

# An Experimental Study to Know the Efficacy of *Sarracenia Purpurea* for Osteoarthritis Following Lifestyle Management as an Adjuvant in Improving Quality of Life

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## ABSTRACT

Osteoarthritis is the common cause of disability in older adults and affects approximately 9.6% of men and women worldwide over the age of 60 years<sup>(1)</sup>. Knee osteoarthritis affects 6% of adult population of the world. The prevalence of osteoarthritis of knee is higher among 70-74-year-olds increasing as high as 40%<sup>(2)</sup>. Pain is the major complaint affecting the daily activities of patients. One of the main goals of the treatment is to reduce the intensity of the symptoms because it is degenerative joint disease as well as progress slowly<sup>(3)</sup>. This study is an attempt to know the effectiveness of *Sarracenia Purpurea* in treating Osteoarthritis. Sample size: 30 cases are included from the registered cases for the purpose of the study. 30 patients are divided into 2 groups, group A-patients were given only with homeopathic medicine *sarracenia purpurea*, Group B- patients were given homeopathic medicine and advised the following lifestyle management. Based on unpaired t-value results of medicine with lifestyle management (40.00+9.06) and only medicine (28.07+9.35), it is evident that medicine along lifestyle management is more effective than medicine group alone,

Un paired t test results of both groups difference is considered extremely significant. The calculated t value is 3.5500 which is greater than the table t-value 2.048 at degrees of freedom (df)28. Based on this statistical analysis group A paired t value is significant, group B is also significant. Unpaired t test for both groups show significant. Hence our study shows  $\alpha < 0.05$ .

**Keywords:** *osteoarthritis, lifestyle management, sarracenia purpurea.*

## INTRODUCTION

Osteoarthritis is the common cause of disability in older adults and effects approximately 9.6% of men and women worldwide over the age of 60 years<sup>(1)</sup>. Knee osteoarthritis affects 6% of adult population of the world. The prevalence of osteoarthritis of knee is higher among 70-74yrs of olds increasing as high as 40%<sup>(2)</sup>. Pain is the major complaint affecting the daily activities of patients. One of the main goals of the treatment is to reduce the intensity of the symptoms because it is degenerative joint disease as well as progress slowly<sup>(3)</sup>. Clarke explained in Dictionary of practical materia medica: Knees feel weak; Bruised pain in Knees after fall; Soreness in tibia and fibula<sup>(4)</sup>.

Robin Murphy explained in Lotus Materia medica lower limbs feels cold when still as from poor circulation; knees feel weak; Weakness of limbs with paralytic debility<sup>(5)</sup>. OA being a chronic condition, self-management via education and lifestyle treatments, such as exercise/physical activity and weight loss, is integral to minimizing pain and improving physical function in people with OA<sup>(6)</sup>. Management of pain with routine non-steroidal anti-inflammatory drugs in such cases may give some patients temporary relief, but use of these drugs often causes unwanted side-effects, administration of homeopathic drugs, which have no significant side effects and relatively much cost effective as compared to conventional treatment with modern medicine<sup>(7)</sup>. Due to frequent episodes of pain, there is impaired in daily activities and significant impact on families daily functioning.

#### **AIMS AND OBJECTIVES:**

- To assess the efficacy of Sarracenia Purpurea in Osteoarthritis.
- To compare efficacy of Sarracenia Purpurea with Life Style Management in Osteoarthritis affected patients.

#### **MATERIALS & METHODS**

**Source for collecting data:** The cases have been considered from OPD and IPD Peripheral centres of MNR Homoeopathic Medical College Sangareddy.

**Type of Study:** It is A Prospective Experimental Study with evaluation of before and after Tests.

**Sample size:** 30 cases were included from the registered cases for the purpose of the study. 30 patients were divided into 2 group, group A-patients was given only with homeopathic medicine sarracenia purpurea. Group B- patients was given homeopathic medicine along with following lifestyle management was advised. Group A was instructed to take Sarracenia Purpurea 30C once a week in early morning with Empty stomach.

