Effectiveness of Planned Teaching Programme Regarding Factors Affecting the Normal Fetal Growth and Development among Antenatal Mothers

Priyanka S Lokhande[1], Manisha Bijapurkar[2]

[1]Nursing tutor, Department of Obstetrics and Gynaecological Nursing, D.Y. Patil, College of Nursing, Kolhapur

[2]HOD, Department of Obstetrics and Gynaecological Nursing, D.Y Patil, College of Nursing, Kolhapur

Abstract: *A Pre-experimental study was conducted to assess the knowledge and view the effectiveness of planned teaching Programme regarding factors affecting the normal fetal growth and development among antenatal mothers in selected PHC'S of Kolhapur district. Total 60 Samples were selected by non-probability, purposive sampling technique. A Structured questionnaire was administered to collect the data. The reliability of the tool was tested by using by'Split half' method by using Karl Pearson's Coefficient of correlation formula and Sperman's prophecy Brown formula which was r=0.75. It was found calculated Chi-square values were higher than tabulated value at 0.05 level of significance. The obtained 't' value (t tab = 10.08) is greater than tabulated value (t tab = 2.00) (df=59). The results of the study revealed that there was significant association between pre-test knowledge scores and selected socio-demographic variable. i.e source of information [x^2cal= 33.06, x^2 tab= 15.51]. This suggests that there is marked increase in post-test knowledge score and planned teaching was effective.*

Keywords: Effectiveness; Fetal growth, Antenatal mothers; Planned Teaching Programme

1. Introduction

Growth and development is a complex process that depends on the inherent biological potential as well as various environmental influences including social, emotional and pathological factors.[1]

Growth is a dominant biological activity during the first two decades or so of human life, including, of course nine months of prenatal life. Growth is an increase in the size of the body as a whole or the size attained by specific parts of the body. It is a fundamental characteristic of all living organisms. Growth is a form of motion.The term development is frequently used along with growth and even considered synonymous by some people. But growth and development are not the identical. Therefore it requires a careful examination and proper understanding.

The integrated nature of growth and maturation is largely maintained by a constant interaction of genes, hormones, nutrients and other factors. These factors also influence physical performance. Some are hereditary in origin. Others, such as season, dietary restriction, severe psychological stress, originate in the environment and simply affect the rate of growth at the time they are acting. Others again, such as socio-economic class, reflect a complicated mixture of hereditary and environmental influences and probably act throughout the whole period of growth.

The terms growth and maturation are often used in conjunction with the term development. The latter denotes a broader concept often used in two distinct contexts. The first context is biological, and here development is the differentiation of cells along specialized lines of function. This mainly occurs early in prenatal life when tissues and organ systems are being formed, and it is highly dependent upon the activation and repression of genes or sets of genes.

The development of function obviously continues postnatally as different systems of the body become functionally refined. [2]

2. Literature Survey

A Quantitative, experimental cum evaluative research study was done in Justice K. S Hegde Charitable Hospital, Deralakatte, Mangalore. The aim of this study was to assess knowledge of primipara mothers regarding family planning methods. 60 primipara mothers were slected by Convenient sampling technique. A structured knowledge questionnaire on family planning methods was used to collect the data. The mean knowledge score after administration of Information booklet was statistically significant at p < 0.05. The calculated 't' value (17.143) was greater than table value (1.67) at 0.05 level of significance. The findings of the present study show that the primipara mothers are not well aware of the available family planning methods. On the other hand, the study opens up the desire of the primipara mothers to learn more. [3]

A Pre experimental study was conducted in hospital at Vidarbha region. The sample size was 100 antenatal mothers. Eighty sample from AVBRH Sawangi Meghe Wardha & 20 sample from Matrusewasangh maternity hospital, Nagpur. The aim of the study was to evaluate the effectiveness of planned teaching on knowledge regarding selected risk factors related to low birth weight babies. Data was collected by structured questionnaires. Samples were selected by non probability convenient sampling technique. The finding show that in pre test score, 47% of sample were having average knowledge, 49% of samples having good knowledge score and 4% samples having 4% very good knowledge where asin post test scores only 4% of samples were having good knowledge ,73% of samples having very good knowledge and 23% samples having excellent

knowledge. The tabulated 't' value for n-1 i.e. 99 degree of freedom is 1.98. The calculated values are 27.24 respectively for knowledge regarding factors affecting low birth weight babies. The calculated 't' values are much higher than the tabulated values at 5% level of significance which is statistically acceptable level of significance. The study concluded that planned teaching on knowledge on selected risk factors related to low birth weight babies was found effective as a teaching strategy.[4]

