Relationships Between Demographic Characteristics, Sources And Facilities Of Breastfeeding Information And Breastfeeding Practice Among Mothers In Medan, Indonesia

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Abstract—Limited research, sources and facilities of breastfeeding information has been undertaken regarding breastfeeding practice among mothers with infants’ age 1-6 months in Medan, Indonesia. This study identified the relationships between demographic characteristics, sources and facilities of breastfeeding information and breastfeeding practice. A descriptive cross-sectional design was applied to achieved aim of the study. Participants were selected from five Primary Health Centres (PHC) in Medan, using a multi-stage sampling method. A total of 374 participants were selected and asked to complete by self-administered questionnaires. Questionnaires composed of the demographic characteristics, sources and facilities of breastfeeding information and breastfeeding practice were provided based upon the validity and reliability test. Data were analyzed using descriptive statistics, Pearson correlation coefficient and Spearman correlation coefficient and Point Biserial Correlation Coefficient with a significant level was established at \( p < 0.05 \). The results of the study revealed that breastfeeding practice of mothers were at a moderate level (M = 2.84, SD = 1.70). Only 9.1% of mothers performed exclusive breastfeeding practice. Sources and facilities of breastfeeding information was statistically positive relationships with breastfeeding practice \((r = 0.12, \ p < 0.05)\). Infant’s age was statistically has negative correlation with breastfeeding practice. However, mothers age, education levels, parity, maternal employment, family income were not significantly correlated with breastfeeding practice. In conclusion, breastfeeding practice was influenced by sources and facilities of breastfeeding information and infant’s age. Therefore, this study can be as a reference for nurses to provide the information about breastfeeding practice. Furthermore, the policy maker should provide the appropriate rooms or places that facilitate mothers to improve breastfeeding practice in Medan, Indonesia.

Keywords— Breastfeeding Practice, Sources and Facilities, Demographic Characteristics

I. INTRODUCTION

Breastfeeding has been recognized worldwide for its multiple benefits for both of infants and mothers. Among the major benefits of breastfeeding are to improve infants nutritional status, reduce morbidity and mortality rates among infants, especially during the first year of life, and reduce health care cost of family and society. Breastfeeding is also important to improve health of the mother and development of infants and children. World Health Organization (WHO) has recommended mothers to provide breastfeeding immediately after birth and provide exclusive breastfeeding to infants until age of six months. Breastfeeding should be continue until infant age of 2 years or beyond with additional supplementary food [1]. Even though WHO has been promoting breastfeeding world wide, particularly in developing countries. Only 35% of infants younger than 6 months are exclusively breastfed worldwide [1], [2].

Inappropriate breastfeeding practices, has impacted morbidity and mortality of infants including 45% of neonatal infectious deaths and 30% of diarrhea. Every year, approximately half of the 10 million deaths of children younger than 5 years old are caused by a direct or indirect consequence of malnutrition including suboptimal breastfeeding [3]. Therefore, it is very important to understand how mothers perform breastfeeding practice and what factors influence breastfeeding practice.

Many factors influence breastfeeding practice. Previous studies examined about age, maternal employment status, educational levels, parity, family income and infant’s age associated with breastfeeding practice. Demographic characteristics have found to be important factors as obstacle to increasing breastfeeding practice including mothers age, educational levels, family income, parity, and employment status of infants 1-6 months [4],[5],[6]. Another characteristic such as infants age also have significantly decreased of breastfeeding practice [6],[7]. Furthermore, sources and
facilities of breastfeeding information was important factors to provide breastfeed to their infants [8],[9],[10]. However, the findings still inconsistent findings.

In Indonesia, several programs have been implemented by the government to raise the prevalence of breastfeeding practice including Baby Friendly Hospital Initiative (BFHI) program and it knew as Rumah Sakit Sayang Ibu dan Bayi, and an obligation and responsibility provide facilities for breastfeed their infants [11,12] However, the prevalence of breastfeeding practice, especially in North Sumatera is still low [13]. Therefore, with this background, this study was conducted to examine the relationships between demographic characteristics, sources and facilities of breastfeeding information and breastfeeding practice among mothers with infant’s age 1-6 months.

