

A cross-sectional comparison of breastfeeding knowledge, attitudes, and perceived partners' support among expectant couples in Mekelle Ethiopia

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Abstract

Background: Breastfeeding is considered the biological norm and essential to reduce infant morbidity and mortality. Mothers are responsible for breastfeeding but the support of others, including their partners is an influential determinant. The aim of this study was to compare antenatal breastfeeding knowledge, attitudes, and perceived breastfeeding support of expectant couples in Mekelle, Ethiopia.

Methods: As part of a mHealth intervention trial, 128 couples in their third trimester from three selected health centres in Mekelle city were recruited to participate. Couples who each had a personal mobile phone, read and spoke Tigrigna, and lived together were included. Baseline data on breastfeeding knowledge, attitudes, and perceived support (breastfeeding savvy, help, appreciation, presence and responsiveness) were collected using previously validated tools through interview by health workers.

Result: Compared to mothers, male partners were more likely to indicate their intention to provide breastfeeding appreciation ($p=0.02$), breastfeeding presence ($p=0.002$), and breastfeeding responsiveness ($p=0.04$). Mothers' prenatal perceptions of their partners' intended breastfeeding support was lower than fathers' perceptions to support their partners. Multiparous mothers had more positive perceptions regarding their partners' breastfeeding savvy ($p=0.03$), and breastfeeding help ($p=0.02$) compared to primiparous mothers.

Conclusion: Fathers in Ethiopia are potentially strong supporters of breastfeeding practice. Future breastfeeding interventions should promote the involvement of fathers in breastfeeding and encourage mothers to increase their partners' involvement in breastfeeding.

Introduction

Breastfeeding is the biological norm and the optimal mode for feeding infants to reduce morbidity and mortality [1]. Although more than 80% of neonates are "ever breastfed" globally, only 50% initiate breastfeeding (baby put to the breast within an hour of birth) [2, 3], and only one-third of infants are exclusively breastfed for the first six months of their life [2, 4, 5]. Sub-optimal infant feeding practices, including pre-lacteal feeding (the feeding of an infant with something other than breastmilk in the first three days of life), non-exclusive breastfeeding, and use of artificial infant formula contribute to 1.4 million child deaths globally [6]. In Ethiopia, only 60% of babies are exclusively breastfed for the first six months [7]. While the Ethiopian government had set a goal of improving the level of exclusive breastfeeding to 70% by 2015, there has only been a one percent improvement in exclusive breastfeeding rates over the last five years [8]. In Ethiopia, non-exclusive breastfeeding was the cause for significantly higher risks of neonatal [9] and infant [10] mortality, and acute malnutrition [11].

Breastfeeding is a complex biological, social and cultural practice influenced by a broad array of socio-demographic, biophysical and psychosocial factors [12]. Psychosocial factors, including maternal intention to breastfeed, breastfeeding self-efficacy, knowledge, attitude, and social support are associated with early initiation and continued exclusive breastfeeding [13, 14]. Studies from low-income countries

have also shown the effects of psychosocial factors on maternal behaviour to exclusively breastfeed for six months and to continue breastfeeding for two years. These findings indicated that mothers with better breastfeeding self-efficacy are knowledgeable and have positive attitudes towards breastfeeding, and those who have access to support are more likely to exclusively breastfeed for six months [15, 16]. These psychosocial factors can be potentially modified through interventions focussed on breastfeeding education and promotion [13, 17]

Adequate support for lactating mothers is crucial to improve exclusive breastfeeding practice [3]. According to Dennis (2002) unsupported mothers are less likely to initiate, and continue breastfeeding [23]. Breastfeeding practice is also dependent on the father's attitudes as well as their infant feeding preferences and beliefs [28, 29]. Father support of breastfeeding is increasingly recognised as pivotal to sustained, optimal infant feeding [30]. Fathers provide this support by providing breastfeeding information to motivate and assist mothers to breastfeed, as well as providing practical support by caring for additional children and undertaking housework [30]. Encouraging fathers' involvement in breastfeeding, as well as the provision of breastfeeding information during antenatal care, would assist them to be more supportive during breastfeeding [31].

