

Effectiveness of Structured Teaching Programme on Practice about Self-assessment of Fetal Wellbeing among Primigravida women

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Abstract: The aim of the study was to assess effectiveness of structured teaching programme on practice about self-assessment of fetal well-being among primigravida women. The Design of the study was a quasi-experimental design. The studied participants comprised all eligible pregnant women according to inclusion criteria amounting to 140 of women. Tools of this study included socio-demographic characteristics, fetal kick count chart, antenatal grow chart using fundal height, anthropometric measurements and gestational weight chart. The findings, most of the studied participants were 20 to 30 years and had bachelor degree, married from about one to two years. There was a highly statistically significant difference between the mean score of total practice among the studied participants at the pre-test and the post-test intervention. It was concluded that, there was a higher statistical improvement in the maternal' practices about self-assessment of fetal well-being after using fetal kick count chart, antenatal grow chart after measuring symphysiofundal height and gestational weight gain chart than before. This supported the study hypothesis. Based on the present findings; the study hypothesis was accepted. It is recommended that encouraging the use of fetal kick count chart, antenatal grow chart and gestational weight chart to self-assess fetal wellbeing as it is safe and less expensive for pregnant women.

Keywords: Assess, effectiveness, structured teaching programme, fetal well-being, primigravida.

1. INTRODUCTION

Every pregnancy is a unique experience for the woman will be new and uniquely different a pregnancy within specific time frame. It is a maturational milestone and a time to be alert to any changes in the body and promptly respond to it. According to Sujatha, Radhiga, Sudha, (2013) assessment of maternal and fetal well-being is the focus of prenatal care. The same reference added that fetal monitoring in a wide sense means fetal surveillance but practically it is an indirect way to measure fetal wellbeing.

Daily fetal movement counting is a way of screening for fetal well-being, by which a woman counts daily fetal movements to assess the condition of her baby (Rubertsson et al., 2013). (Rotdestad, 2012). Hofmeyr et al., (2015) found that daily fetal kick count chart is simple to understand, non – invasive, can be done at home and does not interfere with most daily routine. In general, the presence of fetal movements is a reassuring sign of fetal health

Fundal height assessment is an inexpensive method for screening for fetal growth restriction (Valliapan, 2014). Symphysiofundal height measurement continues to be used in many countries on a large scale simply because of its low cost, ease of use, and need for very little training. Careful monitoring of fetal growth and wellbeing, combined with appropriate timing and mode of delivery, can best ensure a favorable outcome (Resnik, 2012).

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Gestational Weight is amount of weight a pregnant woman gained between the time of conception and the onset of labor, is one of the key markers of intrauterine nutritional environment (Mottola, 2015). Campbell et al., (2013) assumed that Weight gain recommendations are based on the woman's pre- pregnancy body mass index (BMI). BMI is calculated by dividing the weight in kilograms by the height in meters squared (Guelinckx, 2015).

Adele Davis, (2012) reported that, assessment of maternal and fetal well-being is the focus of prenatal care. Nursing responsibilities include heavy emphasis on teaching throughout the pregnancy (Ugwa et al, 2012).

Significance of the study:

A healthy fetus is the goal of every expectant mother and her physician. Yet for every 1000 live births the perinatal mortality is 22.9 deaths (DHS, 2016). According to WHO (2015) 2.6 million perinatal deaths occur annually in the world down from 4.5 million in 1990. The same reference added that, worldwide 36 deaths among 1000 live births in rural areas and 22 fetal deaths among 1000 live births in urban areas are recorded. According to Egypt Demographic and Health Survey (EDHS, 2014) about 8, 90,000 perinatal deaths occurs annually in Egypt , 15 fetal deaths among 1000 live births in rural areas and 18 deaths among 1000 births in urban areas are recorded. In Menoufia Governorate 4.48 fetal deaths among 1000 live births (Inter- Agency Group for Child Mortality Estimation, 2014). Maternal assessment of fetal well-being during pregnancy and adequate prenatal care is very important to identify fetal well-being. It detects any abnormalities of the fetuses such as intrauterine injury and deaths. Therefore interventions and delivery at the expected date can prevent still birth (Froen et al., 2011). Ideally, antenatal monitoring and follow up would decrease fetal death without putting large numbers of healthy fetuses at risk as preterm labour and associated morbidity and mortality (Barker et al., 2013). Therefore, the present study aims to highlight the importance of self-assessment of fetal wellbeing among primigravida

Purpose of the Study:

The study purposed to assess effectiveness of a structured teaching programme on practice about self-assessment of fetal well-being among primigravida women.

