

# “CLINICAL STUDY ON EFFICACY OF SHIREESH TWAK CHURNA IN POST-OPERATIVE PAIN MANAGEMENT”

## Data Presentation, Analysis and Interpretations

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### 6.1: Introduction

Data Analysis is a key phase of research work. The present chapter entitled ‘Data Presentation, Analysis and Interpretation’ comprised of four sections Part ‘A’, Part ‘B’ and the details of each section are given below,

- A. Presentation, analysis and interpretation of data is done with help of sorting the raw data, its coding, classification and tabulation, percentage calculation and drawing the inferences.
- B. Statistical Analysis is done by using measures of central tendency, measures of variation, Testing of Hypothesis is done by using statistical tools like Chi square test, t test, K-S test etc.

In the present chapter the information comprising to several variables is presented in order to pertain a fair comprehensive profile of respondents. The secondary purpose is to examine the relationship between The findings of the hypotheses tested in this study are discussed

This chapter begins with the information on the survey results and the description of the respondent’s demographic information. The descriptive analysis of the variables used in this study is also presented. This is followed closely by the testing of the hypotheses formulated for this study and presented in the order of the hypotheses. Each hypothesis focused on the variables of the research with dependent and independent variable.

The analysis of the hypotheses is carried out based on the statistical tools adopted. The researcher’s position in this study is clearly stated under result presentation and discussion. These views are within the theoretical framework of this study.

### 6.1 Survey Results

Survey Results of this study are analyzed using SPSS 17 (SPSS, Inc., 2010) statistical program.

## Demographic Information:

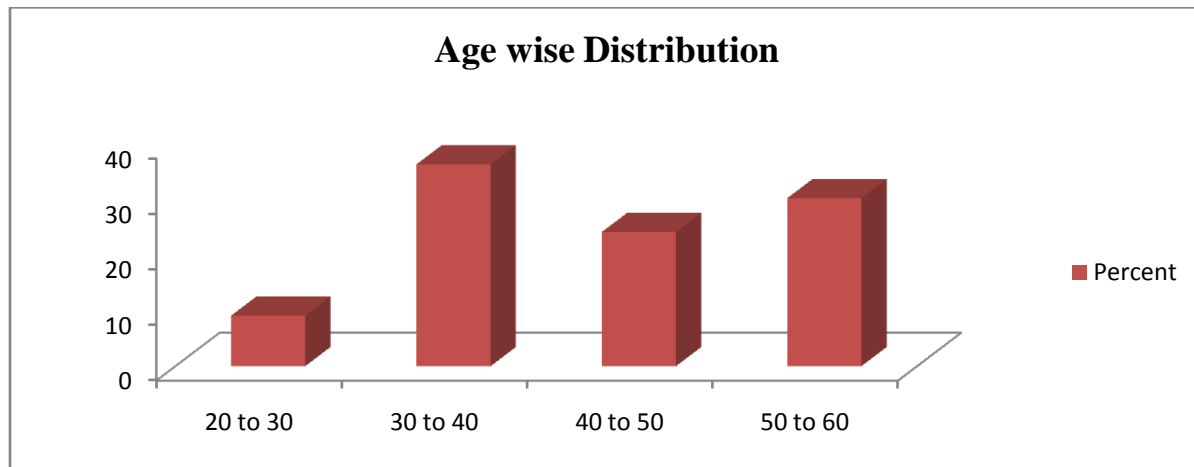
Table No 1 :

### Age wise distribution of respondents:

Age of respondents					
	Age groups	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20 to 30	6	9.1	9.1	9.1
	30 to 40	24	36.4	36.4	45.5
	40 to 50	16	24.2	24.2	69.7
	50 to 60	20	30.3	30.3	100.0
	Total	66	100.0	100.0	

Source :Primary Data

Graph No 1:



(Source :MsExel 2017)

Statistics:

Particulars		Age of respondent
N	Valid	33
	Missing	0
Mean		2.7576
Std. Error of Mean		0.17424
Mode		2
Std. Deviation		1.00095

Majority of the respondents are in the class 30 to 40 which is 36.4 percent followed by the age group 50 to 60 which is 30.3 percent with mean 2.7576 ,standard error mean 0.17424 .Mode is 2 means majority lies between 30 to 40 with standard deviation 1.00095.

