



REVIEW ARTICLE

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Relationship between cultural food taboos and maternal and child nutrition: A systematic literature review

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ABSTRACT

Background: The escalating frequency and severity of climate extremes, such as floods and droughts, are projected to exacerbate the burden of malnutrition. This issue is particularly pronounced among vulnerable populations, including children under five years of age and pregnant women, wherein malnutrition may be further aggravated by the prevalence of culturally ingrained food taboos. While food taboos are often instituted with the intent of safeguarding the health of specific demographic groups, they may also restrict the impose restrictions on the consumption of essential nutrients, thereby impeding optimal growth and development.

Aims: This study aimed to explore the relationship between culturally ingrained food taboos and the nutritional status of mothers and children.

Methods: A systematic literature review was conducted across a range of electronic databases, including Web of Science, PubMed, Google Scholar, and Semantic Scholar. Following the removal of duplicate entries and the application of pre-defined inclusion criteria, a total of 45 articles were selected for comprehensive analysis. The methodological rigor of the included studies was appraised using the AMSTAR checklist.

Results: The earliest article identified within this review was published in 1994. The majority of the studies were conducted in African countries (24), followed by Asia nations (15). Food taboos predominantly involved plant-based sources (13 articles), with animal-based food sources also frequently subject to prohibitions. Of the reviewed articles, 62.2% focused on women of childbearing age, while six articles specifically addressed children. Notably, only two studies incorporated anthropometric measurements to establish a direct association between food taboos and nutritional outcomes.

Conclusion: Although scholarly inquiry into the intersection of food taboos and maternal and child nutrition has witnessed expansion in recent years, there remains a critical need for more exhaustive studies that employ anthropometric measurements to elucidate the impact of food taboos on nutritional status. Such research would yield more definitive insights into the effects of food taboos on nutritional well-being and inform the development of targeted interventions to address this issue.

Keywords: Culture, Taboos, Women, Child nutrition, Malnutrition.

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1 INTRODUCTION

Nutrition is relevant to several of the Sustainable Development Goals (SDGs) and is highlighted directly in Goal 2 (Zero hunger), which aims to eradicate hunger, ensure food security, improve nutrition, and promote sustainable agriculture (Bhurta *et al.*, 2017; Grosso *et al.*, 2020). Despite these aspirations, the Global Nutrition Report (2022) reveals that child malnutrition remains a pressing global concern. In 2022, an estimated 148.1 million (22.3%) children under five years of age were stunted, 45 million (6.8%) were wasted, and 37 million (5.6%) were overweight. Although progress has

been made in reducing stunting since 2012, the world remains off track to meet the 2030 target of reducing stunting to 13.5%. These findings are further corroborated by the *State of Food Security and Nutrition in the World Report (WFP, 2024)* which estimates that between 690 and 783 million people in the world faced hunger in 2022.

The escalating frequency and severity of climate-related extremes, such as floods and droughts, are likely to exacerbate the burden of malnutrition, especially in the Global South (Dimitrova *et al.*, 2022; Ebi & Bowen, 2016; Mirzabaev *et al.*, 2023). Unfortunately, it is the already vulnerable societal



groups that normally bear the impact of the climate extremes (Dembedza *et al.*, 2023; Khine & Langkulsen, 2023) further exacerbating the challenge of malnutrition (Wright *et al.*, 2024). Malnutrition arises from a confluence of factors, including inadequate food intake and suboptimal dietary nutritional quality (Ijarotimi, 2023). Women and children represent particularly susceptible demographics (Macheka *et al.*, 2022; Müller & Jahn, 2009). Maternal malnutrition can lead to the birth of low-birthweight infants who are predisposed to disease and premature mortality (Huffman & Schofield, 2011; Zembe-Mkabile, 2023). Moreover, intrauterine growth retardation, a consequence of maternal malnutrition, contributes to childhood stunting, with enduring negative health implications (Abdullah, 2015; Forgie *et al.*, 2020; Müller & Jahn, 2009).

Several nutrition-specific and nutrition-sensitive interventions have been implemented globally to mitigate malnutrition in children under five years of age and women of childbearing age (Escher *et al.*, 2024; Ghodsi *et al.*, 2021; Habtu *et al.*, 2022; Kearns & Barnett, 2000; Landim *et al.*, 2023; Moench-Pfanner *et al.*, 2012; Moorthy *et al.*, 2020; Ruel *et al.*, 2013). However, malnutrition prevalence, especially in women and children under five years, remains elevated. Poor nutritional practices during pregnancy and early childhood have been identified as a primary contributor to persistent malnutrition, despite the implementation of various intervention strategies (Ekwochi *et al.*, 2016). According to Tugume *et al.* (2024), cultural and traditional practices, values, and beliefs, including food taboos, significantly influence maternal and child nutrition outcomes and play a pivotal role in the successful implementation of nutrition interventions. Food taboos and cultural beliefs are recognized as key determinants of suboptimal feeding practices among pregnant and breastfeeding women (Acire *et al.*, 2023), influencing their dietary patterns and the health of both women and their unborn children. Traditional cultural beliefs are known to establish food taboos and barriers to vital maternal and child nutrition efforts in the first 1000 days (McNamara & Wood, 2019).

Food taboos are defined as the intentional avoidance of specific food items for reasons beyond simple food preferences (Meyer-Rochow, 2009) and are understood as a systematic set of rules governing permissible food consumption (Acire *et al.*, 2023). While some food taboos are family-based, others are rooted in religious such as kosher and halal practices in Jewish and Muslim communities. These taboos are usually associated with sex, with women and children disproportionately subjected to restrictions (Ramenzoni, 2023), compared to men (Avieli & Markowitz, 2023; Ogana, 2014). Food taboos may govern specific phases of the human life cycle, including menstruation, pregnancy, childbirth, or lactation. For instance, in numerous African countries, pregnant women are

prohibited from consuming eggs due to the belief that this will result in a bald child (Meyer-Rochow, 2009). Similarly, a study by Hadush *et al.* (2017) reported that food taboos significantly contribute to maternal and fetal malnutrition during pregnancy. However, while food taboos may predispose women to adverse nutritional outcomes, certain taboos may also offer protection against unhealthy dietary habits (Iradukunda, 2020). Therefore, it is imperative to comprehend the dual impact of food taboos to develop effective, culturally sensitive, nutrition intervention programs.

