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A Comparison of Practices During the Confinement Period among Chinese, Malay, and Indian Mothers in Singapore

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Abstract

Background—Confinement (restrictions placed on diet and practices during the month right after delivery) represents a key feature of Asian populations. Few studies however, have focused specifically on ethnic differences in confinement practices. This study assesses the confinement practices of three ethnic groups in a multi-ethnic Asian population.

Methods—Participants were part of a prospective birth cohort study that recruited 1247 pregnant women (57.2% Chinese, 25.5% Malay, 17.3% Indian) during their first trimester. 1220 participants were followed up 3-weeks postpartum at home when questionnaires were administered to ascertain the frequency of adherence to the following confinement practices: showering; confinement-specific meals; going out with or without the baby; choice of caregiver assistance; and the use of massage therapy.

Results—Most participants reported that they followed confinement practices during the first three weeks post-partum (Chinese: 96.4%, Malay: 92.4%, Indian: 85.6%). Chinese and Indian mothers tended to eat more special confinement diets than Malay mothers ($p<0.001$), and Chinese mothers showered less and were more likely to depend on confinement nannies during this period than mothers from the two other ethnic groups ($p<0.001$ for all). Malay mothers tended to make greater use of massage therapy ($p<0.001$), whilst Indian mothers tended to have their mothers or mothers-in-law as assistant caregivers ($p<0.001$).

Conclusion—Most Singapore mothers follow confinement practices, but the three Asian ethnic groups differed in specific confinement practices. Future studies should examine whether ethnic differences persist in later child-rearing practices.

Keywords

Confinement practices; Asian population; Birth-cohort; Post-partum

Introduction

Becoming a parent is a life-transforming event, and the postpartum period is a vulnerable time of adjustment. In many cultures, the pregnancy period is considered a state of ‘hotness’ while the postpartum period is conceived as a cold and vulnerable state (1). During this postpartum period, mothers often undergo ‘confinement’, a set of practices to assist them in recovery from pregnancy and childbirth. Some of these practices may include prolonged rest (2), a special diet (3, 4) and actions to heighten personal hygiene (2)”.Confinement practices have been linked to later maternal health conditions such as postpartum depression (5) (6).

In Western populations, postpartum practices have been studied in the context of postpartum visits (7) or home visits (8). Traditional postpartum practices of immigrants in Western countries have also been examined in an effort to understand how immigrant mothers adapt

to local Western culture (9, 10). The postpartum period is often given less focus in Western cultures (2), than in Asian cultures (11–13). Postpartum support structures and practices also tend to differ, with ethnokinship more prevalent and emphasized in countries such as Japan and Korea (14). Furthermore, while western medicine has focused mainly on maternal and infant health, social support rituals are a more crucial focus of postpartum practices in Asian cultures (2).

Postpartum diets and practices differ among mothers from different Asian populations, even within the same country. While several studies have examined post-partum practices and diets across different Asian populations, such as Laos (3), Myanmar (15), India (4), Japan (16), Taiwan (17), and Malaysia (18), few have focused specifically on confinement practices A recent study in Malaysia (18) reported that postpartum and confinement practices of mothers have certain similarities across different ethnicities. Earlier studies from the "Growing Up in Singapore Towards healthy Outcomes" (GUSTO) cohort (13) have looked into the dietary practices across three ethnicities during pregnancy and postpartum periods (13). In this paper however, we sought to describe the general differences in the confinement practices of the three ethnic groups.

Methods

Study population

The Growing Up in Singapore Towards healthy Outcomes (GUSTO) study is a prospective cohort study, the details of which have been published previously (19). Briefly, pregnant women aged 18 years and above were approached during their first trimester antenatal ultrasound dating scan at Singapore's two major public maternity units, namely the National University Hospital and KK Women's and Children's Hospital , between June 2009 and September 2010. Eligibility criteria included women who were Singapore citizens or permanent residents of Chinese, Malay or Indian ethnicity with homogeneous parental ethnic background, and who had the intention of delivering in the National University Hospital or KK Women's and Children's Hospital and residing in Singapore for the next 5 years. The potential participants were approached at the clinic when they were at least 12 weeks pregnant. Questions were then asked to assess their eligibility for this study. Of 3751 screened women, 2034 individuals met these criteria and 1247 women were recruited (response rate: 61.3%). Informed consent was obtained from each participant on the day of recruitment. During the recruitment visit (< 14 weeks gestation) and at the first clinic visit (26-28 weeks gestation), questionnaires were administered to the pregnant women to ascertain demographic, socio-economic and lifestyle factors, as well as maternal well-being and obstetric and medical history data.

