

Problems During Lactation are Associated with Exclusive Breastfeeding in DKI Jakarta Province: Father's Potential Roles in Helping to Manage These Problems

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ABSTRACT

The rate of breastfeeding practice in general is high, but exclusive breastfeeding is not optimally practised as factors influencing it are multifaceted. As part of a cross-sectional survey using quantitative and qualitative approaches in DKI Jakarta Province between September and October 2005, this paper reports the risk factors of exclusive breastfeeding and potential roles of fathers in supporting exclusive breastfeeding practice. The subjects were mothers who have infants aged between 1.5 and 8.5 months. Data collected include exclusive breastfeeding practice, maternal characteristics, infant's characteristics, family characteristics, exposure to various sources of information, and potential roles of fathers in providing emotional and physical supports for the mothers. Logistic regression was employed to identify determinants of exclusive breastfeeding practice. Coding of themes that emerged from in-depth interviews was used to explain some phenomena found in the quantitative part of the study. Exclusive breastfeeding practice was 17.5%. Around 85% of the mothers ever experienced at least one lactation-related problem and had a 2.1 risk (95% CI: 1.1-3.8) of not practising exclusive breastfeeding. The lactation problems experienced may be mostly managed by non-medical professionals. As reported in the in-depth interviews, father's roles included involvement during antenatal visits, in child caring and household works, as well as provision of comfort to the nursing mother when she is breastfeeding or feeling tired by massage. Although further confirmation is needed on the roles of Indonesian fathers to help manage lactation problems, the data from this study show that fathers do have the potential to do so.

INTRODUCTION

The United Nations Children's Fund's (UNICEF) conceptual model on child nutritional status outlines the direct causes of under-nutrition as inadequate food intake, poor health status, and lack of care. Care is also identified as an indirect

cause since it may contribute to the child's nutritional status through provision of adequate food and good health care (Engle, Menon and Haddad, 1997). Effect of care is substantially dominant among young children especially infants. Inappropriate infant feeding practices may contribute to higher morbidity, lower

nutritional status, even death. It is then highlighted by the World Bank (2006) that the window of opportunity for improving nutrition is small – from before pregnancy through the first two years of life. There is consensus that the damage to physical growth, brain development, and human capital formation (such as intelligence, educability, and productivity) that occurs during this period is extensive and largely irreversible. Therefore interventions must focus on this window of opportunity. Any investments after this critical period are much less likely to improve nutrition.

Among infants, care related to breastfeeding practices is very important since breast milk is the most predominant source of nutrition for them. Breastfeeding is widely known to be beneficial for infants (Lopez-Alarcon, Villalpando and Fajardo, 1997; Villalpando and Lopez-Alarcon, 2000; Bhandari *et al.*, 2003; Bogen, Hanusa and Whitaker, 2004) and the mothers (León-Cava *et al.*, 2002; The American Academy of Pediatrics, 2005), and also economically advantageous for the community (Ball and Wright, 1999; The American Academy of Pediatrics, 2005). Nevertheless, breastfeeding is also the most difficult to prescribe since it is not governed only by instinct but it is a learned behavior, thus factors influencing it is many.

One of key breastfeeding behaviours is exclusive breastfeeding which means that the infant is not receiving any plain water, sugar water, juices, or other liquids, cow's milk, tinned milk, infant formula, semi solid or solid foods, or any other substance with the exception of drops or syrups consisting of vitamins, mineral supplements, or medicines (WHO, 1991). It is regarded as the most crucial feeding practice to support optimal growth during infancy and childhood as it contributes to reduced morbidity and improved nutritional status, and furthermore to result in better health outcomes in later life (Green, 1999). However, exclusive breastfeeding is

