

Effectiveness of video assisted teaching programme on knowledge regarding non pharmacological pain relieving intervention for children among staff nurses in selected hospital

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Abstract: The purpose of the study is to assess effectiveness of video assisted teaching program on knowledge regarding non pharmacological pain relieving intervention for children in selected hospital. A structured questionnaire is used to assess the knowledge of the staff nurse regarding non pharmacological pain relieving interventions for children in selected hospitals. In the pre-test more than half (53.3%) of the staff nurses had average knowledge, 40% of them had poor knowledge and 6.7% had good knowledge regarding non-pharmacological pain relieving interventions before the video assisted teaching program, but in the post test there was significant improvement in the knowledge scores 80 % of nurses had good knowledge. None of the demographic variables was found to have significant association with knowledge of the staff nurses. Hence the video assisted teaching regarding non pharmacological pain relieving interventions for children is effective in rendering knowledge and bringing awareness.

Keywords: Non Pharmacology; pain; Children; Nurse

1. Introduction:

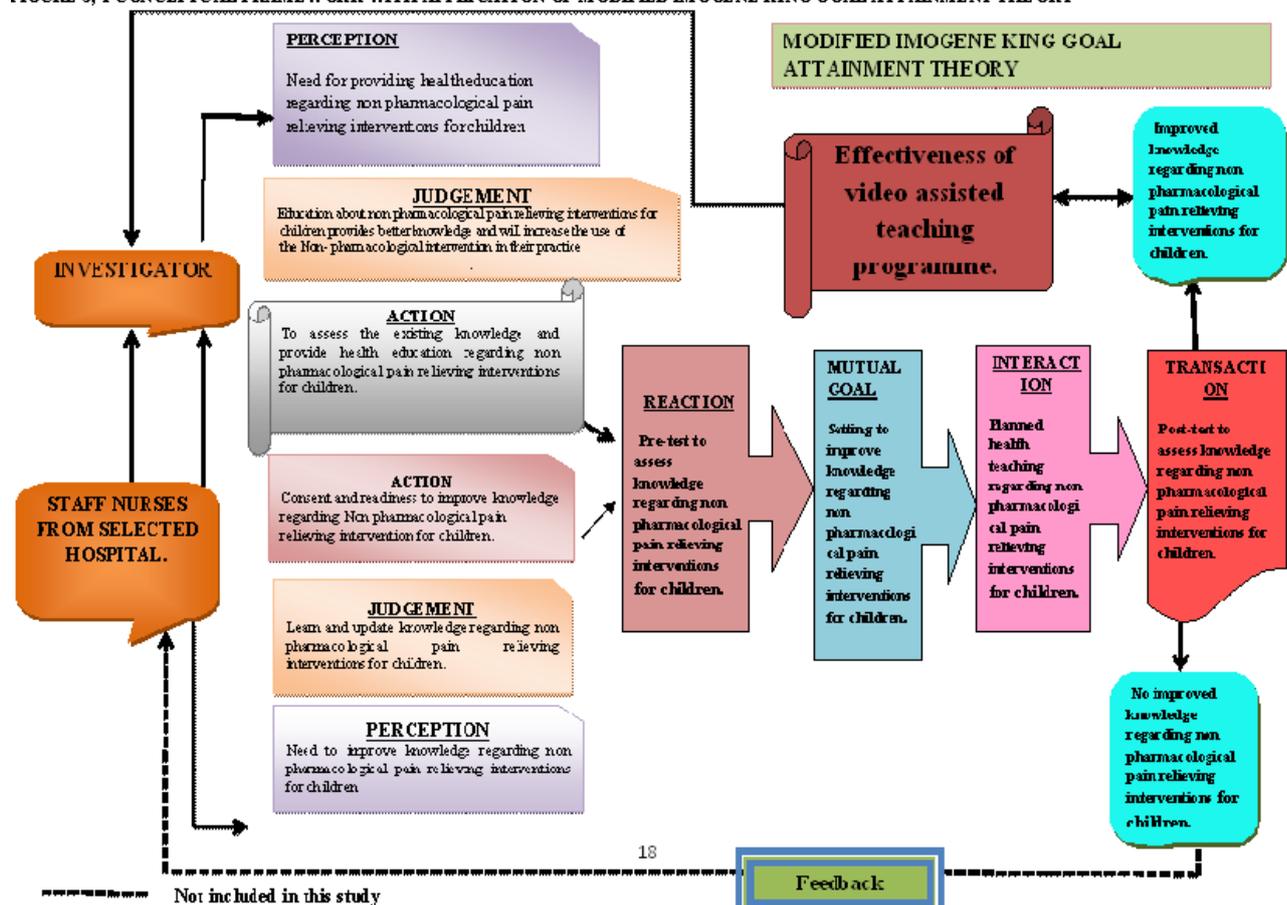
Pain is one of most remarkable experiences of human being lives. Pain is a strong unpleasant sensation with a strong emotional association. Pain is an unpleasant feeling that is equally experienced by all human beings, young and old. But pain if not managed early in life can lead to deleterious effects in later life. The role of nurse is vital in the assessment and management of pain experienced by children during hospitalization. Assistance provided to children with pain requires unique skills of the nursing team, taking into account the subjectivity with which pain is felt by patients. In this sense, pain relief will provide children with conditions to adequately recover, which sends us to humanization and ethical principles which

