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Effectiveness of a learning package on knowledge and attitude of staff nurses regarding pediatric pain management

Suresh Patil and Ravi Ajur

Abstract

Background: Pain is one of the most common adverse stimuli experienced by children, occurring as a result of injury, illness, and necessary medical procedures. It is associated with increased anxiety, avoidance, somatic symptoms, and increased parent distress. The pediatric acute pain experience involves the interaction of physiologic, psychological, behavioural, developmental, and situational factors.

Methodology: A quantitative approach with pre experimental one group pretest posttest design was adopted for the study. The samples from the selected hospitals were selected using convenient sampling technique. The sample consisted of 100 staff nurses. The tools used for data collection was structured knowledge questionnaire and structured attitude scale.

Results: The study result reveal that, the post-test mean knowledge scores was found higher [mean=23.48, SD of 4.81] when compared with pre-test mean knowledge score value which was 15.75 with SD of 5.21. The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 17.82. With respect to attitude of participants the post-test mean attitude scores was found higher [mean=50.08, SD of 8.32] when compared with pre-test mean attitude score value which was 38.22 with SD of 10.98. The statistical paired 't' implies that the difference in the pretest and post-test value was found statistically significant at 5% level ($P<0.05$) with a paired 't' value of 13.11. There is partial association between pre-test knowledge scores and no association between attitude scores and socio demographic variables.

Conclusion: Study results showed significant improvement in the level of knowledge and attitude regarding pediatric pain management. Thus, it can be concluded that learning package was effective to increase and update their knowledge and attitude on pediatric pain management.

Keywords: Pediatric pain, knowledge, attitude, learning package, staff nurses

Introduction

Pain is an individual, multi-factorial experience influenced by culture, previous pain events, beliefs, moods, and ability to cope. It may be an indicator of tissue damage but may also be present in the absence of an identifiable cause. The degree of disability in relation to the experience of pain varies; similarly, there is individual variation in response to methods of pain relief^[1].

Differently from the adult patients in pediatric age it is more difficult to assess and treat efficaciously the pain and often this symptom is undertreated or not treated. In some areas this practice still exists and is a likely reflection of persistence of myths related to the infant's ability to perceive pain. Such myths include the lack of ability to perceive pain, remember painful experiences and other reasons^[2].

Pain is one of the most common adverse stimuli experienced by children, occurring as a result of injury, illness, and necessary medical procedures. It is associated with increased anxiety, avoidance, somatic symptoms, and increased parent distress. The pediatric acute pain experience involves the interaction of physiologic, psychological, behavioural, developmental, and situational factors^[3].

The main causes of acute pain in children are from procedures, surgery, trauma and acute medical illness. Each of these has its own particular considerations but nonetheless, regardless of the cause of pain, a number of general factors are important and should be considered in all circumstances to aide successful pain management.

Today, pain in children is not adequately addressed, and yet there is a deficiency of knowledge in the treatment of pain in people of different areas of health, such as physicians, nurses, psychologists, and dentists.

Medical staff often exhibit widespread and inappropriate attitudes towards pain management in children despite the efficacy of a variety of psychological and pharmacological interventions for reductions the pain [4].

A statistically significant proportion (49–64%) of hospitalized children receives inadequate pain management despite the increase in knowledge and available treatments. For this reason, developed and developing countries have tried to improve and evaluate the preparation of health professionals to provide the best standards of care to children in pain [5].

Pediatrics pain management is not exactly the same as adults, paediatrics pain management require more precise knowledge related to this stage of life, medication dosing to pediatrics is quite challenging due to physiological variances between adult and children [6].

Studies conducted in many countries have declared poor knowledge and attitude among pediatric nurses in pain management, for example In Turkey, the mean score for pediatric nurses' pain management knowledge and attitude questionnaire was 38.2% [7].

In many previous studies teaching programs have shown change of knowledge and attitude of health personals. There has been little work on documenting the knowledge, attitude and practices of health care professionals regarding pain management in children in India. Therefore, researcher felt to undertake this study.

Objectives

1. To assess the knowledge and attitude of staff nurses regarding Pediatric pain management in terms of pre-test and posttest knowledge and attitude scores.
2. To evaluate the effectiveness of learning package on knowledge and attitude of staff nurses regarding pediatric pain management by comparing pre-test and post-test knowledge scores.
3. To find the association between the pre-test knowledge scores of staff nurses regarding pediatric pain management and selected demographic variables.
4. To find the association between the pre-test attitudes scores of staff nurses regarding pediatric pain management and selected demographic variables.