This study, based on a systematic literature review, examined the nexus between cultural food taboos and maternal and child nutrition, aiming to provide an in-depth understanding of the positive and negative influences of food taboos on nutritional outcomes. The scope of the study focused on cultural food taboos imposed on women and children under five years of age, and was guided by the following research questions: (i) What is the global prevalence of food taboos? (ii) Which cultural food taboos are imposed on women and children? (iii) What are the rationales for these cultural food taboos? (iv) How food taboos affect women's and children's nutritional outcomes? Findings from this study may inform the development of culturally appropriate nutrition interventions, that are cognizant of the cultural beliefs and taboos for wider acceptability by the affected communities. This could significantly contribute towards the achievement of SDG 2, which aims to eradicate undernutrition, especially among vulnerable populations.

2 METHODOLOGY

A systematic literature search was conducted to identify published research globally, focusing on objectives of this review. The reporting of this systematic review adhered to the guidelines outlined in the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) Statement (Moher *et al.*, 2009). The systematic search was executed using the following keywords: "food taboos" AND "culture" AND "maternal nutrition" AND "child nutrition". Literature was selected from peer-reviewed articles published in scholarly journals and relevant book chapters. The search was conducted across Google Scholar, PubMed, Web of Science, Scopus, and Semantic Scholar.

The inclusion criteria comprised English-language scientific articles published between January 1, 1994 (the earliest article retrieved from the search engines) and May 30, 2024. The initial search yielded 224 records. Removal of duplicate entries resulted in the exclusion of 154 articles. A preliminary screening of abstracts further reduced the dataset to 83 articles. The screening process involved the exclusion of articles based on titles, keywords, and language; articles published in languages other than English were excluded, and

were those deemed irrelevant to the review's scope. Subsequent full-text screening resulted in a final list of 45 articles. The methodological quality of reviewed articles was assessed by using a checklist for Assessment of Multiple Systematic Reviews (AMSTAR) scale (*Supplementary Data*).

A summary of the inclusion and exclusion criteria is presented in [Figure 1](#). Data were extracted from figures, tables, and text within the selected studies. Following the selection of scientific articles, pertinent data were extracted from each included study and synthesized in thematic tables and graphs.

published. The majority of the reviewed studies employed cross-sectional designs (38), with 22 specifically examining food taboos and maternal and child nutrition. Seven (7) of the reviewed articles were systematic literature reviews, of which four (4) specifically linked food taboos to maternal and child nutrition outcomes. The majority of studies originated from African countries (24), with Ethiopia contributing the highest number (7). Food taboos were predominantly targeted at women of childbearing age (28) compared to children under five years (6).

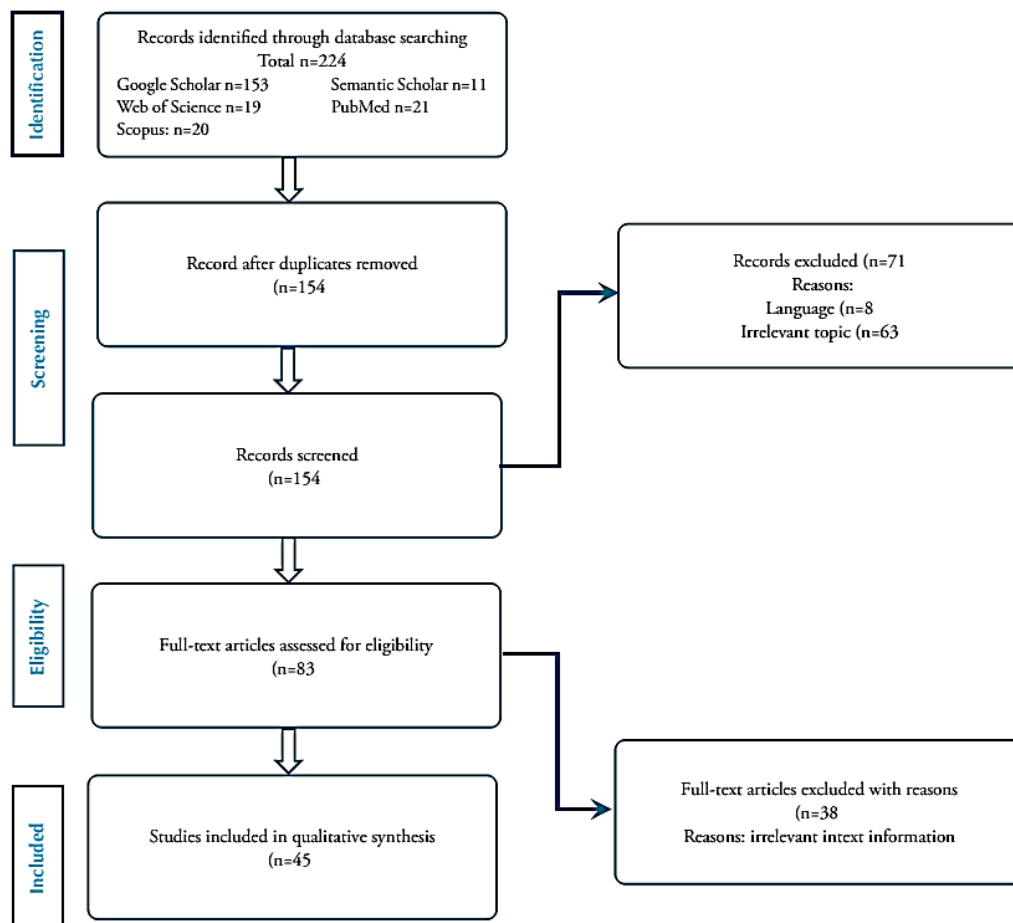


Figure 1. Flowchart of the literature selection process

3 RESULTS

[Table 1](#) presents the final selection of screened and reviewed articles. The earliest identified article was published in 1994, followed by a period of limited research until 2010, after which scholarly output on food taboos started to increase. During the initial period, only three (3) articles were

3.1 Prevalence of food taboos: number and distribution of reviewed articles

The results displayed in [Table 1](#) elucidate the prevalence of cultural food taboos, the population targeted by these taboos, and the rationales underlying their imposition.

