

From Womb to Grave: Food Culture associated with Rites de Passage among Paudi Bhuyan, a Particularly Vulnerable Tribal Group (PVTG) of Odisha, India.

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Abstract: Food practices are closely related to culture, rituals, and health in indigenous communities. In India's Particularly Vulnerable Tribal Groups (PVTGs), these practices are poorly documented, posing significant challenges to targeted health and nutrition policies. The Paudi Bhuyan, a PVTG from Odisha, India has a complex food culture that extends from pregnancy through infancy, adolescence, marriage and death. The current study sought to record and analyse their food prescriptions, food taboos and sickness-related food prohibitions across the life cycle of Paudi Bhuyan. We used a qualitative ethnographic methodology, including semi-structured interviews, focus group discussions, and key informant interviews in the villages of Odisha. The results show a complex, culturally relevant food system that governs food consumption across nine life stages from trimester-specific pregnancy foods to mortuary feeding rituals. Local food sources like moringa, horse gram and millet are targeted during physiologically critical times. Paudi Bhuyan's food culture is an essential body of indigenous nutrition knowledge that should be integrated into public health policies rather than replaced by universal diet guidelines.

Keywords: Food Culture; Food Taboos; Life-cycle Rituals; Indigenous Knowledge; Ethno-nutrition; Paudi Bhuyan; Particularly Vulnerable Tribal Group.

Introduction

Food is far more than sustenance. In indigenous communities across the world, what is eaten, what is avoided, and when dietary transitions occur are governed by an intricate system of cultural logic that has been refined over generations. This system often dismissed as superstition by external health practitioners, in fact encodes community wisdom about the body, vulnerability, and healing that is deeply responsive to lived ecological and social realities. Nowhere is this more strikingly evident than among India's Particularly Vulnerable Tribal Groups (PVTGs), a designation that encompasses 75 tribal communities of India as requiring special developmental attention due to their stagnant or declining populations, extremely low levels of literacy, a pre-agricultural mode of subsistence economy, and geographic isolation [1]. Odisha is home to the largest number of PVTGs among all Indian states, with 13 distinct groups.

Food, in these communities, is not merely a delivery system for macro- and micronutrients. It is a language. It communicates social status, spiritual purity, relational belonging, and moral responsibility. Food taboos are the practices that restrict the consumption of certain foods at specific life stages and have been documented across virtually all indigenous communities globally, and their study has gained increasing traction in the biomedical and public health literature. In the South Asian tribal context specifically, food taboos during pregnancy and lactation

have been found to be widespread, varied, and strongly associated with sociodemographic factors including education and socioeconomic status [2,3,4].

Indigenous food systems have also begun to attract serious academic attention for their nutritional sustainability and alignment with community health priorities. Research among the Sauria Paharia, Munda and Oraon tribal groups (all PVTGs) found that traditional ecological knowledge about food plants was associated with access to micronutrient-dense foods that could directly address deficiency diseases common in these populations [5,6,7]. These findings support a key argument, one that has been frequently neglected by mainstream public health programmes.

The food culture of the Paudi Bhuyan, including its prescriptions, prohibitions, and ritual dimensions throughout the entire human life cycle - has not been systematically recorded in the academic literature. The existing literature on this community has already touched on such areas as biocultural knowledge, edible plant diversity, and socioeconomic change [8,9], yet there is still no dedicated, lifecycle-spanning ethnographic investigation of food practices. This is a huge gap, as food practices in this community do not simply cluster around nutrition, but also function as grief rituals, rites of passage and as markers of social inclusion.

This gap is filled in the present study. It seeks to: (i) to document the food prescriptions and prohibitions in each of the major life-cycle stages of the Paudi Bhuyan community; (ii) to identify the morbidity-related rationale underlying food taboos as perceived by community members; and (iii) to critically interpret these practices through an ethno-nutritional lens, to identify congruities and incompatibilities with contemporary biomedical nutritional knowledge.

Methodology

2.1 Study Design

This study adopted a qualitative ethnographic design, appropriate for investigating food practices embedded in cultural and ritual contexts where quantitative measurement would fail to capture the depth of meaning and the social logic of behaviour.

