

Contents Covered in Food and Nutrition-related Research in Nepal: A Narrative Review**Author**

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¹ Graduate School of Education, Tribhuvan University (TU)² Research Centre for Educational Innovation and Development [CERID], TU³ Central Department of Education, TU**Abstract**

This review paper aims to examine the literature related to food and nutrition research conducted in various parts of Nepal, focusing on research objectives and questions, methodologies, and key findings. We utilized a thematic review approach following the articles available on Google Scholar, PubMed, and Scopus. This review-based study included research papers which are published online with open access, peer-reviewed, written in English language, studies conducted in Nepal, covering any demographic groups, and published from the past 10 years. A data search was performed, and the title and abstract were screened based on the inclusion and exclusion criteria. Data were extracted, including various descriptions such as author, year, objective or research questions, study area, methods, design, study group, sample size and sampling, data collection tools, data analysis, and key findings and themes. Altogether 11 research papers were reviewed. The study findings indicate that a lack of coverage of food and nutrition studies across the entire geography. Nearly three-fourths of studies 72.72% aimed to assess nutritional status, food choice, and eating practices. Over half of the studies 54.55% were based on quantitative methods. Similarly, studies with small sample sizes and random sampling were more common. Over half of the studies 54.55% employed semi-structured questionnaires and anthropometric measurements as data collection tools. Statistical analysis, such as frequency, percentage, and standard deviation, was commonly used to analyze data. The review further indicates that malnutrition is a key problem among children under five years of age, with a high rate of underweight and stunting, where economic status and parental education were the main determinants of malnutrition. This study concludes that there are several gaps, including the content gap, context gap, and methodological gap in food and nutrition research in Nepal. The Kham Magar, a tribal ethnic group living in the mountainous and hilly districts of Rukum East and Rolpa, was not included in any of above reviewed studies. Similarly, qualitative and mixed methods are underrepresented in the literature. Therefore, further research should focus on qualitative studies focusing on indigenous food and nutrition beliefs and behaviors among tribal groups including the Kham Magar community.

Keywords: Food and nutrition; Magar Kham; Malnutrition; Measurement,

Introduction

Food is anything that is consumed to provide essential nutrients for growth, energy, and physiological processes. It contains micronutrients (vitamins and minerals) and macronutrients (proteins, fats, and carbohydrates) needed for good health and life support (World Health Organization [WHO], 2026). Food is obtained from various sources, including plant- and animal-based products. In human society, food serves not only physiological functions

but also plays significant social and cultural roles. (Sheffield et al., 2024). Nutrition looks into how food affects the body's development, metabolism, and overall health. It involves how the body uses, transports, absorbs, and digests the nutrients. A good nutrition is essential for preserving immunity, preventing disease, and promoting overall well-being (Sizer & Whitney, 2022).

Both undernutrition and over nutrition contribute to mal nutrition ,which can result in serious and long term health consequences ,including impaired growth ,obesity ,and diet -related chronic diseases such as diabetes and heart disease .the global burden of mal nutrition highlight s the importance of promoting healthy diets and nutrition - related education (WHO, 2024)

Nepal was ranked 73rd out of 125 countries in the 2023 Global Hunger Index (GHI) highlighting with food insecurity issues (Global Hunger Index, 2023). Numerous nutrition-related issues affect Nepal, especially for vulnerable groups such as marginalized people, pregnant women, and children. These problems stem from sociocultural norms, poverty, food insecurity, and poor healthcare; and in Nepal, the main nutritional issues are undernutrition and over nutrition, such as stunting in 25.8%, wasting in 8.6%, and underweight in 19.2% of children under five, showing serious nutritional discrepancies (Ministry of Health and Population [MoHP], New Era & ICF 2023). Micronutrient deficiencies, such as anemia in 53% of children under five and 34.2% of women of reproductive age, raise the risk of maternal death and cause exhaustion and cognitive impairment (MoHP & UNICEF, 2021).