Table 1. Articles linking food taboos and maternal and child nutrition outcomes globally

Author's name and year	Country	Type of Study	Target population	Restricted food(s) or food practice	Given reason/belief	Attributed effect on nutrition outcomes
Acharya <i>et al.</i> (2020)	Nepal	Cross-sectional study	Children	- Colostrum	- Deemed detrimental to neonatal health	Not mentioned
Acire <i>et al.</i> (2023)	Uganda	Cross-sectional study	Women and children	- Offal, chicken, wild birds, mango, lemon, tamarind, sugarcane	- Perceived risk of macrosomia - Perceived risk of neonatal dermal fissures and lacerations	Not mentioned
Asi <i>et al.</i> (2018)	Cameroon	Cross-sectional study	Women	- Meat from wild animals	- Perceived risk of bestial characteristics in the offspring	Not mentioned
Bhanbhro <i>et al.</i> (2020)	Indonesia	Cross-sectional study	Women	- Young coconut water and fermented cassava	- Perceived risk of spontaneous abortion	Anemia and under-nutrition in pregnant women
Chakona & Shackleton (2019)	South Africa	Cross-sectional study	Women	- Oranges, nartjes and orange juice - Chicken, including chicken heads and feet - Potatoes	- Perceived risk of neonatal jaundice - Perceived risk of neonatal insomnia and alopecia - Perceived risk of neonatal respiratory distress	Micronutrient deficiency in women
Chakrabarti <i>et al.</i> (2019)	India	Cross-sectional study	Women	- Fruits (banana, papaya, jackfruit, coconut), vegetables (brinjal, leafy vegetables), meat, fish and eggs	- Perceived risk of spontaneous abortion and fetal malformations	Not mentioned
Chanchani (2019)	India	Literature review and Cross-sectional Study	Women and children	- Root vegetables and mushrooms. - Too much chili - Green leafy vegetables	- Perceived risk of neonatal cataracts - Perceived risk of maternal pyrosis - Perceived risk of neonatal alopecia	Underweight in children
de Diego-Cordero <i>et al.</i> (2021)	Multiple	Systematic review	Women	- Cold foods	- Perceived risk of neonatal complications and lactation difficulties	Not mentioned
de Sa <i>et al.</i> (2013)	Laos People's Democratic Republic	Cross-sectional study and Meta-analysis	Women and children	- Coconut or pork	- Perceived risk of neonatal adiposity and dystocia	Higher prevalence of stunting
de-Graaf Aikins (2014)	Ghana	Cross-sectional study	Women	- Groundnut soup - Sugarcane	- Perceived risk of maternal pyrosis - Perceived abortifacient properties	Not mentioned

Table 1. (Continued)

Author's name and year	Country	Type of Study	Target population	Restricted food(s) or food practice	Given reason/belief	Attributed nutrition outcomes
Arzoaquoi <i>et al.</i> (2015)	Ghana	Cross-sectional study	Women	- Egg, snails, animal lungs, honey, shea butter	- Perceived risk of postpartum hemorrhage and prolonged labor	Iron deficiency and malnutrition
Ekwochi <i>et al.</i> (2016)	Nigeria	Cross-sectional study	Women	- Snail and grass-cutter meat, eggs	- Perceived risk of neonatal lethargy and dystocia - Perceived risk of predisposing the offspring to kleptomania	Not mentioned
Frumence <i>et al.</i> (2023)	Tanzania	Cross-sectional study	Women	- Foods that are considered "smelly," such as fish, eggs, and other foods like milk and liver	- Perceived risk of undesirable maternal physique and labor complications	Undernutrition
Gebregziabher <i>et al.</i> (2023)	Ethiopia	Systematic review	Women	- Vegetables, fruits, fatty foods (e.g. meat and dairy products)	- Perceived risk of fetal cephalic plastering - Perceived risk of neonatal adiposity and dystocia	Not mentioned
Hadush <i>et al.</i> (2017)	Ethiopia	Cross-sectional study	Women	- Fatty foods, solid foods, and cool/cold foods	- Perceived risk of dystocia, maternal gastritis and typhoid fever, and fetal skin dyschromia	Not mentioned
Holmes <i>et al.</i> (2007)	Lao People's Democratic Republic	Cross-sectional study	Women and children	- Ducks, chicken, and rabbits	- Perceived risk of bestial characteristics in the offspring	Decrease in exclusive breastfeeding practices.
Mengie <i>et al.</i> (2022)	Ethiopia	Cross-sectional study	Women	- Animal meat, eggs, and milk	- Perceived risk of dystocia secondary to macrosomia	Malnutrition in pregnant women
Jeong <i>et al.</i> (2017)	Korea	Cross-sectional study and systematic review	Women and children	- Peach or kiwi, spicy foods	- Perceived risk of neonatal allergies - Perceived risk of neonatal colic or dermal eruptions	Not mentioned
Kamande & Konyole (2020)	Kenya	Cross-sectional study	Children	- Eggs	- Perceived risk of neonatal speech delay and subsequent kleptomania	Severe malnutrition in children
Karcz <i>et al.</i> (2021)	Poland	Cross-sectional study	Women	- Bavarian tea, cow milk	- Stimulates lactation - Perceived risk of neonatal dermal lesions	Vitamin B12 deficiency
Kavle <i>et al.</i> (2018)	Egypt	Cross-sectional study	Women	- Carbohydrates - Beans	- Perceived risk of maternal flatulence and excessive weight gain - Perceived risk of adverse effects on neonatal health	Stunting in children

Table 1. (Continued)