not optimally practised worldwide (UNICEF, 2006). Factors associated to exclusive breastfeeding practice include exposure to antenatal and postnatal care (Green, 1999; Earle, 2000; Shaker, Scott and Reid, 2004), nipple's condition (Vogel, Hutchinson and Mitchell, 1999), time of the first feed, positioning and latching on, feeding frequency and duration (Vogel *et al.*, 1999; Lawrence and Lawrence, 2005), health status of the child and/or the mother (Jakobsen *et al.*, 1996), supplements for babies and mothers, receiving expressed breast milk, or water, or being offered a dummy (Vogel *et al.*, 1999), the timing of the next pregnancy (Jakobsen *et al.*, 1996; Green, 1999), the mother's self-confidence (Green, 1999; Vogel *et al.*, 1999; Arora *et al.*, 2000; Septiari, Februhartanty and Bardosono, 2006), time demands (Wijekoon, Thattil and Schensul, 1995; Green, 1999), and influence of the cultural norms from the family members (Green, 1999; Wolfberg *et al.*, 2004) especially the father (Dearden *et al.*, 2002, Pisacane *et al.*, 2005; Septiari, Februhartanty and Bardosono, 2006). The latter factor is less elaborated on, especially in the Indonesian context.

Following the new World Health Organization (WHO) global recommendation on exclusive breastfeeding from birth up to six months of age (Kramer and Kakuma, 2002), the government of Indonesia on April 7, 2004 through the decree of Ministry of Health Republic of Indonesia no. 450/Menkes/SK/IV/2004 launched a policy that exclusive breastfeeding after birth up to the age of six months should be encouraged to all Indonesian mothers.

In response to this new policy, a study in DKI Jakarta Province was done to investigate the magnitude of exclusive breastfeeding practice up to six months of age and its related factors. However, the objective of study reported in this paper is to assess the risk factors of exclusive breastfeeding practice and to explore

potential roles of fathers in minimising the identified risk factors of exclusive breastfeeding practice.

MATERIALS AND METHODS

Permission and other administrative requirements for conducting the study were obtained from relevant institutions. Ethical clearance was obtained from the Human Ethics Committee of Faculty of Medicine at the University of Indonesia. Prior to the study, the respondents were informed about the purpose of the study and requested to give written consent showing their approval for voluntarily participating in this study. Identity of all respondents was held confidential.

The study was a cross-sectional survey conducted in DKI Jakarta Province covering five municipalities, i.e. East Jakarta, South Jakarta, West Jakarta, North Jakarta and Central Jakarta between September and October 2005. The survey employed quantitative and qualitative methods of data collection.

Quantitative approach

The objective of quantitative data collection method was to obtain proportion of exclusive breastfeeding practice and to identify its risks factors. In this part, subjects were mothers who have infants aged between 1.5 and 8.5 months. Sample size was calculated for estimating one proportion (Lemeshow *et al.*, 1990). With adjustment factor of 2 for cluster sampling method employed in this study, estimated proportion of 50%, and precision of 15%, the minimum sample needed was 425 subjects. However 445 subjects were finally recruited, comprising of those living in five municipalities. Multistage sampling from municipality, sub-district, village, to hamlets was performed. All subjects who had infants aged between 1.5 and 8.5 months were recruited from the selected hamlets.

The data were collected through individual interviews using structured questionnaires by eight trained enumerators. The data included exclusive breastfeeding practice, maternal characteristics (nutritional status, age, education level, occupation, lactation difficulties, and knowledge on breastfeeding), infant's characteristics (nutritional and health status, sex, parity), family characteristics (income, family structure, assistance after delivery, workload, someone to share general domestic problems, someone to share about health/nutrition of the child), and exposure to information from mass media, family and friends/neighbours. Breastfeeding knowledge consisted of definition and benefits of exclusive breastfeeding and colostrum, how to ensure sufficient breast milk production, perception on breastfeeding and bottle feeding. The score ranged from 0-10 with 0-4 (below the median) categorised as "poor" and 5-10 (above the median) as "good".

Data was analysed using SPSS 11.5 for Windows (SPSS Inc., Chicago, IL). EpiNut in EPI-Info 2000 (CDC, Atlanta, GA) was used to calculate the Weight-For-Age, Weight-For-Height, and Height-For-Age Z-scores of the infants. Descriptive data analysis was used to show proportions of categorical data and mean value of continuous data (univariate analysis). Chi-square test with significant level of $p < 0.05$ was performed to identify associations between two categorical data (bivariate analysis).

