Difficulty in Baby Care Activities, Postpartum Fatigue: A Comparison between Rooming-In and Non-Rooming-In Health Care Facilities

Fida`aEidAl-Shatnawi[1], Inaam Abdallah Khalaf[2]

[1]RN, MSN, PhD Student, School of Nursing, University of Jordan, [2]Professor, School of Nursing, The University of Jordan. Amman, Jordan

Abstract

Introduction: Rooming-in is one of the baby-friendly hospital initiative steps. Rooming-in has positive outcomes for mothers and newborns. However, the effect of rooming-in on postpartum fatigue and the difficulty in baby care activities is hardly investigated. Therefore, the purpose of this study is to identify and compare difficulty in baby care activities and postpartum fatigue between rooming-in health care facilities and non- rooming-in facilities.

Method: A Quasi- experimental design was used. A total of 152postpartum women were recruited from two hospitals in Jordan. Two self-administered questionnaires were used to collect data. Independent sample t-test was used to analyze the data.

Results: The women in the rooming-in group scored significantly higher level of postpartum fatigue than women in the non-rooming-in group. There were no significant differences between study groups related to difficulty in baby care activities.

Conclusions: Postpartum rooming-in practice doesn`t affect the difficulty in baby care activities, but it influences the level of postpartum fatigue. Therefore, the health care providers should consider the level of postpartum fatigue among the women when implementing rooming-in.

Key words: *Baby care activities, BFH, fatigue, Jordan, postpartum, rooming-in*

Introduction

As the early postpartum period significantly affects short and long term maternal and infant outcomes, careful and proper care should be practiced during this critical period[1, 2]. Heath care facilities demonstrate different health care modalities during this period. Baby friendly hospitals initiative (BFHI) is one of the initiatives that hospitals perform to maximize the health benefits for mothers and newborns. Rooming-in is one of the ten steps of the BFHI[3].

Rooming-in is keeping the mother and her baby together in the same room after and during hospitalization, rather than keeping them separated, until it medically recommended[4]. Rooming-in found to be beneficial to mothers, families, and their newborns, as it facilitates the transition of mothers and their newborns from hospitals to home, aiding in breastfeeding and enhances maternal-fetal attachment [5, 6].

On the other hand, rooming-in could affect the mother`s ability to perform the baby care activities and increase postpartum fatigue[7]. Postpartum fatigue is a common experience during postpartum that could impact the maternal and infant wellbeing [8]. Previous studies demonstrated that the level of postpartum fatigue did not differ significantly between women in the rooming-in group and women in the non-rooming-in group[9, 10].On the other hand, a recent study conducted in Korea reported that the fatigue level is higher among the rooming-in group than the non-rooming-in group[11].

Rooming-in and non-rooming-in issues had been scarcely investigated, previous studies comparing them focused on the neonatal and the breast feeding outcomes[4, 12, 13]. Therefore, the purpose of this study is to identify and compare difficulty in baby care activities and postpartum fatigue between women in rooming-in and non-rooming-in health care facilities.

We hypothesized that the difficulty in the baby-care activities perceived by women in the rooming-in group will be less than the difficulty in the baby-care activities perceived by women in non-rooming-in group**.** Also we hypothesized that the postpartum fatigue level among women in the rooming-in group will be more than the postpartum fatigue level among women in the non-rooming-in group.

Materials and Methods

Design: We used a quasi-experimental design (non-equivalent control after only design) to conduct the study.

