Qualitative studies of infant and young child feeding in lower-income countries: a systematic review and synthesis of dietary patterns and their determinants

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Abstract: Continued high rates of both under- and over-nutrition in low- and low-middle-income countries highlight the importance of understanding dietary practices such as early and exclusive breastfeeding, and dietary patterns such as timely, appropriate complementary feeding—these behaviors that are rooted in complex cultural ecologies. A systematic review and synthesis of available qualitative research related to infant and young child dietary patterns and practices from the perspective of parents and families in low income settings is presented, with a focus on barriers and facilitators to achieving international recommendations. Data from both published and grey literature from 2006-2016 was included in the review. Quality assessment consisted of two phases (CASP guidelines and assessment using GRADE-CERQual), followed by synthesis of the studies identified, and subsequent thematic analysis and interpretation. The findings indicated several categories of both barriers and facilitators, spanning individual and system level factors. The review informs efforts aimed at improving child health and nutrition, and represents the first such comprehensive review of the qualitative literature, uniquely suited to understanding complex behaviors leading to infant and young child dietary patterns.

Keywords: qualitative research; infant feeding; complementary feeding; breast feeding; low income country

Introduction

Early nutrition is crucially important for children to survive, grow and develop into healthy adults who can lead rewarding lives and productively contribute to their communities, and this has widely been recognized as an international priority.1 Despite important progress over the last decades, almost half of all childhood deaths (those under age 5) continue to be linked to nutritional causes. 2 In addition to morbidity and mortality, the impacts of poor nutrition, both under- and overnutrition, include strong, negative intergenerational consequences for descendants. 3 Alongside maternal nutrition and intrauterine exposures, 4 nutritionally-based caring behaviors of families, including breastfeeding and complementary feeding, form the basis of child nutrition; as a result, impacting child nutrition through improving feeding practices has been extensively studied and subsequently promoted. 5-8

The United Nations Children’s Fund (UNICEF) and the World Health Organization (WHO) concur that optimal nutrition practices for childhood include early initiation of breastfeeding, exclusive breastfeeding for the first 6 months of life, followed by the addition of nutritionally adequate, safe, and appropriate complementary foods with continuation of breastfeeding for 1 year and longer. 9, 10 Markers of appropriate infant and young child feeding include these practices, as well as the timely introduction of solid and semi-solid foods, adequately frequent provision of daily meals, dietary diversity, and consumption of iron rich foods. In response to the need for simple,
practical indicators of appropriate feeding practices in children aged 6–23 months, the World Health Organization (WHO) published a set of population-level indicators that could be obtained from large-scale survey data on feeding practices in varied international settings. 11

However, characterizing feeding practices through quantitative methods such as large-scale surveys can be challenging, particularly because these practices constitute multidimensional and often interrelated behaviors rooted in family systems and socioeconomic conditions, and feeding patterns also change rapidly within short intervals of age. 12, 13 Nonetheless information on infant and young child feeding (IYCF) practices is required to improve nutrition and health during the first 2 years of life. Over the last decade, numerous studies on improvement of nutrition-related behaviors for infants and young children have relied on qualitative research methods, well-suited to exploring complex behaviors and their underlying psychosocial and cultural drivers, to investigate IYCF practices. 14-18 This body of research is likely to contain useful information to further understanding of behavioral approaches to improve child nutrition. A comprehensive summary of qualitative data on IYCF from lower-income settings, including a synthesis of barriers and facilitators to recommended practices, is currently lacking in the biomedical literature.

The primary objective of the proposed study was to systematically review qualitative literature related to family experiences (particularly parental ones) of infant and young child feeding in low-income countries, synthesizing information on the barriers and facilitators that may relate to interventions to impact nutrition, survival, growth and development. The results provide an overview of qualitative studies relating parental perspectives on infant and child feeding, in the interest of providing insights for developing, improving, and scaling nutrition interventions.

Methods

This systematic review was registered with the International Prospective Register of Systematic Reviews (PROSPERO): registration number CRD42016035677. The review followed guidelines from the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) statement. Due to the exclusive focus on qualitative research, the review employed the ENTREQ guidelines 19 in lieu of the PRISMA guidelines, which are more specific to the requirements of quantitative literature reviews. 20

Studies were only reviewed if their results were directly obtained from participants who were parents or close family members of an infant or young child (0–2 years of age) at the time of the study. Family members, for the purposes of this review, were defined to include mothers, fathers or other caregivers living in the child’s household who routinely engage in infant or young child feeding. Infant and child feeding practices were defined as all actions taken to meet the physiological nutritional needs of children in this age group, including but not limited to: breastfeeding; introduction of solid, semi-solid, and/or family foods (known as complementary feeding); and continued breastfeeding of children alongside provision of solid/semi-solid food.

Inclusion and exclusion criteria

Included studies used widely accepted qualitative data collection methods, with well-described methodology, including for example: interviews, focus groups, direct observation, and participatory action research. Included studies also needed to have provided a clear description of recognized qualitative data analysis methods (e.g., grounded theory, narrative analysis, content analysis, thematic analysis).

Excluded studies included those for which it was difficult to extract qualitative data, e.g., mixed methods studies without clearly labeled data, or studies in settings where perceptions of parents or caregivers around infant and young child feeding could not be clearly identified, such as summaries or aggregated data. Commentaries, protocols, and systematic reviews were not included in the analysis. Additionally, as the focus was on research from resource limited settings, studies from countries other than those defined by the World Bank as low-income countries and lower-middle income countries (which have a Gross National Income per capita of less than $4,125) were excluded.
Search strategy

The following electronic databases were considered to be the most relevant for the topic and were searched: MEDLINE (PubMed); Embase; Cumulative Index to Nursing and Allied Health Literature (CINAHL: EBSCOhost). A health sciences librarian was consulted in the development of the database searching strategy.

The initial search strategy was developed for MEDLINE and then adapted for the other databases. Medical Subject Headings (MeSH) were initially used followed by free-text terms using controlled vocabulary (see Appendix 1 for a detailed description of the search strategy). Results were restricted to English language publications from the last 10 years, due to potential difficulties in translating and interpreting foreign language qualitative data by native English-speaking reviewers, and to ensure that the review identifies literature relating to the most current infant and young child feeding practices. In addition reference lists of included studies were manually searched to identify any additional studies that fit the inclusion criteria.

