

# Investigating the Effects of Rooming-in Care in Icteric Hospitalized Neonates

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## ABSTRACT

**Background:** Rooming-in, motivated by World Health Organization (WHO) strategies and baby-friendly hospital policies, is a practice followed in many maternity hospitals of Iran. Mother-infant dyad may easily be damaged by the separation caused by medical and surgical problems, which result in hospital stay. Regarding this, the aim of this study was to investigate the effects of the rooming-in practice in icteric newborns admitted to Mofid Children's Hospital of Tehran, Iran.

**Methods:** This study was conducted on 220 neonates admitted to Mofid Children's Hospital with the complaint of jaundice. Out of the 220 newborns, 124 cases were assigned into the intervention group (the rooming-in care) and 96 neonates were categorized into the control group (the routine-care). The two groups were compared in terms of the length of hospital stay, maternal satisfaction, nursing care time, and hospital stay complications. The data were collected by some trained mid-wives using a validated questionnaire. Data analysis was performed using paired sample t-test through SPSS version 16.

**Results:** According to the results of the study, about 55% of the neonates were male. The neonatal mean ages of the intervention and control groups were  $6.6 \pm 3.7$  and  $7 \pm 3.8$  days, respectively. Maternal satisfaction with neonatal care and maternal comfort during hospital stay were significantly higher in the intervention group ( $P=0.027$ ). Furthermore, the two groups had no significant difference regarding the complications of hospital stay ( $P=0.655$ ).

**Conclusion:** As the findings of the present study demonstrated, in spite of the similarities of the health issues, nursery essentials, and hospital stay complications between the two groups, the rooming-in was more favorable according to the mothers' viewpoints.

**Keywords:** Jaundice, Neonate, Rooming in

## Introduction

Rooming-in, as a neonatal care, has been practiced since 1989 (1). As recommended by the World Health Organization (WHO), this practice should be applied for the healthy neonates born in maternity hospitals immediately after birth (2, 3). Accordingly, in Iran, this practice is followed in the baby-friendly hospitals and maternity units, starting from the neonate delivery and lasting until the discharge of the mother-infant dyad.

The occurrence of medical problems for the mother or newborn, which leads to readmission may result in the mother-infant separation and leave devastating consequences on this fragile dyad. Maternal physical and mental health status

are fundamental in taking care of the neonate. Facing difficulties during early postpartum days is inevitable, and providing a pleasant atmosphere through physical and human facilities may definitely result in an ideal situation for nursing the newborns. The rooming-in practice, defined as keeping the mother and newborn together in the same room for 24 h a day, is highlighted as the seventh step in the "ten steps to successful breast feeding" recommended by the WHO (4).

At the time of maternal discharge, the close mother-infant contact is emphasized even regarding ill newborns, who need NICU or other neonatal unit admission. Kangaroo Mother Care (KMC) is a method of care, which facilitates a close

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contact between the mother and newborn. Many researchers believe that KMC has many beneficial effects on neonatal outcomes by declining mortality rates and morbid conditions (5, 6).

The separation of maternal-infant dyad is routinely practiced in the special care or level II nurseries and NICUs (7). Like other countries, in Iran, the shortage of facilities and physical space has restricted the rooming-in practice during the hospital stay in most of the maternity centers. Hyperbilirubemia, as one of the most prevalent disorders during neonatal period and the most common cause of neonatal admission, involves 60-80% of neonates (8, 9). Most of these icteric neonates are well and do not need to receive special or intensive care; as a result, the rooming-in practice can be followed without any hazardous risk or mismanagement.

The first days of the neonatal life, as the most frequent days of admission due to hyperbilirubinemia, are the important days for maternal-infant bonding and breastfeeding success. Phototherapy as the main treatment of jaundice can easily be followed along with the rooming-in. Not only does the rooming-in interfere with the treatment process, but also it leads to better outcomes by improving breastfeeding and maternal comfort.

With this background in mind, the present study aimed to investigate the effects of rooming-in on icteric neonates regarding the length of hospital stay, maternal satisfaction level, and complications of hospital stay. It should be noted that the rooming-in is not currently practiced in the hospital under investigation.

## Methods

This study was conducted on the icteric neonates admitted to Mofid Children's Hospital in Tehran, Iran during January 2012- December 2012. This referral hospital has a pediatric subspecialty clinic; however, it does not include a Department of Obstetrics and Gynecology. The inclusion criteria included having above 37 weeks of gestation and healthy status except for icterus; in other words, the preterm newborns and those needing NICU admission or sophisticated care services were excluded from this study.

The routine care practiced in the neonatal unit under investigation supported partial stay of mothers beside their neonates, while sitting

on chairs; however, most of the time the mother-infant dyad was separated. The newborns in this study were randomly assigned into routine-care group (control group) and rooming-in care group (intervention group). The latter group was admitted to a different atmosphere facilitating the mothers and neonates with separate beds along with phototherapy devices and nursing clinical supervision. The two groups were compared in terms of such variables as weight at birth, admission, and discharge, age at admission, length of hospital stay, maternal level of satisfaction, and consequences of hospital stay (e.g., milk aspiration and trauma). To measure the maternal satisfaction with the neonatal care services and hospital stay comfort, a validated self-made questionnaire was employed, which was filled in by some trained mid-wives. This questionnaire was rated on a 5-point Likert scale ranging from "very satisfied" to "dissatisfied". Data analysis was performed using paired sample t-test (to compare the mean and standard deviation of the continuous variables) through SPSS version 16. P-value less than 0.05 were considered statistically significant.

