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Research Article
Early Breastfeeding Initiation: Impact of Socio-demographic, Knowledge and Social Support Factors

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Abstract

Background and Objective: Early breastfeeding initiation in the 1st h after delivery seems unsuccessful. This study aimed to analyze the impact of socio-demographic, knowledge and social support factors toward the failure of early breastfeeding initiation. **Materials and Methods:** An observational prospective approach was used with 238 selected purposively pregnant women who were followed through delivery in South Sulawesi province. Field data were collected from April-December, 2015. **Results:** The study results showed that marital age (OR:1.88, 95% CI:1.07-3.31), place of delivery (OR:1.81, 95% CI:0.99-3.29) and midwife social support (OR:2.74, 95%:CI:1.62-4.66) were significant predictors of early breastfeeding initiation, whereas mother's knowledge was not a significant predictive factor. Home birth was found to be significantly different from hospital birth. **Conclusion:** To make early breastfeeding initiation successful, it is necessary to combine good practices among an educated midwife, family and traditional birth attendant.

Key words: Knowledge, socio-demography, social support, early breastfeeding initiation

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Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

The benefits of breastfeeding are substantial for child health[1]. The recommendation for exclusive breastfeeding in newborns and infants has a long history and researchers have revealed that breastfeeding protects against many illnesses and infectious diseases, including reducing the risk of diarrhea[2], respiratory infections, especially pneumonia[3], meningitis[3] and neonatal sepsis[3-6]. Breastmilk contains all needed nutrients for up to 6 months and promotes physical and emotional well-being[7]. As a temperature-controlled nutrient, breastmilk contains antibodies, enzymes and cytokines that stimulate and contribute to the immune system. According to Hale[8] and Venter *et al.*[9], there is evidence of prebiotics in breastmilk that aid in the development of microflora and contribute to a strong immune system. Breastmilk aids in preventing gastrointestinal and respiratory infections, reducing the risk of obesity and otitis media and improving cardiovascular health. Additionally, breastmilk is associated with fewer allergies, urinary tract infections and cases of diabetes later in life[8-11].

Attention has largely focused on the protective effects of breastfeeding in the 1st year of life and greater protection appears to be conferred in the first 6 months of life in particular[12]. However, at present, attention has been directed toward both the pattern of breastfeeding as well as the timing of initiation of breastfeeding and the effects on neonatal morbidity and mortality[13].

It is clear that early breastfeeding initiation within the first 24 h after birth is associated with a reduced risk of neonatal mortality among infants as indicated by a study in rural India[14]. Further education and promotion of the initiation of breastfeeding as soon as possible (certainly within 24 h of birth), especially within regions with currently low prevalence of early initiation, significantly reduces neonatal mortality and helps achieve Millennium Development Goal[14] 4.

Researchers assessing the importance of breastfeeding have reinforced the protective effect of breastfeeding, including in the neonatal period but few studies have assessed the impact of the time to breastfeeding initiation on infant and neonatal mortality and morbidity[15].

Breastfeeding, especially exclusive breastfeeding (EBF) is one of the most effective preventive health measures available to reduce child morbidity and mortality[16]. The international Baby-Friendly Hospital Initiative (BFHI) launched in 1991 by UNICEF and the WHO aims to promote and to protect maternal and child health by ensuring support for breastfeeding in maternity care facilities[17]. More than 20,000 health care facilities in more than 150 countries around the world have secured baby-friendly certification from their national certifying bodies by implementing the Ten Steps to Successful Breastfeeding and ending the practice of distributing free or low-cost breastmilk substitutes[18]. However, most healthcare services in 14 developing countries do not fulfill the initiation requirement of this program[19].

Many factors influence pregnant women's decisions regarding the initiation of early breastfeeding, such as the educational status of pregnant women[20], convenience or dislike of breastfeeding, social or work-related barriers[21], the presence of a support system, whether personal or professional[22-24], support from a partner[23] and increased duration of breastfeeding[24]. Professional support may include support from postpartum nurses during early hospitalization, lactation consultants and physicians[22] and social support may come from clinicians, such as pediatricians and community lactation consultants outside the hospital[24]. Marital status[20,25] and formal education presented through individualized, interactional techniques rather than independent and informal means (such as pamphlets or other reading materials) are also important[23,26,27].

