Summary & Conclusions
Chapter-VI

SUMMARY AND CONCLUSION

Lactation is a crucial period during which the mother continues to protect her young infant with almost the same efficiency in feeding as the placenta. In developing countries the intake of all the nutrients have been found inadequate to meet the needs of mother as well as her growing infant.

The present study was planned with the objectives to find out the dietary pattern of the lactating women and to assess the nutritional composition of traditional supplementary food consumed by lactating women, residing in urban areas of Farrukhabad district. General information and obstetric information was collected through interview schedule and total 200 lactating women were taken from 5 maternity hospitals.

Research Methodology

The study were carried out at 5 maternity hospitals, one District Hospital and 4 Maternity home viz. Govt. Hospital (Ram Manohar Lohia City Hospital), Asha Nursing Home, Tiwari Nursery Home, Suraj Nursing Home and O.P. Maheshwari Nursing Home at Farrukhabad district.

For present study lactating women belonging to urban counterpart were selected from each hospital using purposive random sampling technique. 40 mothers were selected, thus, total 200 samples were selected for study.

Clinical examination, anthropometrics measurement and B.M.I. was used and diet survey was conducted by using repeated 24 hours recall method was used and statistical tools used to determine percentage, mean, S.D., student’s t-test etc.
Using purposive random sampling respondents were selected for dietary survey, clinical examination and assessing anthropometric measurement. Dietary survey was carried by using 24 hours recall method.

In present study, it was found that only 10.00 per cent lactating women were illiterate. Most of them (about 94.00 %) were 20-35 year age-group and rest of the respondents were of middle age (35-50 years).

Occupation of lactating women showed that 88.00 per cent were housewives and only 12.00 per cent were engaged in job and other activities for supporting the financial condition of family.

While occupation of husband revealed that 42.50 per cent were engaged in service, 37.50 per cent in business and remaining 0.50 per cent were engaged in other activities.

Per capita monthly income of the family ranged from Rs. 500 to 20,000. Family type showed that 66.00 per cent are in joint family and rest of them were in nuclear type family. Size of family ranged from 0 to 5 members.

42.50 per cent lactating women were belonged OBC category. Maximum 28.00 per cent lactating women were belonged to 20 to 35 years age-group have graduate and above education level. 14.5 per cent OBC lactating women of nuclear family were belonged to 20 to 35 years age group. 19.5 per cent SC lactating women of joint family were also belonged to 20 to 35 years age group.

25.00 per cent OBC women were from joint family system. 10 per cent OBC women were belonged 20 to 35 years age group earned Rs. 1501 to Rs. 2500 family income. Maximum 88.00 per cent lactating women were belonged to Hindu religion. 36.00 per cent women were 15 to 30 days her lactating time.

Average weight 52.10 kg of the lactating women was belonged 20 to 35 years age-group. More standard deviation was also falls in this age group.
152.11 cm mean height of the lactating women were also belonged to 20 to 35 years age-group. 43.50 per cent lactating women have normal body mass index. 62.00 per cent lactating women were not have previous pregnancy.

25.33 per cent protein g/day increase from RDA of lactating house wife while 16.92 per cent fat g/day increased. 8.33 per cent thiamin mg/day was deficient in lactating women from RDA whereas 4.00 per cent vitamin B_{12} was deficient in housewives. 35.71 per cent thiamin (mg/d) was found increased in service class lactating women. 55.50 per cent lactating women were taking oil and fat once a day. Whereas, 63.00 per cent women were taking milk product twice a day. 46.00 per cent lactating women were taking root and tuber once a week.

Maximum calorie intake 2089.82 of the lactating women was found in a family of having income rupees 3500 and above and 68.79 average fat were taken by lactating women of the family having income rupees 3500 and above.

Correlation coefficient 0.4281 was significant at 5 per cent level of significance concluded that according to income, fat was increase of the lactating women. The value of correlation coefficient was negative in the case of protein. Nutrient were taking of the lactating women belong to above 5 member family size concluded that protein nutrient decrease when increase the size of family. Nutrient were found positively correlated with education of the lactating women.

