

DIETARY LEVEL OF PREGNANT & LACTATING WOMEN IN BARMER DISTRICT

Dissertation Submitted to



The IIHMR University, Jaipur

For the partial fulfillment for the award of the
degree of Master of Business Administration

(MBA)

In

Pharmaceutical Management

By

Leela Atmaram Leema

Under the Supervision and Guidance of

Dr. Ashok Kumar Peepliwal

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled **Dietary Level of Pregnant & Lactating Women in Barmer District** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



Leela Atmaram Leema

Date: 29th June 2022

CERTIFICATE

This is to certify that Leela Atmaram Leema in partial fulfillment of the requirements for the award of the degree of MBA (Pharmaceutical Management) from the IIHMR University, Jaipur has successfully completed her internship at FARE Labs Pvt. Ltd. during March 22, 2022, to June 19, 2022.



Place: Gurugram

D Mathur

Date: 29th June 2022

Managing Director
Fare Labs Pvt. Ltd.

Certificate from Faculty Guide and School Dean

CERTIFICATE

This is to certify that dissertation titled **Dietary Level of Pregnant & Lactating Women in Barmer District** is a record of the research work undertaken by **Leela Atmaram Leema** in partial fulfillment of the requirements for the award of the degree of MBA (Pharmaceutical Management) from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

Dr. Ashok Kumar Peepliwal
Faculty Guide
IIHMR University, Jaipur

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School Dean
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Date: 6th July 2022

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Abstract

Nutritional rank of women is deliberate individual of the important questions an architectural finish founders in the globe. The food plays a big part in inventors and baby fitness. The present study was attended to determine the Nutritional Status of Pregnant and lactating women in Barmer District through inquiry. The study encompassed of multistage orderly random sampling process in 30 Village of 5 Block of Barmer District in Rajasthan, girls (18-49 age) were picked by random sampling. Socio business-related and mathematical sketch, digestive consumption and civilization practices before birth and removal of liquid ending were determined. Results registered that of the middle age of mothers respondent was 25 yrs while middle age of marriage was establish expected 18yrs . Mean old age of matrimonial event for significant and lactating women four and five age individually. Result shows that skilled are no meaningful distinctiveness between non-Pregnant & non-lactating mothers, Pregnant and Nutritional rank of inventors is deliberate individual of the important questions an architectural finish founders in the globe. The food plays a big part in mothers and baby fitness. The present study was attended to determine the Nutritional Status of Pregnant and lactating women in Barmer District through inquiry. The study encompassed of multistage orderly random sampling process in 30 Village of 5 Block of Barmer District in Rajasthan, girls (18-49 age) were picked by random examination. Socio business-related and mathematical sketch, digestive consumption and civilization practices before birth and removal of liquid ending were determined. Results registered that of the middle age of mothers accused was 25 age while middle age of merger was establish expected 18 age. Mean old age of matrimonial event for significant and lactating daughters four and five age individually. Result shows that skilled are no meaningful distinctiveness between non-Pregnant & non-lactating mothers, Pregnant and lactating mothers in strength, protein, iron, metallic mineral and source of nourishment A and C consumption. The best average strength consumption (1481 Kilocalorie) is between the significant pregnant women 0-5 months following by lactating women bearing 6-11 months' teenager. Similarly, calcium and source of nourishment-A consumption is extreme between beginning two trimesters of gestation than in equate to later stage of gestation. The classification of strength, protein, metallic mineral, iron looks usually delivered in as much as Calcium, Vitamin A, Vitamin C looks distorted towards lower consumption. Comparison of real food consumption accompanying ICMR standard spells that calorie use of meaningful and lactating mothers is nearly half equate to the ICMR advice. lactating mothers in strength, protein, iron, metallic mineral and source of nourishment A and C consumption.

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“This wouldn't have been possible without remembering people supporting and motivating. There is obviously no exception.”

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LIST OF ABBREVIATIONS

AWC: Aanganwadi Center BMI: Body Mass Index

CIFF: Children Investment Fund Foundation DD: Dietary Diversity

FF: Food Frequency

GOI: Government of India HH: Household

ICDS: Integrated Child Development Scheme ICMR: Indian Council of Management Research

IIHMR: Institute of Health Management Research LBW: Low Birth Weight

LW/L1: Lactating Women (0-5 Months) LW/L2: Lactating Women (6-11 Months) LW/L3: Lactating Women (12-23 Months)

MOHFW: Ministry of Health and Family Welfare MOWCD: Ministry of Women and Child

Development N1/NPWL: Non Pregnant and Non-Lactating Women NFHS: National Family Health Survey

NNP: National Nutrition Policy

PW/P1: Pregnant Women (0-5 Months) PW/P2: Pregnant Women (6-10 Months) UNICEF United Nations Children's Fund

Summary

This executive summary briefly describes the overall scenario of the report's main findings. According to NFHS 4, 50.3% of pregnant women between the ages of 18 and 45 are anemic in India. In Rajasthan, 46.6% of pregnant women are anemic, which means that two-quarters of pregnant women with anemia are from Rajasthan. Two-thirds of women with anemia in Rajasthan are from the Barmer district, and this rate of anemia reflects the nutritional status of pregnant and lactating women in Barmer. In the current survey, a total of 720 households from 30 villages in 5 blocks of the Barmer district were recorded using a multi-stage sampling procedure. This study included pregnant, lactating, non-pregnant and non-lactating women. From each of these categories, four adjacent HHs were covered by randomly selecting HHs from each village. Therefore, a total of 24 households were recorded in each village and 720 households in the Barmer district. The overall goal of this study is to determine what foods pregnant and lactating women eat during their period and to analyze their micronutrient intake. The study also describes the socio-economic status and cultural practices of pregnant and lactating respondents. This survey collected data on the socio-economic and demographic characteristics of respondents. The median age of all respondents is 25 and the median marriage age is 18. This reflects the girl's promise to make her reproductive age too early. Therefore, it adversely affects their nutritional status. More than two-thirds (70%) of women are unemployed and only 36.4% of the general population are educated until grade 10. The majority of women (92.9%) belonged to Hinduism and 47.4 belonged to OBC caste. 58.3% of women have tap water and most of the population has electricity. The study analyzed that 49.6% of women use grass / forest / plant pests as fuel for cooking. Of the total population, two-thirds of women are nutritionally conscious. The study also found that half of the population decided which foods to prepare, and only 11.9% of women decided to buy basic necessities from HH. The survey also reveals that more than 80% of the total population owns their own bank air conditioners. Therefore, this is a brief description of the respondent's socio-economic and demographic status scenarios.

As the objective is about what food stuff is eaten by women of Barmer District, so findings stated that there are no significant differences between food stuff eating by pregnant and lactating women and NPNL Women. highest intake of food stuff is followed by lactating women (6-11 months) i.e. 260.0g median intake of cereal/millet and their product and 120ml median intake of milk, 22.5ml median intake of oil, 85.0mg median intake of other vegetable, 100.0mg median intake of root and tubers and 20.0g median intake of sugars and study also said that does not eat some food stuff like egg, fruits, green leafy vegetable by each category of women.

Result indicated that there are no significant differences among non-Pregnant & non-lactating women, Pregnant and lactating women in energy, protein, iron, zinc and vitamin A and C intake. The highest average energy intake (1481 Kilocalorie) is among the pregnant women 0-5 months following by lactating women having 6-11 months` child. Similarly, calcium and vitamin-A intake is high among initial two trimesters of pregnancy than in compare to later stage of pregnancy. The distribution of energy, protein, zinc, iron looks normally distributed whereas Calcium, Vitamin A, Vitamin C looks skewed towards lower intake. Comparing actual nutrient intake with ICMR criteria clearly shows that pregnant and lactating women consume almost half the calories recommended by ICMR.

The study also showed that two-thirds of pregnant women first informed her mother-in-law of her pregnancy and the rest to her husband and others. The study also showed that more than 70% of pregnant women and 70% of lactating women received food (Darya, coconut, Khichari, etc.) from the Angan Wadi Center. Most women refrain from many nutritious foods during pregnancy and lactation for no scientific reason due to cultural beliefs. Due to their cultural practices, women consumed very little food inadequate for their good nutrition and the health of their babies. Further analysis also revealed a link between socio-economic fluctuations and ingested and avoided foods. Two-thirds of all women consumed wheat and bajra chapati during breastfeeding, and only a few percent of women consumed jiggery and buttermilk. This is the highest of Islam and OBC casts. And the proportion of foods avoided is highest among women in rural areas.

Major conclusion and recommendations:

The level of dietary energy and protein deficiency is more pronounced, reiterating the fact that it is essentially a "nutrition gap". Intakes of various micronutrients, especially iron, vitamin A, vitamin 12, and zinc, were severely deficient compared to the ICMR guidelines, consistent with inadequate intake of protected foods.

The study also suggests that the main reasons pregnant and lactating women do not eat nutritious foods were lack of nutrient intake and money to buy and dietary taboos increase.

The study also revealed that all women who paripated in the study had some dietary restrictions due to cultural practices. Money was also a constraint, so many nutritious foods were avoided by all women. The study highlights the need to take the necessary steps to increase community participation in various development programs in order to improve women's literacy rates. Nutritional education needs to be strengthened through the Ministry of Health and ICDS to promote changes in awareness

and behavior for better nutritional practices to improve maternal and child nutritional status. The situation in India is needed to demonstrate the effectiveness of ASHA's role in nutritional counseling. ASHA, Aanganwadi Workers, Self Help Groups (SHG) developed this app to raise awareness, guide women's nutrition, and beliefs related to food restrictions without scientific explanation. Eliminate. The National Rural Health Mission (NRHM) envisions that ANM and AWW will work together to provide Village Health and Nutrition Days to provide the necessary health and nutritional care. In this study, the Ministry of Health, ICDS, and NHM coordinated and the main reason for not purchasing nutritious foods to provide more nutritious foods during pregnancy and lactation was lack of funding.

