

EFFECTIVENESS OF COMPUTER ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING SELECTED BIOPHYSICAL MEASURES OF FETAL WELLBEING AMONG GNM INTERNEES IN SELECTED SCHOOLS OF NURSING AT HASSAN

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Abstract: Background: According to the NFHS-4 report the perinatal and neonatal mortality in India was 36 per 1,000 childbirths and 29.5 per 1,000 live births and 16 per 1,000 births in urban areas to 28 per 1,000 births in rural areas. The majority 80% of fetal deaths occur in the antepartum period due to fetal hypoxia/distress. About 40% of neonatal deaths occur on the 1st day of life, almost half within 3 days, and nearly three-fourths in the 1st week these can be prevented by monitoring fetal wellbeing during pregnancy.

Aims: To assess the knowledge regarding selected biophysical measures of fetal wellbeing among GNM internees in selected schools of nursing at Hassan.

Methods: An evaluative one-group pretest and posttest pre-experimental design. With the purposive sampling technique, 50 samples were selected from the Mangala School of Nursing and the NDRK School of Nursing at Hassan. Data was collected by using the structured knowledge questionnaire with 46 items. The reliability of the tool was found to be 0.94. Computer-assisted Teaching Programme was implemented and a post-test was conducted after 7 days to find the effectiveness of the data analyzed by using descriptive and inferential statistical techniques.

Results: Regarding the effectiveness of CATP, the overall mean percentage of pre-test knowledge score was 30% and 79.7% in the post-test with the enhancement of 49.5% and it was significant at the 5% level. Analysis of socio-demographic variables showed a significant association between family income with post-test knowledge scores at a 5% level ($p>0.05$).

Interpretation and conclusion: Overall findings showed that pre-test knowledge scores were found to be 30% and after CATP, knowledge of GNM internees was enhanced by 49.5% of selected Biophysical measures of fetal wellbeing. Hence the result has proved that CATP was effective in improving the knowledge of GNM internees on selected Biophysical measures of fetal wellbeing.

Keywords: Biophysical Measures, Fetal Wellbeing, Computer Assisted Teaching Programme.

I. INTRODUCTION

Motherhood is a wonderful experience only if a mother safely delivers a child. The enabling environment for safe motherhood and childbirth depends on the care and attention provided to pregnant women and newborn by skilled health care personnel and the availability of adequate facilities at health care setting.¹ The time during labor is a vital period of physiological stress for the mother as well as fetus and requires essential care.² The assessment of fetal wellbeing during this time is a component of a total intrapartum care provided to mother to improve fetal outcome³. The fetus today has achieved a status almost equal to those of mother and this importance is gaining more ground as progress with the ever-evolving science of medicines with fast developing technology. Fetal wellbeing depends on a satisfactory maternal health throughout pregnancy.⁴

Clinical examination of the mother and some of the investigations are to be performed in order to assess the Progress of pregnancy and condition of the fetus. Assessment of fetal wellbeing makes use of several investigations which are being used in obstetric practice to identify compromised fetus. These tests include biochemical assays and biophysical assays. Biochemical assays include maternal serum alpha-fetoprotein testing or triple testing, amniocentesis, chorionic villus sampling, cordocentesis-percutaneous umbilical blood sampling, etc. Biophysical assays include fetal movement count, fetal heart rate monitoring, non-stress test, contraction stress test, Doppler Ultrasonography, magnetic resonance imaging, vibroacoustic stimulation test, etc.⁶ The implications of this trend significantly affect the care of pregnant women and the role of nurses as providers of comprehensive, individualized nursing care.⁷

The Biophysical profile is considered as one of the most important and valuable tool in the assessment of fetal well-being to reduce the high incidence of peri-natal and neonatal mortality in developing countries by predicting the presence or absence of fetal asphyxia and ultimately the risk of fetal death in the antenatal and intra-natal period. The selected aspect of biophysical profile in assessing the fetal wellbeing includes Daily fetal movement count, fetal heart rate monitoring by pinard's fetal stethoscope and Electronic monitoring and non-stress test⁸.

