

Nutritional Status and Infant Feeding Practices Adopted by Working Women in Jodhpur City

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Abstract: A survey was conducted on 200 working women from urban area in Jodhpur, mainly to assess their health and nutritional status. Majority of the women reported that working outside home was mainly to improve their living standard. Thirty seven women were from well-to-do families, 52 from Middle Income Group (MIG) and 111 were from Low Income Group (LIG). A large family size and low literacy were found associated with LIG when chi-square test was applied. A significantly low percentage (P) of women were found discarding colostrums in well-to-do group (16.1%) as compared to MIG (56.1%) and LIG (59.3%). Delayed supplementation beyond 1 year was observed for LIG (39.8%), as compared to MIG (12.1%) and well-to-do (6.5%) families. Similarly, longer duration of breast feeding was seen in women of LIG. Well-to-do women opted for commercial food (55.0%) and had better awareness of supplemental food for infants, while the rest opted for traditional food for supplementation. A significantly higher percentage (30.5%) of malnutrition (BMI<18.5) was seen in LIG (P<0.05) as compared to women of other two categories. A lower percentage (20.0%) of obesity was seen in women of LIG. Hypertension was quite low in all the groups. The working women contributed to the family income for improving the living standard, but the nutritional status, infant feeding practices and supplementary feeding differed significantly between the three categories.

Key words: Working women, nutritional status, breast feeding, supplementation, deficiency signs.

Over the last few decades, socio-economic and other constraints in the developing countries have compelled the urban and rural women to seek employment in non-traditional occupations outside their home. In India, the working women constitute about 12% of the total female population in the country and the number is increasing every year (Veena and Vishweshwar Rao, 1987). The gainful employment outside home results in increased purchasing power, greater availability of food and consequent improvement in nutritional status of the

family, including that of the working women (Prema, 1984; Devidas and Mangalam, 1970; Singh *et al.*, 1997).

The dietary requirements, like calories and proteins, for working women are more compared with non-working women. Women working outside homes did not reveal any adverse effect on health, nutritional status or reproductive performance. Income generated by the employed women might have long term benefits like greater financial security, better standard of living and better education for children. Studies from other parts of the

country revealed that the combined income of husband and wife was essentially similar to the earning of husband in the families where women did not work outside the home (Gopalan and Kaur, 1989). Child care was perceived as a major problem during the first few years of life. There were no significant differences in the family pattern, reproductive and lactational performances or contraceptive use between women working outside home and those who were housewives (Timmayamma *et al.*, 1983; Gopalan and Kaur, 1989). Percentage of expenditure on food was shown to be higher in the case of families with working women. Studies also indicated a positive correlation between mother's income and energy intakes. Practice of early weaning was also noted among the children of working women. Mean family size was smaller in well-settled women (Sharma, 1989; Vijayalaxmi, 1991). In some studies working women and housewives were shown to have comparable nutritional status, haemoglobin level, clinical deficiency signs during pregnancy and lactation or during non-pregnant and non-lactating periods (Anon., 1985, 1988). However, such information was lacking from the desert part of Rajasthan. Hence, a study was carried out to assess the nutritional status and morbidity pattern of working women in Jodhpur city and breast feeding, supplementation and fertility pattern of working women from Jodhpur city.

Materials and Methods

For the study women, residents of Jodhpur city, working in various state/central government offices or private departments, formed the target population. Based on their occupation and income, a total of 200

working women was selected proportionately from various departments. These women were classified into three categories: (i) well-to-do group; (ii) middle income group (MIG); and (iii) low income group (LIG). The category I included principals, associate professors, translators, office assistants, nurses and whose earnings were more than Rs. 3,500 per month, category II included clerks, teachers, technicians, etc., and whose income was between Rs. 2,000 and 3,500 per month, and category III included laborers, ward women, daily wagers, etc., whose income was below Rs. 2,000 per month.

A total of 200 working women i.e., 37 from category I, 52 from category II and 111 from category III, were covered and analyzed.

Under clinical examinations, the nutritional deficiency signs like vitamin A, B-complex, vitamin C, anaemia, thyroid enlargement, as well as blood pressure (BP) and pulse rate were recorded. Anthropometric measurements like height and weight of selected women was taken following the standard technique of ICMR, and with the help of Anthropometric Rod and SECA balance. The quartlet index (weight, kg., height m²) was utilized to categorize women according to their weight status as follows:

Weight/Height	Weight status
<18.5	Malnourished
18.5 to 25.0	Normal
25.0 to 30.0	Grade I obese
30.0 to 40.0	Grade II obese
>400	Grade III obese

Information on some fertility parameters like age at menarche, regularity of menstrual cycle, number of children, post-partum amenorrhoea, family planning practices, etc., was obtained from each selected working woman. Information was also collected on the duration of breast feeding, time and type of initiation of supplement to infants, type of family, family size, age, marital status, educational status, income and occupation of the working women and of their husbands/guardians, duration of their services, and names of organization where they were working. Predesigned and pre-tested schedules were used for data collection. Standard statistical procedures like chi-square and t-test were applied to the data.