Research Hypotheses:

1-Primigravida women will obtain higher level of practice about self-assessment of fetal well-being after implementing the structured teaching programme than before.

2. METHODS

Research design:

A quasi-experimental design (Study-control group) was used.

Setting:

The present study was conducted at two Maternal and Child Health Centers at Shebin El-Kom, Menoufia (Quibli and Bahari maternal and child health care center). Their main function is the provision of health care to mothers and children up to six years. Services of women provided by the MCH include antenatal care for delivery for normal labor, postpartum care and family planning. This facility usually serves normal cases. Abnormal or complicated cases are referred to the General or University Hospital due to technological and specialty services required for diagnosis and treatment such as ultrasonography. The flow rate of pregnant women at Quibli maternal and child health care center is 268 women per year and at Bahari maternal and child health care center is 197 women per year (IDSC, 2017).

Sampling:

A purposive sample of 140 pregnant women participated in the present study (85 women were selected from Qubli and 55 women from Bahari Maternal and Child Health Care). They included Primigravida women who are in the second and third trimester, Single pregnancy, Can read and write and Normal pregnancy with no medical or obstetric complications. The studied participants assigned randomly into two groups (Study Group and Control group). Each of the 140 women

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was asked to pick a piece of paper containing a number (1 and 2). Those who selected number 1 was assigned to Study Group, those who selected number 2 were assigned to Control Group. This technique was used to avoid sample contamination and bias.

Sample size:

By reviewing the previous studies that examined the same outcomes, significant differences was found at the average sample size ranged from 115- 105 to achieve 80% power to detect this difference with significant level of 5%. So, a purposive sample of 140 primigravida women was recruited in the study. Simple random sample was used to assign primigravidas into the study and control group.

Instruments:

Instrument I: A structured interview questionnaire: It was developed based on the review of currently related literature. It consisted of five parts: the three parts contained questions related to the socio-demographic characteristics, the second part contained Family History, and the third part included Obstetric history of primigravidas.

Instrument II: Fetal kick count chart: counting and recording the number of movements made by the fetus each day, the mother may create a profile of her baby's activity during the final weeks of her pregnancy. The chart was adopted from Society of Obstetrician and Gynecologist of Canada ,(2007)

Instrument III: Antenatal Grow Chart Using Fundal Height: Fundal height assessment is an inexpensive method for screening for fetal growth restriction. The chart was adopted from National Women's Health, (2011).

Instrument IV: Anthropometric measurements: The tool consisted of Weight before Pregnancy in kgs, Height in cms and Body Mass Index (BMI) = Weight (kg)/ Height (m²) as categorized by Institute of Medicine , 2009.

Instrument V: Gestational Weight Chart: This chart was adopted from Institute of Medicine (2008).it is based on prepregnancy basal metabolic index. Maternal pre-pregnancy BMI was calculated from information on height and weight before pregnancy and according to the prepregnancy basal metabolic index.

Validity and reliability

For validity purposes, the researchers conducted an extensive literature review and developed the questionnaire from the previously used instruments and reviewing pertinent studies. Instrument 1 was designed by the researchers and validated by three experts (two Professors in Maternal and Newborn Health Nursing and one expert in Obstetric Medicine) for content accuracy and internal validity, while instruments II, III, IV and V were adopted from the previous studies. The interview questionnaire underwent some modifications according to the panel of judgment regarding the clarity of sentences and appropriateness of content. All dimensions in the instrument were internally reliable with Cronbach's α scores ranging from 0.78 to 0.95. Intra-class correlation coefficients to evaluate test-retest reliability were high (range 0.89–0.95, $P < 0.001$)

Administrative Approvals:

An official letter was taken from Dean, Faculty of nursing, Menoufia University and directed to Directors of the study settings. An official permission to carry out the study. Also, the approval of the Ethics Committee of the Faculty of Nursing, Monoufia University was obtained.

Ethical Consideration:

An approval of the committee of the research committee in the faculty of nursing, Menoufia University was obtained on 6/11/2018. Approaches to ensuring ethics were considered in the study regarding confidentiality and informed consent. Confidentiality was achieved by the use of closed sheets with the names of the participants replaced by numbers. All participants were informed that the information they provided during the study would be kept confidential and used only for statistical purpose and after finishing the study, the findings would be presented as a group data with no personal participant's information remained.

