"A STUDY TO ASSESS THE EFFECTIVENESS OF LUMBAR SUPPORT FOR THE PREVENTION OF SHORT TERM BACKACHE AMONG POSTOPERATIVE PATIENTS WHO HAVE RECEIVED SPINAL ANESTHESIA AT SELECTED HOSPITAL IN MYSURU."

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ABSTRACT: Anaesthesia has traditionally meant for the condition of having sensation (including the feeling of pain) blocked or temporarily taken away. Its aetiology is probably multifactorial but if these patients received spinal anaesthesia or epidural anaesthesia for the operation, the natural "cause and effect" reaction of many patients and surgeons will attribute the backache to the spinal and epidural injections. The inflatable lumbar pillow may be a cost-effective means of providing immediate relief from short term back ache, and can effective bridge to other interventions for post-operative patients. This study has been undertaken to assess the effectiveness of lumbar support for the prevention of short term backache among post operative patients who have received spinal anesthesia at selected Hospital, Mysuru. A Quasi-experimental non equivalent control group pre test post test design was used and 60 post operative patients were selected using non probability purposive sampling technique. Pilot study was conducted, the tool and study design were found to be feasible. Data were collected using a personal proforma used to assess the personal variable and backache was assessed by using VAS (visual analogue scale). The data reveals that there was a significance difference (fast reduction of pain) in the mean pre test and post test VAS scores and significance difference between the post tests VAS scores of post operative patients who have received spinal anesthesia in experimental group whereas there is slow reduction of VAS scores in patients in control group. Lumbar support interventions was effective in decreasing the backache of post operative patients who have received spinal anesthesia and the study finding that there was a significant difference in the pre test and post test VAS scores of post operative patients in experimental group.

Keywords: Visual Analogue Scale

I. INTRODUCTION:

Pain is a complex, multidimensional experience. For many people, it is a major problem which causes suffering and reduces quality of life. It is one of the major reasons that prompts people to seek health care. Pain occurs in all clinical settings and among varied groups of patients. The widely used definition of The International Association for the Study of Pain states: "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage." In medical diagnosis, pain is regarded as a symptom of an underlying condition.

Postoperative backache is a relatively common minor post-operative complication. Its aetiology is probably multifactorial. But if these patients received spinal anaesthesia or epidural anaesthesia for the operation, the natural "cause and effect" reaction of many patients and surgeons would attribute the backache to the spinal and epidural injections.

Selection of anesthetic approach for lower extremity operations is often a controversial issue for anaesthesiologists. In recent years, there has been a significant tendency towards the spinal anesthesia (SA) rather than general anesthesia (GA) in orthopedic surgeries. SA is a type of neuraxial blockade that involves the injection of local anesthetic drug with a long thin needle into the subarachnoid space . SA has been used since the late 19th century and now is the most common anesthetic technique of neural blockade through which a wide range of surgeries can be performed. Although GA has been the pioneer technique that induces the state of unconsciousness and sensory loss through the intravenous or inhaled agents, it is now less accepted by the anaesthesiologists because of the serious complications involved.

Lumbar supports are frequently used in the management of low backache and are also a common intervention to prevent back injuries. Lumbar supports are provided as treatment, to people who have LBP with the purpose of making the impairment and disability vanish or decrease. There are different types of lumbar supports like lumbar support belt, lumbar support cushion, lumbar support chair, lumbar support pillow, lumbar support massage and so on. Lumbar supports are provided as intervention for prevention with the purpose of preventing the onset of LBP (primary prevention) or of preventing recurrent LBP episodes (secondary prevention).

OBJECTIVES:

The objectives of the study are

1. To assess the severity of short term backache among post postoperative patients who have received spinal anesthesia.
2. To determine the effectiveness of lumbar support for the prevention of short term backache among postoperative patients who have received spinal anesthesia.
3. To find the association between the short term backache among postoperative patients who have received spinal anesthesia and their selected personnel variables.

HYPOTHESES:

The following hypotheses were formulated for the study to be tested at 0.05 level of significance

H_1: There will be significant difference in the pre and post intervention VAS scores among experimental and control group.
H_2: There will be significant difference in the post intervention VAS scores among experimental and control group.
H_3: There will be significant association between the short term back ache and their selected personnel variables.

RESEARCH METHODOLOGY:

The research was conducted in Mysuru district of Karnataka state. The JSS Hospital was selected for the study. Postoperative patients pain level was assessed through visual analogue scale after six hours of surgery(pre test) and again after one hour of lumbar support(post test).The total sample taken were 60 postoperative patients 30 in each experimental and control group with non probability purposive sampling technique.

