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Evaluating the Efficacy of a Structured Teaching Program on Food Hygiene Knowledge and Practices Among Rural Households in Chhattisgarh, India

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Abstract: ***Background: A food is a substance taken into the body to maintain life. Food hygiene are the conditions and measures necessary to ensure the safety of food from production to consumption. The primary aim of food hygiene is to prevent food poisoning and other food borne illnesses. The food hygiene is mainly categorized into milk hygiene, meat hygiene, egg hygiene and hygiene of fruits and vegetables. Food hygiene and safety prevent germs from multiplying in foods and reaching dangerous levels. Objective: To assess the pretest and posttest knowledge and practice of food hygiene among family members. To evaluate the effectiveness of structure teaching programme regarding food hygiene among family members. Methodology: Pre-experimental, one group pre-test post-test design was adopted for this study.60 family members were selected from Balod by using simple random sampling method for this study. A pretest was conducted by using structured knowledge questionnaire and check list for practice to assess the effectiveness of STP on knowledge and practice regarding food hygiene among family members. Result: Pre-test practice mean was13.5, mean percentage was 67.5% and standard deviation was 4.72 After the teaching programme mean was 17.84, mean percentage was 89.2%, The standard deviation was 2.57. the paired t-test value is 12.29, (df 59) was greater than table value 2.00 at 0.05 level of significance which proves the effectiveness of structured teaching programme.***

Keywords: effectiveness, structured teaching program, food hygiene, family members

1. Introduction

Food consists of edible materials such as meat, bread and vegetables; it may be raw like fresh fruit, or cooked, processed or semi-processed. Food is a nutritious substance eaten by us to maintain our vital life processes. It is a fundamental need, a basic right and a prerequisite to good health.

It is a good culture medium and a potential carrier of infection. Cleanliness and care should be maintained in handling, production and distribution of all types of food. Food poisoning has been recognized as diseases of man since as early as Hippocrates. Discovery of techniques for killing bacteria using heat and micro biological studies by scientists such as Louis Pasteur contributed to the modern sanitation standards.

A recent study by the WHO investigated 31 global hazards which caused 600 million foodborne illnesses, 420,000 deaths and 33 million Disability Adjusted Life Years (DALYs) in 2010. The most frequent causes of foodborne illness were diarrhoeal disease agents, particularly norovirus and *Campylobacter spp*. In the same year, foodborne diarrhoeal disease agents caused 230,000 deaths, particularly non-typhoidal *Salmonella enterica* and 18 million DALYs were attributed to foodborne diarrhoeal disease agents.

Need for the study

Food borne illness is a major public health problem in the United States and globally. Both the developed and developing countries suffer the consequences of food borne illness, but to varying degrees. Recent U.S. estimates indicate that some 76 million illnesses and 5,000 deaths are attributed annually to food borne illness. Among all illnesses attributed to food borne causes, 30% are caused by bacteria, 3% by parasites, and 67% by viruses.

Henry O. Addo did his study on Unsafe food poses global health threats, endangering everyone. Infants, young children, pregnant women, the elderly and those with an underlying illness are particularly vulnerable. Food borne and waterborne diseases kill an estimated 2 million people annually, including many children and particularly in developing countries

Problem Statement

A study to assess the effectiveness of structured teaching programme on knowledge and practice regarding food hygiene among family members at selected rural area in sibdi,Balod dist. (C.G.)

Objective

- To assess the pre-test and post-test knowledge and practice of food hygiene among family members.
- To evaluate the effectiveness of structure teaching programme regarding food hygiene among family members.
- To determine correlation between level of knowledge and practice regarding food hygiene among family members.
- To find out the association between knowledge and practice score with selected socio demographic variables.

Hypothesis

H01- there will be no significant difference between pre- test and post-test knowledge and practice score regarding food hygiene among family members.

H1- there will be significant difference between pre-test and post-test knowledge and practice score regarding food hygiene among family members.

H02-There will be no correlation between level of knowledge and practice regarding hygiene among family members.

H2- there will be significant association between the pre-test knowledge and scores with selected socio demographic variables.

2. Conceptual Framework:

The conceptual framework of the present study is based on the modified Imogene M. kings attainment theory the human process of interaction formed on the basis of designing a model of transaction which depicts to help individual and group attain goal, the goal of investigator is to improve the knowledge regarding food hygiene among family members in selected rural area in Sibdi, Balod.

