

# Infant and young child feeding practices of working and nonworking mothers in urban slums of Davangere city

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## Abstract

**Background:** The World Health Organization (WHO) and UNICEF have developed the Global Strategy for Infant and Young Child Feeding (IYCF), which recognizes appropriate infant feeding practices to be crucial for improving nutrition status and decreasing infant mortality in all countries.

**Objective:** To evaluate infant and feeding practices of working and nonworking mothers in urban slums.

**Materials and Methods:** It is a cross-sectional study conducted among mothers with children in age group 6–23 months in urban slums of Davangere, using a pre-designed, pre-tested, semi-structured questionnaire.

**Result:** Among both working and at-home mothers, majority were in the age group 18–22 years and 62% and 46%, respectively belonged to class V socio economic status according to modified B G Prasad Socio economic classification. Among working mothers, majority (85%) were Hindus and among at-home mothers, majority were Muslims (53%) followed by Hindus (37%). Pre-lacteal feeding was given among 9% of children. Exclusive breast-feeding was carried out by 62% of at-home mothers and 16% of working mothers. Among working mothers with children age 6–23 months 58% were fed the recommended minimum number of times per day and from the appropriate number of food groups (79%). Only 11% were fed according to all three recommended practices. Among at-home mothers 31% were giving minimum acceptable diet.

**Conclusion:** The study highlights the inappropriate IYCF practices prevalent in the community. Especially the minimum adequate indicator is very poor and it shows the inadequacy of minimum dietary diversity combined with minimum meal frequency among the children studied.

**KEY WORDS:** Infant and young child feeding, working mother, urban slums


## Introduction

Breast-feeding is one of the important determinants of child health, development, nutrition, and survival. Studies have shown that breast-feeding within the first hour of birth decreases neonatal deaths by 22%.<sup>[1]</sup> Similarly, exclusive breast-feeding for first 6 months of life prevents morbidity and mortality due to common childhood illnesses such as

diarrhea and pneumonia.<sup>[2]</sup> Evidence is also available that optimal breast-feeding practices prevent under-nutrition as well as overweight and obesity. A recent research has shown that breast-feeding also leads to higher IQ, better educational attainment, and higher earning capacity later in life<sup>[3]</sup> apart from helping to prevent non-communicable diseases.<sup>[4]</sup>

The World Health Organization (WHO) and UNICEF have developed the Global Strategy for Infant and Young Child Feeding (IYCF), which recognizes appropriate infant feeding practices to be crucial for improving nutrition status and decreasing infant mortality in all countries.<sup>[5]</sup>

The WHO offers three recommendations for IYCF practices for children aged 6–23 months: continued breast-feeding or feeding with appropriate calcium-rich foods if not breast-fed; feeding solid or semi-solid food for a minimum number of times per day according to age and breast-feeding status; and including foods from a minimum number of food groups per day according to breast-feeding status.<sup>[6]</sup>

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A woman often plays a dual role, of a homemaker and a breadwinner. Achieving harmony in these two respective roles is nothing less than a battle for her. In addition to working outside the home, they have to perform time-consuming, often arduous domestic chores. And they also have to breast-feed their children. For a working woman to practice exclusive breast-feeding for the first 6 months, and continued breast-feeding for 2 years and beyond, a maternity leave of 6 months or more and appropriate support thereafter are necessary. Also maintaining infant and young child feeding requires adequate leave and appropriate worksite facilities once the woman returns to work.

Now, more women are working outside the home both in formal and informal sector. Difficulties that working women face in practicing breast-feeding are also increasing. Women work in informal settings such as farms, streets, construction sites, and markets as well as in formal sectors such as offices, hospitals, educational institutes, and factories. With this background, an effort was made to assess IYCF practices of working and nonworking/at-home mothers in urban slums of Davangere, Karnataka, India.

