A comparative clinical study on *Vyoshadi Guggulu* and *Bilwadi Kwath* in the management of *Sthoulya* with special reference to physical parameters of Obesity

Khyati Mothaliya[1], Omprakash Dadhich[2], Rakesh Chhimpa[3]

1. M.D. Scholar, Dept. of Kriya sharir, National Institute of Ayurveda, Jaipur.

2. Professor and Head, Dept. of Kriya sharir, National Institute of Ayurveda, Jaipur.

3. M.D. Scholar, Dept. of Kriya sharir, National Institute of Ayurveda, Jaipur.

Corresponding author-
Dr. Khyati Mothaliya,
M.D. Scholar, Dept. of Kriya sharer, E mail-
dr.KhyatiMothaliya@gmail.com

Abstract-

Introduction-Obesity is a condition in which the body weight disproportionate to height of a person. And this is due to the deposition of fat over body. Worldwide prevalence of obesity has been got tripled by 1975 to 2016.

Obesity can be correlated with *Sthoulya* as per *Ayurvedic* perspective. As obesity becomes as a threatening condition around worldwide, it is indeed to find out an effective *Ayurvedic* formulation to treat *Sthoulya.*

Aims - The primary aim of this study was toassess and compare the effects of *Vyoshadi Guggulu* and *Bilwadi Kwath* inthe management of *Sthoulya* (Obesity) with the help of physical parameters.

Materials and Method-30 obese patients were enrolled who were randomly divided into three groups, 10 obese patients in each group. In Group A,500mg*Vyoshadi Guggulu* was given with

luke warm water twice a day.In Group B 20ml *Bilwadi Kwath*was givenwith*madhu* twice a day and in Group C, *Vyoshadi Guggulu* (500 mg) twice a day with luke warm waterand*Bilwadi Kwath*(20 ml) twice a day with *madhu*was given. Intervention was continuedfor 45 days with all three groups. Total three visits were done at an interval of 15 days.Assessment was done for reduction in weight (Kg) and Body Mass Index (B.M.I.) of all the subjectswho hadparticipated in the study.

Result-In weight, 5.86%relief was found in Group A; 2.54%relief was found in Group B whereas 7.55% relief was obtained in Group C. In BMI, 6.53% relief was found in Group A,3.70%relief was found in Group B while 8.45% relief was obtained in Group C.

Conclusion-Thus it was concluded that administration of *Vyoshadi Guggulu* and*Bilwadi Kwath*together(Group C)has shown better result in reduction of weight (Kg) and B.M.I than the interventions done in Group A and Group B respectively.

Key words-*Vyoshadi Guggulu, Bilwadi Kwath,* Obesity, *Sthoulya.*

INTRODUCTION

Ayurveda -one of the most ancient medical sciences of the world; advocates a complete promotive, preventive and curative system of medicine. *Ayurveda* treats the patient as a whole rather than treating his ailment as separate entity.According to *Ayurveda*, *Dosha*, *Dhatu* &*Mala* are the base of body[i]. So better understanding about knowledge of *Dosha*, *Dhatu* and *Mala* is necessary to familiarise withthe natural physiological processes occurring in our body. The paradigm of *Ayurveda* treatment therapy is based on principles rooted by*Dosha*, *Dhatu* and *Mala*. Prakruta or basic gunas/qualities of dosha, dhatu and mala and it's normal functioning in our body explained under the branch Kriya sareera. Acharya*Charaka*described that equal distribution of *Mamsa* (muscular tissue) and a properly distributed build-up of the body as one of the prime features of healthy body[ii].

At present, we can find that majority of people are not in *Sama Samhanana* ratio (well distributed body build up). Overweighing & obesity is the chief complaint of the man of present era. Obesity is a chronic disease with high prevalence ratio and serious risk factors where paving way for manifestation of number diseases like diabetes mellitus, hypertension, cardiovascular diseases osteoarthritis, and certain forms of cancer[iii,iv].

According to World Health Organization, the prevalence of obesity got tripled by 1975 to 2016. It states that obesity is a most alarming condition and majority of group of people suffering from the same. About 13% of the world's adult population were obese in 2016. The double burden of the disease was more observed on lower and middle income countries. Overweight and obesity are linked each other to cause death worldwide[v].

