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ROLE OF *UDVARTAN* (MASSAGE BY DRY POWDER) & *SURYABHEDAN PRANAYAMA* IN OVERWEIGHT PERSONS

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ABSTRACT

Aim of the Study: To evaluate the role of *Udvartan* and *Suryabhedan Pranayama* in overweight persons. **Objectives of Study:** 1**.** To study the effect of *Udvartan* in overweight persons. 2**.** To develop awareness of yoga and *Pranayama* in present era for weight reduction.3. To prevent diseases like obesity, Diabetes mellitus 2, hypertension caused by overweight. **Materials & Methods:** Chana Dal powder (Bengal gram) & TilaTaila (Seasame oil) Identified, Authentified and Standardized from Certified Laboratory. The selected subjects were divided in to two groups. In group 'A' *Udvartan* with Chana Dal powder was done & in Group 'B' *Udvartan* with ChanaDal powder and *Suryabhedan Pranayama* (twice a day) was given. Duration- 45 days. **Type of Study:** Two Arm, Randomized, open label, prospective clinical study. Assessment Criteria: (A) Objective Parameters- Weight, BMI, Abdomen Circumference, Hip Circumference. (B) Subjective Parameters were calculated according to Grades. **Statistical Analysis:** Wilcoxon-Signed Rank test for Group A & Group B, Comparison of Group A & Group B were tested using Mann-Whitney U test. **Result and conclusion:** The results were statistically analyzed for better interpretation. In comparison of both groups, there was no difference seen in Objective parameters, but there was significant change seen in Subjective parameters. Group B showed more significant change in Subjective parameters than compared to group A.

KEYWORDS: *Udvartan, Suryabhedan Pranayama, Overweight.*

INTRODUCTION

In Modern era with changing life styles and environment, changed diet habits, man has become the victim of many disease caused by unwholesome dietary habits and Overweight is one of them. Overweight is a gift of the modern age of machines and materialism. It occurs as a result of lack of physical activity with increased intake of food. According to W.H.O., Ayurveda is a system of natural medicine having a detailed scientific literature, a comprehensive materiamedica & a wide breadth of clinical procedures relevant to prevention & treatment of acute and chronic diseases. In Ayurveda, *Sthoolapurusha* (Obese person) is considered as one of the *ninditapurusha* (person who is always criticized). Acharya Charaka[1] has explained the *Swasthapurusha* (healthy individual) as *samamamsa* (balanced proportion of muscles), *samapramana* (compactness), *samasamhanana* (firmness in organs) and having *Dridha Indriyas* (tolerance of hunger, thirst, the sun, cold & exercise, balanced digestion and normal metabolism), but *Sthoola* person is not having such qualities. Regarding this explanation is available in Ayurvedic classics. *Sthoulya* is the nearest clinical entity for obesity in Ayurveda. For causation of *Sthoulya*, excessive intake of calories with a decreased expenditure is the main reason. With a view of preventing excessive consumption, only two *Annakala* (Time for consumtion of food) are specified with intermediate period of 8-10 hours. While deciding the *Ahara* (Diet) to a person, the 8 factors (*Ashtavidha Ahara Visheshaayathana*)[1] are prescribed which includes the assessment of quantity, quality and composition of food.

These eight principles incorporate all the modern parameters described in the context of nutrition. Considering the difficult nature of disease, obesity can be better prevented rather than treated. In Ayurveda, overweight is not mentioned separately so it is included in *Sthoulya*, & persons showing symptoms of stoulya are included under *Asta Ninditapurusha*[1] (*Athi Deerga*-shortening of life-span, *Athi Hraswa*- hampered movement, *Athi Stoola*-Obese, *AthiKrusha*- delibility, *AthiGoura*- feeling of heaviness, *AthiSweta*- over sweating, *Athi Roma*- excessive thirst and *Aroma*- foul smell).[1]

In the present context Ayurveda offers a ray of hope in treatments like *lekhanabasti* (type of medicated enema therapy), *virechana* (Purgation therapy), *Udvartana*(massage with dry powder) along with some internal medicines like Navakaguggulu, trayodashanga guggulu etc. The periodical *Shodhana* (purification) has also proven its efficacy.