2.2 Study Area and Population

The study was conducted in the remote villages of Karangadihi Panchayat of Banspal block inhabited by the Paudi Bhuyan of Keonjhar district in Odisha, India. The Paudi Bhuyan, also known as the 'Hill Bhuyan', derive their name from the Sanskrit root Bhumi (meaning earth) and have historically inhabited forested hillside ecosystems. Their settlement pattern is predominantly in remote, elevated terrain with limited road connectivity which has contributed to the relative preservation of their food traditions, even as modernisation pressures increasingly affecting the younger community members [9,10]. Their economy is based on subsistence agriculture, forest-based food gathering, and limited wage labour, with millet, rice, and forest greens forming the backbone of the daily diet.

2.3 Sampling and Participant Selection

Purposive sampling was used to identify participants with deep community knowledge of food practices and life-cycle rituals. Three categories of participants were included:

- i. Elderly women (aged 45 and above) who were recognised within their communities as knowledge custodians of pregnancy, childbirth, and postpartum food practices (n = 28).
- ii. Male and female elders who knew about marriage and mortuary rituals and other food practices (n = 19).
- iii. Traditional birth attendants (dais), community health workers and local Dehuri priests who have both ritual and practical knowledge about food (n = 11).

The snowball sampling was also used to get more informants that were referred by the first participants so that saturation of community knowledge was also achieved. In the study villages, a total of 58 key informants were involved in the study.

2.4 Data Collection

Three main instruments were used to collect data. First, the key informants were interviewed in great detail using semi-structured interviews that were pre-tested and covered food prescriptions, food taboos, morbidity-related dietary beliefs, and the ritual contexts of food practices at each stage of life. Second, triangulation of individual reports was achieved by conducting focus group discussions (FGDs) with women of reproductive age, elderly men, and mixed groups of community members. Third, direct observation of ritual activities such as *Annaprasana* ceremony and post-wedding feast was conducted where they had access to and consent to the ritual events, such as the preparation and service of food. The data collection was done in 4 phases and it was sufficient to ensure that the seasonal variation in food supply and ritual performance was adequately reflected.

2.5 Data Analysis

Thematic content analysis [11] was used to analyse the transcripts of the interviews. Themes were sorted into two dimensions (i) life-cycle stage (pregnancy, postpartum, infancy, childhood, menarche, marriage, mortality) and (ii) food practice type (prescription, proscription/taboo, morbidity-linked restriction). The results were further put in context by a comparative review of the biomedical nutritional literature the result of which could be attributed to each of the identified food items or practices.

2.6 Ethical Considerations

Ethical approval was given by the Institutional Ethical Committee (IEC) of the Post Graduate Department of

Anthropology (reference number IEC/UU/2022-06) and also by the Department Research Committee (DRC) of the Post Graduate Department of Anthropology. The informed consent of all participants was obtained in writing or orally (where low literacy was observed, verbal informed consent witnessed was recorded). It was guaranteed to the participants of the school that they could enjoy confidentiality and withdrawal without penalty. Consent on behalf of the community at the village level was also obtained with the village elders and the Sarpanch (the village headman).

Results

The life-cycle phases recorded in this study include pregnancy, postpartum recovery, infancy and childhood nutrition, first menarche, marriage rituals and mortuary practices. The food prescription and prohibition are shown in table 1 with respect to different stages of life.

Table 1- Seasonal Ecological Food Calendre Mapping.

1. Pregnancy: Trimester-Wise Food Structure.

With the Paudi Bhuyan, the culture of food is approached with respect to pregnancy, as a state of high biological and spiritual vulnerability, and the food culture is organized into a remarkably structured, trimester-specific dietary framework, one that intuitively resonates with modern nutritional knowledge, even though this is entirely based on indigenous knowledge.

1.1 First Trimester

In first trimester, pregnant women are strongly advised to eat leafy vegetables and pulses, the foods which are generally famous to contain folate, iron, and protein and which are vital during the initial embryonic development. Conversely, the community does not permit consumption of meat, eggs, and ripe papaya during this period. It is interesting to note that ripe papaya has papain, an enzyme in traditional knowledge systems that is associated with uterine contractions, and its inhibition has parallels in multiple South Asian folk medicine traditions [12]. Among the taboos associated with morbidity, there are eggs and pineapple that are avoided specifically because they are believed to have the power to damage foetal health.