The primary goal of Intrapartum fetal heart rate monitoring is to identify hypoxic and acidotic fetuses in whom timely intervention will prevent death. The abnormal fetal heart rates correlate with fetal distress was initially proposed by Killian, 1948. Since then, the goal of fetal heart rate monitoring has been early identification of fetuses at risk for hypoxic insult.⁹ One of the major causes of neonatal death is asphyxia. Hypoxia is thought to be a factor in 90% of intrapartum death and much of the reduction in death has been credited to continuous fetal heart rate monitoring. Several randomized studies conferred a decrease in perinatal mortality with continuous fetal monitoring.¹⁰

A descriptive co-relational study was conducted at South Michigan hospital to evaluate the intrapartum fetal monitoring and effect of selected demographic variable on their attitude of the labour and delivery 145 nurses were participated 72.5% agreed that intermittent fetal monitoring should be standard of care. They have positive attitude but lack the knowledge regarding current evidence and there may be other barriers which contribute to intermittent auscultation not being used routinely.¹⁰

II. FIGURES GRAPHS AND TABLES

Table 1: Classification of respondents on pre test knowledge scores

Knowledge Level	Category	Respondents	
		Number	Percentage
Inadequate	≤ 50 % Score	36	72.0
Moderate	51-75 % Score	14	28.0
Total		50	100.0

The data showed that, majority (72.00%) of the respondents had inadequate knowledge, 28.0% had Moderate knowledge and none of them had adequate knowledge.

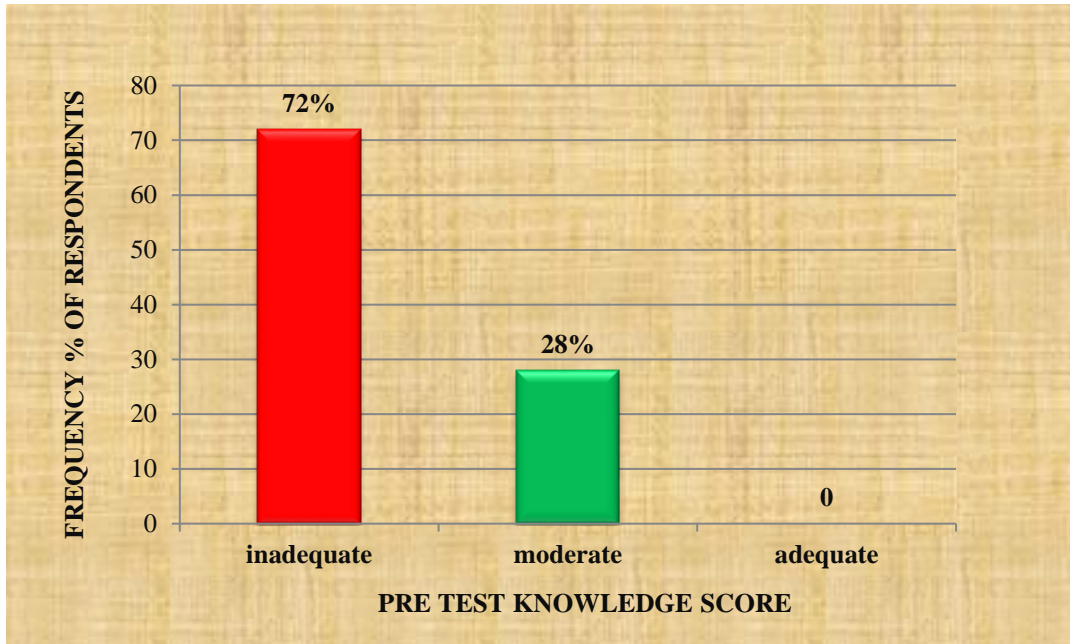


Figure 1: Classification of respondents on pretest knowledge level.

Table. 2: Classification of respondents on post test knowledge scores

Knowledge Level	Category	Respondents	
		Number	Percent
Moderate	51-75 % Score	11	22
Adequate	> 75 % Score	39	78
Total		50	100.0

The data showed that, majority 78% of the respondents had adequate knowledge, remaining 22% of them had moderate knowledge.

