การปฏิบัติและสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่ของมารดาวัยรุ่นชาวเนปาลที่มีบุตรคนแรก

Breastfeeding Practice and Self-efcacy among First-time Nepalese Adolescent Mothers

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บทคัดย่อ

มารดาวัยรุ่นมีการเลี้ยงบุตรด้วยนมมารดาและให้นมมารดาอย่างต่อเนื่องน้อยกว่ามารดาที่อยู่ในวัยผู้ใหญ่ ทั้งนี้มีปัจจัยหลายประการที่มีอิทธิพลต่อการให้นมมารดาโดยเฉพาะสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่ การศึกษาพรรณนาเชิงเปรียบเทียบนี้มีวัตถุประสงค์เพื่อศึกษาการปฏิบัติการเลี้ยงบุตรด้วยนมมารดาและเพื่อเปรียบเทียบสมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาในมารดาวัยรุ่นชาวเนปาลที่มีการปฏิบัติการเลี้ยงบุตรด้วยนมมารดาที่แตกต่างกันในช่วงหกเดือนแรกหลังคลอด กลุ่มตัวอย่างเป็นมารดาวัยรุ่นชาวเนปาลที่มีบุตรคนแรก จำนวน 114 คน ที่พาบุตรมารับบริการที่คลินิกสุขภาพเด็กดี โรงพยาบาลมารดาและสุขภาพสตรีพาโรพาการ์ กัตมันดู ประเทศเนปาลในช่วงหลังคลอด 6 สัปดาห์ และติดตามสัมภาษณ์ทางโทรศัพท์ เกี่ยวกับการปฏิบัติการเลี้ยงบุตรด้วยนมมารดาในช่วงหลังคลอด 3 เดือนและ 6 เดือน จำนวน 111 คน และ 100 คน ตามลำดับ เครื่องมือที่ใช้รวบรวมข้อมูลคือแบบวัดสมรรถนะแห่งตนในการเลี้ยงบุตรด้วยนมมารดาฉบับย่อพัฒนาโดยเดนนิส (2002) ซึ่งมีค่าสัมประสิทธิ์ความสอดคล้องภายในของแบบวัดเท่ากับ 0.86 และแบบประเมินการเลี้ยงบุตรด้วยนมมารดาพัฒนาโดยยิ้มแย้ม (2013) มีค่าความเที่ยงโดยการทดสอบซ้ำเท่ากับ 1.00 วิเคราะห์ข้อมูลใช้สถิติพรรณนาและความแปรปรวนทางเดียว

ผลการวิจัยพบว่า อัตราการเลี้ยงบุตรด้วยนมมารดาอย่างเดียวในระยะ 6 สัปดาห์ (93.9%) และ 3 เดือน (93.7%) ซึ่งอยู่ในระดับสูงมาก ขณะที่อัตราการเลี้ยงลูกด้วยนมแม่อย่างเดียวในระยะ 6 เดือนลดลงอย่างมากเป็น 69.0% ในระยะ 6 สัปดาห์ และ 3 เดือนหลังคลอด มารดาที่ให้นมมารดาอย่างเดียวและมารดาที่ให้นมมารดาร่วมกับนมผสมมีคะแนนสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่สูงกว่ามารดาที่ไม่ได้ให้นมมารดาอย่างมีนัยสำคัญทางสถิติที่ระดับ .001 และ .05 ตามลำดับ และในระยะ 6 เดือนหลังคลอด มารดาที่ให้นมมารดาอย่างเดียวมีคะแนนสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่สูงกว่ามารดาที่ให้นมมารดาร่วมกับนมผสมและมารดาที่ไม่ได้ให้นมมารดา อย่างมีนัยสำคัญทางสถิติที่ระดับ .001 อย่างไรก็ตาม คะแนนสมรรถนะแห่งตนในการเลี้ยงลูกด้วยนมแม่ระหว่างมารดาที่ให้นมมารดาร่วมกับนมผสมและมารดาที่ไม่ได้ให้นมมารดาพบว่าไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ ผลการศึกษานี้น่าจะเป็นข้อมูลที่เป็นประโยชน์สำหรับ

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บุคลากรสุขภาพในการพัฒนากลวิธีเพิ่มสมรรถนะแห่งตนเพื่อส่งเสริมการเลี้ยงบุตรด้วยนมมารดาอย่างเดียวในกลุ่มมารดาวัยรุ่นชาวเนปาล โดยเฉพาะในช่วงหกเดือนแรกหลังคลอด

คำสำคัญ : การปฏิบัติเลี้ยงลูกด้วยนมแม่, การรับรู้ความสามารถของตนเองในการเลี้ยงลูกด้วยนมแม่, วัยรุ่น

Abstract

Young mothers are less likely to initiate and continue breastfeeding compared to adult mothers. There are several factors that influence breastfeeding, especially breastfeeding self-efficacy. This descriptive comparative study aimed to describe breastfeeding practice within the first six months of the postpartum period and to compare breastfeeding self-efficacy among Nepalese adolescent first-time mothers who practised different types of breastfeeding. One hundred and fourteen first-time Nepalese adolescent mothers were interviewed on breastfeeding self-efficacy and breastfeeding practice at six weeks postpartum at the Well Baby Clinic in Paropakar Maternity and Women's Hospital, Kathmandu, Nepal. However, 111 and 100 mothers were followed-up by telephone interviews on breastfeeding practice at three months and six months postpartum perspectively. The research instruments included the breastfeeding self-efficacy short-form scale (BSES-SF) developed by Dennis (2002) and the breastfeeding practice developed by Yimyam (2013). Validity of the instruments was tested by the original authors. The reliability coefficients of the BSES-SF was found to be 0.86 and the breastfeeding practice scale was 1.00 on reproducibility test. Data were analyzed using descriptive statistics, and One Way analysis of Variance (ANOVA).