The included gray literature was initially identified through listing of relevant websites to search for organizations working in nutrition in lower-income countries (in consultation with experts working in the field who use and disseminate data through websites for related nutrition research). A custom search engine (CSE) was created using Google Custom Search. Within the CSE, the relevant websites were searched using search strategies adapted from those used in the databases to reflect relevant keywords related to qualitative studies of IYCF.

The review also included documents identified through a manual review of organizational reports and reports from relevant meetings related to nutrition of young children in low income countries. Results were similarly limited to publications in English from the last 10 years.

A flow diagram using PRISMA guidelines for reporting of systematic reviews is presented in Figure 1 in reporting of the selection process and results. For organization of initial search results, Endnote reference management software (Thomson Reuters (Scientific) LLC) was used, and results of searches imported to the software. At the first stage, duplicates and irrelevant studies were removed. Two independent reviewers then screened study titles and abstracts for suitability against inclusion and exclusion criteria. The decision to include or exclude a study was required to be agreed on by both reviewers (ANB and AK). If after consultation a decision wasn’t reached by the two reviewers, a third reviewer (EFK) made the final decision.

Data extraction

For organization of extracted data, a unified matrix was utilized to record specific characteristics of included studies. Extracted data included: reference details (author, year, title, journal/publisher); country/region of study; objectives or aims of the study; study design including methodological approaches (e.g., interviews/focus groups) and conceptual basis underlying the study (e.g., Grounded Theory); analysis method(s); sampling methodology and sample size; and initial assessment of the methodological limitations of the study. The initial results of the selection process and data abstraction are presented in Table 1.

Additional steps were taken in the data extraction phase that involved expanding the matrix (Table 1) to include participant characteristics, summaries of key outcomes/results reported, and the emergent review findings for which the study contributes evidence. These details are given in Appendix 2.

Quality appraisal

Each selected document was initially assessed for quality and internal validity according to the Critical Appraisal Skills Program (CASP) checklist for qualitative research. The CASP checklist includes 10 questions to appraise the quality of qualitative research. These assessments for each study can be seen in the final column of Table 1 with reference to the CASP appraisal question number where the study presented potential quality limitations. Selected studies met minimum criteria...
defined through the checklist including domains such as appropriateness of study design, data collection techniques, and analysis methods used.

At the second level of appraisal, the GRADE-CERQual guidance 23 was used to differentiate emergent findings strongly supported or less well supported. Two reviewers (AB and AK) independently reviewed studies using guidance derived from GRADE-CERQual to reach consensus of the quality of findings emergent from included studies. The results of this appraisal are presented in Table 2. During this process, methodological limitations of emergent findings were considered and categorized as minor, moderate or major, based on the absence of description of key elements of methodology (guided by the CASP assessment in Table 1) in the document(s) which support the finding, including the following: approach used to recruit or sample participants, how potential for researcher bias was addressed, how analysis was done or, in the case of mixed methods research, how statistical sampling and analysis was done. Minor methodological limitations were those with one element missing, moderate limitations were those with two elements missing, and major limitations were those with three or more missing. Full details of which elements were missing from each document are available in Appendix 3. Additional assessments of emergent findings were conducted based on the quality of the studies or documents supporting the finding. These included assessments of relevance, coherence and adequacy guided by the GRADE CERQual methodology. Assessments of relevance and coherence were not conducted for emergent findings with minimal (usually one) studies or grey literature contributing to the finding. These assessments for each emergent finding are given in Table 2 with full details of the how assessments were made found in Appendix 3. The overall assessment of confidence in emergent findings was based upon the assessments of methodological limitations, relevance, coherence and adequacy and was guided by the GRADE CERQual method. These are given for each emergent finding in Table 2 along with an explanation of judgment describing how the level of confidence was reached.

Following abstraction and grading of evidence, the final step involved data from the results, discussion, and conclusion sections of the included studies, being extracted and entered into NVivo 11 qualitative software (NVivo qualitative data analysis software; QSR International Pty Ltd. Version 11, 2015), wherein thematic analysis was employed to identify domains descriptive of the data for investigation and presentation.

This thematic analysis led to a more interpretive phase in order to understand how the themes identified may represent barriers and facilitators to change infant and young child feeding; for this we used an approach similar to that of Thomas et al. 24

Results

After a narrative summary of themes identified through the initial analysis was available, three reviewers (ANB, AK, EFK) met jointly to consider these and produce a consensus-based listing of barriers and facilitators. This step evaluated all emergent findings in light of the summary of themes wherein several emergent findings were often merged into one synthesized finding, or individual emergent findings were discarded due to weak assessments of confidence or minimal support from the included studies. Table 3 presents the synthesized review findings of barriers and facilitators generated through the data synthesis exercise and subsequently agreed on by reviewers.

Four categories of barriers to recommended breastfeeding practices were identified, and three categories of barriers to recommended complementary feeding practices were identified. Barriers to breastfeeding included factors specific to infant or mother, and cross-cutting beliefs and perceptions, as well as a pervasive lack of support for breastfeeding, from families, health workers and due to time poverty. Several categories of facilitators were also identified from the literature reviewed, including food security, social support, and individual infant and maternal factors.5. Conclusions

This section is not mandatory, but can be added to the manuscript if the discussion is unusually long or complex.

Conclusion
The findings contribute to the expanding literature on family experiences related to breastfeeding and complementary feeding of young children and infants in low-income settings and constitute the most comprehensive summary of findings to date. Previous systematic reviews of qualitative literature related to infant feeding have not included as broad an approach to the topic as the current review, having focused rather on specific areas such as bottle feeding 25 and obesogenic dietary intake. 26 Another qualitative review, undertaken in 2008, focused solely on maternal support for breastfeeding mothers 27 and one carried out in 2013 considered the psychosocial correlates of exclusive breastfeeding 28, neither of those included a comprehensive approach to assessing the quality of included studies.

Strengths of the current review included the use of multiple reviewers experienced in qualitative research and data collection and analysis, a comprehensive search strategy, assessment and scoring of quality and confidence placed in the findings based on guidelines, and inclusion of grey literature. Limitations of the study were the exclusion of documents not available in the English language and date limitations.