3. Methodology

- **Research design:** Pre experimental, one group pre-test post-test design.
- **Target Population-** In the present study the target population were family members in rural area.
- **Accessible population:** In this study, the accessible population was family members under 18-50 yrs
- **Setting of the study:** The study was conducted in Rural area village sibdi dist. Balod (C.G)
- **Sample**: The sample of the present study comprised of 60 sample in rural area village sibdi dist. Balod (C.G)
- **Sampling technique**: In this study non-probability sampling technique, Convenience Sampling technique was used to select the sample.

Variables:

Variables are measurable characteristics that identify each case or distinguish one case from another they may represent a condition feature attribute or behavior that can be observe or controlled. An attribute of person or object that that variable is used in this study they are; Independent variable and Dependent variable

Independent variable:

In the present study the independent variable is **structured teaching program on food hygiene** which has been developed by the researcher

Dependent variable:

In the present study the dependent variable is **knowledge & practice** through structured teaching program which will be influenced by administration of structured teaching program regarding food hygiene, which is the independent variable.

Sampling criteria:

The samples were selected with the following predetermined selection criteria.

Inclusive criteria-

- Those Who are under 18-50 yrs age
- Male and female both will be included.
- Those who can read Hindi

E**xclusion criteria-**

- Illiterate
- Who are not present during data collection

Description of the tool:

It comprised of 3 parts: -

Section A – First section includes socio- demographic variables

Section B- This section includes 22 self-structured questions of knowledge regarding food hygiene.

Section C- This section includes 20 checklists of practice widely used to measure practice of food hygiene.

Criterion Measures

Criteria measures used in this study are as follows.

1) There was total 22 questions to evaluate the knowledge regarding food hygiene among family members. Each correct answer gives 1 score and incorrect answer gives 0. The maximum score is 22 and the minimum score is 0.

Score was categorized in 3 **levels-**

- Adequate knowledge- (15-22 score)
- Moderate knowledge- (8-14 score)
- Inadequate knowledge- (0-7 score)
- There was total 20 questions to evaluate the practice regarding food hygiene among family members. Each correct answer gives 1 score.
- Adequate practice- (15-22 score)
- Moderate practice - (8-14 score)
- Inadequate practice- (0-7 score)

4. Data analysis and interpretation

Analysis of pre-test and post-test level of knowledge score regarding food hygiene by using mean, mean percentage, standard deviation.

S.NO	Knowledge Score	Total Score	Total Mean	Total Mean percentage	SD
1.	Pre-Test	768	12.8	58.18%	+ 3.36
2.	Post Test	1071	17.85	81.13%	+ 2.55

Analysis of pre and post-test level of practice scores regarding food hygiene by using mean, mean percentage, standard deviation.

S.NO	Practice Score	Total Score	Total Mean	Total Mean percentage	SD
1.	Pre-Test	810	13.5	67.5%	+ 4.72
2.	Post Test	1070	17.84	89.2%	+ 2.57

Using paired t-test for assessing significant diffrence between pre-test and post - test knowledge, N (60)

Table 4.15: Reveals that, the 't' value (12.29) is greater than the table value (2.00),

Knowledge Score	Mean	SD	D.F.	t-Value	Table t-value	Inference at 0.05
Pre-Test	12.8	±3.36	59	12.29	2.00	highly significance
Post-Test	17.85	±2.55				

hence research hypothesis was accepted. The calculated' value is greater than the table value (t59=2.00; p<0.05) and it shows that there is a significant difference between the two mean knowledge score. The mean pre-test score is 12.8 and post test score is 17.85. On the basis of this, the research hypothesis H1 was accepted. This indicates that structured teaching programme is effective in increasing the knowledge score of family members regarding food hygiene.

Using paired t- test for assessing significant diffrence between pre-test and post - test practice, N (60)

Practice Score	Mean	SD	D.F.	t-value	Table t-value	Inference at 0.05
Pre-Test	13.5	±4.72	59	9.02	2.00	significance
Post-Test	17.84	±2.57				

Table 4.16: Reveals that, the 't' value (9.02) is greater than the table value (2.00), hence research hypothesis was accepted. The calculated' value is greater than the table value (t59=2.00; p<0.05) and it shows that there is a significant difference between the two mean practice score. The mean pre-test score is 13.5 and post test score is 17.84. On the basis of this, the research hypothesis H1 was accepted. This indicates that structured teaching programme is effective in increasing the practice score of family members regarding food hygiene.

