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Effect of immediate and continuous mother–infant skin-to-skin contact on breastfeeding self-efficacy of primiparous women: A randomised control trial

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ABSTRACT

Objective: To evaluate the effect of mother–infant immediate skin-to-skin contact on primiparous mother's breastfeeding self-efficacy.
Study design: A randomised control trial.
Settings: The study was conducted in Omolbanin obstetrics hospital (large tertiary hospital), Mashhad, Iran.
Participants: 114 18–35 year-old primiparous, Iranian, healthy and full term mothers who anticipated normal vaginal delivery and intended to breastfeed their babies.
Intervention: Skin-to-skin contact immediately after birth and then controlling breastfeeding self-efficacy at 28 days postpartum.
Main outcome measure: Maternal breastfeeding self-efficacy at 28 days postpartum and success in first breastfeeding and mean time of first breastfeeding initiation.
Results: A total of 92 mother–infant dyads (47 dyads in skin-to-skin care skin-to-skin contact group and 45 dyads in routine care group) were monitored and analysed. In skin-to-skin contact group, breastfeeding self-efficacy was 53.42 ± 8.57 SD as compared to 49.85 ± 5.50 SD in routine care group which is significantly higher in skin-to-skin contact group ($p = 0.0003$).

Successful breastfeeding initiation rate was 56.6% in skin-to-skin contact group as compared to 35.6% in routine care group ($p = 0.02$).

Time to initiate first feed was 21.98 ± 9.10 SD min in SSC group vs. 66.55 ± 20.76 min in routine care group ($p < 0.001$).
Conclusion: Mother–infant immediate skin-to-skin contact is an easy and available method of enhancing maternal breastfeeding self-efficacy. High breastfeeding self-efficacy increases exclusive breastfeeding duration.

1. Introduction

Breast milk is the optimal nutritional source for infants[1–4] and it provides species and age specific nutrients and the best nutritional balance for them.[1–4] Despite breast milk's great benefits for the health of infants, breastfeeding rates are declining all around the world,[5,6] as well as in our country Iran.[7] This decrease in exclusive breastfeeding rate is partly due to separating mother and the infant after birth.[8]

The first 2 h after birth is called the sensitive period[9] and this is the best time for mother to initiate breastfeeding the infant.[10] In this period, maternal–infant separation, even for a short time, can decrease the neonate's ability to initiate breastfeeding and may also lead to a reduction in maternal confidence and self-efficacy.[11–13] Immediate mother–infant skin-to-skin contact (SSC) after birth has been proven most effective in successful initiation and continuation of breastfeeding.[14]

Skin-to-skin contact is achieved by holding the naked baby against the mother's chest between her breasts.[15] The effect of

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mother–infant skin-to-skin contact on breastfeeding behaviours of infants is well known.[16–18]

Importance of maternal self-efficacy on breastfeeding initiation and continuation has been demonstrated consistently.[14,19,20] Breastfeeding self-efficacy refers to the confidence of a woman in her ability to breast feed her baby.[21,22] This study was conducted to assess the effect of early mother infant skin-to-skin contact on maternal breastfeeding self-efficacy.

2. Methods

2.1. Setting

A randomised control trial was conducted from 1st April 2012 to 31st July 2012 in Omolbanin obstetrics hospital (large tertiary hospital), Mashhad, Iran. This hospital is affiliated with the faculty of medicine of Mashhad University of Medical Sciences.

2.2. Participants

The study population consisted of 114 primiparous, Iranian, healthy, full term mothers between 18 and 35 years of age who anticipated normal vaginal delivery and intended to breastfeed their babies.

Mother–infant pairs were considered ineligible and were not enrolled in this study if they had any of the conditions mentioned in Table 1.

The study was approved by the ethical committee of Mashhad University of Medical Sciences prior to performance and eligible mothers signed informed consent.