The review focused on identifying studies that related the experiences and first-hand accounts of family members responsible for providing for the care and nutritional needs of young children under 2 years of age. Through this systematic qualitative review and synthesis, hypothesized barriers and facilitators to improving infant and young child feeding were identified. The findings presented in this review are directly applicable to social and behavioral change initiatives in low resource settings aimed at improving practices for better health and nutrition of young children.

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Declaration of Interest: All authors declare that they have no competing interests
Appendix A

Figure 1. Flow diagram of search results and selection process.

Appendix B

Table 1. Data extraction of studies included in review including bibliographic information, study details and assessment of methodological limitations.

| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|-----------------------------------------------------------------|

*Studies identified from search databases*
| No. | Author(s) | Year | Country | Title | Journal | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------|------|---------|-------|--------|------------------|---------------------------------|-----------------------------|--------------------------------------------------------------------------------|
| 1   | Lynn M. Babington | 2006 | Dominican Republic/Las Matas de Farfan | Understanding Beliefs, Knowledge, and Practices of Mothers in the Dominican Republic Related to Feeding Infants and Young Children | Hispanic Health Care International | “To expand knowledge regarding feeding practices and nutritional beliefs of mothers living in the Dominican Republic.” | Qualitative methods (a focus group discussion) AM: modified constant comparative method | Convenience sampling 10 mothers aged 16-45 years with at least one child. | 5. no discussion regarding saturation of data; only 10 participants; limited explanation of results; few illustrative quotes. 6. no discussion about the researcher’s role, potential bias and influence 8. limited data to support the findings; no discussion about the researcher’s role, potential bias and influence |
| 2   | Amal Omer-Salim, Lars-Ake Persson, Pia Olsson | 2007 | Tanzania/suburban Dar es Salaam (Temeke district) | Whom can I rely on? Mothers’ approaches to support for feeding: An interview study in suburban Dar es Salaam, Tanzania | Midwifery | “To explore and describe mothers’ perception of baby feeding and approaches to support for baby feeding” | Qualitative methods (semi-structured interviews) AM: Qualitative content analysis | Purposive selection from clinic 8 mothers with babies under 6 months of age | 5. no discussion regarding saturation of data; only 8 participants; 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|------------------|-----------------------------------|-----------------------------|---------------------------------------------------------------|
| 3   | C Tawiah-Agyemang, BR Kirkwood, K Edmond, A Bazzano and Z Hill 2008 Ghana/ Kintampo district | Early initiation of breastfeeding in Ghana: barriers and facilitators | Journal: Journal of Perinatology | “To explore why women in Ghana initiate breastfeeding early or late, who gives advice about initiation and what foods or fluids are given to babies when breastfeeding initiation is late” | Qualitative methods AM: “The focus groups and semi-structured interviews were independently analyzed by the two lead researchers through the systematic identification and coding of themes. The findings were then discussed and consensus reached.” | Purposive sampling 52 semi-structured interviews with recent mothers, 8 focus group discussions with women of childbearing age, 13 semi-structured interviews with health workers, policy makers and implementers | 6. no discussion about the researcher’s role, potential bias and influence 7. no info about approval from the ethics committee 8. no discussion about the researcher’s role, potential bias and influence |
| 4   | Gloria E. Otoo, Anna A. Lartey, Rafael Pérez-Escamilla 2009 Ghana/ Manya and Yilo Krobo districts | Perceived Incentives and Barriers to Exclusive Breastfeeding Among Peri-urban Ghanaian Women | Journal: Journal of Human Lactation | To explore Ghanaian women’s knowledge and attitudes toward exclusive breastfeeding | Qualitative methods (four focus group discussions) AM: Thematic analysis | Convenience sampling 4 focus group discussions with a 7 to 10 mothers who had at least one child less than 4 months old per group | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| 5   | Luzmil A Hernandez, Marth A Lucia Vasqu 2010 Colombia/ Cali, Colombia | Practices and beliefs about exclusive breastfeeding by women living in Commune 5 in Cali, Colombia | Journal: Colombia Médica | To describe the practices and beliefs about breastfeeding during the first 6 months after delivery, | Qualitative methods (ethnonursing) AM: Ethnonursing Spradley’s method (identification of domains, taxonomies, componential analysis, and finally themes) | Key informants were “intentionally selected” 15 key informant participants (three interviews for each participant: 45 [60 to 90 minutes in | 6. no discussion about the researcher’s role, potential bias and influence 7. no info about approval from the ethics committee 8. no discussion about the researcher’s role, |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|--------------------------------------------------------------------------|
| 6   | Sabrina Rasheed, Rukhsana Haider, Nazmul Hassan, Helena Pachon, Sanjeeda Islam, Chowdhury S.B. Jalal, Tina G. Sanghvi | Why does nutrition deteriorate rapidly among children under 2 years of age? Using qualitative methods to understand community perspectives on complementary feeding practices in order to inform the design of future interventions for improved complementary feeding. | Journal: Food and Nutrition Bulletin | Qualitative (mixed) methods (Semi-structured interviews, food attributes exercises, opportunistic observations, trials of improved practices, key informant interviews, focus group discussions, and 24-hour dietary recall survey) | Convenience sampling Respondents were selected “opportunistically” | 42 semi-structured interviews with mothers; 6 interviews with key informants (2 village doctors and 4 traditional birth attendants); 4 focus group discussions with 2 grandmothers and fathers; food attributes exercises with 24 mothers; 24-dietary recall survey with 195 mothers; and 21 opportunistic observations of feeding times involving meals or snacks. | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|------------------------------------|-------------------------------|---------------------------------------------------------------|