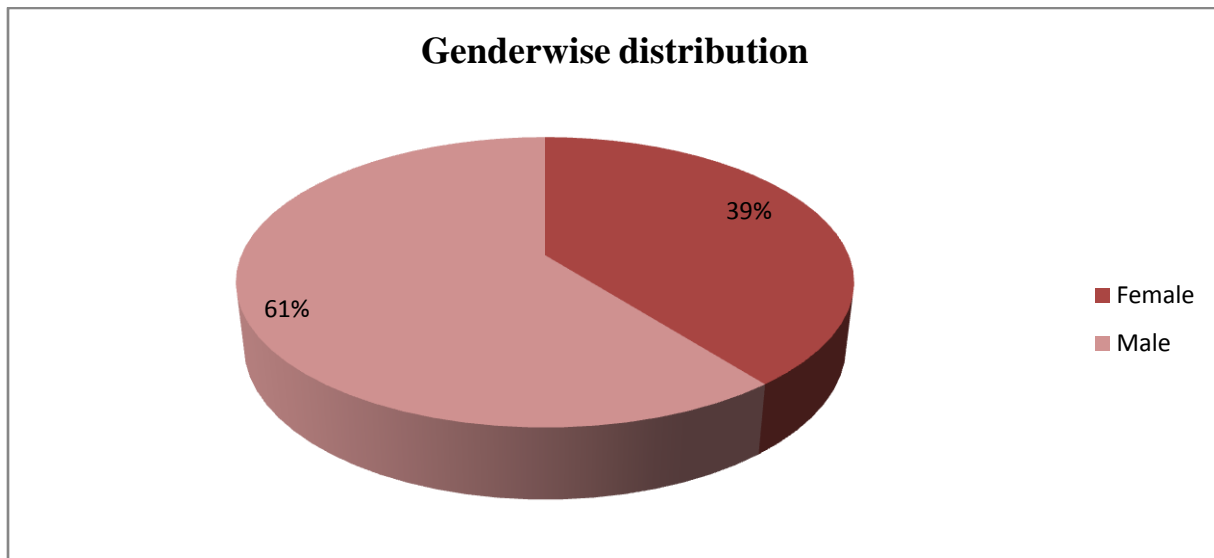
**Table No 2 :**

**Gender wise distribution of respondents:**

<b>Gender of Respondent</b>					
	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	26	39.4	39.4	39.4
	Male	40	60.6	60.6	100.0
	Total	66	100.0	100.0	

(Source :Primary Data)

**Graph No 2 :**



(Source :MsExel 2017)

Out of 33 respondents 61 percent were the male and 39 percent were the females.

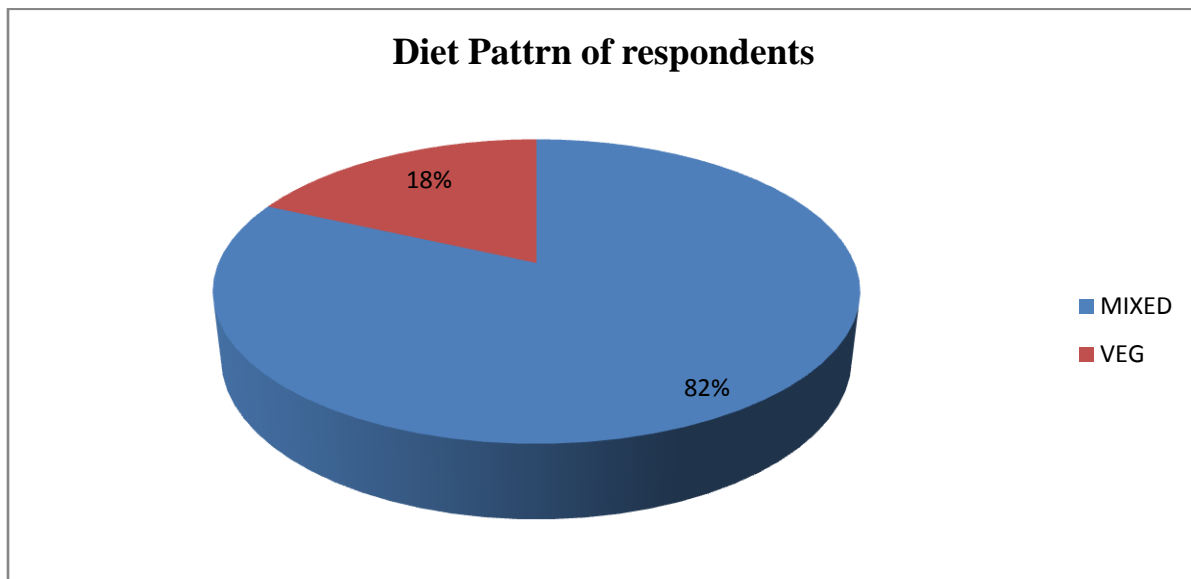
Table No 3 :

Diet pattern distribution of respondents:

<b>Diet Pattern</b>					
	Diet Pattern	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MIXED	54	81.8	81.8	81.8
	VEG	12	18.2	18.2	100.0
	Total	66	100.0	100.0	

(Source :Primary Data)

Graph No 3:



(Source : MsExel 2017)

Out of 66 patients ,82 percent respondents were mixed diet pattern while 18 percent were veg pattern.