As for multivariate analysis, logistic regression was employed to assess the various independent variables that are most influential to the dependant variable of exclusive breastfeeding practice with the following descriptions:

1. exclusive breastfeeding practice based on whether the infant is still breastfeeding, self-reported exclusive breastfeeding practice by the mothers, and whether the infant never received

- pre-lacteal feeding (1 = if all yes, 0 = if at least one no)
2. maternal nutritional status (1 = normal, 0 = under or over nutrition)
 3. maternal age (1 = 16-27 years, 0 = 28-46 years)
 4. maternal education level (1 = \geq 9 years of schooling, 0 = $<$ 9 years of schooling)
 5. maternal occupation (1 = housewife, 0 = working)
 6. experience of lactation difficulties (1 = no, 0 = yes)
 7. knowledge on breastfeeding (1 = good, 0 = poor)
 8. infant's experience of respiratory infection (1 = no, 0 = yes)
 9. infant's experience of diarrhoea (1 = no, 0 = yes)
 10. sex of the infant (1 = female, 0 = male)
 11. parity (1 = primiparous, 0 = multiparous)
 12. average family monthly income (1 = $>$ USD 200, 0 = \leq USD 200)
 13. family structure (1 = nuclear, 0 = extended)
 14. assistance during 40 days after delivery (1 = father, 0 = others)
 15. someone to share general domestic problems (1 = father, 0 = others)
 16. someone to share about health/nutrition of the child (1 = father, 0 = others)
 17. workload (1 = felt being helped, 0 = felt being drained)
 18. recent exposure to information from electronic media (1 = yes, 0 = no)
 19. recent exposure to information from print media (1 = yes, 0 = no)
 20. recent exposure to information from doctors (1 = yes, 0 = no)
 21. recent exposure to information from midwives (1 = yes, 0 = no)
 22. recent exposure to information from community health volunteers (1 = yes, 0 = no)
 23. recent exposure to information from family (1 = yes, 0 = no)
 24. recent exposure to information from friends/neighbours (1 = yes, 0 = no)

The initial regression analysis was performed to select candidate variables. Based on p value of less than 0.250 and theoretical knowledge on factors known to have influence on exclusive breastfeeding practice, the candidate variables included maternal occupation, experience of lactation difficulties, maternal nutritional status, family income, someone for sharing nutrition/health problem of the child, exposure from print media and community health volunteers, infant's experience of diarrhoea, infant's sex, and parity. Test of colinearity for these variables was performed using non-parametric correlation analysis. All variables had correlation coefficient (r) of below 0.8, so no colinearity between variables was found. Then using stepwise method, all candidate variables were entered in the initial analysis of logistic regression. Any variable with p value more than 0.05 was excluded from the model one by one starting from the variable showing the highest p value. The regression analysis was run several times until all variables included in the model show p value of less than 0.05.

Qualitative approach

The qualitative data collection method was meant for data triangulation in which coherent information from the quantitative data could be obtained as it allows more in-depth exploration on the issues being studied. Subjects were mothers and fathers who have infants aged between 1.5 and 8.5 months who were different from subjects in the quantitative part. These subjects were approached purposively based on convenience in parallel with the quantitative part of the study. Miles and Huberman (1994) noted that the sampling method in a qualitative study should follow two principles i.e. appropriateness and adequacy of the issues being studied. It means that in a qualitative study, the completeness of the data is the focus, not the sample size. In

this study, in each municipality, one pair of nursing mother and father was interviewed once, thus making a total of 10 interviews from 10 subjects.

The data were collected through in-depth interviews using semi-structured guidelines for every mother and father separately by one trained enumerator. The interview covered topics mainly on exclusive breastfeeding and its related factors, experience of risk factors that may predispose to lactation problems, exposure to antenatal care (ANC), also role of fathers in providing emotional and physical support for the nursing mothers and father's potential roles in minimising the identified risk factors of exclusive breastfeeding practice.