The results revealed that the rate of exclusive breastfeeding practice at six weeks (93.9%) and three months (93.7%) were very high, whereas the rate of exclusive breastfeeding practice at six months decreased sharply to 69.0%. At six weeks and three months, exclusive and partial breastfeeding mothers had higher scores of breastfeeding self-efficacy compared to no breastfeeding mothers at the significant level of .001 and .05 respectively. At six months, exclusive breastfeeding mothers had higher breastfeeding self-efficacy score than those with partial breastfeeding and no breastfeeding at the significant level of .001. However, there was no difference in breastfeeding self-efficacy between partial breastfeeding and no breastfeeding mothers. The result of this study could be useful for health care providers in developing strategies to enhance breastfeeding self-efficacy for exclusive breastfeeding practice among Nepalese adolescent mothers, especially at six months when the exclusive breastfeeding rate is dramatically low.

Key words: Breastfeeding practice, Breastfeeding Self-efficacy, Adolescent mother

Background and significant

Breastfeeding has long been recognized as being superior to artificial feeding for a variety of reasons. The evidence of the nutritional, immunological, behavioral, economic and environmental benefits of breastfeeding for both developed and developing countries is overwhelming and indisputable. Scientific studies show that it has significant benefits for infants, mothers, and societies (American Academy of Pediatrics [AAP], 2005; United Nations Children's Fund [UNICEF], 2012; World Health Organization [WHO], 2002, 2009; Yimyam, 2013). Breastfeeding has been established important intervention to reduce neonatal and child mortality rate (UNICEF, 2013). Early initition of breastfeeding in first hour could prevent 22% of worlwide neonatal deaths (Edmond, Zandoh, Quigley, Amenga-Etego, Owusu-Agyei, & Kirkwood, 2006). Colostrum, the rich milk produced by the mother during the first few days after delivery reduces the chances of death in the neonatal period by five times (Boccolini, Carvalho, Oliveira, & Escamilla, 2013). It also enhances brain development, provides essential nutrients as well as antibodies to boost the infant's immune system (Kramer, et al., 2008; UNICEF, 2013) resulting in less diarrhea, reducing respiratory infection, ear infections, and reduced risk of hypothermia (Laura, Christa, Fischer, Adi, Cesar, & Black, 2011) and prevent obesity risks in newborns (WHO, 2009).

Furthermore, maternal benefits of breastfeeding are to promote stronger maternal uterine contractions, reduce the chances of breast cancer, ovarian cancer among mothers (Chan & Heung, 2011), lower risk of chronic disease such as diabetes, heart disease and asthma (WHO, 2009). Hormones created during breastfeeding create feeling of warmth and calm resulting improves bonding between mother and child (WHO, 2002; 2009). Milk production serves as child spacing agent by lactational amenorrhoea which is especially important in developing countries' context where the awareness, acceptability and availability of modern family planning methods are very low (WHO, 2009; Ministry of Women and Child [MCW] 2012). Therefore, the WHO (2002, p.5) recommends the practice of exclusive breastfeeding and states that "*Infants should be exclusively breastfed for the first six months of their lives, followed by continued breastfeeding for up to two years to achieve optimal growth, development and health of the infant.*" The Baby-Friendly Hospital Initiative (BFHI) is a global initiative by the WHO and UNICEF to encourage hospital to offer an optimal level of care for lactation. The Paropakar Maternity and Women's hospital in Nepal (Well Baby Clinic hereafter) also has adopted the BFHI 10 steps.

In this study, breastfeeding practice is classified into three types. First, *exclusive breastfeeding* is a practice of a mother in providing infants only her breast milk. No other liquid or solid is given, not even water with the exception of oral rehydration solution or drops/ syrups of vitamins or breast milk. Second, *partial breastfeeding* is a practice of a mother giving her baby a combination of breastfeed and artificial feeds. Third, *no breastfeeding* is a practice of a mother in providing her infant formula or non-maternal expressed milk (WHO, 2002).

Although there are strong evidences in support of breastfeeding for the first six months after birth (WHO, 2002), its prevalence worldwide has remained low (WHO, 2014). In Nepal, the prevalence of exclusive breastfeeding rate among both adult and adolescent mothers was 74.0% at birth, 78.0% at one month, and 53.0% at six months (Nepal demographic health survey [NDHS], 2011; Ulak, Chandyo, Mellander, & Shrestha, 2012). The reason for the high initiation of breastfeeding practices in Nepal may be attributed to their deep rooted cultural practices and beliefs (Kumar et al., 2006). However, adolescent mothers are more likely to wean/stop breastfeeding than adult mothers (Aryal, 2007; Khanal, Adhikari, Sauer, & Zhao, 2013).

An adolescent person is someone between the age of 10 to19 years old. Studies have suggested that adolescent mothers lack knowledge and are unprepared for motherhood and breastfeeding due to the immaturity (Hunter, 2008; Nelson, 2009; WHO, 2014). As a result, most of these mothers discontinue breastfeeding (Smith, Coley, Labbok, Cupito, & Nwokah, 2012). At present, the number of adolescent mothers is very high in Nepal due to early marriage and early pregnancy. Previous studies showed that the rate of marriage for Nepalese girls under 18 is 41.0%, and 52.3% of Nepalese girls are married by the age of 18 (Nepal Demographic Health Survey [NDHS], 2011). Moreover, 17.0% of girls under the age of 20 had given birth or were pregnant with their first child (NDHS, 2011). Therefore, it was interesting to investigate breastfeeding practice and its influences among Nepalese adolescent mothers.

