

Adherence to “Doing-the-Month” Practices Is Associated With Fewer Physical and Depressive Symptoms Among Postpartum Women in Taiwan

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Abstract: According to traditional Chinese custom, women should be confined to home and assisted with tasks for 1 month after giving birth to a child. This restrictive regimen is referred to as *doing-the-month*. The objectives of this study were to describe adherence to doing-the-month practices and to explore the association between adherence to doing-the-month practices and physical symptoms and depression among postpartum women in Taiwan. Participants were 202 women at 4–6 weeks after delivery. Adherence to doing-the-month practices was associated with lower severity of physical symptoms and lower odds of postnatal depression, after adjustment for potential confounders. Adherence to doing-the-month practices was associated with better health status among postpartum women in Taiwan. © 2006 Wiley Periodicals, Inc. Res Nurs Health 29:374–383, 2006

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According to traditional Chinese customs, women should be confined to their homes and should be assisted in conducting their daily tasks for 1 full month after giving birth to a child. The broad array of the somewhat restrictive practices during this 1-month period is collectively referred to as "Tso-Yueh-Tzu," translated as *doing-the-month*. In Chinese culture, pregnancy and delivery are seen to exhaust a woman's physical health. Therefore, following delivery, a woman is supposed to adhere to doing-the-month practices in order to regain her strength (L.L. Chen & Wang, 2000). Doing-the-month has been described as the confinement and convalescence of Chinese women immediately following childbirth (Pillsbury, 1978). This practice has been recorded throughout Chinese history for over 2,000 years (Lin & Chen, 1999). The specific rationale underlying doing-the-month practices appears to have originated from the logic of traditional Chinese medicine and folk medicine in theories of the somatic balance of yin and yang, hot and cold, and the possible contaminative risks to others associated with fetal blood or lochia from postpartum women (Lin & Chen; Pillsbury).

Taiwan is a modern industrialized country. Many women of childbearing years are educated at the vocational school level or higher. Western medicine is the predominant medical system in Taiwan, with more than 99% of deliveries performed by obstetricians in hospitals, although clinics of traditional Chinese medicine are still prevalent and operate largely parallel to the Western medical system. Modernization has changed many facets of traditional life in Taiwan, however, the idea of doing-the-month is still highly valued, and a significant majority of women still follow these practices to some extent (L.L. Chen & Wang, 2000). Many people consider doing-the-month practices as efficacious for curing the body's imbalance postpartum and as a preventive therapeutic measure against ailments that may develop in later years (Lin & Chen, 1999). The dramatic changes in the social environment, as well as advancements in modern medicine, however, have had significant influences upon postpartum women's adherence to doing-the-month practices. The presumed health benefits associated with doing-the-month may appear to be somewhat dysfunctional within the contemporary health environment. Few researchers have examined the effects of doing-the-month practices on the health of postpartum women in a modern society. Moreover, in nearly all of the previous studies, doing-the-month was assumed to be a unitary practice. Yet it actually constitutes

different principles and practices, each with different levels of adherence.

The objectives of this study were to describe the level of adherence to doing-the-month practices and to explore the association between adherence to doing-the-month practices and the severity of physical symptoms and depressive symptomatology among postpartum women in Taiwan. According to the social control theory, society regulates human behavior by keeping people in conformity with prevailing social norms through social control (Coreil, Bryant, & Henderson, 2001). For postpartum Taiwanese women, because doing-the-month is highly valued by society for its effects on women's health, adherence to doing-the-month practices are viewed as the norm. Under the social control theory, women who have low adherence levels to doing-the-month practices may perceive themselves and/or be perceived by others as having poor health. In this study, sociocultural factors of local importance were included. In addition, risk factors for postnatal health commonly reported in previous studies were included as potential confounders. Three domains of risk factors were included: (a) demographic factors, including age, educational level, and work status; (b) perinatal characteristics, including method of delivery, parity, infant birth weight, and method of infant feeding; and (c) sociocultural factors, including adherence to doing-the-month practices, location for doing-the-month, primary caregivers for the postpartum women during the doing-the-month period, and primary caregivers for the neonate. The research questions were: (a) What were the levels of adherence to doing-the-month practices? (b) Was there a significant association between adherence to doing-the-month practices and severity of physical symptoms? (c) Was there a significant association between adherence to doing-the-month practices and depression? Under the social control theory, we hypothesized that adherence to doing-the-month practices was negatively associated with both severity of physical symptoms and postnatal depression.