The analysis used cross case analysis since more than one case was analysed. A matrix was developed to list the emerging themes based on the studied variables as mentioned above. Coding of themes was done several times to get general categories of other factors associated with exclusive breastfeeding practice. The types of analysis conducted were domain analysis and taxonomic analysis (Miles and Huberman, 1994) to show relationships of the assessed variables.

RESULTS

Table 1 show some selected socio-economic characteristics of the respondents. The respondents are categorised as middle-low socioeconomic class based on the level of education, occupation, and income. This was confirmed by the general impression of their housing condition and environment.

Exclusive breastfeeding practice was defined as exclusive breastfeeding practice at time of interview based on the following questions i.e. whether the infant is still breastfeeding, self-reported exclusive breastfeeding practice by the mothers, and whether the infant received pre-lacteal

feeding. By this definition, among mothers with infants ≤ 6 months, exclusive breastfeeding practice at time of interview was 17.5% (Table 1). This paper does not report the proportion of exclusive breastfeeding practice from birth up to the age of 6 months. In relation to social support in breastfeeding, nearly 100% of the fathers approved breastfeeding. Table 1 also suggests that fathers were the most preferred person to discuss problems in general and nutrition/health problems of the child; one of the helpers who did the household chores within 40 days after delivery; and one of the persons who suggested exclusive breastfeeding during pregnancy and right after delivery.

Maternal characteristics (nutritional status, age, education level, occupation, common problems during lactation, and level of knowledge on breastfeeding related matters), infant's characteristics (health status, sex, and parity), family characteristics (monthly income, family structure, assistance after delivery, someone to share general problems, someone to share about health/nutrition of the child, and felt workload by the nursing mothers), and external factors such as exposure to various sources of information as independent variables and exclusive breastfeeding practice as dependent variable were included in the logistic regression analysis. Using stepwise method, the analysis reveals that experience of common problems during lactation was the only significant independent variable associated with exclusive breastfeeding practice. The model fits at $p < 0.026$ with correct prediction of 81.6%. The analysis also revealed that mothers who encountered one or more problems during lactation had a 2.1 risk (95% CI: 1.1-3.8) of not performing exclusive breastfeeding (Table 2). The equation is as the following:

Logit (exclusive breastfeeding practice) = $-1.613 + 0.719$ (experience of lactation difficulties)

Table 1. Characteristics of respondents

<i>Characteristic</i>	<i>Response (n=445)</i>
Mother	
Age (mean \pm SD*, year)	22.77 \pm 5.48
Educational level: senior high school (%)	42.2
Occupation: house wife (%)	87.4
Nutritional status: normal BMI* of 18.5-24.9 (%)	64.5
Perceived workload: feeling overburden (%)	24.7
Level of breastfeeding knowledge: good (%)	56
Family	
Father's educational level: senior high school (%)	51.5
Father's occupation: entrepreneur and daily worker (%)	57.7
Income of Rp 500,000 – Rp 2,000,000 (%)	76.6
Family structure: nuclear family (%)	66.3
Household size of < 6 persons (%)	63.6
Infant	
Normal nutritional status:	
Between -2 and 2 SD weight-for-age Z score (%)	76.6
Between -2 and 2 SD weight-for-height Z score (%)	79.3
Between -2 and 2 SD height-for-age Z score (%)	81.8
Health status: experience of ARI* in last 2 weeks (%)	65
Parity: first child (%)	41.6
Sex: male (%)	47

*ARI: acute respiratory infection; BMI: body mass index; SD: standard deviation

Table 2. Summary of variables in the final model of logistic regression

	<i>B</i>	<i>S.E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp(B)</i>	<i>95% CI for Exp(B)</i>	
							<i>Lower</i>	<i>Upper</i>
Experience of lactation difficulties	.719	.312	5.309	1	.021	2.052	1.113	3.782
Constant	-1.613	.138	136.598	1	.000	.199		

Table 3. Cross-tabulation of exclusive breastfeeding practice and experience of lactation problems, n (%)*