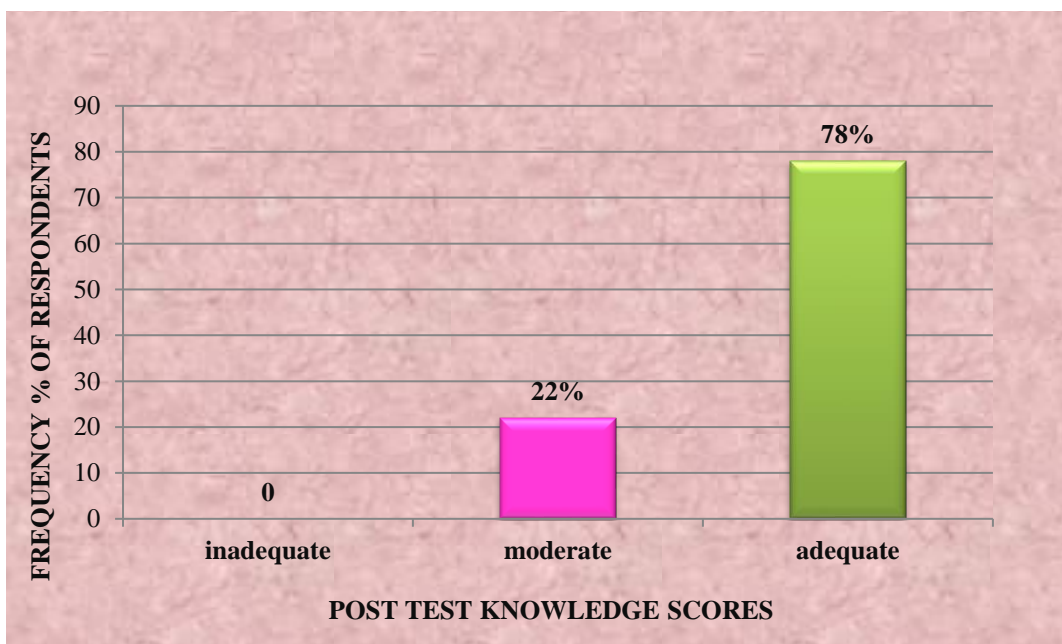


Figure 2: Classification of respondents on aspect wise post-test knowledge scores.

Table. 3. Association between Demographic variables and Posttest Knowledge scores on selected Biophysical measures of fetal wellbeing N=50

Sl. No	Demographic variables	Knowledge level				Chi square value	Degrees of freedom at 0.05 level	P value (0.05) table value	Inference
		Below median		Above median					
		N	%	N	%				
1	Age Group (years)								
	18-21	19	55.8	15	44.11	1.46	1	3.84	NS
	22 and above	6	37.5	10	62.5				
2	Gender								
	Female	16	37.2	27	62.7	0.55	1	3.84	NS
	Male	1	14.2	6	85.7				
3	Religion								
	Hindu	10	37.03	17	62.96	3.22	2	5.99	NS
	Christian	14	70	6	30				
	Muslim	2	66.6	1	33.3				
4	Type of family								
	Joint	5	62.5	3	37.5	0.14	1	3.84	NS
	Nuclear	20	47.6	22	52.3				
5	Occupation of father								
	Government	3	75	1	25	0.26	1	3.84	NS
	Private	22	47.8	24	52.1				
6	Family income								
	Rs Below 5000	8	53.3	7	46.6	13.37	2	5.99	S*
	Rs 5001-10000	14	46.6	16	53.3				
	Rs10001and above	2	40	3	60				
7	Pre entry education to nursing								
	Arts	15	53.5	13	46.4	0.5	2	5.99	NS
	Commerce	4	44.4	5	55.5				
	Science	6	46.1	7	53.8				

NS –Not Significant S*- Significant

Table.3 reveals that the calculated χ^2 values with regard to family monthly income $\chi^2=13.37$ which is greater than the table value 5.99 with 2 df at 0.05% level of significance which is suggestive of significant association between the demographic variable and post test knowledge level of respondents (Figure.3).