Udvartana is a procedure which can be undertaken daily with a preliminary training to the individual. *Pranayama* utilizes breathing to influence the flow of prana in the nadis or energy channels of *Pranayama* kosha or energy body. *Pranayama* is beneficial to improve the digestive fire.

Pranayama gives the proper directions to prana or life energy so it can be used in productive work. By the practice of *Pranayama*, individual becomes more focused in creative/ productive work.

To document and analyze this procedure for statistical interpretation, the study entitled " Role of *Udvartan* and *Suryabhedan Pranayama*" was undertaken. The effect of *Udvartana* and *Suryabhedan Pranayama* in reducing weight and improving person's lifestyle was also considered.

PRANAYAMA

Pranayama involves manipulation of breath movement and the breath is a dynamic bridge between the body and mind. The psychosomatic effects of different *Pranayama*s are believed to derive from differences in duration of the phases of the breathing cycle, tidal volume and other factors including the use of mouth, nostrils, and constriction of the laryngeal muscles and position of the glottis. *Surya Bhedan Pranayama* activates the body and the bodily functions. It increases the digestive fire. It destroys all diseases that are caused by insufficiency of oxygen in the blood. The Gheranda Samhita says that *Surya Bhedan Pranayama* destroys decay and death,[2] awakens Kundalini Shakti and increases digestive fire. The Hatha Yoga Pradeepika says that Surya Bheda *Pranayama* cleans the frontal sinuses, destroys disorders of Vata and destroys intestinal worms.[3] In the Hatha Yoga Pradeepika, it is also said that one can perform *Uddhiyana Bandha* by pulling in the abdomen at the end of Kumbhaka (holding of breath). This will force the *prana* to enter the central pranic channel called Sushumna Nadi. This leads to awakening of the Kundalini Shakti.[3]

AIMS AND OBJECTIVES

Aim- To evaluate the role of *Udvartan* and Suryabhedan *Pranayama* in overweight persons.

Objectives- 1.To study the effect of *Udvartan* in overweight persons. 2**.** Awareness of yoga and *Pranayama* in present era for weight reduction. 3.To prevent further diseases like obesity, DM 2, HTN caused by overweight

REVIEW OF CHANAK

Chanak- Cicer arietinum

Family- Leguminasae

Rasa- Kashayarasayukta

Guna- Laghu, Rooksha

Veerya - Sheeta

Vipaka - Katu

Kama- Vatakarak, Pitta, Raktavikara Nashak, Kapha and Jwara Nashak[4] Raktavikar and Meha Nashak

Parts Used- Chanak Seeds

Properties Of Wet Chanak- Kashaya rasa, Soft, Tasty, Sheetal, Vatajanak, Grahi, Laghu, Pitta, Shukra and Kapha- Pitta nashak[6]

MATERIALS AND METHODS

Chana dal powder approx 30-40 gms depending upon size of Subject

Tila taila (2-3 drops)

Drug Authentication has been done by using the botanical parameters such as Organoleptic/ macroscopic (organ and sense), microscopic, histochemical & phytochemical evaluation from certified research laboratory.

METHODOLOGY

STUDY DESIGN

Ethical clearance from ethical committee was taken and approval was received from the university.

Sampling Method:-A total number of 40 subjects were selected and randomly allocated into two groups.

Group A with 20 samples & Group B with 20 samples.

Intervention

Group A: *Udvartan* with Chana Dal Powder

Group B: *Udvartan* with ChanaDal powder and Suryabhedan *Pranayama* (twice a day)

Drug Intervention

For Group A- *Udvartan* with Chanadal Powder and for Group B- *Udvartan* with ChanaDal powder with Suryabhedan *Pranayama*. Duration, Kaal and quantity for *Udvartan* will be same in both the groups.

SURYABHEDAN PRANAYAMA

• Purak:rechak 5sec: 10sec (i.e 1:2)

• DURATION- 7 rounds for 7 days.

• Increase upto 10 rounds for 8 to 40 days

• Kaal- Morning empty stomach and evening 4-5 hours after taking food

• Before every *Pranayama*shuddhikriya must be done

SHUDDHI KRIYA

1. Kapalbhati 10-10-10 rounds each

2. Nadishodhan 25 rounds in around 5-7mins

SHAVASAN

For 2-3 mins

Inclusion Criteria

• Subjects having signs and symptoms of Overweight.

