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# Food safety related perceptions and practices of mothers – A case study in Hyderabad, India

R.V. Sudershan [a,*], G.M. Subba Rao [b], Pratima Rao [a], M. Vishnu Vardhana Rao [c], Kalpagam Polasa [a]

[a] Food and Drug Toxicology Research Centre, National Institute of Nutrition (NIN), Jamai-Osmania PO, Hyderabad 500 007, AP, India
[b] Extension and Training Division, NIN, Hyderabad, India
[c] Division of Field Studies, NIN, Hyderabad, India

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**Abstract**

Foodborne diseases are an important reason for diarrhoeal deaths among Indian children (<5 years). Since many foodborne illnesses arise from home kitchens, mothers can be the final line of defense. It was attempted to assess perceptions and practices of mothers on food safety. Quantitative data collected from respondents ($n = 90$) using a Knowledge, Attitudes, Beliefs and Practices (KABP) questionnaire, showed that, over 90% wash hands before feeding children, eating, serving or cooking food, but usage of soap is very limited. Over 60% store leftover cooked foods at room temperature as a majority (82%) do not own refrigerators. High incidence of foodborne illnesses was reported in the families (21%) and the community (12%). Though 48% buy packed foods, a majority (78%) do not recognize symbols on food labels. Significant associations ($p < 0.05$) were found between standard of living/literacy and certain food safety practices. Qualitative data obtained from three focus group discussions, reiterated most of the observations made in the survey. Television is the preferred medium to seek information on food safety.


*Keywords:* Mothers; Food safety; KABP study; Focus groups; Qualitative research

## 1. Introduction

Food safety has emerged as an important global issue with international trade and public health implications. In response to the increasing number of foodborne illnesses, Governments all over the world are intensifying their efforts to improve food safety. The global incidence of foodborne illnesses is difficult to estimate but it has been reported that in 2000 alone 2.1 million people died from diarrhoeal diseases. A great proportion of these cases can be attributed to contamination of food and drinking water. The surveillance of foodborne disease outbreaks have been fairly well-established in developed countries but in spite of that only a small percentage of actual cases i.e. less than 10% in industrialized countries are recorded in official statistics. In case of developing countries it could be even less than 1% (WHO, 2006). In India, the surveillance of foodborne diseases has been poor and the official statistics do not accord any special position to foodborne diseases (Health Statistics of India, 1991).

The Centre for Disease Control and Prevention FoodNet surveillance data show that infants and young children are affected most by foodborne illnesses, due in part to their immature immune systems (Scheule, 2004). In India alone, an estimated 400,000 children below five years age die each year due to diarrhoea. Several millions more suffer from multiple episodes of diarrhoea and still others fall ill on account of hepatitis A, enteric fever, intestinal worms and eye and skin infections caused by poor hygiene and unsafe drinking water (UNICEF, 2004). Studies (Bryan, 1988; Scott, 1996; Scott, Bloomfield, & Barlow, 1982) also

* Corresponding author. Tel.: +91 40 27008921x321.
*E-mail address:* vemulasr@yahoo.com (R.V. Sudershan).

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indicate that a significant proportion of foodborne illnesses arises from practices in the home kitchen. The role of food handlers, usually mothers, in ensuring food safety and hygiene for infants and children is well accepted. Home food preparers need to take many precautions to minimize pathogenic contamination of home-prepared foods because they are the final line of defense against foodborne illnesses (Medeiros et al., 2004). Health education in food safety is both possible and cost-effective, but it should be culture specific and should respond to technological, economic and social situations that prevail in a particular society or cultural groups. Identification of educational needs and lacunae in knowledge and perceptions is the first step towards developing educational material (Motarjemi & Moaref, 2000). The present study was an attempt to assess perceptions and practices of mothers of the children under the age of five years on food safety.

## 2. Materials and methods

### 2.1. Study setting and respondents

The study was conducted among the mothers of children (<5 years) residing in the slums of the South Indian city of Hyderabad. Three slums were randomly selected from each of the three natural geographic zones (Old City, New City and Secunderabad) of the City, making the total number of slums nine.

### 2.2. Research methods

Both the quantitative and qualitative research methods were used for data collection. For obtaining the quantitative data, a pre-tested Knowledge, Attitudes, Belief and Practices (KABP) questionnaire consisting 48 closed–ended multiple-choice questions was used. This questionnaire aimed to elicit information on demographic characteristics (age, occupational status, education, number of children, type of family, type of house) of respondents, household assets, location of kitchen, personal hygiene, hygienic practices when handling drinking water, cooked food, fruits and vegetables, non-vegetarian food, milk, child feeding practices, food and water borne diseases, food labels and preferred media for information, education and communication.

For the qualitative data, focus group discussions (FGDs) were conducted with mothers (of children <5 years) between July and August 2005. FGDs are a well-established method of getting participant's understanding of and perspectives on certain issues. They usually constitute a group of 6–8 people, selected for their homogeneity on some factor important to the research, such as age or sex. Discussions are 'focused' on the topic of interest to the researcher. A team consisting of a moderator and notes taker who were trained to conduct focus groups in a standardized way conducted these discussions (Millward, 1995). In preparation for FGDs, a 'theme guide', which listed the themes/topics around which the discussions would focus was evolved from a review of literature, preliminary discussions with nutritionists, food safety experts, epidemiologists and social scientists in the field and from the results of the earlier studies. The broad areas of discussions include:

- Concept of safe food.
- Qualities/indicators of safe food.
- Measures taken to ensure food safety.
- Common adulterants.
- Quality parameters when buying food from outside.
- Effectiveness of government in curbing food adulteration and food poisoning.

### 2.3. Sample size

Quantitative data (using KABP questionnaire) was collected from 90 mothers randomly selected from the nine slums (10 from each slum). Three focus group discussions were conducted with eight mothers in each group. Care was taken not to include those mothers who participated in the KABP questionnaire survey for the FGDs.

### 2.4. Data collection

Quantitative data was collected by administering the KABP questionnaire in the personal interview mode in the residences of the respondents after obtaining informed consent from them. The FGDs were held in the local Anganwadi Centres (Grassroots-level women and child health centres), where the participants were seated in a semi-circle with the moderator in the centre. The FGDs were conducted in Telugu and Hindi (the local languages). The entire discussion was recorded using audio devices such as dictaphone with the permission of the respondents.

### 2.5. Analysis

The data from KABP questionnaires were coded and entered in Microsoft Access 2000 before carrying out statistical analysis viz., frequency distributions, chi-square test and proportion *t*-test using SPSS package (version-14.5). Standard of living index (SLI) of the respondents was calculated by assigning scores to the household assets as per the National Family Health Survey – 1998–99 (NFHS-2, 2000). The respondents were divided into tertiles viz., low, medium and high based on their SLI scores.

The recorded discussions were transcribed on the day after the discussion, using the notes taken by the observer to supplement the tape recordings, especially when more than one person had spoken at the same time. The Telugu/Hindi scripts were translated into English, and each transcript was coded into categories that related to each of the topics in the theme guide. The transcribed/translated scripts were compiled into individual reports by including