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Effectiveness of information booklet regarding knowledge on paediatric pain assessment guidelines among final year B. Sc. nursing students in selected nursing colleges, Mangalore

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Abstract

Background: The greatest challenge for a nurse caring for patients in pain is the assessment of pain itself. Effective pain management, for the nursing profession, starts with effective pain assessment and it is an integral, but challenging component.

Methodology: The research design adopted for this study was one group pre-test and post-test design. 60 final year B.Sc. nursing students were selected by convenience sampling technique. The tool used for data collection was a structured knowledge questionnaire. As an intervention, administration of information booklet regarding pediatric pain assessment guidelines was given.

Result: The study revealed that 70% of them gained adequate knowledge and 30% of them had moderately adequate knowledge on pediatric pain assessment after administration of information booklet. In pre-test mean percentage was 39.72, and the mean, SD was 11.9 ± 2.78 , whereas the post-test mean percentage 68.28, and the mean, SD was 20.48 ± 3.33 . The overall 't' value $t_{60} = 17.68$ is greater than the table value $t_{60} = 1.67$ at 0.05 level of significance, which revealed that information booklet was highly effective in increasing the knowledge of final year B.Sc. nursing students.

Keywords: Effectiveness, information booklet, final year B.Sc. nursing students, pediatric pain assessment guidelines

Introduction

Pain is the most common reason people present for health care, pain costs to society are exorbitant, and pain can have a widespread impact on all aspects of life. The importance of attending to pain is highlighted by the Joint Commission on Accreditation of Healthcare Organizations directives that it be considered the "fifth vital sign" to monitor in medical care. Subjective in nature, pain is "whatever the person says it is, whenever he says it does" 'Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage'. Pain is the most common, most feared & most investigated symptom ^[1].

Pain is a part of life. Perception and response to pain varies according to age group. Between 3 and 10 months of age, infants are able to localize pain as they withdraw their limbs and cry. Infants react intensively with physical resistance and uncooperativeness as they refuse to lie still, attempt to push the stimulus away. The toddler is able to localize pain and reacts by withdrawing the affected part, loud crying, screaming and verbal expressions. This age group responds with intense emotion and physical resistance to any actual or perceived painful experience. The school age child may have all the behavior of young child for actual painful procedure and have muscular rigidity. Adolescents are less motor activity and more verbal expressions for pain. Pain should be treated, untreated pain causes anxiety, depression, irritability and exhaustion. Pain can also cause problems with eating and sleeping ^[1].

The assessment of children's pain is especially problematic as younger children or those with developmental delays often do not have the language or cognitive sophistication to describe their pain. Unfortunately, pain is a frequent and vivid part of childhood, whether as part of routine care e.g., immunization injections or a symptom of a chronic illness e.g., chronic sickle cell disease pain or outside the medical area, children experience frequent bumps, bruises, and injuries as they acquire coordination and adapt to their quickly developing body ^[2]. The first step to adequate pain management is accurate pain assessment.

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Assessment instruments used must be practical, reliable, valid, and appropriate for the child's developmental stage. There are 3 dimensions typically assessed: self-report of pain intensity, behavioral reactions, and physiologic reactions. Because pain is subjective, self-report is considered the criterion standard. Children are usually able to differentiate a few gross levels of pain intensity by the age of 3 years. Children using self-report scales should be able to complete simple seriation tasks, such as ordering blocks of various sizes. For younger or non-communicating children, behavioral scales are used. Physiologic changes are inconsistent and should be used as corroborative data only. Multidimensional assessment gives the most complete picture of a child's pain response. Because pain is a subjective sensation an individual's own description of their pain or 'self-report' is the most accurate measure and should be used whenever possible [3].

To treat pain adequately, ongoing assessment of the presence and severity of pain and the child's response to treatment is essential. Reliable, valid, and clinically sensitive assessment tools are available for neonates through adolescents. In a hospital setting, pain and response to treatment, including adverse effects, should be monitored routinely and documented clearly and in a visible place, such as on the vital sign sheet, to facilitate treatment and communication among health care professionals [4].

Pediatric nurses play a pivotal role in the management of children's pain. Effective treatment for alleviating pain and several valid and reliable pain measures for assessing pain in infants and children have been developed. Yet concerns remain that nurses do not always make appropriate pain management decisions [5].

