# A Study about the Impact of Nutrition Education and Awareness of Food Safety among Women SHG Members

Gowri, B and Vasantha Devi, K.P. and Sivakumar, Marimuthu

Gandhigram Rural University, Gandhigram, Tamil Nadu, India, Chikkaiah Naicker College, Erode, Tamil Nadu, India

28 April 2010

# A Study about the Impact of Nutrition Education and Awareness of Food Safety among Women SHG Members

**By**

**B.Gowri,**
**Ph.D. Research Scholar,**
**Department of Home Science,**
**Gandhigram Rural University,**
**Gandhigram.**
**Tamil Nadu. India.**

**Dr.K.P.Vasantha Devi,**
**Professor and Head,**
**Department of Home Science,**
**Gandhigram Rural University,**
**Gandhigram.**
**Tamil Nadu. India.**

**and**

**Dr.M.Sivakumar, M.A, M.Phil, PhD,**
**Assistant Professor of Economics,**
**Chikkaiah Naicker College,**
**Erode-638004.**
**Tamil Nadu. India**

# A Study about the Impact of Nutrition Education and Awareness of Food Safety among Women SHG Members

## INTRODUCTION

The food processing industry is one of the largest growing industries in India. India is the world's second largest producer of food next to china. It's also the world's largest producer of cereals and milk second largest producer of rice, wheat, sugar, fruits and vegetables and inland fish and third largest producer of cotton and seventh producer of fish. It shares only 1.5% of world food trade. The Indian food industries sales turnover has crossed $300 billion annually. Owing to market forces such as rising income levels and changing consumer behaviors due to rabid economic growth, It is expected to reach a growth rate of 10% in 2010 and 25% in 2020. The Indian food processing sector classified in to two types that is organized sector, unorganized sector. Foods prepared in unorganized sector is unique in India as these measures food processing units are diverse in size and location, in the absence of quality control measures, poor quality packaging material, improper transportation, use of contaminated water, high turn-over of food handlers, lack of personnel hygiene and non judicious use of colorants and preservatives, these unit pose considerable food safety

hazards( www.foodsafety.com) The popularity of these foods among consumers clearly reflects an urgent need for stringent food safety regulations for these food processing units. These systems not only providing new opportunities for food industry but also putting across challenges to save attractive and delicious food also ensure that food is wholesome and chemically and bacteriological safe for human consumption.(Jyothi Sharma and cheena Gambhir 2009)

## SELF HELP GROUPS (SHGs)

Self Help Groups (SHGs) form the basic constituent unit of the microfinance movement in India. An SHG is a group of a few individuals - usually poor and often women - who pool their savings into a fund from which they can borrow as and when necessary. Such a group is linked with a bank - a rural, co-operative or commercial bank- where they maintain a group account. Over time the bank begins to lend to the group as a unit, without collateral, relying on self-monitoring and peer pressure within the group for repayment of these loans.

A SHG consists of five to twenty persons, usually all from different families. Often a group like this is given a name. Each such group has a leader and a deputy leader, elected by the group members. The members

decide among themselves the amount of deposit they have to make individually to the group account. The starting monthly individual deposit level is usually low - Rs. 10 or Rs. 20 (about 20-40 US cents). For a group of size 10, this translates to Rs. 100 to 200 (about $2 to $ 4) of group savings per month. On the basis of the resolutions adopted and signed by all members of the group the manager of a local rural or commercial bank opens a savings bank account. The savings are collected by a certain date (often the 10$^{th}$ of the month) from individual members and deposited in the bank account.

Joining an existing SHG is often a costly affair for an aspiring villager. In order to maintain parity among the members a new member has to join by depositing the total accumulated individual savings and interest of the group. Besides the new member has to be accepted by every member of the existing group. Thus it is often easier for a person not affiliated with an SHG to start a new SHG than joining a pre-existing one.

Loans are then given out to individual members from out of these funds upon application and unanimous resolution drawn at a group meeting. The bank permits withdrawal from the group account on the basis of such resolutions. Such loans, fully funded out of the savings generated by the group members themselves, are called "inter-loans". The repayment periods

of loans are usually short, 3-6 months. After regular loan issuance and repayment for six months, the bank considers making a bank loan to the SHG. The maximum loan amount is a multiple (usually 4:1) of the total funds in the group account. This limit is also reached gradually starting from a lower (2:1 or 1:1) figure. Thus a 10 member SHG with individual monthly deposit level of Rs. 20, completing a six month successful "inter-loaning", accumulates total savings of Rs.1200/- (part of which may be lent out to individual members) and is eligible for a maximum bank loan of Rs. 4800/-.

