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Food Consumption Pattern of the Mahadev Koli Tribe of Tribal Sub Plan Area of Pune District of Maharashtra

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Abstract

Food is more than just a biological necessity; it is deeply interwoven with cultural, social, and economic structures. This study explores the food consumption patterns of the Mahadev Koli tribe in the tribal sub-plan area of Pune district, Maharashtra, focusing on the interplay between dietary practices, cultural identity, and environmental influences. Using an ethnographic approach, the research examines traditional food choices, meal patterns, foraging and agricultural practices, and the impact of modernization on dietary habits. The study employs qualitative methods, including participant observation, and Focused group discussions. It documents staple foods, seasonal variations, food taboos, and ritualistic aspects of consumption. The findings highlight how local ecology, subsistence strategies, and socio-economic factors shape food choices, with a strong reliance on forest produce, millets, and locally available resources. Additionally, the study explores the nutritional implications of these dietary habits and the effects of external influences such as market integration and government food schemes. Traditional food systems contribute to nutritional security and cultural preservation among the Mahadev Koli. The study also examines challenges such as food insecurity, dietary shifts, and the erosion of indigenous knowledge. It contributes to the broader discourse on tribal nutrition, sustainability, and policy implications for community health and food sovereignty. Understanding the Mahadev Koli tribe's food habits offers valuable perspectives on indigenous dietary resilience and the evolving dynamics of food culture in tribal communities.

Keywords: Food consumption, Mahadev Koli, tribal nutrition, dietary habits, food culture.

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Introduction

Food is a fundamental aspect of human life, serving not only as a source of nutrition but also as a reflection of cultural identity, social structures, and environmental interactions (Babu & Sunil, 2008). Across different societies, food consumption patterns are shaped by a complex interplay of ecological, economic, social, and religious factors (Shedage & Kulkarni, 2011). Among indigenous communities, traditional dietary habits are deeply rooted in their way of life, reflecting their relationship with nature, subsistence practices, and cultural beliefs (Ghosh et al., 2023). This study focuses on the Mahadev Koli tribe, a Scheduled Tribe predominantly residing in the hilly regions of Pune district, Maharashtra, to understand their food consumption patterns.

The Mahadev Koli are traditionally a forestdependent and agrarian community, relying on millets, pulses, tubers, and forest produce for sustenance (Babu & Sunil, 2008). Their diet is closely linked to seasonal availability, local biodiversity, and cultural traditions(Nandre & Kulkarni, 2011). However, with the increasing influence of urbanization, market integration, and government interventions, their food habits are undergoing gradual transformations. The introduction of modern food systems, packaged foods, and public distribution schemes (PDS) has significantly influenced their traditional dietary patterns, raising concerns about nutritional security, dietary diversity, and health outcomes. This research aims to explore what, how, and why the Mahadev Koli consume specific foods, the impact of external factors on their dietary habits, and traditional knowledge in food choices. Using ethnographic and dietary surveys, this study documents staple foods, meal structures, seasonal variations, and perceptions of nutrition among the Mahadev Koli.

Materials and Methods

This study employs a cross-sectional research design. The tribal sub-plan area includes more than 60% of the population of the tribe present in the taluka or block (Samvaad, n.d.)In Pune district of Maharashtra, some parts of Ambegaon and Junnar talukas come under tribal sub-plan area. Qualitative research methods are used to gain an in-depth understanding of dietary practices, cultural influences, and external factors affecting food choices.

Study Area and Population

The research is conducted in Ambegaon and Junnar talukas, where the Mahadev Koli community predominantly resides(Census Tables | Government of India, n.d.)These regions are characterized by hilly terrains, forest cover, and semi-agricultural settlements, which influence the tribe's subsistence patterns. The study population consists of Mahadev Koli individuals engaged in traditional livelihoods such as farming, forest foraging, and labor work.

Sampling and Sample Size

A purposive sampling method was used. There were 144 participants in total for 36 focused group discussions. Participants were selected from a diverse range of age groups, genders, and socioeconomic backgrounds to capture a holistic view of food consumption patterns. The data was collected until the data-saturated point.

Data Collection Methods

Focused Group Discussions:

Conducted with community elders, women, and youth to understand shared knowledge on traditional foods, meal practices, taboos, and ritualistic aspects of eating. Explores perceptions of nutritional value, seasonal variations, and dietary changes over generations. It also documented staple foods, meal frequency, sources of food, and cultural significance. Discussion with participants also assesses the impact of modernization, government food schemes, and market dependence on traditional diets. Qualitative data from group discussions analysed using thematic analysis to identify key patterns in food practices, cultural meanings, and dietary transitions.