Pilot study

A pilot study conducted to test the feasibility, applicability and understandability of the tools. It was conducted on 10% of the total sample (14 women) according to the selection criteria. All women participated in the pilot study were excluded from the study sample because the researcher made some modifications in the instruments.

Study field work of the structured teaching programme:

The current study was carried out on four phases where the description of the programme, its aim, objectives, methods of teaching, media used, evaluation and total number of sessions are included.

1) Preparatory phase:

An extensive review related to the study area was conducted including electronic dissertations, available books, articles and periodicals. A review of literature to formulate knowledge base relevant to the study area was also done. Administrative and ethical approvals were obtained. Preparation and testing of all instruments regarding validity and reliability, Pilot study was done and the necessary modifications were made.

2) Assessment phase:

The researcher collected the data from the women of the two groups through an interview and assessment using Socio-demographic Characteristics tool.

3) Implementation phase (for study group):

Each woman in the study group received one session for applying the structured nursing program on self-assessment of fetal wellbeing.

In the session, the researcher explained how to increase fetal movements and how to measure and record daily fetal movement on the chart. Also, The researcher explained the fundal height and how to measure and record fundal height. Also, the researcher explained the gestational weight, how to calculate body mass index, and how to measure and record the gestational weight on a chart. Demonstration by the researcher took 15 minutes and re-demonstration by the women took about 5 minutes. This session took about 20 minutes.

At the end of the first meeting, the researcher advised the mothers to count their fetal movements daily, measure fundal height and their gestational weight gain weekly. Each woman was given a measuring tape and trained how to measure fundal height to assess fetal growth and to measure their heights to calculate BMI. The researcher scheduled with each woman for follow-up at outpatient clinics or through the phone for follow-up assessment after three months.

For control group, the women who were assigned to the control group were interviewed also in the second and third trimester, assessed for their knowledge regarding self-assessment of fetal well-being, did not receive management from the researcher, they received brochures on methods of self-assessment of fetal wellbeing from the researcher.

4) Evaluation phase:

In this phase, all primigravida women recruited in the study were evaluated for their ability to self-measure and record fetal kick count on a chart using instrument two. Also, the pregnant women were evaluated for their ability to self-measurement and record of fundal height to assess fetal growth using instrument two. self-measure of prepregnancy basal metabolic index and record of gestational weight on the chart was evaluated by using instruments four and five. The researcher received the data by a telephone contact to assess the effectiveness of the intervention.

Statistical Analysis:**Data analysis**

The collected data were categorized, coded, computerized, tabulated and analyzed using Statistical Package for Social Sciences (SPSS) +version 22 program. Upon completion of data collection, each answer sheet was coded and scored. The researcher coded the data into a coding sheet so that data could be prepared for computer use analyzed using Statistical Package for Social Sciences (SPSS) version 22 program on IBM compatible computer. The level of significance was set at $p < 0.05$. Chi square test, Number and percentage distribution, Fischer exact test (FE), Mean and Mann- Standard Deviation (SD) were used to analyze the data.

3. RESULTS

Table (1): Socio-demographic Characteristics of the studied participants (No=140).

Variables		Study Group (70)		Control Group (70)		Total		X2	P value
		No	%	No	%	No	%		
Age groups:	20 years <	11	15.8%	9	12.8%	20	14.2%	0.561	0.755
	20-30<	51	72.8%	49	70%	100	71.4%		
	30-40<	7	10%	12	17.2%	19	13.5%		
	40 year or more	1	1.4%	0	0%	1	.9%		
Mean±SD		24.8±2.6 Y		22.4±5.1 Y		23.6±3.6 Y			
Education	Illiterate	12	17.2%	2	2.8%	14	10%	12.255	0.057
	Read and write	10	14.2%	18	25.8%	28	20%		
	Diploma	12	17.2%	20	28.5%	32	22.8%		
	University	36	51.4%	30	42.9%	66	47.2%		
Occupation:	Working	48	68.6%	52	74.3%	100	71.4%	0.566	0.753
	House wife	22	31.4%	18	25.7%	40	28.6%		
Income	Enough	39	55.7%	43	61.4%	82	58.5%	4.828	0.089
	Not enough	31	44.3%	27	38.6%	58	41.5%		
Total		70	100%	70	100%	140	100%		

Table (1) showed the socio-demographic characteristics of the studied participants. The mean age of the studied participants was (23.6±3.6Y). The majority of the studied participants (47.2%) had Bachelor's degree & the minority of them (10%) was illiterates. Regarding the occupation, the majority of the studied participants were housewives (71.4%). More than half of them (58.5%) had enough income.