Group B was instructed to take Sarracenia Purpurea 30C for once a week in early morning with empty stomach, along with following life style management. The data obtained from the patients was analysed using questionnaire before and after. The questionnaire contains some parameters pain, stiffness, difficult with mild, moderate, severe, extreme pains. Based on this assertion was done. Duration: 6 months. The diagnosis of OA was done on clinical presentation of patient and also Radiological studies have also supported. The American college of Rheumatology (ACR) Has developed classification criteria for OA of knee that were used for research purpose<sup>(9)</sup> we have assessed the severity of pain based on the before and after score according to WOMAC Scale<sup>[10]</sup> Ethical clearance was taken by ethical committee before starting the research. Participants in this study was voluntary. The details of the study were explained to each patient and a written consent have been taken before enrolling them for the study. A standard case Proforma was maintained for obtaining the patient's details and the same was used to record them. All the Recorded details of the patients were kept confidential.

#### **PROCEDURE**

- Detailed case taking and recording of patient's problem in case format was done.
- Clinical examination
- Prescription done according to groups
- 30c Potency repeated were every 15 days.
- Observations are noted by questionnaire.

#### **LIFESTYLE MANAGEMENT:**

Making changes to a person's diet may help them to manage osteoarthritis symptoms. Consuming certain foods and avoiding others may help with managing inflammation associated with arthritis, reducing cholesterol, and more.

#### **Dos**

- Reduce cholesterol intake

- Maintain healthy weight
- Include this in your daily diet -Oily fish (omega 3 fatty acid) Dairy products like milk (Cal, Vit D) Dark green leafy vegetables (Vit D, Antioxidants) Broccoli Green tea (Polyphenes), Sunlight exposure, Garlic (works against the enzymes in the body that damage cartilage.) Nuts (Cal, Mag, zinc, fiber, Vit D), finger millet (Ragi).

There is an ongoing long-term effort to determine whether a 10% weight loss has a disease modifying effect by either slowing or stopping osteoarthritis disease progression<sup>68</sup>. Weight loss has beneficial effects well beyond those specific to knee OA. These include reduced risk of cardiovascular disease, type II diabetes, hypertension, foot pain, gout, and sleep apnea. Obesity is the most modifiable risk factor for knee OA and weight loss should be part of the standard-of-care for overweight and obese adults with knee. OA<sup>(8)</sup>

#### Don'ts

- Sugar Saturated fat refined carbohydrates.
- Avoid caffeine<sup>(32)</sup>.

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**STATISTICAL ANALYSIS** [Paired t-test and unpaired t-test]

#### OBSERVATION AND RESULTS

Total sample comprised of 30 patients 15 in group A, 15 in group B, group A only medicine was given, group B along with

medicine lifestyle management was mentioned. The result before and after was recorded and P values are calculated depending on each parameter. The results obtained with significant values are given **SUMMARY OF PAIRED 't' - TEST RESULTS OF GROUP-A (MEDICINE GROUP)**

P-value and statistical significance:

The two-tailed P value is less than 0.0001

By conventional criteria, this difference is considered to be extremely statistically significant.

#### Confidence interval:

The mean of Before minus After equals 29.47

95% confidence interval of this difference:

From 23.66 to 35.27

Intermediate values used in calculations:

$t = 10, 8822$

$df = 14$

standard error of difference = 2.708.

GROUP	BEFORE	AFTER
MEAN	74.60	45.13
SD	9.65	10.12
SEM	2.49	2.61
N	15	15

15 Patients treated with medicine sarracenia showed the calculated 't' value 10.8822 which is greater than table 't' value i.e., 2.14 at degree of freedom (df) 14 at level of 50% significance. Hence the t test is significant.

#### SUMMARY OF PAIRED 't' - TEST RESULTS OF GROUP-A (MEDICINE AND LIFE STYLE MANAGMENT)

P value and statistical significance:

The two-tailed P value is less than 0.0001

By conventional criteria, this difference is considered to be extremely statistically significant.