| 7   | Pranee C. Lundberg, Trieu Thi Ngoc Thu 2011 Vietnam/ Ho Chi Minh City | Breast-feeding attitudes and practices among Vietnamese mothers in Ho Chi Minh City | Journal: Midwifery | “To describe breast-feeding attitudes and practices among Vietnamese women in Ho Chi Minh City.” | Qualitative methods (semi-structured in-depth interviews and observations) | Purposive convenience sampling 23 voluntary Vietnamese mothers who have given birth to a child within the last two years | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| 8   | Yati Afiyanti, Dyah Juliastuti 2012 Indonesia/ Jakarta | Exclusive breastfeeding practice in Indonesia | Journal: Birth Journal of Midwifery | To explore cultural practices and behaviors of breastfeeding among Indonesian mothers | Qualitative methods (semi-structured interviews) – Grounded Theory | Purposive and theoretical sampling 8 key participants (breastfeeding mothers) 10 general participants (family members and healthcare cadre) | 5. no explanation regarding the data collection setting 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| 9   | Hope Mei Hong Lee, Jo Durham, Jenny Booth, Vanphanom Sychareun 2013 Lao PDR/ Vientiane (Sisattanak district and eight in Hatxayfong distric) | A qualitative study on the breastfeeding experiences of first-time mothers in Vientiane, Lao PDR | Journal: BMC Pregnancy & Childbirth | To identify the reasons and influences behind the BF decisions of first-time mothers in Lao PDR. Focusing on decisions around when to initiate BF, timing of the introduction of complementary foods and BF duration. | Qualitative methods (interviews and focus group discussions) | Purposive sampling In-depth interviews with16 first-time mothers and 7 key informants; focus group discussions with 24 first-time mothers | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|--------------------------------------------------|
| 10  | Christy Bomer-Norton, 2013 Haiti/Artibonite | Timing of breastfeeding initiation in rural Haiti: A focused ethnography | Dissertation: The University of Texas at Arlington | To describe factors affecting the timing of breastfeeding initiation among Haitian mothers, particularly the specific cultural beliefs and practices | Qualitative methods (ethnography) AM: Ethnography | Purposive convenience sampling 25 mothers with children less than 12 months old | 8. no discussion about the researcher’s role, potential bias and influence |
| 11  | Anne Laterra, Mohamed A. Ayoya, Jean-Max Beauliere, M’mbakwa Bienfait, Helena Pachon, 2014 Haiti/Artibonite, Nippes, Quest, and Sub-Est | Infant and young child feeding in four departments in Haiti; mixed-method study on prevalence of recommended practices and related attitudes, beliefs, and other determinants | Journal: Pan American Journal of Public Health | To determine and describe the prevalence and patterns of three recommended practices for infant and young child feeding—exclusive breastfeeding, continued breastfeeding, and achievement of minimum dietary diversity To identify the attitudes and beliefs that inform these practices and any other factors that may facilitate or impede their implementation | Mixed methods (a cross-sectional survey and 12 focus group discussions) AM: Qualitative data was analyzed by using thematic content analysis | Survey respondents were recruited by using multi-stage cluster sampling After survey completion, respondents were invited to participate in a FGD held that same day. 12 focus group discussions (with 4-14 participants) among women >= 18 years old with children <= 2 years old | 5. no info regarding the form of data is not (e.g. tape recordings, notes etc); no discussion about saturation of data 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|--------------------------------------------------------------------------------|
| 12  | Gretel H. Pelto, Margaret Armar-Klemesu, 2015 | Identifying interventions to help rural Kenyan mothers cope with food insecurity: results of a focused ethnographic study | Journal: Maternal & Child Nutrition | To identify potential interventions to improve the quality, availability, and affordability of foods consumed by infants and young children | Qualitative methods (Phase 1: 8-10 key informants’ interviews, community observations. Phase 2: Interviews with at least 32 caregivers of infants and young children (6-23 months of age)) | Unknown how key informants were selected. Caregivers were randomly selected in a small representative sample | 5. no explanation regarding the form of data; no discussion about saturation of data 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| 13  | Alessandra N Bazzano, Richard A Oberhelman, Kaitlin Storck Potts, Leah D Taub, Chivorn Var, 2015 | What health service support do families need for optimal breastfeeding? An in-depth exploration of young infant feeding practices in Cambodia | Journal: International Journal of Women’s Health | To provide an in-depth understanding of breastfeeding practices in order to appropriately design a scalable newborn health intervention incorporating expanded breastfeeding counseling and support | Qualitative methods (27 semi-structured interviews with caregivers; 14 observation sessions and two focus group discussions with healthcare providers) | Purposive sampling of 27 interviewees | 5. no justification regarding the data collection setting; no discussion about saturation of data 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| 14  | Jennifer Burns, Jillian A. Emerson, Kimberly Amundson, Shannon Doocy, Laura E. Caulfield, Rolf D. W. Klemm, 2015 | A Qualitative Analysis of Barriers and Facilitators to Optimal Breastfeeding and Complementary Feeding for IYCF practices in South Kivu | Journal: Food and Nutrition Bulletin | To characterize IYCF practices and barriers and enablers to optimal child feeding in South Kivu | Qualitative approach (focus group discussions, structured and in-depth interviews) | Convenience sample of Jenga Jamma 2 program beneficiaries (women of reproductive age) | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|-------------------------------------------------------------------------------------|
| 2016 Democratic Republic of Congo/ South Kivu | Practices in South Kivu, Democratic Republic of Congo | | | | Approach (PM2A) care group lead mothers and government health workers. | 188 participants in 20 FGDs with mothers of children <24 months of age and women of reproductive age. 119 structured interviews among mothers with children <24 months of age. 43 in-depth individual interviews with health workers and lead mothers. | |