Table (2): Physical characteristics of the studied participants. (n=140)

Variables		Study Group (70)		Control Group (70)		Test	P value
		No	%	No	%		
Body mass index	Under weight (BMI <18.5)	3	4.28%	6	8.6%	X ² 1.17 (NS)	0.76
	Normal weight (BMI : 18.5-24.5)	19	27.2%	13	18.5%		
	Over weight (BMI : 25-29.5)	31	44.3%	27	38.6%		
	Obese (BMI >30)	17	24.4%	24	34.3%		
Weight (Kg)	Mean ± SD	63.17 ± 12.7		60.85 ± 10.8		t test 1.259	.210
Height (cm)	Mean ± SD	162.61 ± 6.9		161.05 ± 6.9		t test 1.441	.151

Table (2) indicated that shows Physical characteristics Physical characteristics of the studied participants. There was no statistical significant difference between the two group (study and control group) regarding to weight, height and body mass index. Majority of the studied participants in both study and control group were overweight.

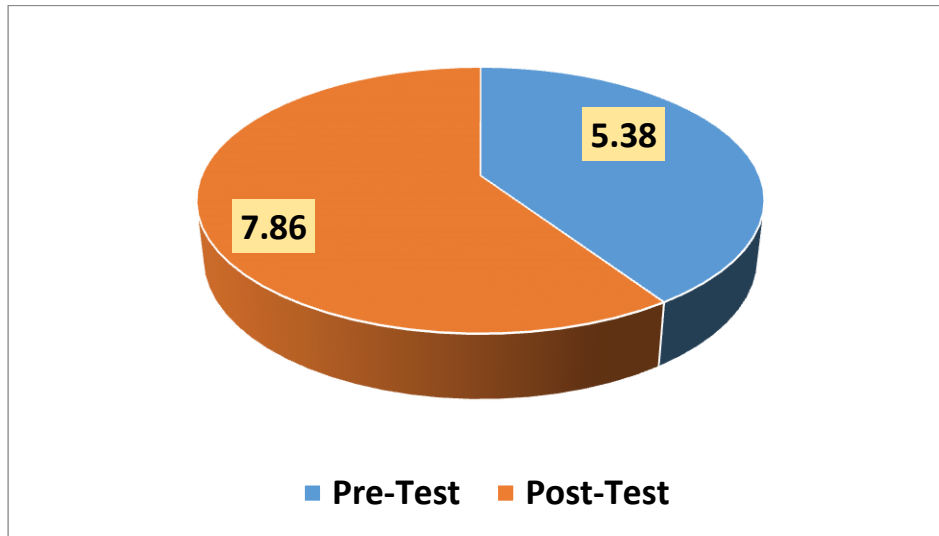


Figure (1): Comparison of Mean, SD and ‘t’ value scores for practice of study group on fetal kick count chart in pre and posttest.

Figure 1: showed that The post-Test mean score was higher than pre-Test mean score regarding the practice of the studied participants on recording fetal kick count on the chart..

Table (3): Comparison of Mean, SD and ‘t’ value scores of study group practice on measuring fundal height using antenatal grow chart chart in pre and post test.

Variable	Mean	SD	t	Table Value
Pre-Test	31.8	11.9	19.9	1.671
Post-Test	41.2	7.3		

P < .05

Table3: Revealed a comparison of Mean, SD and ‘t’ value scores of study group practice on measuring fundal height using antenatal grow chart in pre and posttest. The post-Test mean score was higher than pre-Test mean score. The ‘t’ value is 19.9 which was significant at .05 level

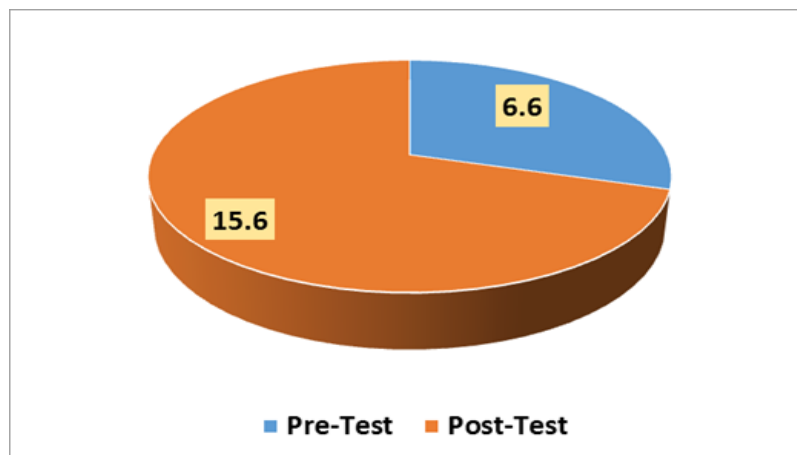


Figure (2): Comparison of Mean scores of studied participants' practice on recording gestational weight gain on Gestational weight chart in pre and post test