94 per cent lactating women were taking traditional food and out of these 24 per cent women were taking doodth and mewa laddu, 35 per cent lactating mothers were avoided rice, radish, urd dhal and 73 per cent respondents avoided chilli, spices, oil, pickle etc. 65 per cent lactating women avoided cold drink.

Food habit showed that 73.00 per cent were vegetarian and 27.00 per cent were non-vegetarian. One of the reason for this high percent of vegetarian they
avoid to eat non-vege due to foul smell, which comes in milk and the babies dislikes it. General health and obstetric information revealed that 60.00 per cent in parity number 1. 30.00 per cent in parity number 2 and rest of women in parity number 3, 4 and 5.

Clinical sign and symptoms observed revealed that in general appearance, hair, tongue, skins, majority of the women were found to be normal. Only 8.00 per cent respondents were found ill due to complicated delivery. 5.00 per cent women were suffering from pale tongue and 3.00 per cent bleeding gum and 11.00 per cent women have lusterless hair.

Their was no significant symptoms related to specific deficiency like koilonychia, thyroid enlargement and xerosis were found.

Average intake of each and every nutrient was less than recommended dietary allowance except fat that is 60.33 gram per day.

There was 8 types of traditional supplementary food consumed by lactating mothers i.e. badam haluwa, ajowain pani, mewa laddu, panjiri, harira, gond laddu, chuwani and sandha. Majority of women (55.00 %) consumed Sandha Harira and rest of them consumed other items. Gond laddu contained maximum amount of energy (348.18/100 gm) and fat (25.22/100 gm). badam haluwa contained maximum amount of protein (9.6/100 gm). The maximum amount of fiber, calcium and iron was observed 18.50/100 gm, 1630.00/100 gm and 30.21/100 gm respectively in ajowain pani.

46 per cent of respondents were not avoided any type of food items and rest of them avoided different types of food such as cold water, curd, fruits, brinjal, oil pickle, chilly etc.

It can be concluded from the present study that intake of all nutrients except fat was unsatisfactory, due to lack of knowledge about balance diet.
Despite their poor dietary intake, weight and height were not below to standard. Traditional supplementary food was rich in all nutrient but excess amount of fat in the form of ghee was used in its preparation because of tradition belief that edible oil cause cough and ghee provided strength to the body.

**Suggestions and Recommendation**

1. Nutrition is one of the important factors affecting public health. Inadequate nutrition plays a key role in the development of many diseases. Both deficiency and excess of food leads to health disorders. Therefore, healthy nutrition programme should be developed to prevent non-communicable disease and promote health.

2. A health education campaign is needed to encourage all pregnant women. Those contemplating a pregnancy, and breast-feeding mothers to take iodine supplements to increase iodine intake by 100 to 200 μg per day. Requesting the manufacturers of prenatal and lactation vitamin and mineral supplements to include appropriate quantities of iodine in their preparations. This will assist in achieving the desired outcome of preventing the adverse effects of iodine deficiency on the fetus and developing infants.

3. There is little evidence that lactation affects or is likely to affect maternal pharmacokinetics for most drugs. If lactation affects the maternal pharmacokinetics, it is likely that the clinical importance is limited. Any analysis of maternal pharmacokinetic date should be descriptive only. Similar to the evaluation of pharmacokinetics in other special populations such as persons with renal failure, rather than using formal.

4. The option of mother infant fair design should not be considered first line testing but should be considered only after studies done in lactating
women alone and only if significant presence of the drug in breast milk raises concern for significant exposure to the breast-fed infant. It may be difficult to quantify the effects of drugs on milk production given small sample sizes, and the possible confounding influence of external factors. In general, there is a clear pharmacological rationale for those drugs shown to affect milk production (estrogens, dopamine agonists and antagonists).

(5) Potential physiological processes would affect drug disposition in the mother. If one is concerned about major differences in pharmacokinetics, these can be assessed using historical controls. It is not necessary to control, non-lactating volunteers likely to yield much useful isolations.