These factors are important for studying the initiation of early breastfeeding. Therefore, the primary objectives of this study were to analyze the interaction between internal and external factors associated with the implementation of early breastfeeding initiation among mothers. This study focuses on the influence of socio-demographic, social support and knowledge factors on breastfeeding.

MATERIALS AND METHODS

This study used an observational prospective approach. Data collection from respondents was conducted at the first, second or third trimester of the prenatal period and mothers and infants were followed until the fourth postnatal week using three data collection steps. The first step in data collection occurred during the prenatal period and included measuring the knowledge of lactation among respondents. The second step occurred 1 month after the first step and included measuring the social support derived from families, relatives and midwives and the third step included evaluating the practice of early breastfeeding initiation at childbirth. This study was conducted at the Bajo coastal area in Bone Regency, South Sulawesi province, Indonesia. The data was taken from the medical records of pregnancy visits to the Primary Health Care Clinic from April-December, 2015. The number of selected respondents were 298 pregnant women (156 respondents in the first trimester and 142 respondents in the second trimester) and based on the inclusion of single pregnancy with no breast anatomical defects (identification standards of visits to antenatal care). The exclusion criteria

were a cesarean section delivery (either optional or due to complications), a baby born < 2500 g, an APGAR score <7 and infants with anatomical defects of the mouth, such as labioschisis.

Data analysis: Chi-square tests were used for bivariate data analysis and multiple logistic regressions were used for multivariate data analysis to find the best model of early breastfeeding initiation at primary healthcare services.

RESULTS AND DISCUSSION

The majority of respondents were pregnant during the healthy reproductive period (Table 1) but most of them had been married twice and some of them were younger than 15 years old. Being pregnant while very young affects long-term reproduction and reduces the healthfulness of the mother's reproductive system. However, there have not been any significant efforts in preventing very early pregnancy through family planning programs. The mean parity was 2.25 with a standard deviation of 1.42, which is categorized as a high value. There was at least one pregnancy for each mother and the largest number of pregnancies was eight. Generally, the mothers had an elementary education and stayed at home as house wives. Only a small portion had a formal occupation. The main source of income for the families was the husband's job as a fisher men, which is common in the coastal areas of Indonesia. During data collection for this study, the proportion of male babies was higher than female babies. The gestational age and weight of the babies were normal. Two thirds of respondents chose a home birth facilitated by midwives and the rest of them chose traditional birth attendants. The average duration of early breastfeeding initiation was 129.8 sec.

Table 1 shows that the 16-19 years old age interval had the highest failure rate in implementing early breastfeeding (OR: 2.25 95%CI: 1.26-4.01). The highest failure rate in implementing early breastfeeding was observed among respondents who had an elementary education (OR: 2.78, 95%CI:1.24-6.24). Respondents who had 2-4 children showed a higher probability of practicing early breastfeeding initiation (OR: 1.85, 95%CI: 0.68-5.02). Respondents from families who had higher income were nearly 1.6 times more likely to be successful in implementing early breastfeeding compared to those who had lower income (OR: 1.66, 95%CI: 0.99-2.78). Respondents who had live births at home were 1.6 times more likely to be successful implementing early breastfeeding than those who had live births at healthcare facilities (OR:1.81, 95%CI:0.99-3.29). On the other hand, respondents who had proper knowledge of early breastfeeding initiation were nearly 1.5 times more likely to be successful compared to those without knowledge of early breastfeeding initiation (OR:1.5, 95%CI: 0.9-2.5). Respondents who had high social support from their families and their husbands were nearly 1.5 times more likely to be successful implementing early breastfeeding during parturition than those who had less social support from their families and their husbands (OR:1.66, 95%CI: 0.99-2.77) and respondents who had high level assistance from midwives were nearly 1.5 times more likely to be successful in implementation during parturition than those who had less social support from midwives (OR: 2.75, 95%CI:1.62-4.66). Some socio-demographic variables, such as maternal age, parity, educational background of the husbands, maternal occupation, family structure, neonatal sex and knowledge of respondents were not statistically significant predictors of early breastfeeding initiation.