Confidence interval:

The mean of Before minus After equals 39.33

95% confidence interval of this difference:

From 34.37 to 44.29

Intermediate values used in calculations:

$t = 17.0065$

df = 14

standard error of difference = 2.313

Review your data:

GROUP	BEFORE	AFTER
MEAN	80.53	41.20
SD	5.40	6.97
SEM	1.39	1.80
N	15	15

15 Patients treated with medicine sarracenia and lifestyle management showed the calculated 't' value 17.0065 which is greater than table 't' value i.e., 2.14 at degree of freedom (df) 14 at level of 50% significance. Hence the t test is significant.

#### SUMMARY OF UN-PAIRED t - TEST RESULTS OF GROUP-A AND GROUP-

GROUP	Medicine with lifestyle management.	Medicine group.
MEAN	40.00	28.07
SD	9.06	9.35
SEM	2.34	2.41
N	15	15

Based on un paired t value results of medicine with lifestyle management (40.00+9.06) and only medicine (28.07+9.35), it is evident that medicine along lifestyle management is more effective than medicine group alone

Un paired t test results of both groups difference is considered extremely significant. The calculated t value is 3.5500 which is greater than table t value i. e. 2.048 at degrees of freedom (df) 28. Hence Research hypothesis approved and Null hypothesis rejected.

#### KEY CONCLUSION FROM THE STATISTICAL ANALYSIS OF THE DATA:

Based on the above statistical analysis group A paired t value is significant, group B is also significant. Unpaired t test for both groups show significant. Hence our study showed that  $\alpha$  is less than 0.05.

#### B (MEDICINE Vs MEDICINE WITH LIFE STYLE MANAGAMENT)

P value and statistical significance:

The two-tailed P value equals 0.0014

By conventional criteria, this difference is considered to be very statistically significant.

Confidence interval:

The mean of Drug with life style management minus Drug equals 11.93

95% confidence interval of this difference: From 5.05 to 18.82

Intermediate values used in calculations:

t = 3.5500

df = 28

standard error of difference = 3.362

Review your data

#### Assessment of null hypothesis:

##### OBJECTIVE 1

After applying t-test for group A the p value was found to be less than 0.05, hence null hypothesis [H0] is getting rejected whereas the alternate hypothesis [H1] getting accepted. The study was found to be statistically significant stating that sarracenia purpurea was effective in treating osteoarthritis.

##### OBJECTIVE 2

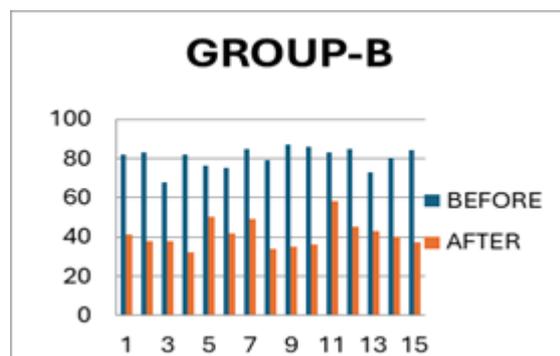
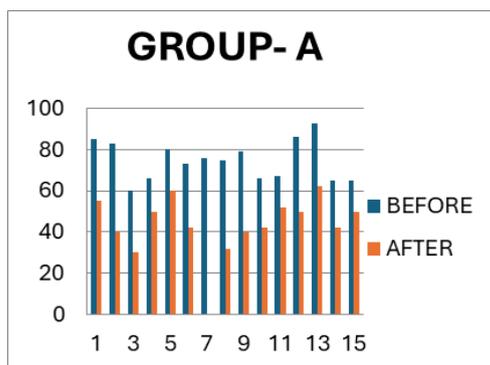
After applying t-test for group B the p value was found to be less than 0.05. Hence null hypothesis [H0] of this study getting rejected whereas the alternate hypothesis is getting accepted. The study was found to be statistically significant stating that their significant difference in using lifestyle management along with sarracenia. Thus, from above observations and calculations, it is clear that both the alternative hypothesis in objective 1 and 2 are statistically significant.