Nursing care has been described as the corner stone of multidisciplinary efforts to control pain. Certainly nurses are the professionals who spend most of the time with patients and their care givers, therefore nurses must take the lead in making pain a treatment priority. Self-reported pain in any age, must be respected, acknowledged and treated appropriately. There is special issues in pediatric nursing, as many children either can't or will not verbalize their pain experiences. These children are heavily dependent on adult cares, whether they are nurses, parents or caregivers, in the management of pain. Therefore where communication from or with children is limited, there is a risk that pain indicators may be discounted or ignored [6].

Accurate pain assessment also requires consideration of children's developmental level, type of pain experienced, history and context of pain, family influences, and interaction with the health care team. In addition, children and their families need to be empowered, through education, to participate in their own pain management [7].

Objective of the study

1. To assess the level of knowledge regarding paediatric pain assessment guidelines among final year B. Sc. nursing students in selected nursing colleges,

Mangalore.

2. To determine the effectiveness of information booklet on level of knowledge regarding paediatric pain assessment guidelines among final year B. Sc. nursing students in selected colleges, Mangalore.
3. To find the association between pre-test level of knowledge regarding paediatric pain assessment guidelines among final year B. Sc. nursing students and their selected demographic variables.

Hypotheses

The hypotheses will be tested at 0.05 level:

H₁: There will be significant difference between pre-test level of knowledge and post-test level of knowledge regarding paediatric pain assessment guidelines among final year B. Sc. nursing students of selected nursing colleges, Mangalore.

H₂: There will be significant association between level of knowledge and selected demographic variables.

Research design: experimental one group pre-test post test

Research approach: evaluative research approach

Setting: Selected nursing colleges Mangalore

Sample size: 60 final year B.Sc. nursing students

Sampling technique: convenient sampling technique

Tool for data collection

Section I: Demographic proforma; consists of 6 items related to demographic data of the participants

Section II: Structured knowledge questionnaire regarding pediatric pain assessment. Consists of multiple choice questions that covered the pain, types of pain, pain pathway, pediatric pain scales to assess the knowledge level of final year BSc. nursing students

Section III: Development of Information booklet regarding pediatric pain assessment guidelines.

Method of data collection

The data was collected personally by the investigator with due permission from the concerned authorities and informed consent was obtained from the participants in a consent form. Institutional ethics committee approval was obtained. Final year BSc nursing students were the one to whom the information booklet was administered in the nursing college. Post-test was conducted on the eighth day using the same structured knowledge questionnaire. The collected data was analyzed through descriptive and inferential statistics.

Results

Section I: Description of demographic variable

This section deals with the description of sample characteristics in terms of frequency and percentage. The findings are presented using Tables and Figures.

Table 1: Frequency and percentage distribution of subjects on selected demographic variables N=60

Sl. No	Variables	Frequency (f)	Percentage (%)
1	Age in years		
	17-20	13	21.7
	21-25	46	76.7
	26-30	1	1.7
	above 30	0	0
2	Gender		
	Male	0	0
	Female	60	100

3.	Religion		
	Hindu	25	41.7
	Christian	35	58.3
	Muslim	0	0
	others	0	0
4	Additional qualification apart from Bsc nursing		
	Yes	0	0
	No	60	100
5	Parents working in health profession		
	Yes	0	0
	No	60	100
6	Pediatric clinical exposure		
	Medical college hospital	0	0
	Government hospital	60	100
	Private nursing home	0	0

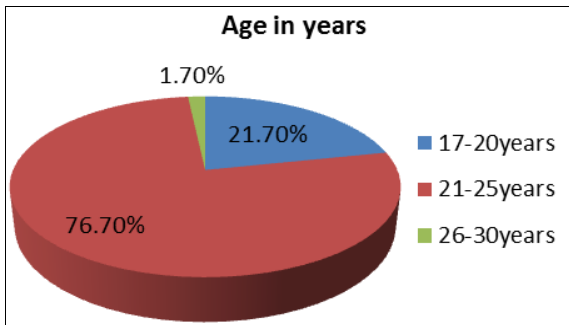


Fig 1: 3D Pie diagram showing percentage distribution of final year BSC nursing students according to their age

Data presented in Table 1 Figure 1 shows majority of the students 46 (76.7%) were in the age group between 21-25 years whereas 13 (21.7%) were in the age group of between 17-20 years and 1 (1.7%) of them were in the age group of between 26-30 years.