II. MATERIAL AND METHOD

A. Design

This research study was undertaken by deploying a cross-sectional design. The hypothesis of this study was that there were significant relationships between demographic characteristics, sources and facilities of breastfeeding information and breastfeeding practice among mothers with infants age 1-6 months.

B. Sample

The samples of this study were 374 mothers with infants ages 1-6 months. Participants were recruited from five Primary Health Centres (PHC) in Medan, using multi-stage sampling method. The inclusion criteria were; mothers of infants age 1-6 months, mothers aged were 18 years old and over, living in Medan, Indonesia, able to read and write in Indonesian language, and willing to participate in this study.

C. Research instruments

Data collection was performed by deploying instruments consisting of three questionnaires; a) Demographic Data Questionnaire was used to assess personal data that includes, mother’s age, educational level, maternal employment, family income, mother’s parity, and infants age, b) Breastfeeding Practice Quality Questionnaire was used for measuring breastfeeding practice, originally developed by Biswas [14]. This questionnaire consists of 6 items, which answering yes or no and justification open-end questions. The score was categorized into three levels using mean score, low level (score 0 to 2.00), moderate level (score 2.01 to 4.00), and high level (score 4.01 to 6.00) of breastfeeding practice. The reliability obtained Cronbach’s alpha 0.88. c) Sources and Facilities of Breastfeeding Information Questionnaire were developed by Zainal [10]. This questionnaire consists of 7 items and the reliability obtained Cronbach alpha. 0.82

D. Ethical Review

This study received the approval of research protocol from the committee of the Ethical Review Board for Research Involving Human Research Subjects, Boromarajonani Collage of Nursing NopparatVajira (BCNNV) committee (ERB no 45/2014).

E. Data Collection

After the researcher obtained the ERB approval and the permission letter granted by head of health department of Medan, the researcher and research assistant met with the participants who came to follow up the immunization schedule of their children and provided explanation of the study to potential participants using an information sheet. The mothers who agreed to participate were asked to perform self-administered questionnaires. Data was collected from August to September 2014.

F. Data Analyzed

Descriptive statistics were used to analyze for frequency, mean, standard deviation, and percentage. The relationships between mothers age, infants age, sources and facilities of breastfeeding information and breastfeeding practice were used Pearson Product Moment Correlation. The relationships between educational level, family income and breastfeeding practice were used Spearman coefficient correlation. Point biserial was used to examine relationship between maternal employment and breastfeeding practice. Data were analyzed using the Statistical Package for the Social Science (SPSS) version 16.

III. RESULTS

A. Demographic Characteristics

Majority of participants were aged between 28-36 years old (54.3%), with age-range of 19-45 years old and the average age was 29.4 years old. Half of the participants had completed senior high school, unemployed (50.0%), multiparity (66.0%), family's monthly income was in the range of IDR. 1,500,000 – 3,000,000 (71.7%), and the average for infants’ age was 4 months (23.8%).

TABLE I. FREQUENCIES AND PERCENTAGES OF DEMOGRAPHIC CHARACTERISTICS OF PARTICIPANTS (N = 374).

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 – 27</td>
<td>137</td>
<td>36.6</td>
</tr>
<tr>
<td>28 – 36</td>
<td>203</td>
<td>54.3</td>
</tr>
<tr>
<td>37 – 45</td>
<td>34</td>
<td>9.1</td>
</tr>
<tr>
<td>Mean = 29, SD = 5.20, Range = 19-45 years old</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Demographic Characteristics | N | %
--- | --- | ---
Primiparity | 127 | 34.0
Multiparity | 247 | 66.0

Education level
- Elementary school | 15 | 4.0
- Junior high school | 43 | 11.5
- Senior high school | 187 | 50.0
- College | 129 | 34.5

Maternal Employment
- Employment | 184 | 49.2
- Unemployment | 190 | 50.8

Family monthly income
- IDR. < 1,500,000 | 28 | 7.5
- IDR. 1,500,000-3,000,000 | 268 | 71.7
- IDR. > 3,000,000 | 78 | 20.9

Infants age
- 1 month | 52 | 13.9
- 2 months | 73 | 19.5
- 3 months | 71 | 19.0
- 4 months | 89 | 23.8
- 5 months | 50 | 13.4
- 6 months | 39 | 10.4

Mean = 3, SD = 1.53

The result showed that roughly two-third of the participants (63.4%) received adequate sources and facilities of breastfeeding information (M= 3.21, SD= 1.29). The result also indicated that the majority of the participants had received information about breastfeeding from health care providers including doctors, nurses, and midwifery (see table 2).