**Table1.Group A showing before and after results**

<b>GROUP-A (PATIENTS WITH ONLY MEDICINE)</b>		
<b>S.NO</b>	<b>BEFORE</b>	<b>AFTER</b>
1	85	55
2	83	40
3	60	30
4	66	50
5	80	60
6	73	42
7	76	30
8	75	32
9	79	40
10	66	42
11	67	52
12	86	50
13	93	62
14	65	42
15	65	50

**Table 1.1. Group B showing before and after results**

<b>GROUP-B (PATIENTS WITH LSM AND MEDICINE)</b>		
<b>S.NO</b>	<b>BEFORE</b>	<b>AFTER</b>
1	82	41
2	83	38
3	68	38
4	82	32
5	76	50
6	75	42
7	85	49
8	79	34
9	87	35
10	86	36
11	83	58
12	85	45
13	73	43
14	80	40
15	84	37



**Figure 1 group A Graph before and after results. Figure 1.1 group B graph before and after results.**

<b>COMPARING BOTH THE GROUPS</b>		
<b>S.NO</b>	<b>GROUP-A</b>	<b>GROUP-B</b>
1	30	41
2	42	45
3	30	30
4	16	50

5	20	26
6	31	33
7	26	36
8	43	45
9	39	52
10	24	50
11	15	25
12	36	40
13	31	30
14	23	40
15	15	47

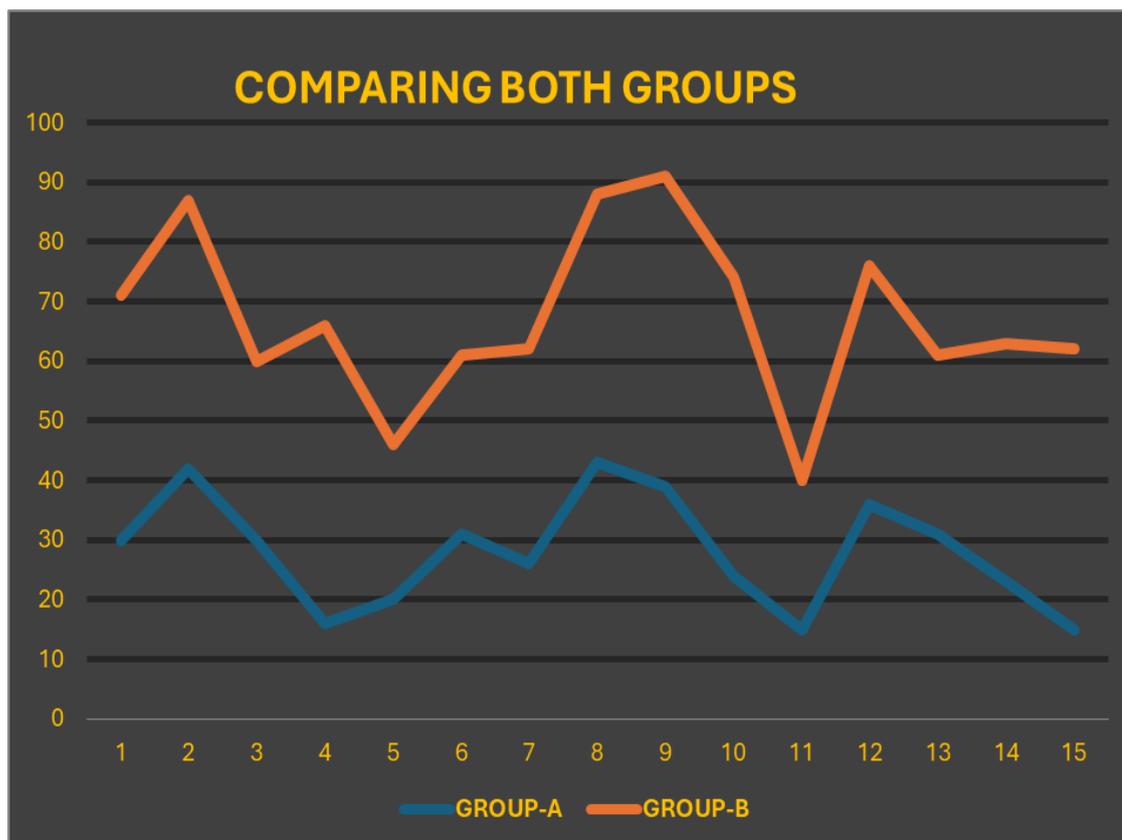


Figure 2.0 showing comparison graph of group A and groupB.

