



“Effectiveness of information booklet on knowledge regarding self-care management among orthopaedic patients with fixators”.

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Abstract:

Background: A Pre experimental study was conducted to assess the effectiveness of information booklet on knowledge regarding self-care management among orthopaedic patients with fixators in a selected hospital, Mangalore. A total sample of 60 orthopaedic patients with fixators were selected using non probability purposive sampling technique. The objectives of the study were to assess the level of knowledge regarding self-care management among orthopaedic patients with fixators before and after the administration of information booklet and to find out the effectiveness of information booklet on knowledge regarding self-care management among orthopaedic patients with fixators. The final objective was to find the association between the pre-test level of knowledge and selected demographic and clinical variables.

Materials and Methods: A one-group pre-test post-test design was used to conduct the study. A sample comprising of 60 orthopaedic patients with fixators were selected using non-probability purposive sampling technique. The conceptual framework of the study was based on Imogene King's Goal Attainment Model. Tools used for data collection were demographic performa and structured knowledge questionnaire.

Results: Data analysis was done using descriptive and inferential statistics. Findings of the study revealed that the mean post-test knowledge score 23.42 ± 3.1 was significantly higher than the mean pre-test knowledge score 10.0 ± 2.4 ($p < 0.05$). Paired t value computed at 31.21^* was statistically significant at $p < 0.05$, which revealed that there is a significant increase in the mean post-test knowledge score.

Conclusion: The findings of the study confirmed that the administration of information booklet was significantly effective in improving the knowledge regarding self-care management among orthopaedic patients with fixators.

Key Word: Information booklet, Knowledge, Self-care management, Orthopaedic patients, Fixators.

I. Introduction

Skeletal system is the biological system providing support to living organism. Skeletal system functions not only as the support for the body but also in haematopoiesis, the manufacture of blood cells that take place in bone marrow. It is also necessary for protection of vital organ and is needed by the muscles for the movement¹. The most common cause of skeletal problems is injury from a traumatic event resulting in fracture, dislocations and associated soft tissue injuries. Accidents contribute for the majority of musculoskeletal injuries in the present world. Commonly it occurs as bone fracture. Bone fracture is a medical condition in which there is a break in the continuity of the bone. It can be the result of high force impact or stress, or trivial injury due to certain medical conditions that weaken the bones, such as osteoporosis, bone cancer or osteogenesis imperfecta, where the fracture is then properly termed as pathologic fracture². The statistics shows that extremity fractures are most common, and usually occur in men younger than age 45, and then become more common in women over age 45 years. The most common fracture prior to age 75 is a wrist fracture. In those over age 75 years, hip fractures become the most common broken bone³. Rehabilitation of orthopaedic patients heavily depends upon the quality of care provided to them. Post operative fixators management mainly focus on complications like fat embolism pin tract infection, non-union, malunion, delayed union, hardware failure and neurovascular embarrassment. So, it is important to educating the patient regarding the care of the fixators and other self-care aspects after the surgery is often being neglected⁴.

Retrospective study was conducted in UK to assess the incidence of late pain and hardware removal after open reduction and internal fixation (ORIF) of ankle fractures among 126 skeletally mature patients undergoing open reduction and internal fixation of unstable malleolar fractures, who were followed up for at least six months from injury. This study used analog pain score, Short Form-36 Health Survey (SF-36), and Short Form Musculoskeletal Functional Assessment (SMFA) for outcome measurements. Results showed that thirty-nine (31%) of the 126 patients had lateral pain overlying their fracture hardware. Of the twenty-two patients with hardware-related pain who had undergone hardware removal, only eleven had improvement in their lateral ankle pain; the mean analog pain score decreased from 6 ± 3.16 (mean \pm SD) before hardware removal to 3 ± 2.9 after hardware removal ($p =$

0.008). For the group of patients who had lateral ankle pain, no significant difference was noted in SMFA or SF-36 scores for patients who had and who had not had their lateral hardware removed ($p > 0.5$). Although pain is generally decreased after

hardware removal, nearly half of patients continue to have pain even after hardware removal. Functional outcome scores are poorer for patients with pain overlying lateral ankle. This study suggests that counselling of patient is essential regarding expected functional outcome after ORIF of ankle fractures and the likelihood of relief of pain after removal of fracture hardware⁵.