**Grey literature**

| 15 | Alive & Thrive- Ethiopia | IYCF Practices, Beliefs, and Influences in Tigray Region, Ethiopia | Alive & Thrive | To understand infant and young child feeding practices and the role of service providers in the study communities. Specific objectives are: • To describe current IYCF practices | Qualitative approach (focus group discussion, maternal interviews, observations, interviews with service providers AM: “Data analysis was done mainly based on the interpretative approach that involves eliciting meanings from respondents who were randomly selected in each area from a list provided by the health post, and the study interviewers also went door to door to identify households with children in the required age group. | Respondents were 45 mothers with interviews; 3 fathers 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence; lack of an in-depth description of the analysis process |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|------------------|-----------------------------------|-----------------------------|---------------------------------|
| 16  | Alive & Thrive 2010 Ethiopia/ SNNP Region | IYCF Practices, Beliefs, and Influences in SNNP Region, Ethiopia | Alive & Thrive | To understand infant and young child feeding practices and the role of service providers in the study communities. Specific objectives are: | Qualitative approach (focus group discussion, maternal interviews, observations, interviews with service providers) AM: “Data analysis was done mainly | Respondents were randomly selected in each area from a list provided by the health post, and the study interviewers also went door to door to identify households with and 2 grandmothers with FGDs; 27 interviews with service providers. | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence; lack of an in-depth description of the analysis process |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|-----------------------------------|---------------------------|-----------------------------------------------|
| 17  | United States Agency for International Development 2010 | Formative assessment of infant and young child feeding practices at the community | United States Agency for International Development | • To describe current IYCF practices • To identify barriers and facilitators for recommended IYCF practices • To identify people and approaches that can influence optimal IYCF change • To explore strategies for improving complementary feeding practices for young children • To explore the potential role of health and community workers to support IYCF behavior changes and thus reduce stunting in young children | Qualitative approach (focus group discussion with mothers, fathers and grandmothers and in-depth interviews with stakeholders) | Recruitment of FGD participants was facilitated by local health facility staff. Clinics and community organizations | 5. 5. no explanation regarding the data collection setting 6. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|------------------|-----------------------------------|-----------------------------|---------------------------------|
| 16  | Zambia                            | targeted areas in Zambia; examine the barriers and constraints to the uptake of recommended feeding and caring practices; learn more about the types of foods used for complementary feeding and the age of children when these foods are introduced; identify feasible and effective channels for promoting recommended infant and young child feeding practices. | AM: Thematic analysis | identified interview participants. | 6 FGDs with 6 to 12 participants each, in 4 different groups: mothers with children < 6mos; mothers with children 6 to 23 mos of age; fathers with children ≤ 23mos; grandmothers with children ≤ 23mos (24 total FGDs) | 8. no discussion about the researcher’s role, potential bias and influence |
| 18  | United States Agency for International Development, Nigeria/ Federal Capital Territory (Abuja Municipal Area Council, Bwari Area) | Formative assessment of infant and young child feeding practices - federal capital territory, Nigeria | Qualitative approach (In-depth interviews with stakeholders and focus group discussion with care givers) | Purposive convenience sampling (from health facility) | In FGDs, 91 mothers of children < 6 months old, 81 mothers of children 6 to 24 months old, 75 grandmothers of children under-24- | 6. no discussion about the researcher’s role, potential bias and influence |
|     |                                  | *(1) To conduct a cross-sectional investigation of breastfeeding habits of caregivers among target groups. (2) To investigate complementary feeding practices among target groups. | AM: Thematic content analysis | In FGDs, 91 mothers of children < 6 months old, 81 mothers of children 6 to 24 months old, 75 grandmothers of children under-24- | 6. no discussion about the researcher’s role, potential bias and influence |
|     |                                  |                                  |                                  | 7. no info about approval from the ethics committee |                                  | 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|-------------------|----------------------------------|-----------------------------|----------------------------------|
| 19  | United States Agency for International Development, 2011 Malawi | United States Agency for International Development: Consulting with caregivers – formative research to determine the barriers and facilitators to optimal infant and young child feeding in Malawi | Identify specific dietary problems among children less than 2 years of age, including determining the energy density and nutrient density (particularly iron, zinc, and vitamin | Phase 1 Qualitative approach (In-depth interviews with caregivers and observations) and Phase 2 TIPs (trials of improved practices) | Purposive sampling interviews with 60 mothers/caregivers of children 6-23 months and 18 key informants | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|------------------------------------------------------------------|
| 20  | Academy for Educational Development (AED)/Alive & Thrive | Initial Insight Mining and Pretest Research for Academy for Educational Development (AED)/Alive & Thrive | To assess IYCF practices as well as an analysis of the specific information gaps | Qualitative approach (focus group discussion with mothers/caregivers and in-depth | Multi-stage sampling: Stage 1: Purposive selection of two | 4. no info about recruitment strategies 5. no explanation regarding the data |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|----------------------------------|-------|-------------|-------------------|------------------------------------|-------------------------------|--------------------------------------------------------------------------------|
| 21  | United States Agency for International Development | Engaging grandmothers and men in infant and young child feeding and | United States Agency for International Development | Assess complementary feeding practices of children younger than 2 years and | A qualitative and participatory in-depth approach (focus group discussion with mothers/caregivers and in-depth interviews with FGD participants were recruited by | Purposive sampling in line with the objectives of the assessment: FGD participants were recruited by | 6. no discussion about the researcher’s role, potential bias and influence 8. no discussion about the researcher’s role, potential bias and influence; no info about the analysis process |
|     | Ethiopia Country Office | Alive & Thrive Ethiopia | Ethiopia Country Office | that needed to be explored through the insight mining and pretest research. | interviews with community health workers and community leaders | rural areas within each region. Stage 2: Purposive sampling of participants by field recruiters (audience profiles were identified and filed recruiters selected participants using a recruitment questionnaire which included key criteria for selection and criteria for disqualification) | 6. no discussion about the researcher’s role, potential bias and influence 7. no info about approval from the ethics committee |
|     | Ethiopia Country Office | Ethiopia: Oromia, Amhara, SNNPR and Tigray; rural areas only | | | | |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|---------------------------------|-------|-------------|-------------------|-----------------------------------|-----------------------------|---------------------------------------------------------------------------------|
|     | Kenya/ Eastern and Western Provinces | maternal nutrition – Report of a formative assessment in Eastern and Western Kenya | community beliefs that influence these. Determine maternal dietary practices during pregnancy and lactation and household factors that influence these. Establish the roles and responsibilities of men and grandmothers in the family and in maternal dietary and infant and young child feeding practices. Determine cultural influencers of maternal, infant, and young child feeding. Document available services and support for nutrition in the intervention areas. | interviews with key informants) AM: Thematic content analysis | community health workers based on guideline criteria. 16 focus group discussions (each discussion comprised between 10 and 12 members); in each of the 2 provinces 8 FGDs occurred among these groups: • 2 FGDs with fathers of children <2 yrs • 2 FGDs with mothers of children <2 yrs • 2 FGDs with grandmothers of children <2 yrs • 2 FGDs with mothers of children <2 yrs • 2 FGDs on maternal nutrition for mothers of children <2 yrs And 28 in-depth interviews with stakeholders | potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|-----------------------------------|-------|-------------|-------------------|-------------------------------------|-----------------------------|--------------------------------------------------------------------------------|
| 22  | United States Agency for International Development, 2011 | Ghana promotion of complementary feeding practices project – baseline survey report | Ghana/ Sunyani West, Jaman South, Nkoranza North, Tain, and Atebutu-Amanten | To provide an in-depth analysis of infant and young child feeding knowledge, practices, and behaviors as a baseline to guide the implementation of the Ghana Promotion of Complementary Feeding Practices Project, and to provide a basis for monitoring and evaluating the effectiveness of the behavior change communication campaign | Qualitative and quantitative methods (structured survey, in-depth interviews, and focus group discussion) | Communities were purposively selected based on the presence of mother support groups and church based groups. Female caregiver participants were purposively selected. Convenience sampling was used for the selection of the fathers, health workers, and community group leaders. | 5. no explanation regarding the form of data 6. no discussion about the researcher’s role, potential bias and influence 7. no info about approval from the ethics committee 8. no discussion about the researcher’s role, potential bias and influence |
| 23  | Alive & Thrive Bangladesh, 2012 | Perceptions, practices, and promotion of infant and young child feeding – | Alive & Thrive Bangladesh | “To determine the perceptions of mothers, influential family and community members and | Qualitative and quantitative methods (structured survey, in-depth interviews, and focus group discussion) | Purposive convenience sampling Semi-structured interviews with 42 fathers of children 6-24 months and 30 focus group discussions with mothers/caregivers of children 6-24 months. Each group has about 10 participants | 5. no explanation regarding the form of data 6. no discussion about the researcher’s role, potential bias and influence |
| No. | Author, year, and country of study | Title | Source type | Aims of the study | Study Design, Analysis method (AM) | Sampling method, Sample size | Assessment of methodological limitations of study (numbers refer to CASP questions *) |
|-----|---------------------------------|-------|-------------|------------------|----------------------------------|-------------------------------|-----------------------------------------------|
|     | Bangladesh/Chitagong, Sylhet districts and Dhaka slums | Results and program implications of assessments in Bangladesh | understanding of community-level health care providers of IYCF, to assess constraints and motivators as well as sources of information on IYCF | AM: Not stated | mothers of children 0-23.9 months and 28 focus group discussions with fathers and grandmothers | potential bias and influence 7. no info about approval from the ethics committee 8. no discussion about the researcher’s role, potential bias and influence; no info about the process of analysis |

