

Dietary practices of Saudi women during puerperium

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Abstract

Aim: Poor maternal health sometimes can be a consequence of practicing different myths during puerperium. This cross-sectional study describes the practice of different myths regarding diet among Saudi women.

Material and Methods: The study comprised women attending the postnatal clinic at the Mother and Child Hospital in Buraidah from January to December 2011.

Results: Almost 65.9% of women were using a combination of herbs such as ginger (*zingiber officinale*), hilba (*fenugreek*) and black seeds (*nigella sativa*). The multinomial logistic regression of herbs on age, education, occupation, parity and mode of delivery was statistically significant ($\chi^2 [48] = 214.645, P < 0.001$). Hilba was more commonly used by women with instrumental delivery. It was common for women to avoid different fruits and vegetables (33.89%). Eggs were avoided by 16.5% of women and 11% avoided cold drinks. The multinomial logistic regression of diet on age, education, occupation, parity and mode of delivery was statistically significant ($\chi^2 [72] = 389.861, P < 0.001$). Individuals below college level education were more likely to avoid fruits, vegetables and cold drinks in their diet.

Conclusion: Health education programs are needed to improve knowledge about dietary malpractices during puerperium. This may help eliminate myths regarding avoidance of certain dietary components.

Key words: black seed, hilba, puerperium.

Introduction

Postpartum/puerperium is the time period from delivery of the placenta and the following 6–8 weeks. During this time all the changes of pregnancy revert back to normal.¹ The body needs to heal during this time; therefore, healthy diet and lifestyle is mandatory.

Historically, women have practiced traditional beliefs and myths during the puerperal time period. Postpartum practices of women vary from region to region. Research reveals that the majority of women adhere to traditional customs. In a Chinese study, Wang *et al.* reported that “almost 90% do not eat cold, hard, sour food, 90% don’t wash their hair or body at all and more than 70% women did not brush their teeth or wash their feet”.² A Fujian study reported unhealthy habits like restricting bathing and washing teeth.³ Dif-

ferent studies have looked at these practices in different parts of the world. Puerperium practices in Saudi women have not been studied. We intended to address the prevalence and demographic determinants of special dietary practices in women from the Al-Qassim region. Our research will serve as a pilot study on which further clinical research on identified practices could be conducted. Knowledge about different postpartum practices and myths may help identify wrong practices and provide guidance in the development of effective intervention programs.

Methods

The study was conducted as a self-administered cross-sectional survey. A structured pro-forma was used to collect data with Arabic translation covering aspects

Received: April 29 2012.

Accepted: August 20 2012.

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such as demographic factors, dietary restrictions and herbal use. Mother and Child Hospital (MCH), Al-Qassim, Saudi Arabia is a major medical facility in the region and is a tertiary care hospital with an annual delivery rate of 10 000. Altogether, 360 women were interviewed who presented to the MCH outpatient clinic in Buraidah for routine 6-week follow-up between January and December 2011. All 360 women were willing to participate and none refused. Verbal consent was given. All women were residents of the Al-Qassim region. Women residing outside Al-Qassim, or who had medical or surgical conditions were excluded. The pro-formas were filled in by the researchers. We tested our pro-forma in a pilot study of 20 patients. This sample size had a 95% confidence level and a confidence interval of 5.

To keep the data anonymous, patient name or identification number was not included. Ethical approval was given by the local committee. Three pro-formas with incomplete data were excluded. SPSS version 19 and Microsoft Office 2007 for Windows 7 were used. Descriptive analysis was used to present the demographic aspects of data. Multinomial logistic regression was used to explain the effect of demographic variables on different dietary practices.

Results

Demographics

Most of the participants were over the age of 25, attended middle school or below, were housewives and were gravida (G) 2–4 or above. Only 20% of participants were under 25 years of age, less than 20% were employed, only 20% attended high school and approximately 12% went to college. Women who had normal vaginal delivery comprised 77.3% and 14.6% underwent cesarean section (Table 1). The percentage of women taking a combination of herbs was 65.90% (Fig. 1) and 72.27% avoided some dietary components (Fig. 2). The socioeconomic status of women in this part of the world is fairly good and medical facilities are provided free of cost by the Government.