• Male or Female of age group 16 to 60 yrs

• Subjects irrespective of sex, religion, occupation, and economic status

• Patients with Informed Consent

Exclusion Criteria

• Subjects with known systemic disorders like Rheumatoid Arthritis, TB, skin diseases, Alzheimer diseases, epilepsy.

• Overweight secondary to other endocrinal disorders

• Pregnant and lactating women

• Subjects allergic to any of the ingredients of the study medications.

Place of work: Swasthavritta OPD, present study was conducted in the year 2016 at Dr.D.Y.Patil Ayurvedic Hospital & Research Institute, Nerul, Navi Mumbai.

Type of Study: Two Arm, Randomized open label, prospective clinical study.

Diagnostic Criteria

40 Subjects fulfilling the inclusion criteria were selected after the screening for any physical or psychological ailments.

Parameters of Study

Objective Parameters- Weight, BMI, Abdomen Circumference, Hip Circumference.

Subjective Parameters- Chalatva, Swedaadikyata, Nidraadhikya, Athikshudha, Kshudha Souhitya, Kshudha Sahatva, Athipipasa, Alpavyayama, Anga Gourava, Gatra Sada[5]

Assessment Criteria

Assessment of the effect of treatment was entirely based on the scores, obtained in the individual test mentioned. The scores were taken before the trial (0th day) & after the completion of treatment schedule (45th day).

Assessment Tools

- Electronic Digital Bathroom Weighing Scale.
- Measuring Tape.

Statistical Analysis

Wilcoxon-Signed Rank test for Group A& Group B, Comparison of Group A & Group B were tested using Mann-Whitney U test.[7]

» OBJECTIVE PARAMETERS

The following parameters were tested using the Wilcoxon-Signed Rank test as they failed the normality assumption.

GROUP A					
	P-VALUE	W	T+	N	SIGNIFICANCE
WEIGHT	0.0001	105	105	14	EXTREMELY SIGNIFICANT
BMI	0.002	55	55	10	VERY SIGNIFICANT
ABDOMINAL CIRCUMFERENCE	0.002	55	55	10	VERY SIGNIFICANT
HIP CIRCUMFERENCE	0.0156	28	28	7	SIGNIFICANT
WAIST HIP RATIO	0.5	3	3	2	NOT SIGNIFICANT

	GROUP B				
	P-VALUE	W	T+	N	SIGNIFICANCE
WEIGHT	0.0078	36	36	8	VERY SIGNIFICANT
BMI	0.0039	45	45	9	VERY SIGNIFICANT
ABDOMINAL CIRCUMFERENCE	0.0156	28	28	7	SIGNIFICANCT
HIP CIRCUMFERENCE	0.25	6	6	3	NOT SIGNIFICANT
WAIST HIP RATIO					

NOTE: Since all values were same for Waist Hip Ratio in Group B, we could not proceed with testing as it requires at least 2 distinct paired differences.

Paired T test was not applied as Sample size was small.

Group A& Group B were tested using Mann-Whitney U statistics as paired t test failed the normality assumption and the results are as follows.

	GROUP A & B			
	P-VALUE	U	U'	SIGNIFICANCE
WEIGHT	0.2148	154	246	NOT SIGNIFICANT
BMI	0.7531	188	212	NOT SIGNIFICANT
ABDOMINAL CIRCUMFERENCE	0.4836	174	226	NOT SIGNIFICANT
HIP CIRCUMFERENCE	0.2752	160.5	239.5	NOT SIGNIFICANT
WAIST HIP RATIO				

Since all values were same for Waist Hip Ratio, we could not proceed with testing as it requires at least 2 distinct paired differences.

So there is no difference seen in Group A & Group B.

» **SUBJECTIVE PARAMETERS**

GROUP A					
	P-VALUE	W	T+	N	SIGNIFICANCE
Movement	<0.0001	120	120	15	EXTREMELY SIGNIFICANT
Swedadikya	-	-	-	-	-
Nidra	0.0002	91	91	13	EXTREMELY SIGNIFICANT
Kshudha	0.0005	78	78	12	EXTREMELY SIGNIFICANT
Satisfaction Of Hunger	<0.0001	153	153	17	EXTREMELY SIGNIFICANT
Tolerance of Hunger	0.002	55	55	10	VERY SIGNIFICANT
Thirst	-	-	-	-	-
Physical Exercise	0.0002	91	91	13	EXTREMELY SIGNIFICANT
Feeling of heaviness	-	-	-	-	-
Fatigue	-	-	-	-	-