1.2 Second Trimester

With the progression of pregnancy, the dieting focus changes to the seasonal fruits, vegetables, and *mandia ladoo* (a preparation of millet-based sweet) - a millet-based sweet preparation that is energy and micronutrient rich. During this trimester, salt, pineapple and taro root (*saru*) are forbidden. Salt intake limitation could be a reflection of the ancient issues of oedema and hypertensive pregnancy disorders. Some of the morbidity-related taboos include maize and ripe mango, possibly due to their supposedly high glycaemic load or digestive issues in the second trimester.

1.3 Third Trimester

The dietary plan of the final trimester is based on coconut and watermelon - hydrating and lightweight foods that will be easy to eat in the situation when the pregnancy is already advanced. In this case, dry fish, brinjal and banana stem are not welcomed, which is due to the concerns regarding the effects of heavy digestion and the possible uterotonic effect of the said foods according to the local belief. Taboos linked to morbidity are also extended to ripe jackfruit and meat, which helps to reinforce the trend of avoiding high-protein, hard-to-digest, or so-called heat-generating foods during the third trimester.

2. Antenatal Care: The *Mitha Khia* Ritual

One of the culturally important antenatal practices is the seventh month of pregnancy, during which a ritual is performed known as *Mitha Khia* (sweet eating). The pregnant woman is served with a rich variety of traditional sweet preparations collectively known as *Pitha pana*, which include varieties such as *Kakera*, *Arisha* as well as *Saal Pitha* all locally prepared rice based or jaggery based confections of high cultural status. This ritual serves as a nutritional provider as well as a social event and the foetus recognition in the community.

No non-vegetarian food, acidic food or oranges are allowed during the *Mitha Khia* ritual, perhaps because the ritual involves feeding on a nutritionally intensive scale. The taboo list of morbidity is subjected to the addition of brinjal, colocasia and groundnuts, which are in line with the historical worries on inflammatory or allergenic risks during late pregnancy.

3. Maternal Post-Pregnancy and Recovery: Rebuilding the Maternal Body.

3.1 Immediate Post-Delivery Phase

The Paudi Bhuyan recommend an easily digestible diet of rice, *moong dal* (green gram lentil) and *saga* (green leafy vegetables) immediately after childbirth. This combination is nutritionally rational - *moong dal* is one of the most easily digestible legumes and a known lactogenic food, and green leaves provide iron to counter postpartum blood loss. The foods that are non-vegetarian and acidic are strictly forbidden on this stage. Taboos involving the morbidity include jackfruit, eggs, maize, and water-laden vegetables, the latter being especially noteworthy, as water-filled vegetables are generally avoided in many South Asian postpartum practices due to the fear of uterine involution [12].

3.2 Recovery Period

The diet is modified as one recover, including moringa (*sajana saga*) and horse gram dal (*kolatha dali*). Both dishes have a strong ethnomedicinal reputation: moringa is a globally recognized superfood due to its dense micronutrient profile and galactagogue (milk-boosting) effects [13] whereas horse gram is a traditional restorative food legume

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Food	Life stage prescribed	Stage season	Ecological Availability	Aligned?	Nutritional significance
Pregnancy- 1 st Trimester					
Moringa leaves (<i>Moringa oleifera</i>)	Prescribed to manage nausea and early weakness	Year-round	Year-round (peak March to May)	Year-round	Iron, folate, Vitamin C (critical in first 12 weeks)
Raw banana (<i>Musa Species</i>)	digestive aid, anti-nausea	Year-round	Year-round	Year-round	Potassium, B6, (resistant starch for gut health)
Pregnancy- 2 nd Trimester					
Mandiya (Millet) (<i>Eleusine coracana</i>)	ritual food prepared as sweet dish	Winter (December to February)	Harvest October-November (stored through winter)	Aligned	Calcium (highest among cereal), iron, B-complex
Jackfruit (ripe) (<i>Artocarpus heterophyllus</i>)	Energy and foetal weight gain	Summer (April to June)	Summer (April to June)	Aligned	Complex carbohydrates, Vitamin B6, Potassium
Pregnancy- Third Trimester					
Watermelon (<i>Citrullus lanatus</i>)	hydration, reduce swelling	Summer (April to June)	Summer (April to June)	Aligned	High water content, lycopene, reduces edema
Coconut (<i>Cocos nucifera</i>)	hydration and electrolytes	Summer (April to June)	Year-round (peak summer)	Aligned	Natural electrolytes, lauric acid, anti-microbial
Sweet potato (<i>Ipomoea batatas</i>)	Micronutrient boost	Winter (December to February)	Harvest October to November (stored through winter)	Aligned	Beta-carotene (Vitamin A), folate, fibre
Postpartum/ Recovery (First 40 Days)					
Horse gram soup (<i>Macrotyloma uniflorum</i>)	Postnatal recovery-restorative	Winter December-February	Harvest November-January	Aligned	High protein, iron, galactagogue-stimulates milk production
Ginger (<i>Zingiber officinale</i>)	Postnatal- anti-inflammatory, uterine recovery	Winter December-February	Harvest November-January (dried form year-round)	Aligned	Anti-inflammatory, digestive, uterine tonic
Haldi (Turmeric) (<i>Curcuma longa</i>)	Postnatal- wound healing, anti-infection	Year-round	Harvest January-February (dried form year-round)	Year-round	Anti-microbial, wound healing, immunity
Barley water (<i>Hordeum vulgare</i>)	Early postnatal-digestive recovery, light nutrition	Spring March-April	Harvest March-April	Aligned	Soluble fibre, easily digestible, supports gut healing
Infant Complimentary Feeding (6-12 months)					