A Cross sectional observational study was conducted in Shri B M Patil Medical College and Hospital, Vijayapura to demonstrate the positive effects of breastfeeding and widely spaced births on infant survival. A purposive sampling was used for 612 post natal mothers who were admitted in postnatal general ward of OBG. The objective of the study was to assess the knowledge, attitude and practice regarding family planning methods among postnatal mothers and to educate them to use one of the family planning method. The result of the study is 65.4% of mothers knew about the family planning methods. Significant association was found in relation to education (p=0.000), religion (p=0.055) and parity (p= 0.01). The study concluded the literacy level will definitely help to gain the information regarding family planning and pregnant women had low-level of nutritional knowledge in the study area. There was significant positive relation between level of education, monthly income and nutrition information during pregnancy and nutrition knowledge. Hence, nutrition intervention such as nutrition education in different villages, health centers, health posts and women organizations should be given for the community particularly for the pregnant mothers concerning nutrition during pregnancy to increase the nutritional knowledge of mothers in the study area.[5]

A co-relational study was conducted in University of Mississippi Medical Center, USA. The aim of the study was to assess the physical exercise during pregnancy and the risk of preterm birth: a study within the Danish National Birth Cohort. The sample size was 211 women. Data was collected by questionnaire method. Total 95% of the women believed that participating in prenatal exercise was helpful. There was a significant correlation between a woman's beliefs regarding the benefits of prenatal exercise and whether or not she chose to exercise during pregnancy. Fourty one percentage of women surveyed and 41.6% of women who exercised indicated that their doctor had the most influence on their beliefs regarding exercise. Approximately 92% of the women who discussed exercise with their physicians were encouraged by them to exercise. Over 69% of women were advised by their physician to place limitations on their exercise habits.[6]

Problem Definition
"A pre-experimental study to evaluate effectiveness of planned teaching programme (PTP) on knowledge regarding factors affecting the normal fetal growth and development among antenatal mothers in selected PHC's of Kolhapur, district."

Research Objectives
- To evaluate the effectiveness of planned teaching programme regarding factors affecting the normal fetal growth and development among antenatal mothers.
- To find out an association between pre test knowledge scores regarding factors affecting the normal fetal growth and development among antenatal mothers with their selected socio –demographic variables.

Hypotheses:
All Hypotheses were tested at 0.05 level of significance
H_1-The mean post-test knowledge score of subjects attending planned teaching programme on factors affecting the normal fetal growth and development is higher than their mean pre-test knowledge score.
H_2- There is an association between pre-test knowledge scores of subjects regarding factors affecting the normal fetal growth and development with their selected socio-demographic variables.

3. Method /Approach

A quantitative research approach was used to assess the effectiveness of planned teaching programme on knowledge regarding factors affecting the normal fetal growth and development among antenatal mothers. Pre-experimental one group pretest-posttest design was used in the study.As the present study comes under pre experimental design, it has independent variable i.e. planned teaching programme and dependent as knowledge.Whereas research variables are age in years, education, residential area, number of children, diet pattern, family income per month and source of information.The present study settings were selected as per the needs and criteria. The setting were Shiroli PHC and Herle PHC. Non probability purposive sampling was used.

4. Sampling Criteria

Inclusion criteria:
Antenatal mothers who were,
- Attending antenatal OPD.
- Primi and multi gravida.
- Able to read and write Marathi.

Exclusion criteria:
- Antenatal mothers who were not willing to participate.

Structured questionnaire were organized. The tool was divided into two sections. The first section contained demographic variable of the antenatal mothers. The second section contained 30 multiple choice questions with four options for assessing knowledge with one correct answer. Questions were related to Introduction of growth and development, Meaning of growth and development, Importance of fetal growth and development, Factors affecting the normal fetal growth and development and its management, Conclusion, Summary, Bibliography.send to 19 experts among those 18 were validated and received back , in that 13 were from field of nursing and 2 were specialized in Obstetrics and Gynaecology 1 was statistician 2 were of M.A (Marathi and English). The tool was translated in Marathi.After considering the suggestion of the guide and

