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Research Article

Dietary Practices And Perceptions During Pregnancy And Lactation Among Women In Rural Sindhudurg: A Qualitative Study

Deshpande SR[1*] | *Potdar PA*[2]

[1]*Department of Community Medicine, ACPM Medical College, Dhule, India*
[2]*Department of Community Medicine, SSPM Medical College, Sindhudurg, India*

***Corresponding Author:**
Deshpande Sonal Renukadas, Department of Community Medicine, ACPM Medical College, Sakri Road, Dhule, Maharashtra, India, 424002
Email: sonal.deshpande@gmail.com

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ABSTRACT

Various regions of Maharashtra have different cultural practices. Pregnancy, childbirth, and lactation are circumstances where cultural beliefs strongly affect women's dietary practices. A qualitative study was conducted to describe dietary practices and perceptions during pregnancy and lactation among women in rural Sindhudurg. A cross-sectional study was conducted among pregnant and lactating women, women involved in cooking for their families, and frontline workers at the rural field practice area of SSPM Medical College, Sindhudurg. A homogenous group for Focused group discussions and a typical case method for In-depth Interviews were used. The mean age of the total 66 participants was 49.2 ± 12.3 years. All the pregnant women agreed that their diet should include fruits, sprouts, and milk. There was a special diet for lactating women, especially during puerperium. Methi laddu, dink ladoo, and dry fruits laddu were consumed by lactating women as galactagogues. They had various myths regarding foods to be avoided during pregnancy. Lactating mothers believed that their diet does affect breast milk composition. There were myths regarding foods that, when consumed by lactating women, may lead to specific symptoms or conditions in babies. The Mean dietary diversity scores of pregnant and lactating mothers were low and were lowest during puerperium. Though many pregnant women know nutritious food, affordability and time availability are constraints. Dietary restrictions, especially during the early postpartum period, led to less dietary diversity. Some of the beliefs are deep-rooted and need to be more easily amenable.

***Keywords:** Diet, lactation, pregnancy, qualitative, rural Sindhudurg*

INTRODUCTION

According to Park's Textbook of Preventive and Social Medicine, culture refers to the customs, beliefs, laws, religion, moral precepts, arts, and other capabilities and skills individuals acquire as members of society. India is a vast country, and so is the state of Maharashtra. Various regions of Maharashtra have different cultural practices. Cultural factors are deeply involved in

dietary practices among the members of society. Payyappallimana U et al. (2016) have described various dietary practices that have evolved from Ayurvedic concepts like prakriti, Sahara, Sathya, and apathy. According to Namiranian P et al. (2021), the hot–cold concept is the basis of various traditional medical systems that are expressed as Tridoṣha ('Vāta,' 'Pitta,' and 'Kapha') in Ayurveda. This concept is widely believed throughout India.

Nutrition and health are interconnected; emphasizing nutrition's importance during pregnancy and lactation is crucial. The physiological changes in the first trimester of pregnancy can cause morning sickness, nausea, and vomiting, leading to alterations in the diet of pregnant women. Choo E et al. (2017) studied the impact of pregnancy on taste. It has been hypothesized that various taste modulators, like hormones, circulating factors, and the immune system, affect taste during pregnancy. Whether taste varies to support a healthy pregnancy or if a change in taste may result in negative consequences to the mother's and offspring's health is debatable.

Pregnancy, childbirth, and lactation are circumstances in which cultural beliefs strongly influence women's dietary practices. Field studies are necessary in such scenarios to observe people in their environment and understand the perceptions surrounding these practices.

No similar study was conducted in the rural area of Sindhudurg district to understand recent local dietary practices during pregnancy and lactation. Therefore, the present study aimed to describe dietary practices and perceptions during pregnancy and lactation among women in rural Sindhudurg. Objectives were to assess current dietary practices among pregnant and lactating women in rural Sindhudurg, to determine women's perception of how and what they eat during pregnancy and lactation affects their and their baby's health, and to identify myths and taboos in dietary practices during pregnancy and lactation that are prevalent.