In ancient literature of *Ayurveda;* *Acharya Charaka* has listed eight types of

censurable persons of which *Atikrisha* (very emaciated) and *Atisthula* (very corpulent) are more significant. *Atisthula* or obese person need more attention because it is considered as *Krichchhrasadhya* – as difficult to treat and has more complications than very emaciated person[vi].

According to *Ayurveda*, vitiated *Rasa*[vii] and *Meda*[viii]*dhatu* are the main cause of *Sthoulya*. Both these *Dhatus* dominantly belong to *Kapha Varga* where *Guru* and *Snigdha Guna* observed dominant in *Sharira Samhanana*. Today's sedentary stressful lifestyle, irregular dietary habits, increased use of fast food and fatty diets are the main cause for obesity. Therefore, overweight is more prone in young population worldwide. These lifestyles increase *Snigdha* and *Guru Guna* in body resulting in obesity and overweight which is considered as *Sthoulya* in *Ayurveda*.

Aim: - The primary aim of this study was to assess and compare the effect of *Vyoshadi Guggulu* and *Bilwadi Kwath* inthe management of *Sthoulya* (Obesity) with physical parameters.

Materials and methods: The study was open label, randomized, interventional type comparative clinical study.Total 30 patients were selected andrandomly divided into 3 groups of 10 patients each. These patients were selected from O.P.D. of Arogyashala NIA and SSBH Jaipur. A detailed case

proforma was prepared to include the *Ayurvedic* and modern aspect of disease.Protocol was approved by the institutional ethical committee (IEC) [Letter No. IEC/ACA/2017/100; dated 26.4.2017] Prior written informed consents were taken from each patient. The trial was registered in CTRI prospectively [Reg. no. CTRI/2018/09/015855].

Inclusion Criteria: Patients with both gender and age between 16-70years and who suits with clinical signs & symptoms of *Sthoulya* as per classical *Ayurvedic* literature.

Exclusion Criteria: obesitydue to hereditary predisposition, hypothyroidism, with severe hypertension and diabetes mellitus, lactating women, with evidence of renal, hepatic and cardiac involvement and patient having drug induced obesity.

Observation and Results
Assessments were done with regards to relief in weight (Kg) and B.M.I. Results were statistically analysed using Stat Graph Pad 3.1 software. **Paired t test** parametric test was used for the assessment of the improvement in objective parametric tests of group 'A', 'B'& 'C'. **One-way Analysis of Variance (ANOVA):** Tukey-Kramer Multiple comparisons Test was used for comparison of results of objective parameters of Group A, B & C.

Table No.1 Content of trial drug *Vyoshadi Guggulu* and *Bilwadi Kwath*

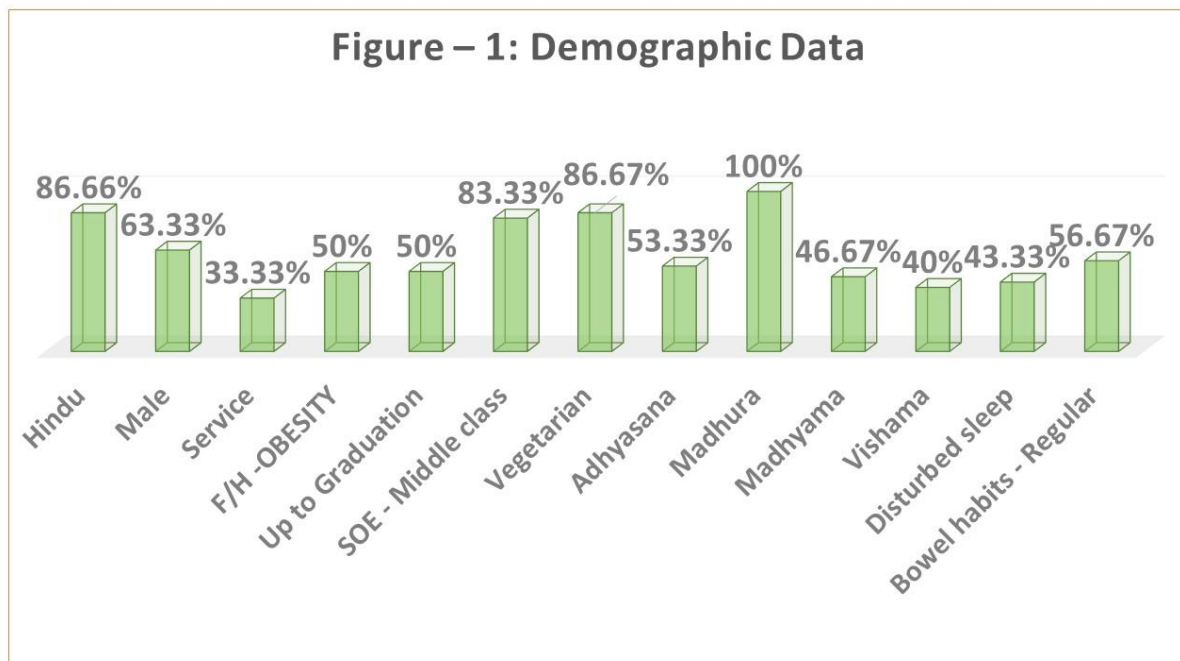|	GROUP-A	GROUP-B	GROUP-C
Intervention	*Vyoshadi Guggulu*	*Bilwadi Kwath*	*Vyoshadi Guggulu* and *Bilwadi Kwath*
Dose	500 mg BD With Luke warm water	20 ml BD With Honey	500 mg BD and 20 ml BD