Several studies have found that young mothers are less likely to initiate and continue breastfeeding than adult mothers (Atuyambe, et al, 2008; Infant Feeding Surveillance System [IFSS], 2012; Ogbonna & Daboer, 2007). A study in Bangladesh infers that adult mothers breastfeed their babies for a longer period in comparison with younger mothers (Giashuddin & Kabir, 2003). Likewise, a Ugandan study found that adolescent mothers were more likely to delay initiation of breast feeding compared to adult mothers (Atuyambe et al., 2008). An American study also showed that breastfeeding rates remain disproportionately low among adolescent mothers, data suggest that only 60.0% of women less than 20 years old initiate breastfeeding, whereas almost 80.0% of women over 30 do so. Additionally, only 20% of young women are still breastfeeding at 6 months, compared to 50% of older women (AAP, 2005). In addition, a study done in Durham, UK, in 2006-2011 showed that 84.0% of adolescent mothers (age 15-19) initiate breastfeeding versus 92.0% among adult mothers (age 20 and older), and only 19.0% of adolescent mothers breastfeed their babies for six months or longer, compared to 52.0% of adult mothers (Infant Feeding Surveillance System [IFSS], 2012). Moreover, a Brazilian study found that adolescent mothers were 1.5 times more likely to cease breastfeeding before their babies were six months of age compared to adult mothers (Santo et al., 2007); higher prevalence of initiation of early weaning has also been found among young mothers compared to adult mothers (Frota & Marcopita, 2004). Previous

studies revealed that Nepalese adolescent mothers' breastfeeding practice was significantly lower than adult mothers (Aryal, 2007; Khanal, Adhikari, Sauer, & Zhao, 2013). In their studies (Khanal et al., 2013), the authors discussed that their lower prevalence of breastfeeding practice may be due to lack of knowledge, confidence, and skill in regard to breastfeeding.

Breastfeeding self-efficacy refers to a mother's confidence in her ability to breastfeed her infant (Dennis, 1999). The concept of breastfeeding self-efficacy was derived from Bandura's self-efficacy theory. According to Bandura, self-efficacy is what people believe that they are capable of in terms of performing specific behaviours in order to attain certain goals, which comes from their own motivation, behaviour, and development (Bandura, 1977). Several studies have been conducted to investigate self-efficacy and breastfeeding practice among adolescent mothers (Beattie-Fairchild, 2013; Blythe et al., 2002; Mossman et al., 2008). However, these studies have been carried out in different countries, mostly in developed countries with different cultural and socio-economic contexts from Nepal. Thus, it could be difficult to apply the findings of these studies with Nepalese adolescent mothers. Additionally, the studies on breastfeeding practice in Nepal were only conducted among the general population (Khanal et al., 2013; Nepal Nutrition and Food Security Bulletin [NNFSB], 2010; Paudel & Giri, 2014; Shrivastava, Singh, & Shah, 2013). The results from the population of general mothers may not explain the situation of breastfeeding practice and self-efficacy among Nepalese adolescent mothers. Therefore, this study aims to explore the breastfeeding practices and compare self-efficacy among first-time adolescent mothers, practising different types of breastfeeding within six months of the postpartum period.

Research Objectives

1. To describe breastfeeding practice within the first six months of postpartum among first-time Nepalese adolescent mothers.

2. To compare breastfeeding self-efficacy among the first time Nepalese adolescent mothers who practise different types of breastfeeding within six months.

Conceptual framework

The conceptual framework of this study is based on Bandura's self-efficacy theory (1977) and literature review. According to Bandura, human behavior is predicted by overall self-efficacy of an individual. Thus, breastfeeding practice which is a specific behavior of mothers can be determined by mothers' breastfeeding self-efficacy. Breastfeeding self-efficacy is defined as a mothers' confidence in her ability to breastfeed her baby. Based on Bandura's theory and the reviewed literature, Nepalese adolescent mothers with higher breastfeeding self-efficacy are more likely to exclusively breastfeed their infants compared to those with lower breastfeeding self-efficacy.

Methodology

A descriptive comparative study was carried out to explore the breastfeeding practices and compare the breastfeeding self-efficacy of mothers who practised different types

of breastfeeding within six months of postpartum.

Population and Sample

In this study, the target population were first-time Nepalese adolescent mothers at six to eight weeks of postpartum who attended Well Baby Clinic. Purposive sampling was used to select the first time adolescent mothers who attended well baby clinic in Paropakar Maternity and Women's hospital to immunize their infants based on the inclusion criteria: 1) being healthy adolescent mothers who gave vaginal birth with term infant and did not have complications, 2) having healthy infant aged six to eight weeks without contraindication for breastfeeding, and 3) willing to participate and able to read and write Nepali. The estimated sample size was calculated by using power analysis (Polit & Beck, 2008) with the accepted minimal significant (α) of 0.05 and the expected power (1-β) of 0.80; and the medium effect size of 0.3. The calculated sample size was 88, but in anticipation of possible 20.0% loss of subjects, 22 more mothers were added bringing the final sample at least to 110.

The 114 first time adolescent mothers were first interviewed by the first author about breastfeeding self-efficacy and breastfeeding practice at six weeks. The second and third interviews were taken by a designated research assistant (registered nurse from the Well baby clinic) via telephone. One hundred and eleven mothers were interviewed at 3 months because three mothers couldn't be contacted. Each mother was called up to 5 times by the research assistant. Two of the mothers didn't respond and one phone number given by a mother was not recognized. In the third telephone interview by the research assistant at six months, another 11 mothers could not be contacted. This time too, the research assistant called each mother up to 5 times. The previous three mothers were still out of reach. Another six mothers had their mobile phone switched off. Three mothers were not picking up the phone and the last two mothers were out of network area. Therefore, only 100 mothers could be followed up through telephone interview at six months.

