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# The Value of Antenatal Health Education Program for Improving Dietary Habits in Puerperium

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**Author's contribution**

*This study was designed a, written and analysed by author ZS.*

**Original Research Article**

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## ABSTRACT

**Background:** Poor maternal health post delivery can be due to improper dietary intake. Women have special beliefs about dietary habits during puerperium which are deep rooted according to customs of the society. Omitting important food items during this time period of stress may lead to dietary deficiencies of iron and calcium leading to anemia and hypocalcaemia. Mothers need to heal from wounds of episiotomy and caesarean section. The extra burden of lactation demands good nutrition. It was observed that there is a trend of avoiding certain food items during puerperium. Therefore this education program was designed to bring about a change in beliefs/views of women about dietary elements which women were planning to avoid during puerperium.

**Methods:** This study comprised women attending the Qassim University clinic for antenatal visits for a period of 3months from 1<sup>st</sup> October 2012-31<sup>st</sup> Dec 2012. A total of 150 women were interviewed to find out their views about avoiding certain food items post delivery. They were later provided health education brochures, and a power point presentation to stress the importance of the dietary components which they were planning to avoid. Pre and post intervention results were compared using chi-square analysis.

**Results:** For meat and poultry, fruits and vegetables, milk and milk products results revealed a significant relationship between pre and post intervention using chi-squared analysis (P value <0.05). For women planning to avoid fish and sea food, results

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indicated that a significant relationship did exist between pre-education program and Post education program groups;  $\chi^2 (1, n = 15) = 15.000, p < .001$  However for drinks and juices the relationship was not significant.

**Conclusion:** Health education programs can successfully change the views about dietary components which can bring a healthy change in dietary habits of women in puerperium. Antenatal classes should include health education programs to find out and allay dietary myths to be practiced in puerperium

*Keywords: Puerperium; Health education; Dietary habits; Anemia; Hypocalcemia.*

## 1. INTRODUCTION

Puerperium is defined as the time period after delivery of the baby and placenta. It usually lasts between 4-6 weeks [1]. During this time period the mother has to return to pre-pregnancy state. Mothers breast feed and recover from surgical wounds of episiotomy or cesarean section as well. Healthy diet during puerperium is required to recover and fulfill maternal stores of iron, calcium and other things. Throughout pregnancy developing fetus has been extracting its needs from the mother leading to depletion of her stores. Similarly blood lost during delivery can lead to iron deficiency anemia in mothers. Furthermore breast feeding places extra burden and can lead to calcium depletion in mothers. This stresses the need for healthy diet during puerperium. Practicing different beliefs and myths during puerperium has not been new in the obstetrics history. In 2007 Wang from China reported that "almost 90% of postpartum women 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]. Restricting bathing and washing has been observed in Fujian Province of China as well [3]. Practices like these can have devastating effects on maternal health like increased susceptibility to anemia, hypocalcemia and maternal infections. Saudi women are not exempt from these practices.

This educational program has tried to target those women in puerperium who were planning to avoid certain foods from their diet puerperium. This might help in bringing up a positive lifestyle change.

## 2. MATERIAL AND METHODS

This study was conducted in AlQassim University clinic. AlQassim is the central part of Saudi Arabia.

Pre and post intervention questionnaires were filled by the attending sister. A self structured questionnaire was used to collect data with Arabic translation covering aspects such as demographic factors and which dietary components the women were planning to avoid during puerperium. A total of 150 willingly participating women were interviewed at the university clinic. Verbal consent was taken from the patients. Approval from local ethical committee of the clinic was sought. Almost 300 obstetric patients are seen during a period of six months at the clinic. Keeping this total population the sample size of 150 was calculated which has a confidence interval of 5 with confidence level of 95%. 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-forma was tested in a pilot study of 20 patients. To keep

the data anonymous, patients name or identification number was not included. Inferential statistics were used to draw conclusions from the sample tested.

From the results of Pre intervention questionnaire it was noticed which dietary component women are planning to avoid in puerperium and why? After that the same group of women were provided with an information leaflet which addressed the importance of different dietary components. The same information was repeated verbally as well by providing a power point presentation to the women using i-pad individually. After an interval of 4weeks at the next antenatal visit the same questionnaire was refilled by the women and again noticed whether or not the intervention was helpful in changing their beliefs/ views about the dietary components.

### 2.1 Statistical Analysis

The Statistical Package for the Social Sciences (SPSS) was used to code, tabulate and provide summarized values for participants demographics. Chi-squared tests for independence were used to assess the research question. P value<0.05 was considered significant. The research question and hypotheses was Can the educational program improve awareness about diet in women during puerperium?