Chapter-1

1. Introduction

1.1 Background

Pregnant and lactating women are one of the most vulnerable populations in terms of nutrition. Various studies in India and elsewhere have shown that in chronically malnourished women, changes in dietary intake during pregnancy and lactation adversely affect the nutritional status of the mother. Over 50% of pregnant women aged 15-49 years in India have anemia, which remains the leading cause of morbidity, mortality and low birth weight in pregnant women. Pregnancy too early, too close, too much, too late affects the nutrition and health of the mother-child duo. Timely contraception is an indirect and effective intervention to prevent malnutrition of mothers and babies. Another important indirect cause of malnutrition remains infection. Undernourishment increases susceptibility to infections. Infections are exacerbated by diet.

The human body undergoes many significant changes during pregnancy. The uterus grows many times, gains weight, changes skin, and often changes breasts during pregnancy. Because of all these changes, women are often most fascinated by the changes that occur in the breast during pregnancy. Pregnancy and lactation are a concern in developing countries as they have a positive impact on the health and nutrition of children.

Proper nutrition is essential not only for the health of the mother, but also for pregnancy and foetus. At every stage of a woman's life, nutrition is the basis of health and optimal energy. Due to the high nutritional demands and the important role of proper nutrition for the fetus and baby, nutrition during pregnancy and lactation deserves special attention. The Government of India has focused on the nutritional status of pregnant and lactating women and has presented several plans to improperly affect them. In India, some studies have shown wrong results.

1.2 Nutritional status of Pregnant & lactating women:

Dietary intake patterns play an essential role in human health. Lack of dietary patterns, especially during pregnancy and lactation, results in lower levels of essential nutrients in Barmer district, with more than 30% of women malnourished and more than 69% suffering from anemia (NFHS 4). Women's physical, psychological, and social well-being. Women who limit their intake of animal foods, fruits and vegetables increase their risk of micronutrient deficiency. Women on low-protein and low-carbohydrate diets may be severely malnourished mothers and are at increased risk of infant mortality

Table1. Anemia % of India, Rajasthan and Barmer

Anemic % of pregnant women age (15-49)years			
Area	India (%)	Rajasthan (%)	Barmer (%)
Urban	45.7	41.4	---
Rural	52.1	48.0	73.2
Total	50.3	46.6	69.5

(Source: NFHS 2015-16 survey findings)

Table 1 reflects anemia rate scenarios for pregnant women aged 15-49 years in India, Rajasthan and Barmer. Table 1 shows that in India, more than 50% of pregnant women aged 15-49 years are anemic, and more than 46% of pregnant women in Rajasthan aged 15-49 years are anemic, with most of the anemia being in Rajasthan. It shows that it reflects the percentage of the state. It explains that the majority of pregnant women's anemia rate lived in Rajasthan. The table also shows that over 69% of poor pregnant women in Rajasthan were found in the Barmer district of Rajasthan. This reflects the crisis in the Barmer district regarding the anemia rate of pregnant women.

The analysis in Table 1 shows that anemia is very high in the Barmer area compared to other areas in Rajasthan, and that anemia is a major contributor to maternal mortality, mortality, and low birth weight.

1.3 Statement of the problem

Women make up half of the world's population and contribute significantly to the functioning of society. Their poor nutritional status has adverse health and socio-economic consequences for society. Potential results include adverse reproductive health effects such as maternal mortality during and after childbirth (Gemedu et al. 2013). Women's nutritional status affects not only women but also families in general, especially infants. For example, the nutritional status of infants and toddlers is closely associated with maternal health before, during and after pregnancy (Smith and Haddad, 2000). However, little attention was paid to the causes of malnutrition in women, as other development agendas were considered more important and therefore prioritized (Loaiza, 1997). Therefore, women's health needs to be improved so that they can lead a productive and healthy life.

According to NFHS 4, more than 69% of women aged 19-45 years in the Barmer area suffer from severe anemia and should not be underestimated. Nutritional interventions for women in the district have little focus on addressing other causes of anemia unrelated to dietary intake, and dietary

availability and micronutrients for pregnant and lactating women. There is also less effort to improve intake.

A poor understanding of the determinants of anemia is one of the challenges in solving the problem of anemia in women in Barmer district. This is due to insufficient research on the issue of anemia in women of childbearing age, especially in the Barmer area. At the Barmer, most empirical studies have focused on women's nutrition. There are few studies on the nutrition of pregnant and lactating women in the Barmer district, examining the factors that influence the nutrition, diet frequency, and diet frequency and energy intake of pregnant and lactating women. No studies have focused on seasonal food intake in pregnant and lactating women. Some of these studies are limited in terms of geographic extent and scope and cannot be effectively used to guide district-level policy interventions.

This study addresses the lack of literature and seeks to provide an understanding of the major determinants of women's food frequency and availability, both occasional and seasonal, and factors that influence food intake in Barmer district. is. This study found that food intake only partially affected nutritional status, and other fundamental decisions that required investigation of female nutritional status and availability and seasonality of food intake during pregnancy and lactation. It is based on the understanding that there are other factors also.

Therefore, this survey addresses the following questions:

1. What is the nutritional status of pregnant and lactating women in Barmer?
2. What is the socio-economic and demographic status of PW / LW and NPNLW in Barmer?
- .3. What is the food intake of PW / LW and NPNLW as usual?

1.4 Objective:

The general purpose of this study is to understand the nutritional status of pregnant and lactating women in the Barmer area.

The specific goals are:

1. Analysis of the socio-economic characteristics of pregnant and lactating women of Barmer, as well as non-pregnant and non-lactating women.
2. Evaluate the cultural practices of pregnant and lactating women.

Chapter 2

2. Literature Review

2.1 Introduction

This chapter reviews the literature on nutritional determinants for pregnant and lactating women. The first section focuses on the theoretical literature on the nutrition of pregnant and lactating women, and the second section of studies conducted in different parts of the world on the nutrition of pregnant and lactating women. Introducing empirical literature. The focus is on nutritional practices, knowledge related to micronutrient deficiency, prevalence of illness due to undernutrition levels, nutritional intake, and cultural factors. Section 3 reviews the literature.

2.2 Theoretical Literature

Swaminathan (1970) discovered that nutrition plays a very important role in maintaining the health of pregnant and lactating mothers and newborns. There is evidence that the majority of mothers in developing countries are malnourished and suffer from malnutrition. There is an urgent need for action to overcome malnutrition and improve the health and nutritional status of pregnant and lactating mothers, babies and preschoolers. Nutrition education for mothers helps prevent malnutrition. Goldberg (1991) stated that breastfeeding, like pregnancy, is a stage in which the health and nutritional status of the baby depends on the mother. In both of these important lifestyle phases, the relative energy costs are so high that most women need to meet them through increased food intake. In both cases, the maternal reserves are depleted due to inadequate nutrition. There may be energy-saving indications that reduce the need for mothers to maintain and allow the saved energy to be used to support fetal growth or breastfeeding.

Susser (1994) found that proper nutrition supports the growth of both maternal and fetal tissues. Chronic malnutrition during pregnancy affects the birth weight of newborns. Malnutrition causes intrauterine growth retardation. Certain nutrients such as zinc, iodine and folic acid are also required for fetal development. Fetal iron deficiency is present in maternal iron deficiency anemia.

Kaur and Sehgal (1989) discovered that energy is the most deficient nutrient in the diet of lactating mothers. Average intakes of foods such as legumes, milk and dry produce, fats and oils, vegetables, especially green leafy vegetables, were well below recommended levels.

Norton (1994) concluded that a study in East Java showed that the diet of pregnant mothers affected the growth of offspring beyond the intrauterine period.

Penrose (1954) stated that pregnancy is a physiologically demanding process, the consequences of which are strongly influenced by both the nutritional status of the pre-pregnant mother and the nutritional intake and utilization of the pregnant mother. rice field. The importance of maternal nutrition was discussed by Devdas et al. (1978) We discovered that the nutritional status of pregnant mothers plays a very important role in the outcome of pregnancy and the growth potential of the baby. Therefore, efforts to improve the nutritional status of infants should begin with conception.

Viteri (1994) found that mothers were at increased risk of dying during the perinatal period. In 20-40% of these deaths, anemia is the main or sole cause. The overall risk of maternal mortality associated with pregnancy and childbirth is increased five-fold, and the risk is dramatically increased in severe anemia. There is an inverse relationship between hemoglobin status and mortality. Anemia is the cause of inadequate weight gain in babies during pregnancy, preterm birth, and low birth weight (LBW).

2.3 Empirical Literature

This study focused on investigating the prevalence of anemia and the factors associated with anemia in pregnant women in rural India in the Bead district of Maharashtra. In this study, there were a total of 200 rural pregnant women from 20 villages in the Bead district. It will be randomly selected. This study found that the prevalence of anemia was significantly higher. The factors discovered are: The women surveyed have poor literacy, profession, and standard of living. Recognition and prevention of anemia by taking ferrous folic acid tablets on a regular basis and increasing food intake. Marriage age, birth history, and fetal loss also contributed to hemoglobin levels. Prenatal performance in early pregnancy and availability and consumption of foliate ferrous tablets over a three-month period affected hemoglobin levels (Khandat, 2014).