Author name and year	Country	Type of Study	Target population	Restricted food(s) or food practice	Given reason/belief	Attributed effect on nutrition outcomes
Maykondo <i>et al.</i> (2020)	Democratic Republic of Congo	Cross-sectional study	Women and children	- Eggs, meat, fish, caterpillars, mushroom	- Perceived risk of maternal weight gain leading to dystocia and epilepsy	Malnutrition in both the mother and child
Khatun (2018)	Bangladesh	Cross-sectional study	Women and children	- Animal-source foods (e.g., meat and fish) - Fish or meat	- Perceived risk of spontaneous abortion or neonatal asthenia - Consumption is prohibited during the first seven postpartum days due to the perceived risk of maternal abdominal pain or emesis	Low birth weight Micronutrient deficiency
Lakshmi (2013)	India	Cross-sectional study	Women	- Restrictions to consume raw papaya, sesame, coconut water, and fermented rice	- Perceived abortifacient properties	Not mentioned
Lusambili <i>et al.</i> (2020)	Mozambique	Cross-sectional study	Women	- Pig - Octopus - Buffalo - Shrimp - Sea turtle - Meat of an animal that had just given birth - Animal intestines - Eggs - Little bird - Coconut	- Perceived risk of porcine facies in the neonate - Perceived risk of abdominal pain and neonatal mortality - Stigmatized due to perceived association with sorcery - Perceived risk of spontaneous abortion - Perceived risk of maternal abdominal pain - Perceived risk of mastatory aggression during lactation - Perceived risk of neonatal asthenia and poor health - Perceived abortifacient properties, the perceived risk of dystocia, and the perceived risk of neonatal alopecia - Perceived risk of neonatal oral malformation - Perceived risk of neonatal hypopigmentation	Not mentioned
Mason <i>et al.</i> (2012)	Multiple	Systematic review	Women and children	- Eggs	- Deemed non-essential and prohibitively expensive	Anemia, intra-uterine growth retardation (IUGR), and maternal thinness and stunting
Musyoka <i>et al.</i> (2023)	Kenya	Cross-sectional study	Women and children	- Rib meat - Eggs,	- Perceived risk of neonatal emaciation - Perceived risk of neonatal mutism	Protein malnutrition
Goswami & Thakur (2019)	India	Cross-sectional study	Pregnant women	-Eggs, fish, salt	- Perceived risk of prolonged labor, spontaneous abortion, and maternal hypertension	Anaemia and malnutrition in pregnant women

Table 1. (Continued)

Author name and year	Country	Type of Study	Target population	Restricted food(s) or food practice	Given reason/belief	Attributed effect on nutrition outcomes
Nag (1994)	Multiple	Systematic review	Women	- Rice water	- Believed to facilitate fetal movement	Anemia in women.
Nguyen <i>et al.</i> (2021)	India	Cross-sectional study	Women	- Ragi, papaya, mango and guava	- Perceived risk of neonatal hyperpigmentation	Maternal undernutrition
Niroula (2019)	Nepal	Cross-sectional study	Children	- Large portions of food - Less food postpartum	- Perceived risk of dystocia due to macrosomia - Considered ritually impure until a purification ceremony is performed	Increased stunting and wasting in children, Low birth weight babies
Ramulondi <i>et al.</i> (2021)	South Africa	Cross-sectional study	Women	- Butternut, papaya, oranges - Beans and tomatoes	- Perceived risk of neonatal skin dyschromia - Perceived risk of maternal pyrosis	Not mentioned
Magfirah <i>et al.</i> (2024)	Indonesia	Cross-sectional study	Women and children	- Fruits, moringa leaves and seafood	- Perceived risk of congenital malformations	Iron deficiency and malnutrition
Kumar Range <i>et al.</i> (1997)	Bangladesh	Cross-sectional study	Women and children	- Honey or sugar water is fed to the infant	- Believed to provide neonatal energy during the immediate postpartum period	Decrease in breastfeeding
Ribeli & Pfister (2022)	Malagasy	Cross-sectional study	Children	- Unripe mangoes, cassava, beans and avocados - Flesh of flying birds or hedgehogs - Eggs	- Considered difficult to digest - Perceived risk of neonatal leprosy - Perceived risk of neonatal speech and auditory impairments	Not mentioned
Rosen <i>et al.</i> (2018)	Niger	Cross-sectional study	Women	- Eggs, meat and spaghetti	- Believed to result in diluted breast milk	Not mentioned
Singh <i>et al.</i> (2020)	Cuba, Thailand, Saudi Arabia, and Argentina	Systematic review	Women and children	- Breastmilk	- Recognized as beneficial for neonatal nutrition	Not mentioned
Smith <i>et al.</i> (2022)	Lao People's Democratic Republic	Meta-analysis	Women	- Meat during the first 2 months postpartum	- Believed to impede postpartum healing	Low minimum dietary diversity for women, food insecurity, micronutrient deficiency
Suyitno <i>et al.</i> (2023)	Indonesia	Cross-sectional study	Women	- Sour and spicy foods - Recommended consumption of coconut water catfish	- Believed to sour breast milk - Recognized as beneficial due to its vitamin content - Believed to prevent adverse pregnancy outcomes	Not mentioned

Table 1. (Continued)

Author name and year	Country	Type of Study	Target population	Restricted food(s) or food practice	Given reason/belief	Attributed effect on nutrition outcomes
Diana et al. (2018)	Multiple	Cross-sectional study	Women	- Meat and milk		Not mentioned
Tesfa et al. (2023)	Ethiopia	Systematic review	Women	- Consuming large portions of food	- Perceived risk of fetal macrosomia exceeding the birth canal diameter, leading to dystocia and potential caesarean section	Reduction in meal portions and frequency
Tsegaye et al. (2020)	Ethiopia	Cross-sectional study	Women	- Vegetables like cabbage, pumpkin, milk and milk products, sugar cane, fruit like banana and avocado and egg	- Perceived risk of spontaneous abortion and dystocia	
Tugume et al. (2024)	Uganda	Systematic review	Women	- Catfish, chicken, cassava, mangoes	- Perceived risk of labor complications	Micronutrient deficiency
Workneh et al. (2023)	Ethiopia	Cross-sectional study	Women	- Rice, spaghetti	- Perceived risk of neonatal macrosomia and associated dystocia	Limited dietary diversity
Zerfu et al. (2016)	Ethiopia	Cross-sectional study	Women	- Leafy vegetables and dairy products, sugar cane and fruits	- Consumption after eight months of gestation is avoided due to the perceived risk of fetal cephalic adhesion and neonatal mortality - Avoided due to the perceived risk of neonatal macrosomia and associated maternal mortality from dystocia	Limited dietary diversity

Table 2 delineates the countries in which the reviewed studies on cultural food taboos were conducted.