used throughout tribal Odisha. Non-vegetarian and fried foods remain tabooed, and the same morbidity-linked

Kanji (Rice gruel) (<i>Oryza sativa</i>)	First complementary food- 6 months	Year-round	Harvest November-December (stored year-round)	Year-round	Easily digestible starch, gentle gut introduction
Ripe papaya (<i>Carica papaya</i>)	Weaning-micronutrient-dense solid foods	Monsoon June-September	Monsoon June-September (peak wild harvest)	Aligned	Iron, calcium, folate, Vitamin K, dense micronutrient source
Illness/Morbidity Recovery (General)					
Mango raw (<i>Mangifera indica</i>)	Fever and heat-related illness recovery	Summer March-May	Summer March-June	Aligned	Vitamin C, cooling properties, electrolytes
Tamarind broth (<i>Tamarindus indica</i>)	Digestive illness, appetite stimulation	Spring February-April	Harvest February-April (dried form year-round)	Partial	Tartaric acid, digestive stimulant, iron absorption aid
Keonjhar ecological seasons: Summer (Mar–May); Monsoon (Jun–Sep); Post-monsoon/Autumn (Oct–Nov); Winter (Dec–Feb). Aligned- Food available when prescribed; Partial- Seasonal overlap; Year-round- Foods available all seasons.					

taboo cluster i.e. jackfruit, eggs, maize and water-laden vegetables continue during this phase.

4. Postnatal Care: Feeding the Nursing Mother.

In the more general postnatal period, the Paudi Bhuyan suggest a diet of seasonal fruits and vegetables, rice, dal, and green leaves, indicating a return to whole and balanced eating, with plant-forward eating being the most plausible option. Nevertheless, an intriguing taboo is presented here: *pakhala* (fermented watered rice), *manda pitha* (a steamed rice dumpling), eggs, and cucumber are prohibited during this stage. The preventive action of *pakhala* is especially remarkable, since fermented rice is a cooking ingredient of the Odia diet, its avoidance here hints at the community awareness of fermentation as something that may not be suitable in nursing period. The taboos surrounding morbidity are extended to mango, brinjal, colocasia and dry fish, all of which are considered problematic in traditional knowledge in relation to lactation or maternal recovery.

5. Childhood and Early Childhood Nutrition (6-59 Months)

5.1 Annaprasana: The First Meal Ritual.

The presentation of solid food to the baby is a culturally elaborate ritual event among the Paudi Bhuyan in the name of *Annaprasana* (literally, "grain initiation"). At this age, the child is ritually fed *jau khiri* (a rice pudding made of barley) and *guda pani* (jaggery water). Jaggery water is a source of rapidly absorbable simple sugars and trace minerals, whereas barley *khiri* is a first grain, soft and easily digestible. Fried food items are avoided. Amongst the food taboos related to morbidity, it is prohibited to eat ripe bananas at this stage, possibly because of cold property in traditional medicine.

