Research Journal of Medical Sciences 10 (5): 526-530, 2016
ISSN: 1815-9346

Study the Component of Nutritional Assessment of Teenage Pregnancy Attending Primary Health Care Center in Babylon Province 2016

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Abstract: To assess the component of nutritional stag habit and dietary intake in teenage pregnancy attendance in primary health center and assessing the status of anemia among teenage pregnancy. Cross-sectional study was conducted at six PHCCS in Iraq, Babylon from 1st of March to 31th of August 2016 including 300 teenagers pregnancy, all were interviewed along with collection their socio-demographic and personal data, the nutritional health was assessed according to the questionnaire format which designed for purpose of this study in addition to assessing food pyramid for adolescent pregnancy, anthropometric measurement and take laboratory testing for hemoglobin, random blood sugar and general urine examination was performed for all participants. The finding revealed that majority of pregnancy adolescent attendance primary health centers in Babylon provided were at age (13-16 year old) about 45.9 and 25% adolescents pregnant gain weight >15 kg during their current pregnancy (76.3%) of pregnant adolescent were belonged big family (87.6%) school drop out, not take folic acide about (73.3%) regarding nutritional related problems; anemia were about (79.7%), hypoglycemia, hyperglycemia, protein urea (trace), nausea and vomiting, common dietary patterns skipping meals, snacks eating, food dislike and not drinking enough amounts of water or beverages daily (6-8) glasses, the dietary intake through the 24 h diet recall and food frequency questionnaire which in comparison with food pyramid do not meet daily requirements of their recommended serving. Health preferment and nutrition-oriented education programs can be designed, structured and offered to female adolescents to prepare them for a healthy marriage and pregnancy, adolescent pregnancy is associated with high frequency of maternal complications.

Key words: Nutritional status, pregnant adolescents, vomiting, dietary patterns, anemia

INTRODUCTION

The nutrition is regarded one of the most important factors that have great impact on the quality of human life in all parts of world, although they affect directly to the failure of growth and development and lower resistance to infection and malnutrition tail has an impact on weight and height so that it is different will be retarded. Adolescence defined as the time of transition in the life span. This period represents physical, social and developmental changes that plays an important role in determining eating behaviors and health (Story and Sting, 2004) "adolescents are tomorrow's adult population and their health and wellbeing are crucial". Adolescence can be divided into three developmental stages depending on physical, physiological and social changes: early adolescence) 10-13 (year, mid Adolescence) 14-17 (year and late adolescence) 18-20 year (UNICEF, 1990) adolescence is considered the onset of puberty and ends to accept identity adult behavior, this period between the ages of (10 and 19) year (WHO, 2002), these sudden changes create special nutritional needs and the adolescence female begin to prepare herself to assuming the responsibility for motherhood, adolescent female in Iraq represent about 52.2% of the population, teenage pregnancy represent about 50% of total birth in Iraq. (WHO, 2002) teenage pregnancy of the most serious health problems of the mother and child in the world (WHO, 2002).

MATERIALS AND METHODS

Type of study is cross sectional study, the data collection for this study was over a period of four months starting from the beginning of march to the end of august 2016, a total of 300 adolescent pregnancy were included

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Table 1: Association of pregnant teenagers by psychosocial history

Variables	Adolescence: Early (10-12 year)	Middle (13-16 year)	Late (17-19 year)	Total	X^2	p-values
Social support						
Yes	22 (7.3)	87 (29.0)	69 (23.0)	178 (59)	6044	0.031*
No	29 (9.6)	53 (17.6)	40 (13.3)	122 (21)		
Continues visiting to PHC						
Arranged	14 (27.5)	47 (33.6)	20 (18.3)	94 (31.3)	7.212	0.027*
Not arranged	37 (72.5)	93 (66.4)	89 (81.7)	206 (68)		
Resident						
Urban	10 (3.3)	35 (11.7)	54 (18)	99 (33)	12.3	0.0045*
Rural	50 (16)	67 (22.3)	84 (28)	201 (67)		
Are you one parent orphan						
Yes	17 (33.3)	52 (37.1)	44 (40.4)	113 (38)	0.763	0.683
No	34 (66.7)	88 (62.9)	65 (59.6)	187 (56)		
Family size						
Small	12 (23.5)	23 (16.4)	36 (33.0)	71 (23.6)	9.347	0.009*
Big	39 (76.5)	117 (83.6)	73 (67.0)	229 (76.3)		
Feeling towards present pregnancy						
Accepted	18 (35.3)	35 (25.0)	44 (40.4)	97 (32.3)	10.452	0.107
Non-accepted	33 (64.8)	105 (75)	65 (59.6)	203 (67.6)		
Educational levels						
Primary school	42 (82.4)	107 (76.4)	94 (86.2)	243 (81)	3.905	0.142
Secondary school	9 (17.6)	33 (23.6)	15 (13.8)	57 (19)		
School drop out						
Yes	47 (92.2)	120 (85.7)	96 (88.1)	263 (87.7)	1.461	0.482
No	4 (7.8)	20 (14.3)	13 (11.9)	37 (12.3)		