METHODS

Sample Size Considerations

As there have been no previous studies on the association between adherence to doing-the-month practices and the severity of physical symptoms and postnatal depression, the sample

size for this study could not be based on previous studies. Polit and Sherman (1990) found the average correlation in nursing studies was about .20. We assumed the bivariate correlation between adherence to doing-the-month practices and the severity of physical symptoms was .20, and set α at .05. The required sample size was 197 to achieve a power of .80 (Polit & Beck, 2004, p.500). In multiple linear regression, when r^2 was set to be moderate (.13), the resultant effect size was .149. We set the number of predictors at 10 and α at .05. The required sample size was 120 to achieve a power of .80 (Polit & Beck, pp. 521–522). As a conservative approach, we decided to recruit about 197 subjects in this study.

Design and Sample

We used a cross-sectional design. The study participants were recruited from the postpartum wards of two hospitals and a certified postpartum care center in Taipei City, which is a metropolitan city in Taiwan. The inclusion criteria were: maternal age older than 20 years; currently married; no perinatal complications; and an infant birth weight of greater than 2,500 g. In Taiwan, women usually give birth in hospitals and remain there for 2–3 days. Postpartum care centers take women and neonates after hospital discharge for up to 2 months post-delivery. These centers provide 24-hour care for women and infants, while still allowing women to be accompanied by family and friends. Women pay for the care at these centers themselves. Women can choose whether they want to adhere to doing-the-month practices even when they stay at postpartum care centers. The recommended time period for doing-the-month is the 1-month period immediately after the delivery of a child. Therefore, we decided that the questionnaires should be filled out by the women at 4–6 weeks postpartum.

Women in the postpartum wards of the hospitals were informed about the study and were invited to participate from January through February, 2003. Each woman who was willing to participate signed a consent form and provided her address and telephone number. A questionnaire was mailed to the women approximately 3 weeks after delivery, and they were asked to complete and return the questionnaire 4–6 weeks after delivery. A reminder telephone call was made if the questionnaire was not returned within 1 week.

Women at the postpartum care center were approached at 4–6 weeks after delivery, those women who were willing to participate signed a

consent form, and a questionnaire was handed directly to them. The completed questionnaires were collected from the center. The final study sample was comprised of 202 women, 150 from postpartum wards and 52 from a postpartum care center. The overall response rate was 73.9%. When questionnaires were returned, we checked for completeness and contacted the participants who gave incomplete answers. Thus, there were no missing data. This study was approved by an Institutional Review Board of Taipei Veterans General Hospital.

Characteristics of the study participants are presented in Table 1. The mean age of study participants was 31.6 years ($SD = 4.7$, $r = 21–45$). Most of the women stayed at the homes of relatives or friends during the doing-the-month period. The number of women who stayed at a postpartum care center was about equal to the number of women who stayed in their own homes. Primary caregivers for the postpartum women during the doing-the-month period were mostly mothers-in-law or their own mothers.

Measures

Depression was measured using the Chinese version of the Center for Epidemiologic Studies Depression Scale (CES-D), with a cut-off score of 15 signaling depression (C.P. Chien & Cheng, 1985). Individuals with high CES-D (≥ 15) were viewed as having probable postnatal depression. The CES-D includes 20 Likert-scale items with scores ranging from 0 to 60. The CES-D has been used extensively to measure depression among postpartum women (Beeghly et al., 2002; Walker, Timmerman, Kim, & Sterling, 2002). The reliability and validity of the Chinese version of the CES-D has been previously demonstrated in the Taiwanese population (C.P. Chien & Cheng; Fu, Lee, & Chen, 2003). The sensitivity, specificity, and misclassification rate based on a cut-off score of 15 were 92.0%, 91.0%, and 8.2% respectively when the CES-D findings were compared to the caseness detected by Clinical Interview Schedule (C.P. Chien & Cheng). The internal consistency of the CES-D, as assessed by Cronbach's α in this study, was .76.

