International Journal of Academic Research and Development
ISSN: 2455-4197; Impact Factor: RJIF 5.22
Received: 22-10-2020; Accepted: 07-11-2020; Published: 24-11-2020
www.academicjournal.in
Volume 5; Issue 6; 2020; Page No. 74-78

A study to assess the effectiveness of structured instructional module (SIM) on knowledge regarding development of placenta and umbilical cord among antenatal mothers in selected hospitals, Nellore

S Elizabeth Jasmine[1*], S Indira[2]
Associate Professor, Department of Obstetrics and Gynaecology, Narayana College of Nursing, Nellore, Andhra Pradesh, India
Principal and Nursing Dean, Narayana Nursing Institutions, Department of Medical Surgical nursing, Nellore, Andhra Pradesh, India

Abstract
Background: As you do not know the path of the wind or how the body is formed in a mother's womb, so you cannot understand the work of GOD, the maker of all things. The placenta is an organ that develops in your uterus during pregnancy. This structure provides oxygen and nutrients to your growing baby and removes waste products from your baby's blood. The Placenta attaches to the wall of your uterus, and your baby's umbilical cord arises from it.
Objectives: 1. to assess the knowledge regarding development of placenta and umbilical cord among antenatal mothers before and after SIM. 2. To associate the level of knowledge regarding development of placenta and umbilical cord with selected socio demographic variables of antenatal mothers before and after SIM.
Materials and Methods: A quantitative research approach was adopted to assess the effectiveness of SIM on knowledge regarding development of placenta and umbilical cord among antenatal mothers. Quasi experimental non-equivalent control group design was used to assess the effectiveness of structured instructional module on level of knowledge between the variables under each section. The samples were selected by using Non – probability convenience sampling technique. The setting of study in Narayana General Hospital and Narayana Superspeciality Hospital, Nellore. Sample size was determined by using single population proportion formula with the assumptions of 95% level of confidence, 10% proportion on knowledge of antenatal mothers on development of placenta and umbilical cord, 4% of margin of error. Finally considering a non-response rate of 8%, the total size was calculated to be 500 antenatal mothers with all trimesters. Among them 250 assigned as experimental group and 250 as control group.
Result: The results reveals that effectiveness of SIM considering the overall aspects, antenatal mothers are gain more knowledge after the administration of the SIM. This 60.82% of knowledge gain is the net benefit of the study which indicates the effectiveness of SIM.

Keywords: development of placenta, umbilical cord and antenatal mothers

Introduction

The placenta is a unique organ of limited life, interposed between two separate individuals. Morphologically it is simply an apposition of fetal membranes to the uterine mucosa (Mossman 1937). It is the site of maternofetal and fetomaternal exchange and in its short life acts as respiratory and alimentary organ, manufactures essential hormones and performs functions later undertaken by the infant's biliary and urinary systems (Aherne 1975).

The placenta is a highly specialized organ that supports growth and development of the fetus and serves as the interface between the maternal and fetal circulations. The placenta functions as the pregnancy organ that delivers nutrients, exchanges respiratory gas, and eliminates toxic waste. The placenta is also an important endocrine organ producing hormones to support and sustain pregnancy and plays a critical role in prevention of pregnancy rejection. Impairment in placental development and/or function has a profound impact on pregnancy outcome.

The umbilical cord is considered both the physical and emotional attachment between mother and fetus. This structure allows for the transfer of oxygen and nutrients from the maternal circulation into fetal circulation while simultaneously removing waste products from fetal circulation to be eliminated maternally.

According To International… Amal Ahmed Abdel Hafez *et al*., (2018) adequate utilization of antenatal health care services is associated with improved maternal and neonatal health outcomes. The objective of the study is to examine the effect of antenatal educational guidelines on mother's knowledge. Descriptive cross section – study design. Obstetrics and gynecology clinic of women's health hospital, Assiut University. A sample of sixty pregnant women attending the obstetrics and gynecology clinic for antenatal care were enrolled in this study and are willing to participate in the study. Three tools were used for this study:

Tool I: A structured interview questionnaire sheet

Tool II: socioeconomic condition scale

Tool III: The education guidelines. Results show that there

was a significant improvement in knowledge level of the study group than those of the control group regarding level of antenatal knowledge. It has been concluded that provision of antenatal educational guidelines was beneficial in improving mother's knowledge regarding different aspects of antenatal period that could have a positive impact on their mother's and child's health. It has been recommended that a large probability sample is needed for generalizability of the study results; Provision of the educational guidelines of the antenatal care to the clinic to be distributed to all the women attending to the clinic is of great value which is prepared in simple Arabic language.

