

RESEARCH

Open Access



Fathers' involvement in complementary feeding of children in Damot Woyde District, South Ethiopia: a community-based cross-sectional study

Amare Abebe Wolkanto¹, Tsegaye Demissie Gemebo¹, Samson Kastro Dake^{1*} and Tewodros Getachew Hailemariam^{1,2}

Abstract

Background In infant and young child feeding practice parents are the primary agents for childcare activities, such as feeding. Mothers' role in infant and young child feeding practice has been the focus of previous research. The involvement of fathers in child-feeding practice has rarely been studied. Thus, this study aimed to assess fathers' involvement in the complementary feeding of children and identify factors associated with it in Southern Ethiopia.

Methods A community-based cross-sectional study was conducted which included a survey, in-depth interviews, and focus group discussions (FGDs). The survey was conducted with 593 fathers who have at least one child of age 6–23 months. Four FGDs were conducted with fathers, and 21 in-depth interviews were conducted with fathers, mothers, and community health workers. The survey data were entered into Epi data software version 1.4.4.0 and statistical analysis was performed using SPSS software version 20. Bivariate and multivariate logistic regression analyses were performed and statistical significance was considered at $p < 0.05$. All interviews and FGDs were transcribed, coded, categorized, and analyzed using open code software version 4.0.2.

Results Of the total sample of 593, 50.9% of the fathers in the study were involved in their children's complementary feeding practices. Fathers with better household income (AOR = 1.56; 95% CI: 1.09, 2.22) and good perception of child complementary feeding practice (AOR = 1.79; 95% CI: 1.28, 2.52) were more likely to be involved in their children's complementary feeding practice. The majority of the fathers had better knowledge about the recommended complementary feeding practices.

Conclusions Income-generating activities and behavioral change communication for fathers should be encouraged to improve their involvement in child feeding. Community-based nutrition programs should also give due attention to increasing the involvement of fathers.

Keywords Children, Complementary feeding, Fathers' involvement, 6–23 months

*Correspondence:

Samson Kastro Dake
tasamsona@gmail.com

¹ Department of Reproductive Health and Nutrition, School of Public Health, College of Health Sciences and Medicine, Wolaita Sodo University, Wolaita Sodo, Ethiopia

² New South Wales Cancer Institute, Sydney, Australia

Background

Infant and young child feeding (IYCF) is a critical practice for child health and survival [1]. IYCF practices directly affect the nutritional status of infants and young children and, ultimately, impact child survival [2]. As part of IYCF practice indicators, timely introduction of



© The Author(s) 2023. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

complementary foods, frequency of feeding, and quality of diet make up appropriate complementary feeding practices. Infants should receive complementary foods from 6 months of age onwards [3]. Parents, particularly mothers, are primarily involved in IYCF practice [4, 5].

Parents are the primary agents to enable children to grow into healthy, responsible, and mature adults. As a parent, the contributions of fathers to their children's development, health, and well-being are important [6]. Studies in Canada and Texas, USA showed that the role of fathers in IYCF practices was crucial in shaping children's nutritional status along with mothers' feeding practices taken into account [7, 8].

A mother's decision to breastfeed and the duration of breastfeeding depends on different factors; among them is the support of the father or male partner [9]. Without supporting fathers to play a positive role in child feeding, interventions designed to promote child feeding are less likely to be effective [10]. Fathers have an important role in promoting their child's social and emotional development and might also be a useful strategy in promoting fathers' involvement [11]. Different studies reported that fathers' involvement in child feeding is affected by the level of socioeconomic status, family structure, cultural conditions, religion, fathers' knowledge and practice of child feeding, and maternal occupation [12–14].

The IYCF practice has been the emphasis of nutritional policies in many developing countries to address child malnutrition and improve the growth, health, and development of children [2]. Despite the role of fathers in IYCF practice, their involvement in child complementary feeding has rarely been studied and literature gives more attention to the role of mothers. Therefore, this study aimed to assess the level of fathers' involvement in complementary feeding of children and to identify factors associated with it in the study area.