Logistic regression for herbs

The multinomial logistic regression of herbs on age, education, occupation, parity and mode of delivery was statistically significant ($\chi^2 [48] = 214.645, P < 0.001$). The reference group for the logistic regression model was the women who reported to *take a combination* ($n = 234, 66\%$). When evaluated individually, none of the demographic variables were significant predictors

Table 1 Count and percent statistics for demographic variables

Variable	Level	Frequency	%
Age, years	Below 25	74	20.8
	25–30	120	33.8
	Above 30	161	45.4
Education	Primary or below	127	35.8
	Middle school	113	31.8
	High school	72	20.3
	College and above	43	12.1
Occupation	Housewife	289	81.4
	Teaching	47	13.2
	Professional	8	2.3
	Government service	11	3.1
	Parity	Primiparous	52
Mode of delivery	G2–4	155	43.7
	G5 and above	148	41.7
	Normal vaginal	273	77.3
	Instrumental delivery	29	8.1
	Cesarean section	52	14.6

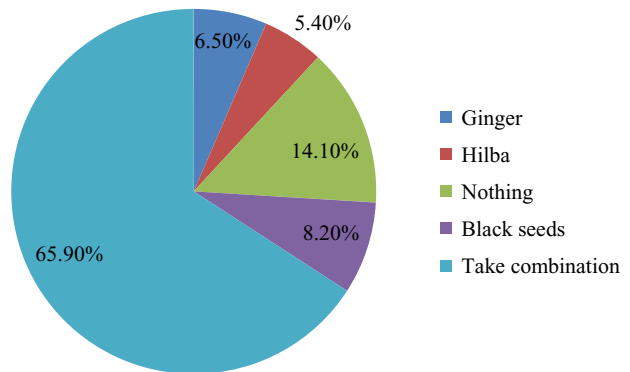


Figure 1 Percentage of participants who endorsed myths about herbs.

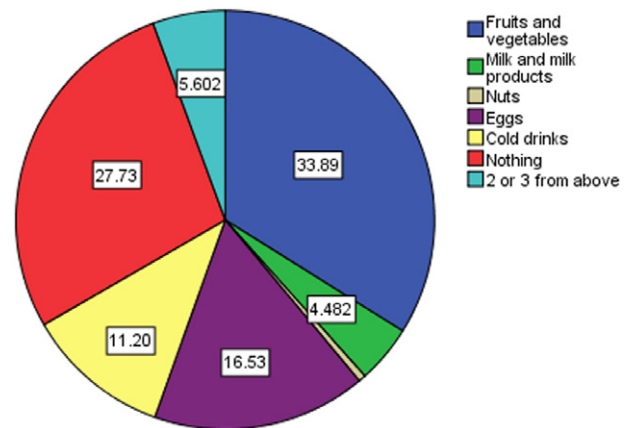


Figure 2 Percentage of participants who endorsed myths about avoiding some foods.

of whether a participant would be in the *ginger* group, compared to the *take a combination* group (Table 2). One of the demographic variables was a significant predictor of whether a participant was categorized in the *hilba* group compared to the *take a combination* group. Women who had an instrumental delivery were approximately 55 times more likely to be categorized in the *hilba* group versus the *take a combination* group compared to women who had a normal vaginal birth. Six of the demographic variables were significant predictors of women being categorized in the *nothing* group versus the *take a combination* group. Women who were between 25 and 30 years of age were approximately six times more likely to be categorized in the *nothing* group versus the *take a combination* group compared to women above 30. Women who went to college were approximately 17 times less likely to be categorized in the *nothing* group versus the *take a combination* group compared to women who went to primary school or below. Professionals were 193 times more likely to be categorized in the *nothing* group versus the *take a combination* group compared to housewives. Women who had not previously given birth were approximately seven times less likely to be categorized in the *nothing* group versus the *take a combination* group compared to women who had given birth five or more times. Women who had normal vaginal delivery were more likely to use herbs as compared to women who had instrumental delivery or cesarean section (Fig. 3). Further analysis by logistic regression revealed that women who had a cesarean section were approximately 10 times more likely to be categorized in the *nothing* group versus the *take a combination* group and women who had an instrumental birth were over 300 times more likely to be categorized in the *nothing* group compared to women who had a normal vaginal birth. Three of the demographic variables were significant predictors of whether women were categorized in the *black seeds* group. Women younger than 25 years of age were approximately 26 times less likely to be categorized in the *black seeds* group versus the *take a combination* group, compared to those who were over 30 years of age. Women who had not previously given birth were approximately six times more likely to be categorized in the *black seeds* group versus the *take a combination* group compared to those who had given birth five or more times and women who had given birth two to four times previously were approximately three times more likely to be categorized in the *black seeds* group.