Data and Analysis

Diet of the Mahadev Koli Tribe: Ecology and Its Influence

The dietary patterns of the Mahadev Koli tribe are intricately linked to their ecological surroundings. Residing in the hilly terrains of Ambegaon and Junnar talukas of Pune district, the tribe depends on a combination of agriculture, forest resources, and local markets for their food supply. Food availability varies across seasons, with monsoons providing abundant wild edible plants, tubers, flowers, leaves, and fruits. It also includes crab, freshwater, and pond fishes. In the monsoons, food diversity is high, but due to heavy rainfall, most of the time, people do not have access to the market due to hurdles in transportation. In winter and summer, emphasize millets, pulses, and preserved foods. Their subsistence farming practices ensure a steady supply of traditional crops, primarily finger millet (ragi), pearl millet (bajra), sorghum (jowar), and pulses like tur dal and horse gram. However, market integration and government food schemes have introduced rice and wheat, leading to a gradual dietary shift.

Food Preparation Methods and Cooking Style Food preparation in Mahadev Koli households follows traditional methods that retain nutritional value. Most cooking uses open-fire chulhas (woodfired stoves), imparting a distinct smoky flavor to dishes. Bhakri (flatbread made of millet or rice flour) is a staple and is prepared by hand-rolling the dough and cooking it on a flat iron griddle. Vegetables and pulses are slow-cooked, often in earthen or metal pots, ensuring better flavor absorption and retention of nutrients.

A common preparation style is boiling or steaming, particularly for wild tubers and leafy greens, which helps reduce anti-nutritional factors. Meat is traditionally roasted or cooked in spicy curries with minimal oil. Fermented foods like ambli (ragi and rice porridge) and pickled raw mango are consumed to enhance gut health and preserve food during lean seasons. Unlike urban populations, deep-frying is not a prevalent cooking method, with the exception of festival delicacies.

Food Consumption Patterns

The daily meal structure of the Mahadev Koli tribe consists of two main meals and one lighter meal or snack. Breakfast is often a simple dish of ragi ambil (fermented millet porridge) or leftover rice, bhakri with chutney. The most substantial midday meal consists of bhakri, dal, seasonal vegetables, and occasionally meat or dry fish. Dinner is relatively light and similar to lunch but includes buttermilk or a simple rice dish, depending on availability. Seasonal availability largely influences food consumption patterns. During monsoons, the diet is rich in fresh greens and tubers, while winter sees an increase in stored grains and pulses. Summer diets include dried and fermented foods, providing sustenance when fresh produce is scarce.

Special Foods for Rituals and Occasions

The Mahadev Koli tribe places great importance on food in social and religious rituals. Special occasions such as festivals, weddings, and community gatherings involve the preparation of traditional

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delicacies. During Vaghbaras,Holi, Akshay Trutiya, Bailpola, and Diwali, sweets made from jaggery, sesame seeds, and rice flour, are commonly prepared. Meat consumption is ritualistically significant, especially during harvest rituals (Saat), where goat sacrifice is performed, and the meat is shared among community members.

Certain foods are considered auspicious or taboo based on cultural beliefs. Pregnant women are advised against consuming specific wild tubers, Payaya, Fish, and excessively sour foods, which are believed to impact fetal health. On the other hand, postnatal diets include nutrient-dense foods like ragi porridge, jaggery-based sweets, and ghee-rich preparations to aid recovery and lactation.

Sun-dried/ preserved food

The Mahadev Koli tribe prepares various sun-dried foods using locally available grains and pulses. These foods are fermented, cooked, and sun-dried, making them easy to store and use throughout the year, especially during festivals and special occasions.

Kurdai is a popular sun-dried snack made from rice or wheat flour, which is fermented, boiled, and shaped into spirals before drying. It is deep-fried before consumption, making it a crispy accompaniment to meals. Papad (papadum) and Padadi are made using lentils, urad dal, or moong dal, mixed with spices, rolled into thin sheets, and dried. These are roasted or fried before serving.

Sangade is another traditional dried food made from fermented black gram or rice batter, shaped into small pieces, and sun-dried. These are later fried to make a crunchy side dish. Such preserved foods play a vital role in the tribe's diet, ensuring food security during lean seasons and adding variety to festive meals. Preparing these sun-dried foods reflects the tribe's knowledge of food preservation techniques, passed down through generations.