should permeate nursing care. Dealing with painful children is still a major challenge for health professionals, among them the nursing team which, in addition to living with children's development peculiarities, should respect their right not to feel pain when there are ways to avoid it. So, professionals shall look for means to minimize hospitalization damages for their development, in the sense of strengthening the links between children and their relatives.

1.1 Conceptual Framework:

King's goal attainment theory as a basis of conceptual framework, which is aim to give video assisted teaching programme on knowledge regarding non pharmacological pain relieving interventions for childrento staff nurses.

FIGURE 3; 1 CONCEPTUAL FRAMEWORK WITH APPLICATION OF MODIFIED IMOGENE KING GOAL ATTAINMENT THEORY



2. Review of Literature:

According to **Whaley and Wong's**, schooler children easily distracted even though they have different temperaments. In order to decrease the painful experience during procedures diversional activities in the form of play, game, radio, video-cassette recorder and television can be used. Cartoon movies are successful diversion for a child who is hospitalized.

Gold JI, Kim SHet.al (2012) conducted a study on effectiveness of virtual reality for pediatric pain distraction during I.V. placement. Twenty children (12 boys, 8 girls) requiring I.V. placement for a magnetic resonance imaging /computed tomography (MRI/CT) scan were randomly assigned to two conditions: (1) virtual reality (VR) distraction using street luge (5DT), presented via a head-mounted display, or (2) Standard of care (topical anesthetic) with no distraction. Responses from the Faces Pain Scale Revised indicated a fourfold increase in affective pain within the control condition. There was a sufficient amount of evidence supporting the efficacy of street luge as a pediatric pain distraction tool during I.V. placement: an adequate level of presence, no simulator sickness, and significantly more child, parent, and nurse – reported satisfaction with pain management.

BellieniCV ,Raffaelli M et.al(2009) conducted a study to assess the analgesic effect of watching TV during venipuncture. 69 children aged 7-12 years were randomly divided into three groups: a control group (C) without any distraction procedure, a group (M) in which mothers performed active distraction, and a TV group (TV) in which passive distraction (a TV cartoon) was used. Main pain levels rated by the children were 23.04 (SD 24.57), 17.39 (SD 21.36), and 8.91 (SD 8.65) for the C, M, and TV groups, respectively. Main pain levels rated by mothers were 21.30 (SD 19.9), 23.04 (SD 18.39), and 12.17 (SD 12.14) for the C, M, and TV groups, respectively. Scores assigned by mothers and children indicated that procedures performed during TV watching were less painful ($P<0.05$) than control or procedures performed during active distraction.

Biermeier AW, Sjoberg I, et.al(2009) conducted a study to evaluate the effect of self – selected distractors (ie bubbles, I Spy: super challenger book, music table, virtual reality glasses, or handheld video games) on pain, fear, and distress in 50 children and adolescents with cancer, ages 5 to 18, with venipuncture. Participants were randomized to the comparison group ($n=28$) to receive standard care or intervention group ($n=22$) to receive distraction plus standard care. Self – reported pain and fear were significantly correlated ($P=0.1$) within treatment groups but not

significantly different between groups. Intervention participants demonstrated significantly less fear ($P<0.001$) and distress ($P=0.03$) as rated by the nurse and approached significantly less fear ($p=0.07$) as related by the parent.

Neil LS, William TZ et.al (2007) conducted an evidence based study on pain reduction during immunization in children. Out of the different methods, they also studied about bright toys in reduction of pain with two literature evidences. 88 children scheduled for intramuscular injection of immunization were randomly assigned to 2 groups. Experimental group received 10 minutes of distraction during injection procedure and the control group received the standard injection with parental presence. The result found that experimental group reported slight but statistically significant reduction in pain of injection 13.5 vs 21.5 in a visual analogue scale ($p=.03$). The result was 1.77 vs. 2.86 on a 10 point visual analogue scale ($p=.0001$). Thus this evidence based review suggests that toys shown during immunization, clearly reduces pain.