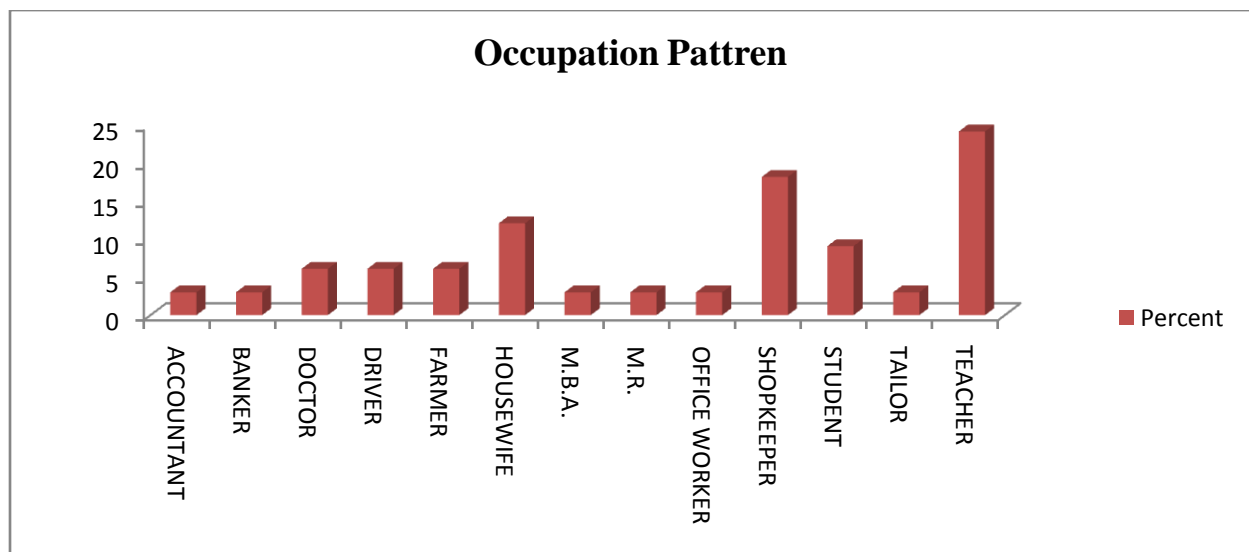
**Table No 4 :**

**Occupation distribution of respondents:**

Occupation					
	Occupation pattern	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ACCOUNTANT	2	3.0	3.0	3.0
	BANKER	2	3.0	3.0	6.1
	DOCTOR	4	6.1	6.1	12.1
	DRIVER	4	6.1	6.1	18.2
	FARMER	4	6.1	6.1	24.2
	HOUSEWIFE	8	12.1	12.1	36.4
	M.B.A.	2	3.0	3.0	39.4
	M.R.	2	3.0	3.0	42.4
	OFFICE WORKER	2	3.0	3.0	45.5
	SHOPKEEPER	12	18.2	18.2	63.6
	STUDENT	6	9.1	9.1	72.7
	TAILOR	2	3.0	3.0	75.8
	TEACHER	16	24.2	24.2	100.0
		Total	66	100.0	100.0

(Source :Primary Data)

**Graph No 4 :**



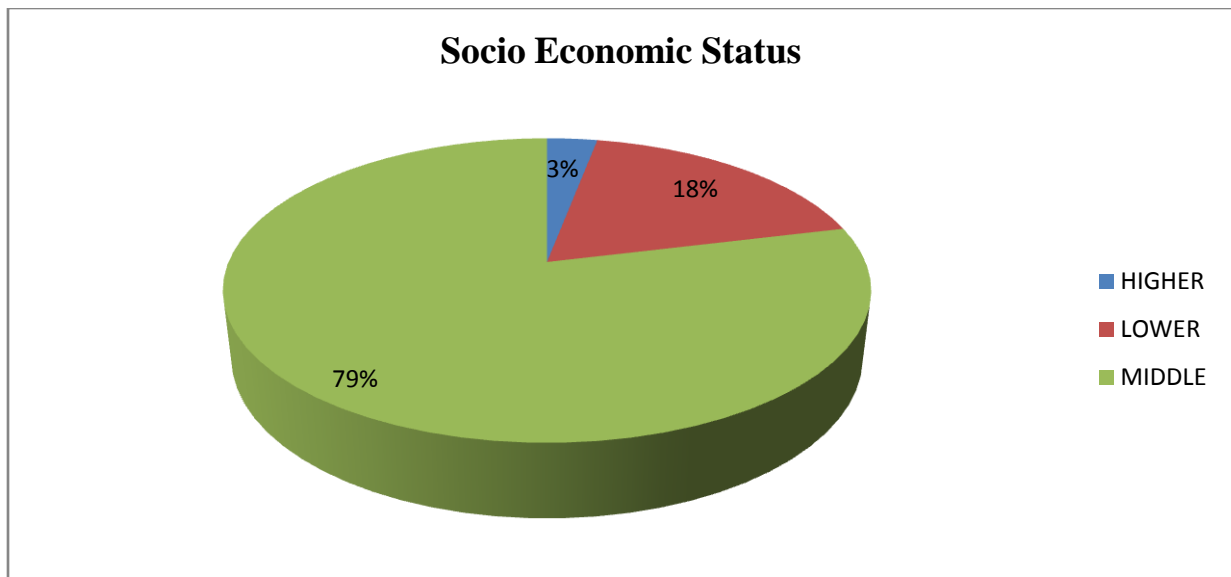
**Table No 6 :**

**Socio economic status distribution of respondents:**

S.E.S.					
	S.E.S.	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	HIGHER	2	3.0	3.0	3.0
	LOWER	12	18.2	18.2	21.2
	MIDDLE	52	78.8	78.8	100.0
	Total	66	100.0	100.0	

(Source :Primary Data)

Graph No 6:



(Source : MsExel 2017)

From the above table ,79 percent respondents were from middle class socio economic status while 18 percent were from lower income pattern.

**Table No 7 :**

**Religion distribution of respondents:**

<b>Religion</b>					
	Religion	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	CHRISTIAN	16	24.2	24.2	24.2
	HINDU	32	48.5	48.5	72.7
	MUSLIM	18	27.3	27.3	100.0
	Total	66	100.0	100.0	

(Source :Primary Data)

Majority of the respondents 48.5 percent were hindus while 27.3 were muslim and 24.2 were chirstian.

**Table No 9 :**

**Marital status distribution of respondents:**

<b>Marital Status</b>					
	Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MARRIED	58	87.9	87.9	87.9
	UNMARRIED	8	12.1	12.1	100.0
	Total	66	100.0	100.0	

(Source :Primary Data)