in this study, six PHCCs which were selected by stratified random sample technique, three from the urban and three from the rural in Babylon City, an assessment tool is structure in a form of a questionnaire and composed of Agarwal main parts as follows: medical history, demographic characteristics of the pregnant adolescent, obstetrical history, daily physical activities, nutrition assessment components, dietary patterns, psychological aspect, social aspect (anthropometric measurements, biochemical tests, clinical observations, dietary intake). Data are collected through review of primary health center to record the results of labertory tests such as Hb gm/100^{ml}, PCV %, random blood suger and general urine exam. Questionnaire interview with clinical observation on individual basis, measurement are taken by using electronic weight scale was calibrated prior to the study. Height was measured in (cm) using a constant board measure to the nearest 0.5 cm with the girls standing without shoes, heals together and the head in the horizontal plane (Tardy *et al*., 2009). Dietary intake and patterns: the recorded results of the dietary patterns, the 24h diet recall and the food frequency questionnaire indicate that the pregnant teenagers have skipping meals, food dislike they drink insufficient amount of Water or beverages daily they eat less number of daily food servings comparing with adolescence periods and food pyramid during pregnancy.

Table 1 shows the association were pregnant teenagers with continue visiting to PHC and family size. The (59.0%) of pregnant teenagers had social support (40.3%) were from low family income (68.7%) pregnant teenagers did not visit PHC continuously. The (76.3%) of pregnant teenagers were belonged to big families and (67.6%) non accepted their present pregnancy, non accepted include denied (11.3%), 0 bligation (28.6%), motivation (27.6%), (81.0%) of pregnant teenagers completed their primary school studies and (87.6) school drop out resident area in urban (33%) and rural (67%). Table 2 shows the association of pregnant teenagers by medical history were distribution of pregnant teenagers by medical history, pregnant teenagers did have family history of chronic diseases about (28.5%) and history of chronic disease in adolescent pregnancy about (11%), chronic disease include (HT, DM, Thyriod disease), respectively. The (53.3%) of pregnant teenagers started their MC at age of 12 year. The (75.3%) of pregnant teenagers were smokers. (24.7%) of pregnant teenagers had no history of eating disorders, meanwhile (5.7%) (66.7%) of pregnant teenagers had no history of any physical activities.

Hb = Hemoglobin PCV = Package Cell Volume, this table indicates the following findings: Hb or PCV%: 20.3% normal, 50.4% mild anemia, 14.3% moderate anemia, severe anemia 15%, randum blood sugar for (300) pregnant adolescents reveal that (26.3%) of the sample are with abnormal-lower bound and (13%) with abnormal-upper bound, sugar in urine; trace (16.3%), protein in urine; trace (24%). Table 3 shows the association of pregnant teenagers by bio-chemical tests.

Table 2: Association of pregnant teenagers by medical and obstetrical history

Variables	Adolescence: Early (10-12 year)	Middle (13-16 year)	Late (17-19 year)	Total	X^2	p-values
Family history of chronic disease*						
Yes	5 (1.7)	29 (9.7)	51 (17)	85 (28.5)	10.796	0.0272***
No	48 (16)	111 (37)	56 (18.7)	215 (71.7)		
History of chronic disease in adolescent pregnancy						
Yes	2 (0.7)	16 (5.4)	15 (5)	33 (11%)	11.77	0.023***
No	12 (4)	108 (36)	147 (49)	267 (89%)		
Age of 1st MC**					14.778	0.001***
10-12 years	35 (68.6)	82 (58.6)	43 (39.4)	160 (53.3)		
13-15 years	16 (31.4)	58 (41.4)	30 (20.6)	104 (34.7)		
>15 years	0	0	30	30 (10)		
Parity						
First	30 (10)	50 (16.7)	57 (19)	137 (45.7)	16.891	0.0019***
Second	6 (2)	80 (26.7)	30 (10)	116 (38.7)		
Third	17 (5.7)	10 (3.3)	20 (6.7)	47 (15.7)		
Abortion						
Yes	12 (4)	52 (17.3)	41 (13.7)	105 (35)	13.886	0.001***
No	9 (3)	99 (33)	8729)	195 (65)		
Smoking habit					0.659	0.719
Yes	7 (2.1)	30 (10)	37 (12.3)	74 (24.7)		
No	46 (15.3)	110 (36.7)	70 (23.3)	226 (75.3)		
History of eating disorders						
Yes	3 (1)	5 (1.2)	9 (3)	17 (5.7)	15.777	<0.001***
No	50 (16.7)	135 (45)	98 (32.7)	283 (94.3)		
Physical activity						
Yes	15 (5)	65 (21.7)	20 (6.7)	100 (33.6)	11.007	0.0304*
No	38 (12.7)	75 (25)	87 (29)	200 (66.7)		

