

“Study to Evaluate the Effectiveness of Lumbar Support in Reduction of Lower Back Pain Among Post Cesarean Section Mothers In Selected Hospitals At Udaipur City”

Mrs. Jyoti Kumari, Mrs. Yashaswini Deepak, Mrs. Brincy Babu

(Dept. of obstetric and Gynecological Nursing, Geetanjali College of Nursing /Geetanjali University India)
(Head of Department (HOD), Geetanjali College of Nursing/Geetanjali University, India)

Abstract:

Background: Low back pain is common during pregnancy and also after cesarean deliveries. According to most studies, at least half of the pregnant population is affected. Persistence of low back pain for at 6 months after cesarean deliveries has been reported in 5% to 40% of patients. Many parturient and their obstetricians believe that spinal anesthesia will cause low back pain. Researcher conducted “Study to evaluate the effectiveness of lumbar support in reduction of lower back pain among post cesarean section mothers in selected hospitals at Udaipur city”.

Material and methods: The researcher adopted a quantitative quasi experimental research approach, non randomized control group design. This study aimed at nursing intervention (lumbar support) for improvement of lower back pain among 80 post cesarean section mothers in selected hospitals at Udaipur city. This approach would help the investigator to evaluate the effect of specific intervention that is “Lumbar support” on lower back pain women in selected hospitals at Udaipur city. In this study samples were drawn by using convenient sampling technique. Data was collected by using Visual Analogue scale. The data obtained were analyzed and interpreted in the light of objectives and hypothesis using both descriptive and inferential statistical in terms of frequency, percentage and chi-square.

Results: Lower back pain among post cesarean section was assessed. The t value was 14.36 which is higher than table value at 0.001 levels. This indicates that there was significant difference between pre-test and post-test level of lower back pain among post cesarean section women’s in experimental group. Hence, the research hypothesis H_1 was proved and accepted. There was a significant association between pre-test level of lower back pain score with selected socio-demographic variables, such as Age in years, $\chi^2=19.32$ was found significant at 0.05, Type of family $\chi^2=17.03$ was found significant at 0.05, Body built $\chi^2=19.55$ was found significant at 0.05, Parity $\chi^2=19.98$ was found significant at 0.05, Area of residence $\chi^2=16.59$ was found significant at 0.05, Educational status $\chi^2=23.01$ was found significant at 0.05, Source of information regarding lumbar support $\chi^2=19.48$ was found to be significant at 0.05 level. Hence research hypothesis H_2 was proved and accepted.

Conclusion: This study concluded that there was improvement in lower back pain among post cesarean section mothers which indicates that the lumbar support was effective. The socio-demographic variables of post cesarean section mothers were significantly associated with the pre-test level of lower back pain score. Lumbar support will help the women to manage their lower back pain.

Key Words: Effectiveness, Lumbar support, lower back pain.

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I. Introduction

Back pain during cesarean section is something that every mother has to go through. Nine months of pregnancy is a period full of happiness but also very difficult. It seems that these difficulties will disappear when the child is born, but in fact, after giving birth, the mother has to face more difficulties than before. And the phenomenon of back pain after cesarean section is a typical example. The degree of back pain after cesarean section is statistically accounted for more than 70% of cases, which means that 7 out of 10 women who give birth have back pain afterward. If you do not fully understand the extent of back pain after cesarean section, then perhaps a lot of people will let this condition prolong, affect their lives and form dangerous medical problems.

A quasi experimental non randomized control group design conducted on effectiveness of lumbar support on lower back pain among post cesarean section mothers. In experimental group 34 participants (85%) had severe level of back pain, 6 participants (15%) had worst level of back pain in the pre-test whereas in the post-test after the intervention, 31 participants (77.5%) had mild level of lower back pain, 9 participants (22.5%) moderate level of back pain, no one had worst level of back pain after providing intervention. in control group 31 participants

(77.5%) had severe level of pain and 9 participants (22.5%) had worst level of pain in the pre-test whereas in post-test 29 participants (72.5%) had moderate level of pain, 7 participants (17.5%) had severe level of pain and 4 participants (10%) had mild level of pain.

Objectives of the study

- To assess the post caesarean pain level among mothers in experimental and control group.
- To evaluate the effectiveness of lumbar support among post caesarean section mothers.
- To find out the association between pre-test levels of back pain score with selected socio demographic variables.