* Critical Appraisal Skills Programme (CASP) Checklist for Qualitative Research

**10 questions to help make sense of qualitative research:**

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issue?
6. Has the relationship between researcher and participants been adequately considered?
7. Have critical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?
10. How valuable is the research?

**Table 2.** CERQual qualitative evidence profile of identified barriers and facilitators to recommended breastfeeding and complementary feeding practices
| Finding No. | Review Finding | Studies contributing to the Review Finding | Assessment of Methodological Limitations | Assessment of Relevance | Assessment of Coherence | Assessment of Adequacy | Overall CERQual assessment of confidence | Explanation of Judgement |
|------------|----------------|--------------------------------------------|------------------------------------------|-------------------------|-------------------------|-----------------------|------------------------------------------|--------------------------|
| 1          | Breastfeeding alters a woman’s breasts in an undesirable way | 1; 4; 13 | Minor methodological limitations | Minor concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | High confidence | This finding was graded as high confidence because of few concerns about coherence and relevance and moderate methodological limitations. |
| 2          | Breastfeeding for more than one year makes children susceptible to infection | 11 | Minor methodological limitations | NA | NA | Minor concern about adequacy | NA | NA |
| 3          | Breastmilk is unhealthy for baby if produced while a mother is angry | 11 | Minor methodological limitations | NA | NA | Minor concern about adequacy | NA | NA |
| 4          | Breastmilk is unhealthy for baby if produced while a mother has an illness | 11 | Minor methodological limitations | NA | NA | Minor concern about adequacy | NA | NA |
| 5          | Breastmilk is not enough for a small baby | 8; 16 | Substantial methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Moderate concerns about adequacy | Low confidence | This finding was graded as low confidence because of moderate concerns about relevance and adequacy of data and substantial methodological limitations. |
| 6          | When baby belches on the breast during breastfeeding the mother can develop swollen breasts | 4 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA | NA |
| 7          | Colostrum is not healthy for baby, so mothers discard colostrum | 3; 7; 10; 18 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns regarding relevance, coherence, and adequacy and moderate methodological limitations. |
| 8          | Baby remains hungry after breastfeeding (e.g., a baby is fussy even after breastfeeding) | 5; 6; 8; 9; 14; 15; 16; 17; 19; 21 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Moderate concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns |
|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 9 | Breast milk substitutes can make a baby healthier | 8 | Moderate methodological limitations | NA | NA | No concern about adequacy | NA |
| 10 | Mothers do not produce sufficient breastmilk | 3; 4; 5; 6; 7; 8; 9; 13; 14; 16; 17; 19; 21; 23 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence |
| 11 | Babies are thirsty and need water | 2; 7; 9; 13; 14; 16; 17; 19; 21; 23 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Moderate concerns about adequacy | Moderate confidence |
| 12 | Other liquids given shortly after birth to clean the infant, believing the insides need to be purged in this way | 11 | Minor methodological limitations | NA | NA | Substantial concerns about adequacy | NA |
| 13 | Delay in breastmilk “coming in” following the birth (delayed onset of Lactogenesis II) | 3 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA |
| 14 | Giving traditional herbs to newborns or young babies is a deeply rooted practice | 20 | Moderate methodological limitations | NA | NA | Minor concerns about adequacy | NA |
| 15 | Mothers do not have confidence that they are producing sufficient breast milk to meet baby’s needs | 5 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA |
| 16 | Baby still cries even after mother breastfeeds | 21 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA |
| 17 | Herbal infusions in water prevent a baby from getting ill | 18 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA |
| Page | Statement | Methodological Limitations | Concerns about Relevance | Concerns about Coherence | Concerns about Adequacy of Data | Confidence |
|------|-----------|---------------------------|--------------------------|--------------------------|-------------------------------|------------|
| 18   | Exclusive breastfeeding is not part of local tradition | Moderate methodological limitations | Minor concerns about relevance | Moderate concerns about coherence | Moderate concerns about adequacy of data | Moderate confidence |
|      |                                                     |                           |                          |                          |                               |            |
| 19   | Mothers attribute their inability to produce enough breastmilk to their own diet | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy of data | High confidence |
|      |                                                     |                           |                          |                          |                               |            |
| 20   | Women should cease breastfeeding if they become pregnant before nursling is 2 years old | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Moderate concerns about adequacy of data | Moderate confidence |
|      |                                                     |                           |                          |                          |                               |            |

