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## FOOD SAFETY OF SELF HELP GROUP FOOD PRODUCTS IN PUDUCHERRY REGION - NO MORE EXCUSES

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### ABSTRACT

In recent years, there have been many serious concerns regarding the food safety of the SHG food products, health and well-being of the consumers which indeed seeks special attention to protect the consumers. Only limited studies have been carried out to understand food safety aspects of the SHG food products. The objectives of this study are to evaluate the level of food safety and hygienic practices among SHG food handlers and also to assess their food safety knowledge. The current study focuses on key food safety factors. Sample of 123 SHG FBO's under Government and Non-government organization covering rural and urban areas of Puducherry region were met to collect the data using questionnaire through interview as well as observational method. From the investigation, it is found that improper food handling process; unhygienic practices among SHG food handlers, soiled food preparation unit, insufficient training and lack of awareness about food safety are prevalent in SHG FBO's. We recommend organization's to conduct well designed training programs, evaluate safety of food products on regular basis and inspect the food preparation units periodically.

**Key words:** Food safety, SHG, practices, food handlers, FBO's and food products.

### INTRODUCTION

Food safety programs have become increasingly necessary due to technological advances in food sectors and also social changes that induce new unhygienic food habits. Global Market, urbanization, industrialization and migration have however introduced new food safety problems (Sudershan *et.al.*, 2009). "When you eat, do so to keep up your strength" is a proverb that emphasis the importance of quality of food which reflects on our health.

In India, it is estimated that every year nearly 4, 00,000 children and others die due to diarrhea, Hepatitis A, enteric fever etc., caused by poor hygienic practices and contaminated drinking water (Aguilera and Stanley, 1999). Here comes the need for food safety and knowledge program for food and agriculture sectors including food industry, food handlers, consumers and any other stake holders involved in this process.

Food industry has various dimensions covering large factory plant for voluminous production, star hotels for royal food and affordable price street foods for common people. Food is handled at various levels by different people. "Self Help Group" (SHG) is one among such providers of food and related item commercially. A

Self Help Group is defined as a "self-governed, peer controlled information, group of people with similar socio-economic background and having a desire to collectively perform common purpose (Emerson, 2011)". SHG is establishing a large number of cottage industries, especially food processing industries. Hence the current study is primarily aimed to evaluate SHG food safety measures, practices and compliance based on key food safety parameters through observational and experimental procedures. Objectives of the study are to: to evaluate the level of food safety and hygienic practices among SHG members and to study the activities, work nature and food safety knowledge of SHG members

### MATERIALS AND METHODS

#### RATIONALE OF THE STUDY

In recent years, there have been many serious concerns regarding the food safety of the SHG food products, health and well-being of the consumers which indeed seeks special attention to protect the consumers. With the recent literature search on this subject, it has been observed that many studies have focused various dimensions of SHG including socio-economic impact,

women and economic empowerment, micro-finance credit systems, benefits of Government schemes to SHG. But only limited studies have been carried out to understand food safety aspects of the SHG food products. This provides ample scope to evaluate the food safety practices of SHG food products through observational procedure initially and subsequently to develop and discuss experimental methods from food samples.

### AREA

For this study, urban and rural areas of Puducherry region were considered. The urban and rural areas were further divided into north and south. SHG groups were classified based on their scheme of formation as government and non- government organization (NGO).

### SOURCES OF DATA

Initially, secondary data on list of Govt. SHGs registered under various bodies like Social welfare department, SJSRY (Swarna Jayanti Shahari Rozgar Yojana) and Project Officers (PRO) were collected. Similarly, list of SHG which are run by NGO's were collected from the training institutes like Indian Bank Self Employment Training Institute (INDSETI) and PKKVK which is another big research institute which provides training and run SHG on their own.

### SAMPLE SIZE

Only partial list were obtained from the available sources. Sample of 123 respondents were met from which data has been collected using questionnaire through interview as well as observational method.

### SAMPLING METHOD

Snow ball method was followed to meet each SHG member and visit their work area for collecting data pertaining to their profiles, activities and key food safety factors.