For the multivariate analysis, all variables that fulfilled the criteria of $p<0.25$ were included in the analysis (assistance from a midwife, support of husband, maternal knowledge, marital age, educational background of respondents, family income, place of childbirth and educational background of the husband) using a backward likelihood ratio statistical method. Four variables were found to be significant in the multivariate analysis: Assistance of a midwife, family income, place of childbirth and marital age. The researchers additionally determined which of those presumed variables may interact. It was indicated that assistance from a midwife and place of childbirth consistently increased OR values in the regression models (Table 2).

Socio-demographic factors: Education is a lifelong learning process among individuals to achieve higher knowledge on specific topics. The higher an individual's educational attainment, the greater their logical reasoning abilities, typically resulting in better behavior and decision-making. It was revealed that there was a statistically significant association between the education level of the respondents and the implementation of early breastfeeding. Respondents who had higher educational attainment showed were 2.78 times more likely to successfully implement early breastfeeding than those with an elementary education. This observation is consistent with the findings of a cohort study at several health facilities in Australia and one of the socio-demographic factors, education level of the mother

Table 1: Socio-demographic, knowledge and social support factors predicting early breastfeeding initiation

	EBI (n = 119)		Non-EBI (n = 119)			
Variables	F	(%)	F	(%)	*p-value	OR
Maternal age						
≤19	10	52.6	9	47.4	0.820	0.86 (0.34-2.22)
**20-35	90	48.9	94	48.9		
≥36	19	54.3	16	45.7		0.81(0.39-1.66)
***Marital age						
≤15	7	46.7	8	53.3	0.011	1.46 (0.49-4.27)
16-19	29	36.3	51	63.8		2.25 (1.26-4.01)
**20-29	69	56.1	54	43.9		
≥30	14	70.0	6	30.0		0.55 (0.19-1.52)
Parity						
Primiparous	46	50.0	46	50.0	0.469	1.08 (0.63-1.85)
**Multiparous (2-4)	66	52.0	61	48		
Grande multiparous (≥5)	7	36.8	12	63.2		1.85(0.69-5.02)
***Mother's education						
Basic	72	44.2	91	55.8	0.020	2.78 (1.24-6.24)
Middle	25	58.1	18	41.9		1.58 (0.61-4.15)
**High	22	68.8	10	31.2		
Father's education						
Basic	73	47.7	80	52.3	0.247	2.07 (0.87-4.93)
Middle	29	49.2	30	50.8		1.95 (0.75-5.08)
**High	17	65.4	9	34.6		
Working mother						
Housewife	94	48.5	100	51.5	0.316	0.71(0.37-1.38)
Working	25	56.8	19	43.2		
***Family income						
≤UMR	57	44.1	72	55.8	0.051	1.66 (0.99-2.78)
>UMR	62	56.9	47	43.1		
Family structure						
Nuclear family	54	51.4	51	48.6	0.695	1.11 (0.66-1.84)
Extended family	65	48.9	68	51.1		
Babie's sex						
Boys	63	52.1	58	47.9	0.517	0.85 (0.51-1.41)
Girls	56	47.9	61	52.1		
***Place of birth						
Home	83	46.4	96	53.6	0.051	1.81 (0.99-3.29)
Health facilities	36	61.0	23	39.0		
***Delivery attendant						
Midwife	119	54.3	100	45.7	0.001	0.45 (0.39-0.52)
Traditional birth attendant	0	0.0	19	100.0		
Mother's knowledge						
Good	70	54.7	58	45.3	0.119	1.50 (0.90-2.51)
Poor	49	44.5	61	55.5		
***Family support						
Good	68	56.2	53	43.8	0.052	1.66 (0.99-2.77)
Poor	51	43.6	66	56.4		
***Midwife support						
Good	81	60.9	52	39.1	0.001	2.74 (1.62-4.66)
Poor	38	36.2	67	63.8		
Pregnancy age (week)						
Mean (SD)	38.6 (1.7)	37.6 (1.9)				
Birth weight (g)						
Mean (SD)	3374.8 (474.1)	3120.2 (475.8)				
EBI duration (sec)						
Mean (SD)	129.8 (135.1)					

