Research Article

Journal of Clinical and Experimental Epidemiology Research

Parental Knowledge and Compliance Practices to Breastfeeding Guidelines and Nutritional Status of Infants

Enedy Zyakaka[1], Namo Gwisai[1] and Reginald Dennis Gwisai[2]*

[1]*Department of Food and Nutrition, Solusi University, Zimbabwe.*

[2]*Department of Academics, Unicaf University, Zimbabwe.*

***Correspondence:**
Reginald Dennis Gwisai, Department of Academics, Unicaf University, Zimbabwe.

Received: 20 Oct 2025; **Accepted:** 10 Nov 2025; **Published:** 24 Nov 2025

Citation: Enedy Zyakaka, Namo Gwisai, Dennis Gwisai R. Parental Knowledge and Compliance Practices to Breastfeeding Guidelines and Nutritional Status of Infants. J Clin Exp Epidemiol Res. 2025; 1(1): 1-6.

ABSTRACT

This study assesses parental knowledge and compliance with recommended breastfeeding guidelines and nutritional status of infants aged 1-23 months. A quantitative orientation and purposive sampling was used to collect data using convenience from 80 parents (40 males and 40 females located from the health centre) and their children (40 infants) aged 1 – 23 months. Data on nutrition knowledge of parents and breastfeeding practices of infants by their mothers were collected with the help of structured questionnaires. Anthropometric measurements of infants were measured to estimate their nutrition status. The weight of each infant was measured using the weight scale while the height was measured using a height board. The measurements were used to calculate underweight, stunting and wasting of infants using z-scores. Participants demonstrated moderate levels of knowledge and practices of breastfeeding. Most (79%) parents reported that they took a forward decision to breastfeed their children before the children were born. Most (58%) of the parents acquired this information from family members while 33% from health personnel. On the other hand observations revealed that most (60%) of the parents also took a decision to stop breastfeeding through the advice of family members while 32.5% reported that the advice came from health personnel. This study revealed that most (80%) of the infants were stunted, underweight (52.5%) while 22.5% were wasted. It is recommended that nutrition education programmes on infant breastfeeding practices should involve all members of the family.

Keywords

Breastfeeding practices, Compliance, Infants, Extended family.

Introduction

In some sub-Saharan African countries, mortality rates of under five children continue to increase despite efforts to reduce child mortality [1]. Millennium Development Goal number 4 (World Health Organization [2], United Nations International Children's Emergence Fund (UNICEF) [3]; United Nations International Children's Emergence Fund (UNICEF), [4]. Previous studies [5-9] have reported that over 200 million under — fives (<5) were malnourished and that there were very high and nearly 2 million under — five (<5) deaths in developing countries each year. Furthermore, some studies [2,10,11] report that children less than two years of age (< 24 months) are most affected by under nutrition. Zambia, a developing country is not spared of the same problem as observed by previous studies [12]. Young mothers in Zambia lack autonomy and decision making power concerning implementation of infant breast feeding practices taught by health workers [13]. This has emanated from the Zambian culture where powers of decision making have been placed in the hands of fathers and grandmothers as observed elsewhere [14]. This pressure has placed younger mothers in difficult situations of having to make decisions based on contradicting advice on breast feeding practices [13]. This study therefore seeks to assess parental knowledge and compliance with recommended breastfeeding guidelines and nutritional status of 1-23 months old infants. Reports by previous studies [3,4] have shown that Zambia is among the 22 African countries with the highest burden of under nutrition in under — five children. Five per cent of the children are reported to be wasted (low weight-for-height a gradual deterioration of a child encompassing loss of strength and muscle mass), 15% are

underweight (low weight-for-age, a child is either thin or shot for his/her age), and 45% are stunted (low height-for-age, reduced growth rate in a child's development). Malnutrition (underweight) was reported to be the underlying cause of 54% mortality rate in children [15]. With respect to children under two years who are severely malnourished, the percentage increases dramatically from 11% to 59% [16].

