原　著

高年初産婦に特化した看護ガイドラインの産後のケアへの実装における効果：準実験介入研究

前　原　邦　江（千葉大学大学院看護学研究院）
岩　田　裕　子（千葉大学大学院看護学研究院）
森　　恵　美（千葉大学大学院看護学研究院）

目的：「高年初産婦に特化した産後１か月までの子育て支援ガイドライン」は高年初産婦の子育てへの身体的，心理社会的適応を促すことを目指している。本研究では，これを高年初産婦に対する病院における産後のケアに実装し，看護ガイドラインに基づく複合的介入の効果を評価することを目的とした。
方法：事前事後テストデザインの準実験研究。看護ガイドラインは，35推奨文で構成され，日本の４施設で産後のケアに実装された。35歳以上の初産婦がガイドライン実装前の対照群（91名）と実装後の介入群（108名）に割付けられた。アウトカムは，産後１か月および２か月時における疲労，産後うつ症状，母親役割の自信と満足感について質問紙を用いて評価された。
結果：産後１か月時において，介入群は対照群よりもエジンバラ産後うつ病自己評価票９点以上の女性の割合が有意に低かった（$\chi^2(1)=5.75$，$p=.019$）。産後２か月間における疲労，母親役割の自信および満足感は，２群間に有意差は認められなかった。
結論：本ガイドラインを病院における産後のケアに実装することは，介入群の産後１か月時の産後うつ症状の有意な低減に貢献した。より効果的で臨床で実行可能なガイドラインに改良するためには，さらなる研究が必要である。

KEY WORDS：childrearing，guidelines，nursing，older primipara，postpartum period

Ⅰ．INTRODUCTION

The proportion of older primiparous women aged ≥35 years has rapidly increased in Japan from 3.3% in 2001 to 9.8% of all live births in 2019[1]. Advanced maternal age is associated with a greater risk for pregnancy complications, caesarean section, preterm birth, and adverse infant outcomes[2-4]. According to previous studies describing postpartum maternal outcomes, both advanced maternal age and primiparity were risk factors for postpartum fatigue[5), 6)] and depression[7), 8)]. In addition, Japanese older primiparas had lower maternal confidence and satisfaction than multiparas and younger primiparas aged ≤34 years at 1 month postpartum[6)].

Mercer[9)] described the postpartum process for establishing a maternal identity with increasing attachment to the infant and learning how to care for the infant as well as physical restoration following birth. Older primiparous women often experience special challenges when adjusting to motherhood, including both physical and psychosocial challenges such as lack of sleep, awareness of physical limitations, anxiety about healthy growth of their baby, concern associated with breastfeeding, and managing changes in roles and responsibilities of infant care[10), 11)]. A challenge for nurses is to meet the needs of older primiparas to prevent accumulated fatigue and depressive symptoms and offer support for establishing a maternal identity while achieving a balance between physical restoration and infant care.

As evidence-based guidelines to care for older primiparas, "Nursing Guidelines for Childrearing Support in Older Primiparas（NGCSOP）in the First Month Postpartum"[12)] were established and have been available on the website of the Medical Information Network Distribution Service（Minds）in Japan[13)]. However, there is little evidence on the assessment of the impact of the NGCSOP when implemented with older primiparas during hospital-based postpartum care under existing standard care settings.

Overview of the NGCSOP

The NGCSOP aims to help older primiparas adapt

Received : 1. 28. 2021　Accepted : 6. 24. 2021.　　doi : 10.20776/S13448846-27-1-P43

physically and psychologically to the childrearing stage of life and experience pleasure with childrearing. These guidelines comprise a set of 35 recommendations for older primiparas mothers and their families to prevent accumulated fatigue, mitigate postpartum physical symptoms, help reduce postpartum depressive symptoms, encourage establishing feeding styles, and boost maternal confidence and satisfaction during the postpartum period. The NGCSOP have been formally evaluated and disseminated by the Minds[12),13)].

Purpose

This study aimed to evaluate the effectiveness of multiple interventions based on the NGCSOP to improve maternal physical and psychosocial adaptation during postpartum among older primiparas. We hypothesized that older primiparas in the intervention group have lower accumulated fatigue, lower prevalence of postpartum depressive symptoms, and greater maternal confidence and satisfaction than those in the control group at 1 month and 2 months postpartum.

Ⅱ. METHODS

Research design

A two-group pre-post quasi-experimental design was employed. In the pre-implementation phase, the control group received standard care. After imparting training to nurses in the participating hospitals, the NGCSOP was implemented in their postpartum care settings. In the implementation phase, the intervention group received multiple interventions based on the NGCSOP that were incorporated into the standard care in each hospital.