Research instruments and their psychometric properties

The instrument in the study was a questionnaire consisting of three parts including Demographic Data Form, Breastfeeding Practice and Breastfeeding Self Efficacy- Short Form (BSES-SF). The breastfeeding practice was developed to investigate the breastfeeding practice of mothers within six months by Yimyam (2013). The questions are both open and closed ended. The original CVI of the breastfeeding practice questionnaire was 1.0, and the repeatability coefficient of the instrument was 1.0 (Yimyam, 2013). The Breastfeeding Self-Efficacy Short Form (BSES-SF) was developed by Dennis (2002). It consists of 14 items. All items are preceded by the phrase "I can always" and anchored with a 5-point Likert-type scale where 1 indicates not at all confident and 5 indicates always confident. The possible scores range from 14-70. The original CVI of BSES-SF was 0.83, and the coefficient alpha of the instrument was 0.94 (Dennis, 2003).

The breastfeeding practice questionnaire and the BSES-SF were not modified, so testing for validation was not necessary. Permission to use the instruments was sought from authors

and authorization was granted. They were back translated to a Nepali version by a certified bilingual expert using the back translation technique (Sperder, Devellis, & Boehlecke, 1994). After back translation, the reliabilities of the instruments were done. The reliability of the test-retest was conducted with 20 Napalese first time adolescent mothers for reproducibility and the scope of the breastfeeding practice was 1.0. The BSES-SF was tested for internal consistency among 20 Nepalese adolescent mothers. The coefficient alpha of the BSES-SF in this study was 0.86.

Protection of Human Subjects

The research proposal was approved by the Research Ethics Review Committee, the Faculty of Nursing, Chiang Mai University, Thailand (Ethic approval No. 144/2015). Permission to collect data was obtained from the director of Paropakar Maternity Hospital. Moreover, all respondents were told that there were free to refuse to participate or withdraw from the study at any time without losing any benefits. Privacy, anonymity and confidentiality were ensured. They were assured that results of the study would not reflect an individual person but would be presented as an overall result. The selected adolescent mothers signed the consent form before the interviews.

Data Analysis

Data were analysed using descriptive statistic to decribe personal data profile, the score of breastfeeding self-efficacy and the breastfeeding practices in terms of frequency, percentage, mean, and standard deviation. The ANOVA test was used to analyse differences of breastfeeding self–efficacy scores among different types of breastfeeding practices.

Findings

There were 114 Nepalese adolescent mothers who took part in the first interview but only 100 mothers who completed the final interview. Among these respondents, 76.0% were 18-19 years old. The average age of the mothers was 18.00 (S.D. = 0.79). About half of the adolescent mothers (46.0%) had obtained primary education, and most (80.0%) were housewives. The majority of the adolescent mothers (55.0%) came from extended families, and most of them (58.0%) had monthly family incomes of Nepalese Rupees (NRs) 20,000 or less. Most of the mothers gave birth at the hospital. Only about one-fourth of the mothers received either prenatal or postnatal education on breastfeeding.

Breastfeeding practice

Among the respondents in this study, the exclusive breastfeeding rates at six weeks and three months were very high at 93.9% and 93.7%, respectively. At six months, the exclusive breastfeeding rate was sharply decreased to 69.0% (Table 1).

Table 1 Breastfeeding practice within 6 months of postpartum period

Period of postpartum	Exclusive breastfeeding		Partial breastfeeding		No breastfeeding		Total	
	N	%	N	%	N	%	N	%
At 6 weeks	107	93.9	4	3.5	3	2.6	114	100.0
At 3 months	104	93.7	4	3.6	3	2.7	111	100.0
At 6 months	69	69.0	19	19.0	12	12.0	100	100.0

Comparison of Breastfeeding Self-Efficacy among Nepalese Adolescent Mothers who Practised Different Types of Breastfeeding

Breastfeeding self-efficacy scores within six months of the adolescent mothers who practised different types of breastfeeding at each of three different times months (at six weeks, at three months, and at six months) were compared by using analysis of variance (ANOVA).

Table 2 illustrates the mean and standard deviation scores of breastfeeding self-efficacy at six weeks and the different types of breastfeeding practice at three different times.

Table 2 The breastfeeding self-efficacy score of Nepalese adolescent mothers within six months among mothers who practised the different types of breastfeeding at three time points

Period of postpartum	Breastfeeding self-efficacy							
	Exclusive breastfeeding		Partial breastfeeding		No breastfeeding		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
At 6 weeks (n = 114)	48.9	5.5	43.5	6.4	32.3	15.9	48.3	5.4
At 3 months (n = 111)	49.0	5.5	43.5	6.4	32.3	15.9	48.4	6.5
At 6 months (n = 100)	51.2	5.2	42.4	7.8	42.8	2.7	48.5	6.8

At six weeks, results of the ANOVA show that there was a significantly different breastfeeding self-efficacy at six weeks among the mothers with different types of breastfeeding at a significance level of .001 ($F = 13.21$, $p < .001$). When comparing each pair of breastfeeding type, it was found that the mothers who practised exclusive breastfeeding had significantly higher scores of breastfeeding self-efficacy than those who did not breastfeed ($t = 15.52$, $p < .001$) but did not have significantly higher scores than those who practised partial breastfeeding ($t = 5.45$, $p = .191$). In addition, the mothers who practised partial breastfeeding had significantly higher scores of breastfeeding self-efficacy than those who were not breastfeeding ($t = 11.17$, $p = <.05$) (Table 3).