A majority of the studies investigated breastfeeding in Ethiopia have assessed the effect of sociodemographic characteristics of mothers on breastfeeding exclusivity [18-20, 32], with fewer studies addressing mothers' knowledge, attitudes and self-efficacy [16, 33]. There are limited studies on the role played by fathers. One cross-sectional study from Ethiopia that did explore the involvement of fathers in breastfeeding indicated promising effects on breastfeeding practice [34]. However, the involvement of fathers in breastfeeding was affected by the maternal perception about what role the father could play [34]. Works by non-government agencies in Ethiopia identified a lack of knowledge and traditional gender roles as being limiting factors for fathers' involvement in breastfeeding [35, 36]. Therefore, understanding the level of breastfeeding knowledge, attitudes and the perception of partner support from the perspective of expectant couples would inform our understanding of effective breastfeeding interventions targeting both fathers and mothers. Therefore, the aim of this study was to compare expectant couples' breastfeeding knowledge, attitudes, and support in Mekelle, Ethiopia.

Methods

Study setting and design

This research took place in three health centres located in Mekelle, Ethiopia. Mekelle is a large city located in north Ethiopia. Mekelle has nine health centres, a tertiary hospital, and three general hospitals. This paper reports on baseline data from a quasi-experimental study, designed to test the effectiveness of a SMS-based breastfeeding education intervention targeting expectant couples attending antenatal care (ANC) in public health centres in Mekelle city, Ethiopia.

Source and study population

Three health centres with the highest number of mothers attending ANC follow-up were purposively used as recruitment sites. All, total of 293, mothers attending their antenatal care (ANC) in these three public health centres were approached by nurses either in person at the health centre during the ANC appointment or via a phone call to check eligibility criteria. Eligible couples satisfied the following inclusion criteria: able to read and understand the local language (Tigrigna), living in a union, mother had no known medical issues that could hinder breastfeeding, there were no known issues with the foetus or pregnancy and both members of the couple were able to provide a written informed consent. Based on these criteria, 128 expectant couples were included in this study.

Data collection

Data were collected through a face-to-face interview between September and October 2018 by trained nurses working in the health centre. A modified version of the cross-cultural adaption process was utilised, in which the questionnaires were translated to Tigrigna, after which the Tigrigna versions of the questionnaires were back-translated to English by two public health nutrition experts from Mekelle University [37]. Finally, face validity to check for understanding and language was conducted for all questionnaires with fathers and mothers who had children under two years of age. Instruments were not evaluated for reliability or validity.

Variables and measurement

Questions on father and mother characteristics such as age, educational status, income, and employment status; and pregnancy and childbirth-related variables such as parity, ANC provider, number of ANC appointments, breastfeeding information during ANC, breastfeeding experience, maternity leave provision, and breastfeeding intention were developed based on the literature [12, 13, 18, 23, 38].

Breastfeeding knowledge and awareness was assessed using a questionnaire adopted from the Food and Agricultural Organization (FAO) of the United Nations (UN) [39]. This questionnaire has ten open questions, which were later coded into Yes or No responses, based on the protocols. Each correct answer was scored, responses were totalled, and the percentage of correct responses recorded. Breastfeeding attitudes were measured using the Iowa Infant Feeding Attitude Scale (IIFAS). This tool has 17 questions, and uses a five-point Likert scale ranging from 1= strong disagreement to 5= strong agreement [40]. Out of the 17 questions nine were reverse scored, thus, these responses were recoded before calculating the total attitude score. The total score was calculated out of 85, with a minimum of 17 and maximum of 85. The questions are non-gendered and can be asked to men and women without modification. This tool has recently been validated in Ethiopia in the Afan Oromo language[41].

The Partner Breastfeeding Influence Scale (PBIS) was used to measure perceived breastfeeding support and was assessed using five dimensions of partner breastfeeding support (Savvy (Cronbach alpha: men=0.87, women=0.82), helping (Cronbach alpha: men=0.79, women=0.82), appreciation(Cronbach alpha: men=0.86, women=0.84), breastfeeding presence (Cronbach alpha: men=0.88, women=0.82), and responsiveness (Cronbach alpha: men=0.77, women=0.76)). Mean scores were calculated from all

scores, from 1 (extremely not supportive) to 5 (extremely supportive) for each breastfeeding support component [42].

