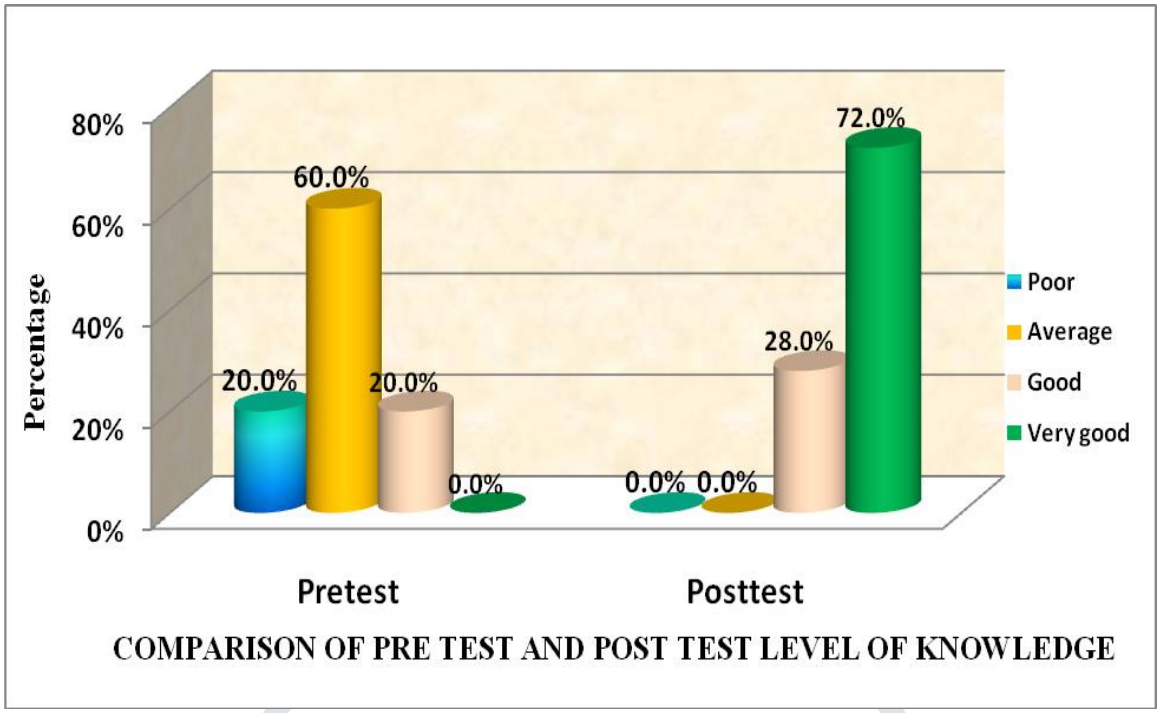

Fig 4: Comparison of pre test and post test knowledge level regarding food poisoning and its prevention among mess workers.

Table 6: Effectiveness of structured teaching programme regarding food poisoning and its prevention among the mess workers.

	Percentage		
	Pre test knowledge	**Post test knowledge**	**knowledge gain**
Knowledge	41.0%	80.4%	39.4%

Table 6 shows the effectiveness of the structured teaching programme. Considering the overall aspects, the mess workers have gained 39.4 percent more knowledge after the administration of structured teaching programme.

This 39.4 percent of knowledge gain is the net benefit of this study, which indicates the effectiveness of the structured teaching programme.

Association between post test level of knowledge regarding food poisoning and its prevention with the demographic variables of mess workers.

It was found that, there was a significant association between post test knowledge score and age with p value 0.02*, education status with p value 0.01** and place of residence with a p value of 0.02*. There was no association between post test knowledge score and demographic variables such as gender, religion, type of family, source of information and habits.