Table 3 Comparison of breastfeeding self-efficacy at six weeks among the groups of mothers with different types of breastfeeding practice at six weeks

Types of breastfeeding practice	Partial breastfeeding	No Breastfeeding
Exclusive breastfeeding	5.45 ^{ns}	15.52 ***
Partial breastfeeding		11.17 *
No breastfeeding		

Note: ^{ns} = non-significant, *** p < .001, * p < .05.

At three months postpartum, there was significantly different breastfeeding self-efficacy at six weeks among the different types of breastfeeding practices (F = 13.07, p < .001). When comparing a pair of breastfeeding practices, it was found that the mothers who practised exclusive breastfeeding had significantly higher scores of breastfeeding self-efficacy than those who were not breastfeeding (t = 16.68, p < .001) but not significantly higher scores than those who practised partial breastfeeding (t = 5.51, p = .196). In addition, the mothers who practised partial breastfeeding had higher scores of breastfeeding self-efficacy than those who did not breastfeed at a significance level of .05 (t=11.16, p = .048) (Table 4).

Table 4 Comparison of breastfeeding self-efficacy at three months among the groups of mothers with different types of breastfeeding practice at three months

Types of breastfeeding practice	Partial breastfeeding	No Breastfeeding
Exclusive breastfeeding	5.51 ^{ns}	16.68***
Partial breastfeeding		11.16 *
No breastfeeding		

Note: ^{ns} = non-significant, *** p < .001, * p < .05.

At six months of postpartum period, there was a significantly different breastfeeding self-efficacy score at six weeks among the mothers who practised different types of breastfeeding at three months at significance level of .001 (F = 25.96, p < .001). When comparing a pair of breastfeeding practices, it was found that the mothers who gave exclusive breastfeeding had significantly higher scores of breastfeeding self-efficacy than those who were not breastfeeding (t = 8.38, p < .001) and those who gave partial breastfeeding (t = 8.85, p < .001). However, the mothers who gave partial breastfeeding did not have significantly different scores of breastfeeding self-efficacy than those who were not breastfeeding (t=0.46, p = .98) (Table 5).

Table 5 Comparison of breastfeeding self-efficacy at six months among the groups of mothers with different types of breastfeeding practice at six months

	Partial breastfeeding	No Breastfeeding
Exclusive breastfeeding	8.85 ***	8.38***
Partial breastfeeding		0.46 ns
No Breastfeeding		

Note: ns =non-significant, *** p < .001.

Discussion

The discussion of this study is presented according to the research objectives.

Research objective 1: Describe breastfeeding practice within six months

Overall, the rates of exclusive breastfeeding practice at six weeks (93.9%) and at three months (93.7%) were high, but the rate of exclusive breastfeeding practice at six months sharply decreased to 69.0%. Additionally, 31.0% of the adolescent mothers were relying on alternative feedings. The high rates of breastfeeding at six weeks and three months could be because most of the mothers were from extended families (55.0%). Previous studies suggest that family support and family presence increase the breastfeeding practice rate among mothers (Dennis & Faux, 1999a; UNICEF, 2012).

The findings of this study are inconsistent with the previous studies from India (Shetty & Shetty, 2013) and the UK (Nadler, 2007) which point out that younger mothers are less likely to breastfeed at six weeks and three months of the postpartum period. Perhaps different cultural practices, traditions and geographical location resulted in the difference in breastfeeding practices with international findings. This could be because breastfeeding is traditionally and culturally popular in Nepalese society and mothers are encouraged to breastfeed for a long duration (Karkee et al., 2014). A study found that almost all infants (98.0%) had been breastfed and their mothers intended to continue breastfeeding for an average period of 28 months (Karkee et al., 2014). In 2011, the NDHS reported that half of the Nepalese children surveyed were breastfed for up to 34 months (Ministry of Health and Population [MHP], 2011). In this study, maternal unemployment status and reliance on breast milk as readily available infant food might have contributed to the continuing of breastfeeding practice.

In terms of the national health policies and activities to promote and protect breastfeeding, a national committee of Nepal formed two principal activities to support the training of health professionals in breastfeeding and to encourage hospitals implement successful "Baby Friendly Initiation hospital (BFHI)" programmes (Shrivastav, Shah, & Singh, 2013). In line with that, Well Baby Clinic adopted the BFHI program. They organized regular events and programs to train hospital staffs on the importance of breastfeeding. In this study, the

majority of the mothers (97.0%) had attended the hospital for delivery which could have influenced the numbers of mothers on exclusive breastfeeding initiation. Despite the early initiation of breastfeeding practice among general mothers in Nepal, 73.0% of breastfeeding was carried out within one hour of delivery and 84.0% within 24 hours of birth (Chandrasekhar et al., 2007). The breastfeeding rate at six months was 70.0% (NDHS, 2011; UNICEF, 2013). The majority of mothers are still providing faulty feeding (Shrivastav et al., 2013). The availability of alternative infant feeds such as cow's and buffalo's milk, (Basnet et al., 2012) and the high use of local herbal drops could explain the increased likelihood of Nepalese mothers giving prelacteal feeds to their newborns before six months of age (Chandrasekhar et al., 2007). It is a result of early partial breastfeeding practice. However, formula feeding is not yet widespread across Nepal, but it is becoming popular in urban areas as reflected by the observed higher rate of prelacteal feeds used by urban mothers (13.4%) (Karkee et al., 2014).