Table 3.0 group A Intensity table.

GROUP-A (INTENSITY TABLE)		
INTENSITY	NO OF PATIENTS BEFORE	NO OF PATIENTS AFTER
EXTREME PAIN	9	0
VERY PAIN	6	0
MODERATE PAIN	0	9
SLIGHT PAIN	0	6

Table 3.1 group B Intensity table.

GROUP-B (INTENSITY TABLE)		
INTENSITY	NO OF PATIENTS BEFOFE	NO OF PATIENTS AFTER
EXTREME PAIN	14	0
VERY PAIN	1	3
MODERATE PAIN	0	12
SLIGHT PAIN	0	0

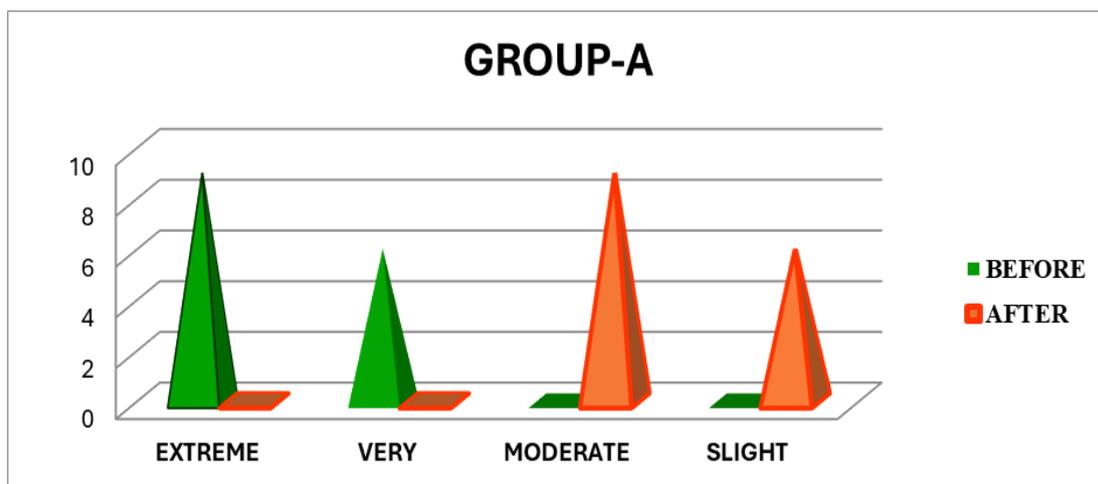


Figure 3.0 group A showing Intensity graph.

