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Full Length Research Paper

Long term effects of professional breastfeeding support - An intervention

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Professional support is important for women during pregnancy, but more research is needed to provide a better understanding of how this support affects the mother's experience of support and breast-feeding behavior the first days after birth and its relation to the duration of breastfeeding. This study aims to evaluate the effects of a professional support during pregnancy in relation to mothers' perceived support at delivery and maternity ward, and on the number of breastfeeding sessions during the first three days after birth. These factors would be subsequently considered in relation to the duration of breastfeeding. Mothers in the Intervention group (IG) and Control group B (CGB) (November 2000 to April 2002) perceived significant better overall support, breastfeeding information and preparation for parenting from the professionals in the delivery and maternity wards compared with the Control group A (CGA) (April to October 2000), (p<0.001), (n = 540). The IG showed a higher frequency of breastfeeding sessions in the first 24 h compared with the mothers in the CGB (p<0.008) and a positive correlation between preparation for the parental role and duration of exclusive breastfeeding (p = 0.006).

Key words: Education, breastfeeding, support, mother, health professionals.

INTRODUCTION

Several studies have shown the benefits of breastfeeding for both the mother and child (Hansson, 2004; American Academy of Pediatrics, 2005), which studies suggest that society could gain much from increased breastfeeding rates. If children are breastfed exclusively, for at least six months, the cost of healthcare during their first year of life can be remarkably decreased (Bartrick and Reinhold, 2010). The World Health Organization recommends exclusive breastfeeding for the first six months of life. From six months of age, it suggests that solids should be introduced as a complement to breast milk, and recommends breastfeeding for two years or longer (WHO, 2003). The Swedish National Board of Food Administration has adopted similar recommendations, except that it recommends partial breastfeeding should

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be continued for one year or longer (The National Board of Health and Welfare, 2010). Although the ideal, as set by these recommendations, has not been achieved, Sweden does have a high incidence of breastfeeding: Of infants born in 2008, at one week of age, 85% were exclusively breastfed and an additional 12% were partially breastfed. At six months, 12% were exclusively breastfed and 55% partially breastfed. At the age of one year, 18% were exclusively or partially breastfed (The National Board of Health and Welfare, 2010).

Many factors have been shown to affect the initiation of breastfeeding and its duration: Sociodemographic factors affecting breastfeeding include, for example, smoking and age (Ekström et al., 2003b; Scott et al., 2006). Early initiation of breastfeeding is a factor associated with success in breastfeeding (DiGirolamo et al., 2001, 2008; Ekström et al., 2003b; Salaria et al., 1978): This usually refers to the initial breastfeeding session, occurring soon after delivery. The pattern of breastfeeding during the first days after birth, and its relationship with the duration of breastfeeding has been sparsely described.

Good support from partners and family members for

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breastfeeding women is shown to be of great importance in facilitating the breastfeeding (Ekström et al., 2003a; Ingram et al., 2001; Scott et al., 2006). In addition, mothers with a good breastfeeding technique, and who are receiving support from family members and hospital staff, feel that they have a plentiful milk supply (Ingram et al., 2001). This support can be emotional, informative or physical (Hong et al., 2003), and can be given by lay persons or professionals (Hall andYauck, 2007). Mothers benefit from breastfeeding encouragement and guidance that supports their self-efficacy and feelings of being capable and empowered, and is tailored to their individual needs (Hannula et al., 2008).

Earlier studies show the importance of supporting counseling to parents to achieve exclusive breastfeeding during the first 6 months (Britton et al., 2007; Guise et al., 2003, Laanterä et al., 2011), and the importance of adopting caring routines, which will facilitate mothers experiences of support during childbirth and breastfeeding (Ekström et al., 2003a, b). The present study is part of a larger intervention that includes a processoriented program on breastfeeding management and promotion, and is intended for antenatal midwives and child health nurses from child-health centers. Earlier results from the larger study showed that, after the process-oriented training program, the antenatal midwives and child health nurses' attitudes to breastfeeding changed in a positive way (Ekström et al., 2005). In addition, the results showed that mothers were more satisfied with the emotional support and information provided by both the antenatal midwives and the child health nurses the first nine months postpartum (Ekström et al., 2006).