Salantera S. (2006) conducted a study on nurse's knowledge about pharmacological and non pharmacological pain management in children. The convenience sample consisted of 265 nurses working on children's wards in university hospitals. Data were collected using an instrument designed for the study. The results showed gaps in the knowledge base of nurses with regard to both pharmacological and non-pharmacological pain management in children. The education and the area of expertise were significant influences on knowledge scores. Nurses should take a more active role in seeking new information and also should be encouraged to use non pharmacological methods that let the children be active participants in their own care.

Ms Devi Sunikumari (2011) conducted a study to evaluate the effectiveness of lecture cum demonstration versus video-assisted teaching on knowledge and practice of breastfeeding technique among primipara. A comparative study was done on 60 samples. 30 sample received lecture on breast feeding technique and 30 samples are provided video-assisted teaching, after pre-test. On 7 days after post test was administered, finding revealed that there is significant difference in knowledge scores among lecture cum demonstration and video-assisted teaching, but was no significant difference in practice scores and both lecture cum demonstration and video-assisted teaching are equally effective.

3.Objectives:

- To assess the existing knowledge of staff nurses regarding non pharmacological pain relieving interventions for children.
- To determine the effect of video assisted teaching programme on knowledge regarding non pharmacological pain relieving interventions for children.
- To find an association between knowledge of staff nurses with selected demographic variables.

4. Materials and Methods:

4.1. Research Approach:

The present study is based on evaluative approach.

4.2 Research Design:

Pre-experimental one group pre-test and post-test design is adopted for the present study. The one group pre-test design provides a comparison between a group of subjects before and after the experimental treatment.

4.3 Variables:

In this present study, **the independent variable** is Video assisted teaching regarding non pharmacological pain relieving interventions for children. **The dependent variable** is the knowledge of staff nurses regarding non pharmacological pain relieving interventions for children.

4.4 Setting of the Study:

The setting of the present study is selected hospitals of Pune city.

4.5 Sample and Sampling Technique:

In the present study the investigator has used a non-probability convenient sampling technique. The investigator preferred to select this sampling technique because of the constraints of time in order to complete the data collection within the stipulated time. The sample selected for the present study comprises of staff nurses working in NICU, PICU and paediatric ward in selected hospitals.

4.6 Sample size:

The sample size for the present study is 30 staff nurses working in NICU, PICU and paediatric ward. As per their presence and consent, on an average 30 samples have been taken for the present study.

4.7 Inclusion criteria:

- Staff nurses working in pediatric ward, pediatric intensive care unit (PICU) and neonatal intensive care unit (NICU).
- Staff nurses who are willing to participate in this study

4.8 Exclusion criteria:

- Those staff nurses who have gained previous knowledge regarding on pharmacological pain management.
- Auxiliary Nurse Midwives are excluded.

4.8 Tool Preparation:

A structured questionnaire to assess the demographic data and the knowledge of the staff nurses regarding non pharmacological pain relieving interventions for children in selected hospitals.

Study instruments used by the investigator consisted of two sections:

- **Section1:** Demographic data of the subjects. A total of 06 items were included in this section.
- **SectionII:** Structured questionnaire regarding knowledge of non-pharmacological pain relieving interventions for children.

I. Validity:

To ensure the content validity of the prepared tool, it was given to 8 experts, which included nurses and doctors from various fields.

II.Reliability:

To test the reliability of the tool, it was estimated the Spearman's Brown coefficient of correlation by using Split-half method. The reliability coefficient was found by 0.821 which shows that the tool is reliable.

4.10 Data Collection:

The investigator approached the study subject, explained to them the purpose of the study and obtained the consent after assuring the subjects about the confidentiality of the data. The pre-test has been taken for selected staff nurses, during which the questionnaire was distributed and filled and taken back by the investigator. Video assisted teaching programme was given to the group. The average time taken to fill the questionnaire, Video assisted teaching programme and discussion was 15-20 minutes. The post-test has been conducted on the 5th day to assess the effectiveness of Video assisted teaching programme.

4.11 Data Analysis:

Demographic variables would be analysed in terms of frequency and percentage in the form of tables and graphs. The data will be processed by using Wilcoxon test, Mann Whitney test and ANOVA (Analysis of Variance) to compare between the pre-test and post-test knowledge scores, determine significance of mean difference between the pre-test knowledge score and mean post-test knowledge scores and determine the relationship between knowledge and selected demographic variables.