5.2 Goda Dhaunia: Ongoing Complementary Feeding

In line with WHO guidelines on complementary feeding, the community complementary feeding phase (*Goda Dhaunia*) encourages *khichdi* (a soft, mixed rice-lentil preparation) and boiled papaya, carrot, or pumpkin, all soft, rich in nutrients, age-appropriate foods that are consistent with WHO recommendations on complementary feeding [14]. The ban at this stage is aimed at complex carbohydrate-rich foods implying a recognition of the digestive limitations in toddlers.

6. Children and Adolescents (5-18 Years)

General prohibitions exist: dry seafood and surplus carbohydrates are discouraged. No particular morbidity-related food taboos were reflected in this age group, pointing toward a relative dietary liberalization in middle childhood and teenage.

7. First Menarche: The Subana Ritual.

The initiation of menstruation (*Subana*) is known to be a critical rite of passage among Paudi Bhuyan girls and the process is accompanied with a specific dietary system. In this time period, the girl is fed *arua rice* (raw, unboiled rice), dal, vegetable curry, (watered rice), and *khiri* - a wholesome, balanced set of foods focusing on easily digestible, cooling and carbohydrate rich preparations. It is interesting to note that this food, the *pakhala*, which during the postnatal care was forbidden, here appears again, now as a permissible food, and this shows how relative the dietary laws are in this culture.

The food taboos of *Subana* are especially extensive: savoury and sour food, milk products, dried fish, and banana are all forbidden. The discontinuation of milk products at menarche is an interesting cultural decision, as dairy is usually thought to be nourishing, so it's tabooing here could be associated with traditional beliefs about the

interaction of dairy with menstrual physiology. Some of the morbidity-related taboos in this stage include tea, milk and eggs which further reinforce the concern that the community has regarding the effects that certain foods have on the reproductive health of the menstruating girl.

8. Marriage-Associated Food Practices

Marriage being one of the most socially important life events, is integrated into a lengthy series of rituals among the Paudi Bhuyan, each of which has its own unique food prescriptions. In all the phases of the marriage, proposal to the final feast after the wedding, there is just one unifying taboo: the outright ban on the consumption of black-coloured foodstuffs.

8.1 Proposal

At the marriage proposal, the guests and participants will be served with *mudhi* (puffed rice) and *channa pitha* (chickpea-based pancake) which are light and celebratory snacks that mark the start of the union. Foodstuffs that are black are not allowed from this stage till *atha mangala*.

8.2 Engagement

The engagement ritual (*Sagun*) serves to solidify the matrimonial status with a celebratory meal of rice and mutton curry - the formulation of a marital relationship into a complete meal of rice and mutton curry.

8.3 Pre-Wedding Purification Ritual - Mangula.

Vegetarian food is the only one allowed, which supports the idea of ritual purity and good omen.

8.4 Marriage (Wedding Day)

During the very wedding day, people practice either fasting or vegetarian diet - as the marriage is a sacred occasion.

8.5 Atha Mangala

The end of the marriage rituals is marked by the feast of rice and mutton curry *Atha Mangala* (eighth-day celebration) as a chain linking the celebratory, generous meal at the beginning of the engagement to the one at the conclusion of the marriage rituals.

8.6 The Parents of the Bride and Groom.

Notably the rice, mutton curry, and *handia* (locally brewed rice alcohol) are served to the parents of both the bride and the groom, the serving of *handia* being culturally significant, as it symbolizes adult social drinking as a celebration and bonding activity of the parental generation. Fruit juices (*pana*) are also served. There were also no reported food taboos in this subgroup suggesting there is a larger freedom of diet that may be extended to elderly community members.

9. Mortuary Practices: Food as a Grief Ritual.

The most ethnically elaborated food system described in this paper, is the one that surrounds death and grieving. The Paudi Bhuyan have a well-organized period of mourning lasting thirteen days after a death, and each phase of this mourning is marked by a certain set of dietary prescriptions, which gradually bring the grieving family back to normal life.

Day 1: 9.1 Ritual of Purification by Mitha (Sweets).

On the first day of pollution (*sutak*), the bereaved are provided with sweets, puffed rice and neem leaves. The symbolically charged paring between something sweet and something distinctly bitter (neem) is richly symbolic, evoking the bittersweet character of loss and, at the same time, the purifying and antibacterial effects of neem in Indian ethnomedicine.