However, professional support is important for women during pregnancy, but more research is needed to provide a better understanding of how this support affects the mother's experience of support and breast-feeding behavior the first days after birth and its relation to the duration of breastfeeding. The aim of this study was therefore to evaluate the effects of a professional support during pregnancy in relation to mothers' perceived support at delivery and maternity ward, and on the number of breastfeeding sessions during the first three days after birth and as a secondary effect how these factors influence the duration of breastfeeding.

METHODS

Setting

The study was performed in a county in the South West of Sweden. The county consists of 13 municipalities with antenatal and child health centers and comprised of urban, suburban, and rural districts with 280,000 inhabitants. Approximately 2500 births occur annually at the maternity clinics. A midwife will meet with a woman/couple approximately 8 to 11 times during pregnancy. Most women give birth in hospital, and care in hospital is provided by midwives who are not previously known to the woman. The average length of Hospital stay is between 6 h and 4 days, and a child-health nurse makes a home visit 7 to 10 days after the birth, and maintains contact until the baby is old enough to start school at six years of age.

At the time of the study, the National Board of Health and Welfare defined breastfeeding as follows: *Exclusive breastfeeding* was defined as breastfeeding with occasional use of water, breast-milk substitutes (not more than a few times), and/or solids (not more than one tablespoon per day). *Partial breastfeeding* was defined as infants who received breast milk, and breast-milk substitutes (every day) and/or solids (more than one tablespoon per day). *Total breastfeeding* was defined as the duration of both exclusive and partial breastfeeding (The National Board of Health and Welfare, 2004).

Intervention

Phase 1: The process-oriented training program for the midwives and child health nurses in support during childbirth and breastfeeding

Based on the findings of a baseline study (Ekström et al., 2003a, b), the ten largest municipalities in the selected area were paired according to their sizes, and the duration of breastfeeding in those municipalities. The paired municipalities were randomly designated to intervention (five municipalities) or control (five municipalities). Furthermore, antenatal midwives and child health nurses were allocated to intervention or control depending on whether their work site had been selected as an intervention municipality or as a control municipality (Ekström et al., 2006; Ekström and Nissen, 2006). In a process-oriented training program (Jerlock et al., 2003) in breastfeeding `counseling was conducted for the midwives and child health nurses from the intervention municipalities from September 1999 through to March 2000 (Figure 1). The teaching program was composed of evidence based lectures with collegial discussions on professional stance, reflective processes, problemsolving processes, and practical skills in relation to the provision of support during childbirth and breastfeeding (Appendix 1).

Phase 2: The sample of mothers and the data collection procedures

The mothers included in this study had either been cared for by healthcare professionals at the five intervention municipalities as described above or by healthcare professionals at the five control municipalities. Consequently the mothers who were recruited to the study belonged either to the intervention municipalities or to the control municipalities. Consequently, the mothers who were recruited to the study belonged either to the intervention municipallities or to the control municipalities. In this study, all mothers met the same professionals at the maternity ward; the only difference was that the intervention group (IG) mothers had met specially trained midwives during pregnancy in contrast to the control mothers who had not met specially trained midwives during pregnancy. The mothers did not know if their antenatal midwife and postnatal nurse had the process-oriented training program (intervention groups) or not (control groups). The sample size was based on results from the baseline study (Ekström et al., 2003a, 2003 b) to detect a difference between the IG group and the controls of one months in duration of exclusive breastfeeding with ß = 0.8 and $\alpha 0.05$.

Before the process-oriented training program had commenced, data were collected for a baseline group called control group A (CGA, n = 148). Data for control group B (CGB, n = 160) and intervention group (IG, n = 172) were collected simultaneously (Figure 1). This design allowed detection of changes over time and any spillover effects of the intervention. It was the same five municipalities for CGA and CGB. Inclusion criteria: Swedish speaking healthy first-time mothers who gave birth to single, healthy full-term