Adherence to doing-the-month practices and the severity of postpartum physical symptoms were measured using scales developed for this study. The scale was initially designed based on extensive literature review and clinical observations. Five experts (including an obstetrician, a traditional Chinese medicine doctor, a nurse

Table 1. Characteristics of the Study Participants (n = 202)

Characteristic	n (202)	%
Age (years)		
20–24	13	6.4
25–29	57	28.2
30–34	78	38.6
≥35	54	26.7
Educational level		
High school or less	58	28.7
Vocational school	65	32.2
University or higher	79	39.1
Work status		
None	55	27.2
Part time	10	5.0
Full time	137	67.8
Method of delivery		
Non-instrumental vaginal delivery	99	49.0
Instrumental vaginal delivery	20	9.9
Cesarean delivery	83	41.1
Parity		
1	107	53.0
2	81	40.1
> 2	14	6.9
Location for doing-the-month		
Own home	56	27.7
Postpartum care center	52	25.7
Relatives' or friends' home	94	46.5
Primary caregivers for the postpartum women during the doing-the-month period		
Mother-in-law	77	38.1
Own mother	59	29.2
Husband	30	14.9
Hired personnel	30	14.9
Others	6	3.0
Primary caregivers for the neonates		
Self	142	70.3
Others	60	29.7
Infant feeding		
Exclusive breast-feeding	50	24.8
Mixed feeding	107	53.0
Exclusive formula-feeding	45	22.3
Infant birth weight (grams)		
< 3,000	50	24.8
3,000–3,499	101	50.0
≥3,500	51	25.2

researcher, a head nurse in the postpartum ward, and a senior nurse in the postpartum care center) rated the correctness, appropriateness, and clarity of the questionnaire using a 4-point Likert scale ranging from 1 (*very inadequate*) to 4 (*very adequate*). Those items that had low scores were discussed and modified by the experts. The overall

performance of the scale as assessed by the content validity index was .95 and .83 for adherence to doing-the-month practices and severity of physical symptoms, respectively. In addition, the instrument was pre-tested on six postpartum women to assess the semantic clarity and readability. The measure of adherence to doing-the-month practices included 27 Likert-scale items with scores ranging from 0 to 108 (items are listed in Table 2). Item scores ranged from 0 (*never*) to 4 (*always*). A high score indicates a high level of adherence to doing-the-month practices. Postpartum physical symptoms were assessed using an 18-item, 4-point Likert scale, with scores ranging from 0 to 54 (items are listed in Table 3). The scores assigned to the Likert scale were 0 (*none*) to 3 (*severe*) for all questions except for two (*varicose veins in the legs* and *more colds than usual*). In our pilot testing of the instrument on women, the participants found it hard to consider the severity of these two symptoms, and they considered presence of these two symptoms as being severe. After consulting with the five experts, dichotomized answers of *yes* (three) and *no* (zero) were used for questions *varicose veins in the legs* and *more colds than usual*. A high score indicates a high severity of physical symptoms. The internal consistencies of the scales for adherence to doing-the-month practices and for postpartum severity of physical symptoms, as assessed using Cronbach's α , were .86 and .77, respectively.

Data Analysis

Statistical analyses were performed using the SPSS 10.0 software package (SPSS, Inc., Chicago, IL). Individual variables were examined by percentage, mean, and standard deviation (*SD*). Bivariate association between adherence to doing-the-month practices and severity of physical symptoms and postpartum depression were conducted using Pearson's correlation coefficient and the Student's *t*-test. Multivariate linear regression and multivariate logistic regression were used to examine the association between adherence to doing-the-month practices and the severity of physical symptoms and postpartum depression, controlling for other significant variables. Stepwise methods were applied in the regression model to identify significant variables in the model. A two-tailed *p*-value of <.05 was considered to be statistically significant in the regression model.

Table 2. Adherence to the "Doing-the-Month" Practices Among Postpartum Women (n = 202)