Objectives of the study

1. To assess the level of knowledge regarding self-care management among orthopedic patients with fixators.
2. To find out the effectiveness of information booklet on level of knowledge regarding self-care management among orthopedic patients with fixators.
3. To find the association between the pretest level of knowledge and selected demographic and clinical variables.

Hypothesis

- H₁- There will be significant difference between pretest level and posttest level of knowledge among orthopedic patients regarding self-care management after intervention.
- H₂- There will be significant association between pretest level of knowledge and selected demographic and clinical variables among orthopedic patients with fixators.

II. Material and Methods

Research Approach: Pre experimental approach.

Research Design: One group pre-test – post-test design.

Population: Orthopaedic patients with fixators.

Settings: Govt. Wenlock Hospital Mangalore

Sampling Technique: Non –probability purposive sampling technique.

Sample size: 60 orthopaedic patients with fixators

Tools and Technique

I) A Demographic Performa was used to collect socio demographic data such as age, gender, religion, marital status, occupation, educational status, income, source of information, & any history of previous bedriddenness.

II) A Structured Knowledge Questionnaire was used to assess the Knowledge regarding self-care management of fixators which consisted of 30 items divided in to seven areas (Fracture, fracture management and fixators, self-care, pain, diet, infection and exercise)

III) An Information Booklet (IB) was administered for 60 samples (orthopaedic patients with fixators, Govt. Wenlock Hospital Mangalore) which was based on the level of understanding of orthopaedic patients with relevant illustration and pictures. The areas covered were fracture which includes introduction, fracture management in that fixator's types, advantages, disadvantage and complication. Self-care management is the second one in that pain management, diet, prevention of infection and exercise.

Method of Data collection: Data was collected for a period of one month [17th October 2011 to 19th November 2011]. After explaining the purpose and obtaining an informed consent, the structured knowledge questionnaire was administered to find out the pre-test level of knowledge among orthopaedic patients regarding self-care management of fixators. On the same day information booklet on self-care management of orthopaedic patients with fixator was administered. A post-test was carried out on the 8th day following administration of the Information booklet.

Inclusion criteria:

- ❖ Orthopaedic patients with fixators who were willing to participate in the study
- ❖ Orthopaedic patients with fixators who can write and read English or Kannada

Exclusion criteria:

- ❖ Orthopaedic patients with fixators who were sensitized to any research studies regarding self-care management after fixators procedure for 3 months.
- ❖ Orthopaedic patients with fixators who were not able to meet self-care needs due to neurological deformity.

Statistical analysis:

Both Descriptive and Inferential statistics were used to analyse the data [using SPSS version 16 (SPSS Inc., Chicago, IL)]. Descriptive statistics such as Frequency distribution and percentage were used to describe the socio demographic data and Inferential statistics such as 'paired t test' was used to find out the effectiveness of the Information booklet by comparing the mean knowledge scores before and after the intervention. Fisher exact test (p#) was performed to find out the association between knowledge and selected demographic variables. The level $P < 0.05$ was considered as the minimum accepted level of significance

III. Results

Table 01: Frequency distribution and percentage of sample characteristics

(N=60)

	Demographic variables	Frequency	Percentage
Age	≤20	4	6.7
	21-30	28	46.6
	31-40	24	40
	41-50	4	6.7
	≥51	-	-
Sex	Male	44	73.3
	Female	16	26.7
Religion	Hindu	22	36.7
	Muslim	10	16.6
	Christian	28	46.7
Marital Status	Married	42	70