In order to improve nutrition status of children in Zambia, mothers were provided with information by UNICEF on the following: Exclusive Breastfeeding (EBF), complementary feeding and preparation of nutritious foods for children under — five [3,4]. It was however revealed by previous studies [13] that caregivers in Zambia failed to translate the knowledge they received from health personnel into good practice. Several studies [14] have shown that mothers lack autonomy in decision making. Culturally, fathers are the major decision makers [14]. According to WHO cultural barriers have contributed to poor implementation of correct feeding practices by mothers in particular the use of unsafe foods. Such practices were reported to be the leading causes of malnutrition and they were estimated as the underlying cause of 54% of under —five mortality [15]. These observations in Zambia have also been shown in other countries in the sub-Saharan region [1,6,7,17,18]. The study was conducted in Chongwe District, a rural district which constitutes of households that earn their income from farm casual employment. Chongwe District is approximately 35km east of Lusaka as shown in Figure 1 with a population of 187,969 of which 93,934 were males [19]. The area has poor rainfall patterns and poor farming, which contributes to inadequate foods for survival and leads to malnourished children [16]. It is against this background that this study sought to assess parental knowledge and compliance with recommended breastfeeding guidelines and its effects on nutritional status of 1 to 23 months old infants. This assessment will assist to inform policy and intervention strategies by health personnel.

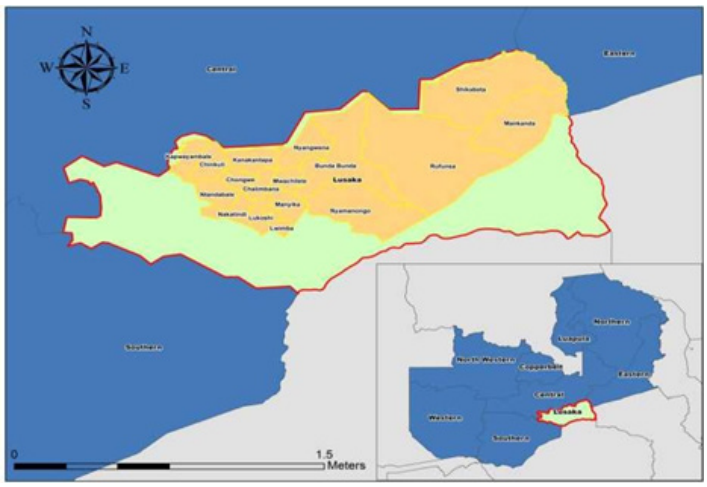

Figure 1: Map of Study Area, Chongwe District [16,19].

Methodology

A quantitative research orientation was used to collect data in this study (80 parents and 40 infants). The anthropometric measurements of weight and height of infants were taken. The weight of each infant was measured using the weight scale while the height was measured using a height board. These measurements were used to calculate underweight, stunting and wasting of infants using z-Scores [2]. Purposive criteria were used because it selected mothers and fathers with 1 — 23 months old infants and it was also convenient because mothers could be located at the Health Centre. A questionnaire adapted from KAP Model [20] was used to collect data. The questionnaire had the following four sections: demographic characteristics; extent of implementation on recommended infant breastfeeding practices; anthropometric measurements of infants; and knowledge and attitudes of parents regarding infant breast feeding practices. Height and weight of each infant was measured. Each child was checked for underweight, stunting and wasting using the World Health Organization Child Card which shows the categories of a health and unhealthy (malnourished) child. Permission to conduct the study was sought from the Ministry of Education and the Ministry of Health in Zambia. Informed consent was obtained from the parents of the infants before the study was conducted. Reliability of the instruments for the study was attained through a pilot study which was done at another clinic in a different village sampling 10 mothers, 10 fathers and 10 infants aged 1 – 23 months old.

Results

Table 1 shows selected socio demographic characteristics of the study population. There was a balance of respondents among the 80 respondents as 50% were male and 50% were female. There were more respondents aged 19 — 29 (42.6%) as compared to the age group 30 — 39 years (36.3%). The majority of the respondents were nuclear families (67.5%). Furthermore, the majority of the respondents had basic or high school education (88.8%).

Table 1: Socio-Demographic Characteristics of Parents (n = 80).

Variables	Characteristics	Frequency	Valid Percentage %
Gender	Male	40	50
	Female	40	50
Age	<20-29	34	42.6
	30-39	29	36.3
	>40	17	21.3
Marital status	Not married	12	15.0
	Married	68	**85.0**
Family type	Nuclear	54	**67.5**
	Extended	26	32.5
Academic qualification	Illiterate	9	11.3
	Basic/high school	71	**88.8**

Source: Authors' Findings (2016).

The results of the nutritional status of the children are shown on Table 2. With respect to malnutrition the highest proportion

(80.0%) of under — five children were stunted followed by 52.5% who were underweight.

Table 2: Nutritional Status of Children aged 1 – 23 months (n = 40).