Table 2. Number of articles published per country

Country	Frequency (n)
Ethiopia	7
Lao People' Democratic Republic	4
Kenya	3
India	3
South Africa	2
Indonesia	2
Uganda	2
Nepal	1
Sudan	1
Cameroon	1
Korea	1
Mozambique	1
Niger	1
Poland	1
Nigeria	1
Ghana	1
Multiple Countries	6

Figure 2 illustrates the temporal distribution of reviewed articles. The findings reveal that while the initial publication identified through the literature search occurred between 1990 and 1995, the highest number of publications (21) on this thematic area occurred between 2016 and 2020, followed by 15 (33.3%) articles published between 2021 and 2024. Only three (6.7%) articles were published between 1990 and 2010.

The results presented in Figure 3 demonstrate that the majority of reviewed articles originated from studies conducted in Africa (24) followed by Asia (15). Within Africa, Ethiopia contributed the highest number of studies (7), followed by the Lao People's Democratic Republic (4), Kenya (3), and India (3) (Table 2). In Asia, India contributed the highest number of studies (4), followed by the Lao People's Democratic Republic (3), and Indonesia (2). Several African cultures maintain deeply rooted beliefs regarding food and health, particularly concerning pregnancy and childbirth. For instance, pregnant women in countries such as Kenya and Ethiopia abstain from consuming certain foods, including meat, dairy, and eggs, due to concerns that these items may lead to complications during delivery or harm the fetus. These beliefs are frequently transmitted across generations,

perpetuating such taboos despite the availability of nutritional education.

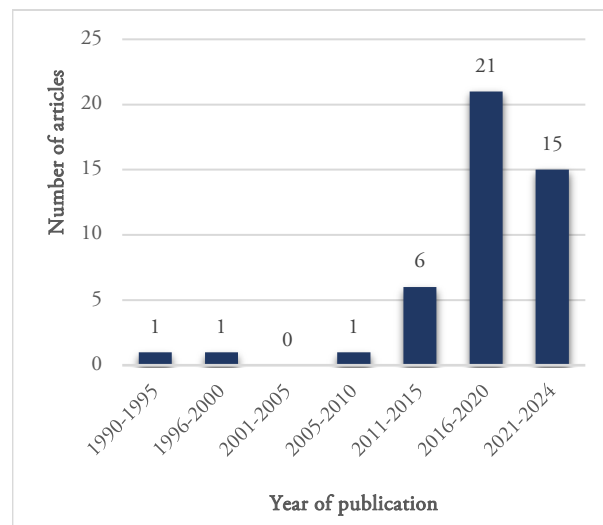


Figure 2. Distribution of reviewed articles from 1990 to 2024 worldwide

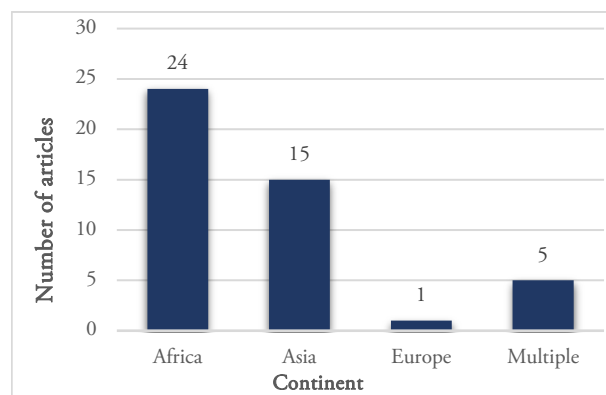


Figure 3. Distribution of reviewed articles by continent

3.2 Source of food taboos and target population (especially women and children)

The majority of food taboos documented in the reviewed literature originated from plant sources (13 articles), followed by those from animal food sources (12) (Figure 4). Plant-derived food taboos encompassed leafy green vegetables, fruits, and legumes, while animal-derived food taboos included products such as beef, pork and fish. The preponderance of plant-source food taboos was observed in Africa (Ethiopia, Kenya, Uganda, South Africa, and Tanzania), whereas animal-source food taboos were more prevalent in Asia (Indonesia, Lao People's Democratic Republic, India, Korea, and Bangladesh) (Table 1).

Numerous cultures impose taboos against the consumption of meat, fish, and dairy during pregnancy, often predicated on beliefs that these foods may precipitate childbirth complications and adversely affect fetal health.

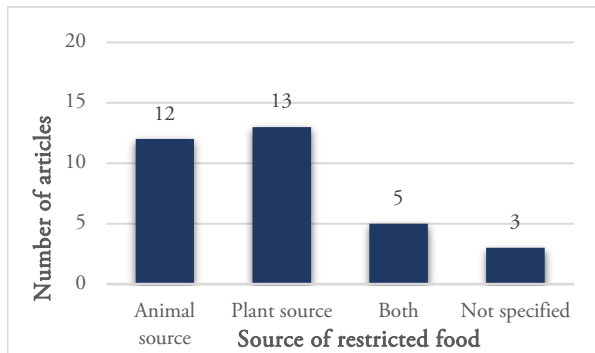


Figure 4. Distribution of reviewed articles by source of food taboo

Figure 5 demonstrates that, of the 45 reviewed articles, the majority of food taboos (28 articles/62.2%) focused on women of childbearing age, six (6) focused on children, and 11 targeted both women and children. Women are considered pivotal to the health of their offspring; thus, certain taboos are instituted to safeguard their health and the health of their children. Concerning the 28 studies on food taboos targeting women of childbearing age, Table 1 indicates that the majority of these studies were conducted in Ethiopia (6), followed by India (4). Pregnant women frequently abstain from foods perceived to cause complications, such as arduous labor or fetal abnormalities. In addition, food taboos are often