Methods

Study design and setting

A community-based cross-sectional survey, in-depth interviews and FGDs were conducted from February to March 2019 in Damot Woyde district, Southern Ethiopia. The district is located 313 km south of the Ethiopian capital, Addis Ababa through Butajira Halaba road. In 2019, the Ethiopian Central Statistical Agency (CSA) projected the total population of the district to be 113,823; of which 50,896 were children below two years of age.

Population and sampling

For the survey, the following assumptions were used to calculate the sample size of 634; the expected prevalence of 50% for the involvement of fathers in complementary feeding practice, 95% confidence level,

5% margin of error, design effect of 1.5, and 10% non-response rate. A total of 593 fathers completed the questionnaire in the survey, making the response rate 93.5%. Fathers who had at least one child in the age group of 6–23 months were the source population. A systematic random sampling method was applied to select fathers from selected kebeles (smallest administrative units). Fathers paired with their children were included in the study. First, 634 households were selected systematically from 6 kebeles that were randomly selected out of 25 kebeles. The total sample was allocated to these 6 kebeles proportional to population size. From each household, one father was recruited to complete the survey questionnaire. In households where there was more than one eligible father lottery method was applied to select one father.

In-depth interviews and FGDs were conducted to complement the survey data. For the in-depth interviews 5 fathers, 10 mothers, and 6 community health workers were recruited conveniently by the first author from the kebeles where the survey was conducted. The number of participants in the in-depth interviews was decided based on point of saturation where there was no new information emerging from the last interviews. Similarly, 4 FGDs were conducted with fathers and mothers that were recruited conveniently by the community health workers from the community. There were a total of 61 participants in the in-depth interviews and FGDs.

Data collection

A structured questionnaire composed of socio-demographic characteristics and questions that measure the father's knowledge, attitude, and involvement in complementary feeding practice was prepared in English and translated into the local language. Six Bachelor of Science degree holder research assistants (RAs) who speak the local language and had previous data collection experience administered the questionnaire. The RAs were also provided with additional training for two days on the different modules of the questionnaire, participants' selection, and ethics. The questionnaire was pretested before conducting the main survey with a sample of 32 fathers in a community with similar characteristics to the actual study population but not part of the main study.

The first author, fluent in the local language, conducted all in-depth interviews using a semi-structured interview guide. Focus group discussions were conducted with fathers and mothers, and 3 RAs facilitated the FGDs. The RAs were gender-matched with the FGD participants. Both in-depth interviews and FGDs were recorded by the digital audio recorder and on average the interview took 45 min whereas the FGDs took 60 min.

Measurements

Fathers were asked six questions to measure their involvement in complementary feeding practice. The questions had five Likert scale responses; always, often, sometimes, rarely, and never. A single variable was established by creating a total score from the six questions. Those who scored above the mean in the total score were labeled as having “fair involvement”, whereas those who scored the mean or below in the total score were labeled as having “Poor involvement”.

Similarly, to assess fathers’ knowledge about complementary feeding, additional six Likert scale questions with five Likert scale responses were administered. Fathers with a score above the mean were labeled as having “better knowledge”, whereas those with a score of the mean or below the mean were categorized as having “poor knowledge”.

Fathers’ perception towards involvement in child complementary feeding was measured using thirteen Likert scale questions. Fathers with a score above the mean were labeled as having “better perception”, whereas those with a score of the mean or below the mean were categorized as having “poor perception”.

Data analyses

The survey data were entered into Epi data software version 1.4.4.0 and exported to SPSS version 20 for analysis. Descriptive statistics were conducted for all variables. Normality was checked for quantitative continuous variables. We utilized binary logistic regression analysis since the outcome variable had binary outcomes. Exposure variables with p -value < 0.25 during bivariate analysis were considered for multivariate analysis. Multivariate logistic regression analysis was done to control for potential confounders and identify predictors of the outcome variable. Audio-recorded files of the FGDs and in-depth interviews were transcribed verbatim, translated into English, and coded. The codes were generated into common themes and sub-themes. Open code software was used to assist data organization and analysis.