Results and Discussion

In Jodhpur district more and more women are seeking employment outside their home due to their socio-economic conditions, growing urbanization and increased industrial development in the area.

Age distribution

About 50% of the women in category I and III, as against 80% in category II, were below 40 years of age (Table 1). The mean ages of women in category I, II and III were 37.9 years, 33.3 years and 39.5 years, respectively. The percentage of married women among the categories ranged between 63.5% in category II to 89.2 in category I.

Income distribution

All women in category III and almost 80% women in category II had their income below Rs. 3,000 per month. The working women of category I had the highest mean

income of Rs. 4,852 per month. Other details are as given in Table 1.

Reasons for working

Majority of women in all the three categories reportedly worked mainly for improvement of the living standard. Better schooling for children and better financial security were mentioned as specific reasons by most respondents. A substantial percentage of women in category I (35.1%) and category II (21.2%) also mentioned getting educated and to pass the time as additional reasons (Table 2).

Discarding the practice of colostrums

A significantly lower percentage (16.1%) of women in category I had discarded colostrums as compared to 56.1% women in category II and 59.3% women in category III. Thus, the lower percentage of women discarding practices of colostrum among the women in category I, ($P < 0.01$) can be associated with higher literacy among them (Table 3).

Introduction of milk after birth

About 50% of the women reported that they introduced breast milk to their newborn babies within 6 hours, while 30% women introduced milk after 24 hours. The practice of introducing milk to newborn was comparable among women of all the three categories (Table 3).

Supplementation

About 65% women in categories I and II were found introducing supplements to their infants within 6 months, as against 12.0% in category III. Similarly, the late supplementation (beyond one year) to infants was less in category I (6.5%) and

Table 1. Analyzed basic data on sampled working women in Jodhpur city

	Category I (n = 37)	Category II (n = 52)	Category III (n = 111)	Pooled
Age Group				
<30	16.2	44.2	11.7	21.0
30-40	37.8	36.6	37.8	27.5
40-50	35.2	9.6	29.7	25.5
>50	10.8	9.6	20.7	16.0
Mean \pm S.D	37.9 \pm 8.23	33.3 \pm 8.35*	39.5 \pm 9.09**	38.7 \pm 8.73
Age at Menarche				
Mean \pm S.D	14.5 \pm 1.57	14.7 \pm 1.37	14.9 \pm 1.7	114.7 \pm 1.61
Women with number of children				
<3	83.8	53.8	26.6 ^{1,2}	47.5
3-5	13.5	19.2	67.6	49.7
>5	0.0	0.0	4.5	2.8
Literacy level				
Illiterate	0.0	1.9	72.9	41.0
Primary	0.0	0.0	18.9	10.5
Middle	16.2	9.2	8.2	10.0
Graduate	83.8	88.4	0.0	38.5
Duration of service				
Mean \pm S.D	13.2 \pm 7.84	10.3 \pm 8.92	16.1 \pm 12.60	14.1 \pm 14.06

* P < 0.05; ** P < 0.001; 1 = P < 0.01; 2 = P < 0.001.

category II (12.1%), as compared to that seen in category III (39.8%). Both these observations suggested that the late supplementation was quite common among the women of category III, who were mostly illiterates and the better awareness persisted among the women of category I and II, who were mostly educated (P < 0.01) (Table 3).

Duration of breast feeding

Some working women (20%) were breast-feeding their children. A lower percentage of women in category III (12.0%) were breast-feeding their children for duration below 12 months, as compared to the women in category I and II (27.5% and 33.3%), respectively. These data (Table 3) suggest that the duration of breast feeding was quite

Table 2. Reasons for working by women in different categories (%)

Reason	Category I	Category II	Category III
Improving living standards	45.9	38.5	63.1
Better schooling of children	2.7	7.6	6.3
Security	5.4	11.5	18.0
Combination of above	10.8	21.2	12.6
Education/pass time	35.1**	21.2**	-

** P < 0.01.

Table 3. Breast feeding and supplementation pattern among working women

Variables	Category I	Category II	Category III
Discarding of colostrums	16.1 ^{2,3}	56.1	59.3
Introduction of milk after birth			
Within 6 hours	46.6	56.3	50.5
After 24 hours	30.0	25.0	30.8
Age of supplementation			
Within 6 months	64.5	65.5	12.0 ^{1,2}
After one year	6.5	12.1	39.8 ^{1,2}
Duration of Breast feeding			
<12 months	27.5	33.3 ¹	12.0 ^{2,3}
>36 months	10.3	6.0	19.4
Reasons for supplementation			
Mothers' milk not sufficient	9.7	15.6	10.6
The child asked for	3.2 ^{2,3}	18.8	26.0
For better growth	29.0	28.1	17.3
To start a habit	3.2	9.4	2.9
Combination of above	9.7	9.4	12.5
Others [#]	45.2	31.6	30.8
Type of food items			
Milk/Rabdi/Rice	-	15.1	3.0
Roti	-	3.0	17.1
Combination of above	22.5	66.7	22.9
Farex/Nestum/Cerelac	54.8	15.2 ¹	1.92,1
Others ^{\$}	22.5	3.0 ¹	55.21,2

^{2,3} - P <0.01; ^{1,2} - P <0.001; ^{1,2} - P <0.001.; ¹ - P<0.05; ^{2,1} - P<0.001.