Logistic regression for myths regarding foods to avoid in diet

The multinomial logistic regression of diet on age, education, occupation, parity and mode of delivery was statistically significant ($\chi^2 [72] = 389.861$, $P < 0.001$). The reference group for the logistic regression model was the women who reported *nothing* ($n = 99$, 30%). When evaluated individually, four of the demographic variables were significant predictors of whether a participant would be in the *fruits and vegetables* group, compared to the *nothing* group (Table 3). Women who attended primary school or below were 6139 times more likely, and women who attended high school were 1084 times more likely to be in the *fruits and vegetables* group versus the *nothing* group, compared to women who attended college or above. Housewives were 91 times less likely and teachers were 34 times less likely to be categorized in the *fruits and vegetables* group versus the *nothing* group compared to women who worked for the government. None of the demographic variables were significant predictors of whether participants were categorized in the *milk and milk products* group versus the *nothing* group, the *nuts* group versus the *nothing* group, or the *eggs* group versus the *nothing* group. Five of the demographic variables were significant predictors of whether a participant was categorized in the *cold drinks* group versus the *nothing* group. Women who were between 25–30 years of age were seven times less likely to be categorized in the *cold drinks* group versus the *nothing* group compared to women who were above 30 years of age. Individuals who attended primary school or below were 1547 times more likely, women who attended middle school were 116 times more likely and women who attended high school were 12 times more likely to be categorized in the *cold drinks* group versus the *nothing* group compared to women who attended college or above. Women who had between two and four previous births were four times more likely to be categorized in the *cold drinks* group versus the *nothing* group compared to women who had five or more previous births. None of the demographic variables were significant predictors of whether a woman was categorized in the *2 or 3 from above* group versus the *nothing* group. Women with vaginal delivery avoided more dietary components as compared to women with instrumental delivery and cesarean section (Fig. 4). However, multinomial regression revealed that none of the components was a significant predictor of whether women should

Table 2 Model summary for multinomial logistic regression of herbs on demographic variables