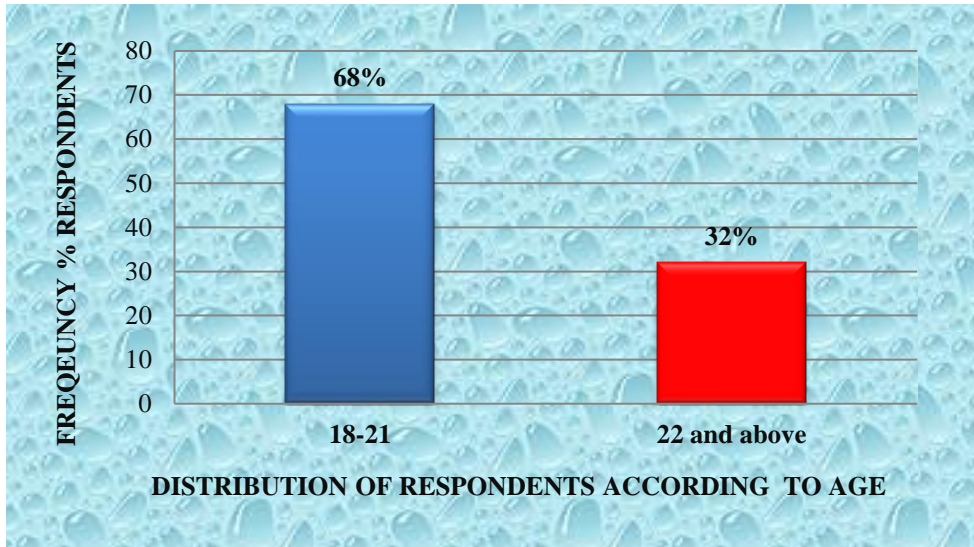


Figure. 3: Percentage distribution of respondents according to their age

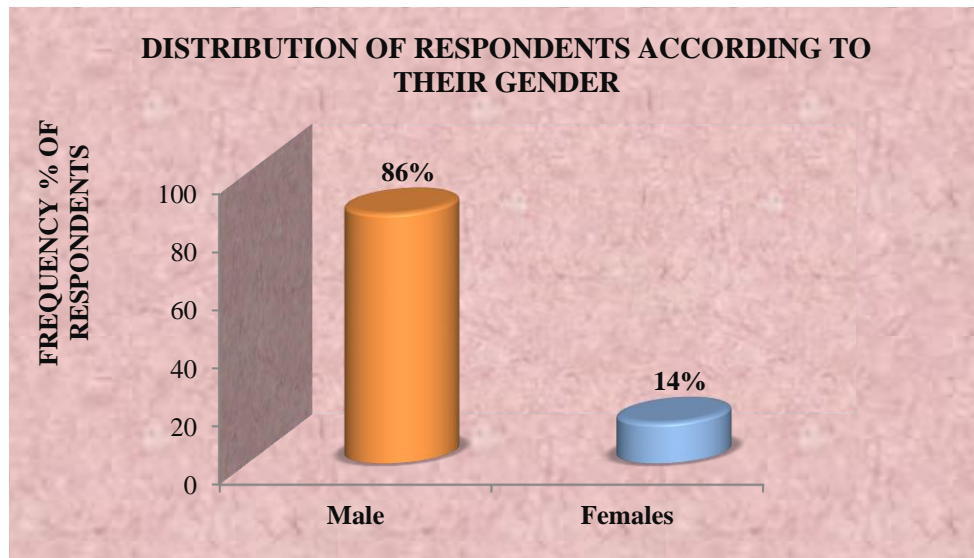


Figure. 4: Percentage distributions of respondents according to their gender

