

Effect of Video Assisted Teaching on Knowledge regarding Fetal Development among Primigravida Mothers

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Abstract

Congenital anomalies can contribute to long term disability which may have significant impacts on individuals, families, health care systems, and societies. Hence, the investigator intended to conduct a study to assess the effect of video assisted teaching on knowledge regarding fetal development among primigravida mothers in selected hospital, Thrissur. The objective of the study was to assess the level of knowledge on fetal development among primigravida mothers, evaluate the effect of VAT on knowledge regarding fetal development among primigravida mothers and to find out association of the level of knowledge regarding fetal development among primigravida mothers with their selected demographic variables. Pre experimental design - one group pre test post test design based on Modified J W Kenny's Open System Model (1999) was used. 30 primigravida mothers whose gestational age fall within 24 weeks were selected by purposive sampling technique. Structured knowledge questionnaire on fetal development was administered to primigravida mothers and pre test knowledge on fetal development, consequently VAT on fetal development was given. After 7 days the post test was assessed. The result revealed that the mean pre test score was 13.47 and after the administration of VAT it was increased to 15.77. The calculated 't' value was found to be 14.36 with p value < 0.001 which is highly significant at 0.01 level. There was a true increase found in the post test knowledge score than the pre test score. There is also an association found between knowledge on fetal development with selected demographic variable ie, age of the mother. Thus the study concluded that the VAT on fetal development was effective in improving the knowledge of primigravida mothers.

Keywords: Video Assisted Teaching; Fetal Development; Knowledge; Primigravida Mothers.

Background of the Problem

Growth of the fetus in the pregnancy is a unique, exciting and often joyous time in a women's life, as it highlights the women's amazing creative and

nurturing powers while providing a bridge to the future. Pregnancy comes with some cost however for a pregnant woman needs also to be responsible women so as to best support the health of her future child. The growing fetus depends entirely on its mother's healthy body for all needs.

Consequently pregnant women must take steps to remain healthy and well nourished as it is a period of time in which a developing child resides within a mother and begins to physiologically develop the tissues, organs and other structures needed for survival [1].

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Need and Significance of the Study

Pregnancy is a complex and dynamic condition. Maternal psychological state changes produce a cascade of reactions, including changes in blood flow to the uterus as well as alterations to the intrauterine sensory environment experienced by the fetus. Given the intricate physiological relationship between the pregnant women and fetus, it would be somewhat surprising if dynamic aspects of the maternal psychological environment did not serve to shape neurodevelopment of the fetus and ultimately that of the child [2].

Statement of the Problem

A study to assess the effect of video assisted teaching on knowledge regarding fetal development among primigravida mothers in selected hospital, Thrissur.

Objectives

- To assess the level of knowledge on fetal development among primigravida mothers.
- To evaluate the effect of video assisted teaching on knowledge regarding fetal development among primigravida mothers.
- To associate the level of knowledge regarding fetal development among primigravida mothers with their selected demographic variable.

Operational Definitions

Effect: The outcome of correct response of primigravida mothers received from video assisted teaching on fetal development.

Video Assisted Teaching: It refers to systematically planned and developed teaching programme by the process of conveying information through video clipping to a group of primigravida mothers on fetal development.

Knowledge: It is the factual information of primigravida mothers regarding fetal development

Fetal Development: The growth and maturation of fetus (0 weeks-40weeks) in utero

Primigravida Mother: It refers to the womens who are pregnant for the first time attending in antenatal OPD.

Assumptions

- The primigravida mothers may have inadequate knowledge on fetal development.

- Video assisted teaching may influence the knowledge level of primigravida mothers on fetal development.
- Selected demographic variables may influence the pre test knowledge of primigravida mothers on fetal development.

Hypotheses

H₁: There is a significant difference in pre and post test knowledge of primigravida mothers on fetal development

H₂: There is a significant association between level of knowledge on fetal development among primigravida mothers with their selected demographic variables.

Conceptual/Theoretical Framework

The Conceptual framework for the present study is based on *Modified J. W Kenny's Open System Model (1999) [3]*.

Review of Literature

Studies related to incidence and prevalence of congenital anomalies

A cross sectional observational study on prevalence of congenital anomalies in routine antenatal ultrasound was conducted in Baby Memorial Hospital, Calicut, Kerala, India in November 2015 to August 2016. Retrospective analysis of all antenatal patients who underwent obstetric ultrasound was done. 5390 obstetric ultrasound examinations were performed in 2312 patients. Data was entered into excel sheet and appropriate statistical analysis was performed. The result was 38 cases of congenital anomalies were diagnosed. The antenatal prevalence of congenital anomalies was 16.43 per 1000 and 1.6%. The study concluded that central nervous system anomalies were the most common, followed by cardiovascular and genitourinary system anomalies [4].