Herb	Predictor	B	Standard error	Wald	df	Sig.	Exp (B)	
Ginger	Intercept	-35.63	2569.60	0.00	1.00	0.99		
	Below 25	1.42	0.74	3.72	1.00	0.05	4.14	
	25-30	1.12	0.61	3.42	1.00	0.07	3.07	
	Above 30	0b	-	-	0.00	-	-	
	College and above	15.17	2569.60	0.00	1.00	1.00	3 858 342.92	
	High school	14.38	2569.60	0.00	1.00	1.00	1 762 645.44	
	Middle school	16.70	2569.60	0.00	1.00	1.00	17 958 438.68	
	Primary or below	0b	-	-	0.00	-	-	
	Trade/Business	17.98	0.00	-	1.00	-	64 543 156.38	
	Government service	0.38	2600.62	0.00	1.00	1.00	1.46	
	Professional	1.18	0.00	-	1.00	-	3.27	
	Teaching	0b	-	-	0.00	-	-	
	Primiparous	-0.28	0.85	0.11	1.00	0.74	0.75	
	G2-4	0.07	0.55	0.02	1.00	0.90	1.07	
	G5 and above	0b	-	-	0.00	-	-	
	Cesarean section	-0.65	0.81	0.63	1.00	0.43	0.52	
	Instrumental delivery	0.88	1.15	0.59	1.00	0.44	2.41	
	Normal vaginal delivery	0b	-	-	0.00	-	-	
	Hilba	Intercept	-22.39	5552.42	0.00	1.00	1.00	
		Below 25	1.38	0.71	3.84	1.00	0.05	3.98
25-30		-0.10	0.75	0.02	1.00	0.89	0.90	
Above 30		0b	-	-	0.00	-	-	
College and above		16.01	3522.71	0.00	1.00	1.00	8 975 993.62	
High school		17.79	3522.71	0.00	1.00	1.00	53 290 692.61	
Middle school		1.20	4246.28	0.00	1.00	1.00	3.31	
Primary or below		0b	-	-	0.00	-	-	
Trade/Business		1.04	6106.08	0.00	1.00	1.00	2.82	
Government service		-13.71	6432.38	0.00	1.00	1.00	0.00	
Professional		0.30	0.00	-	1.00	-	1.35	
Teaching		0b	-	-	0.00	-	-	
Primiparous		-15.88	2120.15	0.00	1.00	0.99	0.00	
G2-4		0.52	0.63	0.69	1.00	0.41	1.68	
G5 and above		0b	-	-	0.00	-	-	
Cesarean section		1.64	1.12	2.16	1.00	0.14	5.15	
Instrumental delivery		4.00	1.34	8.95	1.00	0.00	54.65	
Normal vaginal delivery		0b	-	-	0.00	-	-	
Nothing		Intercept	-6.30	1.86	11.44	1.00	0.00	
		Below 25	1.20	0.65	3.40	1.00	0.07	3.31
	25-30	1.77	0.52	11.76	1.00	0.00	5.84	
	Above 30	0b	-	-	0.00	-	-	
	College and above	-2.82	0.88	10.26	1.00	0.00	0.06	
	High school	-0.30	0.75	0.16	1.00	0.69	0.74	
	Middle school	0.44	0.73	0.36	1.00	0.55	1.55	
	Primary or below	0b	-	-	0.00	-	-	
	Trade/Business	1.87	1.64	1.29	1.00	0.26	6.48	
	Government service	2.33	1.63	2.06	1.00	0.15	10.32	
	Professional	5.26	2.58	4.17	1.00	0.04	193.31	
	Teaching	0b	-	-	0.00	-	-	
	Primiparous	-1.91	0.88	4.71	1.00	0.03	0.15	
	G2-4	0.47	0.46	1.06	1.00	0.30	1.60	
	G5 and above	0b	-	-	0.00	-	-	
	Cesarean section	2.26	0.84	7.16	1.00	0.01	9.54	
	Instrumental delivery	5.73	1.07	28.69	1.00	0.00	308.36	
	Normal vaginal delivery	0b	-	-	0.00	-	-	
	Black seeds	Intercept	-38.53	4758.93	0.00	1.00	0.99	
		Below 25	-3.26	1.22	7.12	1.00	0.01	0.04
25-30		-0.82	0.58	2.02	1.00	0.16	0.44	
Above 30		0b	-	-	0.00	-	-	
College and above		16.29	2397.08	0.00	1.00	1.00	11 823 068.94	
High school		17.90	2397.08	0.00	1.00	0.99	59 634 859.29	
Middle school		18.57	2397.08	0.00	1.00	0.99	115 600 000.00	
Primary or below		0b	-	-	0.00	-	-	
Trade/Business		18.17	4111.13	0.00	1.00	1.00	77 844 550.86	
Government service		18.55	4111.13	0.00	1.00	1.00	113 600 000.00	
Professional		0.27	8145.49	0.00	1.00	1.00	1.31	
Teaching		0b	-	-	0.00	-	-	
Primiparous		1.74	0.84	4.27	1.00	0.04	5.72	
G2-4		1.21	0.58	4.36	1.00	0.04	3.35	
G5 and above		0b	-	-	0.00	-	-	
Cesarean section		0.81	0.62	1.68	1.00	0.20	2.24	
Instrumental delivery		-15.60	5014.69	0.00	1.00	1.00	0.00	
Normal vaginal delivery		0b	-	-	0.00	-	-	

be categorized in the vaginal delivery, instrumental delivery or cesarean section group (Table 2).