5. Major Findings of the Study

Demographic Characteristics-

- **Distribution of subject according to age-** distribution according to age shows the maximum no. of subjects 21 (35%) were in age group of 18-2 Yr of, 18 (30%) were 25-34Yr of age, 5(8%) were 34-42 Yr of age and 16 (27%) were 42-50Yr of age.
- **Distribution of subject according to gender-** the distribution of socio-demographic Variable related to gender in which 7(12%) family members were male and 53 (88%) were female.
- **Distribution of subject according to education-** the distribution of sociodemographic Variable related to education in which 14(24%) were of primary educated 16(27%) were secondaery educated, 20(33%) belong graduation and 10(16%) were belong post graduation category.
- **Distribution of subject according to marrital status - shows** that 37 (62%) the majority of subjects marrital status were married, 19 (32%) were unmarried, 4 (6%) were widow and 0(0%) were divorcee.
- **Distribution of subject according to religion** represents the majority of subjects religion 60(100%) were hindu, 0(0%) were muslim, christian and others.
- **Distribution of subject according to family-** represents the majority of type of family 43(72%) were joint family and 17(28%) were nuclear family.
- **Distribution of subject according to occupation-**.makes known the distribution of socio Demographic variable related to occupation of family members out of which 5(8%) were Govt. employee ,8(14%) were . Private employee ,34(56%) were farmer and 13(22%) were unemployee.
- **Distribution of subject according to income -** represents the majority of family member's monthly income 24(40%) were <10,000, 15(25%) were 10-1000-15,000 , 11(18%) were 15,000-20,000 and 10(17%) were >20,000.
- **Distribution of subject according to** habit of addiction- the distribution of sample based on any habit of addiction in which 2(4%) had taken alcohal , 6(10%) had addiction of Gudakhu (tobacco), 1(1%) had addiction of Smoking and 51(85%) had not habit of addiction.
- **Distribution of subject according to** source of information- table 4.10 represents the majority of family members 34(57%) had got source of information from family, 17 (28%) had got information from media, 9(15%) had got information from peer group and least 0(0%) from others.

Analysis of pre and post-test level of knowledge scores regarding food hygiene among family members –

The knowledge scores regarding food hygiene among family members total Mean score was 768 i.e. mean 12.8, mean percentage was 58.18% and standard deviation was 3.36 in pre-test before teaching programme. After the teaching programme it was 1071 i.e. total score mean was 17.85, mean percentage was 81.13%, . The standard deviation was 2.55. the above result signifies that there has been a consistent increase in post-test when compared to pre-test.

the practice scores regarding food hygiene among family members total Mean score was 810 i.e. mean 13.5, mean percentage was 67.5% and standard deviation was 3.36 in pre-test before teaching programme. After the teaching programme it was 1070 i.e. total score mean was 17.84, mean percentage was 89.2%, The standard deviation was 2.55. the above result signifies that there has been a consistent increase in post-test when compared to pre-test.

Criteria wise analysis of pre test and post test knowledge score & practice score

the pre test level of knowledge regarding food hygiene according to which 2(3.34%) family members had inadequate knowledge, and 32(53.34%) were with moderately adequate knowledge and 26(43.34) had adequate knowledge was need to improvement in pre-test as post-test score majority 54 (90%) having adequate knowledge, 6(10%) having moderately adequate knowledge and 0%(0) having inadequate knowledge.

Pre-test level of practice regarding food hygiene according to which 10(16.67%) family members had inadequate practice, and 18(30%) were with moderately adequate practice and 32(53.34) had adequate practice as post-test score 52 (86.67%) having adequate practice, 6(10%) having moderately adequate practice and 0%(0) having inadequate practice.

t-Test distribution of data related to effectiveness of structured teaching programme on knowledge regarding food hygiene.

there was highly significance difference between pre-test and post-test knowledge score of structured teaching programme as calculated 't' value (12.29) is greater than the table value (2.00) at 0.05 level of significance, (t 59=2.00; p<0.05).