expertise, certain modifications were done in the tool like in Section B- Q 33 was excluded and grammatical corrections were done and the tool was modified and finalized accordingly for pilot study.The questionnaire for knowledge assessment were categorized as Good knowledge score 21-30, average knowledge score 11-20, poor knowledge score 0-10.The correct answer scored with 1 mark, wrong answer with 0 and maximum score was 30.Research proposal with data collection tool was presented in front of the ethical committee. After approval of the ethical committee pilot study and final study were conducted, where it was promised that there will be no risk to the participants and the received information will be kept confidential. The setting of study was selected randomly by using lottery method. Hence, researcher with the help of guide selected the PHC which fulfilled the criteria. The researcher obtained the formal permission from the Medical Officer of the Shiroli PHC, Kolhapur district.The main study was conducted at Shiroli PHC Kolhapur from 09/02/2017 up to 17/02/2017. As 9th of every month is celebrated as SurakshitMatritvaYojana, where free antenatal care is provided on this day at every antenatal clinics. Planning of the time schedule was done as per the timings provided by the Medical Officer of the PHC. On 09/02/2017 the subjects were selected from PHC by using non-probability, purposive sampling technique. As there was chances of drop-outs researcher chosen 70 subjects for this study. The researcher introduced herself to the subjects and explained purposes, objectives of the study. Subjects were taken into confidence and assured confidentially of their responses. Informed consent was obtained from the subjects. Pretest was conducted and the tool was administered to evaluate the knowledge regarding factors affecting the normal fetal growth and development. Average time given for the data collection was 30 minutes approximately. Planned teaching programme was given on knowledge regarding factors affecting the normal fetal growth and development among antenatal mothers on same day i.e on 09/02/2017 for about 45 minutes. After 7 days i.e on 8th day (17/02/2017) post test was conducted on 64 subjects who were present during pre-test.

5. Result & Discussion

a) Findings related to distribution of demographic variables of subjects

Majority of subjects 28 (46.67%) belonged to the age group of 22-25 years and minimum 13 (21.67%) belonged to 26-29 years of age. Majority of subjects 24 (40%) had higher secondary and above education and minimum 05 (8.33%) had no formal education. Majority of subjects 50 (83.33%) resided at rural area, while 10 (16.67%) resided at urban area. Majority of subjects 32 (53.33%) were having no any children while 4 (40%) were having one and above children. Majority of subjects 47 (78.33%) were having mix diet while 13 (21.67%) subjects were having vegetarian diet. Majority of subjects 26 (43.33%) were having Rs 7,000/- to Rs10,000/- monthly income while minimum 8 (13.33%) subjects were having Rs 3,000/- to Rs 6,000/- monthly income. Majority of subjects 42(70%) were having family as a source of information while minimum 1 (1.67%) was having information from other source i.e Garbha Sanskar.

n=60

Mean Difference	Standard Error (SE)	Paired 't' Values		df
		Calculated	Tabulated	
4.84	0.48	10.08*	2.00	59

b) Findings related to distribution of pre-test and post-test knowledge scores of subjects regarding factors affecting the normal fetal growth and development.

In pre-test majority of the subjects 57 (95%) had average knowledge and 1 subjects (1.67%) had poor knowledge and 02 subjects (3.33%) had good knowledge, where as in post-test 32 (53.33%) subjects had good knowledge, 28 (46.67%) subjects had average knowledge and none of the subjects had poor knowledge.

n=60

Knowledge Scores	Pre test		Post test	
	Frequency f	Percentage %	Frequency f	Percentage %
Good (21-30)	02	3.33	32	53.33
Average (11-20)	57	95	28	46.67
Poor (0-10)	01	1.67	00	00.00

c) Testing of hypothesis related to data on effectiveness of PTP on factors affecting the normal fetal growth and development among subjects.

The calculated paired 't' value ($t$tab = 10.08) was greater than tabulated value (t tab = 2.00). Hence H1 is accepted. This indicates that the gain in knowledge score is statistically significant at P<0.05 level. i.e. H1: $\mu \neq \mu 0$. Therefore the findings revealed that the PTP on factors affecting the normal fetal growth and development among subjects was effective in increasing the knowledge.

d) Testing of hypothesis for an association between pre-test knowledge scores with the selected socio-demographic variables

There was significant association between pre test knowledge scores and selected socio-demographic variable like source of information [x^2cal= 33.06, x^2 tab= 15.51].The calculated Chi-square values was higher than tabulated value at 0.05 level of significance.Hence H_2 is accepted. This indicates that there was significant association between pre test knowledge scores and selected socio-demographic variables at 0.05 level of significance, i.e. H_2: $\mu \neq \mu 0$.

n=60

Sr no	Variables	Scores			Chi-square values		df
		Good	Average	Poor	Calculated	Tabulated	
1	**Age** a)18-21 b) 22-25 c)26-29	00 01 01	18 27 12	01 00 00	3.5	9.49	4
2	**Education** a)No formal b)Primary c)Secondary d)Secondary & above	00 00 00 02	05 19 11 22	00 00 01 00	6.6	12.59	6
3	**Residential area** a)Rural b)Urban	02 00	47 10	01 00	0.56	5.99	2

