

Early postpartum dietary practices among a group of Saudi women

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Abstract: This work aimed to study the early postpartum dietary practices among a group of Saudi women. A retrospective study was carried out on a convenient sample of 300 women during their post-partum period who attended seven primary health centers in Riyadh and Taif, KSA. The subjects were interviewed individually throughout a period of four months from September 2009 to January 2010. An interview questionnaire and a dietary scale of King and Jakobson were used for data collection. The results showed that 73.3% of the study subjects had incomplete knowledge about post-partum nutrition and an equal proportion of them (28.3%) had either excellent or borderline dietary practices during their early post-partum period and about one-fifth of them (19.3%) had dangerous dietary practices. The study concluded that Saudi women's post-partum dietary practices were significantly associated with their general characteristics such as age, education, employment and number of family member as well as with their obstetrical characteristics including their gravidity and parity.

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1. Introduction:

The postpartum period, or puerperium, starts about an hour after the delivery of the placenta and includes the following six week (Nian et al., 2006). By six weeks after delivery, most of the changes of pregnancy, labor, and delivery have resolved and the body has reverted to the non-pregnant state (Cunningham et al., 1997).

A good postpartum care and well balanced diet during puerperal period can influence her health for rest of her life (Pillitteri, 2007). After vaginal birth, there are no dietary restrictions for woman without underlying medical conditions or pregnancy-induced complications. Woman should be encouraged to drink 3.000ml of water and other liquids every 24 hours to restore the fluid balance altered by fluid loss during labor and birth process. Healthy food choices are encouraged with respect for ethnic and cultural preferences, while after cesarean birth, woman usually receives clear liquids until bowel sounds are present and then advance to solid foods. For each 20 calories of breast milk produced, the woman must consume an additional 30 calories. This results in a dietary increase of 500 to 1.000 calories each day for woman who is maintaining body weight (Kathleen and Patricia, 2001).

Unfortunately, many women consume less than the recommended amounts of calcium, magnesium, zinc, vitamins B₆, and folate (Institute of Medicine, 1992). New mothers are likely to stop

taking prenatal vitamins which result in nutritional deficiency during their postpartum period and necessitate a restitution of prenatal nutritional supplementation. Prenatal supplements generally do not include a significant amount of calcium, in addition during lactation; 250 – 350 mg of calcium is transferred daily from the mother to the neonate through breast feeding. Woman should be apprised of the need for additional supplementation to meet requirement for this key mineral (Olson et al., 2003). Postpartum nutritional counseling can be tailored to the individual woman based on risk factors for poor nutrition such as extremes of maternal age, excessive weight gain during pregnancy, deviation from ideal body weight, multiple gestation, and history of eating disorders, close interconceptional period and highly restrictive diet due to traditional and religious practices (Olson et al., 2003).

The postpartum dietary and lifestyle habits vary greatly among different countries and cultures (Yeoun, 2003). In western countries, instead of restrictions, women are encouraged to eat a well-balanced diet from all food categories and start physical exercises during this period (Artal et al., 2003 & WHO, 1998). In Asia, postpartum maternal food restrictions (food avoidances) are common practices, which may have important health consequences in reducing the nutritional content of breast milk, inadequate breastfeeding and weaning

practices contribute to high rates of malnutrition and infant and child mortality (Barennes et al., 2007).

In gulf region, the nutritional assessment studies revealed that there are many nutritional problems. In Saudi Arabia, in spite of the vast economic advancement and availability of all types of food in the market, the general observation among the Kingdom communities surveyed was the low intake of various nutrients. On the other hand, several researchers in the Kingdom of Saudi Arabia recommended that the nationwide studies should be conducted to assess the magnitude of nutritional problems, the causative and related socio-cultural factors (Salma et al., 1990). So, this study aimed to identify the early post-partum dietary practices among a group of Saudi women.

2. Subjects & Methods:

Research design:

A retrospective study was carried out on women who interviewed individually in their post-partum period and asked to report their post-partum dietary practices within 24 hours.

Setting:

The study was conducted at seven primary health care centers representing the different sectors of urban areas in Riyadh and Taif cities, KSA, namely, West-Naseem, East Naseem and El Rabwa health centers at Riyadh and Oudh, West El-Madina, El-Hawia and Ganoub El-Shohada El-Ganoubia health centers at Taif.