### METHODS

Both interview schedule and observation method was used to collect data. Through interview, data on Socio-economic, funding procedures and business details were collected. Data pertaining to food safety aspects covering the key factors were collected using checklist by observation method through complete visit to their facility/work area by investigator. Reliability of the study questionnaire has been tested using Cronbach's alpha test and the coefficient value is 0.72. Food items prepared by the SHG are covering under categories like Season foods, Snacks, Sweets, Tiffin and Lunch. Food items were further classified as minimally processed, highly processed and unprocessed.

### RESULTS AND DISCUSSION

From Table 1, it is observed that there is more number of SHG nearly 63 percent registered under Govt. scheme when compared to NGO's with 37 percent. Majority of the SHG members who are in the age group of

40-55 with nearly 52 percent, followed by 33 percent in the age group of 25-40, and about 15 percent in the age group of 55-70. Average age of the SHG member is nearly 44 years.

Nearly 50 percent of the respondents could able to only read and write, followed by 30 percent who have education level up to 10<sup>th</sup> standard. And only 9 percent were uneducated. So, lack of education in SHG members was observed. It is also evident that nearly 70 and 65 percent of the respondents from Govt. and NGO SHG respectively who have not undergone any form of essential industrial training.

On an average, SHG members have nearly 9.5 years of relevant experience. And also, the average number of members in SHG found to be nearly 17 members with varying in the SHG size from minimum of 10 to maximum of 20 members in group. In summary, despite of the good amount of relevant experience and considerable group size, SHG members were lack in the essential education qualification, knowledge and awareness and operating business without undergoing the necessary industrial training programs.

**Table 1: Summary of demographics and personal profiles of SHG members**

Variable	N=123 (%)
Whether Governmental or Non-governmental SHG	
Govt	78 (63.4)
NGO	45 (36.6)
Age Group	
25-40	41 (33.3)
40-55	64 (52)
55-70	18 (14.6)
Age (years)	
N	123
Mean	43.86
Std. Deviation	9.293
Minimum, Maximum	28, 70
Educational Qualification	
Uneducated	11 (8.9)
Can read and write	62 (50.4)
10 std	37 (30.1)
12 std	10 (8.1)
Other degree	3 (2.4)
Have you undergone Training	
Govt. (N=78)	
Yes	24 (30.8)
No	54 (69.2)
NGO (N=45)	
Yes	16 (35.6)
No	29 (64.4)
Years of experience in SHG	
N	123
Mean	9.31
Std. Deviation	5.915

Minimum, Maximum	1, 26
Number of members in SHG	
N	123
Mean	17.18
Std. Deviation	3.346
Minimum, Maximum	10, 20

Table 2 summarizes the Level of food processing and sales of food items from SHG FBO's. According to the activities involved in the various stages of food preparation chain and the mentioned definition SHG food items has been classified as minimally, highly and unprocessed foods. It is observed that nearly 89 percent of food prepared by SHG was highly processed that are ready to eat foods, followed by 9 percent of minimally processed foods and about 2.5 percent of unprocessed foods e.g. Salads. Almost 55 percent of the food items are sold daily, followed by 18 and 17 percent of food products are sold weekly and monthly respectively. Only 3 percent of the foods products are sold seasonally. From the observed data it is very clear that the daily outreach of SHG food products is high in the society, unsafe food might cause severe impact in the day to day life of the consumers and affects their health and wellbeing.

**Table 2: Summary of Level of food processing and sales**

Variable	N=123 (%)
Level of processing	
Minimally Processed	11 (8.9)
Highly Processed	109 (88.6)
Unprocessed	3 (2.4)
Food product sales	
Daily	67 (54.5)
Weekly	22 (17.9)
Monthly	21 (17.1)
Seasonal	4 (3.3)
Daily, Weekly	6 (4.9)
Weekly, Monthly	3 (2.4)

Table 3 summarizes the adherence level of SHG food handlers to the key primary food safety factors and the hygienic practices. Nearly 16.3 percent of SHG food handlers use stain less steel plate for serving food. About 42 percent uses a combination of aluminum, ever silver and iron for cooking, followed by 29 percent uses aluminum and ever silver only. Almost 85 percent uses plastic cover as their packaging materials. Plastics are non-bio-degradable, non-advisable which cause environmental pollution. By serving hot foods in plastic cover food handlers increases the chance of mixing polyethylene chemicals with food items which are very hazards to human health.