## Materials and Methods

It was a community-based cross-sectional study conducted in urban slums of Davangere, which is situated in central part of Karnataka. The population of the city is 4.35 lakhs (Census 2011). Study population included married women of reproductive age with children in age group of 6–23 months residing in slums of Davangere. The study was approved by Institute's ethical committee and an informed verbal consent was taken from the respondents before conducting the interview. The study was conducted for a period of 6 months, that is, April 1, 2014 to September 30, 2014. The sample size was calculated using the following formula:

$$N = Z^2_{\alpha/2} PQ/L^2$$

where  $Z^2_{\alpha/2} = 1.96$ , value of the standard normal variates corresponding to level of significance alpha 5%. NFHS 3 (2005–2006) from Karnataka<sup>[7]</sup> found that 24% of breast-fed children are fed at least the minimum number of times recommended and also consume food from four or more food groups (IYCF indicator),<sup>[6]</sup> so taking 24% as the prevalence ( $P$ ) and 20% as the allowable error ( $L$ ), we calculated a sample size of 317 mothers. Considering 10% drop outs, a total of 348 to 350 mothers decided to participate in the quantitative study that included 175 working and 175 nonworking or at-home mothers.

### Sampling Technique

This cross-sectional study was conducted in the declared slums of Davangere. There are 36 declared/notified slums in Davangere with total population of 63,039. The population of

each slum ranged between 150 and 3500. To represent the different geographical and socio-cultural characteristics, the city was divided into four quadrants using map issued from Davangere City Corporation. The four quadrants were named North East, North West, South East, and South West. The slums were listed according to ward numbers. These wards were rearranged according to quadrants in which they belong. From each quadrant one slum was selected using random number table. So, finally four slums were selected for the study.

The study was conducted for the duration of 6 months from April 1, 2014 to September 30, 2014. The study was conducted in these four geographically selected slums of Davangere. The study population comprised of all the mothers who had children in age group 6–23 months. All selected slums were visited once a month by rotation (by covering 1 slum per week) and interviewed all mothers who met the inclusion criteria (residents of slums, currently working/non-working and having child in the age group 6–23 months), till the sample size was reached. At least three visits were made to include all the mothers who could not be contacted in the first visit. ANM registers and Anganwadi records were used to identify those mothers who were missed during enumeration.

### Data Collection Tools

After taking informed consent, data were collected regarding IYCF practices by interviewing the mothers using pre-designed, pre-tested, and semi-structured questionnaire based on the standard questionnaire on IYCF practices given by the WHO.

For determining the status of IYCF practices 6 core indicators (out of the 8 core indicators and 7 optional indicators as suggested by the WHO) were used. This is a set of simple, valid and reliable indicators to assess IYCF practices amenable to population-level measurement.<sup>[6]</sup> These questions provide the information needed to calculate the indicators of IYCF. As per WHO recommendations, information was collected about the child's diet in the previous 24 h, which included the type of food items and the number of times they had consumed. Food items were categorized in seven types, that is, cereals, legumes and nuts, dairy products, meat products, egg, vitamin A rich fruits and vegetables, and other fruit and vegetables. The questions focused on the following domains:

### Socio–Demographic Characteristics

Name, age, number of living children, religion, type of family, years of formal education, occupation, socio economic status.

### IYCF Practices

Time of initiation of breast-feeding after delivery of baby, whether colostrum given, any pre-lactal feeds given, duration of exclusive breast-feeding, frequency/diversity & diet among children in age group 6–23 months.

*Minimum dietary diversity* was defined as proportion of children 6–23 months of age who receive foods from four or more food groups (The seven food groups used for tabulation

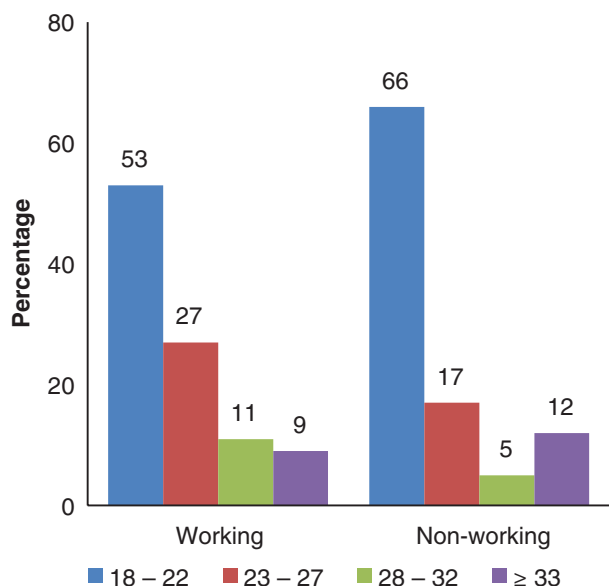


Figure 1: Distribution of mothers according to their age.

were as follows: (1) grains, roots and tubers, (2) legumes and nuts, (3) dairy products, (4) flesh foods, (5) eggs, (6) vit A rich fruits and vegetables, and (7) other fruits and vegetables).