II RESULTS:

Table 1

Selected personal Variables	Experimental group n = 30 f	%	Control group n = 30 f	%	Total n = 60 f (%)
1. Age in years					
1.1) 30-40	10	33.33	15	50.0	25(41.66)
1.2) 41-50	12	40.00	7	23.33	19(31.66)
1.3) 51-60	8	26.66	8	26.66	16(26.66)
2. Gender					
2.1) Male	17	56.66	18	60.0	35(58.33)
2.2) Female	13	43.33	12	40.0	25(41.66)
3. Occupation					
3.1) Farmer	2	6.66	5	16.66	7(11.66)
3.2) Employee	10	33.33	8	26.66	18(30.0)
3.3) Homemakers	12	40.0	10	33.33	22(36.66)
3.4) Unemployed	6	20.0	7	23.33	13(43.33)
4. Type of surgery					

4.1) Open	24	80.0	23	76.66	47(78.33)
4.2) Laparoscopic	6	20.0	7	23.33	13(21.66)
5. History of any past surgeries					
5.1) Yes					
5.2) No	5	16.66	3	10	8(13.33)
	25	83.33	27	90	52(86.66)

Table 2

Frequency and percentage distribution of VAS scores of postoperative patients according to their level of pain among experimental and control group.

Level of Pain	Experimental group n = 30		Control group n = 30		Total n = 60	
	f	(%)	f	(%)	f	(%)
Pre test No pain	0	0	0	0	0	0
Mild	0	0	0	0	0	0
Moderate	6	20	2	6.66	8	13.33
Severe	24	80	28	93.33	52	86.66
Post test 1 No pain	0	0	0	0	0	0
Mild	1	3.33	0	0	1	1.66
Moderate	19	63.33	15	50	34	56.66
Severe	10	33.33	15	50	25	41.66
Post test 2 No pain	3	10	3	10	6	10
Mild	11	36.66	13	43.33	24	40
Moderate	16	53.33	12	40	28	46.66
Severe	0	0	2	6.66	2	3.33
Post test 3 No pain	23	76.66	16	53.33	39	65
Mild pain	6	20	9	30	15	25
Moderate	1	3.33	5	16.66	6	10
Severe	0	0	0	0	0	0

Table 3

Mean, Median, Standard deviation, Range of pre-test and post-test VAS scores of post-operative patients who have received spinal anesthesia among experimental and control group.

Test	Experimental group n = 30				Control group n = 30			
	Mean	**Median**	**Range**	**SD**	**Mean**	**Median**	**Range**	**SD**

Pre test	6.73	7	5-8	±1.202	7	7	5-8	±0.983
Post test 1	4.40	5	2-6	±1.163	5.60	6	3-8	±1.070
Post test 2	2.50	3	0-5	±1.225	3.87	4	2-6	±1.167
Post test 3	0.50	0	0-3	±0.938	1.97	2	0-5	±1.217

The data presented in **Table 3** shows that, the pre test mean VAS score ranged from 5-8 in experimental and control group. The mean pre test is 6.73 and 7 with standard deviation ±1.202 and ±0.983 in experimental and control group respectively. post test 1 mean VAS score ranged from 2-6 in experimental and 3-8 in control group. The mean post test 1 is 4.40 and 5.60 with standard deviation ±1.163 and ±1.070 in experimental and control group respectively. post test 2 mean VAS score ranged from 0-5 in experimental and 2-6 in control group. The mean post test 2 is 2.50 and 4.0 with standard deviation ±1.225 and ±1.167 in experimental and control group respectively. post test 3 mean VAS score ranged from 0-3 in experimental and 0-5 in control group. The mean post test 3 is 0.50 and 1.97 with standard deviation ±0.938 and ±1.217 in experimental and control group respectively.

Table 4
Repeated measures of ANOVA for tests of within the subjects among experimental and control group
n = 60

Source	df	Type III Sum of squares	Mean square	F ratio	Significance
Decrease in pain Score	3	1051.146	350.382	541.964	0.00*
Decrease with respect to group	3	13.613	4.583	7.019	0.00*

$F_{(4)}$: 6.39 (P< 0.05); Significant*

The above table shows that there was significant difference in VAS scores among pre test, post test 1, post test 2 and post test 3 since the p value < 0.05 level of significance.

There was significant time effect observed over time (P<0.001).This indicates that overall, there was a significant reduction in the VAS score over time. A significant interaction effect (P<0.001) was observed between time and group, which indicates that reduction in VAS score was significantly different over time between experimental and control group. Reduction in the VAS scores over time was significantly higher in the experimental group as compared to control group (P<0.001).

Table 5

Mean, Mean difference, Standard deviation of the difference, Standard error of the mean difference and independent 't' value of post-test 1 VAS scores post operative patients who have received spinal anesthesia in experimental and control group.

n = 60

Group	Mean	Mean Difference	SD difference	SEMD	Independent 't' value
Experimental Group (n=30)	**4.40**				
Control Group (n=30)	**5.60**	**1.20**	**±0.093**	**0.017**	**4.160***

t (58) = 2.00 ; p< 0.05;significant* , p<0.05; Not significant p>0.05

The data presented in Table 5 shows that the mean difference in VAS scores post operative patients who have received spinal anaesthesia in experimental and control group is 1.20.This indicates that there was decrease in pain level among experimental group after receiving lumbar support. To find the significance of mean post tests , the independent 't' test was computed and obtained value of independent $'t'_{(58)}$= 4.160 was found to be significant at 0.05 level of significance.