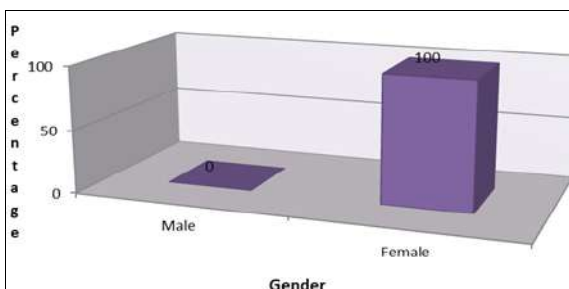


Fig 2: 3D bar diagram showing percentage distribution of final year Bsc nursing students according to their gender.

The data presented in Table 1, Figure 2 shows that All students 60 (100%) who participated in the study were females

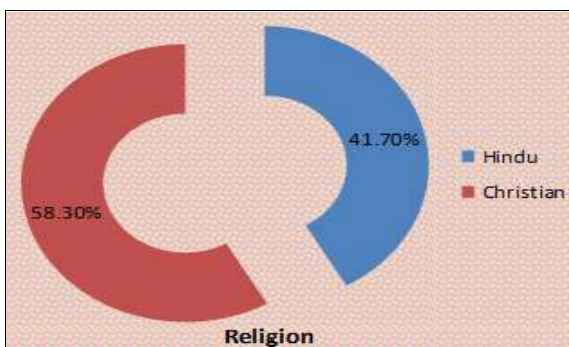


Fig 3: 3D Doughnut diagram showing percentage distribution of final year BSC nursing students according to their religion

The data presented in Table 1, Figure 3 shows that Religion wise, majority of students 35 (58.3%) were Christians and 25 (41.7%) were Hindu families.



Fig 4: 3D Cone diagram showing percentage distribution of final year Bsc nursing students according to additional qualification apart from Bsc nursing.

The data presented in Table 1 Figure 4 shows that there is no other additional qualification of the participants apart from BSC nursing.

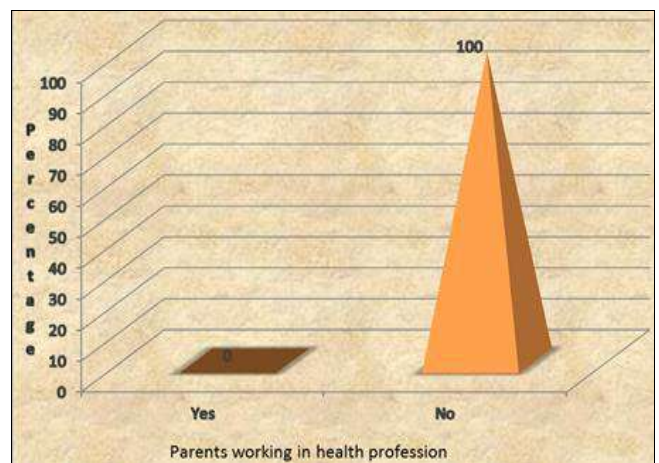


Fig 5: 3D Pyramid diagram showing the percentage distribution of final year BSc nursing students according to their parents working in health profession.

The data presented in Table 1 Figure 5 shows that none of the study participants parents working in health profession.

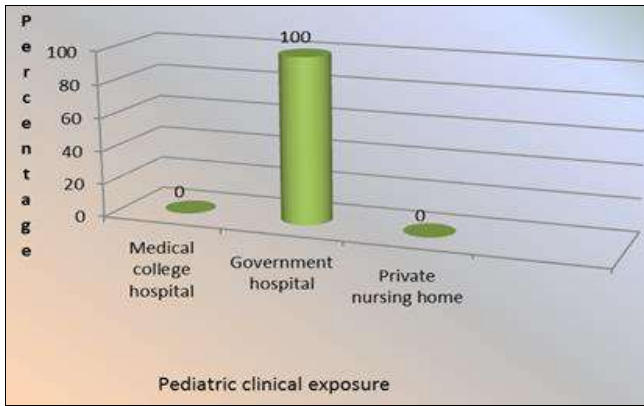


Fig 6: 3D Bar diagram showing the percentage distribution of final year BSc nursing students according to their pediatric clinical exposure.