Figure 2: illustrated that Mean score of post-Test was higher than pre-Test Mean score regarding the practice of the studied participant on recording gestational weight gain on Gestational weight chart

4. DISCUSSION

The participants' mean age was (23.6±3.6Y). The researcher selected this age group as a woman's fertility peaks in mid to late 20s, Female fertility generally starts to decline when a woman is in her early 30s, and the decline speeds up after the age of 35. This was in agreement with Refaat et al, (2016) who assessed the Effect of Counseling Intervention on Women's Knowledge and Practices and Lifestyle of Fetal Wellbeing among Primigravida in Benha University hospital, Egypt. She reported that the mean age of the studied primigravidae was 22.30±3.17.

Also, these previous findings were similar to a study performed by Bhargava et al, (2017) who studied the effect of structured teaching program on knowledge regarding self-assessment of fetal wellbeing among normal and high risk primigravida mothers at Red Cross Hospital, India. Their findings revealed that more than half of the primigravida women 59 (59%) were between 21 to 30 years.

Also, this finding was in harmony with El-sayed et al, (2018) who investigated Effect of Women Self-Monitoring of Fetal Kicks on Enhancing Their General Health Status in Mansoura, Egypt. Their findings reveal that age of the pregnant women ranged from 21 to 30 years with mean of (20.29 ± 2.94) years. As regards to education. about half of the studied participants (51.4) had bachelor's degree. This may be rationalized as percentage of education is about 90% in Menoufia governorate and this was helpful to improve level of knowledge and practice in pre and posttest of the study.

Other studies have reported conflicting findings regarding education and self-assessment of fetal wellbeing, Heubusch et al, (2013) who studied fetal movement counts in pregnancy, found that two thirds of the study had secondary education. Ugwu et al; (2014) who studied Effectiveness of teaching program on knowledge and attitude regarding self-assessment of fetal wellbeing, it was reported that the majority of the participant women were with elementary and secondary education. This contradiction can be explained that these studies were carried out in the Indian countryside where lack of awareness by the government to rationalize the high education and strive only on the elementary education

As regards to physical characteristics for the studied participants in the study and control groups. Majority of the studied participants in the study group and the control group were overweight. This can be rationalized that primigravida women had lack of knowledge regarding the healthy diet and exercises during pregnancy. This result is similar to that of Shapiro C, et al. (2011), and Choi S-K, et al. (2013) who studied Effect of maternal weight gain on infant birth weight mentioned that pre-pregnancy BMI is an important factor in determining GWG among pregnant women. These finding was contradicted by Kirchengast et al, (2011) who studied Factors affecting weight gain during pregnancy and the growth of the infant among multigravida women; he reported that Pre-pregnancy weight has been shown to be negatively associated with weight gain in poor and undernourished women. This contradiction can rationalized that multigravida women usually neglect their health and follow up care as they depend on their previous experience with pregnancy.

The present study revealed that the post-Test mean score was higher than pre-Test mean score regarding self-monitoring of fetal kick count among primigravida women. The present finding was supported by other studies: The findings of the study were supported by earlier study Gomez LM, Vega GDL, Padilla, Bautista F C (2012) who made a descriptive study in Sweden where 1914 women were asked to count the fetal movements for 15 minutes every evening from 28th week of pregnancy until delivery. 79% of the women made a record of fetal movements. This also comes in agreement with a study performed by El-Sayed et, al (2018) who Effect of women self -monitoring of fetal kicks on enhancing their general health status, found that there was a highly statically significant improvement of the total scores of general health at 37weeks of gestation among intervention group while there was no change of general health at 37weeks of gestation among the control group.