Problem Statement

"A study to assess the effectiveness of Structured Instructional Module (SIM) on knowledge regarding development of placenta and umbilical cord among antenatal mothers in selected hospitals, Nellore."

Objectives of the Study

1. To assess the knowledge regarding development of placenta and umbilical cord among antenatal mothers before and after SIM.
2. To associate the level of knowledge regarding development of placenta and umbilical cord with selected socio demographic variables of antenatal mothers before and after SIM.

Methodology

Research approach: Quantitative research approach was adopted to assess the effectiveness of SIM on knowledge regarding development of placenta and umbilical cord among antenatal mothers.

Research design: Quasi experimental non-equivalent control group design was used to assess the effectiveness of structured instructional module on level of knowledge between the variables under each section.

Setting of the study: The study was conducted in Narayana Medical college hospital and Narayana Superspeciality Hospital, Nellore.

Population

Target Population: The population for the study includes all the antenatal mothers.

Accessible Population: Antenatal mothers in selected hospital.

Sample: The sample for the present study was collected from antenatal mothers between 18 – 37 years.

Sampling Technique: Non-probability convenience sampling technique.

Sample Size: Sample size was determined by using single population proportion formula with the assumptions of 95% level of confidence, 10% proportion on knowledge of antenatal mothers on fetal development, 4% of margin of error.

Finally considering a non-response rate of 8%, the total size was calculated to be 500 antenatal mothers with all trimesters. Among them 250 assigned as experimental group and 250 as control group.

Variables: The factors included in this study are based on consideration in previous studies. Books, Journals, New papers Mass Medias, Workshop conferences.

Independent Variables: SIM

Dependent Variables: Knowledge regarding development of placenta and umbilical cord among antenatal mothers.

Result and Discussion

Table 1: Frequency and percentage distribution of level of knowledge among antenatal mothers on development of placenta and umbilical cord in experimental and control group.

Grade	Level of Knowledge	Experimental Group (n=250)				Control Group (n=250)			
		Pre – Test		Post – Test		Pre – Test		Post - Test	
		F	%	F	%	F	%	F	%
A	Excellent	-	-	198	79.2	-	-	-	-
B	Good	-	-	49	19.6	-	-	-	-
C	Average	41	16.4	3	1.2	46	18.4	46	18.4
D	Poor	209	83.6	-	-	204	81.6	204	81.6

Table 1 Shows the frequency and percentage distribution of level of knowledge among antenatal mothers on development of placenta and umbilical cord in experimental and control group.

In associated to level of knowledge among antenatal mothers on development of placenta and umbilical cord in experimental group 41 (16.4%) were average, 209 (83.6%) were poor in pre-test and 198 (79.2%) were excellent, 49 (19.6%) were good, 3 (1.2%) were average in post-test. In league to level of knowledge among antenatal mothers on development of placenta and umbilical cord in control group 46 (18.4%) were average and 204(81.6%) were poor in pre-test and 46 (18.4%) were average and 204 (81.6%) were poor in post- test. The development of placenta and umbilical cord had fancied towards antenatal mothers with great clarification. So that, the experimental group in post-test had received higher level of knowledge than control group.

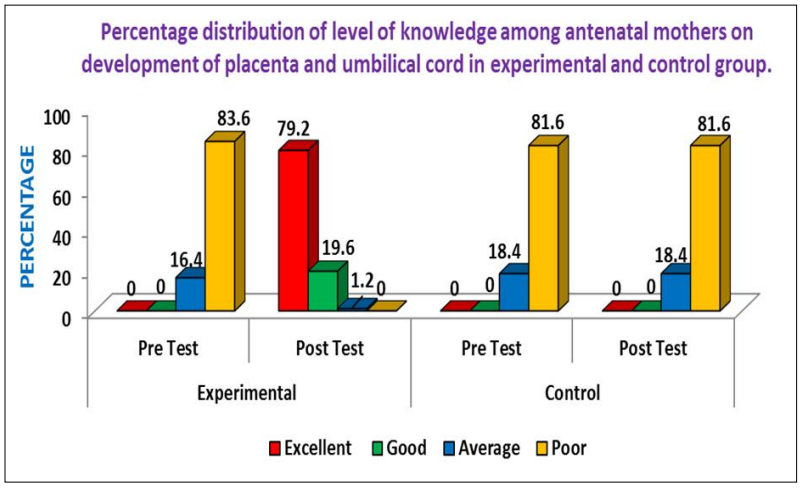

Fig 1

Table 2: Mean and standard deviation on development of placenta and Umbilical cord at experimental and control group for pre and post-test.