The breastfeeding rate at six months among Nepalese adolescent mothers decreased sharply to 69.0% because most of them resumed work and studies. This finding supports findings of several other studies which reported that mothers who were employed and worked outside the house had a lower rate of breastfeeding compared to mothers who stayed at home (Hawkins et al., 2007; Shommo & Al-Shubrumi, 2014; Yimyam, 2013).

Research objective 2: Comparing breastfeeding self-efficacy among adolescent mothers who provided different types of breastfeeding within six months

In this study, the mothers' breastfeeding self-efficacy was assessed at six weeks postpartum period among 114 adolescent mothers. The mean score of breastfeeding self-efficacy was as high as 48.3 (S.D. = 5.4). Within six months, mothers who practised exclusive breastfeeding at three time points had the highest score of breastfeeding self-efficacy. It was found that there were differences in breastfeeding self-efficacy among adolescent mothers who provided different types of breastfeeding. These findings are consistent with other studies. It could be concluded that breastfeeding self-efficacy is a substantial predictor of breastfeeding methods (Dennis & Faux, 1999). In particular, mothers with higher breastfeeding self-efficacy were significantly more likely to continue to breastfeed and to do so exclusively than mothers with lower breastfeeding self-efficacy (Blyth 2004; Dennis, 2003; Wilhelm, Stepans, Hertzog, Rodehorst, & Gardner, 2006). The finding is consistent with the study among adolescent mothers in the UK. (Mossman et al., 2008) that higher breastfeeding self-efficacy were significantly more likely to continue to breastfeed and to do so exclusively. Thus, self-efficacy is a reasonable measure to predict breastfeeding practice among mothers (Wells, Thompson, & Kloeblen-Tarver, 2006). Several studies had proved that breastfeeding self-efficacy was the major predictor of breastfeeding practice among mothers (Dodt et al., 2012; NNFSB, 2010; Smith et al., 2012; Otsuka et al., 2014).

When comparing each type of breastfeeding practice within six months, it revealed different

findings. At six weeks and at three months of the postpartum period, there was no difference in breastfeeding self-efficacy scores among mothers who practised exclusive breastfeeding and those who practised partial breastfeeding. Mothers who practised exclusive breastfeeding or partial breastfeeding had higher scores of breastfeeding self-efficacy than those with no breastfeeding. As other studies (Blyth et al., 2002; Inoue, 2012; Yimyam, 2011, 2013), the perception of insufficient breast milk is the most common barrier to breastfeeding. Most adolescent mothers cited "not enough breast milk" as the reason to not breastfeed or to introduce formula feed before six weeks. Perhaps, in this study mothers who had high scores of breastfeeding self-efficacy might try to solve the problem and continue breastfeeding either in the form of exclusive breastfeeding or partial breastfeeding (combine breastfeeding with formula). However, mothers who had low scores of breastfeeding self-efficacy might choose to wean their infants (as with the no breastfeeding group).

At six months, there was no difference in breastfeeding self-efficacy between mothers practising partial breastfeeding and no breastfeeding. However, mothers practising exclusive breastfeeding had higher scores of breastfeeding self-efficacy than those practising partial breastfeeding or no breastfeeding. The most common reason for weaning before six months for adolescent mothers who initiated breastfeeding at six weeks was resuming work or school. These findings could explain that for most adolescent mothers, breastfeeding self-efficacy was one of the key factors for their decision to initiate and continue breastfeeding for three months. At six months, not only breastfeeding self-efficacy but also the mother's working status might have played an important role in the decision to continue breastfeeding; however, mothers who had very high breastfeeding self-efficacy scores could manage and continue breastfeeding. These findings support the previous studies in many countries that breastfeeding self-efficacy is the most important factor for initiating breastfeeding (Dennis, 2006; Dennis & Faux, 1999; Dodt et al., 2012; O'Brien, Buikstra, Fallon, & Hegney, 2008), but for breastfeeding to continue, working status (Yimyam, 2011, 2013) and breastfeeding self-efficacy (Blyth et al., 2002; O'Brien et al., 2008) might be important factors, which were both found to be the major predictors of discontinuation of breastfeeding practice before six months of age of infants.

Conclusion

The findings conclude that self-efficacy is one of the key factors to initiate and continue breastfeeding until three months postpartum. At six months, not only breastfeeding self-efficacy but also family and cultural conditions may affect the decision to continue breastfeeding. In the hospital, expectant mothers arrived only a day ahead of the delivery, and after normal vaginal delivery mothers only stayed for a day. It showed that the time limit to provide support and counselling for breastfeeding after birth was only one day. Therefore, it is necessary to further expand the community lactation program in conjunction with the hospital to promote breastfeeding beyond six months of infants' age.

Implications

The findings of this study could be used as important information for developing appropriate strategies to improve the rate of exclusive breastfeeding among Nepalese adolescent mothers, especially the exclusive breastfeeding rate at six months. Nursing professionals should work towards improving the breastfeeding self-efficacy among adolescent mothers by developing some activities and strategies. The findings of this study that improvement of breastfeeding self-efficacy among these adolescent mothers might enhance their exclusive breastfeeding and duration. Within three months of postpartum, breastfeeding self-efficacy strategies should focus on managing the maternal concern of "insufficient breast milk". For continuing breastfeeding practice, the breastfeeding self-efficacy strategies should focus on combining breastfeeding and their work or study.

Recommendation

With regards to the further studies, similar studies in larger samples that reflect different geographical areas, ethnic groups and different cultural influences, as well as, qualitative study on breastfeeding practice and breastfeeding self-efficacy among first-time Nepalese adolescent mothers may elicit an in-depth analysis of what contributes to findings in this study. Moreover, a predictive study on factors related to exclusive breastfeeding practice may be done in the future. Not only breastfeeding self-efficacy, but also other predictive factors such as work condition should be considered to investigate.