The food taboos on this day are very wide: milk and milk products, turmeric (*haldi*), fried or roasted food, onion, garlic and all non-vegetarian food is forbidden. The avoidance of turmeric, which is typically thought to be auspicious and of onion and garlic (which is associated in Indian ritual thinking with stimulation and lust) is a deliberate deprivation of sensual pleasure in the face of sorrow.

9.2 Days 2-9: Kasa Khaeba: Bitter Boiled Food.

During the second to the ninth day the grieving family has a ritual known as *Kasa Khaeba* that directly translates to eating the bitter boiled. The diet of this long period is that of plain, boiled, unseasoned and bitter food, an eating habit that reflects the emotional scale of sustained grief and implements the solidarity of the community to face the same hardship.

9.3 Day 10: Dasa Bhata: The Tenth-Day Feast.

The major ritual change takes place on the tenth day. The community celebrates *Dasa Bhata* (tenth-day rice) a ritual feast in the official stage of the most painful mourning period. It is a meal that probably engages more sophisticated food preparation and marks the community returning to social normalcy as one unit.

Day 9.4 11-13: Sada Khaeba: Back to Plain Food.

The last two days of the grieving period celebrate *Sada Khaeba*, a transitional food state, neither the austerity of *Kasa Khaeba* nor the richness of normal meals. Such slow cultural rationality of grief: it is not turned off, but is gradually, by means of food, led along a path towards complete extinction.

Discussion

The results indicate a localized system of indigenous diet that is nutritional, seasonal availability, cosmological and social in its rationality. The food culture of the Paudi Bhuyan is not a set of random prohibitions but a logical system of knowledge that governs the amount of food consumed at biologically and socially essential levels, often

overlapping and coinciding with the current biomedical evidence.

Nutritional Science and Indigenous wisdom of Pregnancy Dietary Practices.

The dietary framework which is limited to the trimester is one of the most impressive discoveries of this work. The recommendation of taking leafy vegetables and pulses during the first trimester (foods known to be rich in folate and iron) is exactly what WHO guidelines on antenatal nutrition recommend [14]. The ban on ripe papaya, which is a source of the uterotonic enzyme papain and pineapple, which is a source of the enzyme bromelain, is indicative of an indigenous pharmacological knowledge which is supported by ethnomedicinal literature [12]. Similar taboos have been reported in tribal pregnant women of South India and Jharkhand [3,4]. Globally, Maggiulli et al. (2022) have shown through a cross-cultural meta-analysis that the pregnancy food taboos of agriculturally-based societies are an expression of diet-specific risk-mitigation strategies, which is a framework that places the practices of the Paudi Bhuyan into a broader adaptive logic, instead of just superstition [2].

The use of ethnomedicine and evidence base in post-partum recovery.

Of special interest is the post-partum use of moringa (*sajana saga*) and horse gram (*kolatha dali*). The galactagogue effects of moringa are well-established, randomised controlled trial has shown significant increases in breast milk volume with moringa supplementation [13], and a recent systematic review reported gains of up to 400 mL/day in the breast milk volume with moringa supplementation [15]. This traditional prescription of moringa by the Paudi Bhuyan thus works, consciously or unconsciously all in strict conformity to the modern science of lactation.

Infant Feeding: Alignment with Global Guidelines

The *Annaprasana* ceremony and the subsequent *Goda Dhaunia* complementary feeding phase reflect indigenous nutritional intelligence that closely mirrors WHO complementary feeding recommendations [14]. The ritual introduction of barley-based rice pudding and jaggery water provides a low-allergen, easily digestible first food with readily absorbable micronutrients. The subsequent emphasis on khichdi and soft-boiled vegetables, while avoiding acidic fruits such as oranges and grapes corresponds to paediatric principles of texture-appropriate, gut-friendly complementary feeding. Similar patterns of complementary feeding were found among Munda of Jharkhand [6].

Menarche, Marriage, and Mortuary Practices

The *Subana* ritual at first menarche and the marriage food sequence both reveal food operating as a social language. The prohibition of milk products and sour foods during *Subana* reflects an indigenous framework for managing the physiological disruption of menarche - a practice that re-inverts the postnatal prohibition of *pakhala*, powerfully illustrating the context-specificity of the community's dietary logic. Across all marriage stages, the absolute prohibition of black-coloured foods constitutes a cosmologically unified dietary rule rooted in colour symbolism, where black signifies mourning, an incompatible force during life-affirming celebrations.