Development of placenta and umbilical cord	Pre – Test		Post – Test		(Z-value, p-value)
Experimental	5.364	2.279	18.744	3.112	(54.846,0.000*)
Control	5.248	1.496	5.168	1.602	(0.577,0.564)

Note: *_ P<0.05 level of significant

Value are expressed as mean and S.D. (n=250)

*_ Mean values are statistically different from post – test by Z-test; P<0.05. There was a significant difference between experimental and control group in development of placenta and umbilical cord. Nether less, the null hypothesis is rejected. It contexted that experimental group annexed high level of knowledge rather than pretest and pre-posttest in control group. Therefore, the research hypothesis H_4 was accepted.

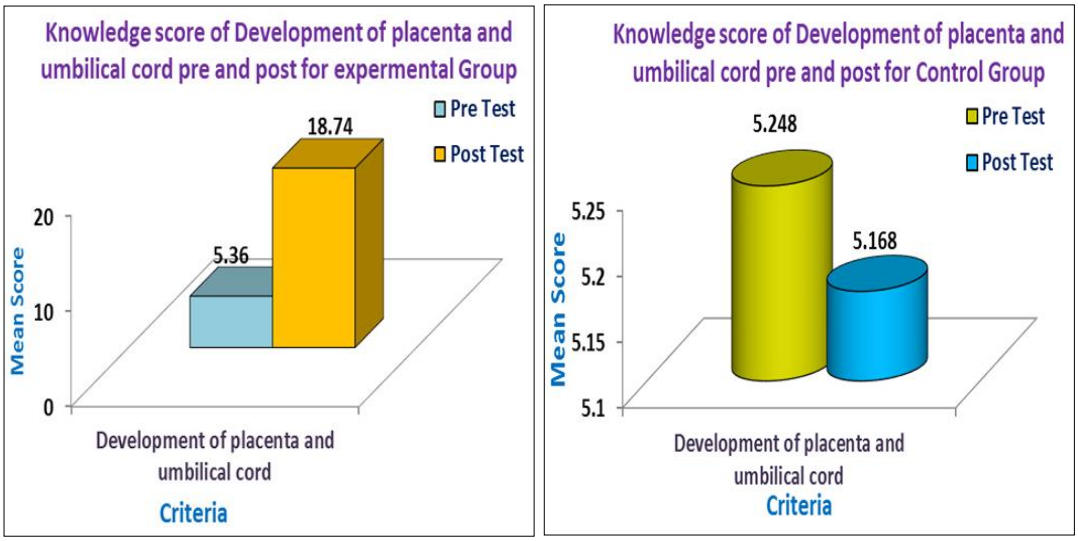

Fig 2: Mean and standard deviation on development of Umbilical cord at experimental and control group for pre and post-test.

Table 2 Mean and standard deviation on importance of amniotic Fluid at experimental and control group for pre and post-test.

Table 3: Effectiveness of SIM on knowledge regarding development of placenta and umbilical cord among antenatal mothers at experimental and control group for post-test.

Test	Criteria	Experimental		Control		(Z-value, p-value)
		Mean	SD	Mean	SD	
Post-Test	Development of placenta and umbilical cord	18.744	3.112	5.168	1.602	(61.328,0.000*)

Values are expressed as mean and S.D. (n=250)

*_ Mean values are statistically different from control by Z-test; P<0.05. The result let out the mean score and standard deviation of post-test among experimental group is 18.744 and 3.112. Here with in control group the mean score is 5.168 with the standard deviation of 1.602. There is difference between the post test scores on experimental and control group. The mean score of experimental group was higher than control group. Wherefore, there was a highly effective improvement of placenta and umbilical cord through the effectiveness of SIM. The development of placenta and umbilical cord is so integrally involved in pregnancy. Most of the antenatal mothers did not known on this organ. No studies has done under the knowledge on development of placenta and umbilical cord among antenatal mothers. It was the interest of the researcher to formulate as a forth objective on fetal development.

Association between the pre-test and post-test level of knowledge on development of placenta and umbilical card in experimental and control group with selected socio demographic variables

There is a significant association between the Pre-test level of knowledge On development of placenta and umbilical card in experimental group gravid, trimesters, education and dietary pattern, where as in control group trimesters, education, income and type of family were Significant. In posttest experimental group religion were significant at the level of $P<0.05$.

Table 4: Effectiveness of SIM on Development of Placenta and Umbilical Cord

	% of pretest knowledge	% of posttest knowledge	% of knowledge gain
Knowledge	24.38%	85.2%	60.82%

Table 4 Show the effectiveness of the SIM considering development of placenta and umbilical cord aspects. The antenatal mothers are gain more knowledge of the administration of SIM. This 60.82% of knowledge gain is the net benefit of the study which indicates the effectiveness of SIM.