Data analysis

The data was analysed using IBM SPSS Statistics version 23 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). After data cleaning and coding, descriptive statistics were conducted. Sociodemographic characteristics were presented using frequency and percentage or mean with standard deviation. Normality tests were performed for each continuous variable using skewness test. Based on these tests further analyses were selected. Independent T-test or ANOVA, and Mann-Whitney U Test or KRUSKAL Wallis test were used for normal distribution and non-normally distributed data, respectively. Once the explanatory variables were fitted with the dependent variable (gender) variables with p-value <0.05 were considered as having significant difference among mothers and fathers. Linear regression was used to assess the association between explanatory variables and partner BF support intention, and maternal perception of their partners' support, p<0.05 was considered as cut off for significance. Reporting follows the STROBE guidelines for cross-sectional studies.

Results

Sociodemographic characteristics

A total of 128 expectant couples participated. About half (46%) of the participants were first-time parents. Almost half (47%) of mothers did not have paid employment, and only one-quarter (26%) of mothers and nearly one-third (30%) of fathers had been educated beyond secondary school. (Table-1).

Table 1 Sociodemographic and economic characteristics of fathers and mothers

Variables	Mothers	Fathers
	n=128	n=128
Age (years)	Mean (26.8±4.7)	Mean (34±7.3)
Religion		
Orthodox Christian	121(94.5%)	
Other	7(5.5%)	
Educational Status		
Primary school	39(30.4%)	42(32.8%)
Secondary school	56(43.8%)	48(37.5%)
Tertiary	33(25.8%)	38(29.7%)
Household income	Mean (3629.5±2170.9)	
Employment		
No job	60(46.9%)	14(10.9%)
Own job	41(32%)	67(53.9%)
Employed	27(21.1%)	47(35.2%)
Number of Children		
0	58(46%)	
1	35(27%)	
2 and above	35(27%)	

Pregnancy and breastfeeding

Among the 128 expectant couples more than half 56% (n=71) received their first antenatal care (ANC) for the current pregnancy at four to six months of

gestation, and 57% (n=73) of them made two or three ANC visits to the health centre. Among the 55% (n=70) of mothers who had previous breastfeeding experience, three-quarters (75%) had breastfed their last baby for more than two years. Almost all (98%) of mothers intended to exclusively breastfeed their babies for the first six months (Table-2).

Table-2: Pregnancy and previous breastfeeding experience of mothers

Variable	Frequency (%)
Months of pregnancy during first ANC visit	
1 st to 3 rd months	57(44.5)
4 th to 6 th month	71(55.5)
Place ANC received	
Health center	114(89.1)
Other	14(10.9)
ANC service provider for the current pregnancy	
Doctor	8(6.3)
Midwife	80(62.5)
Nurse	65(50.8)
Health officer	20(15.6)
Health extension worker	7(5.5)
Number of ANC visits for the current pregnancy	
2-3	73(57)
4 and above	55(43)
Have you received breastfeeding information at ANC	
Yes	90(70.3)
No	38(29.7)
Do you have previous breastfeeding experience	
Yes	70(54)
No	58(46)
How long did you breastfeed your last child	
< 2yrs	17(24.6)
>= 2yrs	52(75.4)
Do you have maternity leave (employed mothers)	
Yes	25(92.6)
No	2(7.4)
How much maternity leave (employed mothers)	
1 Month	1(3.8)
3 Months	6(26.9)
4 Months	18(69.3)

How do you intend to breastfeed your baby	
Breastmilk	125(97.7)
Breastmilk + Formula	3(2.3)
How long should a baby be exclusively breastfed	
6 months	101(79.9)
Others	27(20.1)
Up to what age should a baby breastfeed	
Before 2yrs	5(3.9)
2 yrs and above	123(96.1)

Breastfeeding knowledge, attitudes, and breastfeeding support of expectant couples