Barrier	Outcome	
	Exclusively breastfeeding	Not exclusively breastfeeding
With lactation problems	40 (16.5)	202 (83.5)
No lactation problems	9 (25.7)	26 (74.3)

*Chi-square test, p value of 0.138

Table 3 shows that although not statistically significant, fewer mothers with one or more problems during lactation (16.5%) tended to practise exclusive breastfeeding compared to their counterparts who did not experience any problem during lactation (25.7%). The top four common problems during lactation experienced by half of the mothers were feeling emotionally upset, feeling tired and fatigued, sore nipple and perception of milk insufficiency (Figure 1). Furthermore, as many as 33% of mothers facing lactation-related problems would complement breastfeeding with formula milk, 3% would stop breastfeed-

ing, and the rest would continue breastfeeding.

Figure 2 relates the three types of father's roles and the four most common lactation-related problems experienced by the mothers. The father's roles were associated with more mothers who did not experience sore nipple and perceived breast milk insufficiency (Chi-square test, $p < 0.05$).

From the in-depth interview, it was reported by both fathers and mothers that fathers helped the mothers during lactation period by providing assistance for household chores and child caring (i.e.

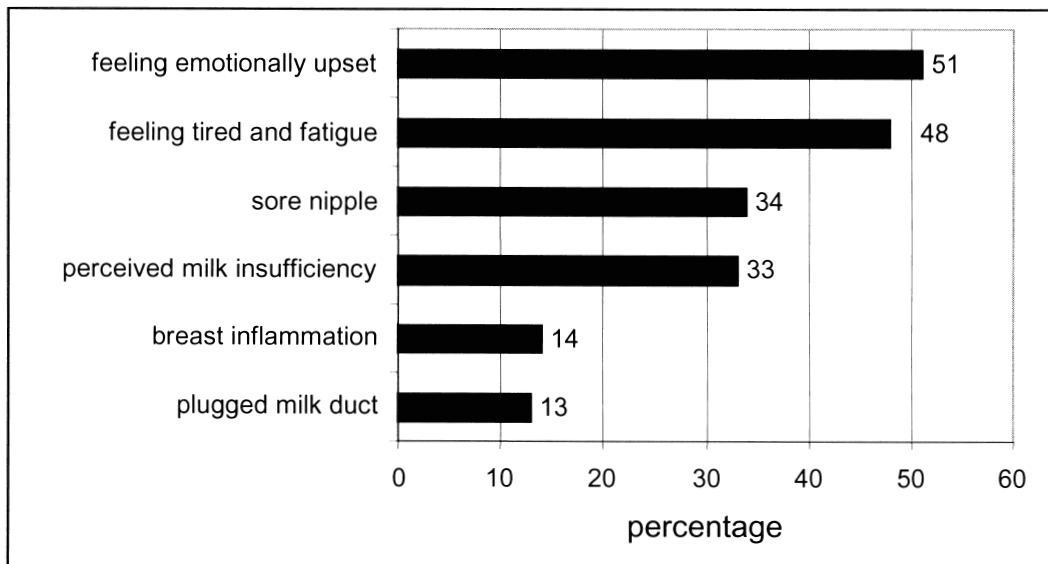


Figure 1. Proportion of mothers with problems during lactation (multiple responses)