Confinement practices questionnaires

Women were followed up at home 3 weeks after delivery by trained interviewers who had successfully completed the GUSTO competency assessments. This includes observing and subsequently conducting three supervised home visits respectively as well as the final competency test. Only after the staff is assessed by the trainers to be competent to conduct the interviews, were the ground staff able to conduct the questionnaires independently.

Questionnaires administered during this visit captured the mother's diet and infant feeding. Mothers were asked to compare their present confinement diet with their usual diets, and to indicate whether they increased, decreased or retained the consumption of a particular food type during the confinement period. The frequency of adherence to confinement practices was derived from questions on the five following confinement practices: showering, the proportion of meals that were confinement-specific, going out with or without the baby, choice of caregiver assistance and the use of massage therapy. These confinement questions were formulated based on the description of confinement practices by Goh (20). The questionnaires were pilot-tested for clarity and understanding, and revisions were made after feedback from women and study staff.

Statistical analysis

Descriptive statistics are reported as means and standard deviations (SDs) for continuous variables and percentages for categorical variables. Differences in confinement practices across ethnicities were analysed using chi-square tests. Associations between ethnicity (as the independent variable) and confinement practices (as the dependent variable) were analysed using multivariable regression analyses adjusting for maternal age, education level, household income, housing type (government or private) and parity. For dichotomous outcomes (i.e. undergoing confinement, use of massage therapy), analyses were performed using binary logistic regression models. For categorical outcomes (i.e. showering, proportion of meals that were confinement-specific, going out with or without the baby, and choice of caregiver assistance), analyses were performed using multinomial logistic regression models. All analyses were performed using SPSS version 20.0 (IBM, SPSS Statistics, Armonk, NY).

Results

Socio demographic characteristics of mothers in the three ethnic groups are compared in Table 1. Most of the study participants were married. Significant differences in socioeconomic status were observed between Chinese and Indian women on the one hand, and Malay women on the other, with 68.7% and 69.6% of Chinese and Indian women, respectively, attaining at least an advanced-level education (Equivalent to pre-university education), compared to 28.8% of Malay women ($p<0.001$). A significantly higher proportion of Chinese and Indian women (18.6% and 12.0% respectively) lived in private housing accommodations, compared to 6.3% of Malay women ($p<0.001$), while 41.3 and 23.8% of Chinese and Indian women respectively, reported a monthly household income above $6000, compared to 6.1% of Malay women ($p<0.001$). We observed significant differences in parity, with Indian women most likely to be multiparous ($p = 0.001$). There were also significant differences observed in citizenship status amongst ethnic groups, with a higher proportion of Chinese and Indian women having Permanent Resident (rather than citizenship) status (32.8% and 46.5%, respectively), than Malay women (3.1%) ($p<0.001$).

Chinese women were more likely (96.4%) to engage in at least some confinement practices while Malays [92.4%] and Indians [85.6%] were less likely to. (Table 2). Chinese women were also more likely to hire confinement assistants (31.0%), while Malay [13.5%] and

Indian women [9.4%] were less likely to hire confinement help. Chinese women were also more likely to have all of their meals prepared specifically for confinement (45.9%) as than Malay women (21.3%). Massage was particularly common among Malay women (85.9%), and least frequent among Chinese (37.8 %). A significantly higher percentage of Chinese women observed a 'no bathing' restriction during their confinement, whereas most Malay [96.8%] and Indian women [88.8%] showered daily. True confinement (remaining at home) was practiced among all 3 ethnic groups, with most mothers (63.7% of Chinese, 51.4% Malay and 60.6% of Indian) staying at home during the confinement period. Similarly, other family members avoided taking the infant out during confinement; 83.7% of Chinese, 66.1% of Malays and 79.9% of Indian infants stayed at home during the confinement period. Malay women however, were more likely to leave their house, with their baby (24.2%), at least once a week during the confinement period.