Sample and settings: A convenience sample of women was recruited. The sample consisted of two groups, a rooming-in group, and a non-rooming-in group. The study participants were women aged between 15-49 years, gave birth normally to healthy singleton newborn at 37-plus weeks of pregnancy, whose newborn babies weighed between 2500 g and 4000 g, who developed no health issues or complications during pregnancy, delivery, and during the immediate postpartum period. Women with the following complications were excluded from the study [prolonged first stage of labor (not more than 12 hours) and second stage of labor (more than two+1 hour (one hour for epidural analgesia) for multigravida (3+1 hour (one hour for epidural analgesia),primigravida, had no instrumental delivery, and whose newborn babies had no health problem during the prenatal or delivery period]. According to neonates' condition, Apgar score is seven or more at one and five minutes after birth, and the neonate did not have diseases. The women able to read and write Arabic language and consented to participate in the study. The sample size for medium effect size (ES) at power .80 and alpha=.05 using t-test was 64 for each group [14]. The sample size increased by 20% to overcome the attrition of participants, accordingly, the sample size was 155 women[15].The study setting is the postpartum wards in two university hospitals in Jordan. One in Amman and the other in Irbid governorate. One is certified as a BFH, and therefore apply rooming-in, and the other doesn`t apply rooming-in.

Data collection procedure: The principal investigator started the data collection after getting the ethical approval from the University of Jordan and the targeted hospitals. The researcher met the women at the targeted hospitals in the postpartum wards. Screening for eligibility was done through reviewing the women's data on the records with the nurses' help. The women who met the criteria were invited to participate. The study purposes, the roles of the women, risks, benefits, and the rights of the women to refuse or withdraw from the study were explained. Anonymity and confidentiality were maintained and guaranteed. After accepting to participate, the study package contains the cover letter, informed consent, and the questionnaires were distributed to them. Data collection was done from July to November 2020. The questionnaires were completed in the woman`s room at the wards on the morning of discharge.

Instrumentation: Structured self-administered questionnaires were used to collect data. These questionnaires are: Difficulty in baby-care activities scale, and visual analogue scale, in addition to the demographic datasheet.

1.The difficulty in baby-care activities was measured by a Likert scale. The scale was developed by Lia (2015) based on an intensive literature review and her clinical experience. The 17 point Likert scale is composed of the following care categories: "feeding, cleansing, health and safety, and pacifying behavior." This scale has 4 points ranging from1: "not difficult" to 4: "very difficult". A higher score indicates a higher level of difficulty. The total score ranges from 17 to 68. The content validity index (CVI) was 0.89, and the Cronbach Alpha was .91[7]. In the current study, the CVI was .75, and the Cronbach Alpha was .95.The questionnaire was developed in Chinese language, to use in this study, it was translated to Arabic language and back translated by two independent researchers according to the WHO guidelines[16]. Areas of disagreement and conflict was resolved through discussion and then agreement.

2. Fatigue level was measured by the visual analogue scale (VAS). The VAS is a 10-cm horizontal line. The participants asked to mark their subjective feelings at the point that best describes their perceived fatigue: the left-hand endpoint of the line means "No fatigue at all"; and the right-hand endpoint means "complete exhaustion"; fatigue levels increase from left to right [17]. The last part of the questionnaire is a demographic data sheet that measured the demographic and obstetric variables.

Data Analysis: The statistical package for the social science (SPSS) (version 20), was used to analyze the data .Descriptive analysis statistics were used to describe sample characteristics, Descriptive statistics were also used to identify difficulty in baby-care activities, and postpartum fatigue level. To compare the homogeneity of the two groups concerning demographic and obstetric variables, an independent sample t-test and Chi-square test were used. Finally, an independent sample t-test was used to determine the differences in the difficulty in baby care-activities, and postpartum fatigue between the two groups.

Results

One hundred fifty-five women met the inclusion criteria and accepted to participate in the study (75 from the rooming-in group, and 80 from the non-rooming-in group). Seventy-five women completed and returned the questionnaire from the rooming-in group, and 79 women completed and returned the questionnaire from the other group. The response rate was 99.35%. Finally, one hundred fifty two questionnaires entered the analysis (73 from the rooming-in group, and 79 from the non-rooming-in one).

Demographic differences between rooming-in and non-rooming-in group

To assess the homogeneity of the sample characteristics, an independent sample t-test and Chi square test were used. There was no significant differences in the women`s demographic and obstetric characteristics between the two groups. Table(1) presents the demographic and obstetric characteristics for both groups.