	Unmarried	18	30
Occupation	Unemployed	18	30
	Unskilled worker(labour/coolie)	33	55
	Skilled (tailor, typist etc)	9	15
	Health professional and others	-	-
Educational status	Primary education	21	35
	High school	32	53.3
	PUC/Higher secondary	7	11.7
	Graduation and above	-	-
Income of family	≤ 2000/-	-	-
	2001-6000/-	46	76.7
	6001-10000/-	14	23.3
	10000-above	-	-
Source of previous information regarding self-care	Mass media	5	8.3
	Friends and Family	4	6.7
	Others (specify)	-	-
	No	51	85
Clinical variables		Frequency	Percentage
Any history of previous bedriddenment	Due to road traffic accident	4	6.7
	Due to Other illness	8	13.3
	No	48	80

Table 02: Frequency distribution and percentage of pre-test and post-test knowledge level regarding self-care management among orthopaedic patients with fixators

Levels		Pre-test		Post-test	
		Frequency	Percent	Frequency	Percent
Knowledge	Adequate	0	0	47	78.3
	Moderate	8	13.3	13	21.7
	Inadequate	52	86.7	0	0
	Total	60	100	60	100

Figure 01: Bar Diagram showing frequency distribution and percentage of pre-test and post-test knowledge level regarding self-care management among orthopaedic patients with fixators (N=60)

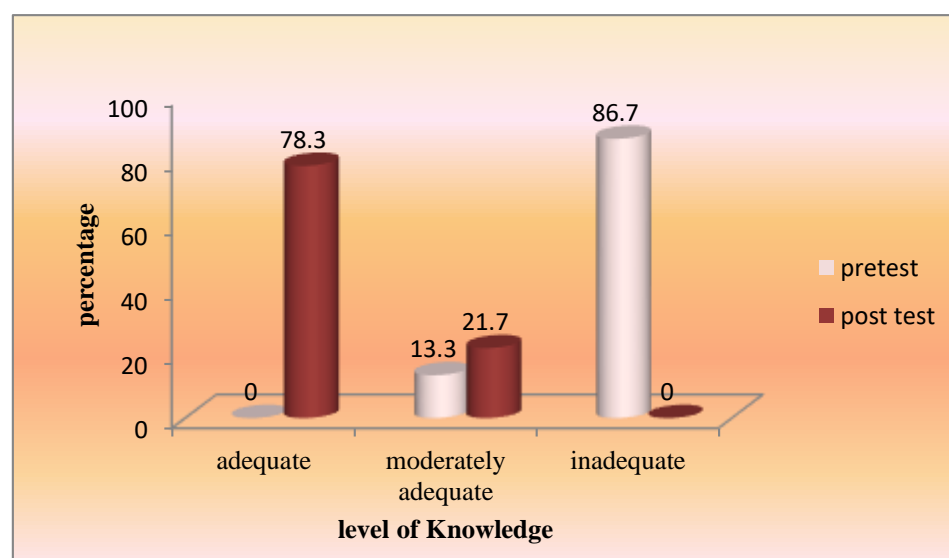


Table 03: Mean, Standard deviation and paired ‘t’ value of knowledge level among orthopaedic patients before and after intervention.

(N=60)						
Stage	Mean	SD	Mean Difference	df	Paired t	p
Pre-test	10	2.44				
			13.42	59	31.21*	1.68
Post-test	23.42	3.01				

* Significant at 0.05 level

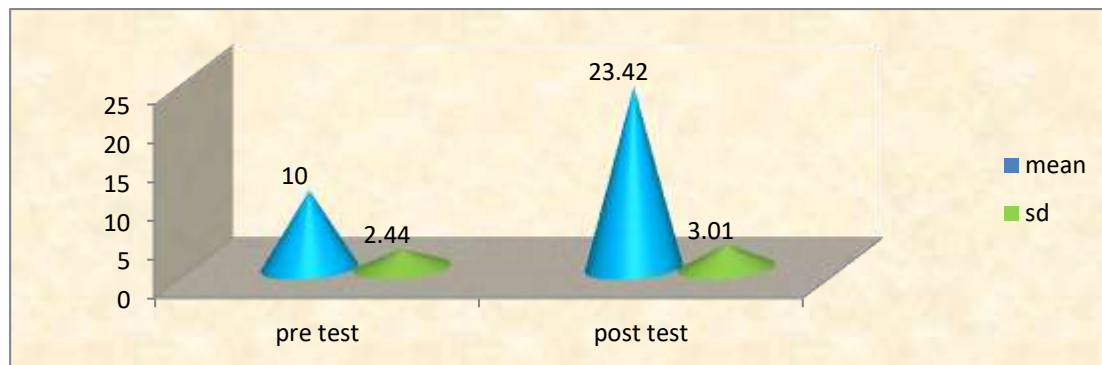
Figure 02: 3D pyramidal diagram showing difference between mean pre test and post test knowledge score