Nutritional status			
Indicators		**Percentage (%)**	**Rating**
Weight for Age	Underweight	**52.5**	High
	Normal	47.5	
Height for Age	Stunting	**80.0**	High
	Normal	20.0	
Weight for Length	Wasting	**22.5**	High
	Normal	77.5	

Source: Authors' Findings (2016)

Table 3: Decisions on Breastfeeding Practices by Parents (n = 80).

Decisions		Prevalence	Rating
First decision breast feed	Before birth	78.80%	High
	After birth	21.20%	Low
Help with decision to breast feed	Self	57.50%	High
	Husband/ Family Members	57.60%	High
	Doctor/ Midwife	32.50%	Low
Other sources assistance to breast feed.	Previous Experience	52.50%	High
	Parenting program	47.50%	Moderate
	Books and Media	17.50%	Low
Help to stop breast feeding.	Self	51.30%	High
	Previous Experience	12.50%	Low
	Family Members	60.00%	Very High
	Health Personnel	2.50%	Low
Encouraging child during meals.	Yes	66.30%	High
	No	5.00%	Very Low
	Sometimes	28.80%	Low

Table 3 presents the results for decision making about breast feeding practices by parents. A higher number of mothers reported that they took a decision to breastfeed their babies before they gave birth (78.8%). Decisions on breastfeeding also rested upon other family members as 58% of the mothers reported that the decision to breastfeed was influenced by their husbands and grandmothers. The least contribution came from the health personnel (32.5%). Other sources that provided information on breastfeeding to parents were previous experiences (52.5%), followed by parenting programmes (47.5%) and lastly books and the media (17.5%). With respect to the advice about when to stop breastfeeding most of the advice came from family members (60%) while health personnel had an insignificant contribution (2.5%).

Breastfeeding practices of the parents are shown in Table 4. Sixty per cent of the parents reported that they breastfed their babies immediately after birth while 40% breast fed a little later, 30 minutes after birth. With respect to giving colostrum a higher proportion of mothers (86.1%) reported that they breastfed their children on colostrum. Even though exclusive breastfeeding is the recommended practice when feeding babies below six months, 10.0% of babies were given fluids/water at birth. Within six months, 16.3% of the babies had been given fruit juice/water. In the study 78.8% mothers reported that they breastfed their babies on demand. Concerning the introduction of new foods 67.5% introduced new foods before the age of six months.

Table 4: Breastfeeding Practices of Caregivers of Chongwe District (n = 80).

Breastfeeding practices		Percentage (%)	Rating
Time child breastfed after birth	Immediately	**60.0**	**High**
	After 30 minutes	40.0	Low
Child breast fed with colostrum	Yes	86.1	**High**
	No	13.9	Low
Other foods given after birth	Breast milk	**90.0**	**High**
	Fluid/Water	10.0	Low
Fluids given to baby in six months	Breast milk	**83.8**	**High**
	Fruit Juice/ Water	16.3	Low
Frequency of breastfeeding	On Demand	**78.8**	**High**
	Six times per day	21.2	Low
Introduction of new foods	Too early	**67.5**	**High**
	Recommended age	32.5	Low

Source: Authors' Findings (2016).

With regard to knowledge about breastfeeding practices of children, parents (mothers and fathers) had been informed about the practice and the results were homogenous (the responses were the same, positive and correct) as tabulated in Table 5. Participants demonstrated moderate levels of knowledge for most items. The mean ranged from 2.54 to 2.96 with standard deviation ranging from 0.19 to 0.81 for most knowledge questions. Parents had less knowledge on whether mothers could continue breastfeeding from 12 — 23 months with a mean of 2.24 and standard deviation of 0.93. This showed that the responses were homogenous. With respect to whether mothers in formal employment could breastfeed exclusively by expressing breast milk for babies, parents had less knowledge with a mean of 1.55 and standard deviation of 0.81. The standard deviation showed that the responses were homogenous.

The results for attitudes of both parents are presented in Table 6. These results reveal that parents supported the practices of breastfeeding moderately with a mean of 2.95 and standard deviation of 1.25. The responses were heterogeneous. However,

the respondents were neither confident nor supportive towards the practice of expressing and storing breast milk for babies to feed later because the mean of 1.94 and standard deviation of 0.88. This indicated that their responses were homogeneous.

Table 5: Nutrition Knowledge of Parents (n = 80).