Practices	Frequency of Adherence					M (SD)
	Always (%)	Most of the time (%)	Some of the time (%)	Rarely (%)	Never (%)	
Avoided carrying heavy objects	53.0	26.2	8.4	8.9	3.5	3.16 (1.12)
Avoided going out unless necessary	46.0	35.1	6.9	9.4	2.5	3.13 (1.06)
Avoided squatting	32.7	40.1	13.9	8.9	4.5	2.88 (1.10)
Remained supine	20.8	33.7	37.1	5.9	2.5	2.64 (.96)
Avoided long-standing	13.9	30.7	33.7	13.9	7.9	2.29 (1.11)
Avoided weeping	29.7	39.1	15.3	12.4	3.5	2.79 (1.10)
Did not read, watch TV, and/or sew	7.4	24.8	27.2	18.8	21.8	1.77 (1.25)
Did not wash hair	40.6	24.3	23.3	8.9	3.0	2.91 (1.12)
Covered thoroughly from head to toe when going out	41.6	26.7	14.4	8.9	8.4	2.84 (1.29)
Avoided contacting wind, including fan and air conditioner	38.1	31.7	11.4	8.9	9.9	2.79 (1.31)
Avoided contacting cold water	27.2	29.2	16.3	17.8	9.4	2.47 (1.31)
Did not take a bath	24.3	20.8	21.3	18.3	15.3	2.20 (1.39)
Used only boiled water when needed	17.3	14.9	13.4	13.9	40.6	1.54 (1.55)
Avoided raw food and salad	87.1	6.4	2.0	2.5	2.0	3.74 (.79)
Did not consume cold drinks or ice products	84.2	8.9	1.5	2.5	3.0	3.69 (.87)
Avoided spicy and "hot" food	68.3	18.3	5.4	6.4	1.5	3.46 (.96)
Avoided "toxic" food	64.9	19.3	9.4	2.5	4.0	3.39 (1.03)
Avoided eating "cold" food	63.9	20.8	3.5	8.4	3.5	3.33 (1.10)
Avoided hard food	58.4	20.8	10.9	7.4	2.5	3.25 (1.07)
Did not drink plain water	32.2	26.7	13.9	10.4	16.8	2.47 (1.46)
Did not eat salty food	26.2	21.3	17.3	15.8	19.3	2.19 (1.47)
Did not go to temples and burn incense	93.6	4.0	.5	2.0	0	3.87 (.60)
Did not have sexual intercourse	90.1	7.4	.5	0	2.0	3.84 (.62)
Only close relatives and families went into the room for "doing-the-month"	24.3	22.3	9.9	10.4	33.2	1.94 (1.62)
Consumed chicken soup	21.8	32.7	29.7	13.4	2.5	2.58 (1.05)
Consumed pig kidney and/or animal viscera	16.3	30.2	30.7	21.3	1.5	2.39 (1.04)
Ingested <i>Eucommia ulmoides</i> ^a	16.8	28.7	22.3	18.8	13.4	2.17 (1.29)

Scores were calculated based on: *always* = 4, *most of the time* = 3, *some of the time* = 2, *rarely* = 1, *never* = 0.

^a*Eucommia ulmoides* is a kind of traditional Chinese herb that is used to strengthen musculoskeletal and endocrine system.

RESULTS

Adherence to Doing-the-Month Practices

Adherence to doing-the-month practices is presented in Table 2. The overall mean score for adherence to these practices was 75.7 ($SD = 14.5$, $r = 33-108$). Those doing-the-month practices that had a mean adherence level of ≥ 3 (*most of the time*) included not going to temples and burning incense, not engaging in sexual inter-

course, avoiding salads, not consuming cold drinks or ice products, avoiding spicy and/or hot food, avoiding toxic food, avoiding eating cold food, avoiding eating hard food, avoiding carrying heavy objects, and avoiding going out unless it was necessary. The doing-the-month practices that had a lower mean adherence level of < 2 (*some of the time*) included using only boiled water when needed, not reading, not watching TV, and/or avoiding sewing, and only allowing close relatives and family members into the room used predominantly for doing-the-month (see Table 2).

Table 3. Physical Symptoms Among Postpartum Women at 1 Month After Delivery

Symptom	% With the Symptom	Symptom Severity (%)		
		Mild	Moderate	Severe
Backache	77.2	37.6	30.7	8.9
Poor sleep quality or insomnia	72.3	42.6	18.3	11.4
Cesarean section wound or perineal pain	55.0	44.6	10.4	0
Headache	46.5	33.2	9.9	3.5
Hemorrhoids	41.1	24.3	14.4	2.5
Joint pain	39.6	29.2	9.4	1.0
Constipation	38.6	28.2	9.4	1.0
Numbness in the hands	32.2	26.7	4.5	1.0
Excessive leucorrhea	28.8	24.3	4.5	0
Dizziness	28.2	20.8	5.0	2.5
More colds than usual	24.4			
Numbness in the feet	19.9	16.9	3.0	0
Varicose veins over legs	19.9			
Vaginal infections	17.8	16.3	1.5	0
Cold hands and/or feet	17.8	13.9	3.5	.5
Excessive vaginal bleeding	13.4	11.4	2.0	0
Urinary incontinence	12.4	10.4	1.0	1.0
Urinary-tract infections	9.9	8.4	1.5	0

Data are sorted from high to low by percentage of women with the symptoms.