Studies related to factors affecting fetal development

A retrospective study on congenital anomalies: the spectrum of distribution and associated maternal risk factors in a tertiary teaching hospital was conducted in Thiruvalla, Kerala.

Inborn babies and babies referred with birth defects admitted in the Neonatal Intensive Care Unit (NICU) along with their mothers were the participants in this study.

During the two-year study period (from June 2014- June 2016), 149 mothers gave birth to 151 babies with congenital anomalies. This included a pair of twin babies and 2 babies of a set of triplets. Deliveries less than 26 weeks were excluded from study.

The data analysed by percentage distribution. Among the babies born with congenital anomalies, the systems most involved were Genito-urinary System (28.5%) and Cardiovascular System (20.5%). The study concluded that prevention by public awareness during adolescence, preconceptional counselling and antenatal screening is stressed [5].

Studies related to knowledge of risk factors among antenatal mothers

A Cross sectional study was conducted at Krishna hospital, Karad in 2016 on knowledge of pregnant women about congenital anomalies. In this maximum mothers were belonging to 21-25 years of age groups, visited 4-6 times for antenatal checkup. The mean knowledge score of mothers regarding birth defect was 11.33. Maximum (63.5%) participants were having good knowledge and 31.5% were having average knowledge.

Only 3 participants had poor knowledge and 7 mothers having very good knowledge. The study concluded that proper health education during antenatal visit and creating awareness through mass media will improve mother's knowledge hence incidence and prevalence of birth defect can be reduced [6].

Methodology

Research methodology is a way to systematically solve the research problems. It may be understood as the science of studying how research is done scientifically.

Research Approach

In this study Quantitative approach was adopted. This approach has been selected for evaluating the effect of Video Assisted Teaching on fetal development among primigravida mothers.

Research Design

The research design used for the present study is Pre - Experimental design (One group pre test post-test design).

Schematic Representation of the Research Design

The Schematic representation of the research design is given below:-

Day 1	Day 1	Day 7
O1	X	O2

O1 - Pre test assessment of primigravida mothers on knowledge regarding fetal development.

X -Intervention (Video Assisted Teaching Programme on fetal development).

O2 - Post test assessment of primigravida mothers on knowledge regarding fetal development.

A detailed schematic representation of the study has been presented in Figure 2.

Variables

The variables identified in this study are independent variable, dependent variable and demographic variable.

Independent Variable

In the present study, the independent variable is Video Assisted Teaching Programme on fetal development.

Dependent Variable

In the present study, the dependent variable was the knowledge of primigravida mothers on fetal development.

Setting of the Study

Present study was conducted in antenatal OPDs of Aswini Hospital, Thrissur, which is located in Thrissur city near to Vadakkechira bus stand. In each of these antenatal OPDs minimum 20-25 antenatal mothers visit for consultation and antenatal check-up daily.

Population

In this study the population consist of Primigravida mothers attending antenatal OPDs of Kerala.

Sample and Sampling Technique

In this study the sample consist of 30 primigravida mothers attending antenatal OPDs of Aswini Hospital, Thrissur.

Sampling Technique- purposive sampling technique.

Inclusion Criteria

- Primigravida mothers who are willing to participate in the study.
- Primigravida mothers whose gestational age within 24 weeks.

Exclusion Criteria

- Those who are not able to read Malayalam.
- Primigravida mothers who are hospitalized.

Tools/Instruments

Development of Tool

For the present study, following tools were used

Section A: Demographic profile of primigravida mothers

Section B: Structured knowledge questionnaire on fetal development

Section C: Video Assisted Teaching program on fetal development.

Content Validity

In order to ensure the content validity for the present study, the investigator submitted the tools which included the demographic profile of primigravida mothers, structured knowledge questionnaire on fetal development and lesson plan on VAT along with synopsis that includes statement of the problem, objectives, assumptions, hypothesis, operational definition, conceptual frame work, research design and plan for analysis, criteria check list for validating tool and score key.

It was submitted to 6 experts (2 Gynaecologist, 3 Nursing experts and 1 language expert). The experts were requested to give their opinion regarding accuracy, relevance, and appropriateness of the content against criteria for tool validation. Modifications were needed for 3-4 items, based on the experts suggestion and recommendations the tool was modified after discussion with the guide.

Reliability of the Tool

Reliability was established by split half method using Karl Pearson correlation coefficient method. The reliability score obtained for structured knowledge questionnaire was $r = 0.8$. Hence the tool was considered to be reliable for the study.