Statements on parents knowledge on breastfeeding	Mean	Std. Dev.
A baby younger than six should be breastfed on demand	2.96	0.19
Mother keeps up her milk supply by exclusive breast feeding, expressing, diet, etc.	2.95	0.22
Advantages of breast milk	2.95	0.23
Only breast milk should be given to newly born babies	2.80	0.58
Exclusive breastfeeding benefits of mother	2.76	0.43
Exclusive breast feeding means only breast milk and no other foods	2.74	0.59
Mother with difficulties seek professional health care services	2.71	0.70
Colostrum/first milk is good for babies	2.70	0.58
Nutrition Knowledge of parents average	2.62	0.33
Baby start eating solid foods at six months	2.58	0.81
Benefits of colostrum	2.54	0.50
Mother can continue breast feeding 12-23 months	2.24	0.93
Mother in formal employment breastfeeds exclusively by expressing breast milk for baby	1.55	0.81

Source: Authors' Findings (2016).

Table 6: Attitudes of Parents on Breastfeeding Practices (n=80).

Statements on parents attitude on breastfeeding	Mean	Std. Deviation
Feel good to breast feed baby	3.34	3.37
Not difficult to breast feed baby exclusively	2.71	0.64
Can breast feed baby on demand	3.08	3.45
confident in breastfeeding baby	2.98	0.22
Confident in expressing and storing breast milk	1.94	0.88
good to give different types of food to child each day	3.34	3.37
good to continue breast feeding beyond six months	3.28	3.39
Attitude average	2.95	1.25

Source: Authors' Findings (2016).

The results on attitudes of fathers are indicated in Table 7. Overall fathers had less support for breastfeeding practices with a mean of 2.48 and standard deviation of 0.69. The standard deviation of 0.69 showed that their responses were homogenous. With respect to provision of appropriate foods during weaning period fathers supported their wives moderately because the mean was 2.58 and the standard deviation of 0.59 indicates that their responses were homogenous. On the other hand fathers had less support in helping their wives perform household chores during breastfeeding because the mean was 2.38 with a standard deviation of 0.93. Again, these responses were homogenous.

Table 7: Attitudes of Fathers on Breastfeeding Practices (n=40).

Attitudes of Fathers only	Mean	Std. Dev.
Help my wife perform household chores during breast feeding	2.38	.93
Provide appropriate infant foods during weaning period	2.58	.59
Father attitude average	2.48	.69

Source: Authors' Findings (2016).

Discussion

This section compares the results of this study to findings of previous studies. The high prevalence of malnutrition confirms the results of studies done earlier in Zambia [3,13]. Previous studies [3,4] established that Zambia had the highest burden of under nutrition in under — five children, where stunting ranked the highest (45%), followed by underweight (15%) and the least being wasting (5%). Zambia has relatively higher overall stunting rates as compared to neighbouring counties in the SADC region. For instance in Mozambique it was rated at 44%, in Zimbabwe 33%, Namibia and Botswana 29% and South Africa 27% [3,4]. This suggests that Zambia was not on track to meet MDG Number 1c: Halve the proportion of people who suffer from hunger and MDG 4 target of reducing child mortality from 167 per 1000 to 64 per 1000 live births [21]. Stunting is a very serious problem in children because it is an irreversible outcome of chronic nutritional deficiency during the first 1,000 days of a child's life [21-23]. It compromises essential physical and mental growth [22]. It also results in a weaker immune system and hence higher risk of infectious diseases [22,23].

This suggests that Zambia was not on track to meet MDG Number 1c: Halve the proportion of people who suffer from hunger and MDG 4 target of reducing child mortality from 167 per 1000 to 64 per 1000 live births [21]. Stunting is a very serious problem in children because it is an irreversible outcome of chronic nutritional deficiency during the first 1,000 days of a child's life [21-23]. It compromises essential physical and mental growth [22]. It also results in a weaker immune system and hence higher risk of infectious diseases [22,23].

Exclusive breastfeeding is recommended by the World Health Organization (WHO) and previous studies [25]. It is a leading intervention in promoting Child Health Survival and the single most effective intervention that could 1,2 prevent 13 — 15% of infant's deaths [25]. According to previous studies [2,25] exclusive breastfeeding would reduce malnutrition in children. Advice on breast feeding received from other family members may be incomplete due to insufficient knowledge on recommended breastfeeding practices. In accordance with the present results, [13,14] have demonstrated that spouses, mothers, grandmothers may have gaps due to insufficient knowledge on exclusive breast feeding among them.