Chutneys and pickles

Chutneys and pickles hold a significant place in the culinary traditions of the Mahadev Koli tribe, serving as important condiments that enhance the flavor and nutritional value of meals. Groundnut (peanut) chutney and sesame seed chutney are widely consumed among the commonly prepared chutneys. Groundnut chutney, made by roasting and grinding peanuts with garlic, dried red chilies, and salt.

Dried Fish in Diet

Dried fish plays a crucial role in the Mahadev Koli tribe's diet, especially in regions with limited access to fresh fish due to seasonal changes or geographical constraints. The process of sun-drying fish allows for its preservation, ensuring a reliable source of protein throughout the year. Fish such as mackerel, bombil (Bombay duck), and small river fish are commonly dried and stored for later use.

Dried fish is prepared by cleaning, salting, and sundrying for several days until the moisture content is sufficiently reduced. This preservation method enhances the shelf life of the fish and intensifies its flavor, making it a popular addition to various dishes. Dried fish is typically used in spicy curries, chutneys, or stir-fried preparations with onions, tomatoes, and local spices. It is an essential protein source, particularly during monsoons and lean agricultural periods when fresh food availability is limited.

Dried fish is considered nutritionally beneficial among the Mahadev Koli, being rich in protein, calcium, and essential fatty acids. However, its consumption is often balanced with traditional beliefs, as certain fish varieties are avoided during specific seasons due to cultural taboos or healthrelated reasons.

Alcohol consumption

Alcohol consumption holds cultural, social, and economic significance among the Mahadev Koli tribe. Traditionally, alcohol has been an integral part of festivals, community gatherings, and religious rituals. The most commonly consumed alcoholic beverages include locally brewed mahua liquor, and toddy extracted from palm trees. These indigenous brews are naturally fermented and often consumed during ceremonial events, agricultural celebrations, and social bonding activities.

In the past, alcohol was ritually prepared and consumed in controlled settings, primarily during harvest festivals, weddings, and religious ceremonies. It was not merely an intoxicant but was believed to have medicinal properties when consumed in moderation. Elders and village leaders often regulated its use, ensuring that it did not disrupt social harmony. The preparation of mahua liquor, made from the flowers of the Madhuca indica tree, was a community-driven activity, with women playing a central role in fermentation and distillation. With increasing exposure to urbanization and commercialization, alcohol consumption patterns have changed. While traditional brews are still prevalent, there is a growing dependency on commercially available spirits, which are often stronger and more harmful than indigenous varieties. This shift has led to higher alcohol consumption rates, particularly among men and young adults. The availability of cheap, industrially produced liquor has also contributed to alcohol-related health issues, including liver disorders, addiction, and domestic conflicts

Additionally, socio-economic stress, seasonal unemployment, and migration for labor have increased alcohol dependency in certain sections of the community. Women, who traditionally played a role in regulating alcohol consumption, have raised concerns over its negative impact on family wellbeing and household finances.

Food During Illness

Among the Mahadev Koli tribe, food practices during illness are influenced by traditional knowledge, herbal remedies, and dietary modifications to promote healing. The diet during sickness is usually light, easy to digest, and nutrientdense, focusing on restoring strength and immunity. During fevers and general weakness, warm, liquidbased foods like ragi and rice ambil (fermented finger millet porridge) are commonly given. These are believed to provide energy while being gentle on digestion. Herbal decoctions made from tulsi (holy basil), turmeric, ginger, and black pepper are frequently consumed to treat coughs, colds, and respiratory infections.

The Mahadev Koli people rely on boiled rice with buttermilk or light dal soups for digestive issues. Herbal remedies such as ajwain (carom seeds) water and coriander seed tea are used to alleviate stomach discomfort.

Postpartum women and individuals recovering from severe illness are given nutrient-rich foods like jaggery-based preparations, ghee, sesame laddoos, and dried fish soups, which are believed to aid strength recovery and blood circulation. Meat consumption is often restricted during illness, but lightly spiced chicken broth is sometimes given for weakness and post-illness recovery.

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These traditional dietary practices reflect the Mahadev Koli tribe's deep-rooted knowledge of healing foods that support recovery and overall well-being.

Changing Eating Practices and Influences

Over the years, socio-economic changes, government interventions, and urbanization have influenced the Mahadev Koli's traditional eating practices. The introduction of subsidized rice and wheat through the Public Distribution System (PDS) has led to a gradual decline in millet consumption, which was once the dietary staple. Packaged and processed foods have made their way into daily consumption, especially among the younger generation, replacing traditional snacks with biscuits, namkeen, and instant noodles.