These days the women Self Help Groups (SHG) are implementing a large number of village cottage industries especially food processing industries. These industries are considered as unorganized sector .These informal sector need food safety education .This is true for India because no considerable efforts have been made so for to create awareness amongst the unorganised sector food producers like SHGs. Hence the present study has been designed with the aim to create awareness amongst women who are involved in food processing trade in unorganized sector with regard to various parameters like adopting food safety and hygienic method, food safety laws for food production. So, 150 SHG women in 8 SHGs who are involved in food processing trade in Dindigul District were selected for the study. With this background an attempt was made to study the SHG women

involved in food processing trade this study has been conducted with the following objectives

- To assess the food safety practices followed by the SHG women involved in food processing trade.
- To create awareness about food safety issues, Hazard Analysis Critical Control Point (HACCP) and food safety laws.
- To evaluate the impact of food safety education programmes.

NEED FOR FOOD SAFETY EDUCATION

Nutrition education as an educational measure for inducing desirable behavioral changes for the ultimate improvement in the nutritional status of individuals to learn about the essentials of nutrition for health and to take steps to improve the quality of their diets and thus their well-being.

For the success of nutrition education it is necessary to make it pragmatic, by studying the food habits and modifying according to local availability of food items and dietary pattern.

Nutrition Education Methods

- Lectures and demonstrations
- Workshops

- Films, still pictures and lantern slides
- Posters, charts and exhibitions
- Books, pamphlets, bulletins and newspaper articles and
- Radio and television.

## DATA and METHODOLOGY

Data were collected through interview schedule method where in 150 respondents were selected by random sampling method in Dindigul district .The villages namely Kalikampatti, Gandhigram, Melakottai, Panjampatti, Chettiyapatti, Chinnalapatti were chosen for the study .All the areas are located nearby Gandhigram and Dindigul. A simple structured questionnaire was administered to elicit information from each respondent the following details. Demographic characteristics such as age, profession, education and socio economic status, main food items prepared and packed especially ready to eat food items like jam, pickles, pappads, bakery items, beverages, snacks etc and awareness about food safety laws and hygienic practices followed while preparing food items, difference in labeling of branded food items, awareness about cross contamination, knowledge about food safety laws, knowledge of HACCP were collected. Survey data were collected through personnel interview with the respondents. The respondents were

divided into control (75) as well as experimental group (75).Food safety education such as HACCP, food hazards, keeping quality of food were imparted to experimental groups. After that the impact of that education was assessed by using a questionnaire.

## RESULTS AND DISCUSSION

The respondents were between 18 to 53 years of age and out of 150 respondents all of them are residing in rural areas. The majority of respondents (74%) were had below the level of higher secondary education, only (26%) were educated up to secondary school education. Regarding the group activities forty two percent (42%) of the members concentrated on both seasonal products and (16%) sixteen percent of the group members prepare only regular products. Thus the study confirms that the SHGs were planning activities relates to food products like pickles, Pappad etc..,

Table 1 shows details about respondents activities and details about their product.

**TABLE-1 SPECIFIED ACTIVITIES AND PRODUCT DETAILS BY SHG'S**

| S.No | Name of the Self help group | Place | Activities |
|---|---|---|---|
| 1 | Annaithersa women SHG | Panchampatti | Pickle making, chikki preparation, Masala powder and sweet preparation |
| 2 | Gandhigram Arakatalai | Gandhigram | Pappad making, Masala powder preparation, Honey bottle filling, preparation of Jam &Nutritious health mix |
| 3 | Santhosimatha women SHG | Melakottai | Running catering, pickle making |
| 4 | Rajakaliamman women SHG | Kalikampatty | Preparation of Pickle, pappad |
| 5 | Mari Amman women SHG | Cheetiyapatty | Preparation of Pickle, pappad |
| 6 | Udayam women SHG | Chinnalapatti | Preparation of groundnut chikki, jam and pickle |
| 7 | Amman women SHG | Ambadurai | Flour making, preparation of bakery items |
| 8 | Sakthi women SHG | Pillaiyarnatham | Preparation of Masala powder, Running catering unit |

Trends in preparing locally made food items shown in table 1 reflect that food items prepared in loose. Packing was most popular among respondent. During the discussions with the respondents on the reasons for preparing the locally made food items it appeared that cost and taste are the most important parameters for preparing these items. Issues related to food

safety did not appear to be a major consideration while preparing these food items (Barlay et al., 2003).