Results

Socio-demographic characteristics

Out of 593 fathers who completed the survey, 276 (46.5%) were in age between 35–44 years and the mean age of the study participants was 36.1 (SD = 2.2). Most (576, 97.1%) of the fathers were married and 421 (71.0%) were protestant Christian religion followers. The majority (563, 94.9%) of the fathers were from Wolaita ethnic group and 177 (29.8%) attended at least primary education.

Table 1 Socio-demographic characteristics of study participants in Damot Woyde district in South Ethiopia, February 2019

	Variables (n = 593)	Frequency	Percent
Age	≤ 30	146	24.6
	31–44	324	54.6
	≥ 45	123	20.7
Marital status	Currently Married	576	97.1
	Currently Unmarried ^a	17	2.9
Religion	Protestant	421	71.0
	Orthodox	129	21.8
	Others ^b	43	7.2
Ethnicity	Wolaita	563	94.9
	Others ^c	30	5.1
Educational status	No formal education	287	48.4
	Primary education (1–8)	177	29.8
	Secondary and above	129	21.8
Occupation	Farmer	347	58.5
	Daily laborer	67	11.3
	Merchant	112	18.9
	Employed ^d	67	11.3
Average monthly income	< 500	321	54.1
	≥ 500	272	45.9

^a Separated, Divorced, Widowed ^b Muslim, Catholic ^c Kembata, Hadiya, Amhara

^d Non-governmental organization employee, Government organization employee

Table 2 Knowledge of fathers about complementary feeding and perception about fathers’ involvement in complementary feeding in Damot Woyde district in South Ethiopia, February 2019

Variables (n = 593)	Frequency	Percent
Knowledge of complementary feeding		
Better	357	60.2
Poor	236	39.8
Perception about fathers’ involvement in complementary feeding practice		
Better	278	46.9
Poor	315	53.1

More than half (347, 58.5%) of the fathers were farmers (Table 1).

Fathers’ knowledge about complementary feeding practice and attitude toward their involvement

More than half (357, 60.2%) of the fathers had better knowledge about child complementary feeding practice and 278 (46.9%) had a better perception of fathers’ involvement in child complementary feeding (Table 2).

Almost all study participants of the in-depth interview and FGDs reported that they know what complementary

feeding is and when to start it. Most mothers and fathers believe that complementary food should be initiated at the age of 6 months.

A 35-year-old father said; "...at the age of six months children should start complementary food." A 22-year-old mother also reported this and she said; "...we start complementary food at the age of 6 months..."

The proportion of fathers' involvement in child complementary feeding and its predictors

In this study, the proportion of fathers' involvement in child complementary feeding practice was 50.9%. Fathers with a better household income had a 56% higher chance of being involved in their child's complementary feeding practice (AOR=1.56; 95% CI: 1.09, 2.22). Fathers with better perception towards fathers' involvement in child complementary feeding were 79% more likely to involve in the practice compared to their counterparts (AOR=1.79; 95% CI: 1.28, 2.52) (Table 3).

Most of the FGD and in-depth interview participants reported that most fathers do not take part in child feeding. The community has defined the role of fathers and mothers in child feeding and most fathers believe that involving in child feeding is not their role.

A 37-year-old male FGD participant reported:

"What we are practicing now is what we have learned from our parents. Fathers in the past had no trend of involving in child feeding. ...except for providing financially, fathers are not involved in food preparation and child feeding. This is considered as the responsibility of mothers."

A community health worker also reported that fathers rarely involve in child feeding.

"...we don't see fathers being involved in child feeding. Since we conduct a house-to-house visit in the community, we observe that fathers' involvement in child feeding is so poor."