Participants

This study was conducted with a convenience sample of four hospitals（two perinatal medical centers, one university hospital, and one general hospital）in Japan. The inclusion criteria were primiparas who 1）were aged ≥35 years; 2）had a normal singleton pregnancy; and 3）were able to communicate in Japanese. The exclusion criteria were 1）high-risk pregnancy; 2）planned cesarean section; and 3）intention to exclusively use formula feeding. Eligible pregnant women were recruited by nurses/midwives in each participating hospital, and those who provided written informed consent were enrolled. Subsequently, if the mother or newborn had 1）serious health problems after birth, 2）premature birth, or 3）declined to participate, they were excluded from the study.

The estimated sample size was 64 with .80 power and two-sided *t*-tests with an alpha level of .05 and an effect size of .50. We recruited >100 participants in each group, considering a dropout rate of 30% at 2 months postpartum.

Standard care

In the pre-implementation phase, participants in the control group received standard care only. Standard care in the participating hospitals involved postpartum support by nurses/midwives during the postpartum hospital stay and follow-up outpatient appointments with the doctors/midwives until 2-4 weeks postpartum. Care involved early skin-to-skin contact, rooming-in, education on baby care tasks, support for successful breastfeeding, and guidance for postpartum life changes and self-care for families.

The postpartum hospital stay was typically 5-6 days after vaginal delivery and 7-9 days after cesarean section. After discharge, follow-up support, such as feeding advice and a physical check-up, was available until 1 month postpartum. There were no specific care guidelines for older primiparas. The standard care was provided flexibly depending on the individual care needs of the mother and infant.

Intervention

In the implementation phase, participants in the intervention group received standard care plus the interventions based on the NGCSOP[12)]. The NGCSOP covered five target areas with 35 recommendations: prevention of accumulated fatigue, relief of physical symptoms, prevention of postpartum depressive symptoms, encouragement of breastfeeding, and promotion of maternal confidence and satisfaction. Nurses incorporated multiple interventions based on the NGCSOP in association with standard care in the hospital setting.

Interventions based on the NGCSOP were provided to participants by nurses/midwives immediately after childbirth to 1 month postpartum in each hospital. Specific additional care comprised a）one-on-one discussion sessions using the educational booklet for older primiparas, b）a nursing interview based on the Edinburgh Postnatal Depression Scale（EPDS）during postpartum hospital stay, and c）telephone or outpatient follow-ups approximately 1-2 weeks after discharge.

Implementation strategies

We provided the NGCSOP intervention manual and a 1-day training session for expert nurses/midwives in each participating hospital. Nurses/midwives were also trained in nursing interview skills through video guidance and role playing[14)]. We also developed the original educational booklet for older primiparas as an intervention tool that intended to provide self-care information related to five target areas.

To ensure intervention success in clinical settings, nurses/midwives and researchers discussed the feasibility of success and flexibility in each hospital. The trained expert nurses/midwives were expected to disseminate the training session to all staff nurses/midwives.

Data collection procedure

In the pre-implementation phase, participants in the control group only were recruited, and data collection was performed. To prevent cross-group contamination, the intervention group was recruited in the implementation phase one month after in-hospital data collection for the control group was completed.

Data were collected between February 2015 and December 2016. Research nurses identified pregnant women who were potentially meeting the eligibility criteria in the participating hospitals during their third trimester (≥30 weeks of pregnancy). Pregnant women were informed regarding the study and invited to participate during regular check-up in the outpatient department. Women who agreed to participate received a letter, consent form, and questionnaires with return envelopes. Participants were asked to return the written informed consent and an antenatal questionnaire before childbirth. For participants in the intervention group, the interventions based on the NGCSOP were initiated immediately after childbirth.

Data were collected at five points: the third trimester of pregnancy (during pregnancy; T0), within 24 h after birth, at 1 day before discharge (during postpartum hospital stay; T1), at 1 month postpartum (T2), and at 2 months postpartum (T3). Participants were asked to respond to each questionnaire by mail at T0, T1, T2, and T3.

Outcome measures

We evaluated the following outcomes representing physical and psychosocial aspects of nursing interventions for older primiparas.

Physical outcome: fatigue

Fatigue was measured using the Postnatal Accumulated Fatigue Scale (PAFS)[15], which comprised 13 items related to fatigue symptoms. The total possible score ranged from 0 to 39. A higher score indicated greater fatigue. Cronbach's alpha in the present study was .82-.87.