Pilot study

The pilot study was conducted at antenatal OPDs of Aswini hospital, Thrissur between 26.12.2016 to 31.12.2016. By purposive sampling technique 3 primigravida mothers were selected from antenatal OPDs who met the inclusion criteria. The investigator collected pre test data from 3 primigravida mothers by administering the demographic profiles and structured knowledge questionnaires on fetal development followed by Video Assisted Teaching Programme on fetal development on the same day. Post test was done after 7 days. Data collected were tabulated and analysed using descriptive statistical method. The result ascertained the feasibility and practicability of the study.

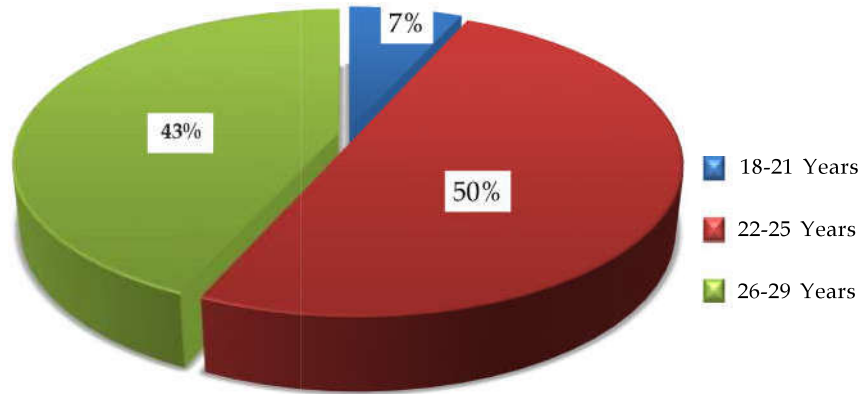
Data Collection Process

The investigator conducted main study during the period between 2.1.2017 to 28.1.2017. The samples of 30 primigravida mothers were selected on the basis of inclusion criteria by using purposive sampling technique. Everyday 20-25 antenatal mothers consulted the each OPD from which the investigator had selected 2 or 3 samples from each OPD who met the inclusion criteria. After brief self introduction the investigator explained the purpose of the study and obtained informed consent from the subjects, the arrangements were made to conduct study and video presentation nearby the vacant room where the primigravida mothers were made to sit comfortably.

Initially investigator administered the structured knowledge questionnaires on fetal development to the samples. The approximate time took by the samples to answer the question is 20-30 minutes. Followed by that investigator carried out video assisted teaching on fetal development for 30 minutes in vacant room. The primigravida mothers were asked to review after 7 days for the post test after one week investigator conducted post test by administering the same tool on fetal development. Primigravida mothers showed interest in attending the video assisted teaching and filling the questionnaires. Data collected were tabulated and analysed using descriptive and inferential statistical method.

Plan for data analysis

Paired 't' test was used to assess the effect of video assisted teaching. Association between the level of knowledge with their selected demographic variables was assessed by Spearman's Rank Correlations and independent 't' test.



Graph 1:

Section B: Description on assessment of pretest and posttest level of knowledge on fetal development among primigravida mothers.

Table 1: Frequency and percentage distribution of primigravida mothers according to age and religion

Sl. No.	Level of knowledge	Scoring grade	Frequency (N)	Percentage (%)
1	Inadequate	0-12	4	13.3
2	Moderate	13-24	26	86.7
3	Adequate	25-30	0	0

Table 2: Assessment of Pre test level of knowledge score of primigravida mothers on fetal development (N=30)

Sl. No.	Level of knowledge	Scoring grade	Frequency (N)	Percentage (%)
1	Inadequate	00-12	0	0
2	Moderate	13-24	29	96.7
3	Adequate	25-30	1	3.3

Section C: Description on effect of video assisted teaching on knowledge regarding fetal development among primigravida mothers

Table 3: Assessment of post test level of knowledge score of primigravida mothers on fetal development (N = 30)

Sl. No.	Knowledge	Mean	SD	DF	t-value	p-value
1	Pre test	13.47	2.70	29	14.366*	<0.001
2	Post test	15.77	2.64			

** Significant at 0.01 level

Section D: Description on association of level of knowledge regarding fetal development among primigravida mothers with their selected demographic variable

Table 4: Association of level of knowledge score of primigravida mothers on fetal development with selected demographic variables such as age and family income per month (N=30)

Sl. No.	Demographic Variables	Correlation	p-value
1	Age of mother	0.371*	0.044 ^{ns}
2	Family income per month	-0.036	0.851

* Significant at 0.05 level; ns non significant at 0.05 level.

Analysis and Interpretation

Section A: Description on demographic profile of the primigravida mothers.