Night blindness and poor immunity in children is still reported in some rural parts of Nepal (WHO, 2020). Due to dietary changes toward processed foods, Nepal is facing a prevalence of non-communicable diseases (NCDs) due to a rise in overweight and obesity, particularly in urban areas; for instance, 14% of males and 18% of women are obese or overweight (MOHP, New Era & IFC, 2023). This highlights the dual problem of malnutrition. NCDs such as diabetes, hypertension, and cardiovascular diseases have increased because of the rise in overweight people (Ghimire et al., 2021). Food insecurity has become a common problem and experience in many rural and marginalized communities, leading to inadequate dietary intake (Global Hunger Index, 2023). Traditional diets in some ethnic communities may lack diversity, relying heavily on main foods like rice and maize with insufficient protein and micronutrients (Acharya et al., 2020). Another review-based study reveals that indigenous foods and knowledge systems face growing threats from climate change, market dependency, youth migration, and the widespread adoption of processed foods (Upreti et al., 2025). The above evidence demonstrates the multiple challenges facing nutrition. To reduce nutrition-related concerns and diseases, to construct and change policies and programs, and to gain food security for all Nepali people, studies are crucial. Few studies have been done by individuals and organizations. These studies primarily focused on the geographical and socio-economic determinants of underweight, overweight, and obesity (Shrestha et al., 2020); anemia among women of reproductive age (Gautam et al., 2019); and the Adolescent Nutrition Survey, 2014. Other topics included are the Nepal Demographic and Health Survey (MOHP, New Era, & ICF, 2023); the Global Nutrition Report (2021); and the prevalence of non-communicable diseases (WHO, 2018).

Despite these studies, it is unclear what issues, study designs, samples, data collection tools, and demographics have been covered in food and nutrition research in Nepal, as far as is known. Therefore, this review aims to evaluate the current studies conducted in Nepal, analyze the food and nutrition agendas covered by the studies, review the studies targeting populations, structures, areas, etc., and identify further research gaps and type of research to be done in this area in the future. So, this paper seeks to examine the literature exploring the research objectives, study methods, and main findings of food and nutrition-related studies and to find out the research gap of the study.

Methods

Search Strategies

This study employed a narrative review approach. This study followed online search strategies to find related articles for the study. For this purpose, *Google Scholar*, *PubMed*, and *Scopus* were used. First author was involved to search the related article. He used key terms for searching data such as 'food and nutrition', 'food culture', 'food and nutrition pedagogy', 'food habits', 'dietary habits', 'food selection in the context of Nepal', etc. From these three databases, 11 articles were extracted for final review.

Inclusion and Exclusion Criteria

Studies were included if they were original research articles conducted in Nepal and published in electronic databases in the English language. Studies published within the last 10 years (2014–2024) were considered eligible. We included research conducted in any region of Nepal and targeting any demographic group or population. Only studies relevant to the topic and research objectives of the review were considered for inclusion.

Studies published before 2014 or in languages other than English were excluded. We also excluded studies conducted outside Nepal. Review articles, case reports, commentaries, reports, editorials, letters, and other non-original research publications were excluded from the review. Duplicate publications and articles that did not address the topic or research objectives of the review were also excluded.

Data Analysis

Data were extracted, including various descriptions such as author, year, study area, design, sampling, data collection tools, and main findings, using MS Word. After that, full-text analysis was done, and the papers were evaluated based on study area, objective or research questions, research design, participants, sampling and sample size, data collection tools, and main findings of the study. Considering these, a matrix table was prepared and the data were analyzed thematically.

Results

The study included 11 articles. This section deals with the covered objectives, study designs, sampling area, sampling, sample size, participants, data collection tools, and main findings in the previously conducted studies (see Appendix I).

Covered Study Area

This study found a limited coverage of food and nutrition studies across the entire geography. The fact that there is a slight increase in studies in districts such as Kaski (Acharya et al., 2015; Pant, 2021), where research is more accessible or urban, reflects the importance of this research in all geographical areas of Nepal (Prajapati et al., 2018; Shrestha, 2014).

During the study, it was found that two studies selected 2/2 districts as the study area (Acharya & Nakanishi, 2021; Ghimire, 2021), while all other studies selected 1/1 district as the study area. Two studies were found to be in the same district, Kaski (Acharya et al., 2015; Pant, 2021), while the other was a single study. Two of Nepal's 21 Himalayan districts, Sankhuwasabha and Sindhupalchowk, have been included in the study area (Prajapati et al., 2018; Shrestha, 2014). Most of the Himalayan districts were found to be outside the study area.

Study Year

In the period of covering the ten years of studies, from 2014 to 2023 AD, the majority of the articles were from 2021 and 2022 AD (Acharya, 2022; Acharya & Nakanishi, 2021; Dahal, et al., 2022; Ghimire, 2021; Pant, 2021; Raikhola, et al., 2021; Sharma, et al., 2022), nearly less than half of the studies were from 2014 to 2020 .