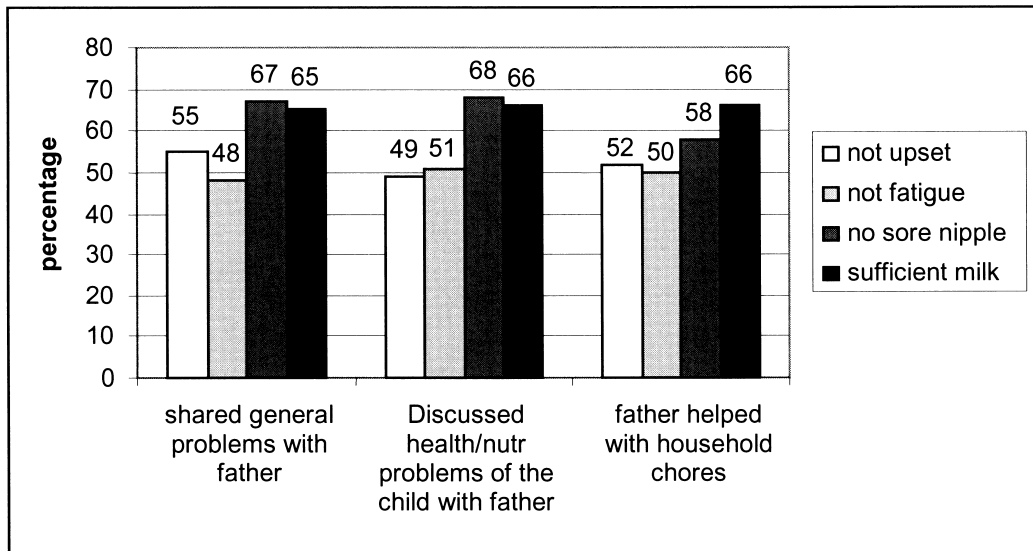


Figure 2. Cross-tabulation of father's roles and the four most common lactation-related problems

bathing, feeding, and playing), also comforting the mothers.

"When my wife is tired, she will go for an early sleep, then I will help her with the household chores." (Father, 27 year-old, a daily worker, accompanied the wife for ANC every month).

"When I feel tired, my husband would serve me with a massage on my back." (Nursing mother, 33-year old, an industrial worker).

Furthermore, it was also reported only by the fathers that they occasionally woke up at night to change the baby's diaper and massaged the wife when she was breastfeeding. On the other hand, mothers reported that they expected the fathers to gain more income so that mothers could eat nutritious food during lactation period.

"I want my husband to support me to eat more nutritious foods so that I can breastfeed successfully." (Nursing mother, 35 year-old, owned a small home-based store).

All fathers reported to have accompanied their wife during antenatal visits;

however none of them accompanied their wife in the examination room. The reasons according to the fathers include prohibition by the doctor, not common for men to enter the room, and too scared to enter the room.

"When I accompanied my wife to the midwife, I waited outside the examination room because I was too scared to enter the room." (Father, 35 year-old, a daily worker, accompanied the wife for ANC for 5 times).

DISCUSSIONS

Thousands of studies regarding breastfeeding up to now have shown the high significance of breastfeeding benefits for child survival. They also addressed multiple factors influencing low rates of exclusive breastfeeding, rendering the latter a difficult breastfeeding behaviour to prescribe. Among the factors hindering exclusive breastfeeding is the experience of lactation difficulties. A review by Giugliani (2004) on problems during

lactation found that it frequently includes breast engorgement, nipple pain/trauma, plugged milk duct, breast infection, and poor milk production. Incorrect positioning and latching on techniques, not frequent breastfeeding and breastfeeding on scheduled times, pacifiers and food suppliers, as well as perception of insufficient breast milk are important risk factors that can lead to low rates of exclusive breastfeeding.

The present study found that the first two most common problems encountered during lactation were related to emotional state and tiredness. The study reported that the majority of the subjects belonged to a nuclear family and were new parents. Parenting is a new circumstance for the couples and they need time to adjust. Paulson, Dauber and Leiferman (2006) stated that postpartum depression is often experienced especially by mothers. This has an effect on child outcomes, which include decrements in social development, behaviour problems, emotional difficulties and a range of physical health problems. Therefore, such feelings of being upset and tired found in this study are common but are potential risk factors of early termination of breastfeeding if not immediately identified and managed. The father as the closest family member, especially among those living within nuclear families, may also experience postpartum depression but carry a crucial role to assist in the new endeavour of parenting together with the mother. The qualitative part of this study also reported that fathers were able to identify the time when mother is tired, and furthermore to initiate action by providing assistance in some parts of household chores and child caring as well as ensuring comforts when needed.

Over the last 30 years, fathers' roles in caring for their children have been expanded by rapid and profound socio-economic changes and by society's evolving perceptions and expectations of fathers' roles (Coleman *et al.*, 2004).