Table-3 presents the mean scores for breastfeeding knowledge, attitudes, and support. There were significant differences between fathers and mothers in the mean score for intention to discuss breastfeeding information (breastfeeding savvy), appreciation, presence during breastfeeding, and responsiveness during breastfeeding. Comparing the intention to provide breastfeeding support, fathers had higher intention scores regarding supporting their partners compared to the mothers' perception scores of the support their husband would provide (breastfeeding appreciation ($p=0.02$), presence during breastfeeding ($p=0.002$), and responsiveness during breastfeeding ($p=0.04$)) (Table-3). One in five fathers (20%) and 13% of mothers had good breastfeeding knowledge, with scores above 70%. In addition, mothers' and fathers' mean attitude scores were favourable towards breastfeeding (Table-4). Table-5 describes the differences in mean scores between multiparous and primiparous mothers in breastfeeding knowledge, attitudes, self-efficacy, and breastfeeding support. Multiparous mothers had better mean scores for breastfeeding savvy, breastfeeding helping, and breastfeeding appreciation perceptions with regard to their partners' support, but there were no differences in the other variables compared to the primiparous mothers (Table-5).

Fathers intention to support their partners during breastfeeding was positively affected by the BF information they received during ANC (savvy $\beta=4$, $p<0.005$; help $\beta=-2.8$, $p=0.006$; information $\beta=-2.3$, $p<0.005$; presence $\beta=-2.5$, $p<0.005$; responsiveness $\beta=-1.5$, $p=0.02$). A father's positive BF attitude was also associated with better intention to support their partners prior to delivery (savvy $\beta=0.19$, $p=0.01$; help $\beta=0.18$, $p<0.005$; information $\beta=0.12$, $p=0.02$; presence $\beta=0.2$, $p=0.006$). In the case of mothers, BF information during ANC (savvy $\beta=-7.7$, $p<0.005$; help $\beta=-5.4$, $p<0.005$; information $\beta=-3.9$, $p<0.005$; presence $\beta=-3$, $p<0.005$; responsiveness $\beta=-2.9$, $p<0.005$) was associated with their positive perceptions regarding partner support of their breastfeeding. In addition, mother's previous BF experience (savvy $\beta=-2.8$, $p=0.03$; help $\beta=-2.2$, $p<0.02$; information $\beta=-1.9$, $p<0.02$), and positive BF self-efficacy (savvy $\beta=0.5$, $p<0.005$; help $\beta=0.4$, $p<0.005$; information $\beta=0.3$, $p<0.005$; presence $\beta=0.2$, $p<0.005$; responsiveness

$\beta=0.2$, $p<0.005$) were also associated with positive perceptions of their partner ability to support breastfeeding.

Table 3: Breastfeeding knowledge, attitude, and support of expectant couples

Breastfeeding construct	Mothers	Fathers	P-value
Knowledge	Mean (61.5±14.4)	Mean (61.4±17.0)	0.66
Attitude	Mean (62±7.4)	Mean (61.4±8.5)	0.54
Support			
Savvy	Mean (36.4±7.6)	Mean (38±8)	0.05
Helping	Mean (29.0 ±5.4)	Mean (29.0±6.0)	0.15
Appreciation	Mean (24.9±4.9)	Mean (26±5.0)	0.02
Presence	Mean (24.4±4.8)	Mean (26±4.7)	0.002
Responsiveness	Mean (20±3.9)	Mean (21±4.0)	0.04

Table 4: Comparison of fathers' and mothers' knowledge of exclusive breastfeeding

Variables	Mothers	Fathers
	Frequency (%)	Frequency (%)
First food for the newborn is breastmilk	125(97.7)	126(98.4)
Exclusive breastfeeding is giving the child breastmilk for the first 6 months	78(60.9)	81(63.3)
Babies should take only breastmilk for the first 6 months of their life	101(78.9)	105(82)
Breastmilk only is sufficient for the baby's first 6 months of life	64(50)	48(37)
The baby should be breastfed on demand	22(17.2)	32(25)
Has knowledge on the benefits of exclusive breastfeeding to the baby	117(91.4)	118(92.2)
Exclusive breastfeeding is beneficial to the mother	48(37.5)	53(41.4)
Breastmilk supply can be sustained by having good nutrition/eating well	117(91.4)	107(83.6)
In times of absence the baby can continue to be exclusively breastfed by expressing breastmilk and storing	44(34.4)	51(39.8)
Health personnel can assist in overcoming breastfeeding difficulties	71(55.5)	61(47.7)
Knowledge category indicative of urgent intervention*	17(13.3)	25(19.5)
Good score (>70%)		

*According to FAO guideline score $\leq 70\%$ indicates urgent need for nutritional intervention.