The study involved 130 pregnant women aged 19 to 45 who attended a PMI (Mother and Child Protection) maternity hospital in Tebusa. Studies show that at least (40%) of pregnant women suffering from many illnesses such as obesity, diabetes, hypertension, and inflammatory diseases, 17.70% of the women surveyed are taking medications, and 33.85% are on a diet. 32.31% and 78.46% were overweight due to medications that were taking nutritional supplements containing 1.54% (39.23% were overweight and 39.23% were obese). At least 1 percent (21.54%) of women were in a satisfactory weight condition. Analysis of biological data showed that 26.67% and 55.45% of pregnant women had hemoglobin and hematocrit levels below WHO standards, respectively. Women's power relied more on plant-based foods than on animal-based foods due to the higher feed

prices. As a result, nutritional counseling should be tailored based on pre-pregnancy weight and weight, and each woman's voluntary food intake. Transform performance without excluding food groups to meet the needs of vitamins, minerals and buty acids. (Taleb, 2011)

This study highlighted the difference in dietary intake of major and micronutrients in pregnant women with OMT compared to healthy controls. A total of 54 subjects (34 OMTs and 20 controls) were included in the nutrient analysis in this study. It was observed that diet alone was not able to meet the requirements for multiple micronutrients in both the OMT and control groups. We also showed that pregnant women with OMT have lower intakes of various micronutrients compared to healthy controls, which can lead to negative pregnancy outcomes. The results of this study highlight the need for micronutrient supplementation during pregnancy. Future research should focus on this Investigate the effects of these differences on pregnancy outcomes and implement policies to promote a healthy diet. (Shrestha, 2011; Khandat, 2014)

In this study, the average height, weight, and BMI of lactating subjects were (0-6 months) 154.03 cm, (6-12 months) 155.18 cm, and (0-6 months) 49.36 kg (6). ~ 12 months) was shown. It was. 52.08 kg of breast-fed women and (0-6 months) 20.77 kg / m², (6-12 months) 21.63 kg / m², reported in Rajasthan (48%), respectively (DWCD, 1998).). Breastfeeding practices have shown that the majority of mothers started breastfeeding on the third day of childbirth. The study also reflects that observations highlight the need to enhance health and nutrition programs in this area. The study also found that, in general, at the household level, consumption of all foods except grains and millet was below recommended levels. The intake of protein, calcium, iron, thiamine, and niacin was similar to the recommended level, but the intake of other nutrients such as total fat, energy, vitamin A, riboflavin, vitamin C, and free folic acid was below the recommended level. rice field. Observations underscore the need to strengthen health and nutrition programs in this area. (Kavita Bairwa, 2017)

This study is primarily concerned with assessing the diet, preferences, knowledge, and related practices of pregnant women living in the Indian environment. 100 pregnant women were enrolled in this cross-sectional study. As a result, the majority of participants (87%) reported regular prenatal examinations and the use of iron and folic acid tablets. Eighty-two percent of respondents are familiar with standardized food markings, and 64% say they will check those markings before making a purchase. 32% of participants knew nothing about a balanced diet. About half (58%) of the participants were categorized in the appropriate category of food reminder end results. There is still room for improvement in the nutritional status of pregnant women, as no participant achieved excellent status on the 24-hour dietary score sheet. (Ajantha, 2015).

An exploratory cross-sectional study conducted in three urban slums to identify PWs and RDWs. This reflects that nearly 80% (274 out of 344) women received some form of ANC, but the packaging was inadequate. Poverty, literacy rates, migration, length of stay in the field, and high parity were the deciding factors for not using ANC. This study also reflects that nutritional advice was given by a quarter of the population. Nutrient intake reveals that more than half of women do not have optimal intake of proteins and micronutrients such as iron, calcium, vitamin A, vitamin C, thiamine, riboflavin, nicotinic acid, zinc, and vitamin B12. A high prevalence of anemia was observed in pregnant women (85%) and RDW (97.1%). It showed that there was no difference in micronutrient intake and prevalence of anemia between women receiving and not receiving ANC. Pregnant women living in urban slums are poorly nourished. (Suparna Ghosh-Jerath, 2015)

A cross-sectional study found that 37% of pregnant women and 33% of lactating women had iodine deficiency. Salt iodine content should be higher in India as the current level of iodine supplementation in India is 15 ppm was insufficient to meet the growing needs of breastfeeding and pregnancy. However, when the actual iodine content of the salt was measured, it was less than 15 ppm in most iodine-deficient pregnant women (65%), iodine-deficient lactating women (71%), and iodine-deficient female controls. Group (100%). The low iodine content in salt contributes to the large gap between supply and demand that occurs in breastfeeding and pregnant women. Also, deficiency of micronutrients, including iodine, is probably due to low dietary intake and low frequency of micronutrient-rich food groups (legumes, vegetables, fruits, nuts, oil seeds) in India. It is often seen in pregnant women. , Products for animals). The iodine content of the salt, the source of unbranded salt, the type of salt storage, and the cooking process are important factors in iodine deficiency in pregnant and lactating women in the study population. (Anirban Majumder, 2016)

A cross-sectional study conducted in 2012 found that both pregnant women and children in the rural population were significantly less aware of the use of TFP compared to the urban population. Attitudes also reflect what seemed to be driven by local traditional beliefs and family influences, rather than acquired knowledge. (Anup Nagaraj, 2013).

2.4 Overview of the Literature

We also use a variety of methods and data to study the effects of diet, knowledge of micronutrient deficiency, prevalence of disease due to undernutrition levels, nutritional intake, and cultural factors for a woman's condition. Regardless, some variables stand out as an important factor influencing nutrition. The variables are : Women's education and knowledge. Socio-economic status of the household; place of residence and traditional beliefs.

Various studies on the determinants of nutritional status of pregnant and lactating women have been conducted throughout Rajasthan and India, but few studies are available in the Barmer district. At the district policy-making level, empirical studies are needed to measure the effects of various factors that affect the nutritional status of pregnant and lactating women. This study examines the effects of dietary habits / frequency, food seasonality and availability, socioeconomic, demographic, and environmental factors on women's nutritional status determinants in the Barmer district. I'm trying to fill the gap.

Chapter 3

3. Research Methodology

3.1 Sampling Design

This was a qualitative and quantitative study conducted at Block 5 in Barmer, Rajasthan, India, using a multi-level random sampling method.

3.2 Village selection

In the Barmer district, a total of 5 blocks were randomly recorded and 6 villages (regions / cities) were selected from each block using a systematic random sampling method.

3.3 Household selection

Twenty-four households (HH) were recorded from each selected village. This study covers all types of caste. H. Hindus, Muslims, Scheduled Castes and / or Scheduled Tribes. This study included pregnant, lactating, non-pregnant and non-lactating women. From each of these categories, four adjacent HHs were covered by randomly selecting HHs from each village. Therefore, a total of 24 households were recorded in each village and 720 households in the Barmer district.

3.4 Sample size estimation

All subjects available from the selected 720 HHs were covered to perform the study. A 24-hour daily recall method for nutritional surveys was conducted at each alternative HH subject to nutritional assessment in each village.

3.5 Data collection procedure

At a convenient location, individual secret interviews were conducted with women in each household. The entire procedure to complete the survey took about 30 minutes. Before the questionnaire was introduced, women were informed about the purpose of the study. They were informed that they could withdraw from research at any time. Oral consent was obtained from each study participant.

3.6. Investigation

The survey was followed up with the selected HH.

3.6.1. Socio-economic and demographic details of the household

Socio-economic information such as age, gender, occupation, marital status, main occupation, average monthly family income and expenditure, family size, family type, personal literacy level, home type,

HH religion, ST / And demographic information SC and OBC, farmland ownership, asset types, drinking water sources, toilet facilities, main lighting sources, main fuels used for cooking, etc. are pre-tested questionnaires.

3.6.2. Nutritional evaluation

In each village, all women available in 24 selected HHs on the day of the study were recorded for nutritional assessment as follows:

3.6.2.1 Food intake Food intake patterns were determined using equipment previously used in India. This tool has been modified to include as much information as possible in consultation with experts. Data were collected through a questionnaire containing 14 food groups: (i) cereals (ii) legumes / legumes (iii) nuts and oil seeds (iv) roots and tubers (v) green leafy vegetables (vi)) Other vegetables (vii) Fruits (viii) Milk and dairy products (ix) Meat, fish and poultry (X) Oils (xi) Sugar (xii) Beverages (xiii) Specialty products (xiv) Spices and seasonings.

3.6.2.2 Food and nutrient intake To assess women's food and nutrient intake, a 24-hour daily dietary survey recall method was conducted at the alternative target HH. Food consumption and culture practices during pregnancy and lactation It has estimated that what are the foods items taken and avoided by the women during their pregnancy and lactation period in which process what are the cultural practices affects their nutrition intake.

3.7 Data Analysis

Descriptive and analytical statistics of the data were carried out using SPSS Windows version 20.0 and Excel. Appropriate statistical tools were used wherever needed.

3.8 Ethical Issues

Oral informed consent was obtained from the head of the selected HH before collecting household information.

Chapter 4

4. Socio- economic & Demographic profile

4.1 District Profile

Barmer District is a district in [Rajasthan](#) state of [India](#). It is located in the western part of Rajasthan state forming a part of the [Thar Desert](#). Barmer is the third largest district by area in Rajasthan and fifth largest district in [India](#). Occupying an area of 28,387 km². Being in the western part of the state, it includes a part of the Thar Desert. Jaisalmer is to the north of this district while Jalore is in its south. Pali and Jodhpur form its eastern border and it shares a border with Pakistan in the west. Partially being a desert, this district has a large variation in temperature

At the time of the 2011 census, the district had a population of 2,603,751. Scheduled Castes and Scheduled Tribes made up 16.76% and 6.77% of the population respectively

Map of Barmer District

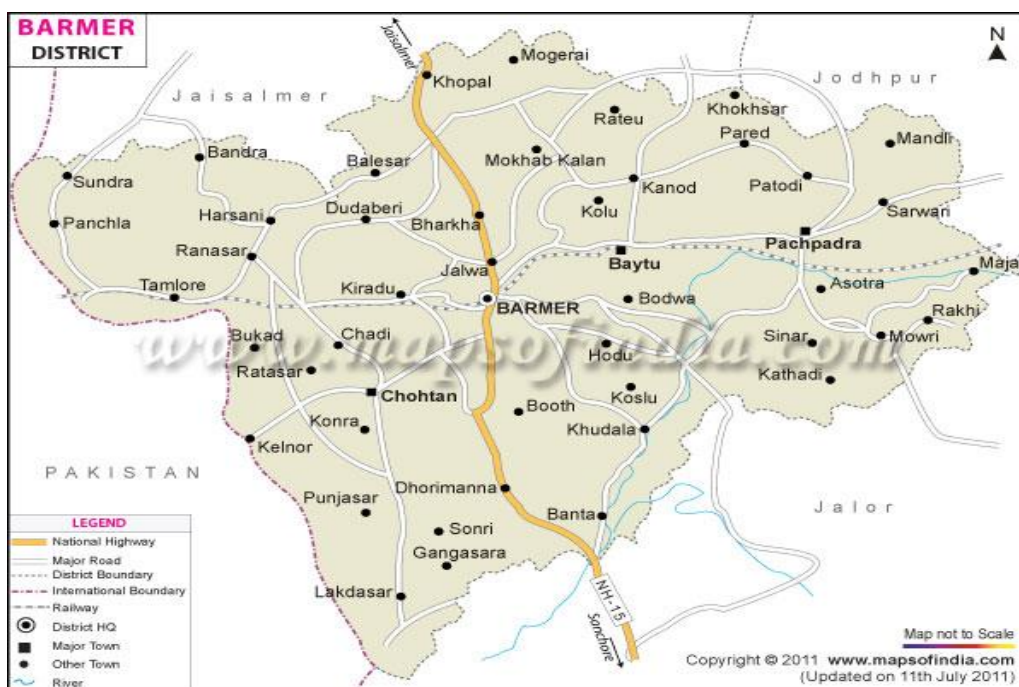


Table 2 Barmer District Profile

Description	2011 Census
Actual Population	26,03,751
Population Growth	35%
Sex Ratio (per 1000)	902
Average literacy	56.53
Female Literacy	41.96
% of Scheduled Castes	18
% of Scheduled Tribes	19