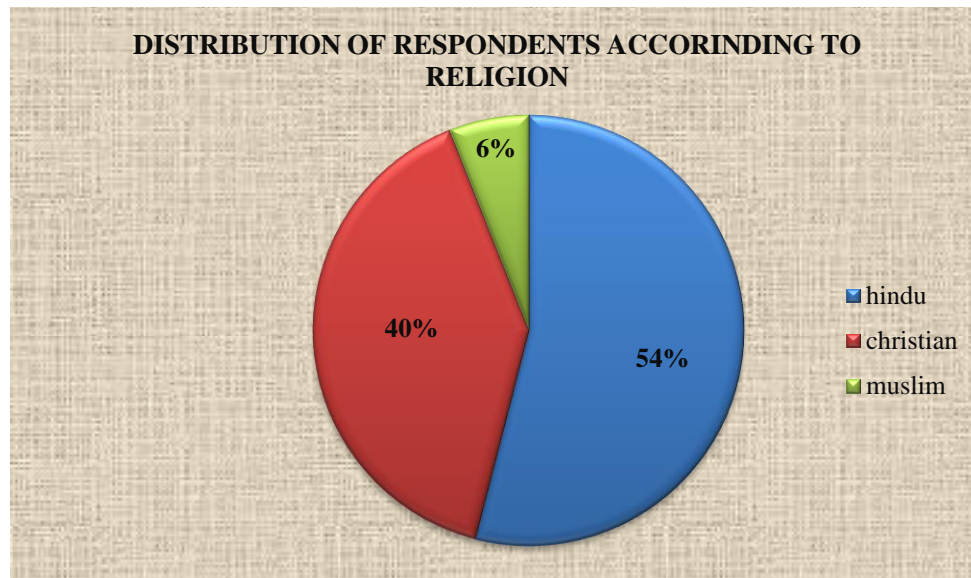


Figure. 5: Percentage distributions of respondents according to their religion

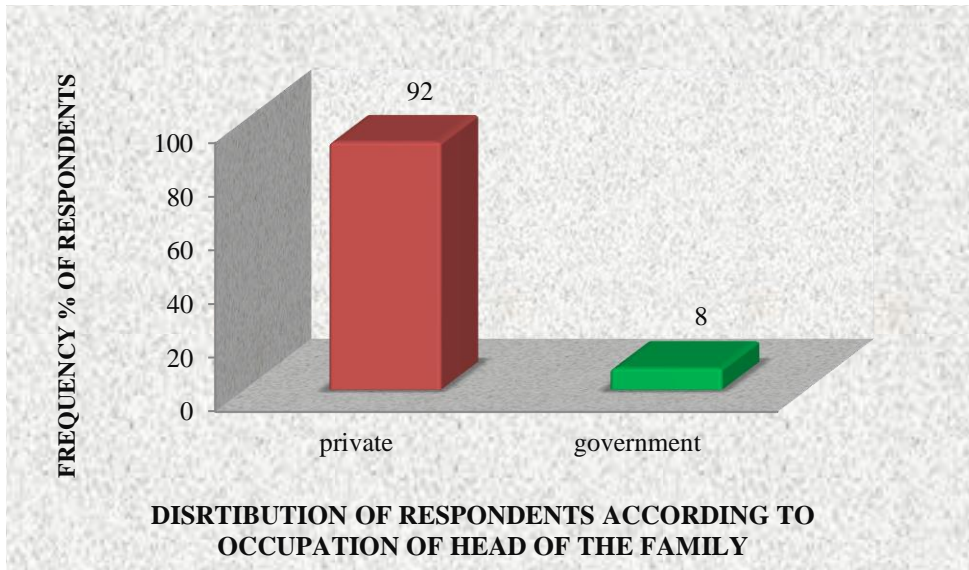


Figure. 7: Percentage distribution of respondents according to the Occupation of the head of the family

