IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 12 Ver. III (December. 2016), PP 49-52
www.iosrjournals.org

Compliance to Supplements in Pregnant Ladies Attending Antenatal Clinics in Alkhobar, Kingdom of Saudi Arabia, 2015

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Abstract: *Pregnancy is considered the greatest physiological stress to which females are subjected to during their lives. Owing to that fact, they should maintain their nutritional status by consuming complementary supplements that helps in preventing the risk of developing pregnancy related disorders. This study is evaluating the compliance of pregnant ladies in KSA towards supplements. 200 Women attending the antenatal clinics in (King Fahad University Hospital, Procare, and Air Base Hospital) in AlKhobar – KSA were randomly selected to participate in a self-filled questionnaire. Questionnaires contains demographic and clinical variables (biographical data, signs and symptoms, chronic disease, patient habits, prescribed medications, supplements, compliance, causes of non-compliance). 88% (175) of the participant were Saudi, 55% between the age of 20-30 years and, 54% were house wife, and 52% were a university graduates. 60% of the pregnant ladies attending antenatal clinics in AlKhobar were compliant toward using supplements during their current pregnancy. The main reason of non-compliance was found out to be forgetfulness. Pregnant ladies in AlKhobar reported good compliance with supplements. The main reason for non-compliance in this study was forgetfulness.*
Keywords: *Antenatal clinics, Compliance, KSA, Pregnant ladies, Supplements.*

I. Introduction

Pregnancy, also known as gravidity or gestation, is defined as the period from conception to birth after which the egg is fertilized by a sperm and implanted in the lining of the uterus; it develops into a placenta and embryo and later into a fetus. Pregnancy usually lasts 40 weeks, beginning from the first day of the woman's last menstrual period, and is divided into three trimesters, each lasting three months [1].

Pregnant women represent a large and important class of all societies. In most cultures their special status is treated with particularly gentle care but at the same time accompanied by numerous of psychological stress & physiological body system function changes, probably the toughest changes to which females are subjected to during their lives. Owing to these facts, pregnancy women are expected to maintain an optimal nutritional status by following a healthy diet plus supplements compliance defined as "the extent to which a patient acts in accordance with the prescribed interval, and dose of a dosing regimen [2] aimed at preventing any avoidable risks of developing pregnancy related disorders such as, congenital anomalies, congenital heart defects, cleft lip, urinary tract anomalies, preterm delivery, low birth weight and intrauterine fetal growth retardation. The issue is, many women in childbearing years are not getting their nutritional needs of folic acid, iron, vitamin D and Calcium through their diet itself [3,4]. These supplements are the back up for those nutritional gaps keeping the mother and her fetus healthy throughout the pregnancy.

According to many sources, the awareness of pregnant and non-pregnant ladies in KSA to the importance of supplements varies. Previous studies has shown that women, especially who had never married, have poor knowledge regarding supplements importance in comparison to gravid women [4]. Most women chose to follow a dense diet, mostly unhealthy, rather than taking a daily pill. Other studies have shown that the percentage of anemic women increased from 30% in the first trimester to 34% in the third trimester and proved to be supplementation non-compliance [5,6].

In the previous studies conducted in the western region of Saudi where the compliance to folic acid particularly was around 81.8% [4] and the compliance to iron was 49.7% in another study conducted in the capital. [5]. Moreover, a study conducted in Urban showed rather high degree of compliance but subject's knowledge was poor. Therefore, it can be suggested that the main reason for non-compliance in this study was the patient's negligence to take the supplements promptly. As a conclusion, adjustments can be done to increase

the compliance among pregnant ladies. Raising awareness to the vital role of antenatal supplement to decrease the negligence should be taken into account [7].

A published article in the year 2000 discussing the requirements, consequences of deficiency and the functional effects of supplements in developing countries concluded that their needs for these micronutrients are great due to widespread maternal malnutrition. However, given to the fact of limited public health resources the priority is not directed towards such interventions. Additional studies, however, are needed in different geographic regions to identify whether micronutrient supplementation in pregnancy results in functional and measurable outcomes for maternal health and survival. These studies would enable the appropriate intervention strategies to be developed, implemented, and evaluated. Such efforts will require the collaboration and commitment of government agencies, health care providers, nutritionists, research institutions, and the community [8].

