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PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1244664>Available online at: <http://www.iajps.com>**Research Article****ASSESSMENT OF NUTRITIONAL KNOWLEDGE AND
PRACTICES AMONG PREGNANT WOMEN**

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Abstract:

Background: Pregnancy is a phase in which body experiences several hormonal and physical changes. During pregnancy balance diet helps for probable weight gain of woman and fetus growth and development. This is well recognized that maternal insufficient diet leads to increased risks of the short term consequences for example, IUGR (intra uterine growth restriction), preterm birth, low birth weight, infant and parental morbidity and death. Also the dietary knowledge has been found to affect pregnant female's nutritional behaviors and choices.

Objective: The objective of the study was to assess the nutritional knowledge and practices among pregnant women.

Method: It was hospital based cross-sectional study in which 120 pregnant women visiting OPD of Civil Hospital Sialkot participated. Data was collected through questionnaire, which was entered into computer software SPSS 20.0.

Results: Among 120 pregnant women, 65.8% were 21-30 years old, 75.8% were literate and 75.0% were housewives. More than half (54.2%) had family monthly income more than 20,000 rupees. Among pregnant women, majority (47.5%) had good nutritional knowledge, followed by excellent (40.0%) and poor (12.5%). Similarly majority (52.5%) had good nutritional practices, followed by excellent (37.5%) and poor (10.0%).

Conclusion: Study concluded that majority of the pregnant women had good/excellent nutritional knowledge and practices. Further researches are required to be carried out on vast level to assess the nutritional knowledge and practices among pregnant women.

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INTRODUCTION:

During whole life, nutrition has a great effect on the health.[1] For human beings, balanced and healthy diet is essential for appropriate working of body system. Pregnancy is a phase in which body experiences several hormonal and physical changes. During pregnancy balance diet helps for probable weight gain of woman and fetus growth and development.[2]

During pregnancy, a healthy nutrition contains sufficient protein, energy, mineral and vitamins, obtained through intake of numerous foods including fish, meat, beans, orange and green vegetables, fruits, nuts and pasteurized dairy items.[3] For females, energy needs during pregnancy raises by 330 Kcal daily while protein by 15 gram daily.[4]

This is well recognized that maternal insufficient diet leads to increased risks of the short term consequences for example, IUGR (intra uterine growth restriction), preterm birth, low birth weight, infant and parental morbidity and death. Furthermore, during pregnancy excessive nutrients intake cause pregnancy complication (for example, gestational diabetes and preeclampsia, distocia, macrosomia and increased rate of C-section). In contrast, as long term consequences, insufficient nutrient intake were observed to have metabolic or pathophysiologic depict which will occur like disorders of infant growth and development and adult persistent disease after long term of quiescence.[5]

Among developing world all together, one in 5 infants is low birth weight. An elevated prevalence of low birth weight babies is observed in South Asia because 1 in 2 newborns is low birth weight.[6] Among pregnant women, iron deficiency anemia (IDA) is most prevalent (80%) micronutrient insufficiency responsible for 19 percent for all maternal mortalities. During the period of pregnancy Zinc insufficiency is common as well. These dietary deficiencies not just have adverse affect on women quality of life but also have impact on newly born children.[7]

National Nutrition Survey of 2011 indicated following micronutrient insufficiency levels among pregnant females: anemia 51.0 percent, IDA 37.0 percent, deficiency of vitamin A 46.0 percent, zinc 47.6 percent and vitamin-D 68.9 percent.[8] Insecurity of food, lack of information about nutritious foods, taboos and myths, gender bias and cultural practices are found most common reasons affecting nutritional diversity and dietary status of pregnant females in Pakistan.[9]

Adequate information regarding dietary intake and its recommendations can assist females during pregnancy in attaining adequate weight gain. As per World Health Organization (WHO), dietary advice was observed to have significant evidence like a mainstay intercession to increase protein consumption during pregnancy, declining the preterm birth risk by 54 percent.[10]