After adjusting for socio-demographic covariates (i.e., maternal age, education level, housing type, income level and parity), we noted similar observed ethnic differences in relation to confinement practices, with Malay women being less likely to hire other confinement assistants and have all of their meals prepared specifically for confinement, whilst being more likely to undergo massage, shower daily and leave their house with their baby during the confinement period (Table 3). Furthermore, we noted that most of the socio-demographic variables were not significantly associated with the various confinement practices, with the exception of household income significantly affecting massage practice, and household income, maternal education level and parity significantly affecting daily showering habits (tabular data not shown).

Discussion

While most Singaporean mothers engage in the confinement practices described, we observed substantial differences in these practices depending on the mother's ethnic background. Although confinement practices have been known to be prevalent in East-, South- and Southeast-Asian populations (3, 4, 11, 12, 18), these practices have rarely been compared among Asian ethnic groups within a single country.

Undergoing confinement means restricting one's movements in leaving the home and avoiding certain behaviors, with the goal of accelerating the recovery process. The confinement period is usually practised for 30–45 days (21). Whilst this designated rest period is practiced across many Asian cultures (16, 22, 23), it is also practiced in non-Asian cultures as well, including South African (24), Mexican (25) and Amish (26) women. Confinement practices are influenced by assimilation (27), and disagreement between traditions and modern beliefs may arise, owing to increasing influence from sources such as the media and health professionals (28).

Within-culture differences in confinement practices have also been reported in major urban centers, where younger women are less likely to participate in them (29). The act of staying indoors during confinement may seem rather restrictive to the active modern mother. In a study of Malaysian Chinese mothers, the traditional confinement practices amongst the Chinese was adapted according to mothers' perception of practicality (30).

In our study, abstinence from bathing during confinement was mostly adhered to by Chinese women. Bathing restrictions during the confinement period exist in many Asian cultures, most of which are related to the “hot” and “cold” beliefs during confinement. While Chinese mothers in our study mostly tended to avoid showers as a whole, cold showers in particular are often prohibited in the belief that they may lead to blood clots and sore joints (9, 10). In non-Asian cultures such as Guatemala, it is believed that bathing in cold water decreases milk supply, and that bathing too soon causes stomach pains or prolapsed uterus(31). In Mexico, bathing is restricted to protect the mother from cold or ‘evil air’(25). Warm baths and showers are often acceptable confinement practices in Asian cultures, however, particularly among mothers in Thailand (32), Malaysia (33) and India (4). A quick, warm shower without hair washing (34), appears to be the practice adopted by Malay and Indian mothers here in Singapore. Mothers may find it uncomfortable and unhygienic not to bathe during the postpartum period, especially in a tropical climate such as Singapore. Hence mothers who observe traditional confinement practices need to negotiate with their caregiver assistants on alternative solutions, which may include the use of medical herbs added to hot water for their daily baths, a practice that has been adopted in countries such as Laos (35) and China (17). This may serve as a potential compromise for mothers to observe traditional confinement practices while maintaining their general personal hygiene at the same time.

We observed a higher prevalence of massage use by Malay mothers during the confinement period than by mothers from the two other ethnic groups. The practice of massage (Jamu therapy) is a predominantly Malay/Indonesian practice (36, 37), but it was also practiced amongst Chinese and Indian women in our study population. Such confinement practices adopted across different groups are indicative of the cross-ethnic influence of confinement practices. Naser *et al.* (38) found that Singaporean women adopted traditional practices that they perceived as beneficial from other cultures. The practice of massage therapy amongst mothers in the three ethnic groups illustrates how confinement practices are influenced by the different cultures in Singapore.