Among patrilineal and matrilineal families of rural and urban households in Indonesia, fathers have also been identified to take important roles in child caring. Furthermore in rural settings, among nuclear families, more fathers from both kinship systems were involved in child caring when the wife had to be away from home (Februhartanty *et al.*, 2005). In the United States, father means more than "wage earner" or "provider" and now can include stay-at-home dads, caregiver of child and sharer of child care responsibilities. It even may include a grandfather caring for his grandchild (Coleman *et al.*, 2004). In Indonesia's context, these phenomena seem to be emerging as also shown by this study.

In breastfeeding, the father has been recently acknowledged to have significant roles since nowadays breastfeeding is considered as a triad of mother, father and the infant (Lawrence and Lawrence, 2005). Some studies confirm that the father has influences on breastfeeding decision (Freed, Fraley and Schanler, 1992; Giugliani *et al.*, 1994; Littman, Medendorp and Goldfarb, 1994; Arora *et al.*, 2000; Earle, 2000; Dearden *et al.*, 2002), breastfeeding initiation (Littman, Medendorp and Goldfarb, 1994; Schmidt and Sigman-Grant, 1999; Arora *et al.*, 2000; Dearden *et al.*, 2002; Wolfberg *et al.*, 2004) and duration of breastfeeding (Schmidt and Sigman-Grant, 1999; Susin *et al.*, 1999; Dearden *et al.*, 2002; Falceto, Giugliani and Fernandes, 2004) as well as risk factors for bottle feeding (Bar-Yam and Darby, 1997; Septiari, Februhartanty and Bardosono, 2006).

Sore nipple, which ranked as the third problem during lactation was also very commonly encountered worldwide. In her review, Giugliani (2004) explained the cause of sore nipple as related to improper positioning and latching on techniques. A "hands-off" breastfeeding technique was taught to midwives in hospitals who subsequently taught mothers in

their care in Bristol, UK. Significant increases were observed in the proportion of mothers exclusively breastfeeding at two weeks and six weeks and in any breastfeeding rates at two weeks after the technique intervention (Ingram, Johnson and Greenwood, 2002). Furthermore, using an antenatal session based around a leaflet, specifically written for grandmothers and partners, and including a demonstration of good breastfeeding position and attachment in addition to the discussion of specific issues around the health benefits and mechanics of breastfeeding was found to be acceptable, useful, and enjoyable by all participants, particularly for first-time parents in UK. The importance of fathers in providing emotional and practical support for breastfeeding mothers is highlighted, since those who were still breastfeeding at 8 weeks all felt that they were receiving similar or better support postnatally than they were antenatally (Ingram and Johnson, 2004). Although breastfeeding is considered a natural act, it is also a learned behaviour for both mother and the newborn. Therefore, this dyad needs to develop a good teamwork for breastfeeding to succeed. In this regard, the role of Indonesian fathers in helping to manage appropriate breastfeeding technique needs further investigation. However, the present study carries this potential role as fathers were reported to be one of the most preferred persons for sharing general domestic problems and problems related to the nutritional and health status of the infants.

Perception of insufficient breast milk ranks fourth on the list. Many confirm this lactation-related problem to be a risk factor that predisposes to the use of supplementary milk, which in turn contributes to early termination of breastfeeding (Arora *et al.*, 2000; Ertem, Votto and Leventhal, 2001; The American Association of Pediatrics, 2005; Septiari, Februhartanty and Bardosono, 2006). Signs of an infant who is adequately breastfed are usually

less highlighted during antenatal and postnatal counselling (Lawrence and Lawrence, 2005; The American Association of Pediatrics, 2005). This is partly the responsibility of the health professionals. However, fathers are also potential advocates for this matter, provided they are equipped with necessary knowledge and skills to manage this problem. This is to say that fathers should also be the target for antenatal and postnatal counselling. In a randomised controlled trial among expectant fathers in USA, breastfeeding was initiated by 74% of women whose partners attended the intervention class as compared with 41% of women whose partners attended the control class (Wolfberg *et al.*, 2004). In Indonesia, it is common that a father would accompany the wife for antenatal and postnatal care services, but this is limited to physical support that he would wait outside the examination room, thus hindering him from obtaining information regarding the maternal and child health topics specifically on breastfeeding related matters. Based on the results of the in-depth interviews, this study also found a similar phenomenon.