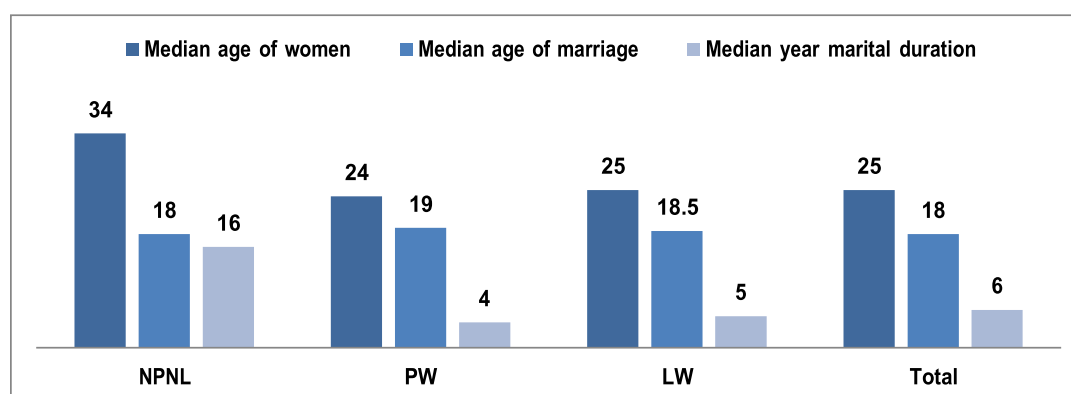
4.2 Respondent Socio Economic Background profile

Recent studies have collected socio-economic and demographic characteristics. Table 3 shows the demographic and socio-economic details of the households (HH) surveyed.

4.2.1 Respondent's profile:

This survey collected information about respondents' age, marriage age, and marriageable age. Figure 1 reflects the age criteria followed by NPNL, pregnant and lactating women with average ages of 34, 24, and 25, as follows: Also, the average marriage ages of NPNL, pregnant and lactating women are 18, 19, and 19, 18.5 years each. Figure 1 also shows the average marriage period for one year. This is NPNL, 16, 04, and 2005 for pregnant and lactating women.

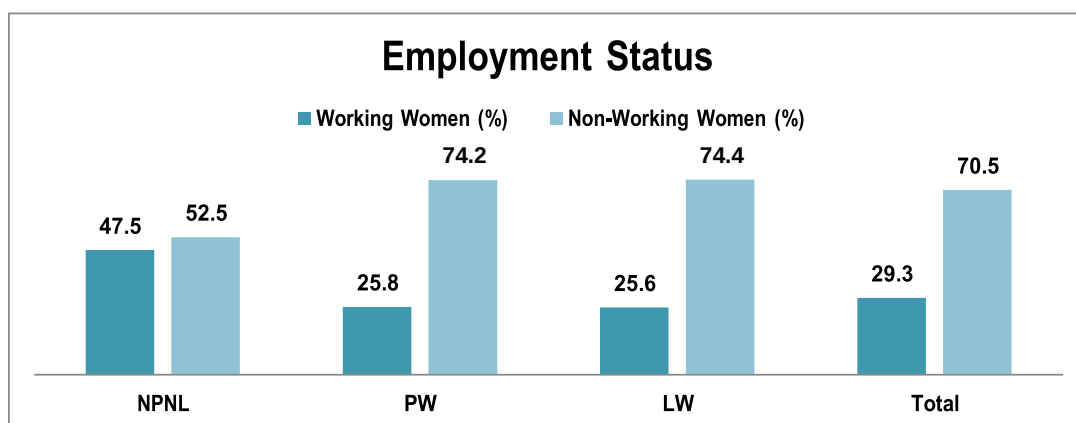
Figure 1 Percentage Distribution of Respondent Status of Age, Marriage



4.2.2 Employment Status:

The survey also collected information about the employment status of respondents. Employment status characteristics also play a role in influencing an individual's nutritional status. Figure 2 Analysis with a high percentage of pregnant women (74.2%), breastfeeding women (74.4%), and 52.5% NPNL women has not been adopted. 25.6% pregnant women, 25.8% breastfeeding women and 47.5% NPNL women were hired. Further analysis also found that the majority of non-working women belong to pregnant and lactating women, and the top working women belong to the NPNL women category.

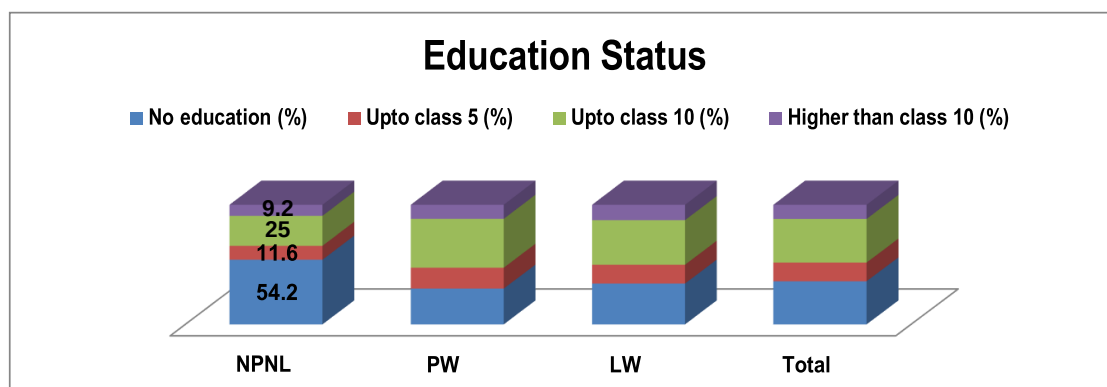
Figure 2 Percentage Distribution of Occupational Status



4.2.3 Educational Status:

Education also affects a woman's nutritional status. Education is one of the most important socio-economic factors known to have a significant impact on women's behavior and attitudes towards food intake. An analysis of the respondents' educational background showed that 54.2% of NPNL women, 30% of pregnant women, and 34.2% of breastfeeding women did not pursue educational background. The analysis also found that the percentage of women enrolled in education in grade 10 and above was the lowest. The majority of pregnant women (40.8) and lactating women (37.2) were educated up to grade 10, and in the NPNL category, the majority of women followed non-school standards.

Figure 3 Percentage Distribution of Educational Attainment

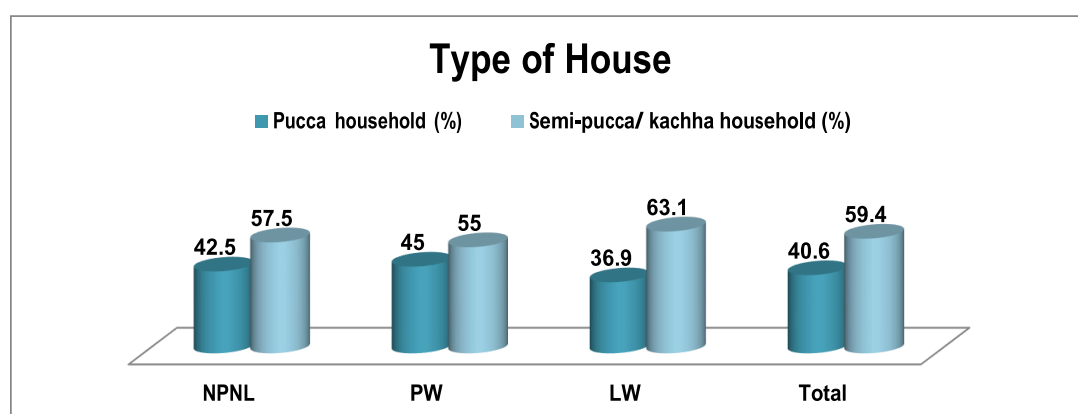


	NPNL	PW	LW	Total
Purple-	9.2	11.7	12.8	11.8
Green-	25	40.8	37.2	36.4
Red-	11.6	17.5	15.8	15.7
Blue-	54.2	30	34.2	36.1

4.2.4 Type of House

The household type was adopted as an indicator of the economic situation of the household. Figure 4 shows that about 57.5% of NPNL's female families lived in Semi-Pucca / Kacha's home and the rest (42.5%) lived in Pucca's home. Similarly, about 55% of the PW family and 63% of the LW family lived in the Semi-Pucca / Kacha house, and the rest lived in the Pucca house. The proportion of HH living in Pucca's home was highest among pregnant women (45%), followed by lactating women (36.9%) and NPNL women (42.5%).