This study aims to improve the services provided to pregnant women in KSA by determining the prevalence of compliance level in pregnant women attending the antenatal clinics in AlKhobar city and determine the factors affecting their compliance towards supplements.

II. Methodology

Target population: Pregnant women of all ages attending the antenatal clinics in AlKhobar.
Study population: Women attending the antenatal clinics in (King Fahad University Hospital, Procare, Air Base Hospital).
Study design: Cross sectional study.
Sample size: Using epi-info programme, Estimated to be 200 samples.
Sample setting: 3 antenatal Clinics in AlKhobar were randomly selected (King Fahad University Hospital, Procare, and Air Base Hospital.)
Study instruments: Questionnaires containing demographic and clinical variables (biographical data, signs and symptoms, chronic disease, patient habits, prescribed medications, supplements, compliance, causes of non-compliance).
Data collection: It was conducted from July 1st to august 31st 2015 from 9am to 3pm. Questionnaires were given to the participants while they were in the waiting room before they entered the antenatal clinic. The purpose of the study was explained and consent was taken. The completed questionnaires were then collected by study members.

III. Results

Two hundred subjects responded to this survey in King Fahad University Hospital, Air Base Hospital & Procare Hospital. All the included is the statistical analysis. The characteristics of population who participated in the study are presented in Table 1.

Table 1 Demographic characteristics of the sample

Demographic data (n=200).				
Nationality	Saudi (176) 88%		Non-Saudi (24) 21%	
Age	Less than 20: 8 (4%)	20-30:110 (55%)	30-40: 64 (32%)	More than 40:18 (9%)
Occupational status	Working: 72 (36%)	Housewife: 108 (54%)	Non-working: 20 (10%)	
Educational level	Primary: 20 (10%)	Secondary: 76 (38%)	University: 104 (52%)	

Among the pregnant ladies attending the antenatal clinics in AlKhobar 53% were in their 3rd trimester, 29% in their 2nd and only 18% in their 1st trimester. The summary is shown in Table 2.

Table 2 Pregnancy trimester

Pregnancy trimester	1st trimester 36 (18%)	2nd trimester 58(29%)	3rd trimester 106(53%)

The most experienced health problem among pregnant ladies attending antenatal clinics in AlKhobar was fatigue and mood swing while vaginal bleeding and pre-eclampsia being the least experienced and when we asked about the antenatal supplement we found that the Iron, folic acid and calcium are the most prescribed supplements while consuming multi vitamins were the least percentage in AlKhobar antenatal clinics. Table 3 summarizes the results.

Table 3 Health problems and supplements during pregnancy

Complication of pregnancy	**Syncope**	**Edema**	**Fatigue**	**Mood swing**	**GDM**	**Preeclampsia**	**Vaginal bleeding**
Frequency	55(27.5 %)	78(39%)	170 (85%)	140 (70%)	30(15%)	10(5%)	18(9%)
Supplement	**Folic acid**	**Iron**	**Calcium**	**Vitamin D**	**Multi vitamin**		**Others**
Frequency	75(37.5 %)	78(39%)	65(32.5%)	47(23.5%)	30(15%)		15(7.5%)

According to our study, about 40% of the study sample was conducted from pregnant ladies attending King Fahad University Hospital, while the rest was divided equally over the Procare Hospital and Air Base Hospital (See Table 4).

Table 4 Pregnant ladies that attending antenatal clinics in AlKhobar.

Hospital	**KFUH**	**Air Base**	**Procare**
Sample no	80 (40%)	60 (30%)	60 (30%)

Fortunately, we reach the main goal of our study through this question (do you take your supplement during your current pregnancy regularly?)

The results were:

60% of the pregnant ladies that attending antenatal clinic in AlKhobar were complaint.

40% of the pregnant ladies that attending antenatal clinic in AlKhobar were non-complaint.

When asked "what is the main reason for the non-compliance?" the answer was forgetfulness. The results are shown in Figures 1 & 2.