*Chronic disease (DM, hypertension, thyroid disease), **MC = Menstrual Cycle; ***p-value = 0.05 is significant

Table 3: Association of pregnant teenagers by bio-chemical tests

Test	Score	Frequency	Percent (%)
Hb or PCV	Normal	61	20.3
	Mild anemia	151	50.4
	Moderate anemia	43	14.3
	Sever	45	15.0
	Total	300	100.0
Blood sugar	Abnormal lower bound	79	26.3
	Normal	182	60.7
	Abnormal upper bound	39	13.0
	Total		100.0
Sugar in urine	Negative	251	83.7
	Trace	49	16.3
	Total	300	100.0
Protein in urine	Negative	227	76.0
	Trace	73	24.0
	Total	300	100.0

There was significant association of pregnant teenagers with HB, proteinuria and glycosuria. This table indicates the following findings: Hb or PCV%: 20.3% normal, 50.4% mild anemia, 14.3% moderate anemia, sever anemia 15%, fasting blood sugar for (300) pregnant adolescents reveal that (26.3%) of the sample are with abnormal-lower bound and (13%) with abnormal-upper bound, sugar in urine; trace (16.3%), protein in urine; trace (24%).

Table 4 shows the association of pregnant teenagers by food habits. There were significant associations of pregnant teenagers with appetite during pregnancy and problems with food (61.7%) of pregnant teenagers had good appetite before pregnancy, meanwhile, only (22.7%) had good appetite after pregnancy (21%) of pregnant teenagers ate three meals per day (61.0%) complained of eating too much, meanwhile (73.3%) and (68.7%) did not use supplement or vitamin and folic acid, respectively. (10%) of pregnant teenagers complain of nausea during pregnancy (62.0%) consumed coffee and tea during pregnancy. This were significant associations pre pregnancy body mass index underweight (9%), obese (24%) while weight gain 28% during pregnancy.

Table 4: Association of pregnant teenagers by food habits

Variables	Adolescence: Early (10-12 year)	Middle (13-16 year)	Late (17-19 year)	Total	X^2	p-values
Appetite before pregnancy						
Good	31 (60.9)	87 (62.1)	67 (61.5)	185 (61.7)	0.032	0.984
Bad	20 (39.2)	53 (37.9)	42 (38.5)	115 (38.3)		
Appetite during pregnancy						
Good	9 (17.6)	43 (30.7)	16 (14.7)	68 (22.7)	9.873	0.007*
Bad	42 (82.4)	97 (69.3)	93 (85.3)	232 (77.3)		
Meal habits						
=Three times/day	41 (80.4)	109 (77.9)	87 (79.8)	237 (79)	0.214	0.899
>Three times/day	10 (19.6)	31 (22.1)	22 (20.2)	63 (21)		
Food allergy						
Yes	23 (45.1)	65 (46.4)	55 (50.5)	143 (47.7)	0.562	0.755
No	28 (54.9)	75 (53.6)	54 (49.5)	157 (52.3)		
Problems with food						
Lack of appetite	20 (39.2)	27 (19.3)	66 (60.6)	113 (37.7)	55.039	<0.001*
Eating too much	31 (60.8)	113 (80.7)	39 (35.8)	183 (61)		
No problem	0 (0.0)	0 (0.0)	4 (3.7)	4 (1.3)		
Appetite before pregnancy						
Good	47 (92.2)	120 (85.7)	96 (88.1)	263 (87.7)	1.461	0.482
Bad	4 (7.8)	20 (14.3)	13 (11.9)	37 (12.3)		
Using supplement and vitamins						
Yes	17 (33.3)	43 (30.7)	20 (18.3)	80 (26.7)	6.189	0.045*
No	34 (66.7)	97 (69.3)	89 (81.7)	220 (73.3)		
Using folic acid and during pregnancy						
Yes	23 (45.1)	51 (36.4)	20 (18.3)	94 (31.3)	14.722	0.001*
No	28 (54.9)	89 (63.6)	89 (81.7)	206 (68.7)		
Vomiting	17 (33.3)	13 (2.6)	10 (9.2)	40 (13.3)		
Heartburn	0 (0.0)	6 (4.3)	27 (24.8)	33 (11)		
Constipation	0 (0.0)	21 (15.0)	25 (22.9)	46 (15.3)		