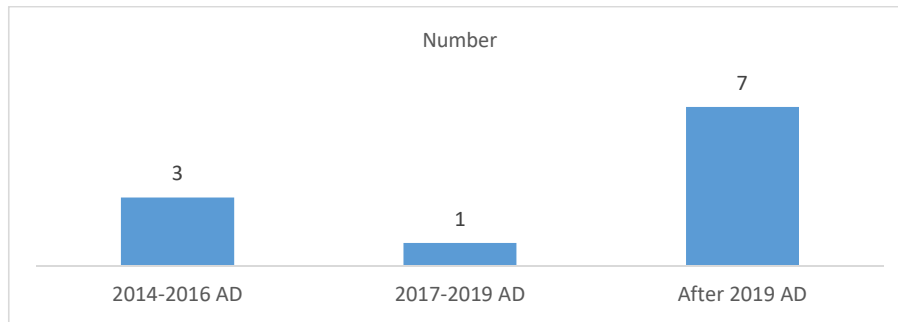


Figure 1: Study year of the included studies

Among the articles in the study, the largest number is from 2021 (Acharya & Nakanishi, 2021; Ghimire, 2021; Pant, 2021; Raikhola, et al., 2021), while there are three articles from 2022 (Acharya, 2022; Dahal, et al., 2022; Sharma, et al., 2022), while the others are from 2014, 2015, 2016, 2018, and 2020 AD, one article each.

Covered Objectives or Research Questions

Of the 11 studies, four studies (Acharya & Nakanishi, 2021; Prajapati, et al. 2018; Raikhola, et al., 2021; Sharma, et al., 2022) aimed to assess nutritional status, while four (Bista, et al., 2020; Dahal, et al., 2022; Ghimire, 2021; Shrestha, 2014) aimed to assess food choice and eating practice. The remaining studies aimed to assess cultural food practices, food knowledge, the relationship between socio-economic factors and nutritional wellbeing, knowledge, attitudes, and beliefs about food recommendations, major barriers to feeding children healthy food, and factors associated with malnutrition. Although the aim of measuring nutritional status was dominant, the aim of food culture and pedagogy was less.

Study Methods and Design Trends

In terms of study methods, seven studies (Acharya & Nakanishi, 2021; Dahal, et al., 2022; Prajapati, et al. 2018; Raikhola, et al., 2021; Sharma, et al., 2022; Shrestha, 2014) were based on a quantitative, and two studies (Bista, et al. 2020; Ghimire, 2021) were based on a qualitative; three studies were mixed method (Acharya, et al., 2015; Acharya, 2022; Pant, 2021).

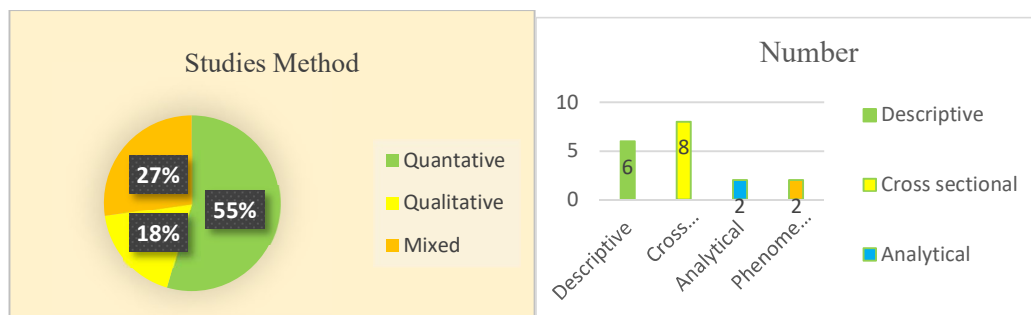


Figure 2: Methods of the included studies

Figure 3: Study design of the included studies

Most studies were found to use cross-sectional research designs, while qualitative methods used phenomenological research designs. This highlights a major gap in food and nutrition studies using qualitative and mixed-methods approaches.

Covered Study Group, Sample Size and Sampling method

Study Group

This study shows that most studies on food and nutrition focus on under five children and students (Acharya, 2022; Acharya & Nakanishi, 2021; Dahal et al., 2022; Pant, 2021; Prajapati et al., 2018; Raikhola et al., 2021; Sharma, et al., 2022). One third research group shows mothers (Acharya, et al., (2015); Bist et al., (2020); Pant, (2021) Shrestha,

(2014)) and elder research group was poor.

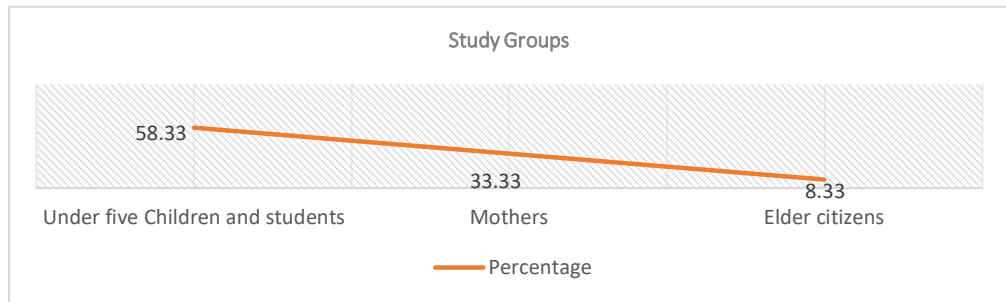


Figure 4: Study groups of the included studies

However, these studies underrepresent populations such as adults, elderly women, and others. This shows the lack of diversity in studies.