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References

American Academy of Pediatrics. (2005). Organizational principles to guide and define the child health care system and/or improve the health of all children. *Journal of American Academy of Pediatrics*, *115*, 496-497.

Aryal, T. (2007). Breastfeeding in Nepal: Patterns and determinants. *JNMAJ Nepal Medical Association, 46*(165), 13-19. .

Atuyambe, L., Mirembe, F., Tumwesigye, N. M., Annika, J., Kirumira, E. K., & Faxelid, E. (2008). Adolescent and adult first time mothers' health seeking practices during pregnancy and early motherhood in Wakiso district, central Uganda. *Reproductive Health, 5*(13), 2-9.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change, Psychological Review. *American Psychological Association, 84*(2), 191-215.

Boccolini, R. S., Carvalho, M. L., Oliveira, M. I., & Escamilla, R. P. (2013). Breastfeeding during the first hour of life and neonatal mortality. *Journal de Pediatria, 89*(2), 131-136.

Blyth, R., Creedy, D. K., Dennis, C. L., Moyle, W., Pratt, J., & Vries, S. M. (2002). Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. *Birth, 29*(4), 278-284.

Chan, M. Y., & Heung, S. M., (2011). The effectiveness of breastfeeding education on maternal breastfeeding self-efficacy and breastfeeding duration: A systematic review. *National Institute for Health Research, 9*(64), 1-5.

Chandrashekhar, T., Joshi, H., Binu, H., Shankar, P., & Rana, M. (2007). Breast-feeding initiation and determinants of exclusive breast-feeding - A questionnaire survey in an urban population of western Nepal. *Public health Nutrition, 10*(2), 192-193.

Dennis, C. L. (1999). Theoretical underpinning of breastfeeding confidence: A self-efficacy framework. *Journal of Human Lactation, 15*(3), 195-201.

Dennis, C. L. (2003). The breastfeeding self-efficacy scale: Psychometric assessment of the short form. *Journal of Obstetrics, Gynecology, and Neonatal Nursing, 32*(6), 734-744.

Dennis, C. L. (2006). Identifying predictors of breastfeeding self-efficacy in the immediate postpartum period. *Research in Nursing & Health, 29*, 256-268.

Dennis, C. L., & Faux, S. (1999). Development and psychometric testing of the breastfeeding self-efficacy scale. *Research in Nursing and Health*, *22*(5), 399-409.

Dodt, R.C., Ximenes, L.B., Almeida, P.C., Oriá, B., & Dennis, C.L. (2012). Psychometric and maternal sociodemographic assessment of the breastfeeding self-efficacy scale - short form in a Brazilian sample. *Journal of Nursing Education and Practice, 2*(3), 66-71.

Edmond, K. M., Zandoh, C.&, Quigley, M. A., Amenga-Etego, S., Owusu-Agyei, S., & Kirkwood, B. R. (2006). Delayed breastfeeding initiation increases risk of neonatal mortality. *Paediatrics, 117*(3), 380-386.

Frota, D. A., & Marcopita, L. F. (2004). Breastfeeding among teenage and adult mothers in Brazil. *Revista de Saúde Pública, 38*(1), 85-92.

Giashuddin, M. S., & Kabir, M. (2003). Duration of breast-feeding in Bangladesh. *Indian Journal of Community Medicine, 28,* 34-38.

Hawkins, S., Griffiths, L.J., & Dezateux, C. (2007). Maternal employment and breast-feeding initiation: findings from the Millennium Cohort Study. *Pediatric and Perinatal Epidemiology, 21*(3), 242-247.

Hunter, L. (2013). Teenager's experience of postnatal care and breastfeeding. *British Journal of Midwifery, 16*(12), 785-790.

Infant Feeding Surveillance System [IFSS]. (2012). Focused report on infant feeding among adolescent mother. Retrieved from http://www.durham.ca/departments/health/health_statistics/IFSSadolescentMothers.pdf

Inoue, M. (2012). *Breastfeeding and perceptions of breast shape changes in Australian and Japanese women* (Doctoral dissertation). Curtin University, School of Public Health. Retrieved from http://espace.library.curtin.edu.au/R?func=dbin-jump-full&object_id=187097 65.

Karkee, R., Lee, A. H., Khanal, V., & Binns, C.W. (2014). A community-based prospective cohort study of exclusive breastfeeding in central Nepal. *BMC Public Health, 14*(1), 927.

Khanal, V., Adhikari, M., Sauer, K., & Zhao, Y. (2013). Factors associated with the introduction of prelacteal feeds in Nepal: findings from the Nepal Demographic and Health Survey 2011. *International Breastfeeding Journal, 8*(1), 1-9.

Kramer, M. S., Aboud, F., Mirinova, E., Vanilovich, I., Platt, R. W., Matush, L., Igumnov, S., et.al. (2008). Breastfeeding and child cognitive development. *Archives of General Psychiatry, 65*(5), 578–584.

Kumar, S., Jha, N., Nagesh., Premarajan., K. C., Yadav, B. K., & Niraula, S. R. (2006) Breastfeeding practices among mothers in a rura community of eastern Nepal. Health and Population Perspectives and Issues, 29(3), 154-160.

Laura, M. L., Christa, L., Fischer, W., Adi, N., Cesar, V., & Black, R. E. (2011). Breastfeeding and the risk for diarrhea morbidity and mortality. *BMC Public Health, 11*(3), 2-12.