Table 03 shows that mean knowledge score before the administration of information booklet was 10 ± 2.44 and after the intervention (Information Booklet), the mean knowledge score increased to 23.42 ± 3.01 . Increase in knowledge score after intervention was statistically significant ($p < 0.05$). Change in knowledge score at post-test was statistically significant. Hence research hypothesis (H_1) was accepted.

Table 04: Association between knowledge level among orthopaedic patients and selected demographic variables. (N=60)

Demographic Variables	Knowledge level				df	χ^2
	Inadequate		Moderate			
	f	%	f	%		
Primary education	20	33.3	1	1.67	59	9.1*
High school	29	48.33	3	5		
PUC/Higher secondary	3	5	4	6.67		
Graduation and above	-	-	-	-		

*Significant at 0.05 level.

The above table depicts that the calculated χ^2 value for educational status was significantly higher than the table value ($p < 0.05$ level). So, there is association between educational status and pre-test knowledge level of self-care management of fixators. Hence the research hypothesis H_2 was accepted. The score changes also reflect the effectiveness of the intervention.

IV. Discussion

The findings in the present study revealed that the mean post-test knowledge score 23.42 ± 3.01 was significantly higher than the mean pre-test knowledge score 10 ± 2.44 ($p < 0.01$). Paired t value computed at 31.21^* was statistically significant at $p < 0.05$. The paired t value [31.21^* df=59] computed by comparison of the mean pre-test and post-test knowledge scores was statistically significant at $P < 0.05$ level. Therefore, it is interpreted that administration of information booklet was significant in improving the knowledge regarding self-care management of fixators among orthopaedic patients.

This result was supported by various studies. An experimental study was conducted in Taiwan to evaluate the effectiveness of a comprehensive discharge planning programme among 50 fracture patients who underwent surgical interventions. The objective of the study was to assess the effectiveness of a comprehensive discharge-planning service for hip fracture patients, regarding functional status, self-care knowledge and quality of life (QOL). The result of the study showed that Significant improvements were observed in functional status of both groups at three months post discharge. The self-care knowledge of the experimental group was higher than that of the control group ($F = 11.569$, $p = 0.001$). At three months post discharge, QOL of experimental group patients was better than control group patients. The study concluded that comprehensive discharge-planning service can improve hip fracture patient's self-care knowledge and QOL⁶.

V. Conclusion

The study was conducted to assess the effectiveness of information booklet on knowledge regarding self-care management among orthopaedic patients with fixators in a selected hospital, Mangalore. The results of the study undoubtedly confirm that the post-test knowledge score was significantly higher than the pre-test knowledge score. Therefore, it is concluded that information booklet is significantly effective in enhancing the knowledge level regarding self-care management among orthopaedic patients with fixators.

limitations

- The study was confined to specific geographical area, which imposed limits on generalization
- The limited sample size caused limit on generalization of the study findings
- The findings could be generalized only to that population, which fulfilled the criteria in the study
- No follow-up was made to measure the retention of knowledge.

Recommendations

- A descriptive study can be conducted to identify knowledge level regarding self-care management among orthopaedic patients with fixators.
- The study can be repeated on a larger sample to generalize the findings
- A comparative study can be conducted to assess the knowledge level regarding self-care management among orthopaedic patients with fixators among various hospitals.

Acknowledgements

Sincere thanks to our parents for their seamless love and support.

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