Sampling and Sample Size

Participants, sampling, and sample size showed a diversity in participant inclusion across studies. Similarly, studies with small sample sizes were more common. Only a few studies included large sample sizes, such as undergraduate students (385), school children (1251), mothers of children (524) and preschool children (389) (Acharya et al., 2015; Acharya & Nakanishi, 2021; Dahal, et al., 2022; Sharma et al., 2022).

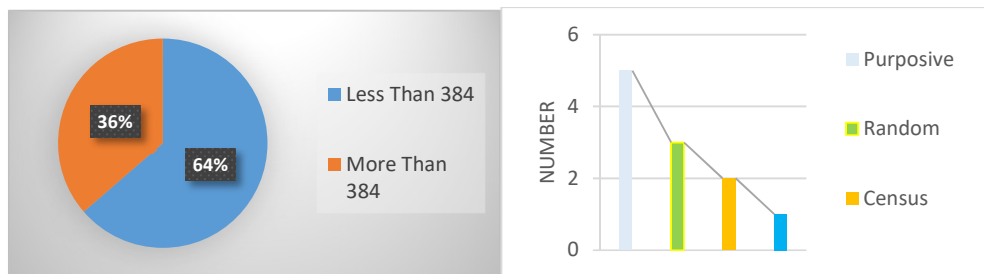


Figure 5: Sample size of the included studies

Figure 6: Sampling methods of the included studies

Except for two qualitative research studies and four quantitative research studies, the sample size of other studies was found to be smaller than required. Since there are few samples in qualitative studies, this issue is not discussed much in this study. Among the various sampling methods, purposive sampling is the nearly half (45.45%) commonly used. Multi-stage sampling was used in only one study (Sharma et al., 2022). Random sampling was more than one third. The multi-stage proportionate random sampling method was used. There is no mention of this in the study by Acharya et al. (2015). The practice of selecting small sample sizes may raise questions about the generalizability of the findings. Therefore, future research on food and nutrition should consider this gap.

Tools and Technique

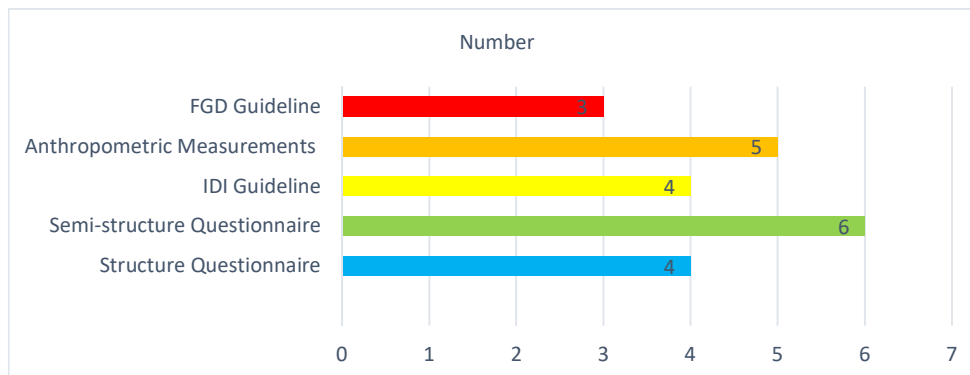
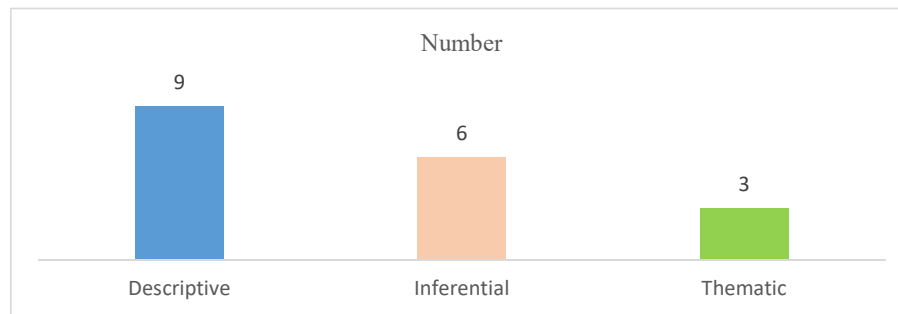


Figure 7: *Tools and techniques of the included studies*

While study the data collection tools used in the studies, semi-structured questionnaires were used more than half studies (Acharya, 2022; Dahal et al, 2022; Ghimire, 2021; Prajapati et al, 2018; Raikhola et al, 2016; Shrestha, 2014), while Anthropometric measurement was used in the second most (Acharya & Nakanishi, 2021; Pant, 2021; Prajapati et al, 2018; Raikhola et al, 2016; Sharma et al, 2022). However, FGD guidelines, IDI guideline, structured questionnaire were used to a lesser extent.