Table 4 shows the association of pre test level of knowledge with demographic variables like age and family income per month. As many of the cell frequencies are less than 5 instead of Chi square test,

Spearman's Rank Correlation was done for the association.

Study finding revealed that Spearman's Rank Correlation value for age is 0.371; p value is 0.044 which is significant at 0.05 level. So there is a positive linear correlation between age and knowledge, indicating that as age increase knowledge also increases. Hence, the research hypothesis was accepted and null hypothesis was rejected. So it is concluded that there is an association between the age of the mother with pre test level of knowledge.

Spearman's rank correlation value for family income per month was -0.036 and the p value was 0.851 which is not significant at 0.05 level. So the correlation between family income per month and knowledge was found to be non significant indicating that there is no linear correlation. Hence the research hypothesis was rejected and null hypothesis was accepted. So it is concluded that there is no association between the family income with pre test level of knowledge.

Results

The mean pre test score on fetal development was 13.47 with SD 2.70 and after rendering video assisted teaching on fetal development the post test score has been raised to 15.77 with SD 2.64. To assess the significance of video assisted teaching on knowledge among primigravida mothers on fetal development paired *t* test was applied. The *t* value for the above mean at degree of freedom 29 was 14.366 ($p < 0.001$) which is highly significant at 0.01 level. So research hypothesis was accepted and null hypothesis was rejected. There was a true increase found in the post test knowledge score than in the pre test indicating that VAT was effective in improving the knowledge of primigravida mothers on fetal development. Thus the null hypothesis was rejected and the research hypothesis was accepted.

Summary

Fetal development is an important and fascinating topic in biology and in real life. As the child grows in his mother's womb, he is at a delicate and vulnerable stage of life. Many of the choices the mother makes can affect the child for the rest of his life. This related reviews revealed that primigravida mothers have less knowledge regarding fetal development and associated risk factors. Thus, the study was undertaken to assess the effect of VAT on, knowledge

regarding fetal development among primigravida mothers at selected OPDs, Thrissur. The investigator adopted pre experimental research design (one group pre test post test design). Total 30 primigravida mothers were participated in the study were selected by purposive sampling method from antenatal OPDs of Aswini Hospital, Thrissur. The primigravida mothers who participated in the study were cooperative and interested in learning. Structured knowledge questionnaire on fetal development was administered to Primigravida mothers and the pre test was assessed. Simultaneously VAT on fetal development was given after 7 days post the post test was assessed. The study result showed that the knowledge level of primigravida mothers increase to 100% after the administration of VAT on fetal development. But there was no association between knowledge of primigravida mothers with their selected demographic variables. Thus it can be summarised that the educational package on fetal development used for the study was collectively effective in teaching and learning of primigravida mothers.

Nursing Implications

Nursing Education

- This study brings the need for updating Obstetric and Gynaecological nursing curriculum with various aspects of fetal development and increased emphasis on advancement in early detection of congenital anomalies.
- Nursing students should be trained in planning and implementing health education programme and exhibition on fetal development depending upon the needs of primigravida mothers during pregnancy.

Nursing Practice

- Nursing personnel are in the best position to offer accurate and scientific knowledge to couples who need to be informed about fetal development as a part of giving antenatal and prenatal care.
- The present study finding could help the nurse working in the antenatal outpatient department to provide adequate information regarding the fetal development in order to achieve the concept of healthy mother and healthy baby.

Nursing Administration

- The study finding helps nursing administrator to take the initiative in organizing in service for

staff nurses specially midwives regarding the various aspects of fetal development.

- Nurse administrator may be involved themselves in policy making and budgeting for the antenatal education programmes related to fetal development.

Nursing Research

- There is great need for research in the areas of fetal development health education and measures to minimize the risk factors associated to it.
- This research study helps the nurse researchers to provide appropriate information to primigravida mothers on genetics and genomics.

Limitation

- The number of sample was small which interfered with generalization the finding of the study.
- Only primigravida mothers from OPDs were included in the study so the findings can be generalized only to this group.
- The related reviews on effect of VAT on knowledge regarding fetal development among primigravida mothers was rare which the researcher found difficult during reviewing the literature.

Recommendations

On the basis of investigators acquaintance with the problem and keeping the limitation in view, the following recommendations were suggested for future research:

- Similar study can be replicated on a large sample size to generalize the findings.
- Similar study can be conducted among multigravida mothers.

- The same study can be done with an experimental and a control group.
- A comparative study can be conducted on knowledge of fetal development among primigravida and multigravida mothers.
- A qualitative study can be done to identify the beliefs and perception associated with congenital anomalies during fetal development among primigravida mothers.
- A descriptive study can be conducted among midwives regarding knowledge fetal development in community settings.
- Similar study can be conducted as a part of preconception care in community settings.

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