4.12. Results:

The collected data is tabulated, analysed, organized and presented under the following headings:

- **Section I:** Distribution of samples in relation to demographic data.
- **Section II:** Data analysis to assess the level of knowledge regarding non pharmacological pain relieving interventions for children among staff nurses.
- **Section III:** Analysis of data related to effectiveness of video assisted teaching on the knowledge score of staff nurses.
- **Section IV:** Description of comparison between selected demographic variables.

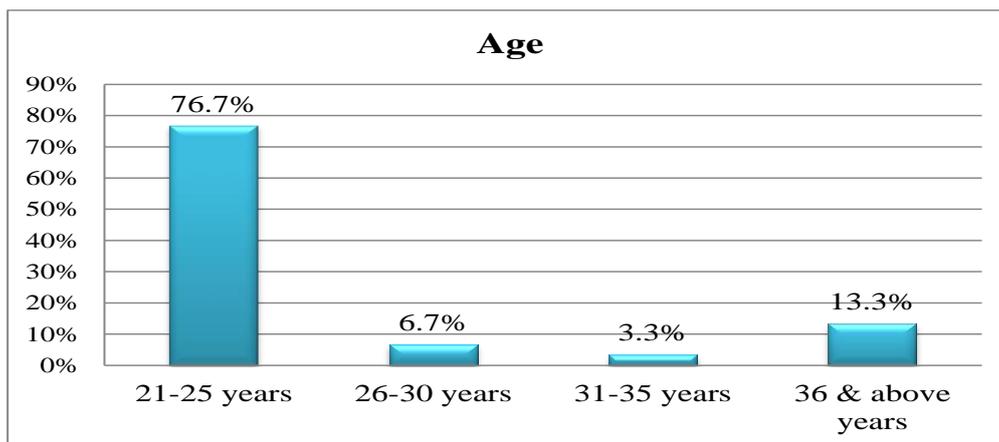
4.12.1. An analysis of data related to personal characteristics of samples (staff nurses) in frequency and percentage

- Majority of subjects 23 (76.7 %) are belonging to the age group between 21 - 25 years, 4 (13.3 %) are

from age group between 36 & above years and 2(6.7%) are from age group between 26-30 years and 1 (3.3 %)is from the age group 31-35 respectively.

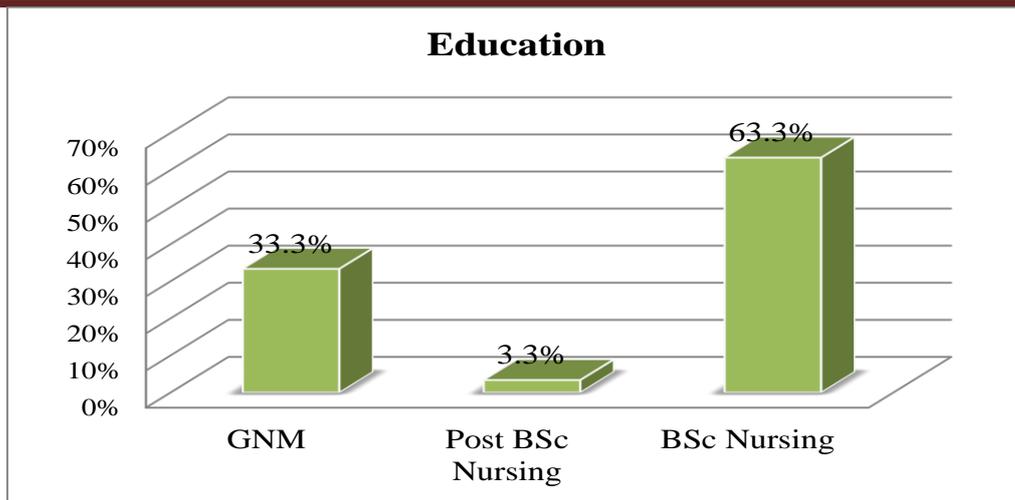
- Majority of subjects 30 (100 %) are females and no one (0 %) belonged to male gender.
- Majority of subjects 19 (63.3 %) have completed BSc Nursing education, 10(33.3 %) have completed General Nursing Midwifery (GNM) and 1 (3.3 %) have completed Post Bsc Nursing Education.
- Majority of subjects 12 (40%) are working in Pediatric ward and 9 subjects (30 %) are employed in NICU and PICU respectively.
- Majority of subjects 25 (83.3%) have upto 5 years of experience, 3 subjects (10.0 %) have 11-15 years of experience, and 2 (6.7 %) subjects have more than 15 years of experience.