Data Analysis Process

More than half studies were related to quantitative, so most of the studies have used statistical analysis. In statistical analysis, most of the studies have used frequency and percentage analysis, while a small number have used chi-square tests, *p*-values, Z-score, logistic regression, t-test, and significance tests. Three studies were related to mixed-methods, so these studies used statistical and thematic analysis.

**Figure 8:** *Data analysis process of the included studies*

Only two studies were related to qualitative research, so these studies have used thematic analysis. The reviewed studies showed some similarities and contradictions in findings related to nutrition, food practices, and their influencing factors. A main result across some research is that malnutrition is a prevalent problem among children under five years of age, with a high proportion of children experiencing underweight, stunting, and wasting. Economic status and parental education consistently emerged as major determinants of malnutrition, with children from low-income families and those whose parents had limited education being at high risk. However, while one study noted gender differences in food choices, others focused more on economic and educational determinants. In addition, regional dietary habits, such as the reliance on local products such as maize and millet in rural areas, contributed to geographical differences in nutritional outcomes (Ghimire, 2021).

Family and cultural beliefs were also influential in shaping nutrition. Mothers and mothers-in-law were identified as key drivers of dietary restrictions, with some foods such as cauliflower, pumpkin, and green vegetables being avoided due to cultural taboos. These restrictive practices, often rooted in tradition, were consistently highlighted as barriers to adequate nutrition, especially for postpartum mothers and young children. In contrast, another study highlighted the increasing influence of mass media and modern food trends on children's eating habits, pointing out the tension between traditional and contemporary dietary influences (Acharya, 2022).

The studies further revealed that although pulses, rice, and vegetables were staples, the overall variety and frequency of consumption of nutritious foods such as meat, fish, and fruit were inadequate. Vegetarian children were consistently found to have lower BMI values than non-vegetarian children across age groups, underscoring the need for a balanced diet through a variety of plant-based sources of protein. Parental involvement was another recurring theme, with studies showing that while many parents were aware of their children's dietary habits, work and professional obligations often limited their ability to effectively guide and monitor these habits (Acharya et al., 2020).

Determinants such as poverty, low family income, and parental education, particularly the father's occupation, played a significant role in shaping children's nutritional outcomes (Sharma et al., 2022). Delaying childbearing and improving maternal education were recommended as effective strategies to combat malnutrition. Furthermore, the older population's preference for organic, locally produced foods such as millet, nettle soup, and corn highlighted rural Nepal's traditional food culture, although a gradual shift toward outsourced food supply was observed (Ghimire, 2021).

The findings highlight the need for targeted interventions to collectively improve nutrition. Advocacy programs should focus on raising awareness among postpartum mothers and their families to overcome cultural barriers and promote dietary diversity. Public health interventions should address the underlying issues of poverty, cultural beliefs, and the increasing preference for fast food. In addition, encouraging parents to be more actively involved in their children's eating practices and promoting the use of locally produced organic foods may be key strategies to improve nutrition outcomes across different demographics. These efforts should be context-specific, recognizing the complex interactions of economic, cultural, and educational factors that shape food practices and nutrition.

Methodological Quality Appraisal

This paper focuses on the gaps that the earlier studies leave. The 11 studies have three methodological weaknesses. Second, sampling size and sampling design: Nine out of eleven studies were conducted with purposive a non-probability sampling, while only one study used a multi-stage probability sampling design (Sharma et al., 2022), and some qualitative studies had small sample size for example Bista et al. (2020) adopted $n = 10$ and Ghimire, (2021) did $n = 20$, making the conclusions limited in terms of external validity and generalizability to the broader population of Nepal.

Second, design and causal inference: The near-total reliance on a cross-sectional design (eight of eleven studies) implies a strong causal claim that is not warranted by the stronger causal claims made in the discussion sections of several of these studies, since longitudinal or intervention designs were not used to test for the directionality of the relationship. Third, measurement and instrumentation: most studies did not report formal validity or reliability testing for the study-specific or adapted questionnaires and focus group discussion guide, with the exception of Acharya (2022), who conducted a pilot for the questionnaire and FGD guide; the lack of psychometrically validated, comparable instruments across studies hinders pooling and comparison of findings across time. Finally, theoretical integration was limited; none of the 11 studies explicitly stated a theoretical or conceptual framework, which aligns with the descriptive nature of this literature and supports the argument for a more theory-driven research agenda in future Nepali food and nutrition research.