Nursing Implications

Nursing education

1. Nurses perform numerous tasks, from providing fundamental healthcare to assisting surgeons with advanced and critical procedures. Those interested in becoming a nurse, can pursue several educational options based on their career goals and level of care they hope to provide.
2. Nurses are the back bone of the health care systems universally and play a vital role in providing health care services globally. Nurses dispense comfort, compassion and caring without even a prescription.

Nursing administration

1. In the event of ever changing knowledge explosion, technological and ever-growing challenges of obstetric nursing, the administration has a responsibility to provide nurses with substantial continuing education opportunities.
2. This will enable the nurses in updating their knowledge, acquiring special skills and administrating high quality care by deputing them for in-service education programmes, special courses and workshops conferences can be arranged and attended by nursing staff.

Nursing research

1. The study has tested the usefulness of self-instructional module on knowledge among antenatal mothers. A new generation of nurse researchers is helping to improve patient care. Florence Nightingale is often seen as the very first nurse researcher.
2. Research provides the foundation for high-quality, evidence-based nursing care. However, there isn't a direct flow of knowledge from research into practice.

Nursing practice

1. Knowledge is of no value unless you put it into practice. Nursing practice is essential to the delivery of high – quality care that optimizes patient's outcomes.
2. Studies continue to show improved outcomes when best practice is used in the delivery of patient care and therefore minimizing technological intervention.

Recommendations

To address the high maternal mortality rates, further research is required to conduct at a national level on midwifery practice to enable appropriate interventions to be introduced nationally. Health education measures should thus be introduced regarding fetal development and expedited action is required to improve the knowledge of antenatal mothers at all levels.

Conclusion

This study identifies important issues that are relevant to development of placenta and umbilical cord and recommends ways to reduce maternal and infant mortality rate through the descriptions of the lived experiences of antenatal mothers that were involved in development of fetus to build a future of a safer patient care environment in contemporary healthcare delivery systems. This is an opportunity where nurses can really make a positive difference to the experience of antenatal mothers during their pregnancy at their stressful time in their lives.

Improving maternal health is one of the millennium development goals. Antenatal women form a large section of our society. However, in many families, these events may become a symbol of sorrow and grief where mothers depart from their babies and families because of inadequate and poor or nil maternal health services provided to these innocent mothers. These maternal deaths could be prevented by applying simple preventive measures. There is a need to target certain groups of population such as rural, uneducated and economically backward and find the way through which the knowledge should be increased regarding the fetus. Moreover, strong commitment, coordination, implementing, monitoring, evaluation and follow up of the programs regarding fetal development.

References

1. Uzma eram, Anees A, Tamanna Z. knowledge regarding Antenatal care scrvices in mothers in zueal areas of Aligarh, 2016, 67-70.
2. Baceun Bhai Patel, Prunaya Guemeet, Dutt rega ramakeishna snalkae, Kapil H Pandga, A joy Mahon, *et al*. A study on knowledge and practices of antenatal care among pregnant women attending antenatal clinic of a tertiary care hospital of pune, Mahalaksh-lea, 2016, 354-362.
3. Kathryn E Baranard, Mary A. Hammond. Infant Behaviour and Development, 1984, 101-113.
4. Hayfaa A Wahabi, Nadia A channa, Amel Fayed, Samia A Esmaeil, Abdut Razaq, *et al*. An open access journal knowledge, Expectations and source of information of pregnant Saudi women undergoing second trimester ultrasound examination, 2014, 2161-0932.
5. Heazell A, Mahomoud S, Pirie AM. Prospective study of womens expectations and knowledge of the mid –

trimester anomaly ultrasound scan, 2003, 88.
6. Liv Oyen Aune. Viewing the unborn child – pregnant womens expectations, ahitoder and experiences regarding fetal ultrasound examination, 2016, 8-13.
7. Anne M, Berndl L. fetal movement monitoring: How are we doing as educators, 2013, 22-28.
8. Verma M, Chhatwal J, Varghese PV. Antenatal period: An educational Opportunity, 1994.
9. Polimetla Apoorva, Uppu Jayalakshmi. A study to amend the knowledge of antenatal Mothers regarding polyhydraminus in antenatal opp at selected hospital chinnakakani, Guntur District, A.P, 2018, 396- 401.
10. Kiserud T, Piaggio G, Carroli G, Widmer M, Carvalho J. A Multinational longitudinal study of ultrasound biometric Meonurements and estimated fetal weight the times 24 January 2017), 2017.