GRAPH 1.1 (a): Bar diagram showing age wise distribution of the subjects.



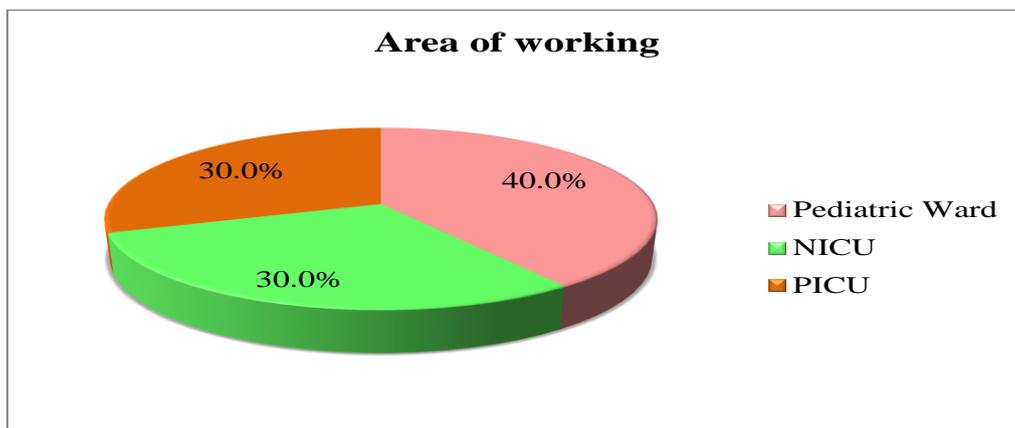
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GRAPH 1.1 (b): Bar diagram showing education wise distribution of the subjects.



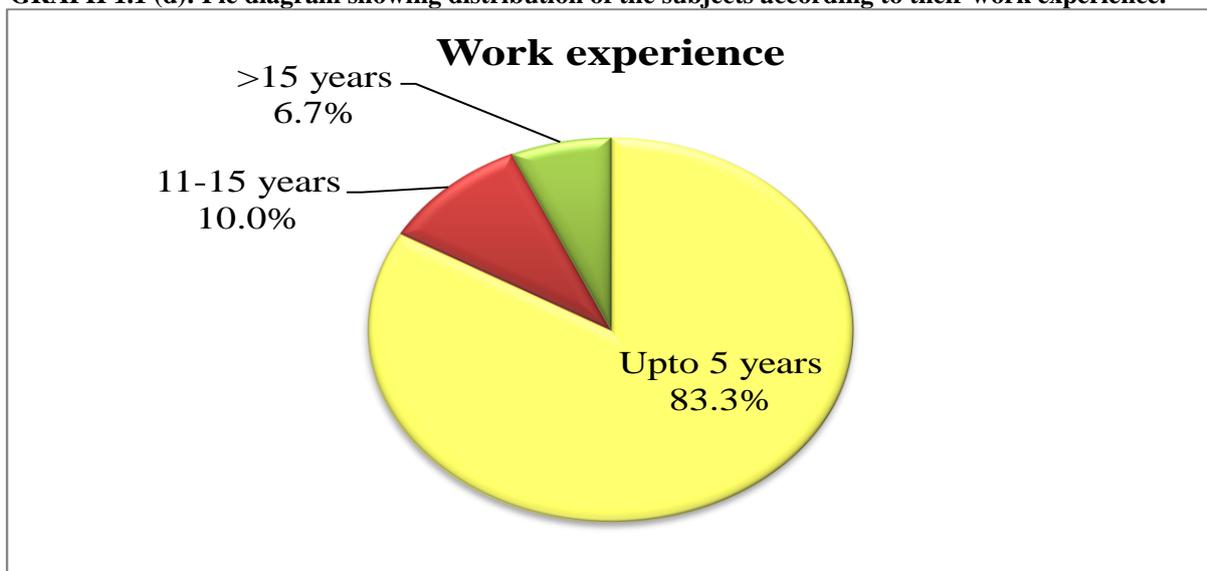
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GRAPH 1.1 (c): Pie diagram showing distribution of the subjects according to their areas of working



GRAPH 1.1 (c): Majority of subjects 12 (40%) are working in Pediatric ward and 9 subjects (30 %) are employed in NICU and PICU respectively.