[#] - Service, Medical advice, Ill-health of the child etc., ^{\$} - *dal pani* (mung bean pulse cooked with plenty of water), *khichadi* (rice cooked with mung bean), *roti churma* (baked wheat flour with butter and sugar) and biscuits.

high among the women of category III (P <0.01) (Table 3).

Type of supplements

The type of supplements provided to infants differed from one category to another. Women in category II and III mostly believed in giving the traditional food items like milk, *rabdi* (pearl millet flour cooked in batter milk), rice, *roti* (backed wheat flour) and their combinations,

as supplements to the infants. Women in category I mostly relied upon commercial foods like Farex, Nestum and Cerelac.

Clinical deficiency signs

None of the women was found suffering from any deficiency of vitamin A, B-complex and vitamin C. However, thyroid enlargement due to iodine deficiency was recorded in 2.5% of the studied population. High blood pressure (145/95 mm/Hg) was

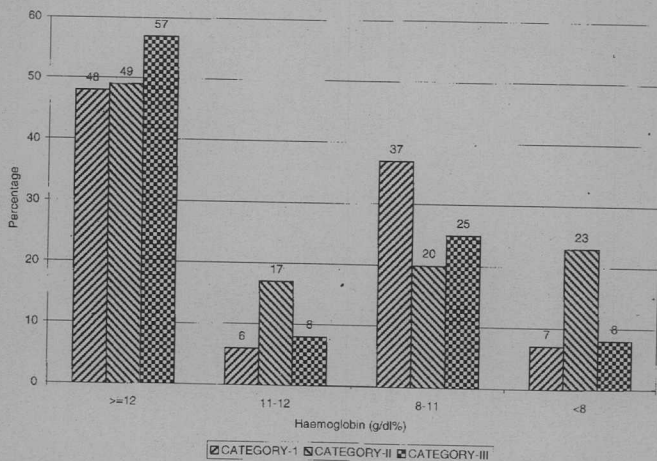


Fig. 1. Haemoglobin status among working women by different categories

also observed among some women (1.5%). Haemoglobin level, which was measured through finger prick method, was comparable in all the categories. The mean level was 9.6 ± 4.82 , and nearly 50% working women were found to be anaemic (Hb<11 g/dl; Fig. 1). As regards body mass index (BMI), a significantly higher percentage

(30.5%) of malnutrition (BMI<18.5) was seen in women of category III as compared to women in the other two categories. Similarly a lower percentage of obesity (26%) was seen in women of category III as compared to those in category I and II (33.0% and 41.0%, respectively; Fig. 2).

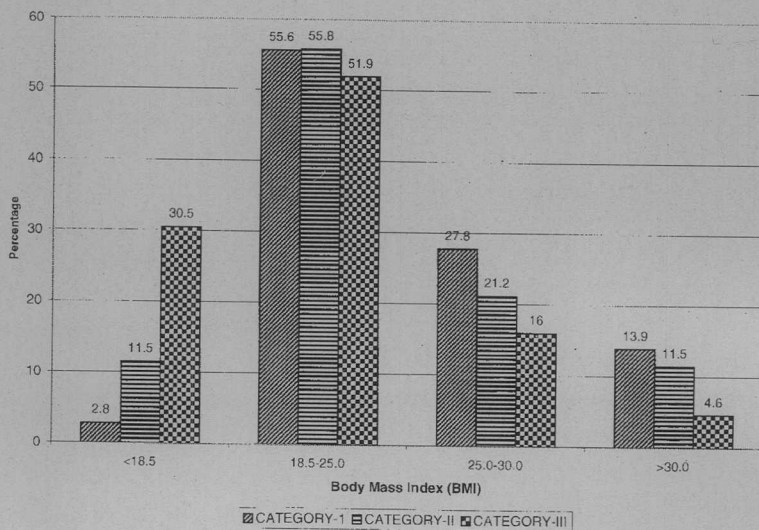


Fig. 2. Distribution of working women by BMI and their category.

The study reveals that the working women did contribute to their household economy and thereby raised the living standard of the family, as well as the standard of education of the children. Working, however, had its impact on the nutritional status and feeding pattern of the women. A separate study is needed to compare these patterns with those in the housewives.

Acknowledgements

The authors are thankful to the Director in-Charge, Desert Medicine Research Centre, Jodhpur, Directors of Central Arid Zone Research Institute (CAZRI), Arid Forest Research Institute (AFRI), PWD and Municipal Corporation, Jodhpur, as well as to Principals of schools for providing help and co-operation during data collection. Thanks are also to the technicians Sunil Colvin, Ramesh Chand Sisodiya and Rohit Prasad Joshi for their support in laboratory investigation.

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