Because a mother's accumulated fatigue could be influenced by labor and delivery, research nurses/midwives collected the baseline data PAFS scores for participants within 24 h after birth. Next, participants were asked to respond to the PAFS questionnaires by mail at T1, T2, and T3.

Psychological outcome: depressive symptoms

Depressive symptoms were measured with the Japanese version of the EPDS[16]. The EPDS comprised 10 items and the total possible score ranged from 0 to 30[17]. A higher score indicated more depressive symptomatology. For Japanese postpartum women, a cutoff point of 8/9 was considered to be optimal for screening for depression with 75% sensitivity and 93% specificity[16]. Cronbach's alpha in the present study was .81-.86.

Participants were asked to respond to the EPDS questionnaires at T0, T1, T2, and T3. The EPDS scores at T0 were used as baseline data.

Social outcome: maternal confidence and maternal satisfaction

Maternal confidence was measured with the 20 item Postpartum Maternal Confidence Scale (PMCS)[18]. The total possible score on the PMCS ranged from 20 to 80. A higher score indicated higher confidence in the maternal role. Cronbach's alpha in the present study was .90-.92. Maternal satisfaction was measured using the 9-item Postpartum Maternal Satisfaction Scale (PMSS)[18]. The total possible score ranged from 9 to 36. A higher score indicated greater maternal satisfaction. Cronbach's alpha in the present study was .86-.89.

Because neither the PMCS nor the PMSS was applicable for women during pregnancy, the baseline responses to questions on maternal confidence were rated on a 4-point Likert scale to the question, "Do you feel confident in becoming a mother?". Participants were asked to respond to the PMCS and PMSS questionnaires by mail at T1, T2, and T3.

Demographics

Demographic and obstetric data were collected via self-reported questionnaires. Questions on age, marital status, employment, education, family income, method of conception, mode of delivery, sex of infant, infant birth weight, and feeding methods were included.

Data analysis

Descriptive statistics (*M* and *SD*) were obtained. Chi-squared tests or independent sample *t*-tests were used to compare the differences in the demographic variables and outcome variables during pregnancy (T0) between the intervention and control groups. A repeated-measure two-way analysis of variance with two independent variables (ANOVA) was performed to examine differences in the changes in PAFS

scores, PMCS scores, and PMSS scores between groups over time. Baseline analysis of PAFS scores was set within 24 h after birth. Cochran Q and chi-squared tests were used to examine the proportion of women with EPDS scores of ≥9. The significance level was set at $p < .05$. The effect sizes were also calculated. The statistical analyses were performed using IBM SPSS Statistics 25 (IBM Corp., Armonk, NY, USA).

Ethical considerations

This study was approved by the Ethics Committee of Graduate School of Nursing, Chiba University (No. 26-20, 26-97) and participating hospitals. It was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from each participant before the start of the data collection.

Ⅲ. RESULTS

Figure 1 shows the flow diagram of participation. A total of 381 women were enrolled (control group: 181; intervention group: 200). Of these, 26 dropped out owing to either mother or infant health issues (e.g., premature birth). At 2 months postpartum, 337 women returned the questionnaires (control group: 162; intervention group: 175). After exclusion for various reasons (e.g., missing data, maternal/infant health problems, lost to follow-up), analysis was conducted on data from 199 participants (control group: 91; intervention group: 108; valid response rate 52.2%). The dropout rates did not significantly differ between the groups (49.7% vs. 46.0%, $Z = .73$, $p = .47$). There were no significant differences in maternal age [$M = 38.3$, $SD = 2.5$ vs. $M = 38.2$, $SD = 2.5$, $t(344) = .42$, $p = .67$], pregnancy after infertility treatment, (51.5% vs. 50.3%, $\chi^2 = .05$, $p = .83$), antenatal EPDS score [$M = 3.8$, $SD = 3.8$ vs. $M = 3.9$, $SD = 3.6$, $t(351) = .91$], financial insecurity, (26.8% vs. 23.0%, $\chi^2 = .64$, $p = .46$), or cesarean section (30.7% vs. 34.0%, $\chi^2 = .44$, $p = .56$) between analyzed participants ($n = 199$) and dropout participants ($n = 156$). There was no significant difference in the proportion allocated to the control group or the intervention group in each participating hospital [$\chi^2(3) = 5.05$, $p = .17$].