It is encouraging to notice that mothers in this study had implemented some healthy recommended breast feeding practices

as observed in other studies [25]. These included the initiating of breastfeeding immediately after birth, breastfeeding infants with colostrum and breastfeeding on demand which is consistent with findings elsewhere [25]. However, reliance on family members may be a barrier to correct feeding practices when mothers are discharged from the hospital [13,14]. These findings are supported by previous studies [13,26] which established that when these mothers were discharged the number of mothers breastfeeding reduced. Early skin to skin contact increases breastfeeding both soon after delivery and two to three months later [2]. Babies who were inserted early stayed warmer and cried less and even breastfed for longer. In addition, an association between early breastfeeding and reduced infection specific neonatal mortality has been reported [27,28].

The support given to some practices such as providing appropriate foods during the weaning period by fathers can go a long way to improve nutritional status of infants. Positive attitude by fathers is important because it reduces barriers to successful infant feeding [29]. Fathers' knowledge and attitude towards exclusive breast feeding are among the important factors that contribute to the success of exclusive breastfeeding practices [13,14,30]. Knowledge and attitudes are strongly related to the disposition of the fathers in supporting breastfeeding and can act as important sources of social support for the breastfeeding mother. Therefore, fathers should be included in infant feeding education programmes so as to reduce barriers to successful breastfeeding of infants. They should also be encouraged to accompany their spouses to under — five clinics. They can also be used as peer educators. On the other hand fathers had less support in helping their wives perform household chores during breast. This could have contributed to early introduction of fluids and food to infants before the age of six months. The findings of the current study are consistent with those of Tembo, Ngoma, Maimbolwa and Akakandelwa who found that male participants found it difficult to help with house chores because neighbours would think that they were being controlled by their wives. Nonetheless, breast feeding requires time and mothers may not have enough time to exclusively breastfeed and carry out household chores simultaneously.

In this study even though the attitudes of parents with regard to breastfeeding were positive the respondents were less supportive to expressing and storing breast milk. This is consistent with other studies [31,32] who found that expression and storage of breast milk was not feasible to parents because they did not even know how to keep it safe and hygienic. Expression and storing of breast milk would support exclusive breastfeeding as well as continuous breastfeeding.

Conclusion

Malnutrition in particular stunting and underweight is still high in Chongwe District of Zambia. Exclusive breastfeeding is not widely practiced as the community continues to practice unhealthy feeding practices such as introduction of others foods too early. This suggests that there is need to emphasize correct breastfeeding practices in order to reduce malnutrition.

Recommendations

Based on the findings of the study coupled with the opinions from parents, the following recommendations will go a long way in increasing knowledge and improving practices. Parents are advised to take their children for growth monitoring. Also, health educational campaigns by health care providers should be promoted in communities so that family members could be informed about healthy breastfeeding practices and lifestyles. It is recommended that the extended family should be involved in health promotion so as to correct cultural barriers to healthy practices.

References

1. Sanyang Y. Prevalence of Under-five years of age mortality by Infectious Diseases in West AfricanRegion. International Journal of Africa Nursing Sciences. 2019; 11.
2. WHO. Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: Recommendations for a public health approach. Geneva: WHO. 2010.
3. UNICEF/WHO/The World Bank Group. Joint Child malnutrition Estimates: Levels and Trends in Child Malnutrition: Key Findings of the 2020 Edition. 2020.
4. UNICEF. The state of the world's children. New York: UNICEF. 2007.
5. Tlou B, Sartorius B, Tanser F. Investigating Risk Factors for Under-Five Mortality in an HIV Hyper-endemic area of Rural South Africa. from 2000-2014. PloS One. 2018; 13: e0207294.
6. Yaya S, Bishwajit G, Okonofua F, et al. Under-five Mortality Patterns and Associated Maternal Risk Factors in Sub-Saharan Africa: A Multi-Country Analysis. PloS ONE. 2018; 13: e0205977.
7. Pritchard C, Keen S. Child Mortality and Poverty in Three World Regions (The West, Asia and Sub-Saharan Africa) 1988-2010: Evidence of Relative Intra-Regional Neglect? Scand J Public Health. 2016; 44: 734-741.
8. Kazembe L, Clarke A, Kandala NB. Childhood mortality in Sub-Saharan Africa: Cross -Sectional Insight into Small-Scale Geographical Inequalities from Census Data. BMJ Open. 2012; 2: E001421.
9. Bhanderi D, Choudhary SK. A study of feeding practices of under- five children in semiurban community of Gujarat. Journal of Preventive Social Medicine. 2011; 42: 60- 66.
10. Hall J, Walton M, Ogtrop FV, et al. Factors Influencing Undernutrition among Children under 5 years from Cocoa-growing communities in Bougainville. BMJ Glob Health. 2020; 5: e002478.
11. Humbwavali JB, Giugliani C, Nunes LN, et al. Malnutrition and its Associated Factors: A Cross-sectional study with children under 2 years in a Suburban area in Angola. BMC Public Health. 2019; 19: 220.
12. Mzumara B, Bwembya P, Halwiindi H, et al. Factors Associated with Stunting among Children below Five Years of Agein Zambia: Evidence from the 2014 Zambia Demographic and Health Survey. BMC Nutrition. 2018; 4.