EBI: Early breastfeeding initiation, OR: Odd ratio, F: Frequency, UMR: Upah minimum regional, n = 238, *Chi square, **OR comparison criteria, ***Significant at p<0.05

Table 2: Multiple logistic regression

Variables	B	p-value	OR	95% CI
Marital age	0.617	0.031	1.853	1.056-3.250
Family income	0.632	0.028	1.881	1.070-3.306
*Midwife support (place of birth)	1.325	0.001	3.763	2.046-6.920

B: Beta value, CI: Conbidential interval, *Variables entered in step 1: Midwife support, family income, place of birth, marital age and the interaction between midwife support and place of birth

(below 12 years is an elementary education) was considered to be one of several important factors for why women initiate and then prematurely cease breastfeeding[28].

In this study, adolescent mothers were highly dependent on their parents, especially their mothers. It was observed that they waited for the peak of childbirth at their parent's homes and they stayed at their parent's homes because they did not have their own homes. This situation affected their attitude towards decisions, such as nursing babies, including in determining both place and assistance during parturition. The ability to bear the cost of childbirth was the main reason to give birth at home. Moreover, there was a negative perception among local people about the hospital. Most of them considered pregnant women being treated at hospitals might require surgical treatment and have higher medical costs beyond those covered by national health security. This issue was also found in a study of breastfeeding practices and cessation in North Carolina in the US breastfeeding is closely connected to their experiences as new mothers in the context of ongoing multiple roles, complex living situations, youth and dependency and poor knowledge of the fundamentals of breastfeeding and infant development. Breastfeeding cessation was influenced by inadequate breastfeeding skills, physically unpleasant and painful early experiences they were unprepared to manage and inadequate healthcare responses to real problems[29].

According to Aubel[30] "the nutritional status of infants and young children in developing countries depend to a significant extent on adoption of optimal nutrition-related practices within the context of the household. Most policies, study and programs for child nutrition in non-Western societies focus narrowly on the mother-child dyad and fail to consider the wider household and community environments in which other actors, hierarchical patterns of authority and informal communication networks operate and influence such practices. In particular, the role and influence of senior women or grandmothers has received limited attention. This study dealing with child nutrition from numerous socio-cultural settings in Africa, Asia and Latin America reveals three common patterns related to social-dynamics and decision-making within households and communities: Grandmothers playing a central role as advisers to younger women and as caregivers of both women and children on nutrition and health issues, grandmother social networks exercising collective influence on maternal and child nutrition-related practices specifically around pregnancy, feeding and care of infants, young children and sick children; and men playing a relatively limited role in day-to-day child nutrition within family systems. Grandmothers provide a role as culturally designated advisers and caregivers". Another factor was prenatal classes and professional support that may be particularly important sources of information to increase adolescent breastfeeding self-efficacy[31].

Knowledge: This study showed that respondents who had at least moderate knowledge were more successful in practicing early breastfeeding initiation than those who had lower knowledge, the difference between the groups was below 10% (7.56%). This factor was associated with a mother's lack of knowledge and midwives with less professional skills, communication strategies, individual motivation and self-confidence in the understanding of the benefits of early initiation of breastfeeding and implementing this method for every delivery. In a study of inhibiting factors of early initiation of breastfeeding among mothers in some rural areas in the Bone Regency, South Sulawesi and Indonesia, mothers who had low educational attainment were 2.76 times more likely to fail to practice early breastfeeding initiation compared to mothers who had higher educational attainment[32].