The data presented in Table 1 Figure 6 shows that all 60 (100%) of the study participants were having pediatric clinical exposure in Government Hospital.

Section II: Distribution of final year Bsc nursing students according to their pre-test and post- test knowledge score.

Table 2: Distribution of subjects according to their pre-test and post-test knowledge score N=60

Category	Range	Pre test		Post test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Inadequate	1-10	19	31.7	0	0
Moderately adequate	11-20	41	68.3	18	30
Adequate	21-30	0	0	42	70

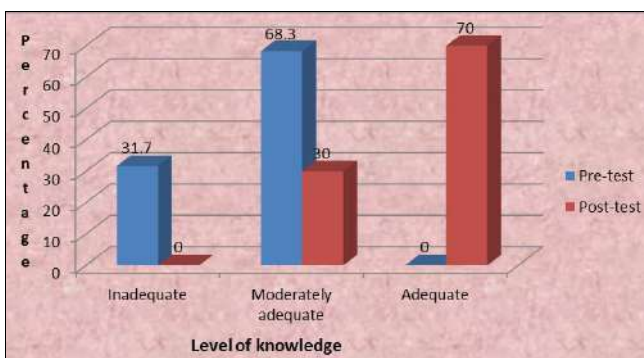


Fig 7: 3D Bar diagram showing the percentage distribution of final year BSc nursing students according to level of knowledge

The data in Table 2 and Figure 7 shows that the majority 41(68.3%) of final year Bsc nursing student had moderately adequate knowledge on pediatric pain assessment and 19(31.7%) of them had inadequate level of knowledge. After administration of information booklet the most of 42(70%) of subjects gained adequate knowledge on pediatric pain assessment and 18(30%) of them had moderately adequate knowledge.

Section III: Effectiveness of information booklet regarding pediatric pain assessment guidelines

In order to test the effectiveness of information booklet in increasing the knowledge paired 't' test was computed. To

test the statistical significance the following null hypothesis was formulated;

H₀₁: There is no significant difference between pre-test and post-test knowledge score of the final year B. Sc. nursing students at 0.05 level of significance.

Table 3: Mean, SD, mean percentage and 't' value that shows the difference between mean pre-test and post-test of final year BSc nursing students knowledge scores. N=60

Sl.no.	Areas	Pre test			Post test			t value
		Mean	SD	Mean %	Mean	SD	Mean %	
1	Regarding pain	3.08	1.078	51.39	4.97	1.104	82.78	10.14
2	Types	2.22	.904	36.94	3.87	1.096	64.44	9.83
3	Pain pathway	1.55	.999	31	3.08	1.124	61.67	10.14
4	Pediatric pain scales	5.07	1.696	38.97	8.57	1.789	65.90	11.21

t₆₀=1.67

The data in Table 3 shows that in the area related, pain post-test mean percentage was highest 82.78, the mean and SD was 4.97±1.104 whereas in pre-test mean percentage was 51.39 and the mean, SD was 3.08±1.078. In the area related, types of pain post-test mean percentage was 64.44, and the mean, SD was 3.87±1.096 whereas the pre-test mean percentage was 36.94, and the mean, SD 2.22±0.904. In the area related pain pathway in post-test mean percentage was 61.67, mean and SD was 3.08±1.124 whereas the pre-test mean percentage was 31, and the mean, SD was 1.55±0.99. In the area related to pediatric pain scales post-test mean percentage was 65.90, and the mean, SD was 8.57±1.789 whereas the pre-test mean percentage was 38.97, and the mean, SD was 5.07±1.696. The present data shows that there is significant difference between mean pretest and post-test knowledge scores in all the four areas.