Subjects:

A convenient sample of three hundred women attending the previously mentioned setting during their post-partum period was included in the study throughout a period of four months from September 2009 to January 2010.

Tools of data collection:

Tool I:

An interview questionnaire sheet was designed for data collection and included the following parts:

Part I: Comprised the socio-demographic and obstetric characteristics of the study subjects such as age, level of education, occupation, type of the family, family income, food budget. Also, obstetrical characteristics of the study subjects such as their gravidity, parity and history of abortion were included in that part.

Part II: It included questions related to women's dietary knowledge and practices during the post-partum period with 24 hours diet recall sheet.

Tool II: A dietary scale of King and Jakobson (Zackler&Brandstadi, 1975) was translated to Arabic, modified and used to assess the dietary practices of the study subjects and to analyze the diet consumed throughout 24 hours by the puerperal women. The scale contained data related to four food groups as follows:

Group one, milk or choice from the milk food list; the amount required daily is four servings (the score was four points per serving, with a total score of 16 points).

Group two, meat or choice from the meat food list; amount required daily is three servings. (the score was 2.7 points per serving, with a total score of 8 points).

Group three, vegetables and fruits" dark green or yellow" the amount required daily is one serving scored with 3 points. Cooked or raw vegetables, the amount required daily are 2 serving (The score was 2 points for each serving with a total score of 4 points). Citrus fruits, the amount required daily are one serving scored with three points. Others fruits" fresh or canned", the amount required daily is one serving with one point score.

Group four, bread and cereals; the amount required daily is four serving (one point per serving with a total of 4 points). A total score of 60 means excellent dietary practices, 54-59 means good dietary practices, 48-53 means borderline and below 48 means danger dietary practices.

Methods:

- 1- Official permission to carry out this study was obtained from the previously mentioned settings.
- 2- The dietary scale was translated into Arabic language by the researchers and verified by bilingual assessors specialized in the field.
- 3- A pilot study was carried out on 30 women selected from primary health care centers and was not included in the study subjects, to ascertain the relevance of the questions and to detect any further problems peculiar to the sequence and clarity of the tool. Based on the results of the pilot study, the questionnaire sheet was reconstructed and made ready for use.
- 4- Each woman was interviewed individually to collect the necessary data and asked to recall her food intake in the last 24 hours.
- 5- Women's knowledge about post-partum nutrition was scored. The correct answers were predetermined according to literature. A score of one was given to each correct answer and score of zero to the wrong answers. The score ranged from zero to two and the total score was classified according to the following: a score of 50 or above denotes good knowledge, while a

score of 30 to less than 50 considered fair and less than 30 was scored as poor knowledge.

- 6- The dietary practices were determined by comparing the food eaten during their last 24 hours with the four food groups and the total score of the dietary practices was compared with that of King and Jacobson, 1975 scale.
- 7- The collected data were categorized, tabulated and made ready for analysis.

Statistical analysis:

The collected data were coded and analyzed using SPSS version 10 for windows. Women's early post-partum dietary practices were examined for association with a variety of demographic and obstetrical characteristics of the study subjects using Chi-squared test with significance when $p \leq 0.05$.

3. Results

The general characteristics of the study subjects showed that 30% of them aged from 30 to less than 35 years old, about one-half of them (48.3%) were illiterate or just read and write, most of them (90.3%) were housewives and about three-quarters of them (75.3%) lived in extended family and more than one-half of them (55%) their family members ranged from 4 to 10 persons. Less than one-third (31.7%) of the study subjects had history of three gravida with slightly more than one-third (34%) of them had 3 deliveries and 91.7 % of them had no history of abortion (table I).

On assessing food budget and responsibility about food, it was observed that more than two-thirds (68.3%) of the study subjects had enough food budget while, less than one-third (31.7%) of them didn't have enough budget. Responsibility regarding food budget fall on father in law among 71.7 % of the study subjects while, mother in law was responsible about food choice among 45% of the study and about three-fifth (59.3%) of them were responsible about food preparation (table II).

Concerning knowledge of Saudi women about post-partum nutrition, the results of the present study revealed that more than one-half (54%) and less than one-third of them (30.7%) either had correct but incomplete knowledge or wrong answer regarding the definition of well-balanced diet respectively. Correct but incomplete answer was found among 73.3% of the study subjects regarding the importance of well-balanced diet and among more than four-fifth (83.7%) of them regarding the different food groups (table III).