(6) Urgent action is needed because there is evidence of significant and increasing iodine deficiency in pregnant and lactating women. Similar recommendations have recently been made for European women (Zimmermann and Dalange, 2004). The only exception to this recommendation for iodine supplementation is women with pre-existing thyroid disease who should be individually managed to ensure normal thyroid function during pregnancy.

(7) More iodine is required during pregnancy to ensure maternal thyroid hormone (T₄) production can be maintained at almost double that of the non-pregnant state. The fetus is entirely dependent on (T₄) transferred from the mother during the rest and second trimesters and on iodine transfer fetal thyroid hormone synthesis during the last trimester. Any compromise in the placental transfer of T₄ or iodine to the developing fetus prejudices normal central nervous system organisation and maturation. It is well established that the normal thyroid adult requires on
average a minimum intake of 150 μg of iodine per day to maintain optimal thyroid function. Therefore, to meet the demands of pregnancy where thyroid hormone production is increased by 50 per cent early in the first trimester. The pregnant woman needs to increase iodine intake by at least 75 μg per day.

(8) Consume a variety of nutrient-dense foods (traditional foods) and beverages within and among the basic food groups while choosing foods that limit the intake of saturated and trans fats, cholesterol, added sugars, salt and alcohol.

Allowing for a small amount of direct transfer of iodine to the fetus (15 μg) and increased wastage by the kidney (10 to 15 μg) of iodine during pregnancy, Therefore one can estimate the recommended daily iodine intake during pregnancy to be 250 μg. A similar result has been calculated for the breast-feeding mother, being the recommended daily intake of 150 μg for an adult plus the recommended daily intake for a newborn infant of 90 μg to 100 μg per day. These results are the basis of soon to be published recommendations of an expert technical working party converted by the WHO in Geneva in January, 2005.

The WHO working party has strongly recommended iodine supplementation for all pregnant and lactating women where USI is not established and where median urinary iodine excretion levels in pregnancy are less than 150 μg/I. There are no concerns about the safety of iodine supplements at these dosages but the WHO committee dose not recommend an intake above 500 μg per day as there are no demonstrable benefits to mother and child above 250 μg per day and there is little data on safety at intakes of more than 1000 μg per day. It can be concluded
that pregnant and lactating women should take iodine supplements in doses of between 100 μg and 200 μg per day. The only exceptions to recommendation are women with know thyroid disease or high iodine intake from other sources.

(9) Maintain body weight in a healthy range, balance calories consumed form foods and beverages with calories expended. Prevent gradual weight gain over time, make small decreases in food and beverage calories and increase physical activity.

(10) Engage in regular physical activity (at least 60 to 90 minutes most day of the work) and reduce sedentary activities. Include cardiovascular conditioning, stretching exercises and resistance exercises or calorthenics for muscle strength and endurance.

(11) Consume a sufficient amount of fruits and vegetables while staying within energy needs. Two cups fruits and 2½ cups vegetables per day are recommended for reference 2,000 calorie intake, with higher or lower amounts depending on the calorie level. Choose a variety of fruits and vegetables each day. In particular, select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables and other vegetables) several times a week. Consume 3 or more ounce-equivalents of whole grain products per day, with the rest of recommended grains coming from enriched or whole grain products. In general, at least half the grains should come from whole grains. Consume 3 cups per day of nonfat or low fat milk or equivalent milk products.

(12) Consume less than 10 per cent of calories from saturated fatty acids and less than 300 mg/day of cholesterol, and keep trans fatty acid consumption as low as possible. Keep total fat intake between 20 to 35
per cent of calories, with most fats coming from sources of polyunsaturated and monounsaturated fatty acids, such as fish, nuts, and vegetable oils. When selecting and preparing meat, poultry, dry beans and milk or milk products makes choices that are bean, low fat or fat free. Limit intake of fats and oils high in saturated and/or trans fatty acids and choose products low in such fats and oils.

(13) Choose fiber-rich fruits, vegetables and whole grains other. Chooses and prepare foods and beverages with little added sugars. Reduce dental caries through good oral hygiene and consuming sugar and starch containing foods and beverages less frequently.