Table No.2 Contents of *Vyoshadi Guggulu*

Sr.No	Drugs Name	Rasa	Guna	Virya	Vipaka
1	*Shunthi*	*Katu*	*Laghu, Snigdha*	*Ushana*	*Madhura*
2	*Maricha*	*Katu*	*Laghu, Tikshna*	*Ushana*	*Katu*
3	*Pippali*	*Katu*	*Laghu, Snigdha Tikta*	*Anushna sheeta*	*Madhura*
4	*Haritaki*	*Panch rasa*	*Laghu, Ruksha*	*Ushana*	*Madhura*
5	*Vibhitaki*	*Kashay*	*Laghu, Ruksha*	*Ushana*	*Madhura*
6	*Aamalaki*	*Pancharasa*	*Guru, Ruksha, Sheeta*	*sheeta*	*Madhura*
7	*Chitrak*	*Katu*	*Laghu, Ruksha*	*Ushana*	*Katu*
8	*Vidang*	*Katu, Kashay*	*Laghu, Ruksha, Tikshna*	*Ushana*	*Katu*
9	*Mustak*	*Katu, Kashay,Tikta*	*Laghu, Ruksha*	*Sheeta*	*Katu*
10	*Guggulu*	*Katu, Tikta*	*Laghu, Ruksha, Tikshna*	*Ushna*	*Katu*

Table No. 3 Detail Contents of *BilwadiKwath*

Sr.No	Drugs Name	Rasa	Guna	Virya	Vipaka
1	*Bilva*	*Kashay, Tikta, Katu*	*Laghu, Ruksha*	*Ushna*	*Katu*
2	*Agnimanth*	*Katu, Kashay, Madhura, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*
3	*Shyonak*	*Kashay, Madhura, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*
4	*Patala*	*Kashay, Tikta*	*Laghu, Ruksha*	*Ushna*	*Katu*
5	*Gambhari*	*Kashay, Madhura, Tikta*	*Guru*	*Ushna*	*Katu*

Observations and Result: -

Figure – 1: Demographic Data

(Hindu 86.66%, Male 63.33%, Service 33.33%, F/H -OBESITY 50%, Up to Graduation 50%, SOE - Middle class 83.33%, Vegetarian 86.67%, Adhyasana 53.33%, Madhura 100%, Madhyama 46.67%, Vishama 40%, Disturbed sleep 43.33%, Bowel habits - Regular 56.67%)

Maximum 86.66% patients were from Hindu community, 63.33% were males, 33.33% were in service by occupation,50 % had Family History of Obesity, 50% were educated up to graduation, 83.33% were from socio economically from middle class, 86.67% were vegetarian, 53.33% had *Adhyashana*, 100% had *MadhuraRasa Satmya*, 46.67% had *MadhyamaKoshtha*, 40% had *Vishamagni*, 43.33% had disturbed sleep and 56.67% had regular bowel habits. (Fig - 01)