On the other hand, few fathers involve in child feeding practice. It was reported that there is a change in the attitude of fathers and they started to involve in child feeding though their contribution is far less than the mothers.

A 29-year-old mother reported:

"Even though they are few in number, there are fathers who involve in child feeding. ...fathers started to involve in child feeding though mother's contribution is great when compared with that of fathers."

Table 3 Bivariate and multivariable regression analysis on fathers' involvement in child complementary feeding in Damot Woyde district in South Ethiopia, February 2019

Variables (n = 432)	Fathers' involvement		COR (95% CI)	AOR (95% CI)
	Poor involvement	Better involvement		
Religion				
Protestant	209(49.6%)	212(50.4%)	1	1
Orthodox	55(42.6%)	74(57.4%)	1.33(.89, 1.97)	1.27 (.84, 1.91)
Others	27 (62.8%)	16(37.2%)	.58(.31, 1.12)	.58 (.29, 1.15)
Ethnicity				
Wolaita	272(48.3%)	291(51.7%)	1	1
Others	19(63.3%)	11(36.7%)	.54(.25, 1.16)	.52(.23, 1.16)
Education				
No formal education	132(46.0%)	155(54.0%)	1	1
Primary (1–8)	94(53.1%)	83(46.9%)	.75(.52, 1.09)	.74(.50, 1.10)
Secondary and above	65(50.4%)	64(49.6%)	.84(.55, 1.27)	.65 (.42, 1.03)
Income				
< 500	169(52.9%)	152(47.4%)	1	1
≥ 500	122(44.9%)	150(55.1%)	1.37(.99, 1.89)	1.56(1.09, 2.22)**
Fathers' knowledge of complementary feeding				
Poor knowledge	108(45.8%)	128(54.2%)	1	1
Better knowledge	183(51.3%)	174(48.7%)	0.80(0.58, 1.11)	.75(.53, 1.05)
Fathers' perception of the involvement				
Poor perception	175(55.6%)	140(44.4%)	1	1
Better perception	116(41.7%)	162(58.3%)	1.74(1.26, 2.42)	1.79(1.28, 2.52)**

** Statistically significant at $p < 0.05$

Discussion

In this study, the proportion of fathers' involvement in child complementary feeding was found to be 50.9%. It was found that household income and fathers' perception of their involvement were the factors associated with fathers' involvement in child complementary feeding. It was also found that the majority of the fathers have good knowledge about the recommended complementary feeding practices.

The proportion of fathers' who involve in complementary feeding of children was found to be 50.9%. This finding is comparable with a similar study conducted in Australia where 42% of the fathers were involved in organizing meals, 60% involve in deciding what kinds of foods their children should eat, and 50% were involved in how much food their child should be offered [6]. A study conducted in Ghana reported the overall level of fathers' involvement in childcare and feeding to be 63.5% [15]. Another study conducted among first-time fathers reported that 73% of fathers were involved in IYCF practice [16]. This difference might be attributed to the fact that all of the study participants were first-time fathers in the above-mentioned study. The study was also conducted in an urban area, unlike the current study where both urban and rural residents were included. The sample size utilized was also small and the study participants were selected purposively unlike the report of the current study.

The involvement of fathers in child complementary feeding was 56% higher for those fathers with a household income of ≥ 500 ETB compared to their counterparts. Fathers who can provide economically are more likely to engage with and nurture their children [17].

In this study, fathers with a good perception of fathers' involvement in child complementary feeding had a higher chance of involving in child feeding. This is in agreement with a study conducted in Madagascar [18]. Fathers with a better perception may view their roles more than being a breadwinner and involved in their children's issues and participating in household and child-centered tasks [19]. Their perception might have come intentionally while they were looking for ways they could help their children to grow healthier.