Table-5: Mean score difference between multiparous and primiparous mothers

Variables	Multiparous	Primiparous	P-value
Attitude	63	60.8	0.09
Knowledge	67.9	60.3	0.23
Self-efficacy	69.6	56.3	0.08
Savvy	70.9	66.8	0.03
Help	30	27.8	0.02
Appreciation	70.1	57.6	0.05
Presence	67.8	60.4	0.25
Responsiveness	20	19	0.69

Discussion

The current study assessed the level of parents' prenatal breastfeeding knowledge, attitudes, and perception of intended breastfeeding support. There are no known previous studies comparing these factors which affect exclusive breastfeeding practice, among fathers and mothers in Ethiopia. The current study has shown that mothers and fathers have poor knowledge of but reasonably favourable attitudes towards breastfeeding that are aligned and do not vary significantly. However, there are differences in the perceptions of intention to support breastfeeding, with fathers indicating a higher level of intention to support but mothers having lower expectations. Fathers' intention to support appears to be influenced by receiving BF information at the ANC and having a positive attitude towards BF. Mothers' perception of their partners' BF support was impacted by their previous experience, BF information received at the ANC and BF self-efficacy.

In this study parents' BF knowledge was low with particularly poor scores recorded for benefits of breastfeeding for the mother, breastfeeding on demand, and the importance of breastmilk expression were low. The scores were lower than maternal knowledge scores using the same tool in Ghana [24]. Studies from Ethiopia have previously indicated that women with better knowledge about the benefits of breastfeeding were more likely to exclusively breastfeed their infants for six months [11, 33, 38, 43, 44]. A previous study has also indicated that fathers lack specific knowledge about infant and young infant feeding [35]. It has been suggested that fathers need more information related to breastfeeding and how they could support their partners [45, 46]. Improving the understanding of optimal infant and child

feeding could improve the likelihood of exclusive breastfeeding practice [47]. A systematic review from low- and middle-income countries also revealed that parents who received breastfeeding education to improve awareness were more likely to initiate breastfeeding early, exclusively breastfeed, and practice continued breastfeeding to at least two years of age [48].

In line with this study, previous studies have shown that maternal breastfeeding attitude was significantly correlated with the father's breastfeeding attitude score, indicating parents share similar breastfeeding attitudes [49, 50]. The mean scores for mothers in this study were slightly lower but comparable (62 vs 65) with a recent study undertaken in southwest Ethiopia [41]. Positive attitudes towards breastfeeding determine maternal exclusive breastfeeding practice. According to Dennis [23] and Meedyia [13] mothers with positive attitudes towards breastfeeding are at lower risk of early discontinuation of breastfeeding. The positive attitudes of mothers to breastfeeding substantially influences their exclusive breastfeeding practice by improving their prenatal exclusive breastfeeding intention [47]. Fathers' attitudes on whether their partners should breastfeed strongly predicts the level of maternal intention to breastfeed. Mothers who perceive that their partners prefer breastfeeding are less likely to cease breastfeeding at any time compared to those who perceive their partners prefer bottle-feeding, or are ambivalent about how their child is fed [28]. .