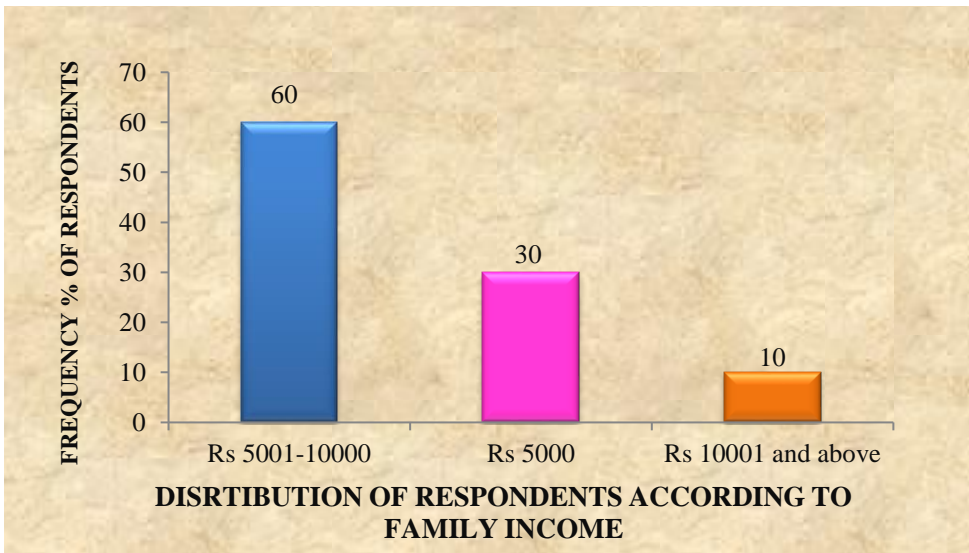


Figure. 8: Percentage distribution of respondents according to the Family income

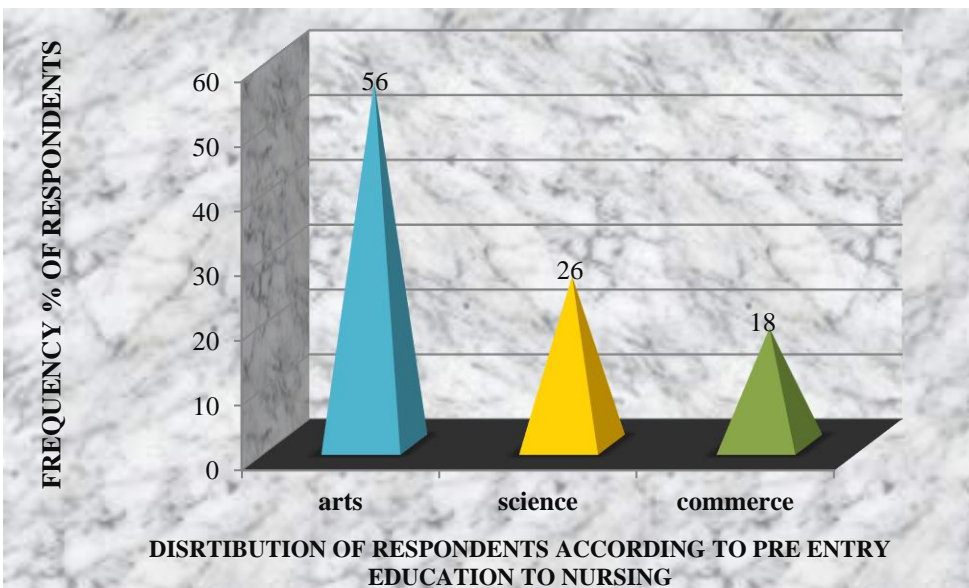


Figure. 9 Percentage distribution of respondents according to the pre entry education to nursing

III. DISCUSSION

Although present study discussion is focused with the objectives of the study to assess the “Effectiveness of computer assisted teaching programme on knowledge regarding the selected Biophysical measures of fetal wellbeing among GNM internees in selected schools at Hassan”

Demographic Variables:

In the present study, the frequency and percentage distribution of respondents based on their demographic variable revealed that majority (68%) were in the age group of 18-21 years; 86% were females; 54% were Hindu's; 84% were from nuclear family; 92% of the head of the family are private employees; 60% of them comes under family income Rs 5001-10000; 56% of them belongs to arts group.

To assess the knowledge regarding selected Biophysical measures of fetal wellbeing among GNM internees.

The present study revealed that the knowledge of majority (72%) of participants regarding selected Biophysical measures of fetal wellbeing was inadequate in the pre-test. The study is also supported by the result of a descriptive correlation study was conducted on labor and delivery nurses experienced more than 20 years attitudes towards intermittent fetal monitoring. Out of 145 nurses 72.4% agreed that intermittent fetal monitoring should be the standard of care. and 48% were unsure about current research findings related to intermittent auscultation.

To evaluate the effectiveness of computer assisted teaching programme on knowledge regarding selected Biophysical measures of fetal wellbeing among GNM internees.

The present study the pre-test and post-test scores showed that the pre-test knowledge level of majority (72%) of subjects regarding selected Biophysical measures of fetal wellbeing was inadequate knowledge and that of 28.0% was moderate knowledge, and nobody had adequate level of knowledge. In post test 78% of respondents had adequate knowledge and that of 22% had moderate knowledge. 117 midwifery and obstetric staff. The results showed that the mean score in early group improved from 50.8 % (pre teaching) to 70.2 % (post teaching). the mean score in control group was 50.3% (test 1) and 54.8% (test 2). the study showed that the computer assisted teaching programme was effective in improving the knowledge of staff nurse regarding cardiotocography.