The pregnant women health and dietary status can affect the growing fetus health as well as survival due to biological association between mother and her baby.[11] Additional requirement during pregnancy for all nutrients takes place to make able fetus to develop normally in uterus. Though, prenatal healthcare providers, nutritionist and policy makers all agree that quality is more important than the quantity of food. Therefore, it is argued that the pregnant females who consume just calories foods can gain proper weight (or even excessive) during their pregnancy but are however at dietary risk for unfavorable pregnancy outcomes.[12]

Also the dietary knowledge has been found to affect pregnant female's nutritional behaviors and choices. Dearth of knowledge about relevant nutrition could be an obstacle to a healthful diet and suitable use of the supplements, especially iron and folic acid.[13]

During pregnancy, importance of maternal nutrition has been recognized since a long time. Several studies have been carried out about nutritional status of females but a few studies were conducted that assessed the nutritional knowledge and practices of pregnant women in Sialkot. Hence, it is significant to carry out a study among pregnant women to assess their nutritional knowledge and practices.

MATERIAL AND METHODS:

It was hospital based cross-sectional study in which 120 pregnant women visiting OPD of Civil Hospital Sialkot participated. Simple random sampling was used. Data was collected through questionnaire, which was entered into computer software SPSS version 20.0. Frequencies and percentages were calculated and data was presented in tables and figures. Chi-square test was applied to find out association between categorical variables. Confidentiality of the data was ensured and proper consent was obtained before data collection.

RESULTS:

Table-1 depicts that among 120 pregnant women, 18 (15.0%) were upto 20 years old and 79 (65.8%) were 21-30 years old while 23 (19.2%) women were more than 30 years old. The mean age of pregnant women was 26.78±4.93 years.

Among these pregnant women, only 29 (24.2%) were illiterate while most of them were literate 91 (75.8%).

Similarly majority of the pregnant women 90 (75.0%) were housewives and only 30 (25.0%) were working women.

Result shows that among 120 pregnant women, 55 (45.8%) had family monthly income upto 20,000 rupees and more than half 65 (54.2%) had more than 20,000 rupees.

Table-2 exhibits that among 120 pregnant women, majority 57 (47.5%) had good nutritional knowledge, followed by excellent 48 (40.0%) and poor 15 (12.5%).

Table-3 demonstrates that among 120 pregnant women, majority 63 (52.5%) had good nutritional practices, followed by excellent 45 (37.5%) and poor 12 (10.0%).

Table-4 described the association between nutritional knowledge and socio-demographic characteristics of pregnant women. Among 18 pregnant women who were upto 20 years old, 6 (5.0%) had excellent nutritional knowledge, 10 (8.3%) had good and 2 (1.7%) had poor nutritional knowledge. Among 79 pregnant women who were 21-30 years old, 39 (32.5%) had excellent nutritional knowledge, 33 (27.5%) had good and 7 (5.8%) had poor nutritional knowledge. Among 23 pregnant women who were more than 30 years old, 3 (2.5%) had excellent nutritional knowledge, 14 (11.7%) had good and 6 (5.0%) had poor nutritional knowledge. The result was found statistically significant as the p-value was 0.02.

Among 29 pregnant women who were illiterate, 7 (5.8%) had excellent nutritional knowledge, 12 (10.0%) had good and 10 (8.3%) had poor nutritional knowledge. Among 91 pregnant women who were literate, 41 (34.2%) had excellent nutritional knowledge, 45 (37.5%) had good and 5 (4.2%) had poor nutritional knowledge. The result was found statistically significant as the p-value was 0.006.

Among 90 pregnant women who were housewives, 28 (23.3%) had excellent nutritional knowledge, 48 (40.0%) had good and 14 (11.7%) had poor nutritional knowledge. Among 30 pregnant women who were working women, 20 (16.7%) had excellent nutritional knowledge, 9 (7.5%) had good and 1 (0.8%) had poor nutritional knowledge. The result was found statistically significant as the p-value was 0.02.