Adherence to Doing-the-Month Practices and Physical Symptoms

Physical symptoms among the study participants are presented in Table 3. The overall mean score for the severity of physical symptoms was 8.8 ($SD = 6.1$, $range = 0-35$). The most prevalent physical symptoms at 1-month postpartum were backache and poor quality of sleep or insomnia.

In bivariate analyses, the level of adherence to doing-the-month practices was negatively correlated with the severity of physical symptoms ($r = -.25$, $p < .001$). The regression model for the severity of physical symptoms is presented in Table 4. A greater level of adherence to doing-the-month practices was associated with a lower severity of physical symptoms. Women who underwent cesarean deliveries reported a lower severity of physical symptoms than women who

Table 4. Linear Regression Model for Severity of Physical Symptoms

	β	95% CI	p
Adherence to doing-the-month practices	-.14	-.20, -.08	< .001
Mode of delivery			
Instrumental delivery	-1.78	-4.50, .94	.20
Cesarean delivery	-1.81	-3.49, -.13	.04
Exclusive breast-feeding	-1.98	-3.84, -.11	.04
Location for doing-the-month			
Relative's or friend's home	-.82	-2.79, 1.15	.41
Postpartum care centers	-4.25	-6.95, -1.55	.002
Primary caregiver/s for the postpartum women during the doing-the-month period			
Own mother	2.87	.92, 4.82	.004
Husband	4.13	1.30, 6.95	.004
Hired personnel or others	1.58	-1.52, 4.68	.32

The reference groups were women who underwent non-instrumental vaginal deliveries, who did not breast-feed their infants exclusively, whose places of doing-the-month were at their own homes, and whose primary caregivers during the doing-the-month period were their mothers-in-law. Higher scores for adherence indicate a higher level of adherence. The model r^2 was 21.5%, $p < .001$.

underwent vaginal deliveries. Women who exclusively breast-fed their infants had a lower severity of physical symptoms. Women whose location for doing-the-month was at a postpartum care center had a lower severity of physical symptoms compared with those who spent this time in their own home, while there were no significant differences between being at one's own home and at a relative's or a friend's home. The primary caregiver for postpartum mothers during the doing-the-month period was significantly associated with the women's severity of physical symptoms; women for whom their primary caregiver was their own mother or their husband reported a higher severity of physical symptoms as compared with women whose primary caregivers were their mothers-in-law.

Adherence to Doing-the-Month Practices and Depression

Probable postnatal depression based on the CES-D cut-off score of 15 at 1 month after delivery was found in 61 (30.2%) of the study subjects. Women who suffered probable depression had lower mean scores of adherence to doing-the-month practices (73.31 vs. 76.85), although such differences were not statistically significant ($p = .11$). The logistic regression model for probable postnatal depression is presented in Table 5. Each successive 1-point increment in the score of adherence to doing-the-month practices decreased the odds of depression by .97. Women who had vocational school educations had significantly higher odds of

depression than women who had university educations or higher. First-time mothers had higher odds for depression. Women who exclusively formula-fed their infants also had higher odds for depression than women whose infants were exclusively breast-fed. The women whose infants were both formula- and breast-fed did not differ significantly compared with women whose infants were exclusively breast-fed. Women whose locations for doing-the-month were at postpartum care centers and those who spent the time at relatives' or friends' homes had lower odds for depression compared with women who spent this time in their own homes.