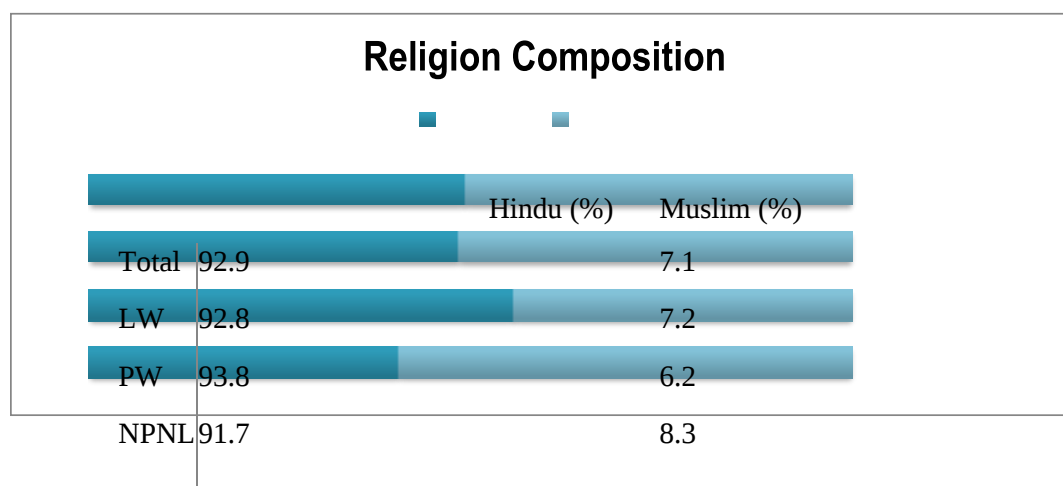
Figure 4Percentage Distribution of Type of House



4.2.5 Religion Composition

The distribution of religious affiliation among women in various categories is shown in Figure 5. In all three categories, Hinduism has the highest percentage of female followers (92.9%), followed by Islam (7.1 percent). In terms of religion, studies reveal that compared to other categories of women polled, pregnant Hindus made up the majority (93.8 percent) of the group. More Muslim ladies than NPNL women were discovered.

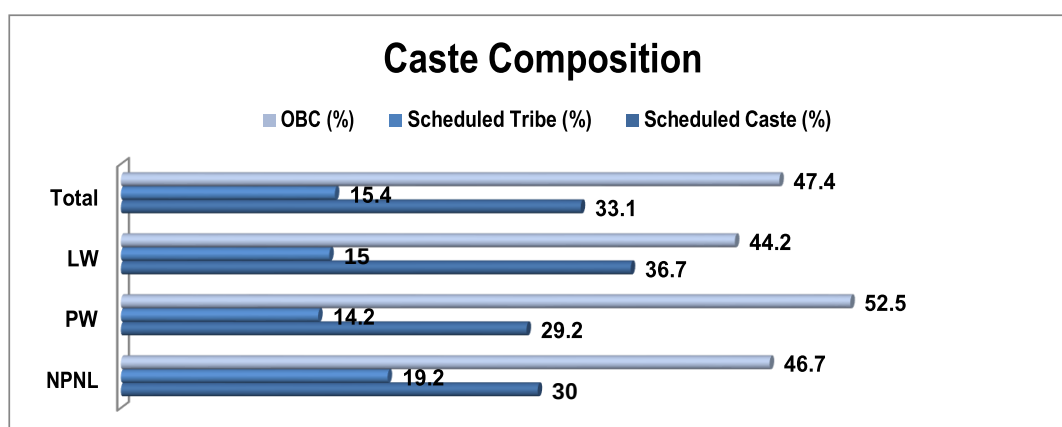
Figure 5 Percentage Distribution of Religion Composition



4.2.6 Community Composition

The community composition information in Figure 6 shows the proportion distribution of community composition among women in different categories. In general, more than half (52.5%) of pregnant women belong to the OBC community, and more than half of lactating women belong to OBC (52.5) and NPNL women (46.7%). Analysis showed that the proportion of planned tribes was higher in NPNL women than in pregnant and lactating women.

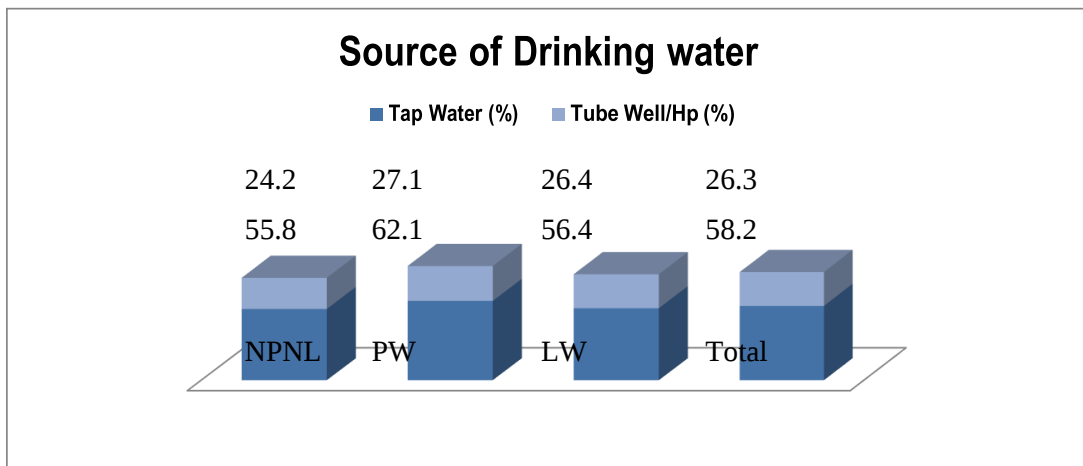
Figure 6 Percentage Distribution of caste Composition



4.2.7 Drinking Water Facility

Figure 7 shows the proportion distribution of women in different categories by drinking water source. Figure 7 shows that more than half of pregnant and lactating women use tap water as a drinking water source, and the lowest percentage of women also use pipewell / HP as a drinking water source.

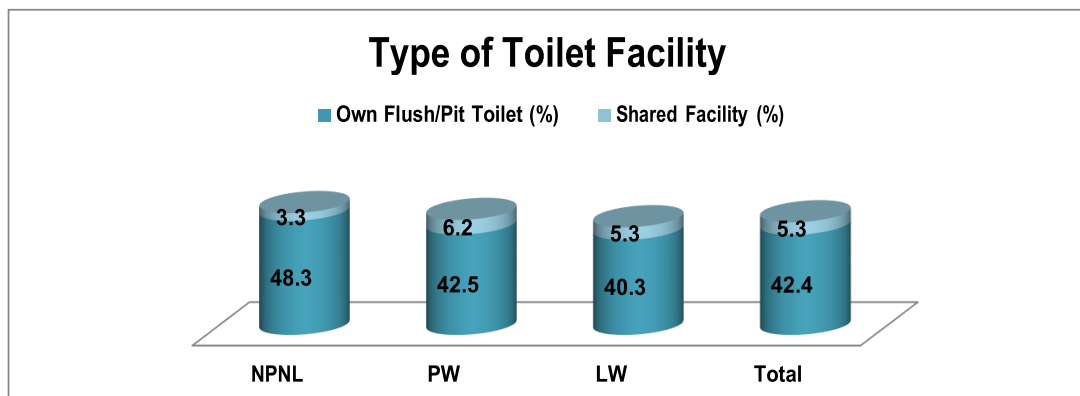
Figure 7Percentage Distribution of Drinking water Facility



4.2.8 Toilet Facility

The question of what type of toilet facility the household utilized was used to gather data on toilet facility utilization. This assisted in generating the response set that was used to divide households into those using their own flush/pit toilet and communal facility.

Figure 8Percentage Distribution of Toilet Facility

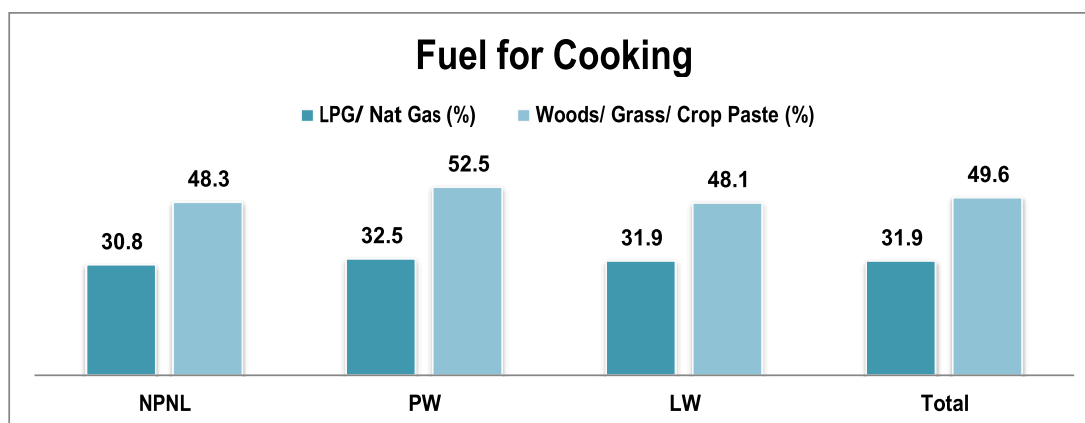


The percent distribution of the various restroom/latrine facilities across the various categories of women is shown in Figure 8. Less than half (48.3%) of non-pregnant and non-lactating (NPNL) individuals reported having a flush or pit toilet facility of their own. When compared to PW and LW families, NPNL women's households are more than twice as likely to use a private flush or pit toilet facility. In both urban and rural households, the most popular form of toilet was the flush/pour flush to septic tank. In comparison to NPNL women homes, close to 6% of pregnant women and near to 5% of breastfeeding women have access to shared restrooms.

4.2.9 Fuel for Cooking

Figure 9 below shows the types of cooking fuel used in different categories of women's homes. Approximately 52.5% of pregnant women's HH generally use firewood as fuel for cooking and LPG (32.5%), and 48.1% LW in families with lactating women use wood as fuel for cooking and NPNL. In one family-women (48.3%) use wood as fuel for cooking. The percentage of LPG users is highest in households with pregnant women, one-third (32.5%) and lactating women (31.9%), and NPNL women (30.8%) compared to other categories.) Was the lowest.