Among 55 pregnant women who had family monthly income \leq 20,000, 22 (18.3%) had excellent nutritional knowledge, 21 (17.5%) had good and 12 (10.0%) had poor nutritional knowledge. Among 65 pregnant women who had family monthly income $>$ 20,000, 26 (21.7%) had excellent

nutritional knowledge, 36 (30.0%) had good and 3 (2.5%) had poor nutritional knowledge. The result was found statistically significant as the p-value was 0.03.

Table-5 asserts the association between nutritional practices and socio-demographic characteristics of pregnant women. Among 18 pregnant women who were upto 20 years old, 10 (8.3%) had excellent nutritional practices, 8 (6.7%) had good and none had poor nutritional practices. Among 79 pregnant women who were 21-30 years old, 24 (20.0%) had excellent nutritional practices, 48 (40.0%) had good and 7 (5.8%) had poor nutritional practices. Among 23 pregnant women who were more than 30 years old, 11 (9.2%) had excellent nutritional practices, 7 (5.8%) had good and 5 (4.2%) had poor nutritional practices. The result was found statistically insignificant as the p-value was 0.09.

Among 29 pregnant women who were illiterate, 12 (10.0%) had excellent nutritional practices, 13 (10.8%) had good and 4 (3.3%) had poor nutritional practices. Among 91 pregnant women who were literate, 33 (27.5%) had excellent nutritional practices, 50 (41.7%) had good and 8 (6.7%) had poor nutritional practices. The result was found statistically significant as the p-value was 0.036.

Among 90 pregnant women who were housewives, 37 (30.8%) had excellent nutritional practices, 43 (35.8%) had good and 10 (8.3%) had poor nutritional practices. Among 30 pregnant women who were working women, 8 (6.7%) had excellent nutritional practices, 20 (16.7%) had good and 2 (1.7%) had poor nutritional practices. The result was found statistically insignificant as the p-value was 0.44.

Among 55 pregnant women who had family monthly income \leq 20,000, 23 (19.2%) had excellent nutritional practices, 27 (22.5%) had good and 5 (4.2%) had poor nutritional practices. Among 65 pregnant women who had family monthly income $>$ 20,000, 22 (18.3%) had excellent nutritional practices, 36 (30.0%) had good and 7 (5.8%) had poor nutritional practices. The result was found statistically insignificant as the p-value was 0.57.

Table-6 shows association between nutritional knowledge and nutritional practices of pregnant women. Among 48 pregnant women who had excellent nutritional knowledge, 9 (7.5%) had excellent practices, 33 (27.5%) had good and 6 (5.0%) had poor nutritional practices. Among 57 pregnant women who had good nutritional knowledge, 29 (24.2%) had excellent practices, 24 (20.0%) had good and 4 (3.3%) had poor nutritional practices. Among 15 pregnant women who had poor nutritional knowledge, 7 (5.8%) had excellent practices, 6 (5.0%) had good and 2 (1.7%) had poor nutritional practices. The result

was found statistically significant as the p-value was 0.01.

Table-1: Socio-demographic characteristics of pregnant women

	Frequency	Percentage (%)
Age (years)		
≤20	18	15.0
21-30	79	65.8
>30	23	19.2
Total	120	100.0
Mean±SD	26.78±4.93	
Education		
Illiterate	29	24.2
Literate	91	75.8
Total	120	100.0
Occupation		
Housewife	90	75.0
Working woman	30	25.0
Total	120	100.0
Family monthly income (Rs.)		
≤20,000	55	45.8
>20,000	65	54.2
Total	120	100.0