These findings were supported by a similar study conducted by **Dr. Talikoti Anilkumar Siddappa (2006).** In this study 439 (70.24%) of food handlers had poor knowledge regarding food hygiene, 178 (28.48%) had fair knowledge and only 08 (01.28%) had good knowledge of food hygiene.[11]

The findings of the study were also supported by a study conducted by Dr. Rajenrda Prasad, et al. in his study similar findings was there and it was observed that 75.74% workers were literate. The marginal increase in literacy rate in our study could be due to the fact that Belgaum being the regional head quarters of North Karnataka, there is increase in migration of educated people for work from small cities and towns and also employer's demand for literate food handlers to provide better service may be the reason.[11]

The findings of the study revealed that, the Majority (34%) of the study subjects were in their most productive years i.e., between ages 26-35 years, 60% of the sample were female, about 36% of the sample had no formal education. Majority of the workers (56%) belongs to urban community. Majority of the workers (40%) had habit of smoking. Data showed that 24 female workers had very good knowledge about prevention of food poisoning than male workers. Higher the age had more knowledge regarding food poisoning prevention. Female workers had good knowledge regarding food poisoning. Nuclear family had very good knowledge regarding prevention of food poisoning.

Before the STP, 20.0% of mess workers are having poor knowledge, 60% of them were having average knowledge and 20% of them were having good knowledge and none of them were having very good knowledge.

After the administration of STP, 28.0% of mess workers are having good knowledge, 72% of them having very good knowledge and none of them having poor/average knowledge.

The study shows that there is a significant association between knowledge regarding prevention of food poisoning with the selected socio-demographic variables such they include age, educational status and residential background.

IV. IMPLICATIONS OF THE STUDY:

The findings of the study have implications for Nursing Education, Nursing Practice, Nursing Research and Nursing administration.

The findings of this study have scope in the following areas:

Nursing Education:

- An awareness need to be created among workers regarding food poisoning.
- Nurse educators need to organize regular short-term training programmes, workshops etc., with support of nursing administrator for the nurses regarding causes of food poisoning and methods of cooking.
- Nurse educators must prepare workers to play a useful role in the total health care of the person instead of disease.
- Nurse educators must make awareness in the student nurses regarding food poisoning and its prevention by organizing regular educational programmes and workshops.
- Identify the workers who have lack of knowledge and they are in need of guidance, find out them and give good education.
- Assess the workers who don't have knowledge regarding food poisoning.
- Nurse educators need to identify the workers of low knowledge regarding food poisoning, preparation of food, methods of serving and storage of different kind food.
- Ensure that education is relevant to practice and to bring high quality nursing practice to the health care system, consideration should be given for integration of education and practice. There are many ways of integrating education and practice like collaboration, in-service/continuing education programme, partnership between service and educational institutions nursing development units (clinical demonstration units). Researcher practitioner collaboration, working together, shared teaching and supervision services.

Nursing Practice:

- Workers need to have adequate knowledge regarding prevention of food poisoning to not to develop a condition of food poisoning cases. The findings imply that there is a need for regular health education programmes to be carried out by nurses.
- Counseling centers may be recognized by nurses in messes to provide counseling and educate workers regarding prevention of food poisoning.
- Nurse can also identify workers who follows strict hygienic and who not, help them to understand the adverse effects of it, help them to get adjust with hygienic preparation way and try to not to contaminate the food.
- Nurses may assist mess managers, wardens and chairman in teaching and guiding regarding food preparation and storing in safe mode.
- The study throw light on the areas where workers lacks knowledge this will help in the nursing practice to identify the lacunae in the knowledge possessed by the mess workers regarding food poisoning prevention, food preparation and storage.
- The findings of the study could be utilized as a basis for in service education of the nurses so that constant awareness and clear understanding may be created regarding food poisoning and trying them to give guidance and counseling about prevention of food poisoning. It also serves as a guideline for the nurse administrators to plan continuing education programme, additional instructions or training to the managers of messes.