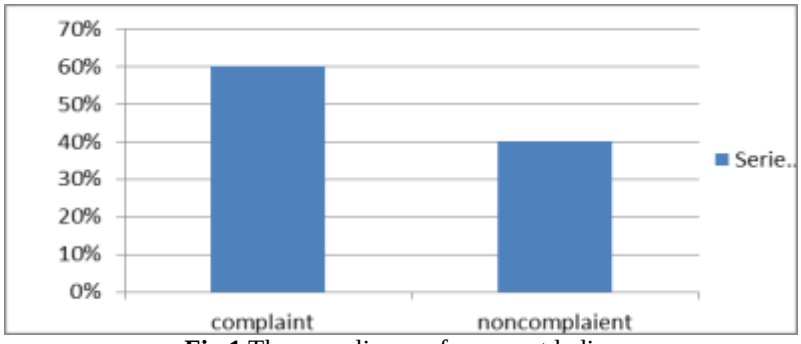

Fig.1 The compliance of pregnant ladies

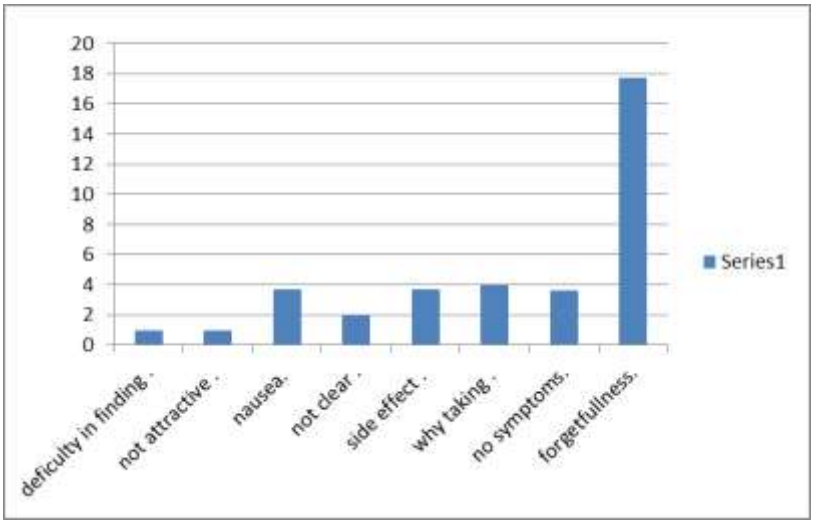

Fig.2 The reasons of non-compliance

IV. Discussion

Pregnant women should have a diet that consists of a variety of foods including proteins, carbohydrates, vitamins, minerals and fats. A balanced diet is the best way to receive nutrients, but vitamin supplements can also be beneficial.

Pregnant women should only take vitamin supplements based on a health care provider's recommendation. Vitamin supplements work best when taken as part of a healthy diet and not as a substitute for a healthy diet to prevent the complication that affect the mother and her fetus. As known the folic acid deficiency and iron deficiency may cause neural tube defect, cleft palate & iron deficiency anemia respectively.

According to the previous researches done in the Western region in KSA, the compliance to folic acid during antenatal period was (81.8%). This result confirms the knowledge of pregnant ladies about the essential role of folic acid during pregnancy. While the complaint to iron supplement in the capital of KSA was 49.7%.

Related to our study, the outcomes showed 60% of pregnant ladies attending antenatal clinics in AlKhobar were complaint to antenatal supplements (more details 37.5% were compliant to the folic acid and 39% of them were complaint to the iron supplement).

On the other hand, 40% of the pregnant ladies participated in AlKhobar were unfortunately non-compliant due to forgetfulness in contrary to other countries like Iran where the main reason for non-compliant was their lack of knowledge.

V. Conclusion

Pregnant ladies in AlKhobar showed a proper compliance to supplements during the antenatal period. But for the minority who didn't, the main reason was forgetfulness. While the compliance toward supplements was influenced by many factors, such as: age, educational level, number of previous pregnancies and the health centers that were attending.

Acknowledgements

We would like to personally acknowledge and extend our heartfelt gratitude to the people who contributed to this research, without them we could not completed this research. **Dr. Abdulfatah Marzooq & Dr. Abdul Aziz Al-Khonain** for their help in giving us an easy access to the patients in Air Base hospital. **Dr. Fadi Hamdan** (head of OBS/GYN in Procare) for his help. **Dr. Faiza Al-Shehri** for her good character in helping us to distribute the questionnaires. We hold special thanks & appreciation to all staff at King Fahad University Hospital, Air base hospital and Procare, all the lecturers in Arabian Gulf University for their gaudiness & last but not least, to all the pregnant ladies who contributed to this research, we appreciate the time you've taken to fill our surveys.

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