Migration to cities for labor work has led to dietary modifications, as urban environments offer fast food and convenience-based eating habits. Despite these changes, community elders continue to uphold traditional food wisdom, emphasizing indigenous foods' nutritional and medicinal value. Government-led nutrition programs and awareness campaigns are increasingly being introduced to encourage a return to millet-based diets and address malnutrition-related concerns.

Adolescent Nutrition and Dietary Challenges

The nutrition of adolescents within the Mahadev Koli community is of particular concern. Adolescents consume a high-carbohydrate, lowprotein diet, which can lead to micronutrient deficiencies. Protein intake is primarily derived from pulses, eggs, and occasional meat consumption, but the lack of dairy and fresh fruits reduces the intake of essential vitamins and minerals. Iron deficiency anemia is commonly observed, particularly among adolescent girls, due to inadequate consumption of iron-rich foods like leafy greens and organ meats. Government schemes such as the Mid-Day Meal (MDM) program and Integrated Child Development Services (ICDS), residential ashram schools play a role in supplementing adolescent nutrition, but traditional food habits continue to dominate.

Discussion

The diet of the Mahadev Koli tribe under study is largely influenced by the availability of forest produce and crops, but this does not suffice to meet their nutritional needs. The consumption of sugar, milk and dairy products, and fats is notably absent, with cereals, pulses, and vegetables making up the majority of their diet. However, even these food items are consumed in insufficient quantities, leading to an inadequate diet overall. It is also observed that Mahadev Koli women face further challenges, as they typically eat last. The lack of access to adequate resources contributes to a deficiency in essential nutrients, similar to findings observed among other tribes. For example, Mittal and Srivastava (2006) reported similar deficiencies in the Oraon tribe of West Bengal, while Mishra et al. (2002) found similar issues in the Kharwar tribe of Uttar Pradesh, as well as in various tribes of Bastar (Singh and Palta, 2004) and Madhya Pradesh (NNMB, 2000). However, the Kharwar tribe was noted to consume milk when available. Bhasin (2005) also found that the Bhils of Rajasthan experience significant nutritional deficiencies due to insufficient intake of pulses, vegetables, fruits, and milk, leading to health problems such as bleeding gums, mottled enamel, and angular stomatitis (Bhasin, 2004). In all of these studies, low consumption of pulses, vegetables, and cereals—below the Recommended Dietary Allowance (RDA) as per ICMR—was noted, influenced by cultural practices and resource availability within each community.

The Mahadev Koli tribe's preference for a nonvegetarian diet is evident, but it is consumed only 2- 3 times a month or during special ceremonies and festivals, mainly due to economic constraints. Additionally, the dietary intake of Mahadev Koli women was found to be lower than that of adult men. Similar findings were reported by Basu (1993) and Kupputhai et al. (1993), who observed poorer dietary intake among tribal women in different regions of India, including the Khond, Gonds, and Porja tribes of Andhra Pradesh (Basu, 1993; Kupputhai & Mallika, 1993). However, Mittal et al. (2006) did not find a significant difference in the diet between Oraon women and men. Alcohol consumption holds socio-religious significance, with men being regular drinkers and some older women consuming alcohol 2-3 times a week after distilling it in traditional distilleries. Younger women, however, have started to refuse alcohol. Chouby (1998) documented similar alcohol-related practices among the tribals of Bastar.

All of the studies mentioned, including the current one, report minimal seasonal variation in the diets of these tribes. In conclusion, the diet of the Mahadev Koli tribe, along with those of other referenced tribes, is deficient in essential foods such as fruits, vegetables, cereals, pulses, and milk, as well as fats. This results in deficiencies in protein, energy metabolism, and other crucial nutrients like calcium, iron, riboflavin, and vitamins A and C.

Conclusion

The food consumption pattern of the Mahadev Koli tribe reflects their ecological setting, cultural heritage, and socio-economic status. While traditional foods remain integral to their diet, modernization and external influences have led to dietary transitions. Understanding these shifts and their nutritional implications is crucial for designing sustainable food security and health interventions for tribal communities. Revitalizing traditional food systems and promoting nutritionally balanced diets can help preserve the cultural identity and dietary resilience of the Mahadev Koli tribe amidst the challenges of modernization.

The findings contribute to a broader understanding of tribal nutrition and indigenous food systems and their relevance to contemporary food security policies. By examining traditional food habits in the context of socio-economic and environmental changes, this research will provide insights into the resilience and adaptability of indigenous diets in modern times.

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