Figure-1: Education of pregnant women

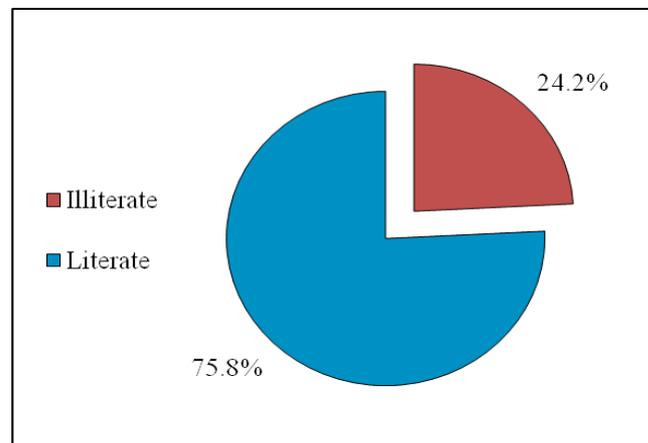


Table-2: Nutritional knowledge of pregnant women

	Frequency	Percentage (%)
Excellent	48	40.0
Good	57	47.5
Poor	15	12.5
Total	120	100.0

Table-3: Nutritional practices of pregnant women

	Frequency	Percentage (%)
Excellent	45	37.5
Good	63	52.5
Poor	12	10.0
Total	120	100.0

Table-4: Association between nutritional knowledge and socio-demographic characteristics

	Nutritional knowledge			Total	P-value
	Excellent	Good	Poor		
Age (years)					
≤20	6 (5.0%)	10 (8.3%)	2 (1.7%)	18 (15.0%)	0.02
21-30	39 (32.5%)	33 (27.5%)	7 (5.8%)	79 (65.8%)	
>30	3 (2.5%)	14 (11.7%)	6 (5.0%)	23 (19.2%)	
Total	48 (40.0%)	57 (47.5%)	15 (12.5%)	120 (100.0%)	
Education					
Illiterate	7 (5.8%)	12 (10.0%)	10 (8.3%)	29 (24.2%)	0.006
Literate	41 (34.2%)	45 (37.5%)	5 (4.2%)	91 (75.8%)	
Total	48 (40.0%)	57 (47.5%)	15 (12.5%)	120 (100.0%)	
Occupation					
Housewife	28 (23.3%)	48 (40.0%)	14 (11.7%)	90 (75.0%)	0.02
Working woman	20 (16.7%)	9 (7.5%)	1 (0.8%)	30 (25.0%)	
Total	48 (40.0%)	57 (47.5%)	15 (12.5%)	120 (100.0%)	
Family monthly income (Rs.)					
≤20,000	22 (18.3%)	21 (17.5%)	12 (10.0%)	55 (45.8%)	0.03
>20,000	26 (21.7%)	36 (30.0%)	3 (2.5%)	65 (54.2%)	
Total	48 (40.0%)	57 (47.5%)	15 (12.5%)	120 (100.0%)	

Table-5: Association between nutritional practices and socio-demographic characteristics

	Nutritional practices			Total	P-value
	Excellent	Good	Poor		
Age (years)					
≤20	10 (8.3%)	8 (6.7%)	0 (0.0%)	18 (15.0%)	0.09
21-30	24 (20.0%)	48 (40.0%)	7 (5.8%)	79 (65.8%)	
>30	11 (9.2%)	7 (5.8%)	5 (4.2%)	23 (19.2%)	
Total	45 (37.5%)	63 (52.5%)	12 (10.0%)	120 (100.0%)	
Education					
Illiterate	12 (10.0%)	13 (10.8%)	4 (3.3%)	29 (24.2%)	0.36
Literate	33 (27.5%)	50 (41.7%)	8 (6.7%)	91 (75.8%)	
Total	45 (37.5%)	63 (52.5%)	12 (10.0%)	120 (100.0%)	
Occupation					
Housewife	37 (30.8%)	43 (35.8%)	10 (8.3%)	90 (75.0%)	0.44
Working woman	8 (6.7%)	20 (16.7%)	2 (1.7%)	30 (25.0%)	
Total	45 (37.5%)	63 (52.5%)	12 (10.0%)	120 (100.0%)	
Family monthly income (Rs.)					
≤20,000	23 (19.2%)	27 (22.5%)	5 (4.2%)	55 (45.8%)	0.57
>20,000	22 (18.3%)	36 (30.0%)	7 (5.8%)	65 (54.2%)	
Total	45 (37.5%)	63 (52.5%)	12 (10.0%)	120 (100.0%)	