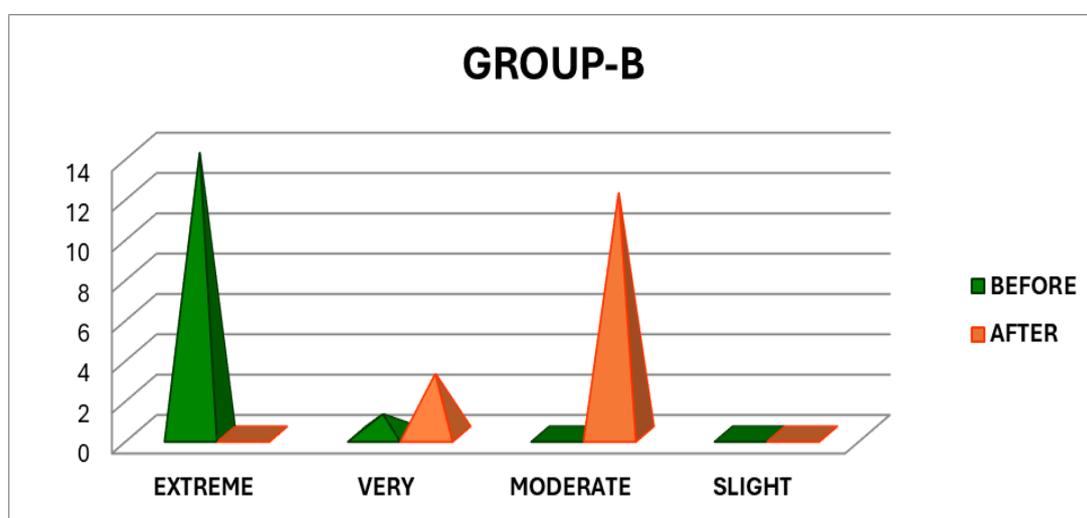


Figure 3.1 group B showing Intensity graph.

Table 4.0 group A showing duration table.

GROUP-A (DURATION TABLE)	
MONTHS	NO OF PATIENTS RECOVERED
1 MONTH	2
2 MONTHS	8
3MONTHS	2
4 MONTHS	3

Table 4.1 group B showing duration table.

GROUP-B (DURATION TABLE)	
MONTHS	NO OF PATIENTS RECOVERED
1 MONTH	5
2MONTHS	3
3 MONTHS	4
4MONTHS	3

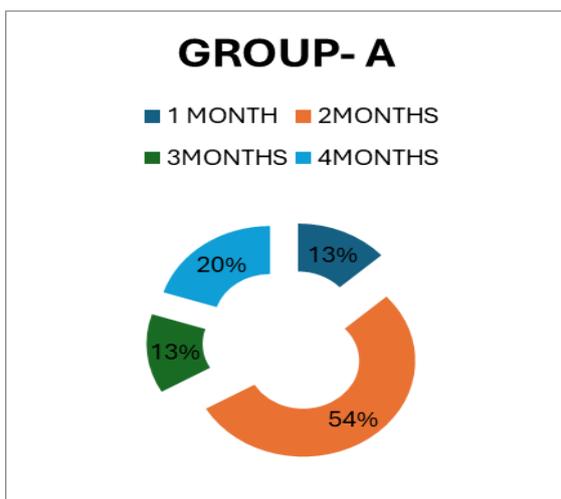


Figure 4.0 showing group A duration graph.

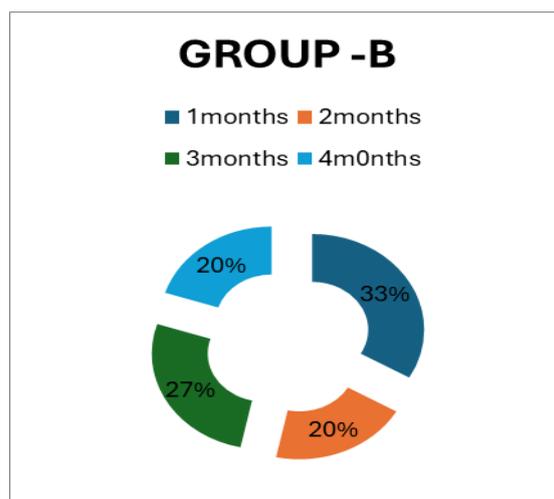


Figure 4.1 showing group B duration graph.

Table 5.0 group A Gender table.

GROUP-A	
GENDER	MEMBERS
MALE	4
FEMALE	11

Table 5.1 graph B Gender table

GROUP-B	
GENDER	MEMBERS
MALE	6
FEMALE	9

Figure 5.0 showing group A Gender.