These findings are in disagreement with study by performed by Saastad et al., (2016) who studied Fetal movement counting improved identification of fetal growth restriction and perinatal outcomes—a multi-centre, randomized, controlled trial, reported that evaluating the effect of formal fetal movement monitoring on maternal concern in pregnancies beyond 28 weeks demonstrate less concern about fetal movement in women who were assigned to perform fetal movement counting. Also, Mangesi et al, (2015) who studied fetal movement count on fetal wellbeing and reported that fetal movement counting causes anxiety to women and causes a decreased their self-monitoring of fetal kicks. These differences in results may be due to the unsatisfactory knowledge about the importance of monitoring fetal activity, and poor perception behavior among multigravida women regarding fetal wellbeing.

According to the present study, the results revealed that The post-Test mean score was higher than pre-Test mean score regarding self-monitoring of fundal height among primigravida women. These findings were harmonious with Klovning et al (2015), who studied symphysis-fundus height measurement to predict small for gestational age status at birth, He reported that the majority of the studied participants had better practice in posttest than pretest on measuring fundal height. This comes in agreement with a study performed by Chauhan et al, (2013) who studied the assessment of symphysis-fundal height and its implication during pregnancy, He reported that high statistical significant deference was observed between 28weeks and 37weeks among intervention group about symphysis-fundal height measurement and woman's general health status domain. Also, the present findings were supported by a study performed by Francis et al, (2015) who studied Controlled trial of fundal height measurement plotted on customized antenatal growth charts, He reported that there was a highly statistical significant improvement regarding measuring symphysis fundal height for the studied participants was clearly noticed during the post and follow-up tests compared to the pre- test

These findings are in disagreement with study by performed by Gardosi et al, (2011) who studied symphysis-fundal height measurements in detection of abnormal fetal growth reported that approximately 58% of the studied participants had no statistical significant change in measuring Symphysial fundal height during posttest .This contradiction may be due to Fetal growth in high risk pregnancies should be monitored with serial ultrasound scans by plotting anthropometric measures against international standards.

The findings of the present study showed that The post-Test mean score was higher than pre-Test mean score regarding self-recording of gestational weight among primigravida women. This comes in agreement with study conducted by Cheikh Ismail et al, (2016) who studied Gestational weight gain standards based on women enrolled in the fetal growth longitudinal study of the INTERGROWTH-21st project: a prospective longitudinal cohort study, they reported that 1914 women were asked to record the their weight gained every week from 28th week of pregnancy until delivery. 82% of the women made a record of weight gain on the chart.

5. CONCLUSION

According to the findings of the present study, it can be concluded that there was a higher statistical improvement in the maternal' practices about self-assessment of fetal well-being after using fetal kick count chart, antenatal grow chart after measuring symphysiofundal height and gestational weight gain chart than before. This supported the study hypothesis.

6. RECOMMENDATIONS

In light of the study findings, the following recommendations are proposed:

Encouraging the use of fetal kick count chart, antenatal grow chart and gestational weight chart to self-assess fetal wellbeing as it is safe and less expensive for pregnant women.

Enhance that periodical educational class for pregnant women about methods of self-assessment of fetal wellbeing should be considered as a part of routine antenatal care.

REFERENCES

- [1] Adele Pillitteri., (2012): Maternal and Child Health Nursing, (1st ed). Philadelphia: J.B. Lippincott 83:1100–3
- [2] Anita H Lee (2013). A Pilot Intervention for Pregnant Women in Sichuan, China on Passive Smoking Patient Educ Couns. Author manuscript; available in PMC ; 15: 1278–1286.
- [3] Arenson, J., & Drake, P (2014): Maternal and newborn nursing. Sudbury, MA: Jones and Bartlett Publishers. Obstet Gynecol 113(2 Pt 1):305–312.
- [4] Barker D, Barker M, Fleming T, et al. (2013): Developmental biology: Support mothers to secure future public health. Nature. PP; 504: 209–210..
- [5] Campbell, D.J., & Stanley J. (2011) . quasiexperimental designs for College Publshlng Company .C. Experimental and research. Chicago: Rand-McNaTIY

International Journal of Novel Research in Healthcare and Nursing

 Vol. 7, Issue 3, pp: (1-11), Month: September - December 2020, Available at: www.noveltyjournals.com