2.3. Enrollment and intervention

Mother–infant pairs were screened for eligibility by two research assistants. Eligible mother–infant pairs were then randomly assigned to either of the two groups, skin-to-skin contact SSC group ($n = 57$) and routine care group ($n = 57$). They were allocated in a 1:1 ratio to each group. One research assistant accompanied mothers in both groups till the end of the second hour after labour. In SSC group infants were placed naked against their mothers' skin in prone position. Infants' heads were covered with dry caps and warm blankets were placed on their backs. Mothers were helped to keep this position for at least 2 h. Routine hospital cares such as weighing and vitamin K injection were postponed for 2 h in this group. In routine care (RC) group, infants were kept under a radiant heater immediately after cutting their cords. They received vitamin K injection and their weight, length and head circumference measurements were recorded and then they were wrapped in pre-heated blankets and were transferred to their mothers.

Table 1
Maternal exclusions and neonatal exclusions.

Maternal exclusions	Neonatal exclusions
Medical complications (diabetes, hypertension, psychiatric problems, etc.)	Gestation < 37 weeks
Severe postpartum haemorrhage	Weight < 2500 or >4000 g
Multiple pregnancy	Apgar score < 7
Caesarean section	Major congenital anomalies
Unwanted pregnancy	Floppiness
Anatomical breast defects, or history of breast surgery	Severe medical problems
Use of drugs not compatible with breastfeeding	Admission to a neonatal unit
Educations in medical sciences, psychology or counselling	

2.4. Randomisation

The randomisation sequence was generated by the statistical adviser of the research programme using computerised research randomiser. The sequence was concealed from the research assistants in sequentially numbered sealed opaque envelop. The envelops were opened after the mothers signed the consent forms. All follow-up data were collected by 2 research assistants who were blind to group assignment (SSC and control group) at day 28, but they were aware of the purpose of the study.

2.5. Data collection

The research questionnaire was developed by the researchers and consisted of 2 parts: Part 1: Maternal characteristics and part 2: Infant's data.

Infant Breast Feeding Assessment tool (IBFAT) was used to measure ''success in first breastfeeding''. The IBFAT evaluates four parameters of infant suckling competence including readiness to feed, rooting reflex, latch-on, and suckling pattern. The infant can receive a score of 0–3 on each item for a maximum total score of 12. Achieving scores between 10 and 12 from IBFAT tool showed success and scores less than 10 showed failure in first breast-feeding. IBFAT is a reliable tool for assessing infant success in first breastfeeding which has been used in several studies.[13,23,24] Reliability of this tool was assessed by observing 20 cases of breastfeeding in a pilot study, in which Kapa coefficient was 0.92.

At day 28 postpartum, the assigned research assistant questioned all participants through phone to determine maternal breastfeeding self-efficacy using breastfeeding self-efficacy scale (BSES)[25] which is a 33 item self report instrument to measure maternal breastfeeding confidence. As recommended by Bandura[26] all items are presented positively and higher scores indicate higher levels of confidence. In this study we used the Persian version of BSES. In a previous study, Persian version of BSES had high internal consistency reliability ($\alpha = 0.82$).[27] In the current study the scale was used at day 28 postpartum and it had also high internal consistency reliability (cronbach's alpha coefficient was 0.9). All items are anchored with a 6-point Likert-type scale where 1 = strongly disagree and 6 = strongly agree.

2.6. Outcome measure

The primary outcome was maternal breastfeeding self-efficacy at 28 days postpartum. The secondary study outcomes were success in first breastfeeding and mean time of first breastfeeding initiation.

2.7. Statistical analysis

Data were analysed using SPSS software, version 14. Data were presented using descriptive statistics including means, standard deviations, and proportions. Student's *t*-test was used for quantitative data and chi square for qualitative data.

Mann–Whitney test was used for parameters with non normal distributions. For all tests level of significance in terms of p value was 0.05.

Fig. 1 shows the methodology flowchart used for carrying out this study.

3. Results

114 eligible mothers according to inclusion and exclusion criteria were enrolled in this research programme. At the end of the study 92 mother–infant dyads were assessed.