There were no significant differences in demographics such as maternal age, mode of delivery, or infant birth weight between the groups (Table 1). No significant differences were found for baseline data of the PAFS scores (5.4, $SD = 5.1$; 6.6, $SD = 6.5$; $t = 1.35$, $p = .18$), antenatal EPDS scores (4.3, $SD = 4.0$; 3.4, $SD = 3.5$; $t = -1.68$, $p = .09$) and level of confidence in becoming a mother during pregnancy ($\chi^2 = 2.43$, $p = .49$) between the intervention and control group. There were no significant differences between the intervention group and control group in exclusive breastfeeding rates during the postpartum hospital stay (T1; 14.2% vs. 22.5%, $\chi^2 = 2.28$, $p = .14$).

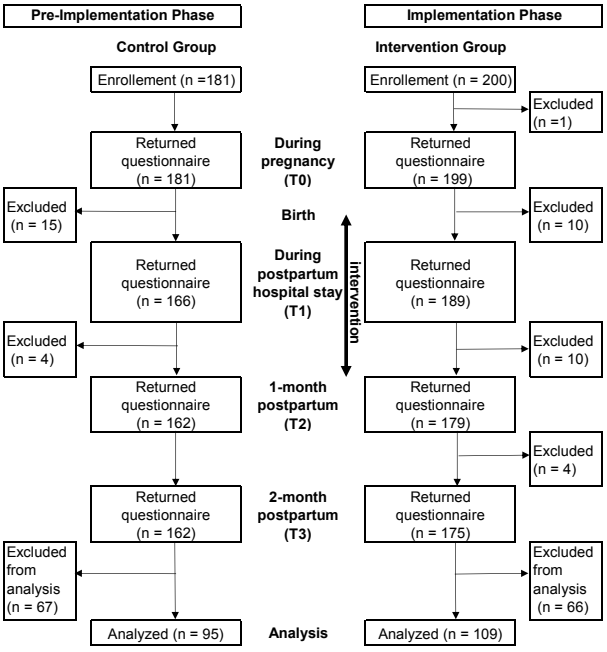

Figure 1. Flow diagram of the phases of the quasi-experiment

Table 1. Participants' demographics (N = 199)

Demographics	Intervention ($n = 108$)	Control ($n = 91$)			
	M (*SD*)	*M* (*SD*)	*df*	*t*	*p*
Age at time of birth (years)	38.1 (2.5)	38.6 (2.5)	195	1.30	.194
	n (%)	*n* (%)	*df*	χ^2	*p*
Married	107 (100)	91 (100)			
Annual family income (yen)			2	1.09	.579
<5,000,000	21 (19.8)	22 (24.2)			
5,000,000 – 9,999,999	66 (62.3)	50 (54.9)			
≥10,000,000	19 (17.9)	19 (20.9)			
Infertility treatment: Yes	54 (50.5)	48 (52.7)	1	0.10	.777
Pregnancy complications: Yes	52 (48.1)	40 (44.0)	1	0.35	.571
Mode of delivery			1	0.92	.358
Vaginal	78 (72.2)	60 (65.9)			
Caesarean section	30 (27.8)	31 (34.1)			
NICU hospitalization: Yes	20 (18.5)	19 (20.9)	1	0.18	.722
	M (*SD*)	*M* (*SD*)	*df*	*t*	*p*
Infant birth weight (g)	3017.3 (362.1)	3036.6 (358.0)	197	0.38	.708

Note. NICU = neonatal intensive care unit

Fatigue

The repeated ANOVA of the PAFS scores showed neither significant interaction effect (intervention × time) [$F(2.7, 531.0) = 1.38$, $p = .25$, partial $\eta^2 = .007$] nor significant group

effect [F (1, 197) = 2.18, p = .14, partial η^2 = .011]. However, the mean PAFS scores at 1 (T2) and 2 months postpartum (T3) were slightly lower in the intervention group (9.3, SD = 6.7; 7.2, SD = 5.9) than in the control group (10.9, SD = 7.5; 8.7, SD = 5.9), and the differences between the groups were not statistically significant.

Depressive symptoms

Figure 2 shows the proportion of women with EPDS scores of ≥9 in both groups during pregnancy (T0) and at T1, T2, and T3. The proportion of women with EPDS scores of ≥9 significantly increased from T0 to T2 and decreased from T2 to T3 in the control group [Cochran Q(3) = 18.44, p < .001]; however, the proportion had not significantly changed in the intervention group [Cochran Q(3) = 5.47, p = .14]. At 1 month postpartum (T2), the proportion of women with EPDS scores of ≥9 in the intervention group was significantly lower than those in the control group (χ^2 = 5.75, p = .02, Cramer's V = .170).