GROUP B					
	P-VALUE	W	T+	N	SIGNIFICANCE
Movement	-	-	-	-	-
Swedadikya	-	-	-	-	-
Nidra	0.0002	91	91	13	EXTREMELY SIGNIFICANT
Kshudha	-	-	-	-	-
Satisfaction Of Hunger	-	-	-	-	-
Tolerance of Hunger	0.0001	105	105	14	EXTREMELY SIGNIFICANT
Thirst	-	-	-	-	-
Physical Exercise	-	-	-	-	-
Feeling of heaviness	-	-	-	-	-
Fatigue	-	-	-	-	-

Group A & Group B were tested using Mann-Whitney U statistics as paired t test failed the normality assumption and the results are as follows.

	GROUP A & B			
	P-VALUE	U	U'	SIGNIFICANCE
Movement	0.0072	103	297	VERY SIGNIFICANT
Swedadikya	0.4003	170	230	NOT SIGNIFICANT
Nidra	0.9889	200	200	NOT SIGNIFICANT
Kshudha	0.0791	136	264	NOT SIGNIFICANT
Satisfaction Of Hunger	0.0791	136	264	NOT SIGNIFICANT
Tolerance of Hunger	0.0509	128	272	NOT SIGNIFICANT
Thirst				
Physical Exercise	0.0269	119	281	SIGNIFICANT
Feeling of heaviness	0.785	190	210	NOT SIGNIFICANT
Fatigue	0.0932	140	260	NOT SIGNIFICANT

There was Significance difference seen in Movement And Physical Exercise through Statistical Analysis. However other subjective parameters did show some difference but they were not that significant.

OBSERVATION

In the present study, out of 40 Subjects, 20 were males (50%), 20 were females (50%), 30% of subjects belong to age group 18 – 30 yrs and 30% of subjects belong to age group 41-50 yrs, while 27.5% of subjects belong to 31-40 yrs.

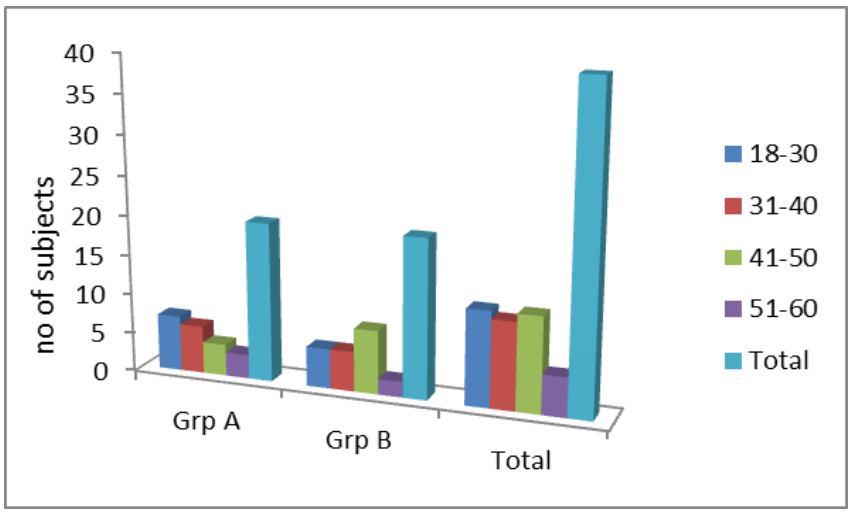


Chart 1 - Showing Age wise distribution of subjects.

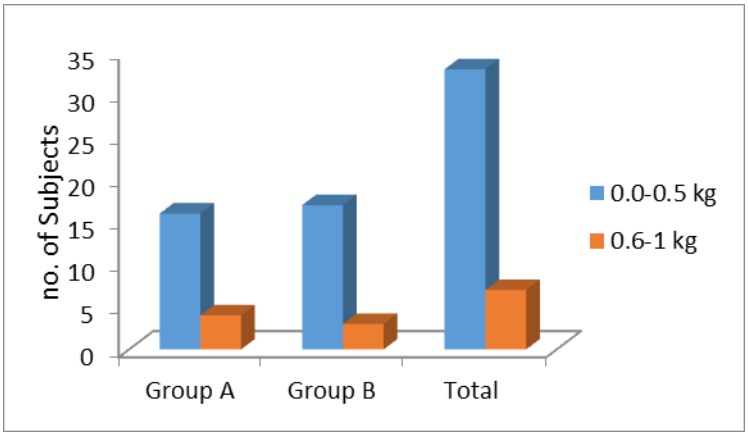


Chart no 2: showing response in weight of Group A and B.