Association between the posttest knowledge scores and selected demographic variables of GNM internees.

The present study revealed that there was a significant association between the post test knowledge level of respondents and their selected demographic variable viz. family income. Calculated χ^2 value 13.37 was more than the table value 5.99 with 2 df at 0.05% level of significance. Related study of antepartal assessment of fetal wellbeing among staff nurse working in selected aspects hospitals at Bangalore. There was significant association between the post test knowledge scores and the demographic variables like total year of experience and in-service education attended. It was also found that there was no significant association between post test knowledge scores and demographic variables like age, professional qualification, and source of information.

Limitations

1. The study is limited only to the GNM internees of Mangala and NDRK Schools of Nursing, Hassan.
2. The study did not use control group.
3. Only single domain that is knowledge is considered in the present study.
4. The sample for the study was limited to 50 GNM internees.

IV. RECOMMENDATIONS

1. A replication of present study can be conducted with a larger population.
2. Similar study can be undertaken by using other teaching strategies.
3. A Comparative study can be conducted to assess the knowledge of GNM internees of govt/private Schools of Nursing.
4. A Similar study can be conducted on different samples with different settings.
5. A similar study can be conducted with one control group and one experimental group.

V. CONCLUSIONS

The study is helpful to find the knowledge regarding the selected Biophysical measures of fetal wellbeing among GNM interneers in selected schools at Hassan, and suggests that interventions focusing to enhance the knowledge of biophysical measures of fetal wellbeing among GNM interneers would contribute to the improvement of their quality of life of baby. Future researches can investigate the advanced measures Biophysical measures of fetal wellbeing

Ethical Clearance

Ethical clearance was obtained from the institutional ethical committee Government college of Nursing, Hassan

Source of funding: Self

Conflict of Interest: Nil

REFERENCES

- [1] Safe motherhood. [Online] 2010 [cited on 2012 Dec]. Available from URL: <http://safemotherhood.org>
- [2] Perry, Hockenbersry, Lowdermilk. Maternal child nursing care. 4th ed. Missouri: Mosby Elsevier publication; 2010; p. 422
- [3] Foureur RMM. Intra-partum fetal heart rate monitoring using audit methodology to identify areas for practice improvement. New Zealand College of midwives. 2009 April; p.8. [Cited on 2013 Dec]. Available from URL: <http://www.thefreelibrary.com/Intrapartum+fetal+heart+rate+monitoring%3A+using+audit+methodology+to-a0206107524>
- [4] Bhide G, Amarnath, Patki S, Ameet, Levi M. Textbook of Obstetrics for Nurses and Midwives. 1st edition. Jaypee brothers. New Delhi: 2003. p. 62 -63.
- [5] Dutta DC. Text book of obstetrics. 6th ed. Kolkata: New central book agency Limited; 1983. p. 109-111.
- [6] Raines DA. Fetal surveillance: issues and implications. Virginia common wealth university of nursing. J Obstet Gynecol Neonatal Nurs. 1996 Sep; 25(7):559-64. [Cited on 2013 May]. Available from: URL: <http://www.ncbi.nlm.nih.gov/pubmed/8892126>
- [7] Dr.Bano Bushra, Dr.Zahid Bushra, Dr.Hussain. Fetal biophysical profile: as a tool to predict fetal outcome. Professional Med J 2010 September; 17(4):670-675. [cited on 2013 June]. Available from URL: <http://www.theprofesional.com/article/OCT-DEC-2010/PROF-1645.pdf>
- [8] Pillitteri A. Maternal and child health nursing, Care of the child bearing and child rearing family. 6th ed. Philadelphia: Lippincott Williams and Wilkins publication; 2010; p.375.
- [9] Spencer JAD. Deaths related to intrapartum asphyxia. British Medical Journal. 1998 February 28; 316(7132): p: 640. [Cited on 2014 Jan]. Available from URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1113044/>
- [10] Mahlmeister L. Legal implications of fetal heart assessment. Journal of obstetrical and gynecological and neonatal nursing. Article first published online: 28 JUL 2006DOI: 10.1111/j.1552-6909.2000.tb02773.x. [Cited on 2014 Jan]. Available from URL: <http://onlinelibrary.wiley.com/doi/10.1111/j.1552-6909.2000.tb02773.x/abstract>