The majority of fathers have good knowledge about the recommended complementary feeding practices. This finding is in agreement with another study conducted in Rwanda where men have a good degree of basic knowledge about key nutrition messages [20]. This might be because the health extension program works within the community to deliver the promotion of appropriate child-feeding practices and other health-related messages. It was found in this study that it is difficult for fathers to involve fully in child care because they stay

most of the time outside the home for income-generation activities.

In this study, it was reported that about half of the fathers' who participated in the study did not involve in complementary feeding of their children. The traditional gender roles, in which the mother is seen as primarily responsible for child care, might have limited fathers' involvement in child feeding. This is supported by another study conducted in Malawi and Madagascar where fathers provided financial and material support and verbal encouragement to their spouses [18, 21]. This traditional definition might have influenced their involvement level in child complementary feeding practices.

Conclusion and recommendations

The study showed that only one in two fathers was involved in their child's complementary feeding. Fathers' involvement in child complementary feeding practice was found to be affected by household income level and perception about fathers' involvement in child complementary feeding. Therefore, community development programs and income-generating activities should be promoted. Community health workers should work to improve the perception of fathers on their involvement in child feeding. Policymakers and health planners should also optimize programs of community-based nutritional promotion programs by giving due attention to fathers.

Limitations of the study

We did not include children's age and gender to see whether there is an association or not with the involvement of fathers. We have no data on child complementary feeding practices and wealth index.

Abbreviations

AOR	Adjusted Odds Ratio
CF	Complementary Feeding
CI	Confidence Interval
COR	Crude Odds Ratio
DE	Design Effect
EDHS	Ethiopian Demographic and Health Survey
EFY	Ethiopian Fiscal Year
ETB	Ethiopian Birr
FGD	Focus Group Discussion
IYCF	Infant and Young Child Feeding
SPSS	Statistical Package for Social Science
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Acknowledgements

We would like to acknowledge the SENUPH_NORHED project for granting the study. We acknowledge our responsible data collectors, supervisors, and study participants.

Authors' contributions

AA designed the protocol, coordinated data collection, made analyses and interpreted findings, and drafted the manuscript. TD contributed to the design, analysis, and interpretation of the findings, and reviewed the

manuscript. TG contributed to the design, analysis, and interpretation of findings reviewed progressive drafts, and proofread the manuscript. SK contributed to the design, analysis, and interpretation of findings and drafted the manuscript. All authors read and approved the final version of the manuscript.

Funding

This study was financially supported by South Ethiopia Network Universities in Public Health SENUHP project from the Norwegian Programme for Capacity Development in Higher Education and Research for Development (NORHED). Wolaita Sodo University facilitated the funding through a graduate-level research program. Neither of the parties had a role in the design, conduct, and decision to publish this research work.

Availability of data and materials

The data set for this study is available with the corresponding author which can be accessed on reasonable request by writing to tasamsona@gmail.com.

Declarations

Ethics approval and consent to participate

Ethical clearance was obtained from the ethical review committee of Wolaita Sodo University in Ethiopia. Informed written consent was obtained from each study participant. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Competing interests

Authors declare no competing interest.