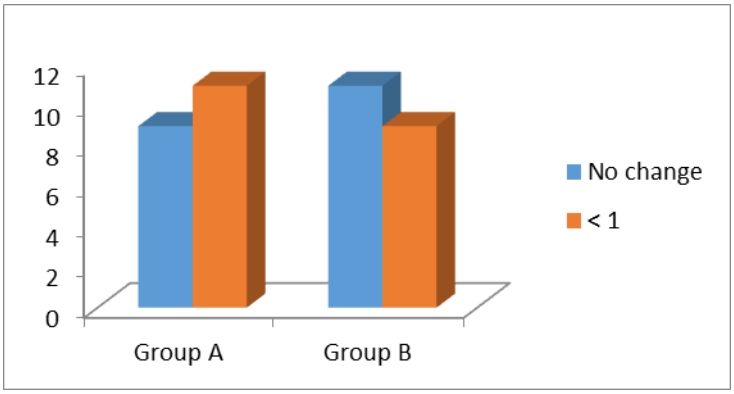
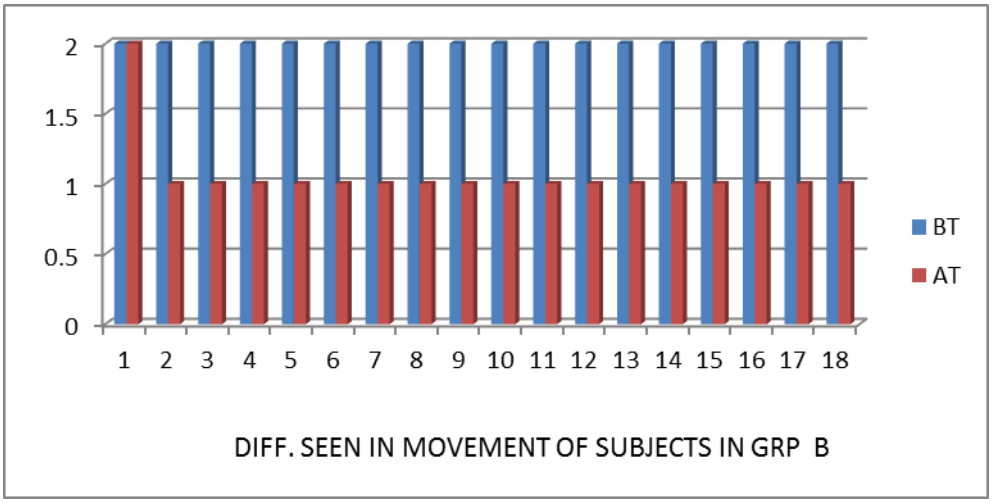
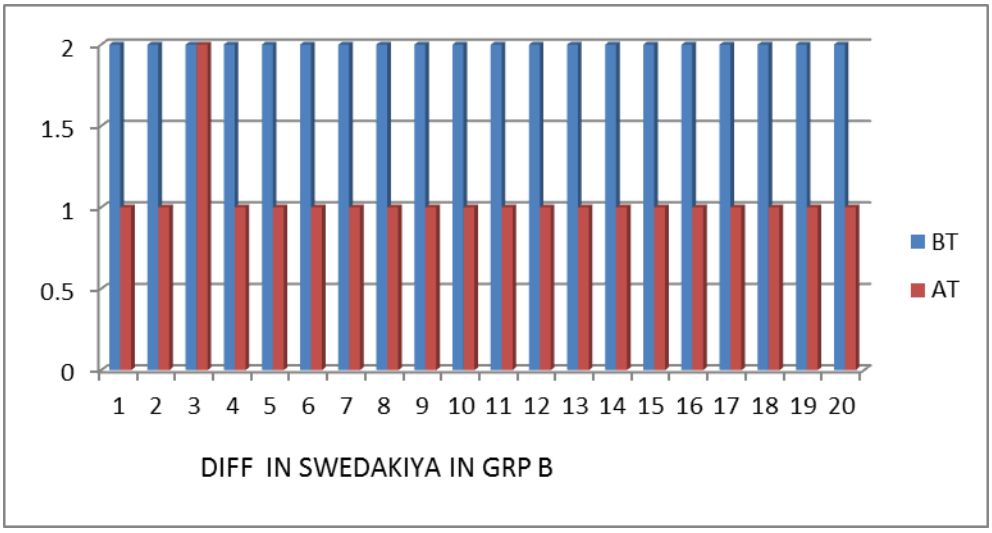