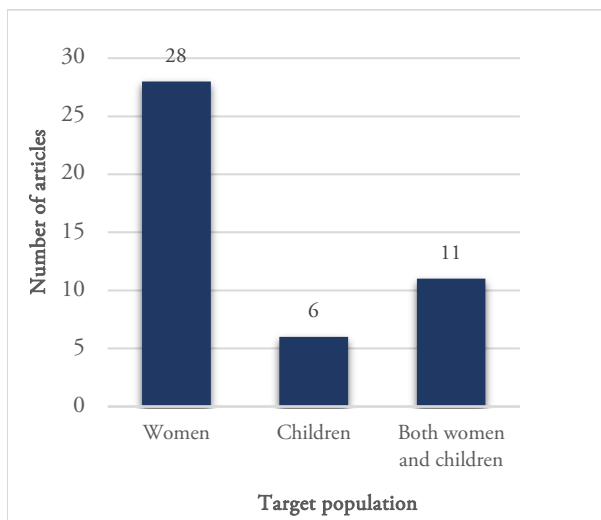


Figure 5. Distribution of reviewed articles by target population

perceived as protective measures intended to ensure the well-being of both the mother and the unborn child.

3.3 Influence of food taboos on maternal and child nutrition

Table 1 reveals that 25 (55.6%) of the reviewed articles elucidated the association between food taboos and nutritional outcomes, with three (3) studies originating from Ethiopia, two (2) from Bangladesh and two (2) from India, and the remainder from various other countries. The remaining 20 articles discussed food taboos without establishing a direct association with specific nutritional outcomes. An in-depth analysis of 25 articles that linked food taboos to maternal and child nutrition (Table 3) revealed that only two (2) studies incorporated anthropometric measurements and dietary quality assessments to establish a correlation with the nutritional status of women and children. The other 23 studies linked food taboos and nutritional outcomes based solely on qualitative research methodologies, such as key informant interviews and focus group discussions. Consequently, the existing literature does not provide sufficient scientific evidence to definitively associate food taboos with women's or children's nutritional outcomes. Therefore, the further research is warranted to investigate this linkage.

4 DISCUSSION

4.1 Number and distribution of reviewed articles

The literature search revealed a paucity of published articles linking food taboos to maternal and child nutrition between 1940 – 2009. The subsequent increase in publications from 2010 onwards may be attributed to the escalating burden of malnutrition, especially among vulnerable groups such as children and women of childbearing age, prompting researchers to explore the impact of socio-cultural factors on nutrition (Belew, 2025). While scholarly investigations into the influence of socio-cultural factors on health programs in general commenced in the 19th century (Burgess, 1961; Cassel, 1957; Davies, 1963; Freimer et al., 1983; Ogbeide, 1974), research focused on the nexus between cultural food taboos and maternal and child nutrition intensified in the 20th century. Moreover, the UN decade of Action on Nutrition (2016 – 2025) underscored the imperative to eradicate hunger and prevent all forms of malnutrition worldwide. This declaration by the UN enhanced the visibility of nutrition initiatives at the highest levels, fostering coordination, strengthening multi-sectoral collaboration, creating synergies, and measuring progress towards sustainable food systems and food and nutrition security for all (UN, 2022).

Table 3. Research studies conducted and the associations between food taboos and women and child nutrition

Author	Target group	Anthropometric measurements	Diet quality assessment	Nutrition indicators studied	Nutrition outcomes studied
Tugume et al. (2024)	Pregnant and breastfeeding women	-	-	Qualitative analysis	Micronutrient deficiency
Tesfa et al. (2023)	Women and children		Meal portions	Qualitative analysis	Reduction in portion size
Workneh et al. (2023)	Pregnant women	-	Dietary quality and diversity	Qualitative analysis	Reduced dietary quality
Musyoka et al. (2023)	Women	-	Dietary quality	-	Reduced dietary quality, protein malnutrition
Frumence et al. (2023)	Children	-	Dietary quality and diversity	-	Undernutrition
Smith et al. (2022)	Women and children	Maternal height, left mid-upper arm circumference, child recumbent length and weight, maternal and child complete blood count	24-hour recall, household food insecurity access scale	Minimum dietary diversity for women (MDD-W), BMI, hemoglobin levels, food insecurity, dietary diversity score, exclusive breastfeeding	Reduced dietary diversity, anemia, stunting, wasting, underweight, breastfeeding practices
Mengie et al. (2022)	Pregnant women	-	Dietary intake	-	Malnutrition
Karcz et al. (2021)	Women and children	-	Dietary quality	Breastfeeding practices	Micronutrient deficiency
Kamande & Konyole (2020)	Children	-	Breastfeeding and complementary feeding practices	-	Severe acute malnutrition
Bhambro et al. (2020)	Women	-	Dietary patterns and attitude	-	Undernutrition, anemia
Maykondo et al. (2020)	Women	-	Nutritional knowledge and diet quality	-	Malnutrition in women
Chanchani (2019)	Women and children	-	-	Qualitative analysis	Undernutrition in women and children

Table 3. (Continued)

Author	Target group	Anthropometric measurements	Diet quality assessment	Nutrition indicators studied	Nutrition outcomes studied
Chakona & Shackleton (2019)	Women	-	-	Qualitative analysis	Undernutrition in women and children
Niroula (2019)	Women and children	Maternal and child height, weight, MUAC	24-hour recall	Stunting, underweight, wasting, overweight	Increased stunting and wasting in children, low birth weight babies
Kavle et al. (2018)	Women and children	-	-	Qualitative analysis	Stunting in children
Khatun (2018)	Women and children	-	-	Qualitative analysis	Low birth weight and micronutrient deficiency
Goswami & Thakur (2019)	Women	-	Dietary diversity	Qualitative analysis	Anemia and malnutrition in women
Zerfu et al. (2016)	Women	-	Dietary diversity	Qualitative analysis	Limited dietary diversity
Larey (2008)	Women	-	-	Qualitative analysis	Iron and folate deficiency
Arzoquoui et al. (2015)	Women	-	-	Qualitative analysis	Maternal malnutrition
de Sa et al. (2013)	Women and children	-	-	Qualitative analysis	Higher prevalence of stunting
Mason et al. (2012)	Women and children	-	-	Literature review	Anemia, intra-uterine growth retardation (IUGR), and maternal thinness and stunting
Holmes et al. (2007)	Women and children	-	-	Qualitative analysis	Decrease in exclusive breastfeeding practices
Kumar Range et al. (1997)	Women and children	-	-	Qualitative analysis	Anemia in women
Nag (1994)	Women	-	-	Literature review	Anemia in women