Almost 75 percent of push cart street food FBO's fails to maintain the cleanliness at serving area. Nearly 67.5 percent of food handlers fail to maintain the cleanliness at food preparation area. And also it is observed that nearly 43 percent of SHG food handler fails to dispose waste in hygienic manner.

**Table 3: Summary of key food safety factors and hygienic practices**

Key primary factors	N=123 (%)
I) Usage of equipments/Vessels	
Vessels for serving	
paper plate	10 (8.1)
paper plate, ever silver plate	1 (0.8)
paper plate, thermocole plate	1 (0.8)
Stain less steel	20 (16.3)
Thermocole plate	9 (7.3)
Vessels for cooking	
Aluminium	6 (4.9)
Aluminium, ever silver	36 (29.3)
Aluminium, ever silver, iron	52 (42.3)
Aluminium, iron	2 (1.6)
Ever silver	9 (7.3)
Ever silver, iron	6 (4.9)
Iron	10 (8.1)
II) Packaging materials	
Banana Leaf, Plastic Cover	3 (2.4)
Plastic Cover	105 (85.4)
Plastic Cover, Glass	2 (1.6)
Plastic Cover, Thermocole Box	3 (2.4)
Thermocol Box	4 (3.3)
III) Cleanliness	
Absence at serving area (Push cart)	15 (75)
Absence at food preparation area	83 (67.5)
Absence in Vessels	78 (63.4)
IV) Absence of Waste disposal bin	53 (43.1)
V) Pest control	
Presence of insects at facility	105 (85.4)
Usage of mosquito coil at food preparation area	66 (53.7)
Presence of street dogs/pigs	101 (82.1)
VI) Water supply	
Water facility for cooking - water storage	13 (10.6)
Usage of corporation water	106 (86.2)
Usage of mineral water	17 (13.8)
VII) Hand washing facility and toilets	
Absence of Drinking water facility for customers	16 (13)
Absence of Water facility for Hand wash	21 (17.1)
VIII) Cooking oil - usage	
Sunflower oil	64 (52)
Groundnut oil	14 (11.4)
Palm oil	45 (36.6)
Re-usage of oil	72 (58.5)
IX) Personal hygiene	
Absence of hand Gloves usage	118 (95.9)
Consuming/usage of betel leaves/tobacco products	5 (4.1)

About 85 percent of SHG food preparation unit has surrounded by insects like mosquito, house fly etc. In addition to that street dogs and pigs were also present around the shop/working/serving area in majority of the SHG covered.

Nearly 54 percent of SHG FBO's use mosquito coils to control mosquito. And about 86 percent of SHG use corporation water for cooking and drinking purpose. Nearly 13 percent of SHG shops have no sufficient and hygienic drinking water and badly 17 percent of SHG shops have no water facility for hand washing.

Nearly 52 percent of SHG involved in food industry use sunflower oil as their cooking medium. And notably 58.5 percent reuses the oil. Almost 96 percent of the SHG food handlers are not using hand gloves while cooking. And nearly 4 percent of SHG food handlers chew tobacco leaf while cooking.

In summary, it is evident from the above data that inadequate food handling and hygienic practices directly or indirectly puts consumer at high risk.

### **SUMMARY AND CONCLUSIONS**

The present study on food safety practices among SHG food handlers in Puducherry region indicates that food handlers are neither adequately qualified nor properly trained to perform their business to comply with set of standards in terms of hygienic practices of food preparation, handling, serving and storage. Consequently the protection of the consumers from these hazards must be considered one of the essential public health functions of any society, which emphasizes the need for total control of the SHG food products. Since SHG food products have enormous wide spread in nook and corner of streets, commune, municipality in both rural and urban areas of the society because they are locally available, easily affordable and also have very high impact in day to day life of consumers.

From the investigation, it is found that improper food handling process; unhygienic practices among SHG food handlers, filthy food preparation unit, insufficient training and lack of awareness about food safety are prevalent in SHG FBO's. We recommend organization's to conduct well designed training programs, evaluate safety of food products on regular basis and inspect the food preparation units periodically.

It can be concluded that there is an immediate need for the food safety, risk mitigation and disease prevention guidelines or awareness programs such as arranging shows, exhibition and distribution of pamphlets to be enforced in practice to make them understand their social responsibility and also to support them in serving rich content and quality food products to the consumers in near future.

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