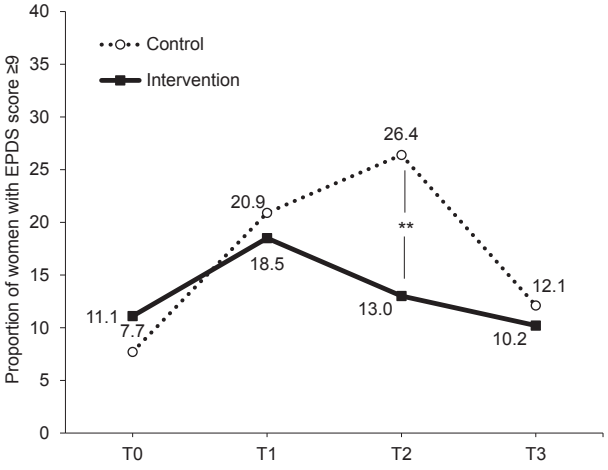

Figure 2. Proportion of women with EPDS score ≥9 by groups
Proportion of women with EPDS score ≥9 during pregnancy (T0), during postpartum hospital stay (T1), 1 month (T2), and 2 months postpartum (T3) are presented for the intervention (n =108) and control (n =91) groups.
EPDS = the Edinburgh Postnatal Depression Scale.

Maternal confidence and satisfaction

The repeated ANOVA of PMCS scores showed a significant interaction effect (intervention × time) [F (1.6, 315.3) = 3.30, p = .049, partial η^2 = .016]. The mean PMCS scores increased significantly in both groups from the time of the postpartum hospital stay (T1) to 1 month (T2) and from T2 to 2 months postpartum (T3). However, the simple main effects between groups were not significant at T1, T2, and T3. The repeated ANOVA of PMSS scores showed neither interaction effect (intervention × time) [F (2, 394) = .43, p = .65, partial η^2 = .002] nor significant group effect [F (1, 197) = 1.28, p = .26, partial η^2 = .006]. (Table 2)

Ⅳ. DISCUSSION

The implementation of the NGCSOP showed partly significant improvements in postpartum outcomes for older primiparous mothers. Our findings showed multiple interventions based on NGCSOP in-hospital settings were effective in reducing the postpartum depressive symptoms, whereas no significant difference was found in the accumulated fatigue, maternal confidence, or satisfaction scores during 2 months postpartum.

Postpartum depressive symptoms

Our findings showed that the intervention group reported significantly fewer depressive symptoms (cutoff

Table 2. Mean scores of the postpartum maternal confidence scale and the postpartum maternal satisfaction scale by groups

	Intervention (n = 108) Mean	SD	Mean difference $F_{2,196}$ (p), r[c] t (p[b]) from T1 t (p[b]) from T2	Control (n = 91) Mean	SD	Mean difference $F_{2,196}$ (p), r[c] t (p[b]) from T1 t (p[b]) from T2	Group mean difference[a] $F_{2,196}$ (p), r[c] t (p[b]), d[d]	Interaction effect between group and time F (p), partial η^2
PMCS			61.25 (< .001), .49			99.45 (< .001), .58	2.30 (.10), .11	3.30 (.049), .016
T1	46.3	9.9		47.4	9.9		0.79 (.43), .11	
T2	53.1	9.3	6.79 (< .001)	51.7	9.7	4.24 (< .001)	1.06 (.29), .15	
T3	58.8	10.2	5.70 (< .001)	57.4	9.3	5.70 (< .001)	1.03 (.30), .07	
PMSS			11.14 (< .001), .23			8.23 (< .001), .20	1.30 (.26), .08	0.43 (.649), .002
T1	30.2	4.0		29.8	4.8		0.36 (.56), .09	
T2	29.8	4.8	−0.39 (.86)	29.0	5.4	−0.79 (.40)	0.77 (.29), .16	
T3	31.4	4.3	1.63 (< .001)	30.6	4.3	1.57 (< .001)	0.82 (.18), .19	