GRAPH 1.1 (d): Pie diagram showing distribution of the subjects according to their work experience.



GRAPH 1.1 (d): Majority of subjects 25 (83.3%) have upto 5 years of experience, 3 subjects (10.0 %) have 11-15 years of experience, and 2 (6.7 %) subjects have more than 15 years of experience.

4.12.2. An analysis of data related to assessment of the knowledge of staff nurses regarding non-pharmacological pain relieving interventions for children

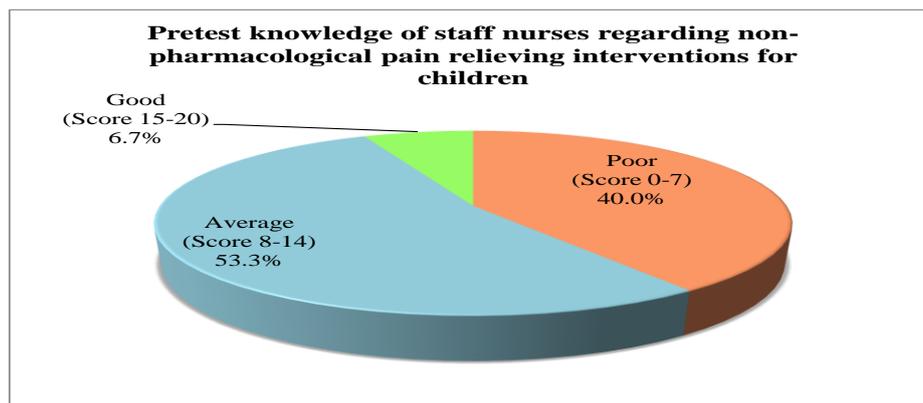
N=30

Table 1.2: Knowledge of staff nurses regarding non- pharmacological pain relieving interventions for children before video assisted teaching program

Knowledge	Pretest	
	Frequency	%
Poor (Score 0-7)	12	40.0%
Average (Score 8-14)	16	53.3%
Good (Score 15-20)	2	6.7%

In pre-test, more than half (53.3%) of the staff nurses had average knowledge (Score 8-14), 40% of them had poor knowledge (score 0-7) and 6.7% of them had good knowledge (score 15-20) regarding non-pharmacological pain relieving interventions for children.

GRAPH 1.2:Pie diagram showing pre-test knowledge score wise distribution of subjects regarding non-pharmacological pain relieving interventions in children.



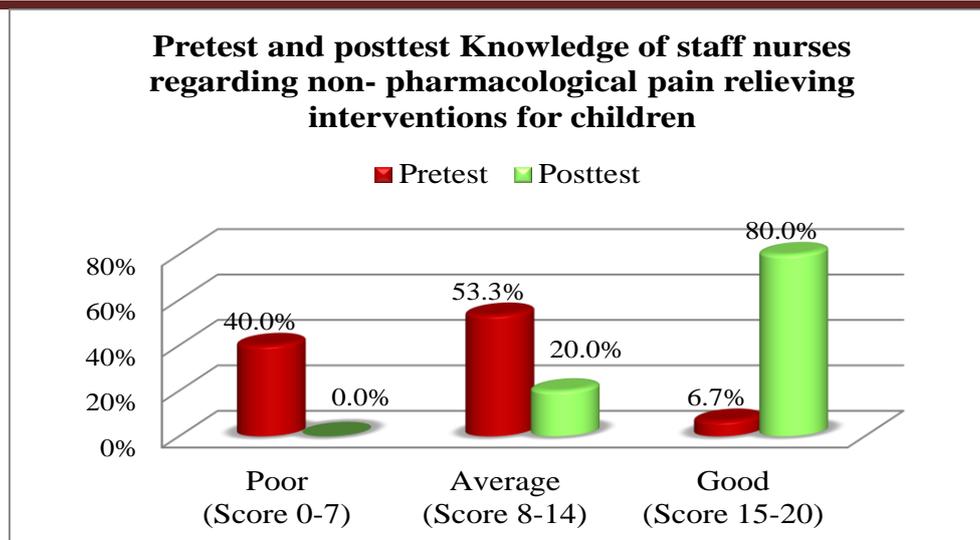
N=30

Table 1.3: Comparison of pre-test and post -test knowledge scores regarding non - pharmacological pain relieving interventions for children among staff nurses

Knowledge	Pre-test		Post-test	
	Freq	%	Freq	%
Poor (Score 0-7)	12	40.0%	0	0.0%
Average (Score 8-14)	16	53.3%	6	20.0%
Good (Score 15-20)	2	6.7%	24	80.0%

In pre-test, more than half (53.3%) of the staff nurses had average knowledge (Score 8-14), 40% of them had poor knowledge (score 0-7) and 6.7% of them had good knowledge (score 15-20) regarding non-pharmacological pain relieving interventions for children. In post-test, majority of 80% of the staff nurses had good knowledge (Score 15-20) and 20% of them had average knowledge (score 8-14) regarding non-pharmacological pain relieving interventions for children. This shows that there is remarkable improvement in the knowledge of the staff nurses regarding non- pharmacological pain relieving interventions for children.