The augmentation in published articles can also be attributed to the integration of nutrition with other disciplines such as sociology (Fielding-Singh & Oleschuk, 2023; Macheke *et al.*, 2022) and geographical information systems (GIS) (Buapian, 2018; Mutohodza *et al.*, 2023; Vilme *et al.*, 2022) within transdisciplinary research, which has gained increasing prominence in recent times. Sociology offers valuable insights into the societal determinants of nutrition, including income inequality, cultural beliefs (Dembedza *et al.*, 2022), and access to healthcare. By incorporating sociological perspectives, researchers can identify the root causes of malnutrition and develop more effective interventions that address underlying social issues. On the other hand, GIS enables researchers to visualize and analyze nutritional data within a spatial context (Dibari & Paron, 2005). This spatial analysis can reveal geographic disparities in access to healthy food options, the distribution of food deserts, and the impact of environmental factors on nutritional outcomes. Utilizing GIS technology, researchers can identify high-risk areas for malnutrition and design targeted interventions to improve food security and nutrition in these communities. By synergizing expertise from multiple disciplines, researchers can elucidate complex relationships and patterns that may remain obscured when studying nutrition in isolation.

In addition, the heightened interest in gastronomy, the art and science of culinary practices, during the 20th century provided deeper insights into the role of food beliefs in healthcare (Erlich, 2004). With the emergence of information regarding the influence of food cultural beliefs on nutrition, research on how food beliefs and taboos can influence malnutrition has increased (Ekwochi *et al.*, 2016; El Mahi, 2013; Mahmudiono *et al.*, 2019; Martínez Pérez & Pascual García, 2013; Menon & Peñalvo, 2019; Onuorah & Ayo, 2003; Owiti, 2013; Pemunta & Fubah, 2015; Pradeilles *et al.*, 2019; Reardon *et al.*, 2021; Wells *et al.*, 2020). Furthermore, the recognition that certain determinants of malnutrition can be indirect, such as food environments, socioeconomic factors, or socio-demographic status (Escher *et al.*, 2024; Sharma, 2021), has led to the advocacy for multidisciplinary and multisectoral approaches to address the burden of malnutrition. Hence, interventions targeting socio-cultural issues such as food taboos are on the rise (Chakona & Shackleton, 2019; Gomez & Torelli, 2015; Kurniawan *et al.*, 2024; Lokossou *et al.*, 2021), which may account for the observed increase in the studies examining the influence of cultural food taboos on maternal and child nutrition status.

The majority of studies identified in the literature search were conducted in Africa and Asia. These findings are consistent with certain existing evolutionary theories on food taboos which postulate that food taboos primarily originate from religious or cultural principles, while others evolve from collective experience (El Mahi, 2013; Henrich & Henrich,

2010). According to Meyer-Rochow, (2009), traditional food taboos are associated with orthodox Jewish and Hindu societies, as well as to traditional lifestyles in Malaysia, Papua New Guinea, and Nigeria. Social anthropological research on eating and food taboos (Hong, 2024) reveals that food taboos are prevalent in countries with strong cultural and religious traditions. Consequently, most studies have been conducted in Africa and Asia, where both cultural and religious food restrictions are strongly observed (Landim *et al.*, 2023; Meyer-Rochow, 2009). Ekwochi *et al.*, (2016) reported that Africa is a continent with numerous food taboos targeting women and children, with 36.5% of women in a region of Nigeria avoiding certain foods during pregnancy due to food taboos. These practices are nearly ubiquitous across African nations, where malnutrition rates among pregnant women and children remain elevated.

4.2 Source of food taboos and target population

The findings of this study indicate that restricted foods predominantly originate from plant sources, closely followed by animal sources. However, the majority of food taboos observed in Asia were associated with animal sources. The avoidance of animal consumption in Asian cultures is often rooted in the representation of animals as religious symbols (Colding & Folke, 1997; Landim *et al.*, 2023). According to Bhatia *et al.*, (2021), Hariohay *et al.*, (2023), and Alves *et al.*, (2012), animals such as the Wild ox of Java, sunbirds, and Tibetan sheep are related to ancestral relationships, totemic symbols, and religious beliefs that serve to protect these species from hunting. Furthermore, the perceived ancestral connection between humans and other animals may influence the development of taboos. For instance, Indigenous populations in China tend to abstain from consuming the Gibbon (Hoolock tianxing) due to the belief that the species represents their ancestors (Bhatia *et al.*, 2021). Similarly, Indigenous communities of India do not hunt or consume primates, as these animals are considered ancestral and, therefore, religious symbols (Hariohay *et al.*, 2023).

Regarding the target population of food taboos, the majority of identified taboos were directed towards pregnant women and women of childbearing age. This result corroborates previous literature, which reports that food taboos frequently target pregnant women to prevent perceived deleterious effects of certain foods on the neonate (Acire *et al.*, 2023; Ekwochi *et al.*, 2016). Non-adherence to these taboos is believed to result in adverse outcomes such as preeclampsia, general bodily weakness, morbidity, abnormal fetal movement, miscarriages, abdominal pains, malaria and fevers, weight loss, prolonged gestation, bleeding, vaginal discharge, and sexually transmitted infections (Acire *et al.*, 2023; Atekyereza & Mubiru, 2014).

4.3 Linking food taboos to maternal and child nutrition

Table 1 demonstrates that the rationale for the majority (43) of the food taboos, as articulated in the reviewed literature was predominantly positive. The primary justification was to safeguard the health of pregnant women and their unborn children. This study reveals that a limited number of research investigations have successfully correlated food taboos, dietary patterns, and anthropometric measurements in women and children, thereby partially elucidating the nexus between food taboos and maternal and child nutritional outcomes. Only two (2) studies (Niroula, 2019; Smith *et al.*, 2022) incorporated anthropometric measurements and established an association with nutritional outcomes. These studies attributed micronutrient deficiencies to the avoidance of catfish and chicken in Uganda (Tugume *et al.*, 2024). In Tanzania, wasting was associated with the avoidance of eggs and milk, and anemia with the avoidance of fish and beans (Frumence *et al.*, 2023). In Egypt, stunting was attributed to the avoidance of beans and green vegetables (Kavle *et al.*, 2018). However, these studies were observational and did not establish causality; therefore, the association between food taboos and maternal and child nutrition remains inconclusive. Rigorously designed human studies or sophisticated statistical analyses utilizing secondary data are required to establish this relationship definitively.