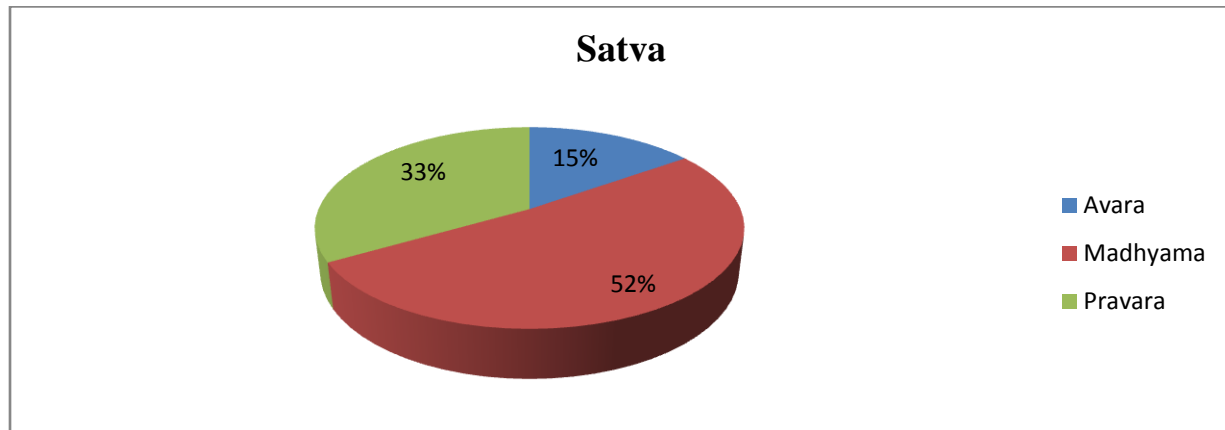
Out of total respondents 87.9 percent were married while 12.1 percent are unmarried.

Table No 10 :

**Satva examination of respondents:**

Satva					
	Savta	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Avara	5	15.2	15.2	15.2
	Madhyama	17	51.5	51.5	66.7
	Pravara	11	33.3	33.3	100.0
	Total	33	100.0	100.0	

Graph No 7 :



From the above table 51.5 percent have madhyama satva while 33.3 percent have pravara satva.

Table No 11: Association of diet with satva:

Chi-Square Tests of prakruti and satva					
Diet Pattern		Value	df	Asymp. Sig. (2-sided)	Decision
MIXED	Pearson Chi-Square	8.325 <sup>a</sup>	10	.597	Not Significant
	Likelihood Ratio	11.209	10	.342	Not Significant
VEG	Pearson Chi-Square	7.500 <sup>b</sup>	8	.484	Not Significant
	Likelihood Ratio	9.364	8	.313	Not Significant
	N of Valid Cases	6			

There is no association of any diet pattern with Prakruti and satva.



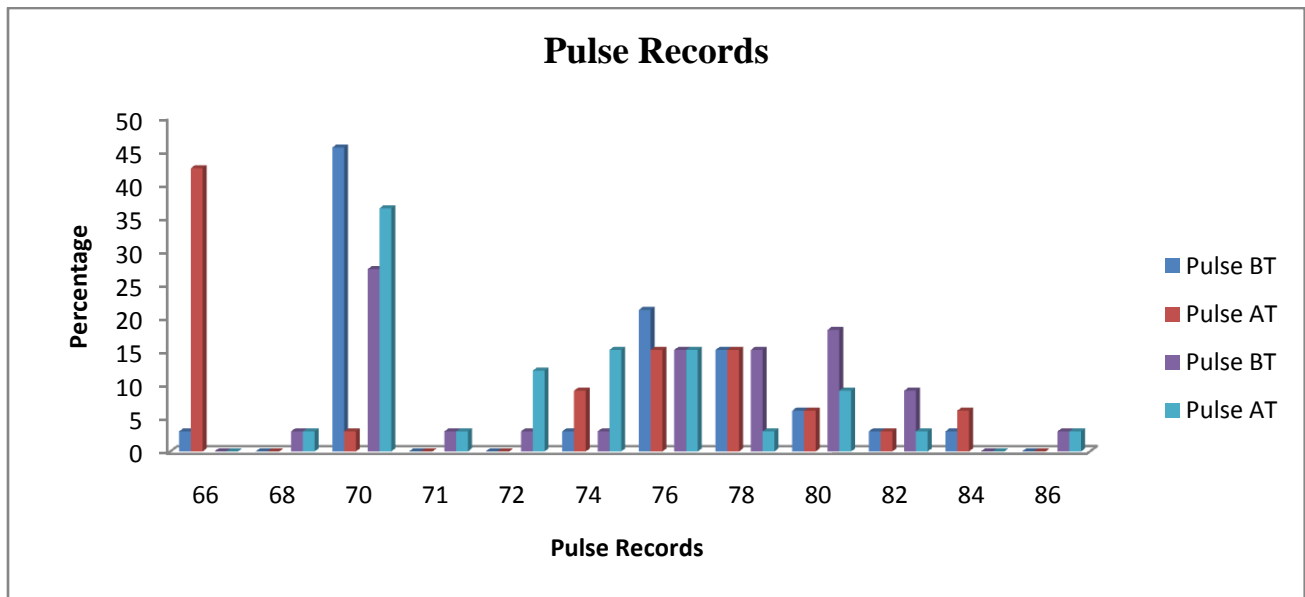
Table No 12 :

Pulse rate of Respondents:

Groups	Control Group					Trial Group			
	Pulse	Pulse BT		Pulse AT		Pulse BT		Pulse AT	
		Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
Valid	66	1	3	14	42.4	0	0	0	0
	68	0	0	0	0	1	3	1	3
	70	15	45.5	1	3	12	36.4	9	27.3
	71	0	0	0	0	1	3	1	3
	72	0	0	0	0	4	12.1	1	3
	74	1	3	3	9.1	5	15.2	1	3
	76	7	21.2	5	15.2	5	15.2	5	15.2
	78	5	15.2	5	15.2	1	3	5	15.2
	80	2	6.1	2	6.1	3	9.1	6	18.2
	82	1	3	1	3	1	3	3	9.1
	84	1	3	2	6.1	0	0	0	0
	86	0	0	0	0	1	3	1	3
	<b>Total</b>		<b>33</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>33</b>