GRAPH 1.3:Bar diagram showing pre-test and post-test knowledge score wise distribution of subjects regarding non-pharmacological pain relieving interventions in children.



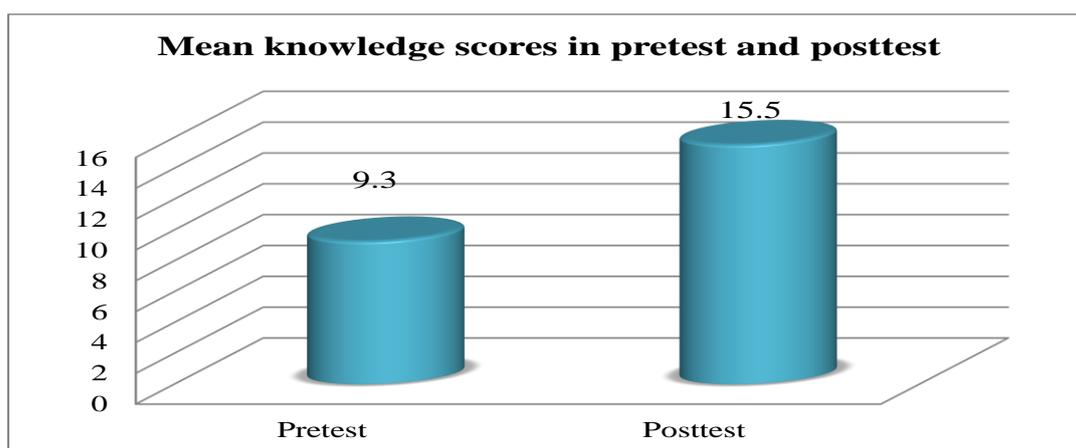
4.12.3. An analysis of data related to the effect of video assisted teaching program on knowledge regarding non-pharmacological pain relieving interventions for children among staff nurses

Table 1.4: Paired t-test for effectiveness of video assisted teaching program on knowledge regarding non-pharmacological pain relieving interventions for children among staff nurses.

	Mean	SD	T	df	p-value
Pre-test	9.3	2.9	15.1	29	0.000
Post-test	15.5	2.4			

Investigator applied paired t-test for comparison of knowledge scores of the staff nurses in pre-test and post-test. Average knowledge score in pre-test was 9.3 which increased to 15.5 in post-test. T-value for this comparison was 15.1 at 29 degrees of freedom. Corresponding p-value was 0.000, very small (less than 0.05). The null hypothesis was rejected. The video assisted teaching program was significantly effective in improving the knowledge of the staff nurses regarding non-pharmacological pain relieving interventions for children.

GRAPH 1.4: Bar diagram showing effectiveness of video assisted teaching program on knowledge regarding non-pharmacological pain relieving interventions for children among staff nurses.



4.12.4 .An analysis of data related to the association of knowledge of staff nurses with their demographic variables
Table 1.5: Fisher’s exact test for the association of knowledge with selected demographic variables.

Demographic variable	Knowledge			p-value	INTERPRETA - TION
	Poor	Average	Good		

Demographic variable		Knowledge			p-value	INTERPRETATION
Age	21-25 years	9	12	2	0.577	Not Significant
	26-30 years	2	0	0		
	31-35 years	0	1	0		
	36 & above years	1	3	0		
Gender	Female	12	16	2	NA	Not Significant
Education	GNM	5	5	0	0.512	Not Significant
	Post BSc Nursing	1	0	0		
	BSc Nursing	6	11	2		
Area of working	Paediatric Ward	4	7	1	0.614	Not Significant
	NICU	3	6	0		
	PICU	5	3	1		
Work experience	Upto 5 years	10	13	2	1.000	Not Significant
	11-15 years	1	2	0		
	>15 years	1	1	0		

*NA-indicates that since there is single category, p-value cannot be calculated.