Figure – 2: Physical Parameter
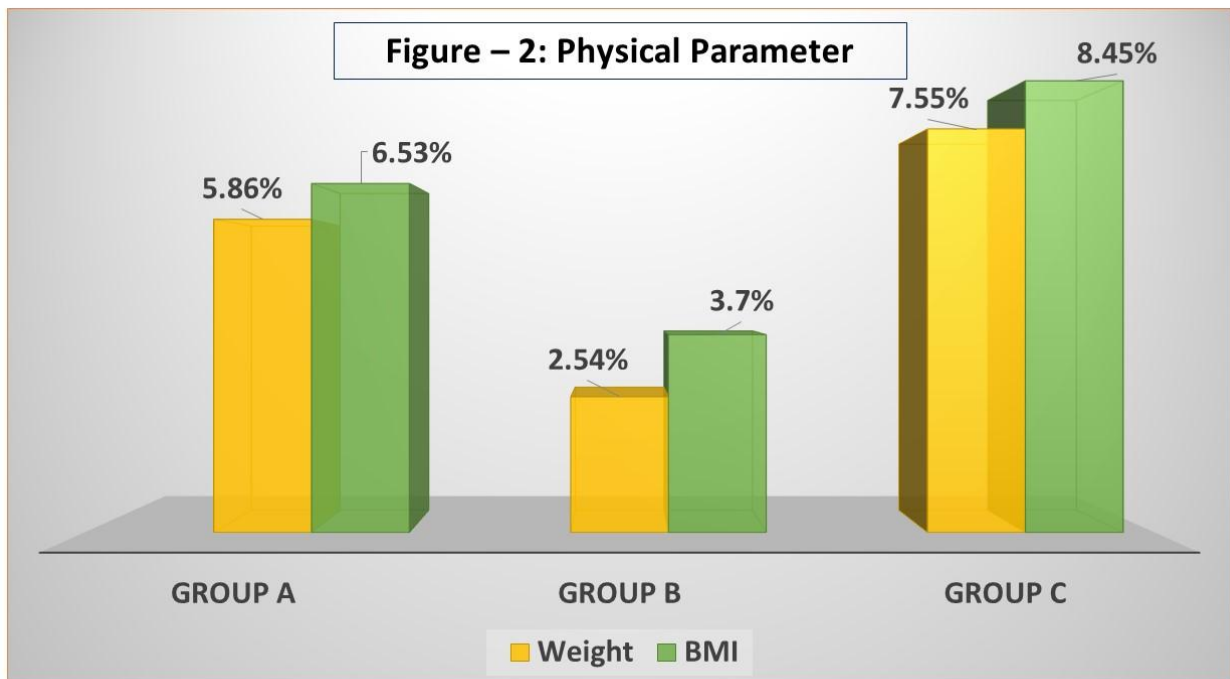
Table No. 4 Effect of the therapy on physical parameters in Group A, B and C

Group	Parameter	Mean		Dif.	% of Change	SD	SE	P	R
		BT	AT						
Group A	**Weight**	88.70	83.50	5.20	5.86	0.92	0.29	P<0.0001	ES
	BMI	33.70	31.50	2.20	6.53	0.42	0.13	P<0.0001	ES
Group B	**Wt.**	90.40	88.10	2.30	2.54	0.67	0.21	P<0.0001	ES
	BMI	32.40	31.20	1.20	3.70	0.42	0.13	P<0.0001	ES
Group C	**Wt.**	96.70	89.40	7.30	7.55	1.57	0.50	P<0.0001	ES
	BMI	36.70	33.60	3.10	8.45	0.57	0.18	P<0.0001	ES

Result of *Sthoulya* in reduction of weight in Group A - 5.86%, at p value (p<0.0001) in Group B - 2.54% at p value (p<0.0001) whereas in Group C - 7.55% at p value (p<0.0001) which were also extremely significant. Result of *Sthoulya* in reduction of BMI in Group A - 6.53% at p value (p<0.0001) in Group B - 3.70% at p value (p<0.0001) whereas in Group C - 8.45% at p value (p<0.0001) which were extremely significant. (Table – 03 and Fig - 2)