(Souece:Primary Data)

Graph No 12:



Before the operation pulses were risen but after the treatment they become normal is shown by above tables and graph which is clearly shown in the following statistical table

**Table No 13:**

**Statistical Differentiation of Pulse rate:**

Descriptive Statistics									
		Control Group				Trial Group			
	N	Mean		Std. Deviation	Variance	Mean		Std. Deviation	Variance
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Pulse -BT	33	75.64	1.012	5.814	33.801	75.67	0.845	4.852	23.542
Pulse -AT	33	73.88	0.783	4.498	20.235	74.3	0.797	4.579	20.968

(Source : SPSS 17)

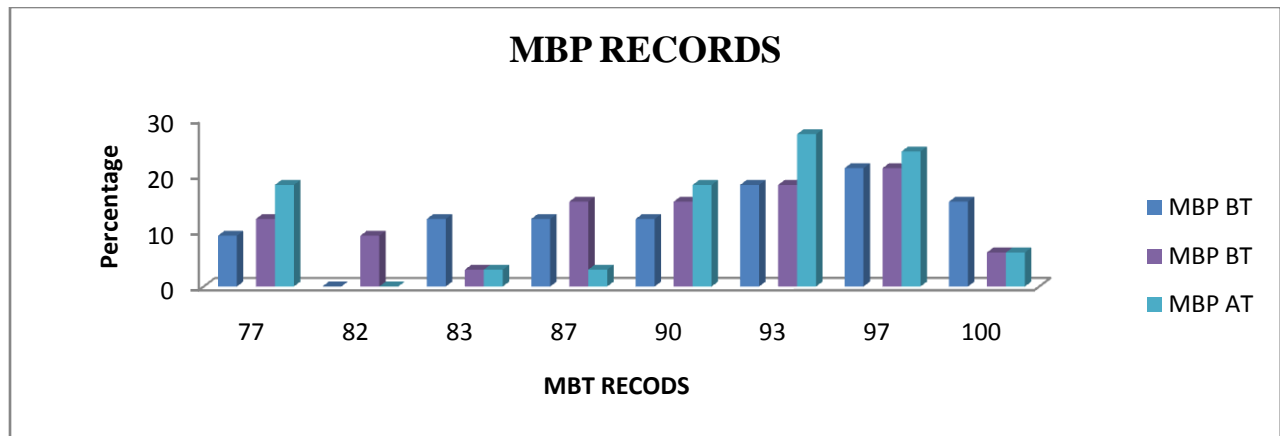
**In the control group, mean pulse BT is 75.64 with SD 5.81 which reduced after treatment as 73.88 with SD 4.49 while in trial group pulse BT is 75.61 with SD 4.85 which reduced to 74.3 with comparative equal SD 4.57. so, we can say that trial group has a better significance than the control group.**

**Table no 14:**

**Mean Blood Pressure (MBP) of Respondents:**

Groups		Control Group				Trial Group			
		MBP BT		MBP AT		MBP BT		MBP AT	
	MBP	Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
Valid	77	3	9.1	9	27.3	4	12.1	6	18.2
	82	0	0	1	3	3	9.1	0	0
	83	4	12.1	4	12.1	1	3	1	3
	87	4	12.1	4	12.1	5	15.2	1	3
	90	4	12.1	2	6.1	5	15.2	6	18.2
	93	6	18.2	7	21.2	6	18.2	9	27.3
	97	7	21.2	5	15.2	7	21.2	8	24.2
	100	5	15.2	1	3	2	6.1	2	6.1
	Total		33	100	33	100	33	100	33

Graph No 13: (Souece:Primary Data)



(Source : SPSS 17)

**Table No 15: Descriptive Statistics of MBP:**

Descriptive Statistics									
		Control Group				Trial Group			
	N	Mean		Std. Deviation	Variance	Mean		Std. Deviation	Variance
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
MBP-BT	33	91.11	1.228	7.055	49.768	89.78	1.189	6.828	46.625
MBP-AT	33	86.93	1.367	7.855	61.705	90.4	1.295	7.441	55.376

(Source : SPSS 17)

From the above tables it is Before treatment blood pressure is higher in mean but after the treatment it is becoming normal to mean.

**Table No 16:**

**Distrubution of respiratory Rate:**

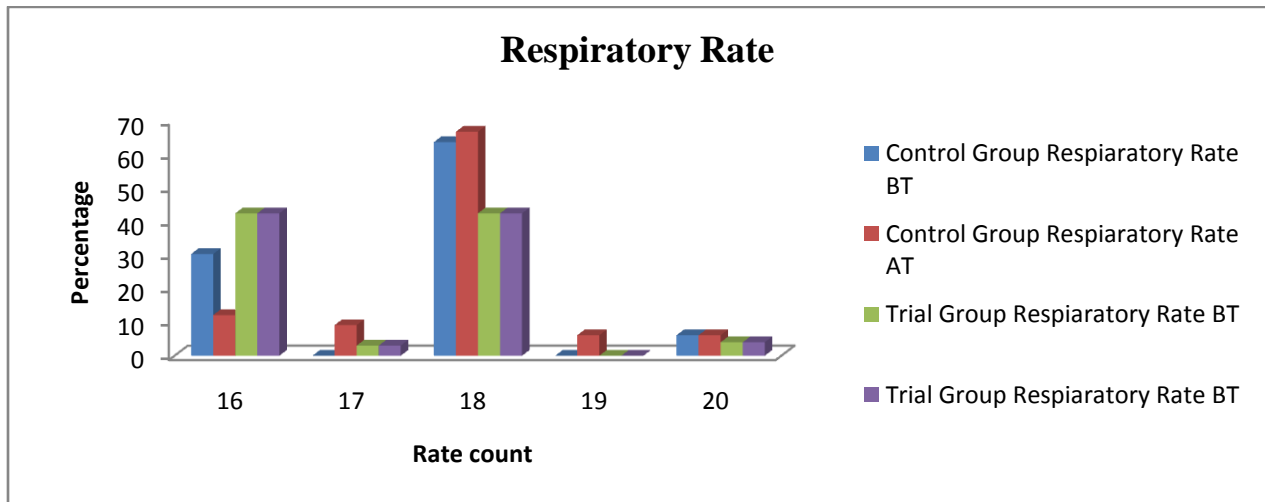
Groups		Control Group				Trial Group			
	Respiaratory Rate	Respiaratory Rate BT		Respiaratory Rate AT		Respiaratory Rate AT		Respiaratory Rate BT	
		Freq	Percent	Freq	Percent	Freq	Percent	Freq	Percent
Valid	16	10	30.3	4	12.1	14	42.4	2	6.1
	17	0	0	3	9.1	1	3	3	9.1
	18	21	63.6	22	66.7	14	42.4	23	69.7
	19	0	0	2	6.1	0	0	2	6.1
	20	2	6.1	2	6.1	20	4	3	9.1
	<b>Total</b>		<b>33</b>	<b>100</b>	<b>33</b>	<b>100</b>	<b>Total</b>	<b>33</b>	<b>33</b>

(Souece:Primary Data)

In control group,from the above table 63.6 percent respondents have average respiratory rate 16 before treatment ,while 30.3 percent have average 16 respiratory rate while it is seen that after treatment it is normalized to 66.7 percent in 22 respondent and distributed equally to 16 to 20 .

In trial group ,18 in 42.4 percent respondents and equally distributed as in 16 respondents to 42.4 percent ,but after treatment it is rises to normal count as 18 which is shown in 69.7 percent respondents .

**Graph No 16:**



(Source : SPSS 17)

**Table No 17:**

**Descriptive statistics of Respiratory Rate:**

Descriptive Statistics									
		Control Group				Trial Group			
	N	Mean		Std. Deviation	Variance	Mean		Std. Deviation	Variance
	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Respiratory Rate-AT	33	17.85	0.164	0.939	0.883	18.03	0.154	0.883	0.78
Respiratory Rate-BT	33	17.52	0.195	1.121	1.258	17.36	0.238	1.365	1.864

(Souece:Primary Data)

In control group,it is clear that Mean Respiratory Rate-AT is 17.85 with standard deviation 0.939 which is higher than before treatment with mean 17.52 with standard deviation 1.121 .

In trial group mean Respiratory Rate-AT is 18.03 with lesser variation 0.883 which is comparatively higher than Respiratory Rate-BT as 17.36 with less standard deviation 1.365 .

Trial Group shows significant results than control group.

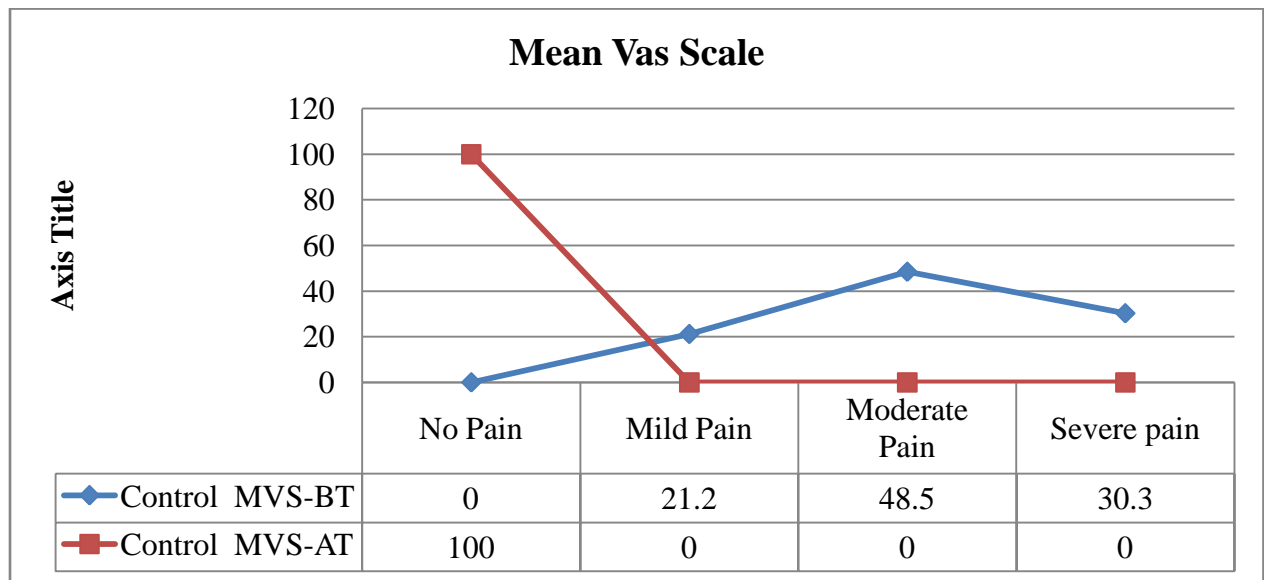
**Table No 18:**

**Distribution of Mean Vas Scale in control group:**

Control Group										
	MVS-BT		MVS- DAY1		MVS-DAY2		MVS-DAY3		MVS-AT	
Scale	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
No Pain	0	0	0	0	2	6.1	1	3	33	100
Mild Pain	7	21.2	9	27.3	14	42.4	8	24.2	0	0
Moderate Pain	16	48.5	14	42.4	13	39.4	15	45.5	0	0
Severe pain	10	30.3	10	30.3	4	12.1	9	27.3	0	0
Total	33	100	33	100	33	100	33	100	33	100

(Souece:Primary Data)

**Graph No 18: Distribution of Mean Vas Scale in control group:**



(Source : SPSS 17)

In control group 48.5 percent respondents having moderate pain ,30.3 percent having severe pain while only 21.2 percent have mild pain before treatment but after treatment pain reduced to 27.3

percent to mild and 42.4 percent to moderate on day 1 .In day 2 ,12.1 percent respondents have severe pain, 42.4 percent have mild pain ,and 39.4 percent have mild pain .

But after treatment on day 3 all respondents having no pain in control group.

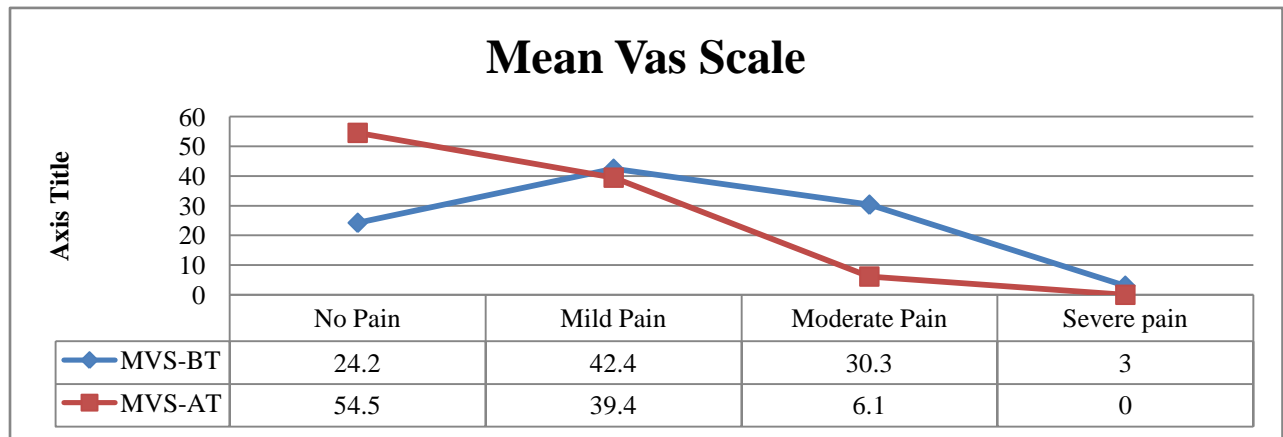
**Table no 19 :**

**Distribution of Mean Vas Scale in trial group:**

Trial Group										
	MVS-BT		MVS- DAY1		MVS-DAY2		MVS-DAY3		MVS-AT	
Scale	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
No Pain	1	3	0	0	0	0	1	3	18	54.5
Mild Pain	14	42.4	3	9.1	8	24.2	28	84.8	13	39.4
Moderate Pain	10	30.3	28	85	25	75.8	4	12.1	2	6.1
Severe pain	8	24.2	2	6.1	3	9.1	0	0	0	0
Total	33	100	33	100	33	100	33	100	33	100

(Souece:Primary Data)

**Graph no 19: Distribution of Mean Vas Scale in Trial group**



(Source : SPSS 17)

In Trial group 30.3 percent respondents having moderate pain ,42.4 percent having mild pain while only 24.2 percent have severe pain before treatment but after treatment pain reduced to 85 percent to moderate pain and 9.1 percent to mild on day 1 .In day 2 ,84.8 percent to mild pain and after day 3 it reduces to 54.5 percent to no pain and 39.4 percent to mild pain. Trial group shows moderate results than control group.

**Table no.20:**

**Descriptive Statistics:**

Descriptive Statistics							
	N	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
MVS-BT	33	6	9	7.12	.143	.820	.672
MVS- DAY1	33	4	8	6.09	.161	.922	.851
MVS-DAY2	33	2	7	4.59	.218	1.253	1.570
MVS-DAY3	33	0	4	1.97	.170	.976	.952
MVS-AT	33	0	4	1.00	.226	1.299	1.688
Valid N (listwise)	33						

(Source : SPSS 17)

From the above table ,mean vas scale before treatment was 7.12 on avareage with standard deviation 0.820 while it goes on reduces with mean values as 6.09,4.59,1.97 to 1.00 with comparatively equal standard deviation.



## Hypothesis Testing

Hypothesis 1:

$H_0$  :- The efficacy of *Shireesh Twak Churna* is insignificant in Post-operative pain management.

$H_1$  :- The efficacy of *Shireesh Twak Churna* is significant in Post-operative pain management.

**Table No 21**

Paired Samples Test										
	Parameters	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t value	Degree of freedom	P value	Decision
					Lower	Upper				
Pair 1	Pulse-AT - Pulse-BT	-1.364	3.991	.695	-2.779	.051	1.963	32	.058	Reject
Pair 2	MBP-BT - MBP-AT	-.626	7.112	1.238	-3.148	1.896	0.506	32	.617	Accept
Pair 3	Respiratory Rate-AT - Respiratory Rate-BT	.667	1.190	.207	.245	1.089	3.218	32	.003	Reject
Pair 4	MVS-BT - MVS-AT	6.121	1.364	.237	5.638	6.605	25.784	32	.000	Reject

(Source : SPSS 17)

From the above table no 21 , it is seen that we reject the hypothesis at 5 percent level of significance with 32 degrees of freedom and conclude that The efficacy of *Shireesh Twak Churna* is significant in Post-operative pain management.

**Table no 22**

ANOVA							
		Sum of Squares	df	Mean Square	F	Sig.	Decision
MVS-BT	Between Groups	1.707	3	.569	.833	.487	Reject
	Within Groups	19.808	29	.683			
	Total	21.515	32				
MVS- DAY1	Between Groups	3.294	3	1.098	1.330	.284	Reject
	Within Groups	23.933	29	.825			
	Total	27.227	32				
MVS-DAY2	Between Groups	6.117	3	2.039	1.340	.280	Reject
	Within Groups	44.110	29	1.521			
	Total	50.227	32				
MVS-DAY3	Between Groups	3.099	3	1.033	1.094	.367	Reject
	Within Groups	27.371	29	.944			
	Total	30.470	32				
MVS-AT	Between Groups	2.567	3	.856	.482	.697	Reject
	Within Groups	51.433	29	1.774			
	Total	54.000	32				

(Source : SPSS 17)

From the above table no 22 , it is seen that we reject the hypothesis at 5 percent level of significance with 32 degrees of freedom and conclude that The efficacy of *Shireesh Twak Churna* is significant in Post-operative pain management.

Hypothesis 2:

H<sub>0</sub> :- The efficacy of *Shireesh Twak Churna* is insignificant in Post-operative pain management than Aceclofenac.

H<sub>1</sub> :- The efficacy of *Shireesh Twak Churna* is significant in Post-operative pain management than Aceclofenac.

**Table no 23**

Paired Samples Test for control group										
		Paired Differences					t	df	Sig. (2-tailed)	Decision
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Pulse-BT - Pulse-AT	1.758	6.093	1.061	-.403	3.918	1.657	32	.107	Reject
Pair 2	MBP-BT - MBP-AT	4.182	7.528	1.310	1.512	6.851	3.191	32	.003	Reject
Pair 3	Respiratory Rate-AT - Respiratory Rate-BT	.333	1.137	.198	-.070	.736	1.685	32	.102	Reject
Pair 4	MVS-BT - MVS-AT	7.091	.723	.126	6.835	7.347	56.341	32	.000	Reject

(Source : SPSS 17)

In control group, From above table it is clear that in the pair 1 of pulse BT and Pulse AT hypothesis is rejected. In pair 2 of MBP BT and MBP AT also hypothesis was rejected same as in pair 3. In MVS AT and MVS BT also hypothesis is rejected using paired t test at 5 percent level of significance .

**Table no 24**

Paired Samples Test For Trial group										
		Paired Differences					t	df	Sig. (2-tailed)	Decision
					95% Confidence Interval of the Difference					
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper				
Pair 1	Pulse-AT - Pulse-BT	-1.364	3.991	.695	-2.779	.051	1.963	32	.058	Reject
Pair 2	MBP-BT - MBP-AT	-.626	7.112	1.238	-3.148	1.896	0.506	32	.617	Accept
Pair 3	Respiaratory Rate-AT - Respiaratory Rate-BT	.667	1.190	.207	.245	1.089	3.218	32	.003	Reject
Pair 4	MVS-BT - MVS-AT	6.121	1.364	.237	5.638	6.605	25.784	32	.000	Reject

(Source : SPSS 17)

In Trial group, From above table it is clear that in the pair 1 of pulse BT and Pulse AT hypothesis is rejected. In pair 2 of MBP BT and MBP AT also hypothesis was accepted but it is rejected in pair 3. In MVS AT and MVS BT also hypothesis is rejected using paired t test at 5 percent level of significance .

**Table no 25**

ANOVA For Control Group							
		Sum of Squares	Df	Mean Square	F	Sig.	Decision
MVS-BT	Between Groups	.269	3	.090	0.158	.924	Accept
	Within Groups	16.458	29	.568			
	Total	16.727	32				
MVS-DAY1	Between Groups	.828	3	.276	0.441	.725	Accept
	Within Groups	18.142	29	.626			
	Total	18.970	32				
MVS-DAY2	Between Groups	3.169	3	1.056	1.814	.167	Reject
	Within Groups	16.892	29	.582			
	Total	20.061	32				
MVS-DAY3	Between Groups	1.019	3	.340	0.939	.435	Reject
	Within Groups	10.496	29	.362			
	Total	11.515	32				
MVS-AT	Between Groups	.000	3	.000	.	.	
	Within Groups	.000	29	.000			
	Total	.000	32				

(Source : SPSS 17)

ANOVA test for control group shows that hypothesis is rejected

**Table no 26**

ANOVA For Trial Group							
		Sum of Squares	Df	Mean Square	F	Sig.	Decision
MVS-BT	Between Groups	1.707	3	.569	0.833	.487	Reject
	Within Groups	19.808	29	.683			
	Total	21.515	32				
MVS- DAY1	Between Groups	3.294	3	1.098	1.330	.284	Reject
	Within Groups	23.933	29	.825			
	Total	27.227	32				
MVS-DAY2	Between Groups	6.117	3	2.039	1.340	.280	Reject
	Within Groups	44.110	29	1.521			
	Total	50.227	32				
MVS-DAY3	Between Groups	3.099	3	1.033	1.094	.367	Reject
	Within Groups	27.371	29	.944			
	Total	30.470	32				
MVS-AT	Between Groups	2.567	3	.856	.482	.697	
	Within Groups	51.433	29	1.774			
	Total	54.000	32				

(Source : SPSS 17)

ANOVA test for trial group shows that hypothesis is rejected

Thus from table no 23,24,25,26 it is clear that hypothesis is rejected and conclude that The efficacy of *Shireesh Twak Churna* is significant in Post-operative pain management than Aceclofenac.