Key theme: Lack of support from families, health workers (HWs) and others

| Page | Statement | Methodological Limitations | Concerns about Relevance | Concerns about Coherence | Concerns about Adequacy of Data | Confidence |
|------|-----------|---------------------------|--------------------------|--------------------------|-------------------------------|------------|
| 21   | Family members do not support ideal breastfeeding practices | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence |
|      |                                                     |                           |                          |                          |                               |            |

This finding was graded as moderate confidence because of minor concerns about relevance and moderate concerns regarding methodological limitations and coherence and adequacy of data.
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 22 | Mothers do not have enough time to breastfeed their infants due to work | 4; 6; 7; 8; 9; 13; 14; 15; 16; 17; 18; 20 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about adequacy | Moderate confidence |
|   |   |   |   |   |   |
| 23 | HWs don't reassure women about their ability to breastfeed | 3 | Moderate methodological limitations | NA | NA | No concern about adequacy of data |
|   |   |   |   |   |   |
| 24 | HWs do not have adequate knowledge and skills to support mothers | 2; 9; 23 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about adequacy | Moderate confidence |
|   |   |   |   |   |   |
| 25 | Mothers do not receive advice from HWs | 3; 9; 10; 13 | Minor methodological limitations | Minor concerns about relevance | Minor concerns about adequacy | High confidence |
|   |   |   |   |   |   |
| 26 | Media has a negative impact on breastfeeding (promoting breastmilk substitutes as healthy for babies) | 7; 8; 13 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about adequacy | High confidence |
|   |   |   |   |   |   |
| 27 | Traditional beliefs and influence of older female family members (e.g., grandmothers) influence breastfeeding | 7; 16; 18; 21 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about adequacy | Moderate confidence |

This finding was graded as moderate confidence because of minor concerns about relevance and moderate concerns regarding methodological limitations and coherence and adequacy of data.
|   |   | 28 Comments/advice from families, peers or close neighbors influence breastfeeding | 8; 9; 13 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | High confidence | This finding was graded as high confidence because of adequate data, minor concerns about coherence and relevance and moderate concerns about methodological limitations. |
|---|---|---|---|---|---|---|---|---|---|
|   | 29 Babies stop breastfeeding for unknown reasons (lack of interest in feeding, self-weaning) | 9; 13 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of minor concerns about coherence, moderate concern about relevance and methodological limitations. |
|   | 30 Delayed breastfeeding initiation of infants with respiratory problems | 10 | Minor methodological limitations | NA | NA | No concern about adequacy of data | NA | NA |   |
|   | 31 Baby has an illness | 4; 10; 14; 17; 19 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of substantial concerns about adequacy; moderate methodological limitations; and minor concerns regarding coherence and relevance. |
|   |   |   |   |   |   |   |   |   | Key theme: Mothers’ knowledge |
|   | 32 Mothers do not understand purpose of colostrum and breastfeeding initiation | 3; 7; 8; 14; 17; 18; 20 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of substantial concerns about adequacy; |
|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 33 | Mothers do not have knowledge about breastfeeding practices generally | 8; 9; 10; 13; 14; 15; 17; 18; 20; 21; 22 | Moderate methodological limitations | Minor concerns about relevance | Moderate concerns about coherence | Moderate concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns regarding methodology, coherence, adequacy and minor concerns about relevance. |
| 34 | Mothers unable to interpret child’s feeding cues or behavior | 8; 17; 19 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns about methodology, relevance, coherence and minor concerns about adequacy. |
| 35 | Mothers do not have formal schooling or education | 2 | Moderate methodological limitations | NA | NA | Minor concern about adequacy of data | NA | NA |

Key theme: *Mother-specific factors*

| 36 | Mothers have breast or nipple problems | 4; 5; 7; 9; 13; 14 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concern about adequacy of data | High confidence | This finding was graded as high confidence because of minor concerns regarding relevance, coherence, adequacy and moderate methodological limitations. |
| 37 | Mothers have an illness and/or have died | 4; 9; 12; 13; 14; 15; 17; 18; 21 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of substantial concerns about adequacy of data, moderate methodological limitations and minor concerns. |
Breastfeeding initiation is delayed due to pregnancy/labor-induced health conditions or activities needing to be performed after childbirth. This finding was graded as moderate confidence because of substantial concerns about adequacy, moderate concerns about relevance and minor concerns about coherence and methodological limitations.

### Barriers to complementary feeding

| 39 | Household food insecurity | 11; 12; 14; 15; 16; 17; 20; 21; 23 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence |
| 40 | Replacement of higher quality foods with lower quality foods for financial reasons or drought | 12; 15 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | Moderate confidence |
| 41 | Lack of diversity in available foods | 12; 14; 15; 16; 17; 19; 20 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence |
|   | Lack of water for cooking  | 12; 15 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of minor concerns about coherence, moderate concern about relevance and methodological limitations |
|---|---------------------------|--------|-------------------------------------|---------------------------------|-------------------------------|-----------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 43 | Some foods are only available seasonally | 12 | Minor methodological limitations | NA | NA | Minor concern about adequacy of data | NA | NA |
| 44 | Mothers prepare foods early in the day and then store for later feeding | 12 | Minor methodological limitations | NA | NA | No concern about adequacy of data | NA | NA |
| 45 | Mothers do not have financial decision-making power | 14; 20 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | No concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of moderate concern about coherence, moderate concern about relevance and methodological limitations |
|   | Infants dislike animal source foods | 6; 23 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Substantial concern about adequacy | Low confidence | This finding was graded as low confidence because of moderate concerns about methodology and relevance; and substantial concerns about adequacy of data. |
| 47 | Infants do not have appetite to eat animal source foods | 6; 18 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Moderate concern about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns regarding methodological limitations, adequacy of data, relevance and minor concerns about coherence. |
|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 48 | Infants refuse to eat or spit out foods | 6; 15; 23 | Moderate methodological limitations | Moderate concern about relevance | Moderate concern about coherence | Substantial concerns about adequacy | Low confidence |
|   |   |   |   |   |   |   |
| 49 | Infants vomit when animal source foods are offered | 6; 15 | Substantial methodological limitations | Moderate concern about relevance | Moderate concern about coherence | Substantial concerns about adequacy | Low confidence |
|   |   |   |   |   |   |   |
| 50 | Infants have an illness | 15; 18 | Moderate methodological limitations | Moderate concern about relevance | Minor concerns about coherence | No concern about adequacy of data | Moderate confidence |
|   |   |   |   |   |   |   |
| **Key theme:** Family-specific factors |   |   |   |   |   |
| 51 | Mothers and other family members do not have appropriate knowledge about complementary feeding | 6; 11; 14; 15; 16; 19; 20; 21; 23 | Moderate methodological limitations | Minor concern about relevance | Minor concern about coherence | Minor concerns about adequacy | High confidence |
|   |   |   |   |   |   |   |
| 52 | Mothers concern about over-feeding their child (which might cause them to be hungrier in future) | 16 | Moderate methodological limitations | NA | NA | No concern about adequacy of data | NA |