Note. T1 = during postpartum hospital stay; T2 = 1 month postpartum; T3 = 2 months postpartum.
PMCS = the Postpartum Maternal Confidence Scale; PMSS = the Postpartum Maternal Satisfaction Scale.
[a]Repeated two-way analysis of variance, [b]Bonferroni adjustment
[c]r = effect size; .20 (small), .30 (medium), .50 (large), [d]d = effect size; .20 (small), .50 (medium), .80 (large)

score of ≥9: 13.0%）than the control group（26.4%）at 1 month postpartum. The reported prevalence rate of 13.0% in the intervention group was lower than that in other older primiparas（20.8%）reported in a previous study[7]. This positive finding could be explained by EPDS screening for early identification of depressive symptoms and follow-up consultation on concerns being effective. Although the EPDS questionnaire is commonly used in Japan, our findings indicated that an individual nursing interview incorporating screening with the EPDS during postpartum hospital stays may be beneficial for older primiparas. It was similar to the evidence revealed by a systematic review[19] that professionally based home visits and flexible postpartum care provided by nurses/midwives, postpartum telephone-based peer support, and interpersonal psychotherapy appear to show promise in the prevention of postpartum depression. The present study highlighted nursing interviews for older primiparas performed before hospital discharge. Our finding showed that there was no difference in the proportion of women at risk for developing depression（EPDS scores of ≥9）between groups at 2 months postpartum. The intervention could be provided particularly during the first month postpartum as a vulnerable period, and nurses should be aware of listening to new mothers and empathizing with their feelings.

Postpartum fatigue

Intervention based on the NGCSOP did not contribute to a significant reduction in accumulated fatigue at 1 month or 2 months postpartum. In the participating hospitals, older primiparas are no longer uncommon. Standard care may have already included tailored care to prioritize mother's rest considering the advanced maternal age before implementation of the guidelines.

In the intervention group, participants were given a discussion session using the educational booklet during the postpartum hospital stay that addressed information required to prevent and cope with postpartum fatigue; however, older primiparas could have required to arrange social support in their circumstance before childbirth. Postpartum fatigue peaks at 4-6 weeks[20]. A follow-up may also be needed after discharge. A previous study showed that use of the Tiredness Management Guide as self-care intervention to manage postpartum fatigue was effective in reducing fatigue from the second week to the 4th week postpartum but not at the 6th week postpartum[21]. According to a randomized controlled study using a workbook on coping with postpartum fatigue[22], mothers who received the workbook, home visit, and three professionally led telephone support sessions had fewer fatigue symptoms at 6-weeks post-intervention. The possible explanation for decreased response rates at 1 month or 2 months postpartum in the present study is that women who were struggling with daily routines or with issues in both groups dropped out. Currently, a check-up for mothers and infants at 2 weeks or 1 month postpartum are available with public subsidies in Japan. Nurses/midwives can take this opportunity to provide follow-up support based on the NGCSOP.

Maternal confidence and satisfaction

Our findings showed that no significant difference in PMCS or PMSS scores were found between the groups, although maternal confidence increased over time in both groups. A previous study showed that a postnatal psychoeducation program comprising a home visit, an educational booklet, and three follow-up telephone sessions improved maternal parental self-efficacy in a randomized controlled trial[23]. In the present study, the amount of intervention could have been insufficient to boost maternal confidence, with only one additional educational session conducted using the booklet during early postpartum. Furthermore, maternal confidence may be influenced by various factors such as social support and communication with their partner about parenting roles.[24] An individual educational session for the intervention group covered issues on preparing their postpartum routine and social support for older primiparas. However, opportunities involving the husband/partner were limited. Further improvement in interventions would be useful to encourage the collaboration of new fathers and other family members.

Limitations and implications

There was selection bias owing to dropouts. Although participants were recruited during their pregnancy, older primiparas had possible risks of adverse consequences at birth and they did not meet the inclusion criteria after birth. Several participants from both groups missed the cutoff date or had missing data; therefore, the valid response rate was 52.2%. Women who were struggling with daily routines after discharge may have dropped out before responding to the questionnaires. However, there were no significant differences in demographics between the dropouts and nondropouts, and no significant differences in dropout rates between the control and intervention groups. Thus, participants in both groups may represent healthy mothers and infants who could complete data collection during the postpartum period. That could be one possible explanation for the only measurable effect being

a small reduction in depressive symptoms. In Japan, older primiparas are at high risk during pregnancy and childbirth; hence, the generalizability of these findings is limited.

Furthermore, the implementation of the guidelines was conducted at four convenient hospitals; hence, external validity should be confirmed. Our positive finding could be explained by the close involvement of nurses/midwives to implement the NGCSOP to supplement standard care in their own hospitals. Nurses/midwives provided additional interventions during postpartum hospital stays. It was challenging to manage balanced care for both mother's rest and parenting education within 4-7 days postpartum. To improve the time barrier to provide information for mothers after childbirth, providing anticipatory guidance on postpartum life changes to older primiparas and their partners through antenatal education should be considered. Testing multiple interventions based on the guidelines in a real clinical setting is challenging owing to various contextual factors. Further studies that collect qualitative data would be beneficial to identify implementation effects more accurately.