Hypothesis

H₁: The mean posttest knowledge scores of staff nurses regarding pediatrics pain management, who have undergone the learning package, will be significantly higher than their mean pre-test knowledge scores.

H₂: The mean posttest attitude scores of staff nurses regarding pediatrics pain management who have undergone the learning package will be significantly higher than their mean pre-test attitude scores.

H₃: The levels of knowledge of staff nurses regarding pediatrics pain management will be significantly associated with their selected personal variables.

H₄: The levels of attitude of staff nurses regarding pediatric pain management will be significantly associated with their selected personal variables.

Methodology

Research Approach: Quantitative Research Approach

Research Design: Pre experimental one group pretest-posttest design

Sampling technique: Non-Probability; Convenient Sampling Technique

Sample size: 100

Setting of study: Selected Hospitals of Belagavi

Tool used for data collection: Following tools used for the data collection

- **Part I: Demographic data:** It consists of 7 items related to demographic data of participants.
- **Part II: Structured knowledge questionnaire:** This section consists of 37 structured multiple choice items with the multiple options for each item to assess the knowledge of staff nurses regarding pediatric pain management.
- **Part II: Structured attitude scale:** A structured attitude scale consisted of 13 statements regarding pediatric pain management.

Procedure of data collection

Data was collected after obtaining administrative permission from selected hospitals of Belagavi. The investigator personally explained the participants the need and assured them of the confidentiality of their responses. The investigator gathered participants in a comfortable room and conducted Pre-Test in selected hospital, Soon after the test, the learning package was administered. On 8th day post-test was given with the same structured knowledge and attitude scale and took about 45 minutes to complete the post-test.

Results

a. The findings related to socio-demographic variables of participants

Table 1: Frequency and percentage distribution of socio-demographic variables of participants N=100

Sl No	Demographic variables	Frequency (f)	Percentage (%)
1	Age in years		
	a) 20 - 30	40	40
	b) 31 - 40	36	36
	c) 41 -50	24	24
2	Gender		
	a) Female	75	75
	b) Male	25	25
3	Educational Qualification		
	a. Diploma Nursing	43	43
	b. Basic Bsc Nursing	38	38
	c. Post-Basic Bsc Nursing	19	19
4	Area of working		
	a. Emergency Unit	39	39
	b. Pediatric ICU	33	33
	c. Pediatric ward	21	21
	d. Neonatal ward	7	7
5	Years of Experience		
	a. 0 – 1 year	36	36
	b. 1 – 5 years	34	34
	c. 5 - 10 years	22	22
	d. >10 years	8	8
6	Previous knowledge		
	a) Yes	61	61
	b) No	39	39
7	Source of information		
	a. News papers	23	23
	b. Family & friends	32	32
	c. Social Media	30	30
	d. Other	15	15

b. Distribution of pretest and posttest knowledge scores of respondents.

Table 2: Mean, median, mode, standard deviation and range of pretest and posttest knowledge scores of Respondents N = 100

Area of Knowledge	Mean	Median	Mode	Standard deviation	Range
Pre test	15.75	14.50	14	5.21	2-29
Post test	23.48	24	19	4.81	14-34

Table 2 reveals pretest knowledge score of participants regarding pediatric pain management, it shows that; the pretest knowledge scores respondents mean was 15.75, median was 14.50, mode was 14 with standard deviation

5.21 and score range was 2-29. The posttest knowledge scores respondents mean was 23.48, median was 24, mode was 19 with standard deviation 4.81 and score range was 14-34.