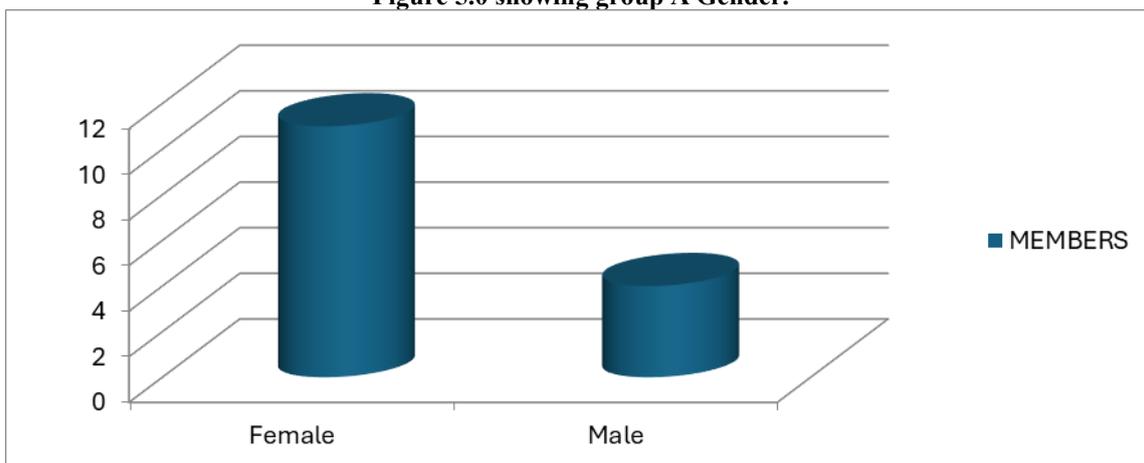
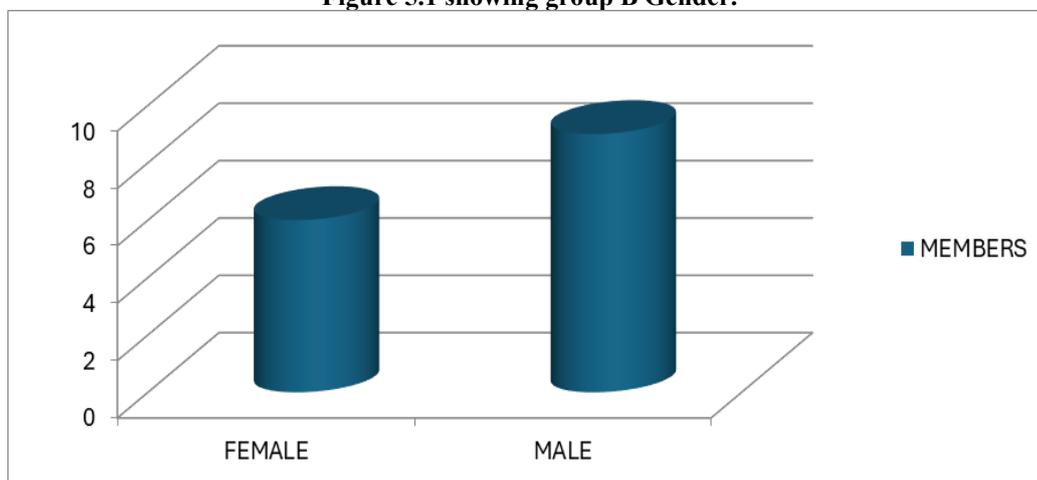


Figure 5.1 showing group B Gender.