### 3. RESULTS

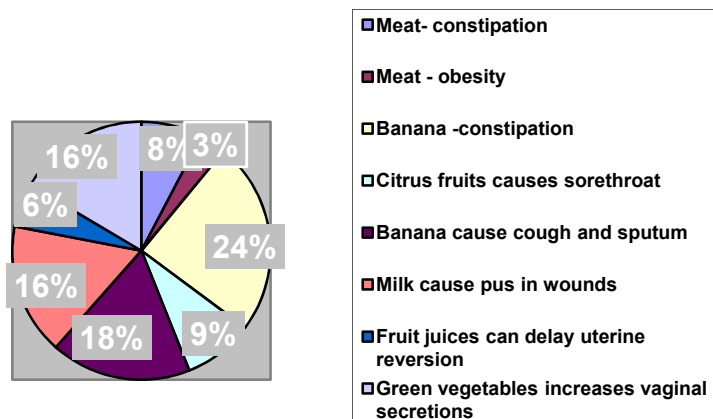
As regard the demographic characteristics of the study population it was observed that most of the participants were over the age of 41 (53.3%), attended secondary school (69.3%) and were gravida (G) 5 or [Table-1].

**Table 1. Demographics and Percent Statistics for Age, Level of Education and Parity**

Frequency Variable	Response	n	%	Variable	Response	n	%
Age in years	Less than 20	12	8.0	Education	Primary School	37	24.7
	21-40	58	38.7		Secondary School	104	69.3
	41 and above	80	53.3		Post-Secondary	6	4.0
	Total	150	100.0		University Degree	3	2.0
				Total		150	100.0
Parity	PG	9	6.1				
	G2-G4	48	32.7				
	G5 and above	90	61.2				
	Total	147*	100.0				

\*3 cases were excluded because of non availability of data  
G=Gravidity

Women were frequently planning to avoid certain foods in their diet during puerperium [Fig-1]. They were blaming meat for obesity, banana to constipation and citrus fruits to sorethroat.



**Fig. 1. Percentage distribution of practiced myths**

*Pie chart\* -represents the percentage of individuals having specific myths to different food items like meat- was linked to cause constipation*

For meat and poultry, results from the chi-squared analysis indicated that a significant relationship did exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 29) = 4.172, p = .041$ . For fruits and vegetables, results indicated that a significant relationship did exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 38) = 26.947, p < 0.001$ . Similarly for milk and milk products, results indicated that a significant relationship did exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 35) = 20.829, p < 0.001$ . For juices and drinks, results indicated that a significant relationship did not exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 27) = 3.000, p = 0.083$ . For participants' avoiding a combination of the aforementioned dietary components (meats and poultry, fruits and vegetables, milk and milk products, and juices and drinks), results indicated that a significant relationship did not exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 18) = 3.556, p = 0.059$ . For participants' avoiding sea food, results indicated that a significant relationship did exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 15) = 15.000, p < 0.001$ . For participants' avoiding none of the aforementioned dietary components, results indicated that a significant relationship did exist between Pre-education program and Post education program groups;  $\chi^2(1, n = 138) = 12.250, p < 0.001$  [Table 2].

Dietary components\* – Refers to food groups women were planning to avoid in puerperium. As regards feedback 76% said that they wanted more information, 97% planned to change their dietary habits as a result of this program and 98% recommended that [Table-3].

**Table 2. Frequency, Percent, Chi-squared, and Significance Statistics for Groups 1 and 2**

Group	Dietary Components*	n	%	Group	Dietary Components	n	%	$\chi^2$	Sig.
1*	Meat & Poultry	20	13.3	2*	Meat & Poultry	9	6.0	4.172	0.041
	Fruits & Vegetables	35	23.3		Fruits & Vegetables	3	2.0	26.947	0.0000021 (<0.001)
	Milk & Milk Products	31	20.7		Milk & Milk Products	4	2.7	20.829	0.00000502 (<0 .001)
	Juices & Drinks	18	12.0		Juices & Drinks	9	6.0	3.000	0.083
	Combination of above	13	8.7		Combination of above	5	3.3	3.556	0.059
	Fish and sea food	15	10.0		Fish and sea food	0	0.0	15.000	0.0001057 (<0 .001)
	None	18	12.0		None	120	80.0	12.250	0.000465 (<0 .001)
	Total	150	100.0		Total	150	100.0		

Group 1=Pre intervention  
Group 2=Post intervention

**Table 3. Frequency and Percent Statistics for Feedback Questions**

Variable	Response	n	%	Variable	Response	n	%
Was the information enough?	Yes	36	24.0	Will your dietary practices change?	Yes	146	97.3
	No	114	76.0		No	4	2.7
	Total	150	100.0		Total	150	100.0
Was the information useful?	Yes	141	94.0	Do you suggest similar programs on other topics?	Yes	148	98.7
	No	9	6.0		No	2	1.3
	Total	150	100.0		Total	150	100.0
Was the program useful?	Yes	148	98.7				
	No	2	1.3				
	Total	150	100.0				

In short intervention led to a decreased proportion of women reporting avoiding certain foods. As regards feedback 76% said that they wanted more information, 97% planned to change their dietary habits as a result of this program and 98% recommended that similar programs on other topics should be planned and run [Table-3].