**TAB.2. DETAILS OF PRODUCT PREPARED BY RESPONDENTS**

| Product details | Experimental Group | Control Group | Product preparation | Pickles | | Pappads | | Masala powder | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | NO | % | NO | % | NO | % |
| Regular | 4 SHG | 4 SHG | Yes | 7 | 80 | 6 | 60 | 2 | 40 |
| | | | No | 1 | 20 | 2 | 40 | 6 | 60 |
| | Total SHG | | | 8 | 100 | 8 | 100 | 8 | 100 |
| Seasonal | 4 SHG | 4 SHG | yes | 1 | 20 | 1 | 20 | 1 | 20 |
| | | | No | 7 | 80 | 7 | 80 | 7 | 80 |
| | Total SHG | | | 8 | 100 | 8 | 100 | 8 | 100 |

Table 2 shows that the details of products prepared by the selected SHG'S .The activities were concentrated on regular and seasonal. Regarding the product details eighty percent (80%) of the groups were preparing pickles regularly, twenty percent were not producing pickles majority of them (60%) were concentrated on pappad preparation. They are producing different types of masala powder like sambar powder, rasam powder, idli powder etc., making of sweets honey bottle filling, catering services were concentrated by only one group(20%)., all others concentrated on regular activities.

It was also observed that majority of the respondent lack knowledge about food safety and sanitary practices. Table 3 reveals that details about knowledge on food safety and hygienic practices. The majority of them did not know about the elements of safe food (40%). cross contamination (120%) usage of gloves (92%) internal temperature (60%). This report was related to the studies have been conducted on safe food handling knowledge on practices of youth (Bryant and barett, 2000). In this study it is found that the majority of the youth did not know about food borne illness cross contamination, internal temperature and proper thermometer usage and only minimum of persons constantly wash their hands before starting food preparation. Food producer's perceptions and belief are shaped by knowledge which in turn is a product of exposure to information sources and personal effort on obtaining information. Thus effective risk communication and food safety education can be the best way of managing the risk of food safety issues at the consumer end of the food chain (NIN 2006)).

**TAB.3. UNDERSTANDING OF LABELS ON PACKED FOODS N=150**

| Parameter | Experimental group NO=75 | % | Control group NO=75 | % | Total NO=75 | % |
|---|---|---|---|---|---|---|
| Manufacture, Expiry date and cost | 25 | 33 | 12 | 16 | 37 | 49 |
| Brand Name | 10 | 13 | 10 | 13 | 20 | 26 |
| Contents | 15 | 20 | - | - | 15 | 20 |
| Nutritive value | - | - | 15 | 20 | 15 | 20 |
| All of the above | | | Nil | | | |

From the above table it is clear that 49% of the respondent who read label looked for the manufacturing and expiry date, while 26% check the brand name and only 20% looked for other information's like contents, nutritive value, weight etc,. So there is also need for basic science training related to food quality and safety issues at school level to make them understand technical specifications and also medias such as radio, television can also be used effectively for the quality education (Daniel, et al., 2000).

**TAB. 4. AWARENESS OF FOOD SAFETY LAW N=150**

| FOODSAFETY LAWS | EXPERIMENTAL GROUP N=75 | | CONTROL GROUP | | TOTAL | |
|---|---|---|---|---|---|---|
| | NUMBER | % | NUMBER | % | NUMBER | % |
| Food product order | - | - | 2 | 2 | 2 | 2 |
| Prevention of food adulteration Act | 15 | 20 | 10 | 13 | 25 | 33 |
| Bureau of Indian Standards | 7 | 9 | 6 | 8 | 13 | 17 |
| AGMARK | 2O | 27 | 14 | 19 | 58 | 52 |

Table 4 reveals that awareness about food safety laws was found to be very low amongst the respondents that is PFA (33%), FPO (2%), BIS (17%), and AGMARK (46%). Knowledge is associated with current practices which in turn affects willingness to change current practices. According to Bruhn, educational efforts should also be focused on high risk groups as well as those preparing food.