*Minimum meal frequency* was defined as proportion of breast-fed and non-breast-fed children 6-23 months of age who receive solid, semi-solid or soft foods (but not including milk feeds for non-breast-fed children) the minimum number of times or more (Minimum was defined as: 2 times for breast-fed infants 6–8 months, 3 times for breast-fed children 9–23 months, 4 times for non-breast-fed children 6–23 months. “Meals” include both meals and snacks (other than trivial amounts) and frequency is based on caregiver report.

*Minimum acceptable diet* was defined as proportion of children 6-23 months who satisfied both minimum dietary diversity and minimum meal frequency.

**Data Analysis**

Data were analyzed using SPSS v17.0. Percentages were calculated for descriptive statistics.  $\chi^2$  test of significance was employed whenever required.

**Results**

Among both working and at-home mothers, majority were in the age group of 18–22 years [Figure 1]. Among them, 65% were residents of Davangere whose mean duration of living was 8.65 years (range 0–30 years). Among both working and at-home mothers majority (62% and 46%) belonged to class V socio economic status according to modified B G Prasad Socio economic classification updated for March 2014.

Majority of the mothers (94%) had received formal education with majority (49%) had education upto SSLC. 5% of

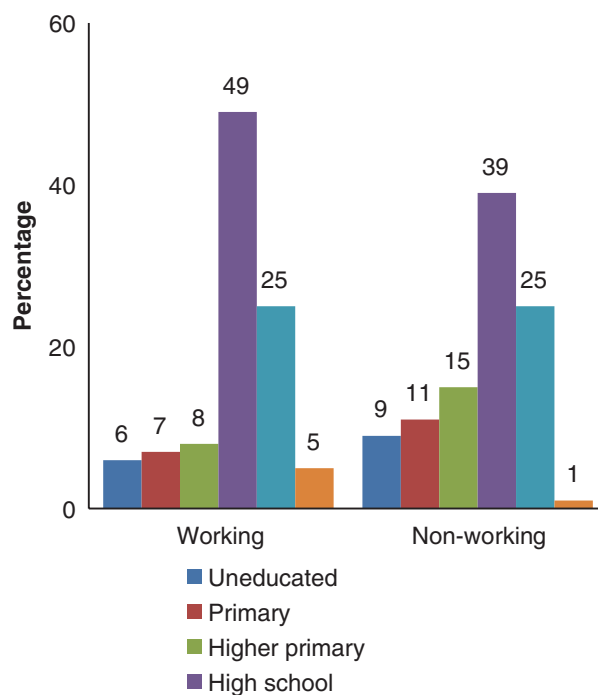


Figure 2: Distribution of mothers according to their educational status.

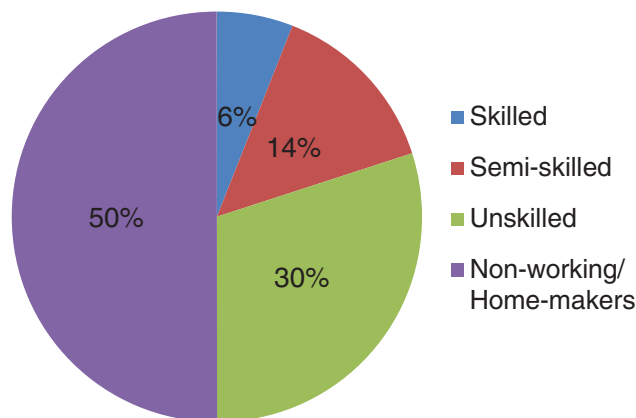


Figure 3: Distribution of mothers according to their occupation.

the mothers had degree education. Only 6% were found to be illiterate. There was not much difference in educational status between working and at-home mothers [Figure 2].

Among working mothers, majority (85%) were Hindus and among at-home mothers, majority were Muslims (53%) followed by Hindus (37%).

Of working mothers, 30% were involved in unskilled labor such as peon, housemaid, followed by semiskilled workers (14%) such as cook and remaining mothers were skilled workers such as teacher/tailor [Figure 3]. Among working mothers, majority (69%) were working 6–8 h/day and 35% of them had to travel more than 3 km for work each day.