MATERIAL AND METHODS

- Study design: Qualitative Study
- Study setting: Rural field practice area of a Medical College in Maharashtra, India
- Study participants: Pregnant and lactating women, women involved in cooking for family, frontline workers – Accredited Social Health Activist (ASHA) and Anganwadi worker (AWW)
- Eligibility Criteria:
  - Consenting pregnant women
  - Currently, lactating women with a child less than two years of age
  - Women involved in cooking for family
  - ASHA workers and Anganwadi workers of the respective area
- Study duration: July to December 2022 (six months)
- Sampling and sample size:
- Convenience sampling was done. Sampling was done until saturation was achieved and no new information was generated.Data Collection:
- Homogenous group for Focused group discussions (FGD)
- Typical case method for In-depth Interviews (IDI)
  - 5 FGDs were conducted among pregnant and lactating women.
  - 2 FGDs with women other than pregnant and lactating involved in cooking for the family
  - 1 FGD was conducted among frontline workers at the Anganwadi center.
  - 8 IDI were conducted among ASHA and AWW of the area

Methodology

Ethical consideration with approval from the Institutional Ethics Committee was sought. Written informed consent was obtained from each participant prior to the collection of data and after the participants were explained the nature and purpose of the study. The study did not involve any intervention or collection of any sensitive data.

The present study was conducted at two villages (Padve and Kasal) under the ruralfield practice area of SSPM Medical College and Lifetime Hospital, Padve, Sindhudurg. The Family Adoption Program covers the area through undergraduate students. Sindhudurg is the coastal Konkan district of the state of Maharashtra in India. Due to the coastal region, the staple food is rice and fish. Proximity to the sea is reflected in the lifestyle of the Konkani people. The population of Sindhudurg district is 8.32 Lakhs (According to the Census report projected), with a population density of 160/ sq km, which is sparsely populated compared to the whole of Maharashtra (365/ sq km).

According to Gram panchayat (local village council) records, the population of Kasal is 4922, while that of Padve is 1232. There are seven Anganwadi centres, in the study area.

Data collection tools

FGD and IDI guides were used to collect data for this study. The guide was semi-structured and included questions related to the increase or decrease in the amount of food consumed during pregnancy and lactation, avoidance of particular food and food groups, any exceptional food consumed during pregnancy and lactation, any foods considered as lactogens, eating habits, methods of preparation of food in the family and their source of information. The guide was first developed in English and then translated into Marathi. All the FGDs and IDIs were conducted in Marathi. Each FGD lasted 30 to 45 minutes, whereas IDI lasted 50 to 60 minutes.

The authors of the study conducted all the IDIs. The FGDs were conducted at Anganwadi centers and homes of pregnant/lactating women. The help of Anganwadi workers and ASHA workers was sought to gather pregnant and lactating women for FGDs. IDIs were conducted either at Anganwadi or Sub-centers. Other family members and undergraduate students were present for some FGDs and IDIs apart from interviewers and participants.

During the sessions, detailed descriptive notes were taken along with interactions between the FGD members, non-verbal communication, environment, and reflections of note taker and facilitator from interview content.

Data analysis plan

All focus group discussions (FGDs) and in-depth interviews (IDIs) were recorded using mobile phones, with the participants' informed consent. The recordings were then translated into English and transcribed. The transcripts were reviewed with Anganwadi and ASHA workers and then input into the Taguette online open software for qualitative data analysis. Thematic analysis was conducted, and the findings were summarized using descriptive statistics such as numbers, percentages, mean, and standard deviation.

RESULTS AND DISCUSSION

Table 1 Describes the demographic characteristics of the study population. A total of 66 participants constituted the study sample; 15 were ANC, 23 were PNC, 12 were women Involved in cooking for the family, and 16 were frontline workers, i.e. ASHA and Anganwadi workers.

Table 1. Demographic Characteristicsof the Study Population

	Frequency (Percentage)	Mean Age ± SD (Range)	Mean years of schooling
Pregnant women (ANC)	15 (22.72)	24.6 ± 3.7 (20, 33)	8.0
Lactating women (PNC)	23 (34.84)	25.6 ± 5.8 (20, 41)	8.5
Women Involved in cooking	12 (18.18)	49.2 ± 10.7 (36, 73)	6.4
Frontline workers	16 (24.24)	40.9 ± (27, 52)	10
Total	66 (100)	49.2 ± 12.3 (20, 73)	8.2