Fathers believe encouraging and showing appreciation of their partner during breastfeeding is one way of providing support to [52]. The current study showed that fathers scored better regarding their intentions to encourage and value breastfeeding compared to the perception of mothers regarding their expectations of partner support. Multiparous women had higher expectations of their partners possibly due to their previous experience. While such a difference is perhaps to be expected, the generally low expectations of mothers of their support their partners could provide is something that could be addressed. According to the assessment of Alive & Thrive in the Tigray region, Ethiopian, fathers have a strong interest in improving their knowledge in relation to child feeding and have reflected their willingness to support their partners [36]. The current study also indicated that fathers who received BF information during ANC were more likely to indicate positive intentions towards providing BF support to their partners. A previous study undertaken in Ethiopia indicated that mothers were more likely to receive breastfeeding support from their mothers and housemaids, with the expectation of the fathers' role limited to providing financially for the family [50]. Therefore, future interventions should emphasise the importance of encouragement and showing appreciation for breastfeeding among both fathers and mothers.

The fathers' role in providing physical and emotional support to their breastfeeding partner could positively influence the mother's breastfeeding practice. Mothers want fathers to be advocates for breastfeeding, and to show them their emotional support through their presence during breastfeeding [53]. The current study showed that, fathers believed they should be close to their partner during breastfeeding to improve maternal confidence to enhance continued breastfeeding. Fathers' presence during breastfeeding has been shown to reduce maternal anxiety and feelings of isolation [53]. Although fathers believed that breastfeeding support was important, their involvement was determined by their partners' perception of the role they could play. Fathers were not routinely involved in breastfeeding

decisions, and for most of the time fathers felt left out [54-56]. Therefore, both fathers and mothers need to be informed on how fathers can assist their partner during breastfeeding and be part of the decision-making around breastfeeding.

Responsiveness is an individual's belief about how their partner understands, cares and validates their decisions [42]. According to the current study, fathers' perceptions regarding their responsiveness or the degree to which fathers were sensitive to the needs of their partners and respected their decisions, was significantly higher in fathers compared to mothers. Fathers' breastfeeding responsiveness has been shown to improve maternal breastfeeding satisfaction, helping mothers to comfortably breastfeed and to continue breastfeeding [42]. The positive perceptions of fathers in the current study and whether they were able to provide the required support with regard to breastfeeding responsiveness indicated they could potentially have a positive influence on breastfeeding practice. However, the low expectations of mothers regarding the support their partners could provide potentially hindered their involvement.

Mothers with higher self-efficacy were also more like to expect more support from their partners. Therefore, provision of BF information during ANC and improving maternal BF self-efficacy are crucial to improve maternal perceptions of their partner support.

One of the strengths of this study is that it is one of only a few studies comparing breastfeeding related knowledge, attitudes, and intended/expected support among both expectant mothers and fathers. The data was also collected during the antenatal period and therefore not reliant on retrospective memory. There are however several limitations. As the data were collected by trained nurses from the health centre attended by the couple, it could be subject to social desirability bias. Although the tools are widely used in the international context and went through face validity, reliability and validity tests were not conducted in the Ethiopian context. In addition, there were no indications of other support provided in the household that may have attenuated the expectation and intention to provide support. For example, the presence of a highly supportive grandparent may have influenced the support provided by the partner. Finally, the sample was limited in size and geographical location and therefore may not be representation of the general pregnant population in Ethiopia.

Conclusion

There appears to be an opportunity in Ethiopia to continue to build breastfeeding knowledge, positive attitudes and the role fathers can play in supporting breastfeeding among mothers and fathers. Fathers tended to show better perceived breastfeeding support in terms of breastfeeding appreciation, presence, and responsiveness. The low perception of mothers with regard to fathers' support could cause exclusion of fathers from breastfeeding and the decision regarding breastfeeding which could negatively influence breastfeeding practice. An intervention targeting breastfeeding knowledge, attitudes and support during the antenatal period targeting both mothers and fathers may be warranted.

Declarations

Ethics approval and consent to participate

This study obtained ethical approval from the Human Research Ethics Committee (HREC) of Queensland University of Technology (QUT), UHREC: 1700000717, Australia; and the Health Research Ethics Review Committee (HRERC) of Mekelle University, Ethiopia, ECR: 1194/2017. All participants provided written informed consent. Participation was voluntary with the right to withdraw at any time.

Consent for publication

Not applicable

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

Authors declare there no conflict of interest

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Author's contributions

KTG participated in design, data collection, analysis, and manuscript write-up. DG and OZ participated in design, analysis and manuscript revision. AM participated in design.

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