Chart no. V. 4: Showing response of BMI in Group A and B.

Subjective Parameters

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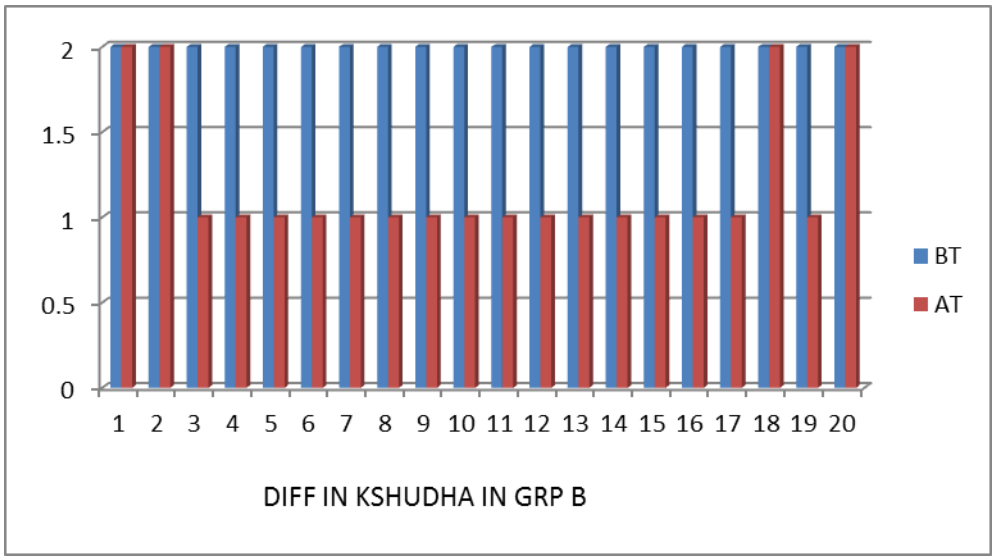
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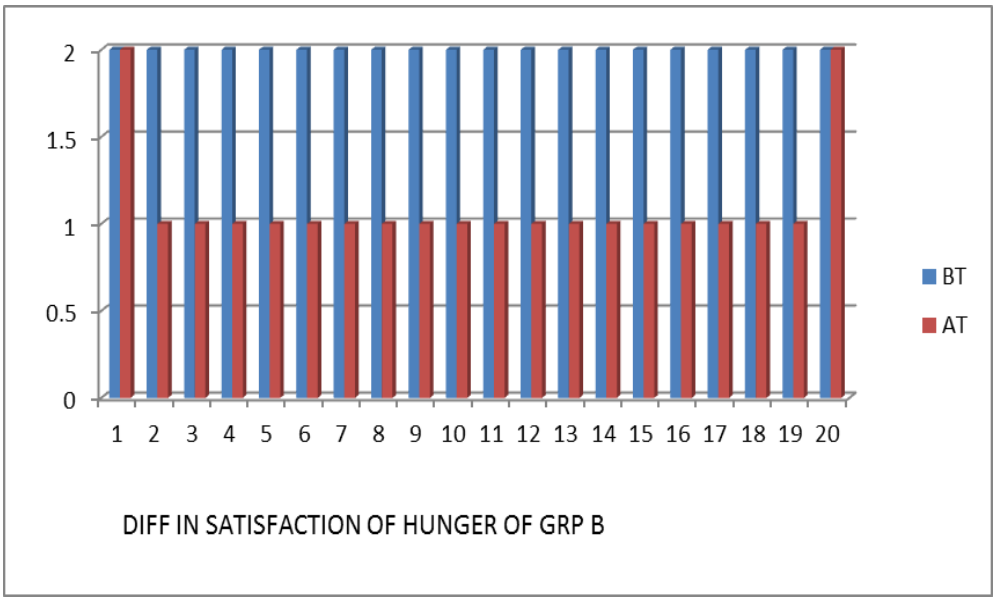
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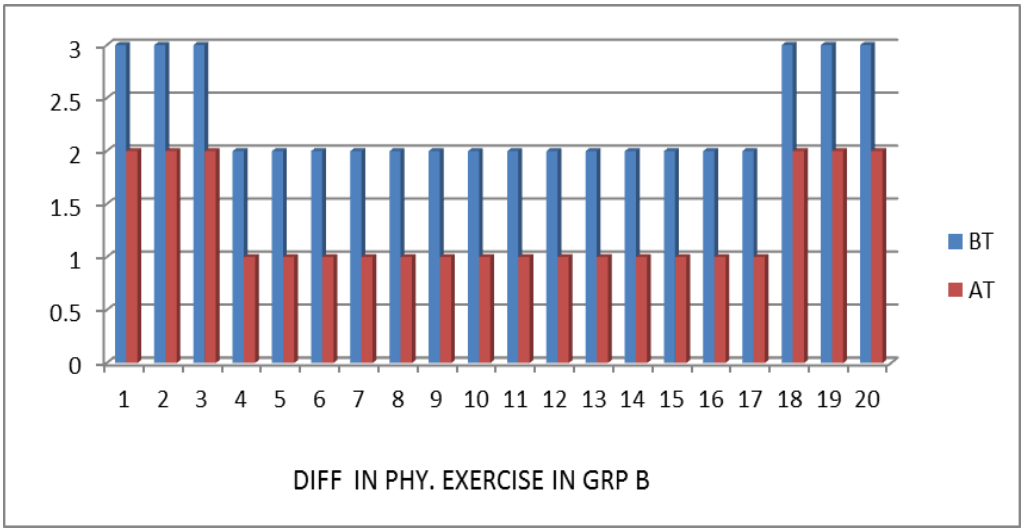
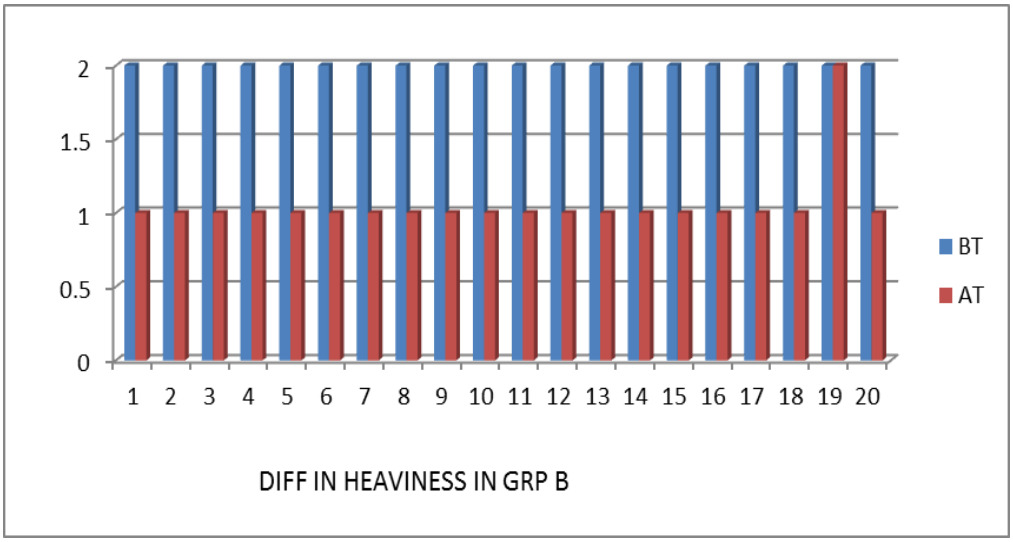
AT
DIFF IN SATISFACTION OF HUNGER OF GRP B





DISCUSSION ON RESULT

Discussion on Objective criteria

During this study it has been observed that there was no significance weight loss caused by *Udvartan* in subjects of Group A (P<0.05). There was mean weight reduction of 0.0 – 0.5kg kg caused by *Udvartan* and Suryabhedan *Pranayama* in subjects of Group B (P<0.05). Comparison of both the groups showed that changes are not that significant (P>0.05).