The major themes and subthemes identified were

1. Diet during pregnancy
    a. Knowledge of what to eat
    b. Knowledge about change from pre-pregnancy/ routine diet
    c. Actual practice
    d. Coconut water
2. Diet during lactation
    a. Knowledge of what to eat
    b. Knowledge about change from pre-pregnancy/ routine diet
    c. Knowledge about galactagogues
    d. Immediate post-delivery diet
    e. Diet for aiding weight loss/ regaining pre-pregnancy strength
3. Myths regarding diet during pregnancy and lactation
    a. Foods to be avoided
    b. Foods to be consumed in less quantity
    c. Modification in routine diet
    d. Foods affecting milk composition
    e. Foods consumed by mothers leading to certain conditions in baby
4. Source of information
5. Decisions affecting diet
    a. Buying groceries
    b. Deciding daily menu
    c. Eating together/ after males in the family
    d. Food preferences and choices

1. Diet during pregnancy

All the pregnant women agreed that their diet should include fruits, sprouts, and milk. This finding is similar to the findings of many other studies done in India and abroad, like Diana R et al. (2018), Catherine N et al. (2015), and Laxmi G (2013).

Although most pregnant women had this knowledge, it was not included in their diet. The main reason is the need for more affordability. Many of the women, with a few exceptions, stated that their diet during pregnancy was not different from their regular diet. Some mentioned that they

eat a variety of foods. Although all the women agreed that eating green leafy vegetables during pregnancy is essential, none reported consuming them regularly. Additionally, none of the mothers ate the recommended five servings of fruits and vegetables daily as the World Health Organization advised in the Draft comprehensive global monitoring framework and targets for preventing and controlling noncommunicable diseases, 2013. Only a few, especially those from higher socio-economic strata, are said to consume milk, dry fruits, fruits, and protein powder (as a supplement). Many pregnant mothers consumed local coconut water. They believed it to be blood purifying and lead to a fair skin complexion for the baby.

2. Diet during lactation:

Although the diet of pregnant females did not differ much from the routine diet; there was a special diet for lactating women, especially during puerperium. A systematic review regarding qualitative literature on cultural practices and beliefs influencing perinatal nutrition in low and middle-income countries by Raman S et al. (2016) noted that restriction of both quantity and type of food was practiced and cultural taboos related to food avoidance of 'bad' food were prevalent in Asia.

"*Olee balantin"* is a term used for the immediate postpartum period of five to six weeks. It is considered a more vulnerable period and strict restrictions have been set forth. Immediate postpartum women were advised to have a liquid diet for at least one week. The semi-solid and liquid diet was advised during the puerperium, which included liquid moong dal khichdi, various porridges like Rava kheer, methi (fenugreek seeds) kheer, and rice kheer. 'Khimti' is a rice porridge used for postpartum women and infants and is particular to the Konkan region.

Many lactating women consumed Methi laddu, dink (edible gum) laddu, and dry fruits laddu as galactagogues. Though this was practiced for up to five weeks, the diet afterward was similar. Once this 5–6 week period has elapsed, there was no special diet for lactating women in most cases.

Some lactating women were consuming 'Jeera water,' i.e., water made with soaking and boiling cumin seeds. It was believed to reduce abdominal fat.

A parallel Chinese concept to olee balantin is "zuo yuezi". During this period, food was restricted to easily digestible foods such as millet soup, brown sugar water, and eggs.

The present study found that a special porridge (khimti)was given to lactating women A similar finding was noted by Ansong J et al. (2022) from Ghana, where a particular type of soup called "Abedru" was taken when the pregnancy was about five to six months till delivery. It was said that it helps women to have easy and smooth delivery. Various types of ethnomedicines and different healing foods used by women during the perinatal period were mentioned in the systematic review (Raman S et al., 2016).

Iron and folic acid (FSFA) consumption:

Iron and folic acid are provided through various government facilities through the Anaemia Mukt Bharat program to pregnant and lactating mothers 180 days during pregnancy and for 180 days post-delivery. Compliance with FSFA tablets was good during pregnancy. Almost all 14 (93%) pregnant women had taken FSFA tablets the day before the interview, but it was neglected during lactation. Only 2 out of 8 (25%) eligible lactating mothers had consumed FSFA tablets.

A cross-sectional study was conducted among pregnant women attending an antenatal clinic in Agartala Govt. Medical College by Choudhuri P et al. (2022) highlighted that only around half of pregnant women comply with IFA. The compliance proportion was 61.7% in a study conducted

at Surat in 2014 by Dutta AJ et al. (2014). Thus, a higher proportion of pregnant women were compliant in our study than in these findings.