- [6] Chiu, J.Y, Gau, M.L, Kuo, S.Y., et al. (2010). Effects of Gua-Sha therapy on breast engorgement: a randomized controlled trial. *Journal of Nursing Research*; 18(1): 1-10. PMID:20220605. Retrieved from: <http://dx.doi.org/10.1097/JNR.0b013e3181ce4f8e>
- [7] Deierlein AL, Siega-Riz AM, Evenson KR. (2012): Physical activity during pregnancy and risk of hyperglycemia. *J Women's Health*; 21(7):PP.769-775
 Oliveira, L.D, Giugliani, E.R.J, do Espírito, Santo, L.C., et al. (2012). Effect of intervention to improve breastfeeding technique on the frequency of exclusive breastfeeding and lactation-related problems. *Journal of Human Lactation*; 22(3): 315-321. PMID:16885491. <http://dx.doi.org/10.1177/0890334406290221>
- [8] Dietz P, Callaghan W, Cogswell M, Morrow B, Ferre C, Schiev(2011) Combined effects of pre-pregnancy body mass index and weight gain during pregnancy on the risk of preterm delivery. *Epidemiology* 2006; 17: 170–177
- [9] Draper, J., Field, S., Thomas, H. & Hare, M.J. (2016). Women's views on keeping fetal movement charts. *British Journal of Obstetrics and Gynecology*, 93, 334-338
- [10] Dutta DC. (2012): Text Book of Obstetrics, (6th ed). Calcutta: New Central Book Agency
 Emmanuel, K. (2011). Nursing intervention of post natal mother with breast engorgement. *Nightingale Nursing Times*, 2(1), page 23-32.
- [11] Fischer, S., Fullerton, J.T., & Trezise, L. (2013). Fetal movement and fetal outcome in a low risk population. *Journal of Nurse Midwifery*, 26 (1), 25-30.
- [12] Frieden, F. J., & Chan, Y. (2017): Antepartum care. In R. E. Rakel & E. T. Bope (Eds.), *Conn's current therapy* (Section 16; pp.1169–1174), Philadelphia: Saunders Elsevier
- [13] Gantes, M., Schy, D.S., Bartasius, V.H. & Roberts, J. (2016). The use of daily fetal movement records in a clinical setting. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 12 (5), 390-393.
- [14] Ghaffarpour M, Houshiar-Rad A, Kianfar H (2010). The manual for household measures, cooking yields factor and edible portion of foods. Tehran: Keshaverzi Press, [Persian]
- [15] Guelinckx I, Devlieger R, Beckers K, Vansant G (2012). Maternal obesity: pregnancy complications, gestational weight gain and nutrition. *Obes Rev* 2008; 9:140–150.
- [16] Hackley, B., Kriebs, J. M., & Rousseau, M. E. (2011): *Primary care of women: A guide for midwives and women's health practitioners*. Sudbury, MA: Jones and Bartlett Publishers
- [17] Institute of Medicine. *Weight gain during pregnancy (2009): reexamining the guidelines*. Washington, DC: National Academies Press, 2009.
- [18] Jeffery R(2012). Bias in reported body weight as a function of education, occupation, health and weight concern. *Addict Behav* 1996; 21: 217–222.
- [19] Keyser N, Josefsson A, Monfils W, Claesson I, Carlsson P, Sydsjö A et al (2011). Total cost comparison of standard antenatal care with a weight gain restriction programme for obese pregnant women. *Public Health*; 125: 311–31
- [20] Lee, C.Y., Dilereto, P.C., & O'Lane, J.M. (2015). A study of fetal heart rate acceleration patterns. *Obstetrics and Gynecology*, 45, 142-146.
- [21] Mathews, D.D. (2013). Fetal movements and fetal well being. *Lancet*, 1, 1315.
- [22] Mathews, D.D. (2015). Maternal assessment of fetal activity in small for dates infants. *Obstetrics and Gynecology*, 45 (5), 488-493.
- [23] McDonald SD, Pullenayegum E, Bracken K, et al. (2012): Comparison of midwifery, family medicine, and obstetric patients' understanding of weight gain during pregnancy: a minority of women report correct counselling. *J Obstet Gynaecol Can*; 34(2): PP.129–135.
- [24] Neldam, S. (2010) . Fetal movements as an indicator of fetal well being. *Lancet*, 1, 1222-1224.