It was noted that an equal proportion of the study subjects (28.3%) had either excellent or borderline dietary practices during their early post-partum period and about one-fifth of them (19.3%) had dangerous dietary practices (table IV).

The distribution of the study subjects according to food groups consumed within 24 hours showed that milk or milk group was not taken by more than two-thirds (68%). 84.7% and 76.7% had incomplete intake of meat group and vegetable group respectively (table V).

As regards food which are increased during early post-partum period, it was found that one-half (50%) of the study subjects increase chicken, slightly more than one-third of them (34%) increase honey with dates, more than one-quarter (26.7%) increases intake of vegetables and fruits, while an equal proportion of them (24%) increase intake of fish and meat. The most given reason for increased food was to replace blood loss (48%). Carbohydrates were among food to be decreased during that period by 30 % of the study subjects and more than one-half of them (53%) relate this to traditional reasons. About three-fifth of the study subjects (59%) didn't eliminate special types of food during their early puerperal period (table VI).

It was observed that only 15 % of the study subjects were more likely to drink 8 to 10 cups of fluid daily. Arabic coffee was mentioned by most of them (99%) among the different types of fluid to be taken during their early post-partum period followed by herbal tea (50%) and black dates (46%), (table VII).

A significant association was observed between Saudi women's dietary practices during their early post-partum period with their general characteristics such as age, education, employment and number of family member as well as with their obstetrical characteristics including their gravidity and parity ($p \leq 0.05$), (table VIII).

4. Discussion:

The postpartum period is a very special phase in the life of a woman. Her body needs to heal and recover from pregnancy and childbirth, a good postpartum care and well balanced diet during the puerperal period is very important for her health. Several studies indicated that the incidences of postpartum health problems are high and these problems maybe have relation to traditional and unscientific dietary and behavior practices in the postpartum period (Nian et al., 2009).

Table I: Distribution of the study subjects according to their general characteristics.

General characteristics	No. (300)	%
I. Age		
< 25	66	22.0
25 -	75	25.0
30 -	90	30.0
35 or more	69	23.0
II. Education		
Illiterate & Read and write	145	48.3
Primary school	90	30.0
Secondary school	45	15.0
University	20	6.7
III. Occupation		
House wife	271	90.3
Worker	29	9.7
IV. Type of the family		
Extended	226	75.3
Nuclear	74	24.7
V. No. of the family member		
4 – 10	165	55.0
11 - 15	82	27.3
> 15	53	17.7
VI. Obstetrical characteristics		
Gravidity		
1	60	20.0
2	80	26.7
3	95	31.7
4 +	65	21.7
Parity		
1	68	22.7
2	89	29.7
3	102	34.0
4 +	41	13.7
Abortion		
0	275	91.7
1	12	4.0
2	8	2.7
3	4	1.3
4+	1	0.3

Table II: Distribution of the study subjects according to their food budget and food responsibility.

Food budget and food responsibility	No(300)	%
I. Food budget		
Enough	205	68.3
Not enough	95	31.7
II. Responsibility regarding food budget		
Husband	16	5.3
Husband and wife	69	23.0
Father in law	215	71.7
III. Responsibility regarding food choice		
Husband	75	25.0
Wife	90	30.0
Mother in law	135	45.0
IV. Responsibility regarding food preparation		
Wife	122	40.7
Mother in law	178	59.3

Table III: Distribution of the study subjects according to their knowledge about post-partum nutrition

Knowledge about nutrition during puerperium	No (300)	%
I. Definition of well-balanced diet		
Correct and complete answer	46	15.3
Correct but incomplete	162	54.0
Wrong answer or did not know	92	30.7
II. Importance of well-balanced diet during puerperium		
Correct and complete answer	52	17.3
Correct but incomplete	220	73.3
Wrong answer or did not know	28	9.3
III. Different food groups		
Correct and complete answer	41	13.7
Correct but incomplete	251	83.7
Wrong answer or didn't know	8	2.7

Table (IV): Distribution of the study subjects according to the score of their dietary practices during their early post-partum period

Score of dietary practices during puerperium	N= 300	%
Excellent (60)	85	28.3
Good (54-59)	72	24.0
Borderline (48-53)	85	28.3
Dangerous(less than 48)	58	19.3

Table V: Distribution of the study subjects according to food groups consumed within 24 hours

Different food groups	N (300)					
	Not taken		Incomplete intake of number of serving		Complete intake of number of serving	
	No	%	No	%	No	%
Milk or choice from the milk food list	204	68.0	96	32.0	0	0.0
Meat or choice from the meat food list	6	2.0	254	84.7	40	13.3
Vegetable and fruit	0	0.0	230	76.7	70	23.3
Bread and cereals	0	0.0	152	50.7	148	49.3

Table VI: Distribution of the study subjects according to types of food which are increased, decreased or eliminated during their early post-partum period with its given reasons.