Table 1: Demographic and obstetric differences between women in rooming-in and non-rooming-in group (n=152)

Variables	Rooming-in	Non-rooming-in	χ2/t	P value*
	n (%) or M (SD)	n (%) or M (SD)		
Age (years)	29.1 (4.86)	30.18 (5.0)	-.95	.34
Education Secondary or less College/bachelor Graduate studies	 22(30.1%) 48(65.8) 3(4.1%)	 18(22.8%) 50(63.3%) 11(13.9%)	4.78	.09
Income	435.8 (61.3)	453.3(87.9)	-1.53	0.13
Residence City Village	 33(45.2%) 40(54.8%)	 33(41.8%) 46(58.2%)	.18	.74
Para Primipara Multipara	 11(15.1%) 62(84.9%)	 16 (20.3%) 63 (79.7%)	.69	.52
Planned Pregnancy Yes No	 47(64.4%) 26(35.6%)	 57 (72.2%) 22(27.8%)	1.06	.38

Cont... **Table 1: Demographic and obstetric differences between women in rooming-in and non-rooming-in group (n=152)**

Type of feeding Exclusive BF Synthetic feeding Both of them		34(46.6%) 31(31.2%) 5(6.8%) 6 (7.6%) 34(46.6%) 42 (53.2%)	.84	.66
Postpartum discomfort Yes No		33(45.2%) 35 (63.3%) 40(54.8%) 31(36.7%)	3.69	.07
Previous information related BFH **Yes** **No**	35(47.9%) 38(52.1%)	50 (63.3%) 29 (36.7%)	3.63	.07

**P* value significant at α = 0.05

M: mean

SD: standard deviation

t: t value

χ2: Chi square value

The effect of rooming- in and non-rooming in health care facility in difficulty in the baby-care activities as perceived by the participating women

To test the first research hypothesis, an independent sample t-test was used. There were no significant differences between the two groups in the total mean score of the difficulty in baby care activities, the mean score for the rooming-in group was (M=23.31,SD=7.54) and (M=23.26,SD=9.6) for the non-rooming-in group,(t=.049, p=.96). The results indicated that women in the rooming-in and the women in the non-rooming-in group did not differ significantly in the total mean score of the difficulty in baby care activities, and both groups have low level of difficulty .Table(2) presents the results of the independent sample t-test to assess the group differences in the total mean score of difficulty in baby care activities.

Table 2:The Independent Sample t-test of Mean Differences in the Difficulty in Baby Care Activities in the Rooming-in Group and the Non-Rooming-in Group (N=152)

Study groups	Mean	Standard Deviation	P value for leven test	T	P value*
Rooming-in	23.31	7.255	.013	.049	.961
Non-rooming-in	23.26	9.853			

t: t value

P value significant at .05 (two-tailed)

The effect of rooming- in and non-rooming health care facility in the postpartum fatigue level of the participating women

To test the second research hypothesis, an independent sample t-test was run. There were significant differences in the mean fatigue level between the two groups(M= 5.58, SD=2.91) for the rooming-in group and (M=4.61, SD=2.09) for the non-rooming-in group, (t=2.60, p=.010). The results demonstrated a moderate level of postpartum fatigue in both groups. However, the fatigue level in the rooming-in group was significantly higher than the non-rooming-in group. Table (3) presents the results of the independent sample t-test for the mean differences in the fatigue level between the rooming-in and non-rooming-in group.