There was no change seen in BMI of group A. Where as in group B there was 0.2-0.5 difference seen in BMI as there was weight loss seen in Group B (P<0.05). Comparison of both the groups showed that changes are not that significant (P>0.05).

During study the measurement of Udar (Abdomen) was not that significant in Gr.A and Gr. B (P<0.05). Comparison of both the groups showed that changes are not that significant (P>0.05).

During study the measurement of sphik Aayam (Buttocks) was not that significant in Gr.A and Gr. B (P<0.05). Comparison of both the groups showed that changes are not that significant (P>0.05)

Discussion on Subjective criteria

Chalatva

In A group symptom was found in all subjects and 15 of them got relief (P<0.0001). In B group symptom was found in 20 subjects and 19 got relief. (P<0.0001).

Atisweda

Excessive sweatingis always found in obese person than normal person. As per Ayurveda process of sweating in obese persons is due to the pachan of vikrutk led which finally turns into sweat and mutra. In this trial the group A having 20 subjects of Aatiswedprvrutti but after the trial 16 subjects got relief (P>0.05). Where as in Group B 19 subject got relief out of 20 subjects.(P>0.05)

Atinidra

Nidra is developed normaly due to the physical and mental fatigue. In Overweight subjects Atinidra symptom is common because the effect of Kaphadosha and tamaguna on buddhi-indriya also effect of Aama are responsible factor. During the study in A group Atinidra was found in all 20 subjects whereas 13 subject (65%) got relief (P<0.05). In B group Atinidra was found in all subjects out of them 15subjects (75%) got relief (P<0.05). The property of chanak is Rukshaguna were helps to Aamapachan, Kaphagna and clears the Tama aavarana resulting in to normal nidra. In group B *Pranayama* helps to clear the nidra.

Atikshudha

Excessive accumulation of meda causes obstruction in the way of vata. This obstructed vayu causes ‘agnisandhukshan’ in koshta. This teevraagni digest the food fast and thus excessive hunger is seen in atisthula. In A group symptom was found in 12 subjects and all of them got relief (P<0.05). In B group symptom was found in 16 subjects and all subjects got relief (P<0.05).

Athi Pipasa

Pipasa & atipipasa these two lakshana were found due to the samata or Amma.thisama require liquid or water for the digestion of ama so that water is required in form of thrust and

also there may be imbalance of drwatva due to vikrutkleda. Atisandukashana also creatspipasalakashan. In group A and group B symptom was found in 12 (P>0.05) and 15 (P>0.05) subjects respectively and there was no relief in both the groups.

Alpavyayama

When the person is obese his tolerance power of exercise reduces. In group A 13 out of 20 pateints found improvement in their tolerance power of performing exercise (P<0.05), where as in group B, all subjects showed 100% relief in improvement of tolerance power of their exercise (P<0.05).

Anga Gourava

When person is overweight he starts feeling heavy in terms of his own body. This symptom was seen in all subjects out of which 18 subjects in group A out of 20 (P<0.05) and 19 subjects in group B out of 20 (P<0.05) showed improvement in this symptom.

Gatrasada

When person is overweight he starts feeling fatigue in terms of his own body. This symptom was seen in all subjects out of which 13 subjects in group A out of 20 (P<0.05) and 19 subjects in group B out of 20 showed improvement in this symptom (P<0.05).

CONCLUSION

Udvartan with Chanak Powder has shown non- significant results in the Overweight On the basis of this study, along with *Udvartan*a procedure, Suryabhedan *Pranayama*, pathyaapathya and exercise may be better line of precaution in Overweight. Symptoms of obesity was improved like-Symptoms of obesity like feeling of heaviness, physical exercise, satisfaction and tolerance of hunger were improved. Difference were seen more in group B *Udvartan* with Suryabhedan *Pranayama* can give a best result as Supportive therapy with Internal therapy for Overweight

FUTURE SCOPE

1. Comparative study as Add on treatment of same study with internal Ayurvedic drugs and only internal drugs on secondary obesity.
2. Continuation study with Yogasana and *Pranayama* during follow-up.
3. Survey study in healthy population to assess its prevalence rate of overweight in sedentary workers and people practicing Exercise or Yoga.

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