Discussion

This study aims to review the literature on food and nutrition in the context of Nepal. This study indicates critical gaps and trends in food and nutrition research in Nepal.

In terms of study area coverage, evidence suggests that fewer studies have been conducted in remote, rural, and mountainous areas, indicating a gap in the coverage of the broader geography. A systematic review conducted by Upreti et al. (2022) discussed that there are many studies on food and nutrition in Asia and Nepal that are different. A review study conducted in India indicated that food and nutrition-related studies are more prevalent in rural areas (Vecchio et al., 2014). Another systematic review found that food and nutrition-related studies are most frequent in China, followed by Japan, Singapore, and Thailand (Zhou et al., 2023). Compared with these studies, very few studies have examined this topic in Nepal. According to this study, there has been some research on assessing nutritional status and exploring food choices and eating practices in Nepal.

Such a study, merely noting the Kham Magar community as a structural gap is not enough;. They would elaborated below: a special study on indigenous knowledge of food and nutrition practices. Without such a study, it is not enough to merely note the Kham Magar community. ; it should be read as a symptom of structural marginalization.

The Kham Magar live in the hilly and mountainous regions of Rukum East and Rolpa, which were under-represented in this review's overall geographic mapping (Covered Study Area), and in which the state has historically invested less than in accessible urban and semiperi-urban areas like Kaski in health, education, and research infrastructure. The Multi-Sector Nutrition Plan III (2023–2030) promises to mainstream gender equality and social inclusion and prioritize underserved hill and mountain populations, including Kham Magar communities (National Planning Commission, 2023), implicitly acknowledging that these communities have not yet been adequately reached by nutrition research or programming. Taken together, these sources provide a basis for viewing the Kham Magar research gap in this review not just as an academic convenience a place where data collection might be easier but as a policy blind spot that has tangible consequences: without baseline nutrition research in this community, future policy and programming under MSNP-III would benefit from no local evidence base. They would be shaped by outside research and context assumptions made by those working in other local environments, or by data from a community with a higher population density. This structural framing supports the recommendation elaborated below to conduct a dedicated study on indigenous knowledge of food and nutrition practices in Rukum East.

Findings from this study, such as assessments of nutritional status and explorations of food choices and eating practices, have been somewhat more extensive, as supported by Sharma et al. (2022). In contrast, the study covered multiple determinants, including social determinants of dietary behaviors (Upreti et al., 2022). A systematic review by Gaupholm et al. (2023) examined the influence of the food environment on dietary habits and nutrition. Zhou et al. (2023) conducted a systematic review assessing the impact of nutrition on healthy aging in Asia. However, fewer studies examine traditional eating practices, knowledge, and food culture, suggesting that important aspects such as socio-cultural learning and exchange in food and nutrition remain underreported. In Nepal, food and nutrition policy-related research is also lacking (Adhikari et al., 2023).

In terms of study design, the study found that food and policy-related research is predominantly based on quantitative research designs. This finding aligns with Upreti et al. (2022) and Zhou et al. (2023). In contrast, another study found limited cross-sectional research on the nutritional health effects of organic foods (Dangour et al., 2010). A scoping review reported that over half of the studies used exclusively quantitative approaches (Gaupholm et al., 2023). Based on these findings, there is a common argument that there is a lack of studies on food and nutrition employing qualitative, mixed-methods, and interventional designs.

In terms of the respondents, the present study showed that most studies on food and nutrition focus on children. These findings align with the study by Upreti et al. (2022), which reported that 6–19-year-olds were respondents. Similarly, Sharma et al. (2022) included the same participants in their study. Upreti et al. (2024) included various respondents in their study, such as children, teachers, and parents. Pokharel et al. (2024) included university students. The study indicated that junk food consumption was common among university students. According to another study, of the total reviewed, one-third included women only, and 28 included both sexes. Most studies focused on urban populations, with nine studies including rural and indigenous communities (Gaupholm et al., 2023). Overall, the evidence suggests that a major gap in food and nutrition research is the lack of diversity in target populations. Most studies have predominantly included children. However, populations such as adults, elderly women, and other vulnerable populations are underrepresented in these studies. This shows the lack of diversity in the studies. The findings of such research may not represent the entire population, thus raising doubts about its generalizability.