*p value = 0.05 is significant

Table 5: Distribution of pregnant adolescent depending on pre-pregnancy body mass index and weight gain during pregnancy

Variables	Frequency	Percentage
BMI before pregnancy		
Under weight	25	9
Normal	154	51
Overweight	49	16
Obese	72	24
Total	300	100
Weight gain during pregnancy (kg)		
4-9	33	11
10-15	183	61
>15	84	28
Total	300	100

RESULTS AND DISCUSSION

In industrialized and developing countries have clearly rates of teenagers pregnancy, prevalence of teenage pregnancy is about 50% of total birth in Iraq (WHO, 2002) USA about 41% in 2014, Kuwait about 14% in 2014 (Friedman *et al*., 1992). In the present study (46%) of pregnancy adolescent attendance primary health centers in Babylon as long as were at age (13-16 year old), other study that reported about 30% of pregnant adolescent in Iraq in 2009 were at age (14-16 year old) (13), other study in India reported 20% of pregnant adolescent were at age 13-16 year old (118). The current study reported 21% of pregnant adolescent with no any social support that was found to be lower than other study (Lynch, 2000) that reported 39.4% of pregnant adolescent without any social support for pregnant teens; however, there are limited articles on how these social supporters could actually create stress or conflict to these pregnant teens and young mother (Kirby, 2001)

In the current study 68.7% of pregnant adolescent participate in the study reported not arranged visiting to PHC with significant associated between adolescent age group were 72.5% of early adolescent (10-12 year) reported to be not arranged to PHC small prenatal visit in adolescent phase gestation was a international healthiness care problematic which may inspiration the expansion of gestation problems (Blankson *et al*., 1993), other study reported that 52% not arranged antenatal care attendance rate in Americas and Africa (Klerman, 1993). Also, the share in current study reported family history of chronic disease (28.3%) and about 25% reported smoking habit wither cigarette smoking or AL-shisha smoking that may be attributed to the 11% prevalence of chronic disease in participant pregnant adolescent while other study in United States In 2011 through 29 nations in Asia, Africa, Latin America and the Middle East. Demonstrations the parental features and

healing situations throughout gestation through reported 20% of adolescent pregnancy being current smokers, this situation in our society was found to have serious medical and social problems as pregnancy teenagers. In the present study, the mean menarche age of 12 year, The Parity mean frequency was 46% of our study population were first parity and 54.3% of parity two or more, this rate of parity in teenage pregnancy that was much higher to that reported by Coned that reported a rate 20.3% for P1 and 4% for parity of more two. The WHO Multicounty Review on Parental and Neonatal Healthiness. This study expressions that mean pre-pregnancy BMI of deliberate cases was 24.53 which despicable that they were in the overweight denomination, the great degree of overweight and obesity (40%) in this reading may be a danger issue for the expansion of newborn and parental problem while underweight (9%) and normal weight were 51.0%. Leppalahti described 10.3% the amount of underweight, 6.3% for overweight and obese and 80.8% normal weight (20). Therefore, obese cases wherewith higher rate in current study than that of Finland while normal weight cases rate was lowering than that study, additional reading in Latin America described that 10.1% of teenage pregnancy were underweight, 66.9% categorized as normal weight and 23% were obese and overweight. Taylor *et al.* (1999) about 61% participants gained within the recommended range for their BMI 28% participants gained more than recommended for their pre-pregnancy BMI.

Adolescents who gain supernumerary weight during pregnancy are at greater hazard of retaining weight postpartum and having a macrocosmic baby (Brooks *et al*., 1994).

CONCLUSION

Most adolescent pregnant by interview be neglected nutritionally and which need to be more nutritional attention, feeding problems were more vulnerable her pregnant teenage girls and that malnutrition and cases of extreme poverty and the situation of adolescent girls that transition and hand economic and psychological direct impact, poor nutritional health in teenagers pregnancy associated with obesity, anemia, poor appetite, inadequate nutrition during pregnancy is an even more marked problem among teenagers and poor outcomes are associated more with socioeconomic factors and lack of food rations are inadequate consumption. Moreover, this study suggests some recommendations:

- Health preferment and nutrition-oriented education programs can be designed
- Structured and offered to female adolescents to prepare them for a healthy marriage and pregnancy, adolescent pregnancy is associated with high frequency of maternal complications
- Women non-governmental organizations must play a role in the educational programmed to reduce adolescent pregnancy due to marriage in age of <18 year which is a habit in our society
- Primary health center should increase realization and nutritional education and nutrition of pregnant s teenage

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