Ⅴ. CONCLUSIONS

We evaluated the effectiveness of the NGCSOP for maternal physical and psychosocial well-being among older primiparas during the postpartum period. Implementation of the NGCSOP in-hospital-based postpartum care contributed to a significant reduction in postpartum depressive symptoms at 1 month postpartum in the intervention group. Further studies are needed to improve the guidelines to make them more effective and feasible in clinical care settings.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

The authors thank all participants and nurses at the participating hospitals. We are grateful to the collaborating researcher, Dr. Koji Tamakoshi and Dr. Akiko Sakajo. Financial support for this study was provided by the Grant-in-Aid for Scientific Research（A）（No. 26253097）from Japan Society for the Promotion of Science, Japan.

References

1）Japan Ministry of Health, Labour and Welfare: Vital statistics 2019, Figure 4, 2020. https://www.mhlw.go.jp/toukei/saikin/hw/jinkou/kakutei19/dl/08_h4.pdf（in Japanese）［cited 26 Jan 2021］

2）Kahveci, B., Melekoglu, R., Evruke I. C., Cetin C: The effect of advanced maternal age on perinatal outcomes in nulliparous singleton pregnancies, BMC Pregnancy and Childbirth, 18, 343, 2018.

3）Koshida, S., Arima, H., Fujii, T., Ito, Y., Murakami, T., Takahashi, K: Impact of advanced maternal age on adverse infant outcomes: A Japanese population-based study. European Journal of Obstetrics & Gynecology and Reproductive Biology, 242, 178－181, 2019.

4）Lean, S.C., Derricott, H., Jones, R.L., Heazell A.E.: Advanced maternal age and adverse pregnancy outcomes: A systematic review and meta-analysis. PLoS ONE. 12（10）, e0186287, 2017.

5）Henderson, J., Alderdice, F., & Redshaw, M.: Factors associated with maternal postpartum fatigue: an observational study. BMJ Open, 9, e025927, 2019.

6）Mori, E., Tsuchiya, M., Maehara, K., Iwata, H., Sakajo, A., Tamakoshi, K.: Fatigue, depression, maternal confidence, and maternal satisfaction during the first month postpartum: A comparison of Japanese mothers by age and parity. International Journal of Nursing Practice, 23（1）, e12508, 2016.

7）Iwata, H., Mori, E., Sakajo, A., Aoki, K., Maehara, K., Tamakoshi, K.: Prevalence of postpartum depressive symptoms during the first 6 months postpartum: Association with maternal age and parity. Journal of Affective Disorders, 203, 227－232, 2016.

8）Youn, H., Lee, S., Han, S.W., Kim, L.Y., Lee, T-S., Oh, M-J., Jeng H-G, G.J.: Obstetric risk factors for depression during the postpartum period in South Korea: a nationwide study. Journal of Psychosomatic Research, 102, 15－20, 2017.

9）Mercer, R.T.: Becoming a mother versus maternal role attainment. Journal of Nursing Scholarship, 36（3）, 226－232, 2004.

10）Mori, E., Iwata, H., Sakajo, A., Maehara, K., Ozawa, H., Maekawa, T., Morita, A., Saeki, A.: Postpartum experiences of older Japanese primiparas during the first month after childbirth. International Journal of Nursing Practice, 20（S1）, 20－31, 2014.

11）Sakajo, A., Mori, E., Maehara, K., Maekawa, T., Ozawa, H., Morita, A., Aoki, K., Iwata H.: Older Japanese primiparas' experiences at the time of their post-delivery hospital stay. International Journal of Nursing Practice, 20（S1）, 9－19, 2014.

12）Mori, E.: Nursing guidelines for childrearing support in older primiparas in the first month following childbirth, 2014. http://minds4.jcqhc.or.jp/minds/childrearing_support_in_older_primiparas/Nursing-Guidelines-for-Childrearing-Support-in-Older-Primiparas-ENGver.pdf［cited 26 Jan 2021］

13）Japan Council for Quality Health Care: Medical Information Network Distribution Service financially supported by Ministry of Health, Labor and Welfare of Japan as a consignment project, 2004. https://minds.jcqhc.or.jp/english/english.php［cited 26 Jan 2021］.