## IMPACT OF NUTRITION EDUCATION

The prevalence of food borne illness begins with the knowledge of where contaminants come from and how they get into food. If the employees in food industry do not know correct food handling procedure the programme will fail ( NFI 2003)).The importance of training employees for

food industry is heightened because of the global nature of our food supply, control of growth, harvest and shipping . Also an error in time/temperature management, cross contamination or personal health and hygiene of food handlers can cost a life among our vulnerable citizens, as we have learned storage, preparation, holding and service procedure are critical in the prevention of food borne illness. Employees come to the job are not knowing these information. They have to be trained (American Meat institute 1996). So taking these aspects in mind food safety education was given to the experimental group members (75%) by using education modules like booklet and leaflet. The impact of education was also assessed Table 5 shows the details about impact of education on knowledge of food safety and sanitary practices.

## TAB.5. KNOWLEDGE ABOUT FOOD SAFETY AND HYGIENIC PRACTICES N=75

| S.No | PARAMETERS | EXPERIMENTAL GROUP | |
|---|---|---|---|
| | | Before one month of education | After one month of education |
| 1 | Elements of safe food<br>a)Hand washing | 13 | 31 |
| | b)Temperature and time | 9 | 14 |
| | C)Heat and cold | 8 | 17 |
| | d)wash, rinse and sanitize | 4 | 13 |
| | e)Unaware | 41 | 0 |
| 2 | Usage of gloves<br>Gloves are needed while preparing<br>Food items<br>a)yes | 15 | 66 |
| 3 | b)No | 60 | 9 |
| | Knowledge about HACCP<br>HACCP means<br>a)Critical control point | 20 | 11 |
| | b)Hazard accumulation control point | 11 | 4 |
| | c)Heat analysis control point | 34 | 5 |
| | D)Hazard analysis critical control point | 10 | 55 |
| 4 | Awareness about cross contamination<br>a)Aware | 10 | 55 |
| | b)Unaware | 65 | 20 |
| 5 | Safe temperature for food items<br>a)potentially hazards food 5’ c (or)below,60’c(or)above | 10 | 46 |
| | b)7.2’c(or) below | - | 10 |
| | c)above 8.2’c | 20 | 10 |
| | d)None of the above | 45 | 9 |
| 6 | Possible source of contamination of foods with micro-organisms<br>a)packaging Materials | 40 | 5 |
| | b)Equipment | 20 | 4 |
| | c)Air | 7 | 8 |
| | d)all of the above | 8 | 58 |
| | Mean ±SD | 450±98 | 450±102 |

From the above table it is clear that the mean and standard Deviation value increases from 450±98 to 450±102 .So the increased values obtained in standard deviation revealed that there was statistically significant difference in the knowledge about food safety and hygienic practices among the respondents with different levels of education

## CONCLUSION

The results of the study show that popularity of processed foods is increasing in suburban and rural areas. Low price, small packs, convenience and tasty foods were reported to be major factors contributing to popularity of processed foods prepared by unorganized sector among people. There is lack of awareness amongst the SHG Women involving in food processing trade. So, educational materials need to emphasize safe food handling practices among the SHG women involved in food processing trade. For food safety education to be effective it must be collaborative effort between food producers, educators and food safety professionals.

## REFERENCES


Bryant.T and Barret.E (2000), "Determining the food safety and hand washing practices", Journal of American Dietetic Association, 100 (Supplement A-68)

Bruhn, C.M. (1997), "Consumer concerns: Motivation to action. Emerging the infectious diseases", 1997, 3,511-515.

Buchanan.R (2000), "FOA/CRSAN Priority research needs", Accessed on September 21, 2000 from http://www.cfsan.fda.gov/~dms/resneeds.html.

Center for food safety and Applied Nutrition (2002), "Hand Washing related research Findings", Accessed on December 13, 2002 from http://www.foodsafety.gov/~dms/fsehandw.html

Daniel.R, Daniel.B, Gilment B, and Noonan.P (2001), " Audils international home food safety Study Report", Audils International, Accessed on Sep 21, 2000 from http//www.audils.com/2000HFS.html

Jyothi Sharma and Cheena Gambhir (2009), "Consumer Awareness about Quality and Safety of Packaged foods in Chandigarh", Indian journal of nutrition and Dietetics, (2009), 46,162

NFI (2003), "National workshop on food safety", Nutrition Foundation of India, New Delhi, 2003.

NIN (2006), "Knowledge, Attitudes, Beliefs and Practices: Study on Food and Drug Safety", National Institute of Nutrition, Hyderabad.