The knowledge level of the mothers can not be separated from their socio-demographic background. The level of education, economic status, social interaction and social strata are all influential factors on their knowledge level. In general, social stratification reflects differences in family life, family values, family tastes and media[33]. Education improves cognitive abilities through a variety of academic efforts and it also paves the way to work outside the home in diverse professions. These facts have both positive and negative impacts on maternal behavior. Finding jobs outside the home can positively contribute to family income, even though it is not the main role of females. Therefore, spare time in nurturing children and breastfeeding continuously becomes

a burden for families in which the mother works outside the home as they have little time to raise children.

Implementing early breastfeeding promotes breastfeeding activities, improves the infant's immunity, improves the recovery of maternal health, increases the duration of mother's milk offerings and eventually may decrease costs in nurturing babies. Exclusive breastfeeding can diminish the purchase of synthetic milk formula, reducing visits to pediatricians because babies who take breast milk get sick less frequently than those who drink synthetic milk formula[34,35].

Several studies show that most failures in implementing early breastfeeding and giving mother's milk are caused by the knowledge level of the mother. Therefore, proper knowledge should be gained about breastfeeding and the advantages of early breastfeeding initiation[36] with health assistance from health officers to find solutions to breastfeeding problems and teach precise lactation methods[37]. Cultural beliefs and practices are important factors in breastfeeding and there are common beliefs that may discourage breastfeeding[38].

A previous study revealed that mother's knowledge level was the main predictor and the most influential factor in early breastfeeding initiation. Poor knowledge among mothers about early breastfeeding initiation was predicted to be 18 times more likely to fail in implementing early breastfeeding compared to those with better knowledge[32]. Although such a study did not show a significant association between mother's knowledge level and the implementation of early breastfeeding, this study revealed that two influential factors in implementing early breastfeeding initiation were health assistance from a midwife and place of childbirth.

Place of childbirth: The results of this study showed that midwives did not always perform optimally. During this study, only half of the respondents conducted early breastfeeding initiation optimally. This finding was similar to a former study showing that two among eight senior midwives and 15 newly graduated midwives used consistently accurate methods. The mean time to breastfeeding initiation was 129.8 sec, with the longest time at 15 min and 10 sec. However, the minimal duration based on the literature was 30-60 min[39]. This delay commonly occurs at general hospitals in Indonesia because most hospitals are not implementing Baby-Friendly Hospital Initiative (BFHI) standards and significant reports show how many hospitals in Indonesia are implementing standardized BFHI[40].

The report from IBFAN of the Indonesian Commission represented by Asosiasi Ibu Menyusui Indonesia-Indonesian Association of Breastfeeding Mother (AIMI) showed that the constraints on the implementation of early breastfeeding in Indonesia are due to the lack of availability of persuasive policies and protection for breastfeeding women who work in informal sectors. There is no explicit authorization for individuals to disrupt the International Code of Marketing of Breastmilk Substitutes and inappropriate planning programs for mother's milk protection in emergency situations, such as natural disasters and/or HIV/AIDS[41]. Moreover, several countries are now facing various constraints in implementing international policies related to BFHI.

This fact is different from findings in Nepal, where two thirds of the population of live births at health facilities are implementing precise early breastfeeding and are 1.67 times more likely to be successful at implementing the method than those who have live births at home. The reason for this success is good implementation of early breastfeeding initiation as a routine activity. Commonly, hospitals in Nepal implement the accredited BFHI according to the Ten Steps Principle and they have promotion programs for mother's milk and community-based early breastfeeding initiation, presenting manuals, directives and direct assistance to patients to adopt and increase good behaviors around breastfeeding until the patients are back in their homes[42]. If Indonesian people can implement the policies of early breastfeeding as applied in Nepal, it is predicted that at least two thirds of the population of infants may gain both early breastfeeding initiation and exclusive mother's milk.