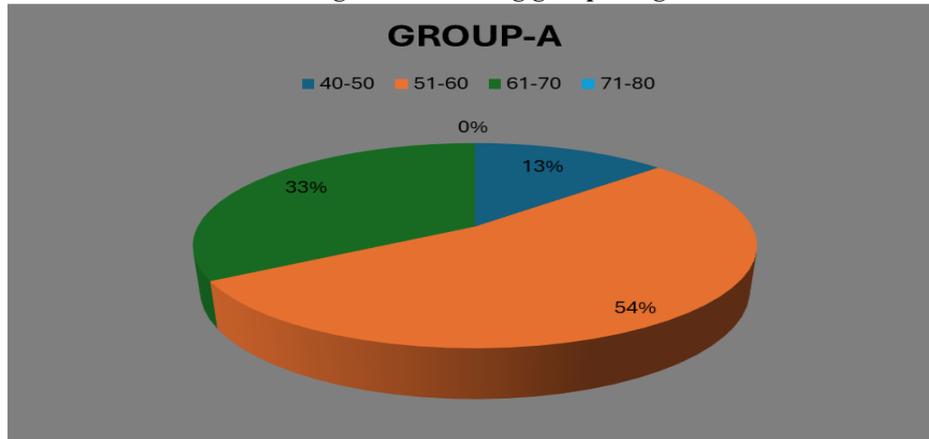
**Table 6.0 group A Age table.**

GROUP-A [AGE DISTRIBUTION]	
AGE	MEMBERS
40-50	2
51-60	8
61-70	5
71-80	0

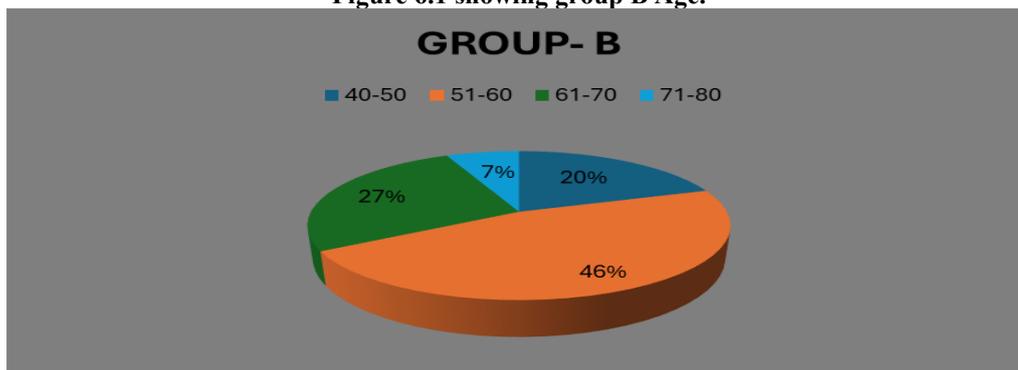
**Table 6.1 group B Age table.**

GROUP-B [AGE DISTRIBUTION TABLE]	
AGE	MEMBERS
40-50	3
51-60	7
61-70	4
71-80	1

**Figure 6.0 showing group A Age.**



**Figure 6.1 showing group B Age.**



## DISCUSSION

This study was designed to assess the effectiveness of Sarracenia Purpurea in curing osteoarthritis and to compare the Sarracenia Purpurea to lifestyle management. Sarracenia Purpurea had shown improvement in curing osteoarthritis but lifestyle management along with Sarracenia Purpurea had shown more effectiveness than only Sarracenia group. The significant p value shows less than 0.05 which states that the study is statistically significant.

Lifestyle management plus Sarracenia Purpurea is more effective than Sarracenia alone in managing osteoarthritis, as poor lifestyle habits are a key contributor to the condition, according to multiple studies in

article "Efficacy of an exercise program combined with lifestyle education in patients with knee osteoarthritis" (10). Shows that lifestyle management had shown better improvement in osteoarthritis patients.

Even Sarracenia Purpurea is having sphere of action on musculoskeletal system with symptoms like morning stiffness, Limbs weak bruised pain in the knees and hip joints. Bones of arms pain, weak in between shoulders. In many literature books like Kent, Clark, N. M choudhary.

In conventional allopathy painkillers, anti-inflammatory medicines, have temporary relief of symptoms but show more side effects in future. Various studies have shown beneficial effect of homeopathic drug's in treating osteoarthritis. Frequently

used remedies are Angustra vere, Bryonia, Rhustox, Arnica, cal carb, cal flour, kali carb, Guaiacum, phytolacca, symphytum

## CONCLUSION

This study concludes that *Sarracenia Purpurea* act effective in treating osteoarthritis, which was observed along with lifestyle management and *Sarracenia Purpurea* gives more effectiveness than only with *Sarracenia Purpurea*.

Females were more in my study. Patients who were came with extreme pain all have improved to moderate pain or slight pain.

Most of the patients shown improvement within 2 months in group A and within 1 month in group B.

In group-A- females-(11), males (4). In group B females (9), males (6).

All 30 patients have shown improvement, no one reported with adverse effects.

## Declaration by Authors

**Ethical Approval:** Approved

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**Conflict of Interest:** The authors declare no conflict of interest.

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