Regarding sampling methods and sample size, the sample size of other studies was found to be smaller than required, and among the various sampling methods, random sampling is commonly used. Pokharel et al. (2024) selected 273 respondents using convenience sampling. Another review found that studies with small and large sample sizes were equivalent (Gaupholm et al., 2023). Similar studies, such as the qualitative study, reported a small sample size of 10 participants, while the quantitative study had a large sample size of 524 (Zhou et al., 2023). Another similar study reported sample sizes ranging from small groups (e.g., 6 to 43 participants in controlled trials) to large cohorts (e.g., 2764 infants in a cohort study). The study also revealed randomized controlled trials as the dominant sampling methods (Dangour et al., 2010). A review of the overall literature reveals a paucity of studies on food and nutrition in Nepal that use appropriate sample sizes and varied sampling methods.

Regarding the tools used, the current study found that semi-structured questionnaires and anthropometric measurements were most commonly used in food and nutrition research in Nepal. Pokharel et al. (2024) used a self-structured questionnaire. The next study showed that dietary assessment, biological measures, and self-reported dietary data are dominant tools (Dangour et al., 2010). According to Zhou et al. (2023), the dominant data collection tools and methods in this table are Food Frequency Questionnaires (FFQs), both semi-quantitative and quantitative, and 24-hour dietary recalls. Researchers frequently use these tools to assess dietary patterns, diversity, and specific nutrient intakes in relation to cognitive function, physical function, and other health outcomes in the aging population. Although the tools and methods included in the reviewed studies have supported diverse research on nutrition and food, the limited use of a wide range of tools and methods suggests that food and nutrition research in Nepal has not been sufficiently complex and multifaceted.

Quantitative statistical analysis was used to analyze the data because most studies were quantitative. Most studies used statistical analysis. Most studies used frequency and percentage analysis, while a small number used chi-square tests, p-values, Z-scores, logistic regression, T-tests, and significance tests. Because few studies used qualitative methods, qualitative data analysis approaches were rarely used. According to one study, frequency analysis, regression models, and other robust statistical methods were increasingly used to assess the relationship between dietary patterns and health outcomes (Zhou et al., 2023). Dominant statistical tests were used for organic and conventional exposures to compare outcomes, such as ANOVA, and for adjustments for confounders to analyze relationships between dietary habits and health outcomes (Dangour et al., 2010). Overall, this low employment trend indicates a potential horizon for including future studies.

The papers reviewed in this study had both similar and different findings and observations in nutrition and food practices. In children under five years of age, malnutrition (i.e., high underweight and stunting rates) was a significant issue. Malnutrition was primarily driven by economic status and parental education. Food practices ranged from unregulated consumption of readily available local foods; these typically relied on trends and social demand rather than use and ethnic value. A lack of diversity in nutritious foods such as meat, fish, and fruits, and low BMI among vegetarian children, were notable. Reducing poverty, improving maternal education, and delaying childbearing were suggested. Older adults showed a preference for organic and local foods, but a gradual shift toward foreign food trends was also noted. Sharma et al. (2022) found discordance, finding that more than half of the children had below the normal level of nutrition status and nearly half had a low economic background. The systematic review reported that individual and public policy-level constructs are important in explaining JFC among the SCA. This implies that the researchers and policymakers need to consider multilevel determinants (Upreti et al., 2022). Pokhrel et al. (2024) found that there is a high prevalence of junk food intake among university students, with socio-demographic factors such as sex, subject specialization, and caste/ethnicity being significantly associated with junk food intake. This finding is further explored by Upreti et al. (2021), reporting that junk food consumption is common among basic-level

students in the study schools. Multi-level determinants explain the factors associated with this behavior, extending from micro to macro, as the socio-ecological model asserts. Low family income, height-for-age (HAZ) and weight-for-age (WAZ), and father's occupation for WAZ and BMI-for-age (BAZ) classification of nutrition status were found to be the most specific determinants of poor nutrition status in preschool children (Sharma et al., 2022). Based on this review paper, the gaps related to food and nutrition research in Nepal are identified. These include a lack of studies in rural, hilly, and Himalayan areas; diverse demographics such as vulnerable, elderly, female, adult, ethnic groups, etc.; limited research on food and nutrition policies; a lack of qualitative, mixed, and intervention studies; insufficient studies based on representative sample sizes; the use of limited data collection tools; and very few studies on traditional and cultural foods, habits, and pedagogy.

Conclusion

This review indicates that food and nutrition-related studies are still limited, particularly in rural Nepal covering ethnic tribal group. Most of the studies focus on children's nutritional status, while other issues remain understudied across diverse demographic groups and settings. The evidence reveals that food and nutrition research in Nepal has focused largely on individual- and household-level determinants and comparatively neglected the structural and policy levels. But including the marginalization of the Kham Magar is a significant gap. Similarly, quantitative approaches dominate food and nutrition-related research in Nepal, whilst qualitative approached study is still in demand. Therefore, this study suggests conducting research that considers ethnic groups' traditional, folk, and cultural food and dietary practices and pedagogy among the tribal ethnic groups in mountainous regions of Nepal undergoing qualitative or mixed-methods approach.