3. Myths regarding diet during pregnancy and lactation:

The Oxford Dictionary defines myth as 'something that many people believe, but that does not exist or is false. Taboo is a cultural or religious custom that prohibits people from doing, using, or talking about a particular thing.

They had various myths regarding avoiding foods or those that should be consumed less during pregnancy. Non-vegetarian food, such as chicken, crabs, and egg yellow, should be consumed in smaller quantities. The reason behind that was it may cause indigestion; this food is '*heavy'* (There is a concept of heavy foods and light foods. Foods that are difficult to digest are heavy foods)

Mutton was avoided because it may induce vomiting in pregnant mothers, and pregnant women avoided the same reason spicy and sour foods.

Jackfruit, which is locally available fruit, is avoided because it is considered '*hot'*. They believed that hot foods should be avoided during pregnancy. Papaya is not at all consumed by pregnant women because it is considered hot and may lead to abortion.

In the present study, fruits like jackfruit and Papaya were considered hot, so abortifacients were used. Papaya was not at all consumed by pregnant women and was considered abortifacient by all the women surveyed. A similar finding was noted in other studies where various fruits were considered abortifacients. The study conducted by Chakona G. et al. (2019) in South Africa found that Pineapple and guava were prohibited for pregnant women. In a study by Catherin N et al. (2015) in Karnataka, India, Papaya, sesame, jackfruit, custard apple, pumpkin juice, cucumber, mango, guava, and aloe-vera were considered abortifacients. Chakrabarty S et al. (2019) from West Bengal found that most participants mentioned Papaya, *parwar* (pointed gourd), and pineapples as causing miscarriage.

As it was a universal finding across studies in India that Papaya was considered an abortifacient, we tried to search for relevant literature. Contradictory to the current finding, a study by Eliagita C et al. in Indonesia in 2017 aimed to examine the effect of Papaya (Carica papaya Linn.) on hemoglobin and hematocrit levels in pregnant women with anemia and has recommended that consuming Papaya by pregnant women can prevent anemia. It was a randomized control trial, and results showed that mean hemoglobin levels in the papaya-consuming group were significantly higher than the controls. Adebiyi A. et al. (2002) conducted an experimental study on rats and published it in the British Journal of Nutrition. They found that regular consumption of ripe Papaya during pregnancy may not pose any significant danger. However, the unripe or semi-ripe Papaya (which contains a high concentration of latex that produces marked uterine contractions) could be unsafe during pregnancy. Yogiraj V et al. (2014) stated in their research that young men and pregnant women should avoid papaya seeds in any form since they possess antifertility effects that were demonstrated well in animal models.

After the cesarean delivery procedure, eggplant, potatoes, and cashews were avoided by the mother, as they were believed to cause infection in the stitches.

"Brinjals, potatoes, and cashews may lead to delayed healing and even pus in cesarean stitches." (Mother-in-law, 53 years old).

Lactating mothers believe that their diet affects the composition of breast milk and that they should be alert when consuming certain foods. There were myths regarding foods that, when

consumed by lactating women, may lead to specific symptoms or conditions in babies; lactating women did not consume Fish (especially bangda) as it is believed to cause a rash on the baby's skin. Lobsters were not consumed for the same reason. Palak (spinach) was considered to cause diarrhea in babies. Sour foods were avoided because they may cause cough in infants. *Cold* foods like cucumber may cause a runny nose, a common cold. Consumption of bananas by lactating women may cause sputum in babies. One of the mothers said, "Banana is not given to the lactating mother because that may lead to *Kapha* and breathing difficulty in the baby." (lactating mother, 26 years old). Most women said they need more time for meals and eat on the go. "We must eat on the go. Who has time to relax and have meals?" (ANC, 20 years old).

The mothers in our study believed that their diet affected their infants, but it was in a negative sense, whereas frontline workers said that maternal diet did not affect milk composition. Emmett PM et al. (1997) conducted early studies regarding breast milk composition. The study noted that the mother's nutritional status influences the fat and, therefore, energy content of breast milk and its fatty acid composition and immunological properties. The protein and lactose concentrations are not significantly affected. The mother's intake influences the concentration of vitamins in breast milk, while minerals are less variable (except selenium). A recent study by Mane SM et al. (2018), where the biochemical concentration of various components of breastmilk was estimated, showed that total protein, lipid, and lactose levels in the colostrum of malnourished mothers are significantly lower than those in well-nourished mothers.