## Results

Out of the 220 newborns enrolled in this study, 126 cases (57.3%) were male and 94 neonates (42.7%) were female. According to the results of the study, the mean neonatal ages were  $6.6 \pm 3.7$  and  $7 \pm 3.8$  days in the intervention and control groups, respectively. In addition, the mean birth weights were  $3180 \pm 480$  and  $3160 \pm 410$  g in the intervention and control groups, respectively. As the results demonstrated, there was no significant difference between the two groups regarding the neonatal weight gain during the hospital stay. Table 1 presents the distribution of the studied variables.

The level of satisfaction was significantly higher in the intervention group, compared to that in the control group (26.6% and 18.8%, respectively;  $P$ -value=0.027). Furthermore, no difference was observed between the two groups regarding the frequency of treatment and hospital stay complications, such as milk aspiration, trauma, eye displacement, thermal instability, and apnea (Table 1). In addition, the two groups were similar to each other in terms of such variables as difficulty in breastfeeding at the time of discharge,

frequency of changing diaper by mothers, and time spent on neonatal caregiving.

**Table 1.** Comparison of the variables between the intervention and control groups

Variables	Rooming-in care (intervention group)	Routine-care (control group)	P-value
Age (days)	6.6	7.0	0.488
Length of hospital stay (days)	2.6	2.7	0.735
Birth weight (kg)	3.18	3.16	0.884
Admission weight (kg)	3.04	3.02	0.900
Discharge weight (kg)	3.10	3.10	0.842
Maternal satisfaction			
Very satisfied	26.6%	18.8%	
Satisfied	54%	53.1%	0.027
Fairly satisfied	16.2%	19.8%	
Dissatisfied	2.4%	3.1%	
Very dissatisfied	0.8%	5.2%	
Treatment consequences			
Treated	95.2%	96.9%	0.738
Transferred to other hospitals	2.4%	1%	
Discharged against medical advice	2.4%	2.1%	
Complications			
Milk aspiration	0.8%	1%	
Trauma	0.8%	1%	0.655
Total complications	1.6%	3.0%	
No complication	98.4%	96.8%	

## Discussion

In this study, 220 neonates with hyperbilirubinemia admitted to Nursery Unit of Mofid Children's Hospital were grouped based on receiving the routine-care and rooming-in practice. As the findings demonstrated, the maternal satisfaction level during the hospital stay was significantly higher in the intervention group than that in the control group ( $P=0.027$ ).

The breastfeeding and caregiving during hospital stay are clearly recommended by the WHO and UNICEF in "ten steps to successful breastfeeding", which is also endorsed by American Academy of Pediatrics (10). According to this policy, keeping mother and newborn in proximity should be motivated from the time of birth in the hospital (11, 12), i.e., from the delivery room to the postpartum ward. Rooming-in practice in the birth centers provides the optimum environment to improve lactation. This strategy helps the mothers discover their newborn's cues before the dyad is discharged from the hospital. Based on the baby-friendly hospital policies, continuation of rooming-in is recommended until breastfeeding weaning time.

As the findings of the present study indicated, no significant difference was observed between the two groups in terms of the breastfeeding problems at the discharge time, frequency of changing diaper by mothers, time spent for neonatal nursing care, and complications of hospital stay. These findings may have been affected by the limited hospital stay of the icteric neonates. The rooming-in practice is considered as the preferred method for long hospital stays.

In a study conducted by Lee et al. in 2010, the

rooming-in practice along with breastfeeding success and failure rates of 860 normal healthy mother-infant dyads were analyzed during June 2004-June 2009 (13). In the mentioned study, 83 cases had to abandon the rooming-in for separation; therefore, the rooming-in success rate was estimated to be 90.3%.

In another study conducted in 2014, Hodgson ZG highlighted the effect of the rooming-in on reducing the need for medical treatment of the neonates born with opiate withdrawal problems (14).

Additionally, in a randomized controlled trial carried out by ahn SY in 2008 in 2008, the emotional stability of neonates was evaluated regarding the rooming-in care (15). They demonstrated that the neonates receiving the rooming-in care showed a more stable behavior against external irritations, compared to those receiving the routine-care.

Furthermore, Ronald (2007) concluded that the rooming-in practice was associated with significant decrease in the need for neonatal abstinence syndrome treatment and the length of hospital stay (16). In a survey carried out by Sasidharan et al. in 2005, an eleven-year experience in India showed that the rooming-in of mother and sick neonate can decrease mortality rate resulted from three significant diseases including asphyxia, sepsis, and prematurity (17).

According to the literature, the practice of rooming-in could also increase the ratio of nurse to patient (18, 19). Contrary to the current study, in the study conducted by sasidharan, the neonates with acceptable general condition were not enrolled, and other variables of health-care and nursery indices were not mentioned. In another study conducted by

Santos et al. in 2009, the continuity of breastfeeding for a 12-month period was guaranteed by the rooming-in practice (3). Limitation of the present study included small sample size and following the practice of rooming-in only for the icteric neonates.

## Conclusion

As the findings of the current study indicated, the rooming-in is a favorable practice for the mothers; however, it has no privilege in terms of hospital stay complications and health problems. Consequently, providing mothers with a more comfortable atmosphere using wider space and financial capabilities would create enormous advantages in neonatal caregiving.

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## Conflicts of interests

There is no conflict of interest.

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