Discussion

Different studies have looked at puerperal practices from different parts of the world. Studies from Lao PDR by Lamxay and de Boer have highlighted the use of many plants during puerperium linked to perineal

healing, retraction of the uterus, prevention of anemia and postpartum headaches.^{4,5}

Geçkil reported that the most of the women in puerperium eat a dessert called ‘Bulamaç’ and drink a mixture of grape molasses and butter.⁶ However, in our study we found herbal use the most common practice and that women were using ginger, black seeds and hilba seed. They believed that these herbs strengthened the uterus, cleaned the birth passage and were

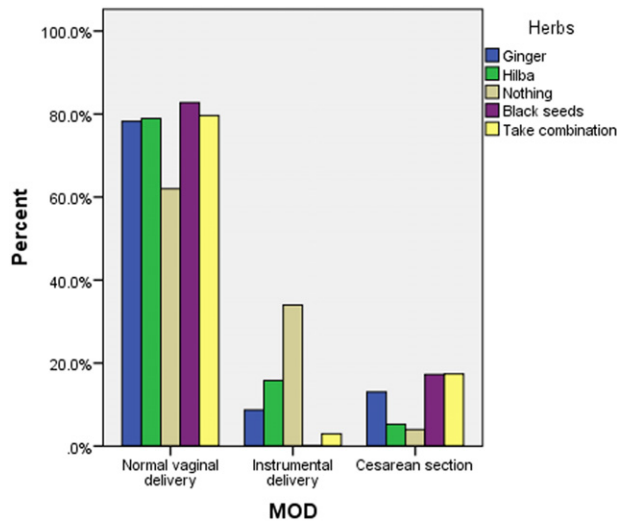


Figure 3 Percentage distribution of herbal use with different modes of delivery (MOD).

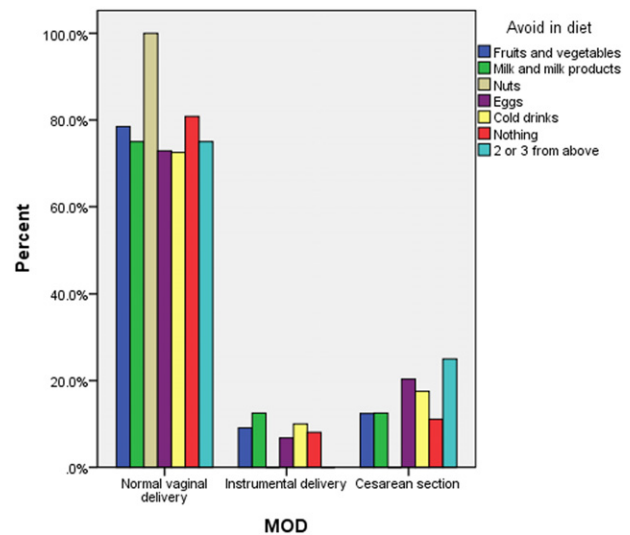


Figure 4 Percentage of avoiding dietary components with different modes of delivery (MOD).

Table 3 Model summary for multinomial logistic regression of diet on demographic variables