14）Iwata, H., Mori, E., Sakajo, A., Maehara, K., Aoki, K., Tsuchiya,

M.: Translating post-partum care guidelines into clinical practice: Nursing interventions to prevent post-partum depression in older Japanese primiparas, 2017. https://www.n.chiba-u.jp/mamatasu/info/webdir/73/PPD%20prevention%20care.pdf［cited 26 Jan 2021］
15）Tsuchiya, M., Mori, E., Sakajo, A., Iwata, H., Maehara, K., Tamakoshi, K.: Cross-sectional and longitudinal validation of a 13-item fatigue scale among Japanese postpartum mothers. International Journal of Nursing Practice, 22(S1), 5－13, 2016.
16）Okano, T., Murata, M., Masuji, F., Tamaki, R., Nomura, J., Miyaoka, H., Kitamura, T. : Validation and reliability of Japanese version of EPDS, Archives of Psychiatric Diagnosis and Clinical Evaluation, 7(4), 525－533, 1996.（in Japanese）
17）Cox, J. L., Holden, J. M., Sagovsky, R.: Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. The British Journal of Psychiatry, 150(6), 782－786, 1987.
18）Maehara, K., Mori, E.: Development of the postpartum maternal confidence scale and the postpartum maternal satisfaction scale: reliability and validity. Journal of School of Nursing, Chiba University, 27, 9－18, 2005.（in Japanese）
19）Dennis, C-L., Dowswell, T.: Psychosocial and psychological interventions for preventing postpartum depression. Cochrane Database of Systematic Reviews, Issue 2, 2013.
20）Song, J-E., Chae, H. J., & Kim, C. H.: Changes in perceived health status, physical symptoms, and sleep satisfaction of postpartum women over time. Nursing & Health Sciences, 16(3), 335－342, 2013.
21）Troy, N. W., Dalgas-Pelish, P.: The effectiveness of a self-care intervention for the management of postpartum fatigue. Applied Nursing Research, 16(1), 38－45, 2003.
22）Giallo, R., Cooklin, A., Dunning, M., Seymour, M.: The efficacy of an intervention for the management of postpartum fatigue. Journal of Obstetric, Gynecologic & Neonatal Nursing, 43(5), 598－613, 2014.
23）Shorey, S., Chan, S.W.C., Chong, Y.S., He, H-G.: A randomized controlled trial of the effectiveness of a postnatal psychoeducation programme on self-efficacy, social support and postnatal depression among primiparas. Journal of Advanced Nursing, 71(6), 1260－1273, 2014.
24）Maehara, K., Mori, E., Tsuchiya, M., Iwata, H., Sakajo, A., Ozawa, H., Morita, A., Maekawa, T., Makaya, M., Tamakoshi, K.: Factors affecting maternal confidence among older and younger Japanese primiparae at one month post-partum, Japan Journal of Nursing Science, 13(4), 424－436, 2016.

EFFECTIVENESS OF NURSING GUIDELINES WHEN IMPLEMENTING POSTPARTUM CARE FOR OLDER PRIMIPARAS: A QUASI-EXPERIMENTAL INTERVENTION STUDY

Kunie Maehara, Hiroko Iwata, Emi Mori
Graduate School of Nursing, Chiba University

KEY WORDS :
childrearing, guidelines, nursing, older primipara, postpartum period

Aim: The "Nursing Guidelines for Childrearing Support in Older Primiparas in the First Month Postpartum（NGCSOP）" targeted older primiparous women to help them physically and psychosocially adapt to childrearing. This study aimed to evaluate the effectiveness of multiple interventions based on nursing guidelines implemented in hospital-based postpartum care for older primiparas during the postpartum period.
Methods: A pre-post quasi-experimental design was employed. The nursing guidelines comprised a set of 35 recommendations for postpartum care settings that were implemented in four hospitals in Japan. Primiparous women aged ≥35 years were enrolled in the control group before implementation of the guidelines（n = 91）or in the intervention group after implementation of the guidelines（n = 108）. Outcomes were assessed using questionnaires for fatigue, depressive symptoms, maternal confidence, and maternal satisfaction at early postpartum and at 1 month and 2 months postpartum.
Results: At 1 month postpartum, the proportion of women with an Edinburgh Postnatal Depression Scale score of ≥9 in the intervention group was significantly lower than that in the control group［$\chi^2(1) = 5.75, p = .019$］. No significant differences were found between the two groups in fatigue, maternal confidence, and satisfaction during 2 months postpartum.
Conclusions: Implementation of the NGCSOP in hospital-based postpartum care contributed to a significant reduction in postpartum depressive symptoms at 1 month postpartum in the intervention group. Further studies are needed to improve the guidelines by making them more effective and feasible in clinical care settings.