4	Number of children						
	a)Nil	01	31	00	1.26	5.99	2
	b)One and above	01	26	01			
5	Diet pattern						
	a)Vegetarian	00	13	00	0.8	5.99	2
	b)Mixed diet	02	44	01			
6	Monthly income						
	a)Rs 3,000/ to 6,000/-	00	08	00	2.86	12.59	6
	b)Rs 7,000/- to 10,000/-	01	24	01			
	c)Rs 11,000/- to 14,000/-	00	14	00			
	d)Rs 15,000/- and above	01	11	00			
7	Source of information						
	a)Family	01	40	01			
	b)Friends	00	08	00	33.03*	15.51	8
	c)Mass media	00	04	00			
	d)If any other specify	01	00	00			
	e)None	00	05	00			

A pre experimental study was conducted at Shiroli PHC to evaluate the knowledge regarding factors affecting the normal fetal growth and development among antenatal mothers. The data was collected from 09/ 02/ 2017 to 17 /02 /2017. The data was collected by non-probability, purposive sampling technique. Pre-test was conducted on 09/02/2017 and on same day planned teaching programme was administered. After 7 day post was conducted. The study concluded that calculated paired 't' value was greater than tabulated value which indicated that the gain in knowledge score was statistically significant. Therefore the findings revealed that the PTP on factors affecting the normal fetal growth and development among subjects was effective in increasing the knowledge. The calculated Chi-square values was higher than tabulated value at 0.05 level of significance. This indicated that there was significant association between pre test knowledge scores and selected socio-demographic variable i.e source of information at 0.05 level of significance.

6. Conclusion

A pre experimental study was conducted at Shiroli PHC to evaluate the knowledge regarding factors affecting the normal fetal growth and development among antenatal mothers. The data was collected from 09/ 02/ 2017 to 17 /02 /2017. The data was collected by non probability, purposive sampling technique. Pre-test was conducted on 09/02/2017 and on same day planned teaching programme was administered. After 7 day post was conducted. The study concluded that calculated paired't' value was greater than tabulated value which indicated that the gain in knowledge score was statistically significant. Therefore the findings revealed that the PTP on factors affecting the normal fetal growth and development among subjects was effective in increasing the knowledge. The calculated Chi-square values was higher than tabulated value at 0.05 level of significance. This indicated that there was significant association between pre test knowledge scores and selected socio-demographic variable i.e source of information at 0.05 level of significance.

7. Future Scope

1) A similar study on a large setting with more samples for a longer period of time would be more pertinent in making broad generalizations.
2) Quasi-experimental study can be conducted in two groups; one group as experimental and the other as control, could be undertaken to evaluate the effectiveness of PTP in more precise way.
3) A comparative study can be conducted to evaluate the effectiveness of two different teaching strategies.
4) A comparative study can be conducted in different settings.
5) A longitudinal study can be done to assess the effect of PTP on factors affecting the normal fetal growth and development.

References

[1] Pilliteri A. Maternal and child health nursing. 6thedition.NewYork:Lippincott William Wilkins Ltd;2007.p-705-97.
[2] Dr. Kaushik Bose. Concept of Human Physical Growth and Development.www.upscsuccess.com.
[3] Thomas T .Effectiveness of information booklet on knowledge among primipara mothers regarding family planning methods. Ijarn.2014; volume 2.issue (4): page no. (211-218) www.jiarm.com
[4] M. Archana, SrJosy. Effectiveness of Planned Teaching on Knowledge of Selected Risk Factors Related to Low Birth Weight Babies among Antenatal Mothers at Vidarbha Region. International Journal of Science and Research (IJSR). Volume 3 Issue 6, June 2014. https://www.ijsr.net
[5] Lindsteron D.P, Berhanu B. The effect of Brest feeding and birth-spacing on infant and early childhood mortality in Ethiopia.journal of Soc Bio. Spring summer ed.2000;vol. 47.issue (1-2): (1-7). http://www.tandfonline.com
[6] Juhl M, Andersen PK. Physical exercise during pregnancy and the risk of birth. Am J Epidemiology 2008;167(7):859-66. https://www.ncbi.nlm.nih.gov

Author Profile

Priyanka Sanjay Lokhande, Nursing Tutor, Department Obstetrics and Gynaecological Nursing, D.Y Patil, College of Nursing, Kolhapur

Smt. Manisha Bijapurkar, Professor, Head of department in Obstetrics and Gynaecological Nursing, D.Y.Patil College of Nursing Kolhapur.