Table 2 shows the frequencies, percentages, mean, standard deviation, and range of sources and facilities of breastfeeding information (N= 374).

<table>
<thead>
<tr>
<th>Sources and facilities of breastfeeding</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>85</td>
<td>22.7</td>
</tr>
<tr>
<td>Enough</td>
<td>237</td>
<td>63.4</td>
</tr>
<tr>
<td>Good</td>
<td>52</td>
<td>13.9</td>
</tr>
</tbody>
</table>

Mean = 3.21, SD =1.29, Range =0-7

Regarding to breastfeeding practice, the result found that majority of the participants (79.1%) did not start feeding their infants with their breast-milk immediately after birth. More than half of participants provided prelacted food (52.7%), most of mothers (88.2%) were giving breastfeeding to their infants during data collection period. The ratio between participants who were providing only breast-milk to those participants providing breast-milk with either baby-formula milk or mixed food was roughly 1:10 (9.10% and 90.9% respectively), and those who provided water to their infants (46.5%). Moreover, breastfeeding practices among the participants were generally at a moderate level (Mean = 2.84, SD = 1.70) (see Table 3).

Table 3 presents the frequencies, percentages, mean, standard deviation, and range of breastfeeding practice (N= 374).

<table>
<thead>
<tr>
<th>No</th>
<th>Statement</th>
<th>Yes</th>
<th>N</th>
<th>No</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I start breast milk immediately after birth</td>
<td>78</td>
<td>20.9</td>
<td>296</td>
<td>79.1</td>
</tr>
<tr>
<td>2</td>
<td>I stop breastfeeding to my child</td>
<td>44</td>
<td>11.8</td>
<td>330</td>
<td>88.2</td>
</tr>
<tr>
<td>3</td>
<td>I provide prelacted food to my baby</td>
<td>197</td>
<td>52.7</td>
<td>177</td>
<td>47.3</td>
</tr>
<tr>
<td>4</td>
<td>I provided breast milk only to my baby until now</td>
<td>34</td>
<td>9.1</td>
<td>340</td>
<td>90.9</td>
</tr>
<tr>
<td>5</td>
<td>I provide formula milk or mixed food for my baby</td>
<td>340</td>
<td>90.9</td>
<td>34</td>
<td>9.1</td>
</tr>
<tr>
<td>6</td>
<td>I provide water for my baby</td>
<td>174</td>
<td>46.5</td>
<td>200</td>
<td>53.5</td>
</tr>
</tbody>
</table>

Mean = 2.84, SD= 1.70, Range= 0-6

Result showed that the mother's age, parity, education, maternal employment, family's income, each was not significantly associated with breastfeeding practice (r =.002,r =.067, r =.021, r =.024, r =.018 at p> .05, respectively). Infant's age was negative, statistically significant, and associated with breastfeeding practice (r= -.18, p<.01). Meanwhile, sources and facilities of breastfeeding were positively associated with breastfeeding practice (r =.12, p<0.05) (see table 4).

Table 4 shows the associated between demographic characteristics and breastfeeding practice (N= 374).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Breastfeeding practice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>r</td>
</tr>
<tr>
<td>Mothers age (a)</td>
<td>0.002</td>
</tr>
<tr>
<td>Infants age (a)</td>
<td>-0.180**</td>
</tr>
<tr>
<td>Maternal employment (b)</td>
<td>0.021</td>
</tr>
<tr>
<td>Educational level (c)</td>
<td>0.024</td>
</tr>
<tr>
<td>Family income (c)</td>
<td>0.018</td>
</tr>
<tr>
<td>Parity (c)</td>
<td>0.067</td>
</tr>
<tr>
<td>Sources and facilities of breastfeeding</td>
<td>0.122</td>
</tr>
</tbody>
</table>

Variable * = Pearson coefficient correlation,
Variable * = Point biserial coefficient correlation,
Variable * = Spearman rank correlation coefficient.
** Correlation is significant at the level 0.01 level (2-tailed)
* Correlation is significant at the level 0.05 level (2-tailed)
IV. DISCUSSIONS


The result showed that the overall quality of breastfeeding practice among lactating mothers in Medan was at a moderate level (M = 2.84, SD = 1.70), then again findings from previous studies on breastfeeding practice in Medan were limited. However, this study has found that only 9.1% of participants reported practicing exclusive breastfeeding to infants up to the infant's age of six months. Whereas a previous study that was conducted in Indonesia reported that 12% of mothers practiced exclusively breastfeeding [15]. These two findings are, however, inconsistent with that of MoH which reported the prevalence of exclusive breastfeeding to be 18.4% [16].