#### **4. DISCUSSION**

Health care messages have been fruitful in bringing a positive change in lifestyles. Many harmful practices during puerperium have been reported in literature and authors recommended the need of health education in this aspect [4,5,6].

Health care administrators have been using these programs to bring a social change in behaviors and attitude of individuals.

The programs should be simple and build in a way that increases the interest and understandability to be effective in bringing a social change. This also stresses the need for evaluation of health education programs at the same time. Thus carefully selected topics in area of need and then properly designed intervention programs in the form of health education can be considered as an effective tool in improving the health status of communities. There are programs available in literature stressing the importance of a healthy and balanced diet during pregnancy. However literature is scarce about dietary intervention programs to allay myths about diet in puerperium.

A food frequency questionnaire from Brazil stressed the need to improve and implement nutritional interventional programs in accordance with energy needs and racial differences of women [7]. Therefore In developed countries there are programs to prevent diet that can cause obesity because overeating and unhealthy diet leading to obesity is a problem there rather than under nutrition. However world women are excluding even normal essential 200 dietary components for no reason. This leads to dietary deficiencies especially of iron and calcium and different minerals for nursing mothers. Liu et al conducted a randomized controlled trial in both urban and rural areas of Hubei including 302 participants who presented for antenatal checkups during third trimester. Two hour antenatal and 4hour postnatal sessions of health education were provided. The control group was given routine health education. Results were fruitful in the experimental group who gave way most of the unhealthy habits and traditions in post partum period. 8A In short intervention led to a decreased proportion of women reporting avoiding certain foods. His results are comparable to this study as well which reveals that after receiving health education a significant proportion of women decided to include those food items which they were planning to avoid in their diet (Table 2).

In Saudi Arabia women avoid banana, citrus foods, juices and even green leafy vegetables from their diet. (Fig. 1) Women were avoiding banana linking it to constipation, citrus fruits to sore throat and green leafy vegetables were blamed to increase vaginal secretions increasing woman's susceptibility for easy conception. Milk and milk products were blamed for causing cough and sputum along with wound infection (Fig. 1). These practices have been less frequently studied in Saudi Arabia which is a country with large family sizes and therefore women are frequently going through this cycle of childbirth and puerperium. I have designed an educational program to provide guidance on these myths and tell the women how important it is to include these dietary components in their diet. In response to my health education program individual women changed their mind significantly in favor of different dietary components after receiving health education messages. Twenty women

were planning to avoid meat and poultry in their diet during puerperium. However after health care education message only 6 were left. The result was significant ( $p < 0.05$ ) in bringing a positive change. Same was the case with fruits and vegetable group as well as milk and milk products. Health education program was successful in changing the women's attitude towards fruits and vegetable intake in 50% of cases. However the results were not statistically significant. The health care message about this aspect needs more attention in the future programs.

## **5. CONCLUSION**

The Author suggests that educational programs like these should be continued and run on health care facilities. Health care messages should be run on LCD screens at patient waiting areas.

Health care individuals /medical staff working at clinics have the opportunity to be in direct contact with the patients in their everyday practice. They should point out the areas that need attention. Consultants working at their clinics should prepare the health care messages according to the topics that require attention. These messages should be displayed at each consultant clinic waiting area.

## **6. FUTURE RECOMMENDATIONS**

The concept of the intervention to support nutrition areas jointly discovered by the woman receiving the intervention and the health care provider should be explored further. Further research can be conducted targeting education programs towards health in puerperium and explore whether or not change in beliefs can bring about an actual temporary or permanent change in dietary habits

## **7. STRENGTHS**

The results may be of considerable importance to women in the cultural/geographical area where it was conducted. Particularly as the results has the potential to affect clinical practice. It's a first initiative towards addressing importance of diet in puerperium in the region and open new doors for further research.

## **CONSENT**

Verbal consent was taken from the participants and all data was kept anonymous.

## **ETHICAL APPROVAL**

Local ethical committee of the clinic gave approval for the study.

## **ACKNOWLEDGEMENT**

I deeply acknowledge sister Noor who helped me in filling the proformas.

## **COMPETING INTERESTS**

Author has declared that no competing interests exist.

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