Table 3: The Independent Sample t Test for The Mean Differences In Fatigue Level Between Rooming-in and non-Rooming-in Group (N=152)

Study groups	Mean	Standard Deviation	P value for leven test	T	P value*
Rooming-in	5.58	2.91	0.70	2.60	.010
Non-rooming-in	4.61	2.09			

P value is significant at .05 (two- tailed)

t: t value

Discussion

Postpartum women are expected to carry out most of the baby care activities in the health facilities including: feeding, cleansing, safety and health, and pacifying. Rooming-in environment enables the mothers to provide complete care for themselves and their newborns with nurses' support[18]. It is expected that mothers in rooming-in settings experience less difficulty in providing care for their newborns. As they can observe nurses while providing care for the baby beside mothers, and asking for help and advice on issues related to baby care. Women in the rooming-in settings experience a higher level of confidence while providing care for their newborns [10].The study results demonstrated no significant differences between the women in the rooming-in group and the women in the non-rooming-in group in the difficulty in doing the baby care activities. Both groups demonstrated a low level of difficulty. This result may be due to the time of collecting the data, as the assessment of the study variables was done at the first 24 hours after giving birth and before the women discharge, at this time, the assistance of their family members and nurses are available which explain this result. The investigation of this variable for a long time and more than one point of measurement may show the difference between groups. The results of our study are consistent with the finding of lia et al. (2015) study, which compares the difficulty in baby care activities among postpartum women who delivered in the rooming-in facility according to the type of delivery, the findings showed no significant differences between the two groups. Inconsistently, the confidence in doing baby care activities was higher in the rooming-in group compared with the non-rooming-in group in another study[10].

Postpartum fatigue is one of the most common health concerns during postpartum period that may extend from births to one year, and it can impact maternal and fetal wellbeing[8, 19].In rooming-in settings, the mothers providing care and assessment of their newborns for about 24 hours. It is expected that women who gave birth in rooming-in settings to experience a higher level of fatigue than women who gave birth in non-rooming-in settings, as the babies in non-rooming-in settings brought to the mothers from the nursery upon their request. The study results demonstrated that postpartum women

experience a moderate level of fatigue. This finding is consistent with another study, where postpartum women reported a moderate level of fatigue [20]. Additionally, the results showed that postpartum women who gave birth at rooming-in facilities experienced a higher level of fatigue than postpartum women who gave birth at non-rooming-in facilities. These results are in line with study results conducted in Korea, which found that women in rooming-in settings had a significantly higher level of fatigue than women who partially apply rooming-in [14].On the other hand, other studies demonstrated no significant differences between groups in term of postpartum fatigue[9, 10].The inconsistent results about postpartum fatigue might be related to the different times of data collection, and the varying fatigue scales that were used in measuring it among postpartum women. The consensus regarding a unifying and universal fatigue scale is warranted to enable the researchers to assess fatigue level among postpartum women.

Conclusions

Rooming-in could not affect the mother`s ability to do the baby care activities. However, it could increase the level of postpartum fatigue. Assessment of fatigue level at immediate postpartum period and regularly during hospitalization to intervene accordingly is warranted. Hospitals should apply rooming-in in a more flexible way that takes postpartum fatigue levels and the ability to do the baby care activities into considerations. Nurses in the postpartum wards should be aware of the importance of applying rooming-in according to the women`s needs and concerns.

Implications for practice, policy, and research

Based on the study results, health care providers, including nurses, should assess fatigue level, and the ability of postpartum women to accomplish the baby care activities, especially in rooming-in settings. The study recommended using the visual analogue scale as an easy and quick assessment tool to evaluate fatigue level during hospitalization especially, in rooming-in settings, and to intervene accordingly using pharmacological and non-pharmacological strategies. Nurses in postpartum wards should consider the importance of assessing fatigue levels frequently and then intervene assuring flexible implementation of rooming-in based on the postpartum women's needs and concerns. It is recommended that policymakers work together with baby-friendly hospital initiative authorities to develop and implement a more flexible rooming-in policy. Improving accreditation criteria to enables nurses to implement rooming-in in a flexible way is needed.

For future studies, it is recommended to use the baby care activities scale in other population and settings to confirm its validity. It is also recommended to conduct a study utilizing a longitudinal design with more than one point of data collection to determine accurately the effect of rooming-in on the study outcomes. A comparison of primiparous women and multiparous women related to outcome variables is needed. Furthermore, a qualitative study to understand in-depth the experiences of postpartum women in rooming-in facilities is warranted.