Dietary Diversity Score was assessed by taking the 24-hour dietary recall per Guidelines for Measuring Household and Individual Dietary Diversity. Report. FAO 2010; of the pregnant and lactating women. All the foods and drinks consumed during the past 24 hours by the ANC/ PNC mother were noted down. They were probed for meals and snacks that were not mentioned. Then, the food mentioned was divided into 16 groups, leading to the total DDS being 16.

Table 2. Mean dietary diversity scores of pregnant and lactating mothers

Stage	Mean Dietary Diversity score $\pm$ SD
Pregnancy (n=15)	6.1 $\pm$ 2.7
Immediate postpartum-up to 6 weeks (n=6)	4.3 $\pm$ 3.2
After 6 weeks postpartum- (n= 17)	8.9 $\pm$ 4.8

This may be due to various restrictions. Kheer and liquid diets, given to lactating mothers, are calorie-dense, which is required postdelivery. Also, it helps to maintain hydration among lactating mothers. However, the dietary diversity score was deficient. This condition may lead to micronutrient deficiency. A study by Rajpal S et al. (2021) in the Palghar district of Maharashtra found that only half of the lactating women have a minimum diversified diet (MDD). Similar findings were noted in studies conducted in Ethiopia by Demilew YN et al. (2020) and Hailu S et al. (2019).

4. Source of Information:

All the mothers were registered with some health facility or another. The sources of information mentioned regarding diet were doctors, nurses, hospitals, booklets, AWW, ASHA, mother, mother-in-law, and grandmother.

"I follow whatever instructions that are given by my mother-in-law." (24-year-old, ANC). One of the PNCs mentioned that she participates in the Garbh Sanskar group on social media (the WhatsApp group was created for pregnant females).

5. Decisions affecting diet:

In most households, men typically handle grocery shopping and food purchases. Food preferences are considered for men and children. The decision-making for the daily menu usually involves the mother-in-law.

"We must eat whatever is bought by my husband. No one bothers about our likes or dislikes." (PNC, 25-year-old)

Milk was given to young children, and adults usually drank tea twice a day.

"We buy milk only sometimes." (ANC, 22 year old)

IDI among AWW, ASHA:

Frontline workers' knowledge of dietary advice to be given to pregnant and lactating mothers was current. They advised mothers to eat sprouts, dates, milk, green leafy vegetables, and dry fruits. ASHA workers told mothers to eat whatever is affordable, available, and easy to digest. They were counseled to avoid addictions like smoking and alcohol. Various types of kheers, including methi (fenugreek) and dink (edible gum), are considered Galactagogues by them. Frontline workers did not consider the effect of maternal nutrition on breast milk composition or its impact on the baby. However, they know all the restrictions and myths prevailing among mothers.

Education regarding diet was given through various programs conducted at Anganwadi, like *Annaprashanam*, a half-year birthday celebration for infants, *Poshan Pandharwada*, or Nutritional Fortnight. It included the demonstration of healthy food recipes as well.

Most things have stayed the same over the years, especially in rural areas. Dietary restrictions, especially during the early postpartum period, led to Less dietary diversity. Misinterpretation of ancient knowledge It is also important to note that though they knew about nutritious food, primarily affordability and, secondarily, time constraints were an issue for many women. The present study focused on dietary practices prevalent in rural coastal areas of India. The field-based data collection in the local language was done with the help of ASHA and Anganwadi Workers. The various myths regarding diet during pregnancy and lactation and the relevant literature for insight are discussed. Though this article focuses only on dietary practices, other practices around pregnancy and childbirth are prevalent. These beliefs are deep-rooted and are not readily amenable.

CONCLUSION AND SUGGESTION

Many pregnant and lactating women are aware of the importance of nutritious food. Current knowledge of frontline workers regarding dietary advice for pregnant and lactating mothers is crucial. Dietary restriction, especially during the early postpartum period, leads to Less dietary diversity. There are various misbeliefs about diet during pregnancy and lactation; some of the beliefs are deep-rooted and not readily amenable.

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CONFLICT OF INTEREST

None

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