Since all the p-values are large (greater than 0.05), there is no evidence against null hypothesis. None of the demographic variable was found to have significant association with knowledge of the staff nurses regarding non- pharmacological pain relieving interventions for children.

4.13 Discussion:

The analysis of the data reveals that the staff nurses are having lack of knowledge and video assisted teaching improved knowledge of staff nurses regarding non pharmacological pain relieving interventions for children.

II-Findings related to level of knowledge of staff nurses regarding non pharmacological pain relieving interventions for children in pre & post test

1. In pre-test, more than half (53.3%) of the staff nurses had average knowledge (Score 8-14), 40% of them had poor knowledge (score 0-7) and 6.7% of them had good knowledge (score 15-20) regarding non-pharmacological pain relieving interventions for children. In post-test, majority of 80% of the staff nurses had good knowledge (Score 15-20) and 20% of them had average knowledge (score 8-14) regarding non- pharmacological pain relieving interventions for children. This shows that there is remarkable improvement in the knowledge of the staff nurses regarding non- pharmacological pain relieving interventions for children.

III-Findings related to effectiveness of video assisted teaching on knowledge of staff nurses regarding non pharmacological pain relieving interventions for children

1. Investigator applied paired t-test for comparison of knowledge scores of the staff nurses in pre-test and post-test. Average knowledge score in pre-test was 9.3 which increased to 15.5 in post-test. T-value for this comparison was 15.1 at 29 degrees of freedom. Corresponding p-value was 0.000, very small (less than 0.05). The null hypothesis was rejected. The video assisted teaching program was significantly effective in improving the knowledge of the staff nurses regarding non- pharmacological pain relieving interventions for children.

IV-Findings related to correlation of pre & post knowledge score regarding non pharmacological pain relieving interventions for children with demographic variables.

Since all the p-values are large (greater than 0.05), there is no evidence against null hypothesis. None of the demographic variable was found to have significant association with knowledge of the staff nurses regarding non- pharmacological pain relieving interventions for children.

4.14 Conclusion:

The findings of the present study indicated that staff nurses have inadequate knowledge non pharmacological pain relieving interventions for children during the pre-test. But after the video assisted teaching their knowledge score have increased in the post-test. Hence the video assisted teaching regarding non pharmacological pain relieving interventions for children is effective in rendering knowledge and bringing awareness regarding non pharmacological pain relieving interventions for children participants in their own care.

It is supported by findings of Ms.Rinu .J. George (2009)conducted a study to assess the effectiveness of a video assisted teaching programme on knowledge regarding non pharmacological methods of pain management in children among staff nurses working in pediatric wards of selected hospitals at tumkur. . The convenience sample consisted of 265 nurses working on children's wards in university hospitals. Data were collected using an instrument designed for the study. The results showed gaps in the knowledge base of nurses with regard to non-pharmacological pain management in children. The education and the area of expertise were significant influences on knowledge scores. Nurses should take a more active role in seeking new information and also should be encouraged to use non pharmacological methods that let the children be active participants in their own care. The pre-test mean value was 9.37 with a standard deviation of 2.659. The post-test mean value was 18.53 with a standard deviation of 2.374. Difference between the pre-test and post-test score was found to be statistically significant.

It is supported by findings of Nick Allcock (2010) conducted a study on the effectiveness of tailored video assisted intervention among emergency paediatric nurses [N= 50] on knowledge of pain

management and nurses pain management practices such as documentation of pain, administration of analgesics and non-pharmacological interventions. The results of paired(t) test showed a significant difference between pre and post test scores. The study revealed that video assisted teaching contributed to the improvement of nurse's knowledge of pain management and increased their use ofnon-pharmacological pain relieving interventions.

It is supported by another study of Mr. Clark's ,he conducted a research which shows that nurses in their studies rated their knowledge as fairly adequate, and their mean scores on knowledge and attitude surveys did not reflect any association with their demographic variables. The literature suggests that their knowledge was associated with the information they gained from their hospital and it had no association with any of their demographic variables like age, gender, area of experience and education.

Study findings are also supported by findings of S Salentra (2006),in which she conducted a study on nurses' knowledge about pharmacological and non-pharmacological pain management in children. The convenience sample consisted of 265 nurses workings on children's wards in university hospitals. Data were collected using an instrument designed for the study. The results showed that there remain gaps in the knowledge base of nurses with regard to both pharmacological and non-pharmacological pain management in children. The demographic variables did not have any significant influences on knowledge scores. Nurses should take a more active role in seeking new information and should also be encouraged to use non-pharmacological methods that let the children be active participants in their own care.

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