There might be several reasons behind the moderate level of overall breastfeeding practice among lactating mothers in Medan, Indonesia, and the reasons include the moderate level of family's income, limited facilities of breastfeeding in public places, mothers perceiving insufficient own breast-milk, and providing pre-lactated food to their infants after mothers having given birth to them. In this study, majority of the participants had moderate family's income which could mean they could afford to buy formula milk for their infants and the facilities to carry out breastfeeding practice in public places were limited. Moreover, mothers in this study also perceived insufficiency of their own breast-milk (32.9%). In summary, therefore, the aforementioned reasons might have affected the breastfeeding routine among mothers participating in this study.

3. Relationships between demographic characteristics, and breastfeeding practice among mothers with infants age 1-6 months

Current findings showed that there was no significant relationship between demographic characteristics of participants, including mother’s age, family’s income, educational level, maternal employment, parity, with breastfeeding practice. However, Infant’s age showed a statistically significant negative relationship with breastfeeding practice.

Mother’s age did not show a significant relationship with breastfeeding practice, but however, this finding was not consistent with findings of the previous studies which showed a relationship between mother's age and breastfeeding practices, the younger mothers were more likely to provide exclusive breastfeeding practice than the older mothers [6, 17]. Majority of participants in this study were in the age-range of 28 to 36 years old and this age group is recognized as productive age group [16]. However, in this study the mother's age could not conclusively indicate being a contributing factor to their breastfeeding practice. The contrasting finding of this study could be explained by the mother's perceived insufficiency of their own breast-milk production as cited by 32.9% of the participants. In Indonesia, mothers who believe their own breast-milk is insufficient tend to wean their babies and provide them instead with supplementary foods early, even before the infants reaching the age of six months old [18]. Perceiving insufficiency of their own breast-milk tends to influence breastfeeding equally in both older and younger mothers, and therefore, in this study, mother’s age could not be indicative of breastfeeding practice. Moreover, this finding is supported by previous studies which found mother’s age was not related to breastfeeding practice [10], [19].

According to family's income, no significant association between family's income and breastfeeding practice was found which implied that participants in this study, whose moderate level of breastfeeding practices were reported, could be coming from low or high family's incomes. However, this finding was inconsistent with findings from several previous studies where mothers coming from family with higher income were more likely to perform exclusive breastfeeding practice [19], [20],[21], then again, based on the North Sumatera Province Central Bureau of Statistics in 2012, majority of the people in Medan had a moderate level of family's income which conformed with the participants of this study. Thus, this could explain why a significant proportion of participants (32.9%) with their own perceived insufficient breast-milk supply had led them to introduce supplementary foods to their infants at an earlier age. This study also found that large proportion of the participants (90.9%) introduced formula milk to their infants before they reached the age of six months old. Therefore, a higher or lower family's income could not have effect on their breastfeeding practice and these results are supported by findings of several previous studies which found family's income bearing no association with breastfeeding practice [19].