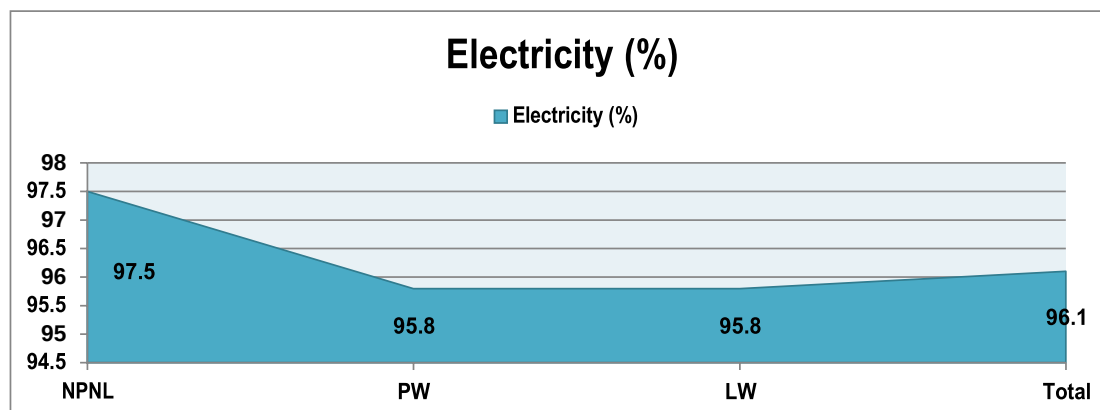
Figure 9Percentage Distribution of Fuel for Cooking



4.2.10 Electricity Facility

Figure 10 shows changes in electricity consumption by women in different categories. The majority of female HH in NPNL (97%) and pregnant and lactating female households (95%) had electricity and the rest did not have electrical equipment.

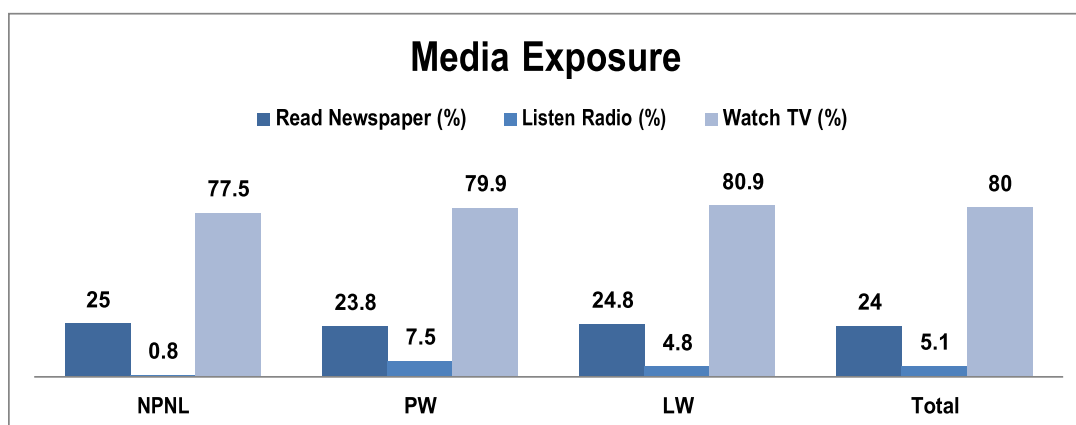
Figure 10Percentage Distribution of Electricity



4.2.11 Media Exposure

Media exposure also plays a major role in influencing women. The media raises awareness of government programs related to nutrition. The current study presented media exposure information by asking questions about reading newspapers and listening to radio and television. shape Eleven reported more than half of pregnant women. Breastfeeding and NPNL women watch TV, and a small percentage of pregnant breastfeeding and NPNL women listen to the radio. Further analysis also found that a small proportion of breastfeeding women, pregnant women, and NPNL women read newspapers.

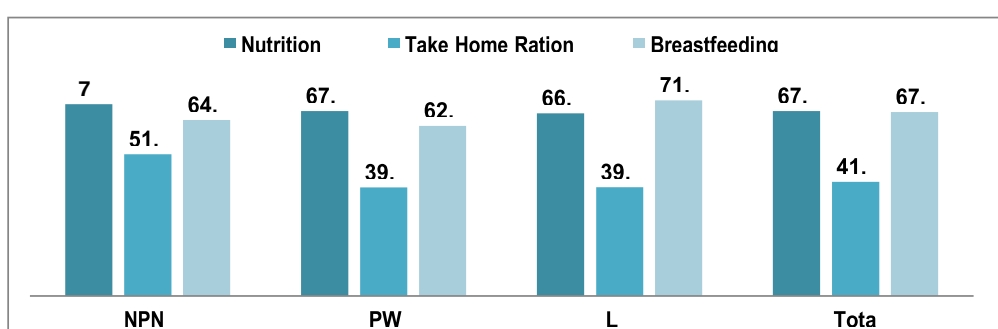
Figure 11Percentage Distribution of Media Exposure



4.2.12 Awareness Related to Nutrition, Take Home Ration and Breastfeeding

Awareness of diet, home distribution, and breastfeeding teaches us knowledge about diet, home distribution, and breastfeeding. Figure 12 shows that more than half (70%) of NPNL women are diet conscious and about 66% of pregnant and lactating women. Awareness of takeaway rations is highest at 51.7%, followed by women with NPNL, similar to about 39% between pregnant and lactating women. Breastfeeding awareness is also about 65% for women in all categories.

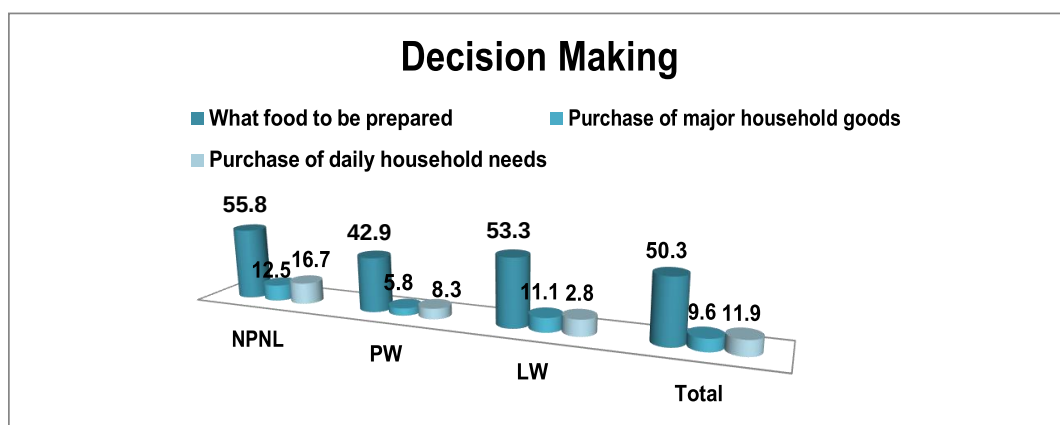
Figure 12Percentage Distribution of Awareness



4.2.13 Decision Making

Decision making also plays a major role in socio-economic characteristics. In the current survey, decision information was collected by asking them about decisions about food preparation, purchase of daily necessities, and purchase of daily necessities. It reflects how much they make decisions in their home. Figure 13 shows that about two-quarters (50%) of pregnant, lactating, and NPNL women make their own choices about the foods they prepare. H. When buying important household items or everyday household items.

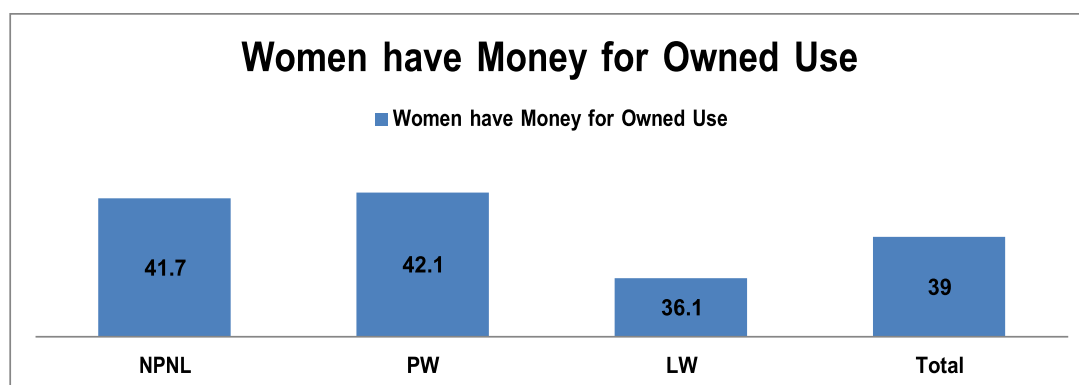
Figure 13Percentage Distribution of Decision Making



4.2.14 Women Have Money for Owned Use

Figure 14 shows the percentage of women who have money according to their needs. The current assessment of this study revealed that 41.7% of NPNL women, 42.1% of pregnant women, and 36.1% of breastfeeding women have money for their needs. Further analysis revealed that the proportion of women breastfeeding was lowest when they had money according to their needs.

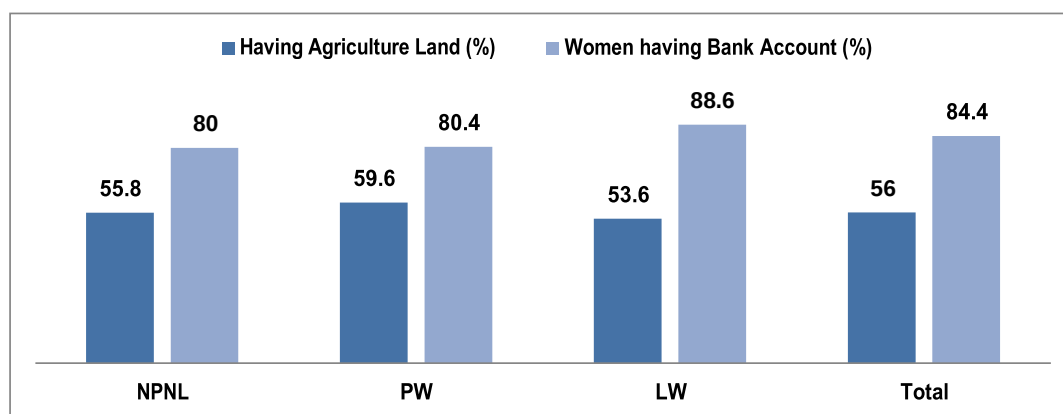
Figure 14 Percentage Distribution of women has money for owned use



4.2.15 Agriculture land and Bank A/c

It plays a role in defining the socio-economic status of an individual. Figure 15 shows the proportion distribution of air conditioning in farmland and banks by women in three categories. About 88% of breastfeeding women have their own bank account, and 53.6% of breastfeeding women also have farmland. This is followed by a high proportion of women with NPNL during pregnancy, lactation (80%), using air conditioning in their banks, and more than half of the population owning farmland.