Diet has been shown to be an important component of confinement practices. Consumption of certain foods is believed to promote or restore health, while other foods are avoided as they are thought to cause illness either immediately or in the future. We observed that Chinese women were more likely to have all of their meals specially prepared for the confinement period. As previously reported by Fok (39), Chinese women are influenced by the concept of the yin and yang in balancing their foods during confinement. According to traditional Chinese beliefs, the body of a woman is believed to be in a state of ‘cold’ during the postpartum period and thus ‘hot’ foods (12), such as ginger and wine are generally recommended (28). Although such beliefs are common in China and other East Asian countries, they are found in many non-Asian cultures as well, including parts of Latin America and Africa (1). Some similarities in confinement diets are apparent across the three ethnic groups in Singapore. A turmeric drink, known as Jamu, is particularly important in the Malay confinement diet, as it is believed that using correct supplements are important in aiding mothers to regain the energy spent during labour (11). Some women in Nepal have also been known to consume a herbal tonic containing turmeric, in an attempt to promote milk production during the postpartum period (40). Among Guatemalan women, herbal teas containing artemesia, pimipinela, oregano and white honey are taken for pain relief (41).

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Caregiver assistance during confinement includes provision of practical assistance to the mother (e.g. doing household chores, cooking, providing care for the mother and her infant), and is often provided by close relatives or respected elders within the community (2). In our study, most women engaged close relatives as caregivers during confinement (grandmothers, mothers-in-law, mothers, aunts and sisters), a practice that is universally adopted across many other countries (2). Chinese women often engaged domestic helpers or confinement nannies during the confinement period. The employment of confinement nannies specifically for confinement purposes is unique to the Southeast Asian context. During the confinement period, Chinese mothers may hire traditional confinement nannies, (known as *peiyue)* to take care of them and their baby (30). This prevalence of caregiver assistance increasesthe mother's access to both practical and emotional support during the confinement period. While we did not specifically ask the mothers for the reason they chose to hire confinement help, the combined role of family support and hired confinement help in general is important in assisting mothers in matters of physical recovery and to care for her baby,

Strengths of our study include its prospective design, high follow-up rate, and comparison across different Asian ethnic groups. We are aware of no previous studies that have examined ethnic differences in confinement practices in a multi-ethnic population. There are however, some limitations to consider. We did not use focus group discussions with the study participants. Such discussions would help mothers' verbalize their thoughts (42) about confinement practices and allow us to better understand the reasons Singaporean mothers did or did not engage in the confinement practices we studied. Nor are we able to disentangle the potential influences of personal choice and assimilation on the observed ethnic differences in confinement practices. Future studies would also benefit from examining the various reasons mothers choose to practice confinement practices or reasons why mothers are selective in the practices they adhere to.

Conclusions

Despite modernizing trends, most Singaporean mothers engage in traditional confinement practices. There are also substantial differences in those practices depending on the mother's ethnic background. These findings may help health care professionals to better understand the dynamic and ethnic-specific nature of confinement practices, thus allowing them to provide greater support and tailor ethnic-specific postpartum care for mothers. .

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Table 1

Demographic and clinical characteristics in study of confinement practices of Singaporean women, 2009-2010

Mothers	**Chinese N = 684**	**Malay N = 319**	**Indian N = 217**	**P value[+]**
Age (yr) Mean+-SD	31.6 ± 4.9	28.9 ± 5.5 *	30.0 ± 4.9	**<0.001**
Marital Status (%)				0.327
Married	96.5	95.0	98.1	
Single	3.4	5.0	1.9	
Divorced	0.1	0.0	0.0	
Highest Education attained (%)				**<0.001**
Below ""A" levels / diploma	31.3	71.2	30.4	
“A” levels / diploma or higher	68.7	28.8 *	69.6	
Type of housing (%)				**<0.001**
Government	81.4	93.7	88.0	
Private	18.6	6.3 *	12.0	
Household Income (%)				**<0.001**
Below SGD $6000	58.7	93.9	76.2	
Above SGD $6000	41.3	6.1 *	23.8	
Parity (%)				**0.001**
Nulliparous	50.5	40.4	38.1	
Multiparous	49.5	59.6	61.9 *	

[+]P values across 3 ethnic groups were determined with the use of a chi-square analysis (categorical) or 1-factor ANOVA (continuous)

*p<0.05 when compared with Chinese

Table 2
Confinement practices of Singaporean mothers from the three ethnic groups