International Journal of Novel Research in Healthcare and Nursing

 Vol. 7, Issue 3, pp: (1-11), Month: September - December 2020, Available at: www.noveltyjournals.com

- [25] Nobis PN. Eclampsia., (2010): The Indian scenario. Asian Journal of Obs and Gynae Practice, 8(2) QZ1`Available at <http://www.nursingtimes.net>.
- [26] Olafsdottir AS, Skuladottir GV, Thorsdottir I, Hauksson A, Steingrimsdottir L(2013). Combined effects of maternal smoking status and dietary intake related to weight gain and birth size parameters. BJOG; 163;168
- [27] Olson C, Strawderman M, Dennison B(2011). Maternal weight gain during pregnancy and child weight at age 3 years. Maternal and Child Health J; 13: 839–846
- [28] Polley BA, Wing RR, Sims CJ(2011). Randomized controlled trial to prevent excessive weight gain in pregnant women. Int J ObesRelatMetabDisord;26:1494–502
- [29] Potti S, Sliwinski C, Jain N, Dandolu V(2010). Obstetric outcomes in normal weight and obese women in relation to gestational weight gain: Comparison between Institute of Medicine guidelines and Cedergren Criteria. Am J Perinatol 2010; 27:415–420.
- [30] Rasmussen KM, Yaktine AL, (2012): Weight Gain During Pregnancy: Reexamining the Guidelines. Washington, DC: National Academies Press; <http://www.nap.edu/openbook>
- [31] Rayburn, W.F. (2010). Clinical significance of perceptible fetal motion. American Journal of Obstetrics and Gynecology, 138, 210-212
- [32] Rayburn, W.F. (2012) • Antepartum fetal assessment, monitoring fetal activity. Clinics in Perinatology, 1 (2), 231-252
- [33] Rayburn, W. R., & ivfcKean, H. (2010). Maternal perception of fetal movement and perinatal outcome. Obstetrics and Gynecology, 56 (2), 161-164
- [34] Sadovsky, E. (2015). Monitoring fetal movement: A useful screening test. Contemporary Obstetrics and Gynecology, 25 (4), 123-135.
- [35] Selvin, S., (2014). Statistical analysis of epidemiological data. 3rd ed. New York, NY, USA: Oxford University Press.
- [36] Sevenhuysen GP, Gross U(2011): Documenting the reasons people have for choosing their food. Asia Pac J ClinNutr 2008, 12:30–37.
- [37] Scholl TO, Hediger ML, Khoo C-S, Healey MF(2011), Rawson weight: correlations during adolescent pregnancy. J Clin Epidemiol 2011;44:423-8
- [38] Sheikh M, Hantoushzadeh S, Shariat M.,, (2012): Maternal perception of decreased fetal movements from maternal and fetal perspectives, a cohort study.” BMC Pregnancy Childbirth
- [39] Siega-Riz AM, Evenson KR, Dole N. Pregnancy-related weight(2013) gain—a link to obesity? Nutr Rev 2004;62(7 Pt. 2):S105-11
- [40] Sobel, J. D., (2007). "Vulvovaginal candidosis." The Lancet, vol. 369, pp. 1961-1971
- [41] Sorenson JD, Abrams B(2011). Prenatal weight gain advice: an examination of the recent prenatal weight gain recommendations of the Institute of Medicine. ObstetGynecol;79:664–9.
- [42] Thorsdottir I, Birgisdottir BE(2013). Different weight gain in women of normal weight before pregnancy: postpartum weight and birth weight. Obstet Gynecol;92:377-83.
- [43] Tobias DK, Zhang C, Chavarro J, et al. (2012): Prepregnancy adherence to dietary patterns and lower risk of gestational diabetes. Am J Clin Nutr; 96(2):PP.289-295.
- [44] Ugwu A, Osungbade E, Erundu F (2010): Maternal perspectives of prenatal sonogram in a north-eastern population in Nigeria. Libyan J Med.; PP. 4:140.

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- [45] Weiss JL, Cogswell ME, ScanlonKS(2010). Trends in pregnancy weight gain within and outside ranges recommended by the Institute of Medicine in a WIC population. *Matern Child Health J* 2010;2:111–
- [46] World Health Organization (2010). *The use and interpretation of anthropometry*. Geneva: women WHO.
- [47] Yekta Z, Ayatollahi H, Poralı R, Farzin A(2012). The effect of pre-pregnancy body mass index and gestational weight gain on pregnancy outcomes in urban care settings in Urmia-Iran. *BMC Pregnancy Childbirth* 2012 5:16
- [48] Young, G. and Jewell, D., (2010). "Topical treatment for vaginal candidiasis (thrush) in pregnancy." *Cochrane Database of Systematic Reviews*,
- [49] Zachary M Ferraro Kaitlin S Boehm, Laura M Gaudet, and Kristi B Adamo (2013): Counseling about gestational weight gain and healthy lifestyle during pregnancy: Canadian maternity care providers' self-evaluation *Int J Womens Health*. PP; 5:PP 629–636.