Conflict of Interest Statement

No **Conflicts of Interest.**

Funding: None.

References

1. Berens, P., C. Lockwood, and K.J.U. Eckler, Literature review March, *Overview of postpartum care.* 2016.
2. WHO, *WHO recommendations on postnatal care of the mother and newborn*. 2013, World Health Organization Geneva.
3. Organization, W.H., *Guideline: protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services*. 2017: World Health Organization.
4. Jaafar, S.H., J.J. Ho, and K.S. Lee, *Rooming-in for new mother and infant versus separate care for increasing the duration of breastfeeding.* Cochrane Database Syst Rev, 2016(8): p. CD006641.
5. Dumas, L., et al., *Influence of skin-to-skin contact and rooming-in on early mother-infant interaction: a randomized controlled trial.* Clin Nurs Res, 2013. **22**(3): p. 310-36.
6. Pérez-Escamilla, R., et al., *Impact of the Baby-friendly Hospital Initiative on breastfeeding and child health outcomes: a systematic review.* 2016. **12**(3): p. 402-417.

7. Lai, Y.L., et al., *Postpartum fatigue, baby-care activities, and maternal-infant attachment of vaginal and cesarean births following rooming-in.* Appl Nurs Res, 2015. **28**(2): p. 116-20.
8. Khatun, F., et al., *The Relationships among Postpartum Fatigue, Depressive Mood, Self-care Agency, and Self-care Action of First-time Mothers in Bangladesh.* Korean Journal of Women Health Nursing, 2018. **24**(1).
9. Song, J.-E.J.K.J.o.W.H.N., *A comparative study on the level of postpartum women's fatigue between rooming-in and non rooming-in groups.* 2001. **7**(3): p. 241-255.
10. Chung, I.-s., et al., *A Comparative Study on Confidence in Newborn Care and Postpartum Fatigue of Puerperal Mothers in Rooming-in vs. Non-Rooming-in Groups.* International Journal of u- and e- Service, Science and Technology, 2015. **8**(11): p. 211-220.
11. Kim, Y., S. Kim, and K.-C.J.J.o.t.K.A.-I.c.S. Cho, *A Comparative Study on the Level of Postpartum Women's Fatigue and Breast Feeding Rate according to the Types of Rooming-in care.* 2017. **18**(5): p. 445-455.
12. De Bernardo, G., et al., *Rooming-in Reduces Salivary Cortisol Level of Newborn.* Mediators Inflamm, 2018. **2018**: p. 2845352.
13. Van der Merwe, S., et al., *Comparison of infant-feeding practices in two health subdistricts with different baby-friendly status in Mpumalanga province.* 2015. **28**(3): p. 121-127.
14. Cohen, J.J.P.B., *Quantitative methods in psychology: A power primer.* 1992. **112**: p. 1155-1159.
15. Polit, D.F., et al., *Resource manual for nursing research.* 2012.
16. int/substance_abuse/research_tools/translation/en/, W.H.O.J.h.w.w., *Process of translation and adaptation of instruments.* 2009.
17. Gift, A.G.J.N.r., *Visual analogue scales: measurement of subjective phenomena.* 1989.
18. Soares, A., R.R. Gaidzinski, and M.O.V.J.R.E.E.U. Cirico, *Nursing intervention identification in rooming-in.* 2010. **44**(2): p. 307-16.
19. Badr, H.A. and J.A.J.A.n.r. Zauszniewski, *Meta-analysis of the predictive factors of postpartum fatigue.* 2017. **36**: p. 122-127.
20. Abushaikha, L., R. Safadi, and M. Ahmad, *Assessing the association between fatigue and functional status during postpartum.* Sexual & Reproductive Healthcare, 2018. **18**: p. 19-23.