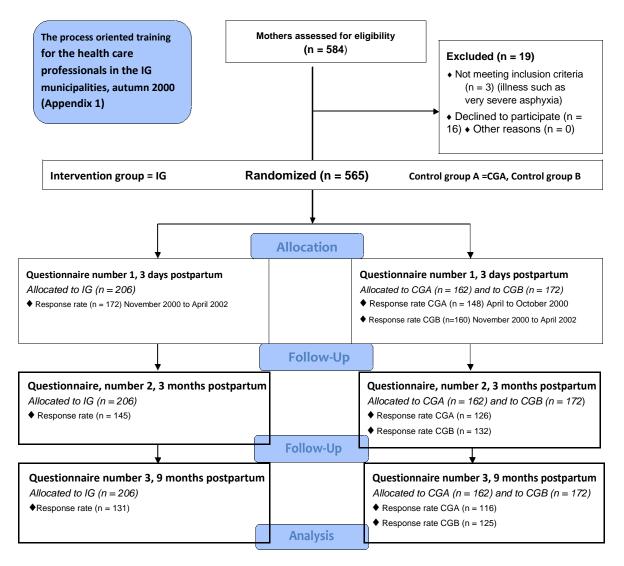


Figure 1. Flow figure of how mothers enrolled in the study CGA (Data collection: April 2000 to July 2001) intervention group (IG) and control group CGB (data collection November 2000 to April 2002) for questionnaire number one at 3 days postpartum. Follow-up with questionnaire number two and three occurred at three and nine months postpartum.

babies delivered spontaneously, by vacuum extraction, or by Caesarean section. The mothers had been cared for either by healthcare professionals at the intervention municipality, as described previously, or by healthcare professionals at the control municipalities.

Exclusion criteria: Mothers who had given birth to babies with lifethreatening diseases or malformations for example life-threatening illness such as very severe asphyxia.

All mothers who fulfilled the inclusion criteria and had been cared for at the antenatal and child health clinics in the municipalities selected for this study were consecutively collected from the hospital register and were invited to participate in the study. A total of 584 mothers were recruited; of those, 480 gave their informed consent to participate in the study (Figure 1).

Questionnaires

Three questionnaires were developed for this longitudinal study.

Maternity staff members distributed the first questionnaire to the mothers which were asked to answer at the three days after birth. Follow-up questionnaires were sent to the mothers' homes three months and nine months after birth (Figure 1). One reminder was sent to the mothers who did not respond to the questionnaire.

Obstetric and demographic data

Obstetric data were collected from birth records and demographic background data were collected when the first questionnaire was administered (Table 2).

Mothers' perceptions of professional support at the delivery and maternity ward

The questionnaire, administered three days after birth, investigated each mother's perceptions of the support received from the health professionals in both the delivery and maternity wards. The questionnaire covered the following criteria: Overall support, breastfeeding information and preparation for the parental role from the professional caregivers at the delivery and maternity wards (Oakley, 1994). All items were rated on scales, ranging from 1 (not good) to 7 (very good), or with 1 signifying "disagree" and 7 signifying "agree completely." Throughout the items, the endpoint, "agree completely," sometimes represented a positive assessment and sometimes a negative assessment, thus avoiding the risk of routine responses (Cohen et al., 2007) (Table 3).

Mothers' perceptions: The number of breastfeeding sessions in the days after birth and the duration of breastfeeding

In the questionnaire, administered 3 days after birth, the mothers were asked about the numbers of breastfeeding sessions in those first three days (mothers' own experience). In the questionnaires administered, three and nine months after birth, the mothers were asked about the duration of exclusive and total breastfeeding. Mothers, who had not responded to the questions regarding breastfeeding duration, were followed-up by telephone.

Statistics

For the statistical analyses of the data, we used the Statistical Package for the Social Sciences (SPSS, version 14.0). Central measurements were presented as a mean (M) and dispersion by standard deviation (SD). To test the differences between the groups, one-way ANOVAs and Tukey's HSD-test for post hoc comparisons were performed. Chi-square tests were performed on category data. Pearson's rank correlation was used to relate data on the ordinal level. P-values \leq 0.05 were considered significant (Cohen et al., 2007).

Pilot test

The three questionnaires developed for this study were pilot-tested by 20 mothers for acceptability and face validity. The questionnaires were corrected before data collection began. In addition, an expert group of midwives and pediatric nurses was consulted to establish the content validity of the questionnaires. A few minor corrections to the wording were made.

Ethical considerations

The Ethics Committee of the Medical Faculty of Gothenburg University, Gothenburg, Sweden, approved the study.

RESULTS

Response rate, demographic and obstetric data

The response rate for the three questionnaires was: at 3 days (n = 480); at 3 months (n = 400), and at 9 months (n = 372) (Table 1). There were no significant differences in regard to demographic and obstetric data for mothers in the intervention group (IG) and control groups (CGA and CGB) at three days after birth (Table 2). In addition, there were no significant differences in regard to the mothers' perception of support, or breastfeeding duration, between those mothers who answered questionnaire 1 but did not

return Questionnaires 2 and 3, and those who did (data not shown). At the time of the third questionnaire, at nine months, 23% of all the mothers had stopped breastfeeding (IG 29, CGA 22, and CGB 17%). Of all the mothers, 61% completed all three questionnaires and their answers validate the overall findings in the study.

Initiation of breastfeeding

The initiation rate of breastfeeding was high for all groups: Of the mother-infant pairs, 90% initiated breastfeeding within the first 24 h, and 97% initiated breastfeeding within the first three days. No significant differences were found between the IG (where 100% initiated breastfeeding) and the CGA and CGB (where 97% initiated breastfeeding).

Overall support from professional caregivers on the delivery and maternity wards

The mothers in the IG and CGB perceived significantly better support received from the professional caregivers on the delivery ward and the maternity ward as compared with the mothers in the CGA (p<0.001). There was no significant correlation between the support given by the professional caregivers on the delivery ward and the exclusive or total breastfeeding duration (Table 3).

Breastfeeding information and preparation for parenting provided by professional caregivers on the maternity ward

The mothers in the IG and CGB groups perceived that they received significantly better information about breastfeeding and preparation for parenting from the professional caregivers on the maternity ward as compared with the mothers in the CGA (p<0.001). For the mothers in the IG, there was a significant correlation between the preparation that they received for their parental role from the professional caregivers on the maternity ward, and the duration of exclusive breastfeeding (df = 21, F = 2.12, p = 0.006) (Table 3).

Number of breastfeeding sessions in the first three days after birth

The mothers in the IG reported a significant higher frequency of breastfeeding sessions in the first 24 h compared with the mothers in the CGB (p<0.001). There was a significant correlation between the number of breastfeeding sessions in the first 24 to 48 h after birth and total breastfeeding duration for the mothers in the CGB (df = 22, F = 4.04, p<0.001). There was also a significant correlation between the number of breastfeeding

Table 1. Response rate for the intervention group (IG) and control groups (CGA and CGB) at 3 days, 3 months, and 9 months postpartum.

Questioner group	IG	CGA	CGB	Total		
	n = 206 (%)	n = 162 (%)	n = 172 (%)	n = 540 (%)		
3 days postpartum	172 (84)	148 (91)	160 (93)	480 (89)		
3 months postpartum	145 (70)	126 (78)	132 (77)	403 (74)		
9 months postpartum	131 (64)	116 (72)	125 (73)	372 (69)		

 Table 2. Demographic and obstetric data for mothers in the intervention group (IG) and control groups (CGA and CGB) at three days after birth.

Parameter	IG (n = 172)	CGA (n = 148)	CGB (n = 160)		
Age in years (m and SD)	26.6(4.5)	27.2(4.6)	27.0(5.0)		
Gestational weeks (m and SD)	40.4(1.4)	40.5(1.4)	40.4(1.4)		
Education (%)					
Compulsory school	6 (3)	5(3)	3 (2)		
High school	77 (37)	73(45)	71 (41)		
University	74 (36)	55(34)	62 (36)		
Other	14(7)	15(9)	21 (12)		
Missing	35 (17)	14(9)	15(9)		
Marital status (%)					
Cohabitation (3 days postpartum)	125 (61)	102(63)	118(69)		
Married	42 (20)	43(27)	38 (22)		
Single	3 (1.5)	2(1)	2 (1)		
Other	1 (0.5)	3(2)	2 (1)		
Missing	35 (17)	12(7)	12(7)		
Obstetric data (%)					
Vaginal delivery	146 (70)	120(74)	129(75)		
Caesarean section	32 (16)	22(14)	31 (18)		
Vacuum extraction/forceps	28 (14)	20(12)	12(7)		

sessions in the first 48 to 72 h after birth and the duration of exclusive breastfeeding for the mothers in the CGA (df = 24, F = 1.86, p = 0.042) (Table 3). There were no significant correlation between the number of breastfeeding sessions the first days after birth and duration of breastfeeding in any of the groups.

Duration of breastfeeding

Data was analyzed for the duration of exclusive breastfeeding for the IG (m 3.9, SD 2.2 months), for the CGA (m 3.2, SD 1.7 months) and for the CGB (m 3.5, SD 2.0 months). There was a significant difference between IG and CGA (p = 0.02). Data was also analyzed for the duration of any breastfeeding for the IG (m 7.5, SD 4.7

months), for CGA (m 7.1, SD 4.6 months) and for the CGB (m 7.0, SD 4.5 months). At nine months, 23% of all the mothers had stopped breastfeeding (IG 29, CGA 22 CGA 22, and CGB 17%). There was no significant difference between the groups with regard to the duration of total breastfeeding.

DISCUSSION

In this study, all mothers met the same professionals at the maternity ward; the only difference was that the IG mothers had met specially trained midwives during pregnancy in contrast to the control mothers who had not met specially trained midwives during pregnancy. Professional support during pregnancy may contribute to mothers' evaluation of the support given from Table 3. Mothers', perceived overall support from professional caregivers, breastfeeding information and preparation for parenting and the number of breastfeeding sessions during the first three days after for mothers in the intervention group (IG) and control groups (CGA and CGB).

Mothers' answers in the scales		IG (n=172)		CGA (n=140)		CGB (n=160)		IG/CGA	IG/CGB	CGA/CGB		
		М	SD	n	М	SD	n	М	SD	p value	Tukey's HSD test	F∞
		6.1	1.7	148	3.8	2.6	154	6.2	1.6	<0.001	0.971	<0.001b
×Breastfeeding information from professional caregivers on the delivery ward*		4.8	2.1	146	3.9	2.3	155	4.5	1.9	<0.001	0.498	0.020 c
×Support from professional caregivers on the maternity ward*		6.1	1.5	144	3.6	2.5	156	6.0	1.4	<0.001	0.989	<0.001d
×Breastfeeding information from professional caregivers on the maternity ward		5.8	1.7	145	3.9	2.4	156	5.8	1.6	<0.001	0.983	<0.001e
×Preparation for parenting from professional caregivers on the maternity ward		5.4	3.2	144	3.8	1.8	157	5.2	1.5	<0.001	0.612	<0.001f
Number of breastfeeding sessions, 0 to 24 h		7.9	3.4	66	7.6	3.2	74	6.3	3.4	0.874	0.008	0.053 g
Number of breastfeeding sessions, 24 to 48 h		8.8	3.3	71	8.4	3.9	75	7.6	4.0	0.736	0.084	0.397 h
Number of breastfeeding sessions, 48 to 72 h		8.7	3.3	74	8.7	3.5	74	7.9	2.4	0.997	0.243	0.249 i

*Scales ranging from 1 (not good) to 7 (very good)

∞ F test ; a 0.23, b 70.52, c 7.7, d 88.0, e 49.11, f 21.01, g 4.97, h 2.13, and i 1.68

professionals after birth with emphasis on preparation for their parental role. The main findings of this study showed that the mothers in the IG reported a significant higher frequency of breastfeeding sessions in the first 24 h compared with the mothers in the CGB. A possible explanation is that mothers in the IG were better informed about good breastfeeding routines, which might result in a higher frequency of breastfeeding sessions in the IG group than in the control groups.

Becoming a parent is a new challenge that may need a supportive environment. Both stressful and protective factors, such as support, affect parents and can interact in a complicated manner that leads to different responses from individuals experiencing the same stressor (Wickberg, 2005; Bäckstrom et al., 2010). Furthermore, life stressevents during pregnancy decrease the odds of successful breastfeeding (Li et al., 2007) and mothers self-efficacy are important anenatal predictors of breastfeeding status six mont after birth (Yström et al., 2008).

Other results highlighted the fact that mothers in

the IG and CGB reported better support from the professional caregivers in both the delivery ward and the maternity ward, and also better breastfeeding information and preparation for their parenting role compared with the mothers in the CGA. It is interesting that, although the healthcare professionals in the delivery and maternity wards of the CGB were not involved in the processoriented training, both the mothers in the IG and the CGB perceived that they got better support from the professionals than did the mothers in the CGA. People who have positive memories of a situation are more likely to have an open-minded and friendly approach in a similar situation (Uvnäs-Moberg et al., 2005). Since social support is affected by earlier experiences of receiving support (Kahn and Antonucci., 1980; Hupcey, 1998), it is possible that mothers who had a better experience of support during antenatal care are more likely to have a positive perception of support from other healthcare professionals as well. For the IG mothers: there was a significant correlation between preparation for the parental role from the professional caregivers on the maternity ward and

the duration of exclusive breastfeeding. These results support the effectiveness of the intervention, since both IG and CCGB mothers valued the preparation for parenting similarly, but for the CGB, there was no significant correlation with duration of breastfeeding. This may suggest that the IG mothers had a better opportunity to assimilate the preparations for parenting gained on the maternity ward, and thereby laid down a more solid foundation of knowledge which carried them through the longer period of breastfeeding.

The mothers in the IG also reported a higher frequency of breastfeeding in the first 24 h after delivery, as compared with the mothers in the CGB. Interestingly, there was a significant correlation between the number of breastfeeding sessions in the first days after birth and the duration of subsequent breastfeeding for the mothers in the control groups, but not for the mothers in the IG. There is a theory that frequent breastfeeding in early lactation stimulates the development of receptors to prolactin (which is the hormone that stimulates breast milk production) in the mammary gland, and is a predictor of milk supply later on (Riordan, 2009). This may partly explain why the number of breastfeeding sessions in the first days was correlated with the duration of breastfeeding for mothers in the control groups. The IG mothers, by receiving better support from the professionals, might also have been more alert to the baby's signals (Ekström et al., 2006), thereby facilitating breastfeeding on demand, which is important for breast-feeding success and duration (DiGirolamo et al., 2001). In this situation, the actual number of early breastfeeding sessions would therefore be of lesser significance in influencing the duration of breastfeeding. In fact, the number of breastfeeding sessions in the first days is probably just one of many factors that contribute to breastfeeding duration, and for the IG mothers other factors, may be of greater importance. It has been shown to be important that mothers-to-be have resources with which to manage possible future breastfeeding problems. These can consist of education regarding different types of problems and how to solve them (Bailey et al., 2004), and it is also essential to give the mothers a realistic view of breastfeeding (Avery et al., 2009; Hall and Yauck, 2007; Rajan, 1993).

A randomized control trial design with two control groups was elected as being suitable for the study. This is a design suggested to measure possible spillover effects (Machin and Campbell, 2005). More differences were found when the IG was compared with the CGA (from whom data were collected before the intervention) than when the IG was compared with the CGB (where data were collected simultaneously with the IG). The results show that changes also take place among controls when an intervention is being rolled out. In the professional network of midwives and child health nurses. knowledge and information are shared, which easily leads to spillover effects between intervention and control professionals. These results thus demonstrate the value of using an historic control group, which will provide a baseline against which to evaluate the spillover effect.

Every mother's perception is affected by her personal experiences and, therefore, it might be difficult to compare her perception to the perceptions of other mothers. In this study, although the tendency of the participant responses is consistent, this complexity might have an impact on the validity of the answers. In order to gain acceptability and face validity for the items and statements used in this study, a pilot study was performed. We also consulted an expert group of midwives, pediatric nurses, pediatricians, and obstetricians for content validity. Further research to gain an in-depth understanding of the mothers' perceived feelings of support is ongoing. This intervention should have been strengthened by including midwives and nurses working at the delivery and maternity wards.

IMPLICATIONS FOR PRACTICE

Previous studies have shown that most mothers make

their decision about breastfeeding early in pregnancy (Bergman et al., 1993; Hailes and Wellard, 2000). Knowing this, it seems important that healthcare professionals discuss the issue with women early in their pregnancy before they have made a decision, to give them the opportunity to decide on a well-informed basis (Laanterä et al., 2011). For interventions aimed at increasing breastfeeding rates to be effective, it is important to begin during pregnancy (Gill et al., 2007; Rosen et al., 2008). The overall finding of this study is that support given during pregnancy is important for breastfeeding outcomes and affects the parent's ability to apply information and utilize the support given later on.

Conclusion

Professional support during pregnancy contributes to mothers' evaluation of the support given from professionals after birth with emphasis on preparation for their parental role, which has a positive effect of the duration of exclusive breastfeeding.

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REFERENCES

- American Academy of Pediatrics (2005). Section on breastfeeding. Breastfeeding and the Use of Human Milk. Pediatrics, 115: 496-506.
- Avery A, Zimmermann K, Underwood PW, Magnus JH (2009). Confident commitment is a key factor for sustained breastfeeding. Birth., 36: 141-148.
- Bailey C, Pain RH, Aarvold, JE (2004). A give it a go' breast-feeding culture and early cessation among low-income mothers. Midwifery, 20: 240-250.

Bartick M, Reinhold A (2010). The Burden of Suboptimal Breastfeeding in the United States: A Pediatric Cost Analysis. Pediatrics, 125: 1048-1056.

- Bergman V, Larsson S, Lomberg H, Moller A, Marild S (1993). A survey of Swedish mothers' views on breastfeeding experiences of social and professional support. Scand. J. Caring Sci., 7: 47-52.
- Britton C, McCormick F, Renfrew M, Wade A, King S (2007). Support for breastfeeding mothers. Cochrane Database of Systematic Reviews., Art. No.: CD001141.
- Backstrom C, Hertfelt Wahn E, Ekström A (2010). Breastfeeding support two sides of the same story. Experiences of Mothers and Midwifes . Int. Breastfeed. J.,pp. 5-20.
- Cohen J, Manion L, Morrison K (2007). Research methods in education. Abingdon, UK: Routledge.
- DiGirolamo AM, Grummer-Strawn LM, Fein S (2001). Maternity care practices: Implications for breastfeeding. Birth, 28: 94-100.
- DiGirolamo AM, Grummer-Strawn LM, Fein SB (2008). Effect of maternity-cae practices on breastfeeding. Pediatrics, 122: 43-49.
- Ekstrom A, Widstrom A, Nissen E (2006). Does continuity of care by well-trained breastfeeding counselors improve a mother's perception of support? Birth, 33: 123-130.
- Ekstrom A, Nissen E (2006). A mother's feelings for her infant are

- strenghten by excellent breastfeeding councelling and continuity of care. Pediatrics, 118: 309-314.
- Ekstrom A.Widstrom AM, Nissen E (2003a). Breastfeeding Support from Partners and Grandmothers: Perceptions of Swedish Women. Birth, 30: 261-266.
- Ekstrom A, Widstrom AM, Nissen E (2003b). Duration of Breastfeeding in Swedish Primiparous and Multiparous Women. J. Human. Lact., 19: 172-178.
- Ekstrom A, Widstrom A-M, Nissen E (2005). Process-oriented training in breastfeeding alters attitudes to breastfeeding in health professionals. Scand. J. Public. Health., 33: 424-431.
- Guise JM, Palda V, Westhoff C, Chan BK, Helfand M, Lieu T (2003).The Effectiveness of Primary Care-Based Interventions to Promote Breastfeeding: Systematic Evidence Review and Meta-Analysis for the US Preventive Services Task Force. Ann. Family. Med., 1: 70-80.
- Gill SL, Reifsnider E, Lucke J F (2007). Effects of support on the initiation and duration of breastfeeding. West. J. Nurs. Res., 29: 708-723.
- Hailes JF, Wellard SJ (2000). Support for breastfeeding in the first postpartum month: perceptions of breastfeeding women. Breastfeed. Rev., 8: 5-9.
- Hall WA, Yauck Y (2007). Getting it right: Australian primiparas' views about breastfeeding: A quasi-experimental study. Int. J. Nurs. Studies., 44: 786-795.
- Hannula L, Kaunonen M, Tarkka MT (2008). A systematic review of professional support for breastfeeding. J. Clinical. Nurs., 17: 1132-1143.
- Hansson L (2004). Immunobiology of human milk: how breastfeeding protects babies. Amarillo (TX): Pharmasoft Publishing.
- Hong TM, Callister LC, Schwartz R (2003). First-time mothers' views of breastfeeding support from nurses. MCN The American J. Matern. Child. Nurs., 28: 10-15.
- Hupcey JE (1998). Clarifying the social theory-research linkage. J. Adv. Nurs., 27: 1231-1241.
- Ingram J, Johnson D, Greenwood R (2001). Breastfeeding in Bristol: teaching good positioning, and support from fathers and families. Midwifery, 18: 87-101.
- Jerlock M, Falk K, Severinsson E (2003). Academic nursing education guidelines: tool for bridging the gap between theory, research and practice. Nurs. Health. Sci., 5: 219-228.
- Kahn RL, Antonucci TC (1980). Convoys over the Life Course: Attachment, roles and social support. Baltes PB, Brim OG (Eds.), Life-span development and behaviour, New York: Academic press. 3:253-286