Ministry of health and population [MHP]. (2011). *Nepal-Population.* Retrieved September 12, 2015 from: http://countryeconomy.com/demography/population/nepal

Ministry of Women and Child [MCW], (2012). Women Development Programme. Kathmandu, Nepal: Department of Women and Children. Retrieved September 12, 2015 from http://www.dwd.gov.np

Mossman, M., Heaman, M., & Dennis, C. L. (2008). The influence of adolescent mothers' breastfeeding confidence and attitude on breastfeeding initiation and duration. *Journal of Human Lactation, 24*(3), 268-277.

Nadler, E. (2007). Region of Waterloo Public Health Infant feeding Survey 2006/07. *Region of Inlatorloo Public Health.* Retrieved from www. Sciendges.com.

Nepal Demographic and Health Survey [NDHS]. (2011). Demographic and Health Survey. Population Division Ministry of Health and Population Government of Nepal. Kathmandu. *Nutrition of Children and Women.* pp 171-171. Retrieved from http://dhsprogram.com/pubs/pdf/FR257/FR257%5B13April2012%5D.pdf

Nepal Nutrition and Food Security Bulletin. (2010). Breastfeeding and complementary feeding practices are less than adequate among mothers of children 12-23 months in the Baitadi districts of Nepal. *Helen Keller International,* 3, 1-7. Retrieved from http://reliefweb.int/sites/reliefweb.int/files/resources/06C5DA296B6926CC852577D60071E31B-Full_Report.pdf

Nelson, A.M. (2009). Adolescent attitude, beliefs, and concerns regarding breastfeeding. *Journal of Maternal Child Nurse*, 34(4), 249-255.

O' Brien, M., Buikstra E., Fallon, A.B., & Hegney, D. (2008). Exploring the Influence of Psychological Factors on Breastfeeding Duration, Phase 1: Perceptions of Mothers and Clinicians. *Journal of human lactation*, 25(1), 55-63.

Otsuka, T., Taguri, M., Dennis, C. L., Wakutani, K., Awano, M., Yamaguchi, T., & Jimba, M. (2014). Effectiveness of a breastfeeding self-efficacy intervention: Do hospital practices make a difference? *Maternal and Child Health Journal, 18*(1), 296-306.

Paudel, D. P., & Giri, S. (2014). Breast feeding practices and associated factors in Bhaktapur District of Nepal: A community based cross-sectional study among lactating mothers. *Journal of the Scientific Society, 41*(2), 108-111.

Santo, L. C., de Oliveira, L. D., & Giugliani, E. R. (2007). Factors associated with low incidence of exclusive breastfeeding for the first 6 months. *Birth, 34*(3), 212–219.

Shetty, S. B., & Shetty, S., (2013). KAP study of factors promotion breastfeeding in nursing mothers and pregnant women. *National University of Juridical Sciences, 3*(3): 34-37.

Shommo, S. A., & Al-Shubrumi, H. A. (2014). Breastfeeding knowledge, attitude and practice among mothers in Hail district, northwestern Saudi Arabia. *Journal of Nursing and Health Science, 3*(1), 49-56.

Shrivastava, M., Singh, R., & Shah, G. (2013). Breastfeeding Pattern in Teaching Districts of a health Sciences University in Eastern Nepal. *Nepal Journals, 11*(3), 191-197.

Smith, P. H., Coley, S. L., Labbok, M. H., Cupito, S., & Nwokah, E. (2012). Early breastfeeding experiences of adolescent mothers: A qualitative prospective study. *International Breastfeeding Journal, 7*(13), 1-13.

Ulak, M., Chandyo, R. K., Mellander, L., & Shrestha, P. S. (2012). Infant feeding practices in Bhaktapur, Nepal: a cross-sectional, health facility based survey. *International Breastfeeding Journal, 7*(1), 1-7.

United Nations Children's Fund [UNICEF]. (2012). Improving Child Nutrition: The achievable imperative for global progress. New York, USA Retrieved Nov 24, 2014 from http://www.unicef.org/publications/index_68661.html

United Nations Children's Fund [UNICEF]. (2013). UNICEF Nepal. Retrieved from http://www.unicef.org/infobycountry/nepal_nepal_statistics.html.

Wells, K., Thompson, N. J., & Kloeblen-Tarver, A. S. (2006). Development and psychometric testing of the prenatal breast-feeding self-efficacy scale. *American Journal of Health Behavior, 30*, 177-187.

Wilhelm, S. L., Stepans, M. B., Hertzog, M., Rodehorst, T. K., & Gardner, P. (2006). Motivational interviewing to promote sustained breastfeeding. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 35*(3), 340-348.

World Health Organization [WHO]. (2002). Infant and young Child Nutrition. The secretariat. Fifty-Fifth Wolrd Health Assembly, Provisional Agenda item 13.10, Global Strategy on Infant and young Child feeding. Geneva, Switzerland: World Health Organization.

World Health Organization [WHO]. (2009). Mortality Estimates by Cause, Age, and Sex for the Year 2008. Global Patterns of Mortality in Young People: A systematic analysis of population health data. Lancet, 374(9693), 881-892.

World Health Organization [WHO]. (2014). Global Nutrition Targets 2025. Geneva, Switzerland: World Health Organization.

Yimyam, S. (2011). Breastfeeding beliefs and practices Aamong Eemployed women: A Thai cultural perspective in P. Liampongtong (Ed.). *Infant feeding Beliefs and Practices: A cross-cultural perspective* (pp. 125-140). New York: Springer.

Yimyam, S. (2013). Breastfeeding experiences among employed mothers. In M. Cassidy (Ed.). *Breastfeeding: Global Practices, Challenges, Maternal and Infant Health Outcomes* (pp. 159-180). New York: Nova Science Publishers.