Figure 15 Percentage Distribution of Agriculture land and Bank A/c



4.2.16 Allowed to go to the Market, Health, outside Village

Figure 16 shows that 99.1% of NPNL women are allowed to leave markets, medical facilities and even villages. The analysis also revealed that the majority of NPNL women (99.1%) are allowed to go out of markets, medical facilities, and villages. The study also clearly states that the majority of pregnant and lactating women are also allowed to visit the following locations: H. Market, health, and outside the village.

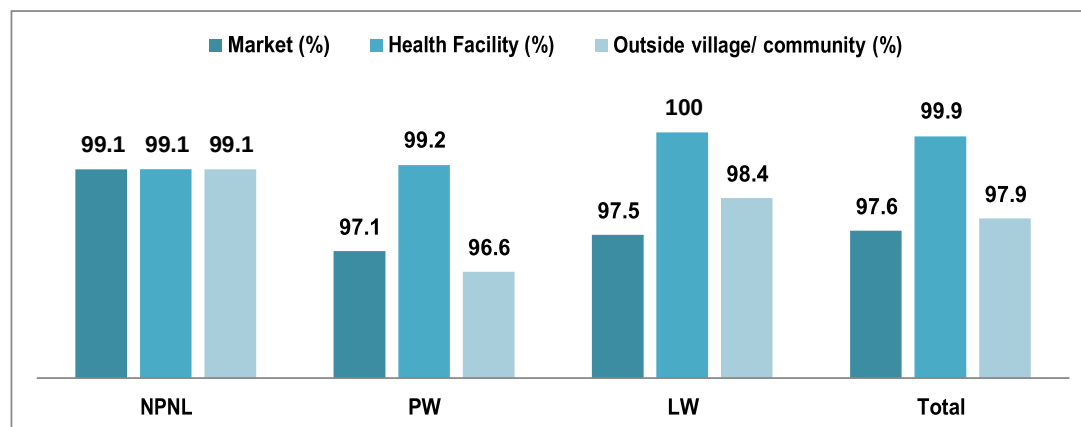


Figure 16 Percentage Distribution of Allow to go

Table3. Socio Economic and Demographic Profile of Respondent

Respondent	NPNL Women (120)	Pregnant Women (240)	Lactating Women (360)	Total (720)
1.Respondent Profile				
Median age of women	34.0	24.0	25.0	25.0
Median age of marriage	18.0	19.0	18.5	18.0
Median year marital duration	16.00	4.0	5.0	6.0
2.Main Economic Activity				
Working Women (%)	47.5	25.8	25.6	29.3
Non-WorkingWomen (%)	52.5	74.2	74.4	70.5
3.Education Status				
No education (%)	54.2	30.0	34.2	36.1
Upto class 5 (%)	11.6	17.5	15.8	15.7
Upto class 10 (%)	25.0	40.8	37.2	36.4
Higher than class 10 (%)	9.2	11.7	12.8	11.8
4.Type of House				
Pucca household (%)	42.5	45.0	36.9	40.6
Semi-pucca/ kachha household (%)	57.5	55.0	63.1	59.4
5.Religion Composition				
Hindu (%)	91.7	93.8	92.8	92.9
Muslim (%)	8.3	6.2	7.2	7.1
6.Caste Composition				
Scheduled Caste (%)	30.0	29.2	36.7	33.1
Scheduled Tribe (%)	19.2	14.2	15.0	15.4
OBC (%)	46.7	52.5	44.2	47.4
7.Type of FACILITY				
A. Drinking Water				
Tap Water (%)	55.8	62.1	56.4	58.2
Tube Well/Hp (%)	24.2	27.1	26.4	26.3
B. Toilet Facility				
Own Flush/Pit Toilet (%)	48.3	42.5	40.3	42.4
Shared Facility (%)	3.3	6.2	5.3	5.3
C. Fuel for Cooking				

LPG/ Nat Gas (%)	30.8	32.5	31.9	31.9
Woods/ Grass/ Crop Paste (%)	48.3	52.5	48.1	49.6
D. Main Source of Light				
Electricity (%)	97.5	95.8	95.8	96.1
8.Budget				
Median Monthly Income	5000	5000	5000	5000
Median Monthly Expenditures	5000	5000	5000	5000
9.Media				

Table 3 continued				
Read Newspaper (%)	25	23.8	24.8	24
Listen Radio (%)	0.8	7.5	4.8	5.1
Watch TV (%)	77.5	79.9	80.9	80
10.Awareness Related To				
Nutrition (%)	70	67.5	66.7	67.5
Take Home Ration (%)	51.7	39.6	39.7	41.7
Breastfeeding (%)	64.2	62.1	71.4	67.1
11. Decision About (%)				
What food to be prepared	55.8	42.9	53.3	50.3
Purchase of major household goods	12.5	5.8	11.1	9.6
Purchase of daily household needs	16.7	8.3	12.8	11.9
Visit to relatives or others	10.8	5.4	6.1	6.7
Attending marriage ceremony	9.2	3.8	4.2	4.9
Work outside the home	12.5	6.2	9.2	8.8
Healthcare	10.0	11.7	16.7	13.9
Schooling of Children	7.5	7.9	11.4	9.6
Treatment seeking for children	10	5.4	12.2	9.6
Women have Money for Owned Use	41.7	42.1	36.1	39.0
Characteristics				
12.Allowed to go to Following Places				
Market (%)	99.1	97.1	97.5	97.6
Health Facility (%)	99.1	99.2	100	99.9
Outside village/ community (%)	99.1	96.6	98.4	97.9
13.Women visit their Parent House				

Often (%)	22.5	24.2	28.1	25.8
Belong to any group (%)	20.0	19.6	18.3	19.0
14. Wealth Indicators				
Table (%)	32.5	31.7	34.2	33.1
Mattress(%)	93.3	92.1	92.2	92.4
Cot/Bed (%)	92.5	92.9	90.0	91.4
Watch Clock (%)	71.7	79.2	72.2	74.4
Electric Fan (%)	83.3	84.6	83.9	84.0
Radio Transistor (%)	0.8	7.1	4.2	4.6
Black & white TV (%)	7.5	5.0	8.6	7.2
Colour TV (%)	65.0	66.7	64.4	65.3
VCR/ CD player (%)	10.0	13.3	10.0	11.1
Sewing Machine (%)	39.2	43.3	48.1	45.0
Refrigerator (%)	17.5	27.1	23.9	23.9
Computer (%)	8.3	6.7	5.3	6.2
Bicycle (%)	38.3	32.9	26.9	30.8
Motorcycle/ Scooter (%)	45.0	47.1	51.4	48.9
Car (%)	6.7	7.9	5.8	6.7

Table 3 Continued				
Animal- drawn (%)	4.2	7.9	5.8	6.7
Water Pump (%)	24.2	22.9	22.2	22.8
Thresher (%)	2.5	6.7	5.0	5.1
Tractor (%)	5.8	10.0	6.9	7.8
Landline/ Mobile Phone (%)	85.8	84.6	83.6	84.3
15. Having Agriculture Land (%)	55.8	59.6	53.6	56.0
16. Women having Bank Account (%)	80.0	80.4	88.6	84.4

Table 3 shows the socio-economic and demographic characteristics of pregnant, lactating, and NPNL women. These socio-economic and demographic characteristics included respondent profiles, educational background, employment status, home types, facility types, respondent decisions, and respondent home assets. rice field. Table 3 also shows awareness of nutrition, breastfeeding, and takeaway rations, as well as women's exposure to the media.

Chapter-5

5. Dietary Diversity Practices and Food Intake/ Consumption

Dietary diversity is a qualitative measurement of consumption of food that reflects home access to a variety of foods and is also an indicator of the nutritional adequacy of an individual's diet. The Diet Diversity Survey provides a fast, user-friendly, easy-to-use, low-cost assessment tool. The Diversity Scores listed in these guidelines consist of a simple count of food groups consumed by households or individuals over the last 24 years. Time. Studies have shown that increased dietary diversity is associated with socio-economic status and household food security (household energy availability) (Hoddinot and Yohannes, 2002; Hatloy et. al., 2000).

This study provides information on nutritional status and dietary intake of pregnant and lactating women in the Barmer district of Rajasthan, India. Food intake was assessed using a previously validated 24-hour recall and qualitative food frequency questionnaire (FFQ). FAO uses a reference period of the last 24 hours. The 24-hour reminder period does not adequately indicate an individual's habitual diet, but it may provide a population-level dietary assessment to help monitor progress and target interventions (). Savy et al., 2005).

In 24-hour recall, subjects were asked to recall all food and drink consumed in the last 24 hours. The use of common household items and portion size models was used to help women estimate the amount of food consumed, and these were converted to grams using household measurements. For over-the-counter foods such as biscuits, we purchased and weighed equivalents to minimize the hassle of weighing women. For packaged foods, the information was taken from the nutrition information in the package.

5.1 Dietary Intake

Table 5 shows the nutritional intake (CU / day) of various nutrients. The intake of some of the selected micronutrients was below the recommended value. Inadequate intake of micronutrients has been identified in pregnant and lactating women, as well as in non-pregnant and lactating women.

5.1.1 Energy

Energy intake was highest in the 1482 kcal p1 category compared to other women's categories in the Barmer area. Pregnant and lactating women have a higher percentage of energy intakes than non-pregnant and lactating women. Analysis also revealed that energy intake in the L1 category was the lowest among pregnant and lactating women 1366. Further analysis revealed that women in the Barmer area had the lowest energy intake compared to the ICMR energy intake guidelines. And this gap is highest in the L1 category at 1359 kcl and lowest in the L3 category at 860 kcl. These low-calorie diets do more than limit the amount of calories your body consumes to function at normal levels. (Table 4)

5.1.2 Protein

Protein intake was highest at 43 g / CU / day in the P1 and L1 categories. Further analysis also showed that women in the Barmer area had the lowest protein intake compared to the ICMR protein intake guidelines. And this gap is highest in the L1 category at 33 g / m³ / day and lowest in the L3 category at 7 g / m³ / day. (Table No.4)

5.1.3 Fats

Fat intake was significantly inadequate compared to the ICMR guidelines for fat in all categories of women. And this deficiency was highest in the L1 and L2 categories (45 mg) and lowest in the L3 and N1 categories (20 mg). (Table - 4)

5.1.4 Calcium

Calcium intake was 298 mg, the highest in the p1 category. Further analysis also showed that women's calcium intake was the lowest in the Barmer area compared to the ICMR calcium intake guidelines. And this gap is highest in the L1 category 749 mg and lowest in the L3 category 120 mg. (Table No. 4).