However, mothers in Indonesia commonly give birth at home as observed in this study, because of cost, cultural setting and anxiety over prejudicial perceptions of hospitals. People are likely to choose to give birth at home in the form of private care to obtain better psychological effects and a calm and quiet situation because there is only one patient. This reality should be considered a local strength in building home-based maternity care. This finding was similar to a meta-analytic study on the difference between planned home births vs. planned hospital births that showed that planned home births in many places can be as safe as planned hospital births, with less intervention and fewer complications[43]. However, choosing childbirth planning at home requires an integrated health care system to ensure good access to emergency services[44].

Social support: The social network refers to the existence of individual social relations. Social support is one of the most important functions of a social network[45]. Social support consists of instrumental, informational and appraisal aspects of individuals who take on social care, especially for the family

and care provider. It is impossible to separate those aspects from one another. For example, a primary health care section bearing duties to distribute precise information to patients as stated in the Antenatal Care Services Standard. The responsibility of this duty is stipulated in the Health Ministerial Decree No. 900 of the year 2000 on the professional standard for midwifery services. Health care officers should care for every patient who is socially deprived by providing accurate information, correcting mistaken understandings and sharing new knowledge with younger mothers. Information on early breastfeeding initiation promotes preliminary knowledge for mothers, faster distribution of information and greater possibilities to build good will and positive perceptions.

Based on the data analysis for this study, there was a positive and strong association between early breastfeeding initiation and health assistance from a midwife. Respondents who had good social support were easily informed of the benefits of early breastfeeding initiation. Their interactions were created through their first social contact when discovering the pregnancy, during childbirth and throughout nurturing the baby and child. Midwives spend a lot of time developing trust among patients but the majority of midwives lack the goodwill to develop this role dedicated to mothers and their families.

Family is the heart of social interaction for every individual and thus the main social support derived from family is gained from instrumental, emotional and informational support. Informational support may be gained from grandmothers as adolescent mothers reproduce care behavior derived from their parents, such that early breastfeeding initiation is not considered new care knowledge. On the other hand, instrumental support is gained in the form of physical support, whereas emotional support is obtained in the form of love and affection derived from her husband. The results of this study revealed that although support from the husband did not statistically significantly predict early breastfeeding initiation, wives experienced good social support from their husbands, such as giving affection, fulfilling needs for specific nutritious food, accompanying wives to the physician and midwife, being close to the mother during parturition and breastfeeding, helping to do various household activities and replacing her role as a nurturing person to the baby.

Such social support enables a mother to control her social role transformation as a nurturing person. Sometimes, psychological pressure focuses on her nurturing role, her hopes for other persons and her sense of self depicted on her baby's healthy growth. Sometimes, breastfeeding mothers face various confusing information from families and relatives, perceptions from knowledgeable and experienced parents and information from her younger and elder siblings as well as other relatives, which can be confusing and increase emotional instability. Moreover, individually, she faces internal conflict due to fatigue, new social relations, increased activities and new responsibilities.

Responsibility for nurturing a baby is rather a nuisance as she should increase her knowledge in harmony with adaptation to the baby's needs. Therefore, there are several general points that are useful when considering the treatment process: (1) Individual therapy is inadequate to treat attachment problems, (2) Treatment milieu must be developed, (3) Only after a relationship has been developed can treatment for trauma and loss be effective, (4) Children should not be forced to explore their trauma or loss, (5) Young children should not be asked to say good-bye to a loss without having something to take its place, (6) Provide support, hope and guidance, (7) Follow the child's pace with accepting a loss and (8) Provide a nurturing environment where a relationship of safety, consistency and emotional closeness is possible[46].

CONCLUSION

Health assistance from a midwife, place of childbirth, marital age and financial support of the family constitute a breastfeeding model that explains successful early breastfeeding initiation. Giving birth at home was associated with increased early breastfeeding initiation. Good knowledge of early breastfeeding initiation does not guarantee its precise implementation but accurate knowledge is needed at least to promote intention and the ability to implement such intentions during childbirth. Positive social support is needed from family and relatives to provide freedom of action and self-confidence in nurturing children and decreasing both the physical and psychological burdens of the maternal role.

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