Received: 1 September 2021 Accepted: 4 January 2023

Published online: 10 January 2023

References

1. WHO. Strengthening action to improve feeding of infants and young children 6–23 months of age in nutrition and child health programs: Report of proceedings. Geneva: World Health Organization; 2008.
2. Meshram II, Rao KM, Balakrishna N, et al. Infant and young child feeding practices, sociodemographic factors and their association with nutritional status of children aged <3 years in India: findings of the National Nutrition Monitoring Bureau survey, 2011–2012. *Public Health Nutr.* 2018;22(1):104–14.
3. UNICEF. Infant and Young Child Feeding: Programming Guide. New York; 2011. www.enonline.net/unhcriycfprogrammingguide. Accessed 23 Aug 2021.
4. Sear R. Beyond the nuclear family: an evolutionary perspective on parenting. *Curr Opin Psychol.* 2016;7:98–103.
5. Maurer TW, Pleck JH. Father's caregiving and breadwinning: A gender congruence analysis. *Psychol Men Masc.* 2006;7(2):101–12.
6. Mallan KM, Nothard M, Thorpe K, et al. The role of fathers in child feeding: perceived responsibility and predictors of participation. *Child Care Health Dev.* 2014;40(5):715–22.
7. Penilla C, Tschann JM, Dearthoff J, et al. Fathers' feeding practices and children's weight status in Mexican American families. *Appetite.* 2017;117:109–16.
8. Watterworth JC, Hutchinson JM, Buchholz AC, et al. Food parenting practices and their association with child nutrition risk status: comparing mothers and fathers. *Appl Physiol Nutr Metab.* 2017;42(6):667–71.
9. Lovera D, Sanderson M, Bogle ML, Vela Acosta MS. Evaluation of a breastfeeding peer support program for fathers of Hispanic participants in a Texas special supplemental nutrition program for women, infants, and children. *J Am Diet Assoc.* 2010;110(11):1696–702.
10. Sherriff N. Fathers' perspectives on breastfeeding: Ideas for intervention. *Br J Midwifery.* 2009;17(4):223–7.
11. Sardaki A, Kristiansson R, Oberklaid F, Bremberg S. Fathers' involvement and children's developmental outcomes: a systematic review of longitudinal studies. *Acta Paediatr.* 2008;97(2):153–8.
12. Falceto OG, Fernandes CL, Baratojo C, Giugliani ERJ. Factors associated with father involvement in infant care. *Rev Saude Publica.* 2008;42(6):1034–40.
13. Bilal SM, Dinant G, Blanco R, et al. The influence of father's child feeding knowledge and practices on children's dietary diversity: a study in urban and rural districts of Northern Ethiopia, 2013. *Matern Child Nutr.* 2016;12(3):473–83.
14. Education USDo, Statistics NCFE. Measuring Father Involvement In Young Children's Lives: Recommendations for a Fatherhood Module for the ECLS-B. Washington 2001.
15. Saaka, M., Awini, S., Kizito, F., & Hoeschle-Zeledon, I. Fathers' level of involvement in childcare activities and its association with the diet quality of children in Northern Ghana. *Public Health Nutrition*, 2022; 1–8. <https://doi.org/10.1017/S1368980022002142>.
16. Sachdeva S, Gupta S. Knowledge, Attitude and Involvement of First-Time Fathers in Infant and Young Child Feeding and Care Practices. *Curr Res Nutr Food Sci.* 2022;10(3):959–70.
17. Thrive A. Fathers support infant and young child feeding: Their contributions to better outcomes. 2012. <https://www.aliveandthrive.org/sites/default/files/attachments/Literature-Review-Dads.pdf>. Accessed 18 Sept 2019
18. Rakotomanana H, Walters CN, Komakech JJ, Hildebrand D, Gates GE, Thomas DG, et al. Fathers' involvement in child care activities: Qualitative findings from the highlands of Madagascar. *PLoS ONE.* 2021;16(3):e0247112. <https://doi.org/10.1371/journal.pone.0247112>.
19. Moyo SA, Schaay N. Fathers perceptions and personal experiences of Complementary feeding of children 6 to 23 months in south-western Zimbabwe. *World Nutr.* 2019;10(3):51–66.
20. Catholic Relief Services. Father Engagement in Nutrition: A Qualitative Analysis in Muhanga and Karongi Districts in Rwanda. 2016; <https://www.crs.org/sites/default/files/tools-research/father-engagement-in-nutrition.pdf>. Accessed 20 Sept 2019
21. Chintalapudi N, Hamela G, Mofolo I, et al. Infant and Young Child Feeding Decision Making and Practices: Malawian Mothers' and Fathers' Roles in the Context of HIV. *J Hum Lact.* 2018;34(1):68–76. <https://doi.org/10.1177/0890334417719245>.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions

