



## ARAŞTIRMA / RESEARCH

### Effect of postpartum home visitation educational program on exclusive breastfeeding in newborns: a randomized clinical trial

Doğum sonrası ev ziyareti eğitim programının yenidoğanlarda anne sütü ile beslenme üzerine etkisi: randomize klinik bir çalışma

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#### Abstract

**Purpose:** This study was performed with the aim to evaluate the effect of postpartum home visitation and providing breastfeeding consultation services on exclusive breastfeeding.

**Materials and Methods:** This clinical trial study was conducted on 276 women who delivered in hospitals affiliated the Shahid Beheshti University in 2013. Consecutively, 92 people in the intervention group and 184 people in control group were enrolled. The intervention group at home received cares and breastfeeding consultation and the control group did not receive these services. The outcomes were recorded and compared in both groups at 60 days postpartum.

**Results:** In terms of type of newborns feeding, the group who received services after delivery in the home had 84.8% exclusive breastfeeding and the rate in the group who did not receive services after delivery in the home was 64.7%. There was a statistically significant difference between the two groups

**Conclusion:** This study showed that providing home care for mother and newborns and counseling increase the exclusive breastfeeding rate.

**Key words:** Postpartum care, breastfeeding, newborn.

#### Öz

**Amaç:** Bu çalışma, doğum sonrası ev ziyaretinin etkisini değerlendirmek ve anne sütü ile besleme konusunda emzirme danışmanlığı hizmetleri sunmak amacıyla yapılmıştır.

**Gereç ve Yöntem:** Bu klinik çalışma, 2013 yılında Shahid Beheshti Üniversitesine bağlı hastanelerde bulunan 276 kadın üzerinde yürütülmüştür. Müdahale grubunda 92 kişi ve kontrol grubunda 184 kişi ardı ardına kayıt edildi. Müdahale grubu, evde bakım ve emzirme danışmanlığı hizmeti aldı ve kontrol grubu bu hizmetleri almadı. Sonuçlar her iki grupta da doğumun 60.gününde kaydedildi ve karşılaştırıldı.

**Bulgular:** Yenidoğan beslenme türü açısından, doğumdan sonra evde hizmet alan grupta emzirme oranı %84,8, doğumdan sonra hizmet almayan gruptaki emzirme oranı ise %64,7'dir. İki grup arasında istatistiksel olarak anlamlı fark vardır.

**Sonuç:** Bu çalışmanın sonuçları, anne ve yenidoğanlar için evde bakımın sağlanması ve danışma ile anne sütüyle besleme oranının arttığını göstermiştir.

**Anahtar kelimeler:** Doğum bakımı, emzirme, yenidoğan.

## INTRODUCTION

Infancy is considered as one of the most sensitive periods of one's life in terms of growth and

development and child feeding has particular importance during this period. Meanwhile, breast milk is the most complete food for newborns during the first few months of life. What recommended as natural feeding of newborns in the first 6 months of

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life is exclusive breastfeeding<sup>1</sup>. Exclusive breastfeeding is defined as follows: consumption of human milk by the newborns without any supplements (water, fruit, non-human milks and foods) except vitamins, minerals and medications<sup>2</sup>. Exclusive breastfeeding provides an ideal diet for children improves an emotional relationship between mother and child and ensures the health of mothers and children, and follows the economic benefits<sup>3</sup>. Breastfeeding creates dependencies between mother and child; in addition, it prevent the children against infectious diseases and other chronic diseases in the next years of life<sup>4</sup>.

Cross-sectional studies in Canada showed that although about 90% of mothers breast-fed the babies through their milk, exclusive breastfeeding up to six months only can be observed in 25% of them<sup>5</sup>. Studies showed that 56% of Iranians children up to four months and 28% up to six months enjoy the exclusive breastfeeding with maternal breast milk that this was lower in comparison with the WHO recommendation<sup>6</sup>. Breastfeeding has a preventive effects in reducing morbidity and mortality, incidence of diarrhea and intestinal bleeding, abdominal colic, asthma, acute respiratory infections, atopic diseases and jaundice in infancy, reduce the risk of diabetes, weight gain and the future obesity and exclusive breastfeeding reduces the possibility of acute respiratory infections up to 5 times and probability of death from the disease up to 4 times<sup>7-9</sup>. Moreover, breast-feeding the newborns reduces the rate of ovarian cancer and breast cancer in mothers<sup>10</sup>.

In recent years, national attention has been focused on this point that the early years of life, as a golden opportunity, is effective to advance the child health<sup>11</sup>. During this time, parents are helped to learn how provide effective care for their own children and facilitate their baby's mental development by providing early rich experiences<sup>11</sup>. According to shortening stay of mother in hospital during the first 6 weeks after birth until the time of vaccination, mother and child have no contact with health care providers and this will lead to a disruption in continuity of care by health care providers<sup>12</sup>. Over the past few decades, postpartum home visitation in women and newborns has attracted much attention<sup>13</sup>. Home visitation from newborns is well-known favorable strategy to check the health and development of children<sup>14</sup>. The purpose of home visitation is to improve pregnancy

outcomes through nutrition education and family support to provide security for children, proper nutrition and providing environmental stimuli, achieving the maximum health and development of children, family relationship with health care providers and other needed services<sup>15</sup>. The results indicated that home visitation leads to positive outcomes for mother and baby and increases mother satisfaction and cost savings<sup>16</sup>. Thus, according to the shortening the duration of breastfeeding, especially in developing countries and the importance of home visitation program and examining the health of the mother and child after delivery, the study was conducted with the aim to investigate the effect of postpartum educational program at home on exclusive breastfeeding.

## MATERIALS AND METHODS:

After the confirmation of the ethics committee at the University Martyr Beheshti and clinical trial registration number IRCT: 2013060313565N1, this clinical trial study was performed on women who had given birth in Tehran's Taleghani, Shohada, Mahdiyeh, and Emam Hossein Hospitals since mid-August to November of 2013. The sample size, taking into account the 95% confidence level and power 80%, respectively. 276 qualified mothers were selected consecutively as study samples on the first day of delivery after obtaining the consent.

Inclusion criteria were Iranian nationals, the absence of underlying disease, the presence of single fetus with normal birth weight and without congenital anomalies and Edinburgh questionnaire score less than 10 and the absence of depression under drug treatment, and exclusion criteria were unwillingness to continue the study for any reason and migration from the study area. Edinburgh questionnaire was provided in 10 questions by Cox et al. (1978) and used to investigate the criteria for diagnosis of depression, and its sensitivity, specificity and predictive value were confirmed in Iran<sup>17, 18</sup>. In this questionnaire, result less than 10 no depression, 10-12 mild depression, more than 13 and cases with suicidal ideation can be considered severe depression<sup>19</sup>. The questionnaire was used to collect data and 10 professors of Faculty of Nursing approved the questionnaire.

Finally, 92 people in the intervention group and 184 people in control group were placed consecutively (for one person in intervention group, two people in

control group) (Figure 1). Mother visits was performed by midwives trained in the 3-5 and 13-15 days after delivery (time of providing cares according to according to the state instructions of postpartum care which takes place in health centers). Midwives had attended a workshop in which they were informed about their duties in this research before intervention, and all of them had the same method of intervention. Postpartum care package was the same to the Iranian National Guideline of Maternal and Neonatal Postpartum Cares designed by Ministry of Health (revised spring 2008)

In these visits, mothers were trained on the properly way of breastfeeding, lack of using bottles and pacifiers, training the exclusive breastfeeding, recognizing sufficiency of breast milk, and the lack of need of newborns to milk powder in normal mode. In addition, correct way of sucking the breast by the baby which depends on the position of baby in the mother's side is an important things, which will prevent cracked nipples, was trained; In the case of cracked nipples, protective treatments such as

washing with non-soap substances and then drying with a hairdryer and putting expressed breast milk on the nipple and drug treatments were used. The rate of exclusive breastfeeding in both groups was evaluated at day 60 after delivery. The average time of providing consulting services was considered 30 to 45 minutes which was changeable based on mother demand. Phone number of service provider was given to mothers, so that there is the possibility of access in case of problems or questions. Caregivers at home was trained before the intervention, and integration in the delivery of services was conducted. Information recorded during sampling included demographic information as well as pregnancy.

#### Statistical analysis:

In this study, we used descriptive statistics, Chi-square test and Fisher's exact, independent t-test to analyze the data. Statistical significance was assumed if  $P < 0.05$ . All reported P-values are two-sided. Statistical analyses were performed using SPSS (Version 15.0, SPSS Inc.).

**Table 1. Mean and standard deviation and frequency distribution of research groups based on demographic characteristics**

Research team/Demographic information	Intervention group	Control group	P-value
Age (SD) Mean/Year	27.03±(5.20)	2.37±5.45	0.728
Mean number of pregnancy	2.12±1.13	2.03±1.15	0.529
Average number of delivery	0.80±0.84	0.77±0.88	0.732
Mean number of abortions	0.34±0.61	0.26±0.59	0.732
Mean weight of newborns	3218.80±393.90	3913.46±380.05	0.613
Education level	Illiterate	6.5%	2.2%
	Primary	16.3%	14.7%
	Guidance	20.7%	21.7%
	High-school	44.6%	48.4%
	University	12.0%	13.0%
Occupation	Housewife	94.6%	92.4%
	Employed	5.4%	7.6%
Type of delivery	Cesarean	60.9%	65.2%
	Natural	39.1%	34.8%
Wanted/Unwanted	91.3%	82.6%	0.053
Wanted/Unwanted	8.7%	17.4%	

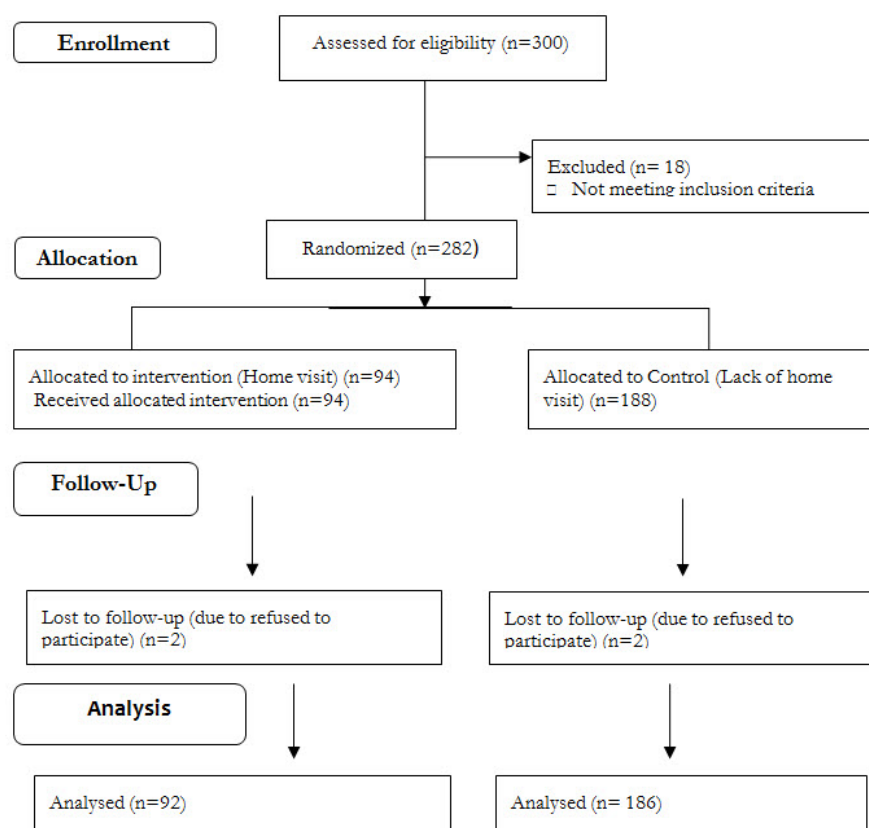


Figure 1: Study flow chart

## RESULTS

This study was conducted with the aim to investigate the effect of providing postpartum cares at home on the rate of exclusive breastfeeding in newborns on 276 women who had given birth in Tehran's Taleghani, Shohada, Mahdiyeh, Emam Hossein Hospitals.

The average age of women giving birth were  $27/19 \pm 5/36$  years. Most of the women were literate (96.4%). In terms of job situation, most people were housewives. 64% of subjects had normal delivery. In checking the number of pregnancies on all women who had delivery, the average number of pregnancies was 2.06 with standard deviation of 1.14 case.