13. Bwalya MK, Mukonka V, Kankasa C, et al. Infants and young children feeding practices and nutritional status in two districts of Zambia. Lusaka: Bio Mixed Central of Zambia. Int Breastfeed J. 2015; 10: 5.
14. Nandagire WH, Atuhaire C, Egeineh AT, et al. Exploring Cultural Beliefs and Practices Associated with Weaning of Children Aged 0-12 Months by Mothers attending Services at Maternal Child Health Clinic Kalisizo Hospital, Uganda. Pan Afr Med J. 2019; 34: 47.
15. Central Board of Health. Ministry of Health Report. Lusaka: CSO. 2003.
16. ZDHS. Report. Lusaka: MOH. 2010.
17. Nwankwo BO, Brieger WR. Exclusive Breastfeeding is undermined by use of other liquids. J Trop Pediatr. 2002; 48: 109-112.
18. Davis P, Darko ET, Mukuria A. Water, Koko and Complementary Feeding Practices. Kumasi, Ghana. ORC Macno Calverton Maryland. 2003.
19. CSO and ZDHS. Demographic Survey. Lusaka: CSO. 2010.
20. Monde MD. KAP Survey Model (knowledge, attitudes and Practices) London: Spring. 2011.
21. UNICEF. Causes and Consequences of Stunting: An opportunity to improve Health and Economic Development. 2012.
22. Nshimyiryo A, Hedt-Gauthier B, Mutaganzwa C, et al. Risk Factors for Stunting among Children Under Five Years. A Cross-Sectional Population-based Study in Rwanda using the 2015 Demographic and Health Survey. BMC Public Health. 2019; 19.
23. Akombi BJ, Agho KE, Hall JJ, et al. Stuntiing and Severe Stunting among Children under 5 years in Nigeria: A Multilevel Analysis. BMC Pediatrics. 2017; 17.
24. Inayati, DA, Scherbaum V, Purwestri RC, et al. Infant feeding practices among mildly wasted children: a retrospective study on Nias Island, Indonesia. Int Breastfeed J. 2012 ; 7: 3.
25. Jama A, Gebreyesus H, Wubayehu T, et al. Exclusive Breastfeeding for the First Six Months of Life and its Associated Factors among Children Aged 6-24 Months in Burao District, Somaliland. Int Breastfeed J. 2020; 15: 5.
26. Dashti M, Scott JA, Edwards CA, et al. Determinants of breastfeeding initiation among mothers in Kuwait. Int Breastfeed J. 2010; 5: 7.
27. Phukan D, Ranjan M, Dwivedi LK. Impact of Timing of Breastfeeding Initiation on Neonatal Mortality in India. Int Breastfeed J. 2018; 13: 27.
28. Moore ER, Anderson GC, Bergman N. Early skin-to-skin contact for mothers and their healthy new-born infants. Geneva. Cochrane Database Syst Rev. 2016; 11: CD003519.
29. Kuzma J. Knowledge, attitudes and practices related to infant feeding among women in rural Papua: A descriptive mixed method study. New Guinea. Int Breastfeed J. 2013; 8: 16.
30. Taşpınar A, Çoban A, Küçük M, et al. Fathers' knowledge about and attitudes towards breast feeding in Manisa, Turkey. Midwifery. 2013; 29: 653-660.
31. Okonya JN, Nabimba R, Richard M, et al. Perceptions of Breast Milk Expression Practices among Working Mothers. African Journal of Midwifery and Women's Health. 2017; 11.
32. Ismail TAT, Sulaiman Z, Jalil R, et al. Breast milk expression among formally employed women in urban and rural Malaysia: A qualitative study. Int Breastfeed J. 2012; 7: 11.