These studies, however, indicate the intricate relationship between food taboos, maternal nutrition, and child nutrition, as evidenced by anthropometric measurements. The remaining 23 studies relied on qualitative analysis, employing interviews, key informants, and focus group discussions. While these methodologies offer valuable insights into cultural beliefs and practices, they often lack the quantitative rigor necessary to draw definitive conclusions regarding nutritional status. The limited incorporation of anthropometric measurements in only two studies raises concerns regarding the robustness of the evidence linking food taboos to maternal and child nutrition. Anthropometric assessments are critical for objectively evaluating nutritional status, as they provide measurable data on height, weight and body composition. Without these metrics, it becomes challenging to ascertain the actual impact of food taboos on nutritional outcomes, particularly in populations at risk for malnutrition. Therefore, further research is imperative to establish the association between food taboos and nutritional outcomes through in-depth analysis of the anthropometric measurements, dietary assessments and nutritional indicators.

Although food taboos are often intended to safeguard the health of pregnant women and their unborn children, the inherent challenge lies in the restriction of certain highly nutritious foods, such as fruits (e.g., papaya, mango, and

pineapple), and meat which provide essential nutrients crucial for maternal and child nutrition (Lokossou *et al.*, 2021). Studies by Santos-Torres *et al.*, (2003) and Hartini *et al.*, (2005) have demonstrated that the avoided foods are frequently nutritious and beneficial. Consequently, the ultimate impact of some food taboos may be malnutrition, resulting in adverse nutritional outcomes such as anemia, underweight, and limited dietary diversity (Debela *et al.*, 2023).

Following the review of published literature, several relevant issues emerged; (i) the majority of cultural food taboos are based on anecdotal evidence with limited or no scientific foundation and are predominantly prevalent in rural populations; (ii) cultural food taboos are deeply rooted in traditions and customs, transmitted across generations, although the influence of the elder generation appears to be waning; (iii) concomitant with the erosion of indigenous knowledge systems and the decline of traditional customs, there is evidence of a reduction in traditional food intake in various countries. It is crucial to investigate the current prevalence of these food taboos, especially among Generation Z. Furthermore, it may be pertinent to examine whether, at reported consumption levels, the implicated cultural foods exert a significant effect on fetal and maternal health and nutrition status. For instance, the avoidance of eggs throughout pregnancy may be inconsequential if other protein sources are adequately consumed. However, in monotonous diets where eggs constitute a substantial portion of daily protein intake, this could result in significant adverse outcomes for both the pregnant individual and the developing fetus, as they require additional nutrients for healthy growth and development. Additionally, it would be prudent to examine the differential implications of eliminating single versus multiple food items, as well as to determine which specific foods exert the most substantial impact when excluded. These and other effects can be modeled using linear programming methods to assess the effect of adding or subtracting foods from dietary patterns on limiting nutrient intake.

Recommendations

- Future research should prioritize the integration of anthropometric assessments alongside qualitative methodologies. This combined approach would facilitate a more nuanced and comprehensive understanding of the extent to which food taboos influence actual nutritional status.
- The utilization of mixed-methods research designs, incorporating both qualitative and quantitative techniques, is recommended to provide a more holistic perspective on the issue. For instance, the integration of dietary recalls or food frequency questionnaires with in-depth qualitative interviews could generate richer, more

robust data on both cultural perceptions and actual dietary practices.

5 CONCLUSION

This study explored the intersection between cultural food taboos and maternal and child nutrition, aiming to achieve an in-depth understanding of the cultural food taboos imposed on women and children, the underlying rationales for these taboos, their implications for nutritional outcomes. The findings reveal a growing body of research on food taboos, with increasing scientific evidence shedding light on their prevalence and impact. Food taboos predominantly target women of childbearing age and pregnant women, with restricted foods primarily derived from plant and animal sources. Geographically, the practice of food taboos is more prevalent in Africa and Asia compared to other regions.

While the stated rationale for these taboos is often rooted in protecting maternal and fetal health, several restricted foods provide essential nutrients necessary for optimal nutrition. Research demonstrates that adherence to food taboos can result in reduced consumption of nutrient-dense foods among pregnant women. For instance, studies in Kenya and Ghana (Aberé & Azene, 2023; Chakona & Shackleton, 2019) found that pregnant women avoided foods such as meat, eggs, and dairy due to cultural beliefs associating these foods with adverse pregnancy outcomes, including difficult labor or fetal deformities. The prevalence of food taboos is notably pronounced in Africa and Asia compared with other regions. In Ethiopia, for example, a study reported a 27.5% prevalence of food taboo practices among pregnant women, with various avoiding critical food items such as fruits and cereals (Tsegaye et al., 2021). This highlights a significant gap in nutritional intake during critical periods of development.

The adherence to food taboos has been associated with adverse health outcomes, including maternal malnutrition, low birth weight, and increased risks of anemia among mothers. In rural communities, misconceptions surrounding food taboos often persist despite health education efforts, highlighting the need for culturally sensitive interventions. A deeper understanding of the interplay between cultural practices, dietary habits, and nutritional outcomes is essential for informing policymakers and health professionals in designing targeted interventions to improve maternal and child health in diverse cultural contexts.

However, this study also identified a critical gap in the existing literature: there is limited research directly correlating food taboos with specific nutrition indicators or outcomes. This lack of evidence makes it challenging to attribute the persistent rise in malnutrition rates solely to food taboos. There is an urgent need for in-depth studies that establish clear linkages between food taboos, dietary patterns, and

measurable nutrition status indicators. Moreover, further research is required to explore effective strategies for addressing food taboos in a manner that respects cultural traditions while simultaneously improving nutritional outcomes among vulnerable populations.

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