The mortuary practice which last for 13 days from sweets and neem on Day 1, through bitter boiled food (Days 2–9), the communal feast (Day 10), to plain eating (Days 11–13) constitutes a structured grief management system with respect to diet. Phan et al. (2025) argue that culturally embedded food-based grief rituals provide community-level emotional resilience and function as grief support systems, precisely the role this sequence fulfils among the Paudi Bhuyan [16].

Implications for Health Policy

Despite high rates of undernutrition and anaemia among Odisha PVTGs with underweight prevalence reaching 75.26% in children under five and severe anaemia in over 36% of adults [17], nutritional programming for these communities remains largely standardised and culturally indifferent. This paper has shown that the food culture of the Paudi Bhuyan is not an enemy to better nutrition but a possible ally. Native ingredients like moringa, horse gram and millet are micro nutrient rich and locally produced. Interventions which fit within the food logic of the community, and which suggest the use of moringa as a postnatal supplement within the cultural recovery framework, or construct complementary feeding programmes around khichdi are much more likely to lead to sustained uptake. This method is adherent to the results of similar PVTG food systems studies that found inclusion of traditional food knowledge in government health promotion programs as both viable and effective [5,6,18,19].

Conclusion

This work is the first attempt at documenting the food culture of the Paudi Bhuyan in all the phases of a complete human life cycle; starting with the first trimester of pregnancy and all the way to the last day of mortuary observance. The results convincingly demonstrate that the food system of the Paudi Bhuyan is not a body of superstitious taboos, but a living, adaptable, internally coherent body of indigenous nutritional and ritual knowledge that has served the health and social cohesion across the generations of the community.

The community's pregnancy dietary framework i.e. trimester-specific, context-sensitive, and ecologically grounded that demonstrates a level of indigenous nutritional sophistication that frequently converges with contemporary biomedical recommendations. The postpartum use of moringa and horse gram represents an ethnomedicinal practice with robust scientific backing, underscoring the potential of indigenous food systems as sustainable, culturally acceptable nutritional interventions. The black food taboo across all marriage stages indicates how colour symbolism organises dietary behaviour, a finding relevant to the anthropology of food cosmology among Indian tribes. The mortuary food sequence represents a grief management architecture encoded in dietary practice, with direct relevance to community mental health and grief support.

This requires health workers who understand tribal food systems, antenatal counsellors who know which

pregnancy food restrictions are nutritionally beneficial and which are potentially restrictive, and policymakers who recognise indigenous food culture as an asset to be leveraged rather than a barrier to be overcome.

Limitation of the study

Several important limitations of this study merit acknowledgement. The qualitative design, while appropriate for depth of documentation, does not permit statistical generalisation. Food practices may vary by village location, contact with non-tribal communities, and generational change. Future studies should build on this documentation through mixed-methods designs that quantify the nutritional impact of observed practices, assess intergenerational change in food culture, and evaluate the outcomes of culturally-aligned nutritional interventions.

Abbreviation

PVTG- Particularly Vulnerable Tribal Group; WHO- World Health Organisation, FDG- Focus Group Discussion.

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Statement and Declaration

This is a research based on fieldwork done by the P.G. Department of Anthropology, Utkal University, Bhubaneswar, Odisha, India. The work submitted is our original creation and has not been previously published or submitted elsewhere for consideration.

Authors Contribution

All authors have contributed significantly to the research and preparation of this work. M.M.Naik and S.P.Sahoo wrote the manuscript. P.K.Patra and K.C.Satapathy contributed by reviewing the manuscript for the final version before submission and contributed to the intellectual content.

Ethical Consideration

Necessary ethical approval has been taken from the Department Research Committee (DRC) and the Institutional Ethical Committee (IEC) (Reference number IEC/UU/2022-06) of Utkal University.

Consent to participate

Necessary permission was taken from the community to carry out fieldwork. Each individual was told about the purpose of this research and informed about their rights if willing to participate or not. An informed consent form has been taken.

Consent for publication

All authors have approved the final version of the manuscript for submission.

Declaration of conflicting interest

The authors have no competing interests to declare that are relevant to the content of this article.

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Data availability statement

Not available

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