II. Material and Methods:

Quantitative Experimental research approach was used for the present study. This approach would help the researcher to effectiveness of lumbar support on lower back pain among post cesarean section mothers in selected hospitals at Udaipur city.

Research design: Quasi experimental non randomized control group design.

Research Setting: The study was conducted in Geetanjali hospital, kalpana nursing home and Magnus hospital Udaipur Rajasthan.

Study duration: 5th may, 2022 to 25th may, 2022

Sample Size: 80 post cesarean section mothers.

Population: in the present study, the population consists of post cesarean section mothers in Geetanjali hospital, Kalpana nursing home and Magnus hospital at Udaipur Rajasthan.

Sampling Technique: Non randomized control group design.

Inclusion criteria:

- Post cesarean section mothers who are willing to participate in the study.
- Post cesarean section mothers who are available at time of data collection.
- Women who are within 2-4 postoperative days.

Exclusion criteria:

- Post cesarean section mothers who have major complication such as post partum hemorrhage (PPH) and pregnancy induced hypertension.
- Women having lower back pain due to pathological condition.

Procedure Methodology: Data collection was a systematic gathering of information (data) relevant to the research purpose. Formal permission was obtained from the nursing superintendent of hospital setting at Udaipur. The main study was done in Geetanjali hospitals, kalpana nursing home and Magnus hospital Udaipur Rajasthan from 5th may, 2022 to 25th may, 2022. The convenient sampling technique was used to collect the sample. The objectives and purpose of the study were explained and confidentially was ensured. Researcher obtained informed written consent form from each study participants. The information regarding the demographic data and other variable were collected from the post cesarean section mothers by interview and from the health records. 80 samples were selected for study. Pre-test was done to observe the level of back pain. The average time was taken for each participant was around 40 minutes in scoring time was 5 minutes. The language was found to be clear. Based on pre-test score, the nursing intervention was administered by the researcher to each participants. The post cesarean section mothers who were in the experimental group were given lumbar support for 15 minutes for 3 times (morning, afternoon, evening,). The post cesarean section mothers who were in control group were given only routine care. Post test was done after 3rd days in both experimental and control group. Researcher didn't find any problem to conduct main study. The data collection procedure was conducted by maintaining social distance and followed government guidelines as per covid-19 situation.

Statistical analysis: Data analysis is the technique used to reduce, organize and give meaning to the data. In the present study, data obtained were analyzed on the basis of objectives of the study using descriptive and inferential statistics. A master data sheet was prepared with responses given by participants. The plan for data analysis were as follows -

Descriptive analysis

- Frequency and percentage distribution was used to evaluate the socio-demographic variables (age in years, type of family, parity, body built, educational status, area of residence, source of information regarding lumbar support).
- Frequency and percentage distribution was used to evaluate the level of back pain.
- Mean and standard deviation was used to compare the pre-test and post-test level of back pain.

- Paired t-test was used to compare the pre-test and post-test level of back pain among experimental and control group.
- Chi square test was used to find out the association of pre-test pain score among experimental group and control group with their selected socio-demographic variables.

III. Results

Section A: Frequency and percentage distribution of socio-demographic variables.

Section B: Assessment of pre-test and post-test level of lower back pain among post cesarean section mothers.

Section C: Effectiveness of lumbar support on the management of lower back pain.

Section D: Association between pre-test pain score with their selected socio-demographic variables.

SECTION-A

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOCIO-DEMOGRAPHIC VARIABLES.

TABLE 1: SOCIO-DEMOGRAPHIC VARIABLES

N = 80

S. N.	Socio Demographic Data:	Frequency (Experimental)	Percentage (Experimental)	Frequency (Control)	Percentage (Control)
1	Age (in year)				
a)	21-25	19	47.50%	13	32.50%
b)	26-30	14	35%	15	37.50%
c)	31-35	7	17.50%	12	30%
d)	36 and above	0	0%	0	0%
TOTAL		40	100	40	100%
2	Type of family				
a)	Nuclear	17	42.50%	16	40%
b)	Joint	22	55%	21	52.50%
c)	Extended	1	2.50%	3	7.50%
TOTAL		40	100	40	100%
3	Body Built (BMI)				
a)	Under weight (<18.5)	0	0%	0	0%
b)	Normal (18.5 - 24.9)	26	65%	18	45%
c)	Obese (25-29.9)	14	35%	22	55%

TOTAL		40	100	40	100%
4	Parity				
a)	1	15	37.50%	9	22.50%
b)	2	17	42.50%	18	45%
c)	3	7	17.50%	10	25%
d)	4 and above	1	2.50%	3	7.50%
TOTAL		40	100	40	100%
5	Area of residence				
a)	Rural	20	50%	19	47.50%
b)	Urban	20	50%	21	52.50%
c)	Semi Urban	0	0%	0	0%
TOTAL		40	100	40	100%
6	Educational Status				
a)	No formal	9	22.50%	11	27.50%
b)	Primary	12	30%	11	27.50%
c)	Secondary	3	7.50%	3	7.50%
d)	Higher secondary	16	40%	15	37.50%
TOTAL		40	100	40	100%
7	Source of information regarding lumbar support				
a)	Mass Media	19	47.50%	18	45%
b)	family members and peer group	0	0%	0	0%
c)	Health profession	17	42.50%	0	0%
d)	No information	4	10%	22	55%
TOTAL		40	100	40	100%

The data given table 1 describes the frequency and percentage of experimental and control group of lower back pain among post cesarean section mothers by age in years, type of family, body built, and parity, area of residence, educational status, and source of information regarding lumbar support

SECTION-B

ASSESSMENT OF PRE-TEST AND POST-TEST LEVEL OF LOWER BACK PAIN AMONG POST-CESAREAN SECTION MOTHERS.

Table-2: Frequency and percentage distribution of pre-test and post-test level of lower back pain among post-cesarean section mothers for experimental group.

N=40					
Levels of Pain	Pain Score	Pre-Test Frequency	Percentage	Post-Test Frequency	Percentage
No pain	0	0	0%	0	0%
Mild Pain	1-3	0	0%	31	77.50%
Moderate Pain	4-6	0	0%	9	22.50%
Severe Pain	7-9	34	85%	0	0%
Worst Pain Possible	10	6	15%	0	0%
Total		40	100%	40	100%

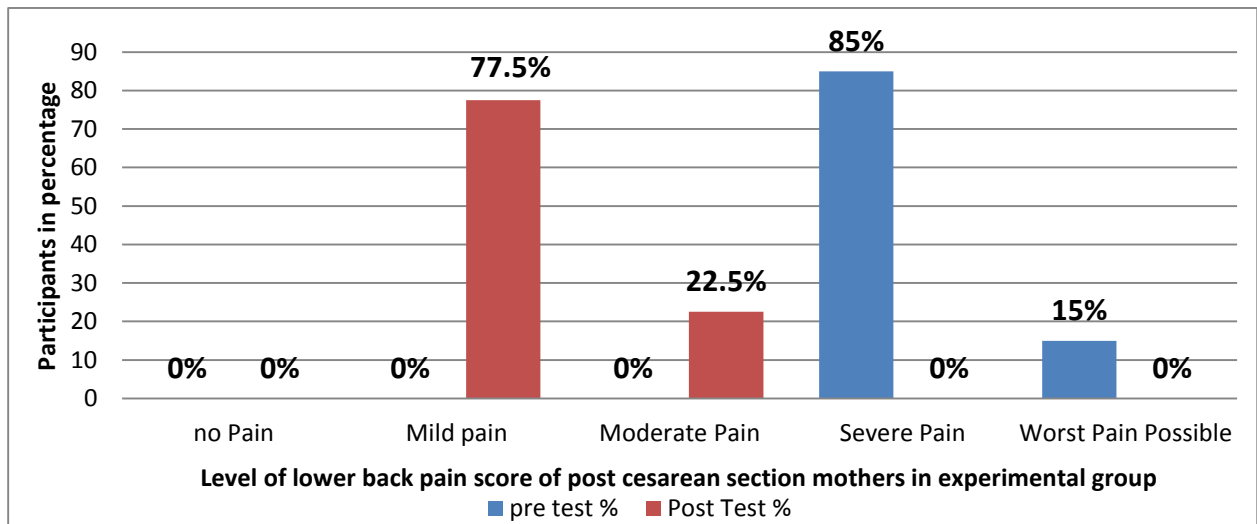


Figure-1: Percentage distribution of pre-test and post-test level of lower back pain for experimental group.

Table-2 and Figure-1: It shows that, in experimental group 34 participants (85%) had severe level of back pain, 6 participants (15%) had worst level of back pain in the pre-test whereas in the post-test after the intervention, 31 participants (77.5%) had mild level of lower back pain, 9 participants (22.5%) moderate level of back pain, no one had worst level of back pain after providing intervention.

Table-3: Frequency and percentage distribution of pre-test and post-test level of lower back pain among post-cesarean section mothers for control group.

N=40					
Levels of Pain	Pain Score	Pre-Test Frequency	Percentage	Post-Test Frequency	Percentage
No pain	0	0	0%	0	0%
Mild Pain	1-3	0	0%	4	10%
Moderate Pain	4-6	0	0%	29	72.5%
Severe Pain	7-9	31	77.5%	7	17.5%
Worst Possible Pain	10	9	22.5%	0	0%
Total		40	100%	40	100%

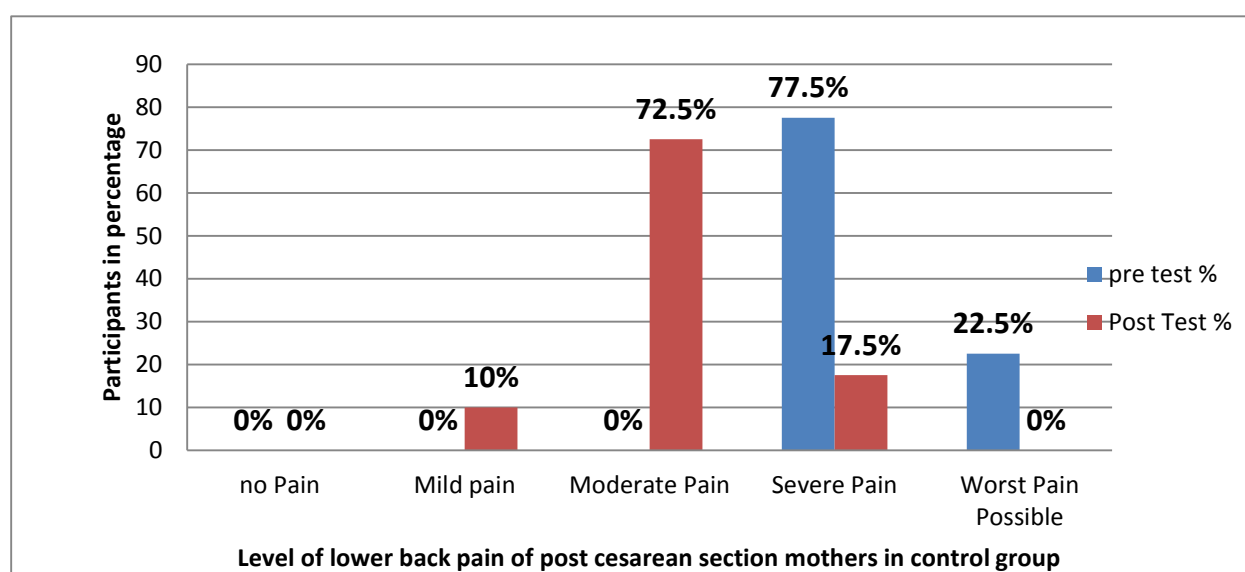


Figure-2: Percentage distribution of pre-test and post-test level of lower back pain for control group.

Table-3 and figure-2: It shows that, in control group 31 participants (77.5%) had severe level of pain and 9 participants (22.5%) had worst level of pain in the pre-test whereas in post-test 29 participants (72.5%) had moderate level of pain, 7 participants (17.5%) had severe level of pain and 4 participants (10%) had mild level of pain.

SECTION-C:

EFFECTIVENESS OF LUMBAR SUPPORT ON THE MANAGEMENT OF LOWER BACK PAIN LEVEL.

Table-4: Effectiveness of intervention comparison of pre-test and post-test score for experimental Group.

N=40								
	Mean	Mean Percentage (%)	SD	Mean Difference	df	t-value	P-value paired test	Inferences
Pre-test Experimental	8.51	85.10%	0.95	5.69	39	14.36	0.001	Significant
Post-test experimental	2.82	28.20%	1.05					

The result show that in the Experimental group pre-test mean 8.51 with standard deviation 0.95 and post-test mean was 2.82 with standard deviation 1.05, t value was 14.36 which was higher than the table value that is at 0.001 levels .Hence H_1 was accepted.

Table-5: Effectiveness of intervention comparison of pre-test and post-test score for control group.

N=40

	Mean	Mean Percentage (%)	SD	Mean Difference	df	t-value	P-value paired test	Inferences
Pre-test control	8.6	86.00%	1.05	2.39	39	1.36	0.57	Non-Significant
Post-test control	6.21	62.10%	1.28					

The result show that in the Control group pre-test mean 8.6 with standard deviation 1.05 and post-test mean was 6.21 with standard deviation 1.28, t value was 1.36 which was lower than the table value at 0.57 level. Hence H_1 was not accepted.

The above finding clearly indicate that the lumbar support on lower back pain was found to be effective in reducing the level of lower back pain among post cesarean section mothers in experimental group rather than the control group who had undergone normal hospital routine measures.

SECTION: D

ASSOCIATION BETWEEN THE PRE-TEST AND WITH THEIR SELECTED SOCIO-DEMOGRAPHIC VARIABLES.

Finding related to the Association between the pre-test with their selected socio-demographic variable.

This selection deals with analysis and interpretation of the data collected to find out the association between pre-test with their selected socio-demographic variable like Age in years, Type of family, Body built, Parity, Area of residence, Educational status, Source of information regarding lumbar support. A non-parametric chi-square test is used to describe the association between pre-test with selected socio-demographic variables.

H₂: There was a significant association between the pre-test with their selected socio-demographical variable for experimental group.

The chi-square test was carried out to determine the association between pre-test with their selected socio-demographical variables like Age in years, Type of family, Body built, Parity, Area of residence, Educational status, Source of information regarding lumbar support.

In experimental group socio-demographical variable such as Age in year $\chi^2=19.32$ was found significant at 0.01, Types of family $\chi^2=17.03$ was found significant at 0.02, Body built $\chi^2=19.55$ was found significant at 0.01, Parity $\chi^2=19.98$ was found significant at 0.01, Area of residence $\chi^2=16.59$ was found significant at 0.01, Educational status $\chi^2=23.01$ was found significant at 0.01, Source of information regarding lumbar support $\chi^2=19.48$ was found to be significant at 0.01 level. Hence research hypothesis H_2 was proved and accepted.

H₂: There was a significant association between the pre-test with their selected socio-demographic variable for control group.

In control group socio-demographical variable such as Age in year $\chi^2=13.08$ was found significant at 0.02, Educational status $\chi^2=15.77$ was found significant at 0.02, Area of residence $\chi^2=13.88$ was found significant at 0.03, Type of family $\chi^2=9.03$ was found to be non-significant at 0.0156, Body built $\chi^2=4.87$ was found to be non-significant at 0.089, Parity $\chi^2=7.67$ was found to be non-significant at 0.08, Source of information regarding lumbar support $\chi^2=7.04$ was found to be non-significant at 0.46. Hence research hypothesis H_2 was accepted.

IV. Discussion

Assessment of pre-test and post-test level of lower back pain among post cesarean section mothers for experimental and control group.

For the experimental group in the pre-test, majority of the participants 34 (85%) had severe level of back pain, and 6 (15%) had worst level of back pain, whereas in the post-test, majority of the participants 31 (77.50%) had mild level of back pain, 9 (22.50%) had moderate level of back pain. It shows that no participants were remained at severe level of lower back pain after lumbar support. For control group that, in the pre-test most of

the participants, 31 (77.5%) had severe level of back pain and 9 (22.5%) had worst level of back pain, whereas in the post-test, 29 (72.5%) had moderate level of pain and 7 (17.5%) had severe level of pain.

A similar study was conducted by **Mrs J. Nagalakshmi, in the year (2014)** at Chennai, In experimental group in pre-test, majority of the participants had severe level of back pain that is 66.7% and 33.3% of the women had moderate level of back pain. In the control group, 40.0% of the participants sensed moderate level of back pain and 60% experience severe level of back pain. In post-test, in the experimental group, 13.3% of the participants felt no pain and 86.7% of the Participants had mild level of back pain. In the control group, 83.3% of the participants had Moderate level of back pain and 16.7% had severe level of back pain.

Effectiveness of intervention comparison of pre-test and post-test score for experimental and control group.

In experimental group the improvement in level of lower back pain from pre-test to post-test the mean was 8.51 to 2.82, SD was 0.95 to 1.05. the mean difference was 5.69. The data further represent that the, “t” value of 14.36 was significantly higher than the table value at 0.001 levels. This indicates that there was difference in pre-test and post-test level of lower back pain of participants and the lumbar support was effective to decrease the level of lower back pain among post cesarean section mothers. Hence H_1 was accepted.

Whereas in control group the score of the level of lower back pain from pre-test to post-test the mean was 8.6 to 6.21, SD was 1.05 to 1.28. the mean difference was 2.39. the data further represent that the, “t” value of 1.36 was not significantly higher than the table value at 0.001 levels. Hence H_1 was not accepted.

A similar study was conducted by **Mrs J. Nagalakshmi, in the year (2014)** at Chennai, the data showed that, in experimental group the improvement in level of lower back pain from pre-test to post-test the mean was 6.67 to 1.23. The data further represent that the “t” value of 15.34 was significantly higher than the table value at 0.001 levels. This indicates that lower back pain reduces in experimental group. Whereas in control group the score of the level of lower back pain from pre-test to post-test the mean was 6.60 to 5.20. The data further represent that the, “t” value of 7.01 was not significantly higher than the table value at 0.001 levels. There was not significant reduction in the lower back pain of women’s among control group.

Finding related to the Association between the pre-test score with their selected socio-demographic variables.

There was a significant association between the pre-test score with their selected socio-demographical variable for Experimental group.

The chi-square test was carried out to determine the association between pre-test score with their selected socio-demographical variables like Age in years, Type of family, Body built, Parity, Area of residence, Educational status, Source of information regarding lumbar support.

In experimental group socio-demographic variables such as Age in years ($\chi^2=19.32$) was found significant at 0.05, Type of family ($\chi^2=17.03$) was found significant at 0.05, Body built ($\chi^2=19.55$) was found significant at 0.05, Parity($\chi^2=19.98$) was found significant at 0.05, Area of residence($\chi^2=16.59$) was found significant at 0.05, Educational status($\chi^2= 23.01$) was found significant at 0.05, Source of support($\chi^2=19.48$) were found to be significantly associated with pre-test level of back pain score at 0.05 level hence research hypothesis H_2 was accepted.

In control group socio-demographical variable such as Age in years ($\chi^2=13.02$) was found significant at 0.05, Type of family ($\chi^2=9.03$) was found non-significant at 0.05, Body built ($\chi^2=4.87$) was found non-significant at 0.05, Parity ($\chi^2=7.67$) was found non-significant at 0.05, Area of residence ($\chi^2=13.88$) was found significant at 0.05, Educational status ($\chi^2=15.77$) was found significant at 0.05. Source of information regarding lumbar support ($\chi^2=7.04$) was found non-significant at 0.05. Hence research hypothesis H_2 was proved and accepted.

In similar study was done by **Mrs J. Nagalakshmi, in the year (2014)** at Chennai which show the association between the pre-intervention levels of lower back pain with selected demographic variables using ANNOVA test, chi-square test was used to compute the association between pre-test with their selected socio-demographic variables. So it is found to have association with the lumbar support among post cesarean section mothers with lower back pain.

V. Conclusion

The study was conducted to “Evaluate the effectiveness of lumbar support in reduction of lower back pain among post cesarean section mothers in selected hospitals at udaipur city”. In the present study 80 post cesarean section mothers were selected through convenient sampling technique. Researcher used quasi experimental non randomized control group design to evaluate the back pain among post cesarean section mothers. Data was collected by universal pain assessment scale tool and was analyzed through suitable statistical method. The participants become familiar and found themselves comfort and reduction of lower back pain. This ensured that reduction of lower back pain as evidenced by the result shown by universal pain assessment scale. Hence

lumbar support was found to be a cost-effective procedure in reduction in lower back pain in post cesarean section mothers.

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