Bar-Yam and Darby (1997) in their review revealed that there are four styles of fathering i.e. involved, assistor, supervisor, and detached, based on father's participation in the decision to breastfeed and their involvement in caretaking. Involved fathers participate actively in the decision to breastfeed and in caring for their children. Assistor fathers follow their wives' lead regarding breastfeeding and they are actively involved in care taking. Supervisor fathers are involved with the breastfeeding decision and they provide little child care or household help. Detached fathers are not involved in child care or the breastfeeding decision. Falceto, Giugliani and Fernandes (2004) added that a good couple relationship was associated with more parental breastfeeding support and involvement in infant's care but not in the

breastfeeding practice. Furthermore a study among low income fathers and nursing mothers in USA (Schmidt and Sigman-Grant, 1999) found that a father's role in infant feeding included care for mother and infant, and use of the breast pump so that the father can feed. Therefore, the interventions involving fathers that showed good effect on breastfeeding practice include giving postpartum advice to fathers and mothers in Brazil by means of a video film discussing basic topics of breastfeeding and some home visits (Susin *et al.*, 1999), male-focused breastfeeding promotion corporate lactation programme in USA (Cohen, Lange and Slusser, 2002), teaching good positioning and support from fathers and families in UK (Ingram *et al.*, 2002), father-to-father support in USA (Stremmler and Lovera, 2004) and intervention classes on infant care and breastfeeding promotion among expectant fathers in USA (Wolfberg *et al.*, 2004).

A study in Italy concluded that fathers helped increase rates of full breastfeeding at 6 months by being taught how to prevent and manage the most common lactation difficulties such as perceived milk insufficiency, milk refusal from infant, sore and inverted nipples, and mother's returning to work (Pisacane *et al.*, 2005). Fathers' attitudes to breastfeeding postnatally were fairly similar to those before the baby was born, with breastfeeding in public and knowing how much milk the baby was getting having the most influence on whether they felt that their partners should continue to breastfeed (Ingram and Johnson, 2004).

In the present study, a father's role as a companion to share general domestic problems and nutrition/health problems of the child may be regarded as some form of emotional support. Furthermore, a father's role on provision of help in household tasks 40 days after delivery is considered more as a physical support; however it may be further perceived by the nursing

mothers as emotional attention from the fathers. These phenomena were implied from Figure 2 in which all types of father's roles were related with lower proportions of reported sore nipple and perceived breast milk insufficiency. The explanation possibly includes the fact that when the nursing mother is emotionally calm and relaxed, correct breastfeeding technique is enhanced, thus reducing risk of developing sore nipple (Giugliani, 2004; Lawrence and Lawrence, 2005). Furthermore, relaxed emotional state is related with enhanced work of prolactin and oxytocin, two hormones known to play roles in the production of breast milk (Lawrence and Lawrence, 2005). Although further confirmation is needed on the roles of Indonesian fathers to help manage lactation problems, the data from this study show that fathers do have the potential to do so.

Limitations of the study include the fact that exclusive breastfeeding practice was assessed cross-sectionally based on some proxy queries, therefore a careful interpretation on the findings should be borne in mind.

CONCLUSIONS AND RECOMMENDATIONS

This study finds that higher proportion of mothers who did not experience lactation difficulties practised exclusive breastfeeding as compared to their counterparts who experienced at least one lactation difficulty. The study also reveals the relationship between emotional support provided by the fathers with fewer reported lactation-related problems.

The results of this study confirm the need to focus on lactation difficulties and how to overcome it during lactation counseling in exclusive breastfeeding promotion. Furthermore, it is strategic that further studies specifically address the father's potential roles in helping manage these common problems during lactation.

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