DISCUSSION

Adherence Levels to Doing-the-Month Practices

We found that most of the postpartum Taiwanese women in our study still adhered to doing-the-month practices, although a decreased adherence level for some practices was noted. Of the 27 practices, all reflected a mean adherence frequency of > 2 (*some of the time*), except for three practices. The practices reflecting the highest adherence level included not going to temples and not having sexual intercourse. These may be related to the belief of a potential contamination effect of the new mother associated with the delivery. Women with lochia are enjoined not to go to temples in order not to offend the Gods. The

Table 5. Logistic Regression Model for Postnatal Depression (CES-D \geq 15)

	Odds Ratio	95% CI	p
Adherence to doing-the-month practices	.97	.95, .997	.03
Educational level			
High school or less	1.03	.40, 2.65	
Vocational school	2.51	1.05, 6.00	
University or higher	1		
Parity			
1	3.14	1.53, 6.44	.002
>1	1		
Infant feeding method			
Exclusive breast-feeding	1		
Exclusive formula-feeding	4.01	1.31, 12.33	.02
Mixed feeding	2.29	.91, 5.78	.08
Location for doing-the-month			
Own home	1		
Relative's or friend's home	.32	.14, .70	.004
Postpartum care centers	.21	.07, .62	.005

The model Nagelkerke r^2 was 24.7%, $p < .001$.

practice of avoiding going out during the doing-the-month period may also contribute to the high adherence level of not going to temples. Medical professionals in Taiwan typically suggest that sexual intercourse be resumed after the doing-the-month period, thus the adherence level to the practice of not having sex during the doing-the-month period was high. Other practices revealing a high adherence level included avoiding raw food and salad, not consuming cold drinks or ice products, and avoiding spicy and/or hot food. These features might represent the acceptance of the theories of traditional Chinese medicine by the study participants due to the potential damage to health of consuming cold, spicy, hot, and/or raw food. In the context of Chinese medicine, cold and hot indicate the inherent nature of the food, rather than the actual temperature of the food. For example, bamboo shoots and turnips are classified as cold food, while ginger and ginseng are classified as hot food.

Three practices revealed low adherence levels (*less than some of the time*). They included not reading, not watching TV, and/or not sewing, using only boiled water when needed, and allowing only close relatives and families to visit the room used for doing-the-month. The use of only boiled water and not doing things that warranted the intensive use of eyesight may be associated with a historical lack of clean tap water and electric light. In addition, compared with the results of previous studies, our reported rate of not taking baths and not washing one's hair during the doing-the-month period was low. For example, in the early 1990s, Kuo (1995) found that the percentages of women not taking baths and not washing their hair during this period were 55.6% and 66.3%, respectively. Such comparative results suggest that, commensurate with the improvement in both material and physical environments for postpartum women, the adherence level to the avoidance of those practices that were associated with a lower standard of cleanliness and general lack of facilities (a hot and clean water supply) tended to decrease.

Adherence to Doing-the-Month Practices, Severity of Physical Symptoms, and Depression

Adherence to doing-the-month practices was negatively associated with the severity of physical symptoms and depression among postpartum women, after accounting for potential confounders. The results demonstrated that even in a

modern society with advanced medical information readily available, more adherence to doing-the-month practices was associated with better health status among Chinese women at 1 month postpartum (Tables 4 and 5).

The positive association between adherence to doing-the-month practices and health status could be because the women with higher adherence level had more attention, care, and help during this period. Also Chinese society is based on a patrilineal culture traditionally. Inequity of women is still an issue, although increased educational level and growing economic independence of younger women have improved their status. The ritual of doing-the-month itself could give women a sense of entitlement and empowerment, which may contribute to better health status. Women with higher adherence levels during the doing-the-month period may also have been healthier and more resourceful before delivery, which, in turn, accounted for better health after delivery. Nonetheless, the study results of the positive effects of adherence to cultural practices on individual's health support social control theory (Coreil et al., 2001) and highlight the significance of sociocultural factors. Healthcare professionals working in cross-cultural healthcare programs worldwide should not underestimate the potential influences of traditional beliefs and practices upon women's postpartum health. Modern healthcare should be integrated with respect to traditional practices in order to provide culturally appropriate healthcare.