5.1.5 Iron

P1 category 14mg had the highest iron intake. Additional research revealed that women in the Barmer District have the lowest iron consumption when compared to the recommended levels by the ICMR. And the P2 category 25mg has the largest gap. In Table No. 4

5.1.6 Zinc

The 4.5mg consumption of zinc in the p1 category was the greatest. Additional research revealed that women in the Barmer District have the lowest zinc consumption when compared to the recommended levels by the ICMR. Additionally, this difference is greatest in L1 category (8.5mg) and lowest in P1 category (2.9mg). In Table No.4

5.1.7 Vitamin A

Vitamin A intake was severely deficient compared to the ICMR guidelines for vitamin A in all categories of women. And this deficiency was highest in the L1 category at 721 mg and lowest in the P1 category at 363 mg. Vitamin A intake was the highest in the L2 category at 247 mg. (Table no.4)

5.1.8 Vitamin C

Vitamin C intake was 17-20 mg, below the ICMR guidelines of 42 mg / CU / day. Admission was below the ICMR guidelines for all women categories in the Barmer area. The analysis also revealed that the lowest intake of vitamin C was found in the P1 category (17 mg). (Table No. 4)

5.2 Food Consumption

Table 5 shows the average consumption of foods (g / CU / day) related to the category. Grains and millet formed the majority of the diet in the women's category. Food consumption data show that women consumed a variety of foods from grains, legumes and their derivatives, nuts and oil seeds, roots / tubers, green leafy vegetables, other vegetables, and milk and dairy products. Shown. Consumption of milk and dairy products, as well as roots and tubers, was relatively high in all women.

5.2.1 Cereals & millets

Average grain and sorghum intakes ranged from a minimum of 0.0 g to a maximum of 1108 g at 257.8 g / CU / day. Average millet consumption was higher in the female P1 category (260 g) and in the female L2 category (260 g), lower than in the other female categories.

5.2.2 Egg

The average consumption of egg was negligible in all categories of women in Barmer District.

5.2.3 Fruits

The average consumption of Fruits was negligible in all categories of women in Barmer District.

5.2.4 Green leafy vegetables

The average consumption of green leafy vegetables (GLV) was 0.0g/CU/day. The ranged consumption was 462g. The analyses also clear that none of consumption in no one category.

5.2.5 Meat & Fish

The average consumption of Fruits was none in all categories of women in Barmer District.

5.2.6 Milk & milk products

The average consumption of milk & milk products was 102ml/CU/day. The highest consumption of Milk was among P1 category and L2 Category.

5.2.7 Fats & oils

The average consumption of visible fats and oils was 20g. This ranged from a minimum consumption of 0.0g to a maximum consumption of 148g. The L2 category had the highest fat consumption.

5.2.8 Other vegetables

The average consumption of other vegetables was 67.5g per BU / day. It ranged from low 0.0g to high 544.4g. Consumption was highest in the L2 category (85 g) and lowest in the N1 category (49 g).

5.2.9 Pulses & legumes

The average consumption of legumes and legumes is approximately 13.1 g / CU / day, which is between a minimum consumption of 0.0 and a maximum consumption of 362.0. No consumption of legumes was seen in the L2 category. Category L2 (9.5g) was the least consumed. The proportion of legumes and legumes consumed was highest in category P1 (362 g).

5.2.10 Roots & tubers

Average root and tuber intake in women of all categories (85.5 g). Uptake was high in the toL2 category (100 g), followed by L3 (95.5 g), L1 (93.3 g) and N1 (89 g). Uptake was lower for P1 (63 g) and P2 (70 g).

5.2.11 Sugar & jaggery

The average consumption of sugar and brown sugar was 20 g / CU / day. This ranged from a minimum consumption of 0.0g to a maximum consumption of 180g. It was found that categories P1, P2, L1, L2 and L3 had more consumption than category N1.

Table No.4 Comparison of Actual Nutrient in take with ICMR standard

Primary Data	Energy	Protein	Fats	Calcium	Iron	Zinc	Vit- A	Vit- C
L1	1366	40	12	251	13	4.2	229	19
L2	1454	43	14	274	13	4.4	247	18
L3	1377	40	13	280	13	4.3	230	20
P1	1482	43	14	298	14	4.5	238	17
P2	1364	42	12	264	13	4.3	212	20
N1	1366	41	13	278	13	4.1	233	18
ICMR Guideline								
L1	2725	75	45	1000	30	12.7	950	42
L2	2625	68	45	1000	30	12.7	950	42
L3	2225	50	20	400	30	7.3	600	42
P1	2525	65	30	1000	38	7.3	600	42
P2	2525	65	30	1000	38	7.3	600	42
N1	2225	50	20	400	30	7.3	600	42
Gap								
L1	-1359	-35	-33	-749	-17	-8.5	-721	-23
L2	-1171	-25	-31	-726	-17	-8.4	-703	-24
L3	-848	-10	-7	-120	-17	-3.0	-370	-22
P1	-1043	-23	-16	-702	-24	-2.9	-363	-25
P2	-1161	-23	-18	-736	-25	-3.1	-388	-22
N1	-860	-9	-7	-122	-17	-3.2	-367	-24

Table5. Average intake of women from different food groups in Barmer Rajasthan

Category		Cereal, Egg millets, and their product S	Fruits	Green Leaf veget ables	Meat & Fish	Milk	Oil	Pulses Other Veget Ables s	and their product S	Root s and tuber S	Suga R	
N1	Median	254.5	0.0	0.0	0.0	0.0	100.0	16.3	49.5	16.5	89.0	15.5
	Range	609.0	120.0	480.0	462.0	0.0	620.0	85.0	490.0	183.0	564.0	113.0
	Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Maximum	609.0	120.0	480.0	462.0	0.0	620.0	85.0	490.0	183.0	564.0	113.0
	N	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
P1	Median	260.0	0.0	0.0	0.0	0.0	123.5	20.0	71.0	9.5	63.0	20.0
an	Range	1043.0	0.0	300.0	250.0	130.0	700.0	100.0	518.0	362.0	505.3	116.0
	Minimum	65.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Maximum	1108.0	0.0	300.0	250.0	130.0	700.0	100.0	518.0	362.0	505.3	116.0
	N	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
	P2	Median	254.5	0.0	0.0	0.0	0.0	100.0	20.0	60.0	15.0	70.0
an	Range	542.5	225.0	590.0	185.0	383.0	760.0	70.0	544.4	160.0	450.0	170.0
	Minimum	97.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Maximum	640.0	225.0	590.0	185.0	383.0	760.0	70.0	544.4	160.0	450.0	170.0
	N	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
	L1	Median	241.5	0.0	0.0	0.0	0.0	100.0	20.0	70.0	15.0	93.3

an												
Range	533.0	79.8	610.0	200.0	0.0	560.0	148	247.9	100.0	400.0	120.	
Minimum	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum	549.0	79.8	610.0	200.0	0.0	560.0	148	247.9	100.0	400.0	120.	
N	120.0	120.0	120.0	120.0	120.0	120.0	120.	120.0	120.0	120.0	120.	
L2	260.0	0.0	0.0	0.0	0.0	120.0	22.5	85.0	0.0	100.0	20.0	
Medi												
an												
Range	525.0	50.0	400.0	120.0	50.0	770.0	144.	357.0	126.0	380.0	180.0	
							0					
Minimum	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum	575.0	50.0	400.0	120.0	50.0	770.0	144.	357.0	126.0	380.0	180.0	
							0					
N	120.0	120.0	120.0	120.0	120.0	120.0	120.	120.0	120.0	120.0	120.0	
							0					
L3	250.8	0.0	0.0	0.0	0.0	100.0	16.0	55.5	18.0	95.5	20.0	
Medi												
an												
Range	566.0	0.0	300.0	316.0	0.0	1153.8	80.0	374.0	158.0	500.0	110.	
Minimum	84.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum	650.0	0.0	300.0	316.0	0.0	1153.8	80.0	374.0	158.0	500.0	110.	
N	120.0	120.0	120.0	120.0	120.0	120.0	120.	120.0	120.0	120.0	120.	
							0					
All	257.8	0.0	0.0	0.0	0.0	102.0	20.0	67.5	13.1	85.5	20.0	
Medi												
an												
wo	1108.0	225.0	610.0	462.0	383.0	1153.8	148.	544.4	362.0	564.0	180.0	
men							0					
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Major conclusion and recommendations:

The level of dietary energy and protein deficiency is more pronounced, reiterating the fact that it is essentially a "nutrition gap". Intakes of various micronutrients, especially iron, vitamin A, vitamin 12, and zinc, were severely deficient compared to the ICMR guidelines, consistent with inadequate intake of protected foods.

The study also suggests that the main reasons pregnant and lactating women do not eat nutritious foods were lack of nutrient intake and money to buy and dietary taboos increase.

The study also revealed that all women who participated in the study had some dietary restrictions due to cultural practices. Money was also a constraint; so many nutritious foods were avoided by all women. The study highlights the need to take the necessary steps to increase community participation in various development programs in order to improve women's literacy rates. Nutritional education needs to be strengthened through the Ministry of Health and ICDS to promote changes in awareness and behavior for better nutritional practices to improve maternal and child nutritional status. The situation in India is needed to demonstrate the effectiveness of ASHA's role in nutritional counseling. ASHA, Aanganwadi Workers, Self Help Groups (SHG) developed this app to raise awareness, guide women's nutrition, and beliefs related to food restrictions without scientific explanation. Eliminate. The National Rural Health Mission (NRHM) envisions that ANM and AWW will work together to provide Village Health and Nutrition Days to provide the necessary health and nutritional care. In this study, the Ministry of Health, ICDS, and NHM coordinated and the main reason for not purchasing nutritious foods to provide more nutritious foods during pregnancy and lactation was lack of funding.

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