Nursing Administration:

- Nurse administrators should constitute nursing team to develop nursing practice standards, protocols and manuals, for nursing implications on mess and hotel workers with low knowledge regarding preparation, serving of the food and food poisoning and facilitate the utilization of standards to provide quality care to patient for better outcome.
- Nurse administrator should plan, school, colleges, professional colleges and community health programmes during which food poisoning in messes/hotels/community can be identified and preventive measures can be planned.
- Administrators should participate and encourage research work on care of patient and equip settings with recent books, procedure manual and studies
- Replacing fear inducing campaigns is the need of the day and nursing administrators should move politically in work settings and other opportunities to correct misconceptions.
- Administrators should revise protocols to include opportunities for meeting spiritual needs.

Nursing Research:

- There is need for extended and intensive research in the area of educating the staff nurses regarding food poisoning. Research can help and increase the body of nursing knowledge, which improves the care provided. Although actual performance is important, use of observation to explore nurse performance is limited in clinical setting. "The potential of observation in research in this nature has yet to be fully exploited".
- There is a need for nursing research in the area of food poisoning as little is know about the causation, identification, scientific nursing care aspects and preventive strategies of food poisoning in messes in India. Similar studies in this area can be done, so that therapeutic interventions based on the study findings can be provided. There is still a lot of scope for exploring more on this topic.
- The present study gives an idea to other researchers in the field of nursing or any other professionals in future regarding food poisoning and its prevention about basic knowledge.

V. RECOMMENDATIONS

- A comparative study can be conducted between mess workers of hostels and hotels regarding causation of food poisoning, beginning symptoms of food poisoning and prevention.
- A study on the knowledge of nursing personnel regarding food poisoning may help to the students.
- A qualitative study on the effectiveness of nursing measures to improve the quality of preparation of food in hygienic manner should be conducted.
- An experimental study can be done to find out the limitations faced by the workers while preparation of food and maintaining hygiene in kitchen area.
- A study should be conducted to evaluate the effectiveness of vedio teaching programme on food poisoning.
- A study to evaluate the effectiveness of structured teaching programme on prevention of food poisoning.
- A study to assess the knowledge regarding food poisoning and its prevention.
- A study to assess the physiological and gastro intestinal problems of food poisoning.

VI. BIBLIOGRAPHIC REFERENCES

1. Food and Agricultural organization. Annual production book. 2004; 108–115. http://www.ojhas.org/issue30/2009-2-10.htm
2. Adedoyin OT, Ojuawo A, Adesiyun OO, Mark F, Anigilaje EA. Poisoning due to yam flour consumption in five families in Ilorin, central Nigeria. West Afr Med J 2008; 27(1):41–43.
3. ATKINS, P. and BOWLER, I., Food in Society. Economy, culture, geography, Arnold / Oxford University Press, 2001.
4. Abbot JM, Wheatley V, Schaffner D, Bruhn C, Blalock L. Risky eating behaviors of young adults-implications for food safety education. Vitae Rutgers University, New Brunswick, NJ, USA. J Am Diet Assoc. 2008 Mar; 108(3):549-52.
5. Angelillo IF, Viggiani NMA, Greco RM, and the Collaborative Group: HACCP and food hygiene in hospitals: knowledge, attitudes, and practices of food-services staff in Calabria, Italy. Infect Control Hosp Epidemiol 2001, 22:363-369.
6. Askarian M, Gholamhosein K, Aminbaig M, Memish ZA, Jafari P: Knowledge, attitudes, and practices of food service staff regarding food hygiene in Shiraz, Iran. Infect Control Hosp Epidemiol 2004, 25:16-20.
7. Source: Health Day news.
8. Khare M, Ranade A, Paniker. "A study on poisoning in children in Mumbai, India." 1990.
9. Source: www.neurologyindia.com.
10. World Health Organization. "Food borne hazards in basic food safety for health workers." Retrieved 12 august 2007. http://www.who.int/entity/food safety/publications/capacity/en/2.pdf.
11. REDLINGSHOFER, B., Versune alimentation durable? Ce qu'enseigne la literature scientific, Courier de l' environment de l'INRA, n°53, décembre 2006.