Type of food & given reasons	No (300)	%
I. Increased food		
Chicken	150	50.0
Fish	72	24.0
Meat (Mazbay, Mandy)	72	24.0
Milk	54	18.0
Egg	48	16.0
Vegetables & Fruits	80	26.7
Garlic with Frengrack	66	22.0
Honey with Dates	102	34.0
Cereals (Hessawy rice)	18	6.0
Given reasons		
Replace blood loss	144	48.0
Increase immunity	102	34.0
Promote breast feeding	96	32.0
Tradition.	42	14.0
Help involution	36	12.0
II. Decreased food		
Salty and spicy food	48	16.0
Carbohydrates	90	30
Fried food	12	4.0
Canned food	12	4.0
Given reasons		
Tradition	159	53.0
To avoid wound infection	96	32
To avoid gastro intestinal trouble.	62	20.7
To avoid weight gain	18	6.0
III. Eliminated food		
No thing	177	59.0
Onion and garlic	51	17
Salty and spicy food	51	17
Gas forming food	33	11.0
Fish	9	3.0
Given reasons		
To avoid gas formation	80	26.7
Tradition	63	21.0
To avoid wound infection	30	10.0

N.B. More than one response

Table VII: Distribution of the study subjects according to their daily fluid intake during their early post-partum period

Amount and types of daily fluid intake		No (300)	%
I. Total Daily intake of fluid			
1-4 cups		142	47.3
5-7 cups		65	21.7
8-10 cups		45	15.0
> 10 cups		48	16.0
II. Types of fluid intake during early puerperium			
Water		21	7.0
Milk		39	13.0
Fresh juice		24	8.0
Soups		105	35.0
Arabic Coffee		297	99.0
Herbal tea		150	50.0
Black dotes		138	46.0
Fenugreek		9	3.0
Cinnamon		36	12.0
Maramia		39	13.0
Zaater		36	12.0
Soma		9	3.0
Sesame drink		12	4.0
Mardood		102	34.0
Anzaroot		60	20.0

Table (VIII): Association between score of early post-partum dietary practices of the study subjects and their general characteristics

General characteristics	Excellent		Good		Border line		Dangerous		Total	p
	No.	%	No.	%	No.	%	No.	%		
I. Age										
< 25	36	42.4	22	30.6	5	5.9	3	5.2	66	0.001*
25 -	32	37.6	24	33.3	10	11.8	9	15.5	75	
30 -	10	11.8	15	20.8	30	35.3	35	60.3	90	
35 or more	7	8.2	11	15.3	40	47.1	11	19.0	69	
II. Education										
Illiterate & Read and write	8	9.4	27	37.5	63	74.1	47	81.0	145	0.0001*
Primary school	38	44.7	33	45.8	13	15.3	6	10.3	90	
Secondary school	30	35.3	5	6.9	5	5.9	5	8.6	45	
University	9	10.6	7	9.7	4	4.7	0	0.0	20	
III. Occupation										
House wife	59	69.4	70	97.2	84	98.8	58	100.0	271	0.0031*
Worker	26	30.6	2	2.8	1	1.2	0	0.0	29	
IV. Type of the family										
Extended	72	84.7	60	83.3	52	61.2	42	72.4	226	0.103
Nuclear	13	15.3	12	16.7	33	38.8	16	27.6	74	
V. No. of the family member										
4 - 10	60	70.6	42	58.3	32	37.6	31	53.4	165	0.0021*
11 - 15	18	21.2	20	27.8	33	38.8	11	19.0	82	
> 15	7	8.2	10	13.9	20	23.5	16	27.6	53	
Obstetrical characteristics										
VI. Gravidity										
1	30	35.3	16	22.2	10	11.8	4	6.9	60	0.014*
2	19	22.4	22	30.6	15	17.6	24	41.4	80	
3	22	25.9	30	41.7	30	35.3	13	22.4	95	
4 +	14	16.5	4	5.6	30	35.3	17	29.3	65	
VII. Parity										
1	25	29.4	26	36.1	9	10.6	8	13.8	68	0.041*
2	30	35.3	22	30.6	20	23.5	17	29.3	89	
3	24	28.2	21	29.2	45	52.9	12	20.7	102	
4 +	6	7.1	3	4.2	11	12.9	21	36.2	41	
Total	85		72		85		58		300	