Declarations

Authors' Contributions: The first Author: Contributed research design, data search, analysis and interpretation, and drafting of the manuscript. Second Author: Conceptualized the study, interpreted the data, and critically reviewed the manuscript. Third Author: Contributed to the analysis and discussion of the findings and was responsible for manuscript revision and final editing. All authors read and approved the final version of the manuscript.

Use of AI: We used AI Quillbot and ChatGPT to improve language.

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S N	Author and Year	Study Areas	Methods			Study Design				Study Group			Sample Size		Sampling			Tools and Technique					Data Analysis			Key findings and Theme
			Quantitative	Qualitative	Mixed	Descriptive	Cross-sectional	Analytical	Phenomenology	Under five children and Students	Mothers	Elder Citizens	Less Than 384	More Than 384	Purposive	Random	Census	Structured Ques.	Semi-structured Ques.	IDI Guideline	Anthropometric Meas.	FGD Guideline	Descriptive	Inferential	Thematic	
1	Acharya, et al., (2015)	Kaski	-	-	✓	-	✓	-	-	-	✓	-	-	✓	0	0	0	✓	-	✓	-	✓	✓	-	✓	The study found 66% mothers, 5% fathers, 18 % grandparents and 11% other were responsible for feeding their children.
2	Acharya and Nakanishi (2021)	Mahottari and Rautahat	✓	-	-	✓	✓	-	-	✓	-	-	-	✓	✓	-	✓	✓	-	-	✓	-	✓	✓	-	The result of the study revealed that non-vegetarian children had a higher BMI in all age groups of both sexes than the vegetarian group.
3	Acharya, (2022)	Banke	-	-	✓	✓	✓	-	-	✓	-	-	✓	-	-	-	✓	-	✓	-	-	✓	✓	-	-	The study has found that most parents are aware towards their children's habits some of them could not give their time for this due to their business.
4	Bist et al., (2020)	Birgunj	-	✓	-	-	-	-	✓	-	✓	-	✓	-	✓	-	-	-	-	✓	-	-	-	-	✓	Postnatal woman are practicing their food intake based on their cultural beliefs about hot food and cold food

5	Dahal, et al., (2022)	Kathmandu	✓	-	-	✓	✓	-	-	✓	-	-	-	✓	-	✓	-	-	✓	-	-	-	✓	✓	-	The food choice and eating practice were dependent on the current living status of the students.
6	Ghimire, 2021	Lamjung And Chitawan	-	✓	-	-	-	-	✓	-	-	✓	✓	-	✓	-	-	-	✓	✓	-	-	-	-	✓	The Nepalese elThe citizens' food culture is almost similar. They are aware of organic food consumption. They used to consume maize, rice, and millet, dhindo (porridge and bread), nettle soup, etc.
7	Pant, (2021)	Kaski	-	-	✓	✓	✓	-	-	✓	✓	-	✓	-	-	✓	-	✓	-	✓	✓	-	✓	✓	-	The study found that 33% of ECD children had moderate to acute malnutrition while 67% had normal nutrient status
8	Prajapati et al., (2018)	Sindhupalchok	✓	-	-	-	✓	✓	-	✓	-	-	✓	-	✓	-	-	-	✓	-	✓	-	✓	✓	-	The study found that underweight was 25.4%, stunting 54.6%, and wasting 23.1% .Mother's age and education significantly associated with malnutrition.
9	Raikhola et al., (2016)	Palpa	✓	-	-	✓	✓	-	-	✓	-	-	✓	-	-	✓	-	-	✓	-	✓	-	✓	✓	-	High prevalence of underweight ,wasting and stunting 60.2% exclusively breast feed for 6 months: 56.5% timely complementary feeding.
10	Sharma et al.,(2022)	Rupandehi	✓	-	-	-	✓	✓	-	✓	-	-	-	✓	-	✓	-	✓	-	-	✓	-	✓	✓	-	The finding of the study suggest more than half of the children had a below normal levels of nutrition status and nearly half of them belonged to poor economic status

11	Shrestha,(2014)	Sankhuw a sabha	✓	-	-	✓	-	-	-	-	✓	-	✓	-	✓	-	-	-	✓	-	-	✓	✓	-	-	The study showed that there are food taboos surrounding specific food items which were not consumed from 11 days to sox months after delivery based on various socio cultural beliefs and practices.
To tal	-	-	6	2	3	6	8	2	2	4	4	1	7	4	5	4	2	4	6	4	5	3	9	6	3	-