Rate of Physical Symptoms and Depression

Our study revealed a high prevalence of physical symptoms (Table 3) and probable depression among postpartum women. Similarly, researchers in other countries (Australia, UK, France, and Italy) have reported a high prevalence of physical symptoms (Brown & Lumley, 1998, 2000; Glazener et al., 1995; Saurel-Cubizolles, Romito, Lelong, & Ancel, 2000; Thompson, Roberts, Currie, & Ellwood, 2002). The results of earlier studies have suggested that women in Asian cultures have lower incidences of postpartum depression than women in the West (Stern & Kruckman, 1983). The rather low rate of postpartum depression in the Chinese culture has been attributed to the availability of high levels of social support accompanied by doing-the-month practices provided by the typical Chinese family (Pillsbury, 1978). Because our study was not a

population-based study and did not involve the application of structured clinical interviews, the comparability of our results with other studies is limited. More recently, however, researchers have reported that rates of postnatal depression in postpartum Chinese women in Hong Kong (11%, D. Lee, Yip, Chiu, Leung, & Chung, 2001) and Taiwan (40%, C.H. Chen & Tseng, 1994; 21%, Heh, Coombes, & Bartlett, 2004) were similar to Western countries. These results may represent a trend toward the increased prevalence of postpartum depression in modern Chinese society. Population-based epidemiological studies should be conducted to examine this issue further.

Other Sociocultural Factors Related to Severity of Physical Symptoms and Depression

In addition to adherence to doing-the-month practices, the choice of a postpartum care center as a place for doing-the-month was associated with lower severity of physical symptoms and lower rates of probable depression. Institutionalized care (as provided by postpartum care centers) for neonates and mothers during the doing-the-month period is a rapidly growing industry in Taiwan, with increasing number of women choosing such institutions as their locations for doing-the-month. The findings in our study of less severe physical symptoms and lower prevalence of postpartum depression for women who resided at such institutions for the first postpartum month are not consistent with the results of earlier studies (Tseng, Chen, Wang, & Tsai, 1994). Our results suggest that the location for doing-the-month is a significant variable for health among postpartum women, and the effects appear to be independent of women's socioeconomic status and level of adherence to doing-the-month practices. Thus, the location for doing-the-month should be included in future studies relating to women's postpartum health.

Traditionally, the primary caregivers for postpartum women were mostly mothers-in-law (Pillsbury, 1978). Our data showed that mothers-in-law still were the most frequently reported primary caregivers. In addition, when we compared women with mothers-in-law as the primary caregiver with the women with their own mothers or husbands as primary caregivers, we found higher risks of physical postpartum symptoms in the latter, but there was no relation to depression. Specific reasons for the observed differences are unclear and, to the best of our knowledge, they

have not been reported previously. D.T. Lee, Yip, Leung, and Chung (2004) found that Chinese women in Hong Kong who were accompanied and assisted by a female relative or friend during the doing-the-month period had lower risks of postnatal depression. Postpartum women in Taiwan were less depressed when they were taken care of by their own mothers, but dissatisfaction with parents' instrumental support and unwanted emotional support from parents-in-law were associated with high risks for postnatal depression (Heh et al., 2004). The results suggest that the relationship between primary caregivers and postpartum women during the doing-the-month period was related to women's health status. Further studies are warranted in order to examine this issue.

Limitations

This study was limited by its cross-sectional design. In addition, this study sample is not a representative sample of the Taiwanese postpartum population. National data in Taiwan showed that in 2001, the mean age of women who delivered a baby was 28.2 years. In 1998, for married women aged 20–49 years of age, 50–55% of women were employed (Zhou, Lai, Tsai, & Wang, 2003). The national rate of cesarean delivery in 2003 was 32.67% (Taiwan Department of Health, 2004). A breast-feeding study using a national sample of Taiwanese postpartum women showed the following: the mean age was 28.4 years; 51.8% of the mothers had an educational level of senior high school or below; and 55.3% of the mothers were employed among postpartum women in Taiwan (L.Y. Chien, Chu, Tai, & Lin, 2005). Using these data for comparison, our study participants appeared to be older; had a higher educational level; were more likely to be employed; and were more likely to have a cesarean delivery. Studies applying a population-based sampling method and featuring a longer period of follow-up are warranted in order to further examine the effects of doing-the-month practices upon the health of postpartum women.

CONCLUSIONS

The high prevalence of physical symptoms and probable postnatal depression indicate the need for postnatal care to be provided in the community after discharge from the maternity unit. Perinatal and sociodemographic factors for postnatal health

established in other societies are also applicable to the Chinese population. Cultural factors are also significant in postpartum women's health. Nurses need to be aware of cultural factors in order to provide culturally appropriate care.

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