Weight of newborns was within the normal range of 2500-4000 g (Table 1). In a survey of exclusive breastfeeding conducted at day 60 postpartum, the

following results were obtained. In terms of feeding practices, a group who received breastfeeding consulting and training services at home by midwives, 84.8% (78 persons) had exclusive breastfeeding and this rate was 64.7% (119 persons) for the group who did not receive these services. There was a statistically significant difference between the two groups ( $P$ . Values < 0.05).

## DISCUSSION

The aim of this study was to evaluate the effect of postpartum care at home on the rate of exclusive breastfeeding in newborns. In the present study, the prevalence of exclusive breastfeeding was 71.4%, which has been very close to the study results of Veghari et al. (66.4%)<sup>20</sup>, Naserpur et al. (61.6%)<sup>21</sup>, Patil Sapna et al. (61.5%)<sup>22</sup>, Ghanbarnejad et al. (55.4%)<sup>23</sup>, and Bastani et al. (52.6%)<sup>24</sup>. But, the prevalence of exclusive breastfeeding in studies

Ghaed Mohammadi et al. (14.7%), Mohammad Beygi et al. (41.5%), Ssenyonga et al. (35.1%), and Ogbeide et al. (27.3%) was less than the present study<sup>7-9-25-26</sup>. Possible cause of the differences in the prevalence of exclusive breastfeeding in different studies can represent that cultural, economic, and social differences of people in different societies may somehow affect the continuation of breastfeeding and exclusive use of breast milk. Moreover, enjoyment or lack of support systems such as spouses and family support of the problem and getting help from others can be involved in this case. It is also possible some mothers have more information about the importance of exclusive breastfeeding for their children up to six months, and thus make them more sensitive and this brings their credible attention to exclusive breastfeeding<sup>23</sup>.

The group that received postpartum services in home, had 84.4% exclusive breastfeeding and this rate was 64.7% for the group that did not receive postpartum services at home. The study results of Edraki et al. also showed that home visitation affects the pattern of exclusive breastfeeding in second, third and sixth months and increased the duration of exclusive breastfeeding. Moreover, the percentage of exclusive breastfeeding nursing strike in the control group was greater than the group under home visitation<sup>2</sup>. Pabarja et al. also stated that a higher percentage of mothers under home visitation followed exclusive breastfeeding at the end of the first and second months in the home visitation group<sup>27</sup>. In a study conducted on the impact of health care program of home visitation in the postpartum period on continuation of breastfeeding, Foroud and Foroud have stated that a higher percentage of children in the case group used exclusive breastfeeding compared to the control group during the first, second, third and fourth months of life<sup>28</sup>. Bashour et al believe that mothers who received four times or once the home visitation, followed more proportion of exclusive breastfeeding for their newborns compared with mothers who did not receive home visitation at all. The researchers also stated that one of the positive outcomes of home visitation is to follow the exclusive breastfeeding for more than four months in baby<sup>29</sup>. Thus, providing supportive interventions of breastfeeding prevents early discontinuation of breastfeeding before the six months<sup>3</sup>. Many researchers believe that one of the successful variables of breastfeeding in newborns is professional support and training during pregnancy

and also home visitation<sup>4</sup>.

The study showed that providing postpartum cares at home is effective on the rate of exclusive breastfeeding in newborns. Findings of researchers indicate that home visitation reduces early cessation of breastfeeding by 50% and increases the breastfeeding up to 3 months at a rate of 25%<sup>3</sup>. In fact, home visitation as a supportive intervention strategy plays an important role in diagnosis of social and physical problems, initiation and continuation of breastfeeding by making contact with health care providers during the first weeks after delivery. The researchers believe that home visitation will lead to reduction of mortality and newborns morbidity and improve the sense of well-being in endangered families<sup>13</sup>.

The limitations of the study was that only two visits were conducted in the days 3-5 and 13-15, and there was not any care until the day 60. Of course, the selected days are critical times in the postpartum period which are important in terms of emotional and physical problems created for mothers, and mothers visit the health centers less today to get services.

According to the results of this study, consulting services and breastfeeding training at home with support of mothers have a positive impact on the rate of exclusive breastfeeding in newborns. Thus, providing the care and performing consulting services and training breastfeeding at home are recommended to respected authorities of health staff; of course, offering home care services requires proper management of midwives and careful planning.

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