Table 3: Mean, median, mode, standard deviation and range of pretest and posttest attitude scores of Respondents N = 100

Area of attitude	Mean	Median	Mode	Standard deviation	Range
Pre test	38.22	36	53	10.98	16-61
Post test	50.08	51	49	8.32	29-63

Table 3 reveals pretest attitude score of participants regarding pediatric pain management, it shows that; the pretest attitude scores respondents mean was 38.22, median was 36, mode was 53 with standard deviation 10.98 and score range was 16-61. The posttest knowledge scores respondents mean was 50.08, median was 51, mode was 49

with standard deviation 8.32 and score range was 29-63.

c. Distribution Respondent’s Pretest And Post Test Scores According To Their Level Of Knowledge And Attitude
I. Knowledge Scores

Table 4: Frequency and Percentage distribution of respondents according to level of Knowledge regarding pediatric pain management N=100

Level of Knowledge					
Pre test			Post test		
Poor f (%)	Average f (%)	Good f (%)	Poor f (%)	Average f (%)	Good f (%)
25 (25%)	65 (65%)	10 (10%)	00	53 (53%)	47 (47%)

The data presented in the Table 4 depicts the respondent’s level of knowledge during pretest and posttest regarding pediatric pain management; with regard to pretest level of knowledge it shows that, maximum 65(65%) respondents were had average knowledge, 25 (25%) respondents were

had poor knowledge and remaining 10(10%) of respondents were had good knowledge. During post-test maximum 53 (53%) of respondents were had good knowledge and 47(47%) of respondents were had average knowledge.

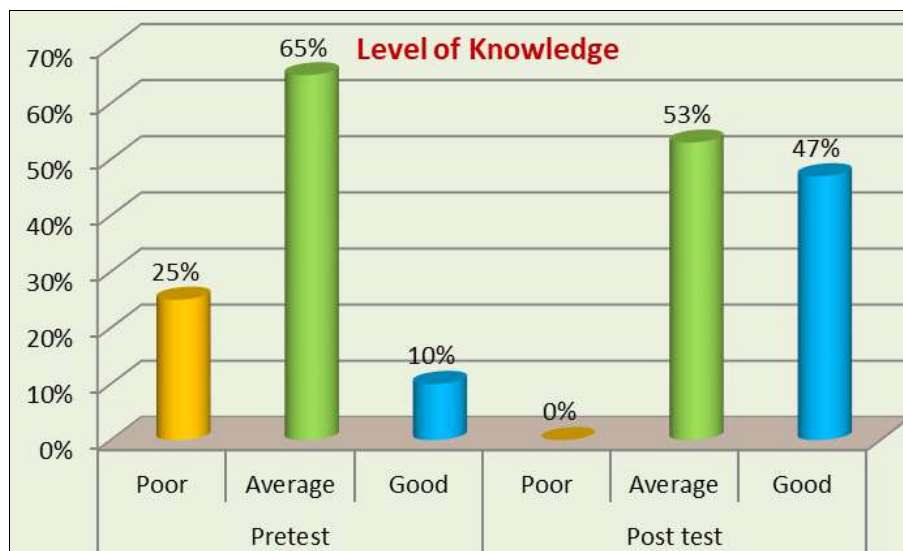


Fig 1: Pretest and posttest level of knowledge

II. Attitude Scores

Table 5: Frequency and Percentage distribution of respondents according to level of Attitude regarding pediatric pain management N=100

Level of Attitude					
Pre test			Post test		
Non favorable f (%)	Favorable f (%)	Positive f (%)	Non favorable f (%)	Favorable f (%)	Positive f (%)
30 (30%)	45 (45%)	25(25%)	4 (4%)	33 (33%)	63 (63%)

The data presented in the Table 5 depicts the respondent’s level of attitude during pretest and posttest regarding pediatric pain management; With regard to pretest level of attitude it shows that, majority 45(45%) respondents were had favorable attitude, 30(30%) of respondents were had

non favorable attitude and remaining 25(25%) were had positive attitude. During post-test maximum 63(63%) of respondents were had positive attitude, 33(33%) of respondents were had favorable attitude and 4(4%) of respondents were had non favorable attitude.