The calculated 't' value in the area I (t₆₀=10.14), the area II (t₆₀=9.83), the area III (t₆₀=10.14), the area IV (t₆₀ = 11.21) is greater than the table value t₆₀=1.67 at 0.05 level of significance which conclude that there was significant difference between mean pretest and post-test knowledge scores in all the four areas. The null hypothesis was rejected and research hypothesis was accepted. Hence it was proved that information booklet was effective in increasing the knowledge of final year Bsc nursing students.

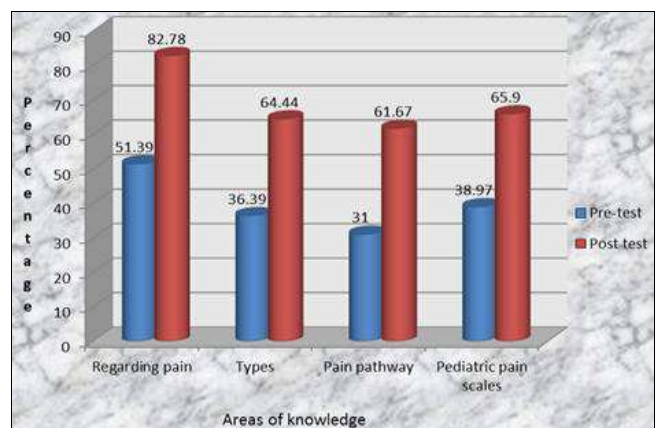


Fig 8: 3D Cylinder diagram showing difference between mean pre-tests and post-test knowledge score

Table 4: Mean, standard deviation, mean percentage and ‘t’ value that shows the overall knowledge scores of final year BSc nursing students N=60

Areas of knowledge	Pre test			Post test			‘t’ value
	Mean	SD	Mean %	Mean	SD	Mean %	
Overall knowledge	11.9	2.78	39.72	20.48	3.33	68.28	17.68

t₆₀=1.67

The overall post-test mean percentage 68.28, and the mean, SD was 20.48±3.33 which is higher than the pre-test mean percentage was 39.72, and the mean, SD was 11.9±2.78. The overall ‘t’ value t₆₀=17.68) is greater than the table value t₆₀=1.67 at 0.05 level of significance which conclude that there was significant difference between mean pretest and post-test knowledge scores in all the four areas. The null hypothesis was rejected and research hypothesis was accepted. Hence it was proved that information booklet was effective in increasing the knowledge of final year B.Sc. nursing students.

Section IV: Association between pre-test knowledge and selected demographic variables

This section deals with the association between pre-test mean knowledge score and selected demographic variables. To find out the association Chi-square test was done. To test the statistical significance the following null hypothesis was formulated:

H0₂: There will be no significant association between pre-test mean knowledge score and selected demographic variables.

Table 5: It is evident from that there is no significant association between selected baseline variables N=60

Variables	<M(12)	>/=M(12)	χ ²	Level of significance
1.Age in years				
17-20	8	5	2.696	p>0.05 Not significant
21-25	17	30		
26-30	0	0		
>30	0	0		
2.Gender				
Male	0	0		Not significant
Female	25	35		
3. Religion				
Hindu	7	18	3.293	p>0.05 Not significant
Christian	18	17		
Muslim	0	0		
others	0	0		
4.Additional qualification apart from Bsc nursing				
Yes	0	0		p>0.05 Not significant
No	25	35		
5. Parents working in health profession				
Yes	0	0		p>0.05 Not significant
No	25	35		
6.Pediatriic clinical exposure				
Medical college hospital	0	0		p>0.05 Not significant
Government hospital	25	35		
Private nursing home	0	0		

t₆₀=3.84; p>0.05

The data presented in the Table 5 shows there is no significant association between pre-test knowledge score and demographic variables. Hence null hypotheses was accepted and research hypotheses was rejected.

Conclusion

Nurses are the key person of health team, who play vital role in promotion and maintenance of health. Effective pain management is best achieved by using a team approach, nurses need to take responsibility and accountability for improving pain assessment and management. Senior nurses need to be role model expert pain management practice. They can play a key in identifying the causes of pain by incorporating pain scale into routine pain assessment and documentation. Clinical knowledge is the cornerstone for the effective management of pediatric pain, therefore, nurses providing this care, should have the necessary skills and knowledge.

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