Hence the null hypothesis H_{02} was not supported and research hypothesis was accepted and inferred that the mean post test 1 VAS scores of postoperative patients who received lumbar support is lower than the mean post test 1 VAS scores of postoperative patients who did not received lumbar support was effective in reducing pain in postoperative patients who have received spinal anaesthesia.

Table 6

Mean , mean difference , standard deviation difference, standard error and independent 't' test for post test 2 VAS scores of post operative patients who have received spinal anesthesia among experimental and control group.

n= 60

Pain. difference	Mean difference	Mean	SD	SEMD	Independent 't' value
Experimental group (n=30)	2.50	1.37	±0.058	0.011	4.426*
Control group (n=30)	3.87				

t (58) = 2.00 ; p< 0.05;significant* , p<0.05; Not significant p>0.05

The data presented in Table 6 shows that the mean difference in VAS scores postoperative patients who have received spinal anesthesia among experimental and control group is 1.37.This indicates that there was decrease in pain level among experimental group after receiving lumbar support. To find the significance in mean VAS score the independent 't' test was computed and obtained value of independent $'t'_{(58)}$= 4.426 was found significant at 0.05 level of significance.

Hence the null hypothesis H_{02} was not supported and research hypothesis was accepted and inferred that the mean post test 2 VAS scores of post operative patients who received lumbar support is lower than the mean post test2 VAS scores of post operative patients who did not received lumbar support was effective in reducing pain in postoperative patients who have received spinal anesthesia.

Table 6

Mean , mean difference , standard deviation difference, standard error and independent 't' test for post test 3 VAS scores of post operative patients who have received spinal anesthesia among experimental and control group.

n= 60

Group difference	Mean	Mean difference	SD	SEMD	Independent 't' value
Experimental group (n=30)	0.50	1.47	±0.279	0.051	5.228*
Control group (n=30)	1.97				

t (58) = 2.00 ; p< 0.05;significant* , p<0.05; Not significant p>0.05

The data presented in Table 6 shows that the mean difference in VAS scores post operative patients who have received spinal anesthesia among experimental and control group is 1.47. This indicates that there was decrease in pain level among experimental group after receiving lumbar support. To find the significance in mean VAS score , the independent 't' test was computed and obtained value of independent $'t'_{(58)}$= 5.228. was found to be significant at 0.05 level of significance.

Hence the null hypothesis H_{02} was not supported and research hypothesis was accepted and inferred that the mean post test 3 VAS scores of post operative patients who received lumbar support is lower than the mean post test3 VAS scores of post operative patients who did not received lumbar support was effective in reducing pain in post operative patients who have received spinal anesthesia.

Table 7
Chi-square values of pre test levels of VAS scores and their selected personal variables

n = 60

Selected personal	Mild to Moderate (<7)	Severe (≥7)	χ^2
1 Age in years			
1.1) 30-40	12	13	1.270
1.2) 41-50	6	13	
1.3) 51-60	6	10	
2 Gender			
2.1) Male	15	21	0.104
2.2) Female	9	15	
3 Occupation			
3.1) Farmer	5	5	0.556
3.2) Employee	6	9	
3.3) Unemployed	8	13	
3.4) Business	5	9	
4 Type of surgery			
4.1) Open	19	27	0.40
4.2) Laparoscopic	5	9	
5 Any past surgeries			
5.1) Yes	4	2	1.975#
5.2) No	20	34	

$\chi 2_{(1)}$:3.84,$\chi 2_{(2)}$:5.99,$\chi 2_{(3)}$:7.81 p >0.05, p<0.05, significant* , # Yates correction .

The data presented in the **table 7** shows that computed Chi-square value and there was no statistically significant association between the VAS scores of postoperative patients with their age, gender, occupation, type of surgery and past surgery at 0.05 level of significance. Therefore the finding support null hypothesis H03 inferring that there is no significant association between VAS scores of postoperative patients who have received spinal anesthesia and their selected personal variables.

CONCLUSION

The findings of the study revealed that, The mean post test VAS scores of postoperative patients who have received spinal anesthesia is significantly lesser than their mean pre-test VAS scores t(29) = 9.023 at 0.05 level of significance. The mean difference between post test VAS score of experimental and control group is 1.20 and calculated t(58) = 4.160 at 0.05 level of significance. This indicates that there is significant decrease in the post test VAS scores of postoperative patients who have received spinal anesthesia. Hence the lumbar support was found to be effective to decrease the pain of postoperative patients.

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