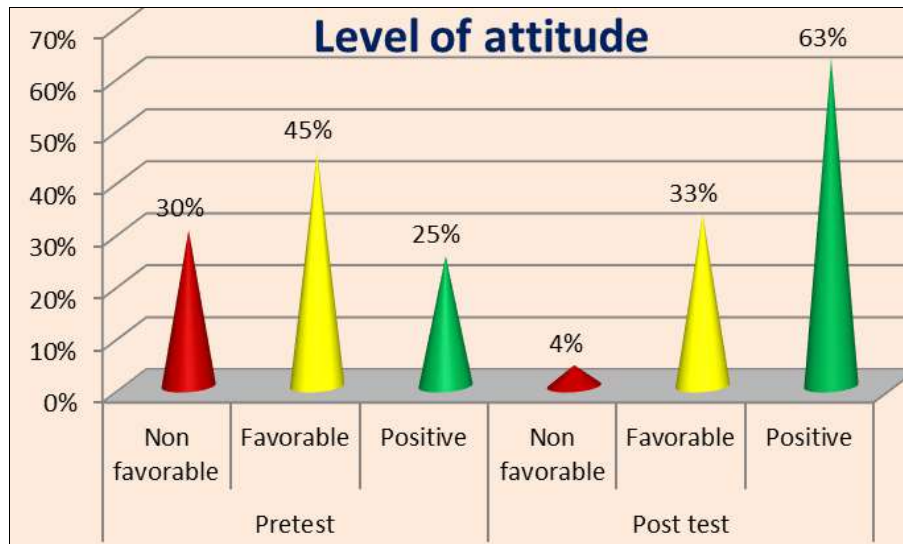


Fig 2: Pretest and posttest level of attitude

d. Effectiveness of Learning package

Paired ‘t’ value was computed to find out the significance of difference between means of pre-test and posttest knowledge and attitude scores of respondents.

Table 6: Mean, standard deviation, standard error of difference and ‘t’ value of pre-test and post-test knowledge and attitude scores N=100

Area	Aspects	Mean	Sd	SEMD	Paired t Test
Knowledge	Pre-test	15.75	5.21	0.43	17.82*
	Post-test	23.48	4.81		
Attitude	Pre-test	38.22	10.98	0.90	13.11*
	Post-test	50.08	8.32		

* Significant at 5% level

Table 6 indicates the overall mean knowledge and attitude scores of pre-test and post-test scores.

Knowledge

With respect to knowledge scores of participants, the findings reveal that the post-test mean knowledge scores was found higher [mean=23.48, SD of 4.81] when compared with pre-test mean knowledge score value which was 15.75 with SD of 5.21.

The statistical paired ‘t’ implies that the difference in the pretest and post-test value was found statistically significant at 5% level (P<0.05) with a paired ‘t’ value of 17.82. There exists a statistical significance in the difference of knowledge score indicating the positive impact of learning package.

Hence, the research hypothesis H₁ is supported. This indicates that the enhancement in knowledge is not by chance and the staff nurses who exposed to structured teaching program on pediatric pain management, significantly improved in their knowledge.

Attitude

With respect to attitude scores of participants, the findings

reveal that the post-test mean attitude scores was found higher [mean=50.08, SD of 8.32] when compared with pre-test mean attitude score value which was 38.22 with SD of 10.98.

The statistical paired ‘t’ implies that the difference in the pretest and post-test value was found statistically significant at 5% level (P<0.05) with a paired ‘t’ value of 13.11. There exists a statistical significance in the difference of attitude score indicating the positive impact of learning package.

Hence, the research hypothesis H₂ is supported. This indicates that the enhancement in attitude is not by chance and the staff nurses who exposed to structured teaching program on pediatric pain management, significantly improved in their attitude.

e. Association between level of knowledge, attitude and selected socio demographic variables

The computed Chi-square value for association between level of knowledge of staff nurses regarding pediatric pain management and their selected demographic variables is found to be statistically significant at 0.05 levels for educational qualification, years of experience and sources of knowledge of participants and is not found statistically significant for other socio demographic variables. Therefore, the findings partially support the hypothesis H₃, inferring that staff nurses level of knowledge regarding pediatric pain management is significantly associated only with educational qualification, years of experience and sources of knowledge.

The computed Chi-square value for association between level of attitude of staff nurses regarding pediatric pain management and their selected demographic variables is not found to be statistically significant at 0.05 levels for any of the selected socio demographic variables. Therefore, the findings do not support the hypothesis H₄, inferring that staff nurses level of attitude regarding pediatric pain management is not significantly associated any of the selected socio demographic variables.

Conclusion

The conclusions drawn from the study were as follows

- The overall pretest knowledge and attitude of staff nurses regarding pediatric pain management was average and favorable respectively.
- There was a need for teaching program regarding pediatric pain management among staff nurses.
- Post test results showed significant improvement in the level of knowledge and attitude regarding pediatric pain management. Thus, it can be concluded that learning package was effective to increase and update their knowledge and attitude on pediatric pain management.
- The results revealed that there is partial association between pre-test knowledge scores and no association between attitude scores and socio demographic variables.

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