As for educational level, current data showed that the level of education was not associated with breastfeeding practice in contrary to the previous studies which showed a significant relationship between the level of education of lactating mothers and breastfeeding practices [6],[17],[23],[24]. A possible reason of these different findings can be explained by the region of residing participants in this study, and in similarity to earlier study[25], and since this study was also conducted in an urban area, it was easier for participants to find the information related to breastfeeding practice. In Indonesia, for mothers who live in urban areas, it is not only convenient to search for information about breastfeeding but they are also exposed to advertisements of formula milk [18]. As similarly reasoned by previous studies advertisements tended to encourage mothers to believe that the formula milk is nutritious and mothers get the impression that the formula milk is better than their own breast-milk [22], and it is possible to conclude that whether participants had a high or low education, it could not be taken as a clear indicator influencing their breastfeeding practice. Similarly, several previous studies found that the education level was not associated with breastfeeding practice [10], [19].
Based on results of demographic data of participants, maternal employment was not associated with breastfeeding practice and this result was supported by previous study that the maternal employment was not significantly correlated with breastfeeding practice [19]. It therefore indicates that being employed or unemployed did not contribute anything to the breastfeeding practice. These results are consistent with previous studies conducted in Indonesia which found unemployed and employed mothers tended to provide formula milk to their infants before they reached the age of six months old [26]. This finding could possibly be explained as follows; first, this would be related to knowledge about expressed breastfeeding including how to storage breast-milk and the facilities of extracting breast-milk. This study found that more than half of participants (54%) did not know how to store breast-milk. When the mothers left their infants at home, they prepared formula milk for their infants. Second, of the 374 participants only a small proportion (9.6%) who were employed, and were provided with appropriate room or place as well as facilities for breastfeeding, which of course, could influence breastfeeding of infants by participants. This finding was consistent with previous finding which found that appropriate room or place, facilities for extraction of breast-milk and a refrigerator at work place influenced employed mothers to continue breastfeeding practice[27].

According to parity, there was no statistically significant association with breastfeeding practice found and such was supported by some previous studies showing no correlation between both primiparity and multiparity with breastfeeding practice [10],[19],[28]. This could possibly be related to the mothers perceiving insufficient breast-milk production and knowledge of participants about how to storage the breast-milk, and this situation brought about participants weaning and introducing supplementary food to their infants at the earlier stage. Based on this reason, it is possible to conclude that whether primiparity or multiparity, it was not a clear indicator for breastfeeding practice. Thus, it can be concluded that the parity is not correlated with breastfeeding practice.

The current study found that infant's age was negatively associated with breastfeeding practice. This indicates that increased infant's age would result in reduced breastfeeding practice. This study was consistent with previous studies which found that infant's age had a significant relationship with breastfeeding practice [6,29]. A possible reason for this finding might be that mothers perceive that their infants are growing up and need additional nutrition to enhance growth and development. As stated by earlier studies, mothers introduced supplementary food when they felt that their infants were getting older and would be able to tolerate these foods even before reaching six months of age [6]. Such finding is supported by other study carried out in Indonesia which showed that about 74% of mothers provided complementary feeding to their infants before reaching six months of age [15]. Therefore, growing age of infants would decrease the proportion of breastfeeding practice.

4. Relationship between sources and facilities of breastfeeding information and breastfeeding practices among mothers with infant’s age 1-6 months.

The finding showed that the enabling factors such in terms of sources and facilities of breastfeeding were associated with breastfeeding practices. This indicated that the mothers who received sources and facilities of breastfeeding would perform breastfeeding practice. This finding was consistent with previous studies, which reported that the sources and facilities of breastfeeding and breastfeeding practice were significantly related [9],[10].

The possible explanation for this finding is that the participants who received information from sources such as doctors, nurses and midwives in antenatal care, maternity wards and child health centers were more likely to perform breastfeeding practice. This study, carried out in urban area and the information related to breastfeeding would influence mothers to provide breastfeeding practice. As stated by a previous study, it was easier for mothers who lived in urban areas to get information about breastfeeding than the rural areas [25]. Therefore, a relationship was found between sources and facilities of breastfeeding and breastfeeding practices.

IV. CONCLUSIONS

Demographic Characteristics including mother’s age, level education, family income, maternal employment, parity and breastfeeding practice were not correlated with breastfeeding practice. However, infants age was negatively significant associated with breastfeeding practice. Furthermore, sources and facilities of breastfeeding information was significantly associated with breastfeeding practice. Therefore, this study can be as a reference for nurses to promote and improve breastfeeding practice among mothers with infants age 1-6 months. Based on these findings, policy maker in Medan should provide appropriate rooms or places that facilitated of mothers during breastfeeding their infants in public places to raise the level of breastfeeding practice among mothers with infants age 1-6 months.

ACKNOWLEDGEMENT

The authors thanks to the mothers who have infants age 1-6 months in Medan for their participation, Directorate General of Higher Education (Ministry of Research, Technology, and Higher Education of the Republic of Indonesia), Boromarajonani College of Nursing NopparatVajira affiliated Kasetsart University, and Sari Mutiara Indonesia University for support this study.
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