(14) Consume less than 2,300 mg (approximately 1 tsp of salt) of sodium per day. Choose and prepare foods with little self and consume potassium rich foods, such as fruit and vegetables.

(15) Alcoholic beverages should not be consumed. Women of child bearing age who may become pregnant, pregnant and lactating women, children and adolescents, individuals taking medications that can interest with alcohol and those with specific medical conditions.

(16) Know how to prepare, handle and store food safely to keep you and your family safe whole grains.

2000 Guidelines

1. Aim for a healthy weight

2. Be physically active each day

3. Let the pyramid guide your food choices

4. Choose a variety of grains daily, especially whole grains.
5. Choose a variety of fruits and vegetables daily

6. Keep foods safe to eat

7. Choose a diet that is low in saturated fat and cholesterol and moderate in total fat.

8. Choose beverage and foods that limit your intake of sugars.

9. Choose and prepare foods with less salt.

(17) A healthy, sensible eating and exercise programme should be your primary focus. The trick is to eat everything in moderation. Try to eat three or six meals a day. In other words, either three larger, fully satisfying meals, or six smaller meals throughout the day. Skipping a meal can result in low blood sugar level, which can cause you to overeat later or at the following meal. If this happens, its easy to eat whatever you can lay your hands on. Fatty foods like pastries and biscuits are not going to do much for the waistline.

(18) It is best to follow a high carbohydrate, low fat diet, as recommended by the food guide pyramid. Breads, cereals and grain products like pasta and rice contain mostly carbohydrate and provide the body with energy and easily burned up by the body. Luckily, carbohydrate foods also make wonderful comfort foods and lead to calming effect on the brain, as the sleep inducing hormone serotonin is released after eating carbohydrates that transmits calmness and mood stability to your brain cells.

Unfortunately, carbohydrate, especially bread, have been labeled fattening. Remember, it is not the carbohydrate that are fattening but what you choose to put on it such as the butter avocado, full fat cheeses, peanut butter, cold meats, cream sauce, etc. In addition, the
high fibre content of unrefined carbohydrates means that they help promote satiety, regulate our digestive process and help control our blood sugar levels – all useful in weight control.

(19) Eat lots of fruits and vegetables. The goal is to eat at least five servings of fruits and vegetables a day. They are a rich source of vitamins and minerals and are therefore termed out “protective” foods as they help the body fight off sickness and disease.

An added benefit is that they are relatively low in calories and also contribute to our daily fibre intake. Fruits are quick and easy to eat as shacks during day, as are vegetables like lettuce and spinach, onions, peas, cabbage, cauliflower, and Brussels sprouts, which could upset your baby’s tummy and cause colic like symptoms.

(20) Its recommended that pregnant and lactating women have a calcium intake of 1200 mg per day. Do this by including at least four to five portions of the following foods in your daily diet.

1. 1 glass skim or two per cent milk

2. 1 fat free or low fat yoghurt (175 ml)

3. 30 g reduced fat cheese

4. ½ cup cheese

5. 80 g sardines

6. ½ cup low fat custard.

As you can see, “low fat” or “fat free” options are recommended to reduce the intake fat.
Fat has more than twice the calories than protein and carbohydrate. Thus by reducing the amount of fat in the diet, you will be cutting down on the largest source of calories.

It is important to cut out unnecessary fats in the diet not only for losing weight but also for general health. The issue of what constitutes fat can often be confusing. The visible fats, like oil, butter and margarine, are easier to control because we know they are fats, so we can be aware to stay away from them. But it is the hidden fats that can be problematic such as fried foods, processed meals, baked goods like pies and pastries, gravies, salad dressings, mayonnaise, nuts and full cream dairy products. Remember to choose fat free or low fat dairy products, eat only small portions of meal, eat more fish and chicken, always. Cut off visible fat and skin from meat or chicken and to prepare food with minimal oil. Rather bake, steam or grill food instead of frying.

Fluid intake is important when you are breast-feeding, since it is needed to replenish the fluids lost through the production of breast milk. You will need at least eight glasses of fluid per day – two to three litres. Coffee and tea should be limited to no more than four cups per day and you should not drink alcohol.