- Laantera S, Ekstrom A, Polkki T, Pietilä AMS (2011). Confidence in breastfeeding among pregnant mothers. Published online. West. J. Nurs. Res.,
- Li J, Kendall GE, Henderson S, Downie J, Landsborough L, Oddy WH (2007). Maternal psychosocial well-being in pregnancy and breastfeeding duration. Acta. Pediatrics, 97: 221-225.
- Machin D, Campbell M (2005). Design of studies for medical research. Chichester, England, Great Britain: John Wiley & Sons Ltd.
- Oakley A (1994). Giving support in pregnancy: the role of research midwives in randomised controlled trial. Robinson S, Thomson AM (Eds.), Midwives, research and childbirth., London: Chapman & Hall. 3: 30-63.
- Rajan L (1993). The contribution of professional support, information and consistent correct advice to successful breastfeeding., Midwifery, 9: 197-209.
- Riordan J, Wambach K (2009). Breastfeeding and human lactation (4th ed). Sudbury (MA): Great Britain, Jones and Bartlett Publishers.
- Rosen IM, Kreuger MV, Carney LM, Graham JA (2008). Prenatal breastfeeding education and breastfeeding outcomes. MC: American J. Maternaling, Child. Nurs., 33: 315-319.
- Salaria E, Easton P, Cater J (1978). Infant feeding. Duration of breastfeeding after early initiation and frequent feeding. Lancet,pp. 1141-1143.
- Scott, JA, Binns CW, Oddy WH, Graham K I (2006). Predictors of breastfeeding duration: Evidence from a cohort study. Pediatrics, 117: 646-655.
- The National Board of Health and Welfare (2004). Breast-feeding, children born 2002. Stockholm, Sweden.
- The National Board of Health and Welfare (2010). Breastfeeding, children born 2008. Stockholm, Sweden.
- Uvnas-Moberg K, Arn I, Magnusson D (2005). The psychobiology of emotion: The role of the oxytocinergic system. Int. J. Behav. Med., 12: 59-65.
- Wickberg B (2005). Kropp och sjal och barnafodande. In B. Sjogren (Red.). Psykosocial obstretik. Lund, Sweden: Studentlitteratur.pp. 71-88.
- WHO and UNICEF (2003). Global Strategy for Infant and Young Child Feeding. Geneva.
- Ystrom E, Niegel S, Klepp K-I, Vollrath ME (2008). The impact of maternal negative affectivity and general self-efficacy on breastfeeding: The Norwegian mother and child cohort study. J. Pediatr., 152: 68-72.

APPENDIX

The process-oriented training program for healthcare professionals

Definition of the process-oriented training program

In order to change health professionals attitudes, the training program was based on literature reviews and collegial discussions containing professional stance, reflective processes, problem-solving processes, and practical skills in relation to support during childbirth and breastfeeding. The health professionals were trained in problem-solving, reflection, decision-making in terms of competence and personal qualifications to ensure that they should be ready to meet the demands of their profession (Jerlock et al., 2003).

The process-oriented training program involved seven days of lectures and the main theme brought up was own breastfeeding experiences (both private and professional), breastfeeding attitudes, breastfeeding counselling, and collaboration and communication between antenatal centres and child health centres in line with WHO recommendations (WHO, UNICEF. Protect, Promoting and Supporting Breastfeeding. Geneva: World Health Organization, 1989)

. Midwives and postnatal nurses were asked to reflect on different areas in breastfeeding support. The supervisors on the training program were chosen to strengthen the process between the healthcare centres and the hospital wards. The following topics were chosen by the healthcare professionals as homework:

- 1. How do we protect, promote, and support breastfeeding.
- 2. How do we inform about parenthood and family life.
- 3. How do we broaden our minds in order to help parents from another cultural background?
- 4. How can you share parental leave on an equal basis or should we not do this?
- 5. What is attachment and how do parents' best support attachment?
- 6. What happens if postnatal depression occurs?
- 7. Relationships with healthcare professionals and significant others.
- 8. How do we support the families with complicated deliveries?
- 9. How do we best support parent-infant interaction when the infant is cared for on the neonatal ward?
- 10. How do we talk about lifestyle problems?
- 11. How do we approach single parents?