Table-6: Association between nutritional knowledge and nutritional practices

Nutritional practices	Nutritional knowledge			Total	P-value
	Excellent	Good	Poor		
Excellent	9 (7.5%)	29 (24.2%)	7 (5.8%)	45 (37.5%)	0.01
Good	33 (27.5%)	24 (20.0%)	6 (5.0%)	63 (52.5%)	
Poor	6 (5.0%)	4 (3.3%)	2 (1.7%)	12 (10.0%)	
Total	48 (40.0%)	57 (47.5%)	15 (12.5%)	120 (100.0%)	

DISCUSSION:

Nutritional knowledge and practices play a considerable role for both mother and child during pregnancy. Present study was carried out regarding assessment of nutritional knowledge and practices among pregnant women visiting OPD of Civil Hospital Sialkot. To obtain adequate results a group of 120 pregnant women was included in the study.

Study showed very encouraging results that majority (80.8%) of pregnant women were upto 30 years old which is a suitable childbearing age and only 19.2% pregnant women were more than 30 years. The findings of our study are comparable with the study undertaken by Mugyia and coworkers (2016) who also confirmed that most of the women (81.0%) were upto 30 years old and only 19.0% were more than 30 years old.[12]

Role of education cannot be overlooked because literate women are more vigilant about their diet during pregnancy. Study showed that significant portion (75.8%) of pregnant women was literate and 24.2% were illiterate women. The result of a recent study carried out by Zelalem and associates (2017) exhibited better scenario than our study results who reported that only 10.8% pregnant women were illiterate and remaining massive portion (89.2%) was of literate pregnant women.[2] Study further disclosed that most of the pregnant women (75.0%) were housewives while Ali and partners (2014) asserted in their study that 92.3% pregnant women were housewives.[9] Family monthly income is most important factor that effect the nutritional status of the pregnant women. Study highlighted that more than half of the women had family monthly income more than 30 thousands rupees.

During study nutritional knowledge was assessed and found that most of the pregnant women (47.5%) had good nutritional knowledge, followed by excellent (40.0%) and poor (12.5%). The findings of our study are better than the study done by Perumal and teammates (2013) who reported that majority of the pregnant women (46.0%) had

good nutritional knowledge, followed by poor (32.6%) and excellent (21.4%).[14]

Study further disclosed that more than half (52.5%) of pregnant women had good nutritional practices, followed by excellent (37.5%) and poor (10.0%). The results of our study showed better situation than the study conducted by Devika and Thahira (2016) who confirmed that 72.0% pregnant women had poor nutritional practices and only 28.0% had good nutritional practices.[15]

When the association between nutritional knowledge and socio-demographic characteristics was assessed, study showed significant results regarding age, education, occupation and family monthly income. But the study performed by Devika and Thahira (2016) showed insignificant results except education.[15] Study further showed insignificant results regarding nutritional practices except the age. The findings of our study are comparable with the study performed by Devika and Thahira (2016) who also showed insignificant results except age with nutritional practices.[15] Study also assessed the association between nutritional knowledge and nutritional practices and found significant results between both variables.

CONCLUSION:

Study concluded that majority of the pregnant women had good/excellent nutritional knowledge and practices. Further researches are required to be carried out on vast level to assess the nutritional knowledge and practices among pregnant women to keep them healthy and to prevent them from numerous complications.

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