There was highly significance difference between pre-test and post-test practice score of structured teaching programme as calculated 't' value (9.02) is greater than the table value (2.00) at 0.05 level of significance, (t 59=2.00; p<0.05).

Chi square analysis for association between the pre-test knowledge score of structured teaching programme regarding food hygiene with selected socio-demographic variables.

1) There is no significant association between age and knowledge as the calculated chi square value is 10.45 (DF 6) is less than table value 12.59 at 0.05 level of significance.
2) There is no significant association between Gender and knowledge as the calculated chi square value is 3.07 (DF 2) is less than table value 5.99 at 0.05 level of significance.
3) There is no significant association between education and knowledge as the calculated chi square value is **11.38** (DF 6) is less than table value 12.59 at 0.05 level of significance.
4) There is no significant association between marital status and knowledge as the calculated chi square value is 1.93 (DF 6) is less than table value 12.59 at 0.05 level of significance.
5) There is no significant association between family and knowledge as the calculated chi square value is 5.94 (DF 2) is less than table value 5.99 at 0.05 level of significance.
6) There is no significant association between religion and knowledge as the calculated chi square value is 0 (DF 6) is less than table value 12.59 at 0.05 level of significance.
7) There is no significant association between Family income and knowledge as the calculated chi square value is 8.83 (DF 6) is less than table value 12.59 at 0.05 level of significance. .
8) There is significant association between occupation and knowledge as the calculated chi square value is 16.43 (DF 6) is greater than table value 12.59 at 0.05 level of significance.
9) There is no significant association between any habit of addiction and knowledge as the calculated chi square value is 24.05 (DF 6) is less than table value 12.59 at 0.05 level of significance.
10) There is significant association between any sources of information and knowledge as the calculated chi square value is 16.43 (DF 6) is greater than table value 12.59 at 0.05 level of significance.

Chi square analysis for association between the pre-test practice score of structured teaching programme regarding food hygiene with selected socio-demographic variables.

1) There is significant association between age and practice as the calculated chi square value is 16.56 (DF 6) is greater than table value 12.59 at 0.05 level of significance.
2) There is no significant association between Gender and practice as the calculated chi square value is 2.02 (DF 2) is less than table value 5.99 at 0.05 level of significance.
3) There is no significant association between education and practice as the calculated chi square value is 3.35 (DF 6) is less than table value 12.59 at 0.05 level of significance.
4) There is no significant association between religion and practice as them calculated chi square value is 0 (DF 6) is less than table value 12.59 at 0.05 level of significance.
5) There is significant association between family and Practice as the calculated chi square value is 75.3 (DF 2) is greater than table value 5.99 at 0.05 level of significance.
6) There is significant association between marital status and practice as the calculated chi square value is 12.76 (DF 6) is greater than table value 12.59 at 0.05 level of significance.
7) There is no significant association between family income and practice as the calculated chi square value is 1.96 (DF 6) is less than table value 12.59 at 0.05 level of significance.
8) There is no significant association between occupation and practice as the calculated chi square value is 6.06 (DF 6) is less than table value 12.59 at 0.05 level of significance.
9) There is significant association between have any habit of addiction and practice as the calculated chi square value is 22.22 (DF 6) is greater than table value 12.59 at 0.05 level of significance.
10) There is significant association between sources of income and practice as the calculated chi square value is 17.34 (DF 6) is greater than table value 12.59 at 0.05 level of significance.

6. Limitation

- The study is limited to family members under 18-50 yrs.
- The study was confined to one group.
- The study period is limited to short duration.
- The sample size is limited to 60 in selected rural area

7. Recommendations

- On the basis of the study that had been conducted, certain recommendations are given for future studies.
- A study can be done to compare the knowledge, and practice of family members on food hygiene in rural and urban areas.
- A study can be done to assess the knowledge, and attitude and practice regarding food hygiene in rural areas.
- Regular health educational programs should be conducted by health professional on food hygiene in rural areas.

8. Conclusion

The primary aim of food hygiene is to prevent food poisoning and other food borne illnesses. The food hygiene is mainly categorized into milk hygiene, meat hygiene, egg hygiene and hygiene of fruits and vegetables. In the present study the knowledge and practice regarding food hygiene is inadequate before teaching programme. After teaching programme and assessing the practice of handling food their knowledge and practice was improved.

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