This finding was graded as low confidence because of moderate concerns about relevance and coherence and substantial concerns about adequacy of data and methodology.

This finding was graded as low confidence because of moderate concerns about relevance and coherence and substantial concerns about adequacy of data and methodology.

This finding was graded as moderate confidence because of moderate concerns about methods and methodology and minor concerns about coherence.

This finding was graded as high confidence because of minor concerns about relevance, coherence and adequacy; and moderate methodological limitations.
|   | Mothers and family members fear that child may choke on certain solid foods | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Moderate concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns about methodology, adequacy of data, relevance and minor concern regarding coherence. |
|---|---|---|---|---|---|---|---|
|   | Religious/cultural traditions around preparation of non-fasting foods for children by adults who are fasting | Moderate methodological limitations | NA | NA | Moderate concern about adequacy of data | NA | NA |
|   | Thicker weaning porridge believed to be difficult for young children to swallow/digest | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Moderate concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns about methodology, adequacy of data, relevance and minor concern regarding coherence. |
|   | Lack of time to cook special foods for the child | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Minor concern about adequacy of data | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns about methodology and relevance and minor concerns regarding coherence and adequacy of data. |

Cross-cutting barriers

|   | Inability of HWs to support | Moderate methodological limitations | NA | NA | No concerns about adequacy of data | NA | NA |
|---|---|---|---|---|---|---|---|
|   | Conflicting information | Moderate methodological limitations | NA | NA | Moderate concerns | NA | NA |

FACILITATORS

Facilitators to recommended breastfeeding

|   | Breastfeeding is inexpensive and hygienic | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence | This finding was graded as high confidence because of minor concerns about |
|---|---|---|---|---|---|---|---|

|   |   |
|---|---|
|   |   |
| Key theme: Healthcare services |

| 60 Breastfeeding relieves uncomfortable fullness of breasts | 4 | Moderate methodological limitations | NA | NA | Moderate concerns about adequacy | Low confidence |

This finding was graded as low confidence because of moderate concerns about adequacy and minimal studies contributing evidence.

| 61 Breastfeeding strengthens the bond between the mother and child | 5; 9 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Moderate concerns about adequacy | Moderate confidence |

This finding was graded as moderate confidence because of moderate concerns regarding methodology, relevance and adequacy and minor concerns about coherence.

| Key theme: Infant-specific factors |

| 62 Advice and encouragement provided in some healthcare setting(s) (e.g., prenatal visits, delivery, home visits) | 3; 10; 13; 16; 17; 18 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence |

This finding was graded as moderate confidence because of substantial concerns about adequacy, moderate methodological limitations, minor concerns about relevance and coherence.

| 63 Some advice and counseling from HW’s on importance of breastfeeding | 2; 3; 4; 9; 13; 14; 15; 16; 17; 18; 19 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence |

This finding was graded as moderate confidence because of substantial concerns about adequacy, moderate methodological limitations, minor concerns about relevance and coherence.
|   | Child crying provides guidance when to feed | Minor methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence | This finding was graded as high confidence due to only minor concerns about adequacy, relevance and methodologic al limitations and moderate concerns about relevance. |
|---|---|---|---|---|---|---|---|
| Key theme: **Mother-specific factors** |
|   | Mothers understand the importance of breastfeeding | 1; 2; 3; 4; 5; 7; 9; 10; 11; 15; 16; 17; 18; 19; 21; 22 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | High confidence | This finding was graded as high confidence because of minimal studies contributing evidence |
| Key theme: **Social and cultural factors** |
|   | Cultures and traditions facilitate early initiation of breastfeeding | 3 | Moderate methodological limitations | NA | NA | No concerns about adequacy | Low confidence | This finding was graded as low confidence because of minimal studies contributing evidence |
|   | Family support promotes breastfeeding | 1; 2; 7; 9 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate methodologic al limitations, minor concerns regarding relevance and coherence and |
| Facilitators to complementary feeding | Key theme: Food security |
|--------------------------------------|-------------------------|
| 69 Praise and affirmation from a partner and/or family facilitate breastfeeding | 2 | Moderate methodological limitations | NA | NA | No concerns about adequacy | NA | NA |

**Key theme:** Social support

| 70 Some healthy foods are available | 16; 18; 22 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of moderate concerns about methodology and relevance; and minor concerns about coherence and adequacy. |

**Key theme:** Mother-specific factors

| 72 Mothers understand the importance of complementary feeding | 15; 16; 18 | Moderate methodological limitations | Moderate concerns about relevance | Minor concerns about coherence | Minor concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of minor concerns about coherence and adequacy; and moderate concerns regarding relevance and methodology. |

**Key theme:** Healthcare services

| 73 Mothers receive IYCF advice and counseling at healthcare facilities | 15; 18; 19; 21 | Moderate methodological limitations | Minor concerns about relevance | Minor concerns about coherence | Substantial concerns about adequacy | Moderate confidence | This finding was graded as moderate confidence because of minor concerns about coherence and adequacy; |
and moderate methodological limitations and substantial concerns about adequacy.
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