Majority of the at-home mothers (48%) were part of joint family followed by 29% belonging to three generation family and 23% mothers were from nuclear families. Among working mothers 36% belonged to nuclear family followed by 34% belonging to joint family.

Pre-lacteal feeding was given among 9% of children. Exclusive breast-feeding was carried out by 62% of at-home mothers and 16% of working mothers. Mean duration of exclusive breast-feeding among working mothers was 2.1 months, among home makers it was 3.6 months.

Among working mothers with children aged 6–23 months, 58% fed the children recommended minimum number of times per day and from the appropriate number of food groups (79%). Only 11% were fed according to all three recommended practices. Among at-home mothers, 31% were giving minimum acceptable diet. Differences in practices of early initiation of breast-feeding, exclusive breast-feeding among children less than 6 months, minimum meal frequency, minimum dietary diversity, and minimum acceptable diet among working and nonworking mothers was found to be statistically significant [Table 1].

## Discussion

In our study, 16% of working mothers gave history of exclusive breast-feeding for 6 months. It was lower compared to similar study carried out among working mothers in Southwestern Nigeria by Beatrice Olubukola Ogunba<sup>[8]</sup> where 24% working mothers exclusively breast-fed for 6 months. In another study carried out among working mothers of Delhi by Kumar *et al.*,<sup>[9]</sup> 38% of them practiced exclusive breast-feeding for 6 months.

Pre-lacteal feeding was given by 6% of working and 11% of nonworking mothers. In a study done in Vancouver by Patricia *et al.*,<sup>[10]</sup> 17% of nonworking mothers gave pre-lacteal food.

Majority of nonworking mothers (73%) practiced adequate minimum meal frequency, whereas adequate minimum dietary diversity was practiced by 70% of working mothers.

Adequate minimum acceptable diet was low among study population (20%), but comparatively high among nonworking mothers (31%). NFHS-3 (2005–2006) data from overall India found that only 44% breast-fed children are fed at least the minimum number of times recommended and only half of them also consume food from three or more food groups. Feeding recommendations are followed even less often for non-breast-feeding children. Overall only 21% of breast-feeding and non-breast-feeding children are fed according to the IYCF recommendations.<sup>[11]</sup> NFHS-3 data from Karnataka have reported that only 42% children aged 6–23 months are fed the recommended minimum times per day and 34% are fed from the appropriate number of food groups. Only 24% are fed according to all three recommended practices.<sup>[7]</sup> A study carried out in urban slums of Delhi<sup>[12]</sup> found that 48.6% of children aged 6–23 months are fed the recommended minimum times per day and 32.6% are fed from the appropriate number of groups. The all three recommended IYCF practices were practiced by only 19.7% of mothers of children aged 6–23 months.

## Conclusion

The study highlights that inappropriate IYCF practices are still very much prevalent in the community among both working and nonworking mothers. Especially the minimum adequate diet indicator is very poor among working mothers. Lack of sustained support and motivation of mothers, particularly working mothers, are major contributors to the prevailing situation.

## Recommendation

Emphasis should be given to IYCF education program during all contacts with eligible mothers. The interactions between health care providers and the nursing mothers should be more frequent to ensure sustained correct infant and child care practices.

**Table 1:** Status of IYCF practices among working and nonworking/at-home mothers of children in the age group 6–23 months

IYCF indicator N = 350	Status	Working mother No. (%)	Nonworking No. (%)	$\chi^2$ , (df), p-value
Exclusive breast-feeding for 6 months	Yes	28 (16)	108 (62)	75.05, (1) < 0.0001
Pre-lacteal feeding	Given	11 (6)	19 (11)	1.79, (1) > 0.05
Continuing breast-feeding	Yes	58 (66)	66 (100)	25.81, (1) < 0.0001
Minimum meal frequency	Adequate	69 (58)	95 (73)	5.59, (1) < 0.05
Minimum dietary diversity	Adequate	84 (70)	63 (48)	11.5, (1) < 0.001
Minimum acceptable diet	Adequate	13 (11)	41 (31)	14.34, (1) < 0.001

$\chi^2$ , Chi square; df, degree of freedom; p value <0.05, statistically significant.

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