The results of the study denoted that considerable percent (around three-quarters) of the study subjects had correct but incomplete knowledge about post-partum nutrition, while the score of the dietary practice of about one-half of them tends to be at the borderline or dangerous. These results are congruent with (Nian et al., 2009) who found that increased nutrition and health care knowledge did not lead to parallel dietary and health behavior changes, this apparent incongruence may be related to the fact that in Saudi Arabia, the tradition to support a newly delivered woman and her baby for the first month after childbirth at home is still common, where more than three-quarters of the women in the study lived in extended family and they may had an elder female of the family such as her mother or mother-in-law as the support person. The elder female who takes care of the women may have hindrance the change due to traditional believes (Nian et al., 2009).

Incomplete intake of the daily requirement of the different food groups was observed among Saudi women in this study where, milk and milk products were not taken at all by more than two-thirds of the study subjects during their early post-partum period. Such harmful practices should be negated as mothers during the post-partum period are in need for more calcium as essential component in milk production (Abraham et al., 2001 and Olds et al., 2004).

Meat group was inadequately taken by more than four-fifths of Saudi women in the study, one-half of them increase chicken intake during the post-partum period and only 24% of them increase intake of red meat and fish prepared in a unique Saudi Arabian way such as Mazby and Mandy. These results are supported by Juliana et al., (2008) who reported that, according to women in his study, some meats are problem causing for health, especially pork, fish and beef. It is not advisable to consume these animals' meat if they are neutered, nor their guts. One of the permitted meats is poultry, mainly used to prepare chicken soup and considered to be substantial light food.

The daily intake of vegetables and fruits was inadequate among more than three-quarters of the study subjects. Congruent with this, a study performed in Egypt by Wafa et al., (2004) who found that the majority of the Egyptian women in her study subjects had harmful dietary practices where, 66.3% & 82 % did not take their daily requirement of meat and vegetables group respectively. These results may attributed to the fact that mother in law was responsible about food preparation among 59.3% of the study subjects. Puerperal diet arranged by mother or mother-in-law was the negative influencing factor of vegetable intake (Nian et al., 2009).

Carbohydrates, salty and spicy food were among the food restricted or avoided by Saudi women in the study either for traditional reasons or to avoid infection and weight gain. In agreement with this Yeoun (2003), who stressed that culturally specific dietary prescriptions are common in the postpartum period among non-Western countries, the choice of certain cultural foods by non-Western women should be respected, if there are no dietary restrictions for health reasons.

A minority of Saudi women in the study had adequate daily fluid intake during their puerperium. Arabic coffee, herbal tea and nigella sativa (black seeds) were the mostly fluid taken during that period. This is a pleasant way for many women to increase fluid intake but the nurse should alert the women that excessive intake of coffee interferes with the absorption of supplemental iron and may have important health consequences in reducing the nutritional content of breast milk (Barennes et al., 2007).

A significant association was observed between the Saudi women's dietary practice and their general characteristics such as their age, education, occupation, number of family members as well as their gravidity and parity. These results are supported by Nian et al., (2009) who observed that although the traditional postpartum beliefs and practices abound, the level of adherence differs according to the socio-economic structure of the women and their families.

5. Conclusion:

It can be concluded that considerable percent of the Saudi women had incomplete knowledge about post-partum nutrition with an observable borderline and dangerous post-partum dietary practices that significantly related to their socio-demographic as well as their obstetric characteristics.

Recommendations:

Antenatal clinic should develop education programs on postpartum nutrition and health care for pregnant women and their family members. Some of the antenatal visits should be extended to early postnatal visits to follow up and guide the women on contemporary postpartum practices, which will enable women to practice them. Moreover, further prospective studies are needed to explore the relationship between post-partum dietary practices and women's health outcomes.

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