Diet	Predictors	B	Standard error	Wald	df	Sig.	Exp(B)
Fruits and vegetables	Intercept	1.33	1.49	0.80	1.00	0.37	
	Primary or below	8.72	1.55	31.85	1.00	0.00	6138.69
	Middle school	6.99	1.27	30.11	1.00	0.00	1084.84
	College and above	0b	–	–	0.00	–	–
	Housewife	–4.53	1.18	14.73	1.00	0.00	0.01
	Teaching	–3.56	1.08	10.91	1.00	0.00	0.03
	Government service	0b	–	–	0.00	–	–
Cold drinks	Intercept	–17.06	3175.90	0.00	1.00	1.00	
	25–30	–1.98	0.76	6.80	1.00	0.01	0.14
	Above 30	0b	–	–	0.00	–	–
	Primary or below	7.34	1.48	24.75	1.00	0.00	1546.87
	Middle school	4.76	1.21	15.44	1.00	0.00	116.21
	High school	2.52	1.01	6.27	1.00	0.01	12.42
	College and above	0b	–	–	0.00	–	–
	G2–4	1.45	0.71	4.23	1.00	0.04	4.28
G5 and above	0b	–	–	0.00	–	–	

good for the digestive system. A study from Hong Kong reported increased use of ginger soups and poultry products during puerperium. Analysis of ginger vinegar soup revealed median calcium and iron contents as 4.65 and 0.84 mg/dL, respectively, which was higher when compared with six other types of soups being used.⁷ Hilba (fenugreek) is a plant commonly used in Middle East. Women use it during puerperium to regulate the menstrual cycle and reduce weight.⁸ In our study women with instrumental delivery were more likely to use hilba and they believed that it improved perineal strength. There have been reports in medical literature about the benefits of hilba seed; however, the sample sizes were very small; in one study of 18 participants it was found that fasting blood sugar, triglyceride and very low density lipoprotein-C (VLDL-C) decreased significantly after taking hilba seed soaked in warm water as compared to their use with yogurt.⁹ Black seed (*nigella sativa*) is used in puerperium for lactation promotion. It is believed in Islamic culture to be the healer of many ailments and even the Prophet Muhammad (PBUH) described its healing power.¹⁰ Even women with college education were taking a combination of herbs, which reveals the popularity of herbal intake in the society.

A review of the literature revealed that dietary practices in Saudi women have been studied during pregnancy but there is a lack of evidence about puerperal practices.¹¹ Scientific evidence about the benefits of these products and their side-effects as well as their effect on nursing babies needs to be addressed.

Adequate intake of different foods is very important in puerperium as maternal requirement increases, especially if the mother chooses to breastfeed. There have been reports of inadequate intake of different foods and food components.¹² A study conducted in a London Caucasian population reported that intake of iron, folate and calcium from food components was lower than UK recommendations in this population. A large proportion of our studied population avoided fruits and vegetables in their diet (Fig. 2). Commonly avoided were green leafy vegetables such as spinach because of the belief that they increase vaginal secretions. Bananas were linked to constipation and citrus fruits were blamed for sore throat. Ozsoy and Katabi conducted a study on traditional practices in Iran and Turkey and found the use of low caloric diet and herbal drinks.¹³ A study in Bangladesh reported that women restricted protein intake during this time period.¹⁴ Kulakac *et al.* reported that women in Turkey avoided grains and vegetables like legumes in their diet during

breastfeeding. The women believed that intake of these components may cause intestinal colic to the newborn (89.4%).¹⁵ Women below college education were more likely to avoid fruits and vegetables and cold drinks during puerperium. Women who delivered for the first time avoided cold drinks. This may be because first-time mothers are more cautious and rely on advice from family and friends.

The limitations of this study were its non-probability (convenient) sampling and because it was a hospital-based study results cannot be generalized to the whole population. However, MCH is a major tertiary level hospital in the region. We believe that our results may be very close to the prevailing condition in the general population. However, this is the first study regarding puerperal practices in the region, which may open the doors for future research in this area. We recommend that the active components of herbs and their beneficial effects in puerperium as well as effects on lactation and on breastfed babies should be explored.

We conclude that there is a need for educational programs to improve knowledge about malpractices during puerperium. This may help eliminate myths regarding diet and improve maternal and child health during this time period. Further studies are urgently required to explore the use of different herbal drugs and seeds. Women who are primiparous or have an education level below college level should be targeted for health education.

Acknowledgment

We acknowledge the MCH hospital and administration staff for their support.

Disclosure

The authors have no conflict of interest.

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