	Chinese	Malay	Indian	P value[+]
Undergo confinement				**< 0.001**
No	22 (3.6)	19 (7.6)	26 (14.4)	
Yes	584 (96.4)	230 (92.4)	154 (85.6)	
Caregiver				**< 0.001**
Mother/Mother-in-law	333 (59.4)	138 (71.5)	115 (83.3)	
Other relatives	54 (9.6)	29 (15.0)	10 (7.2)	
Other confinement people[+]	174 (31.0)	26 (13.5)	13 (9.4)	
Proportion of meals prepared for confinement				**< 0.001**
None	20 (3.4)	39 (17.0)	28 (18.2)	
Less than half	23 (3.9)	25 (10.9)	13 (8.4)	
Half	58 (9.9)	81 (35.2)	21 (13.6)	
Most	215 (36.8)	36 (15.7)	27 (17.5)	
All	268 (45.9)	49 (21.3)	65 (42.2)	
Massage during confinement				**< 0.001**
No	377 (62.2)	35 (14.1)	90 (50.0)	
Yes	229 (37.8)	214 (85.9)	90 (50.0)	
Shower during confinement (%)				**< 0.001**
None/once a week	156 (26.0)	5 (2.0)	7 (3.9)	
2-6 times a week	147 (24.5)	3 (1.2)	13 (7.3)	
Everyday	296 (49.4)	239 (96.8)	159 (88.8)	
Go out during confinement (%)				**0.014**
None	383 (63.7)	128 (51.4)	109 (60.6)	
Once a week	137 (22.8)	74 (29.7)	49 (27.2)	
≥ 2 times a week	81 (13.5)	47 (18.9)	22 (12.2)	
Baby goes out during confinement (%)				**<0.001**
None	504 (83.7)	164 (66.1)	143 (79.9)	
Once a week	73 (12.1)	60 (24.2)	28 (15.6)	
≥ 2 times a week	25 (4.2)	24 (9.7)	8 (4.5)	

[+]P values across 3 ethnic groups were determined with the use of a chi-square analysis (categorical) or 1-factor ANOVA (continuous)

[+]Other confinement people refers to people hired specifically to help out during the confinement period, such as Confinement Nannies

Table 3

Associations between ethnicity and confinement practices of Singaporean women, 2009-2010

	OR (95% CI)		
	Chinese	**Malay**	**Indian**
Undergoes confinement[a]	ref	0.45 (0.21-0.93)	0.22 (0.12-0.42)
Caregiver[b]			
Other relatives	ref	0.92 (0.53-1.62)	0.59 (0.28-1.21)
Other confinement people	ref	0.50 (0.30-0.83)	0.25 (0.13-0.47)
Meals prepared for confinement[b]			
less than half	ref	0.63 (0.26-1.54)	0.42 (0.16-1.07)
half	ref	0.83 (0.40-1.70)	0.24 (0.11-0.55)
most	ref	0.11 (0.06-0.24)	0.11 (0.05-0.23)
all	ref	0.11 (0.05-0.22)	0.21 (0.11-0.41)
Undergoes massage[a]	ref	18.07 (11.38-28.69)	2.05 (1.41-2.99)
Shower[b]			
2 to 6 times a week	ref	0.28 (0.03-2.47)	1.98 (0.74-5.32)
everyday	ref	39.50 (15.44-101.04)	12.98 (5.83-28.89)
Mother goes out during confinement period[b]			
once a week	ref	1.53 (1.03-2.28)	1.22 (0.80-1.85)
≥ 2 times a week	ref	2.21 (1.36-3.57)	1.01 (0.59-1.74)
Baby goes out during confinement period[b]			
once a week	ref	2.41 (1.53-3.79)	1.30 (0.79-2.15)
≥ 2 times a week	ref	4.39 (2.15-8.99)	1.35 (0.57-3.23)

[a]Analyses conducted using binary logistic regression, with ethnicity as independent variable and adjusted for the following covariates: maternal age, education, accommodation, income level and parity

[b]Analyses conducted using multinomial logistic regression, with ethnicity as independent variable and adjusted for the following covariates: maternal age, education, accommodation, income level and parity