Table No. 5 – Effect on haematological parameters in Group A

Haematological Parameters	Mean		Diff.	% Change	SD	SE	P	Level of significance
	BT	AT						
HB	14.10	14.10	0.00	0.00	0.47	0.15	1.0	NS
HCT	42.70	42.90	-0.20	-0.47	2.20	0.70	0.7804	NS
TEC	5.40	5.40	0.00	0.00	0.00	0.00	1.000	NS
TLC	7340.00	7467.00	-127.00	-1.73	1329.48	420.4	0.7695	NS
PLATELET	2.50	2.70	-0.20	-8.00	0.42	0.13	0.1679	NS
M.C.V	81.80	83.40	-1.60	-1.96	3.27	1.03	0.1565	NS
M.C.H	26.60	27.60	-1.00	-3.76	1.25	0.39	0.0319	NS
M.C.H.C	32.80	33.00	-0.20	-0.61	0.79	0.25	0.4433	NS
NEUTROPHILS	59.90	58.70	1.20	2.00	6.29	1.99	0.5609	NS
LYMPHOCYTES	18.95	18.53	0.42	2.22	4.79	1.10	0.8161	NS
EOSINOPHILS	2.91	2.09	0.82	28.13	1.50	0.32	0.8723	NS
MONOCYTES	3.22	2.43	0.78	24.32	1.54	0.32	0.5763	NS
BASOPHILS	1.53	0.74	0.79	51.72	1.03	0.24	1.0	NS

Table No. 6 Effect on haematological parameters in Group B

Haematological Parameters	Mean		Diff.	% Change	SD	SE	P	Level of significance
	BT	AT						
HB	14.30	14.20	0.10	0.70	0.57	0.18	0.5911	NS
HCT	43.00	43.30	-0.30	-0.70	1.64	0.52	0.5763	NS
TEC	4.90	5.00	-0.10	-2.04	0.32	0.10	0.3434	NS
TLC	8060.	8210.0	-	-1.86	1401.78	450.1	0.7428	NS

	00	0	150.00					
PLATELET	3.00	2.70	0.30	10.00	0.48	0.15	0.0811	NS
M.C.V	88.00	86.30	1.70	1.93	3.47	1.10	0.1553	NS
M.C.H	29.30	28.60	0.70	2.39	1.25	0.40	0.1108	NS
M.C.H.C	33.00	33.30	-0.30	-0.91	1.42	0.45	0.5203	NS
NEUTROPHILS	56.10	53.20	2.90	5.17	10.98	3.47	0.4252	NS
LYMPHOCYTES	21.26	21.21	0.05	0.25	4.99	1.15	0.5893	NS
EOSINOPHILS	3.68	2.55	1.14	30.86	0.94	0.20	0.0528	NS
MONOCYTES	2.96	2.17	0.78	26.47	1.48	0.31	0.5414	NS
BASOPHILS	1.68	0.68	1.00	59.38	0.94	0.22	0.1039	NS

Table No. 7 Effect on haematological parameters in Group C

Haematological Parameters	Mean		Diff.	% Change	SD	SE	P	Level of significance
	BT	AT						
HB	14.20	14.30	-0.10	-0.70	0.57	0.18	0.5911	NS
HCT	42.70	43.00	-0.30	-0.70	2.83	0.90	0.7452	NS
TEC	4.90	5.20	-0.30	-6.12	0.95	0.30	1.0	NS
TLC	8300.00	8430.00	-130.00	-1.57	1971.49	623.4	0.8395	NS
PLATELET	2.60	2.90	-0.30	-11.54	0.82	0.26	0.2789	NS
M.C.V	85.20	81.50	3.70	4.34	13.72	4.34	0.4159	NS
M.C.H	28.60	27.10	1.50	5.24	5.54	1.75	0.4143	NS
M.C.H.C	33.60	33.20	0.40	1.19	1.35	0.43	0.3732	NS
NEUTROPHILS	58.40	57.90	0.50	0.86	8.44	2.67	0.8555	NS
LYMPHOCYTES	18.84	18.89	-0.05	-0.28	4.89	1.12	0.5183	NS
EOSINOPHILS	3.73	2.32	1.41	37.80	3.19	0.68	0.3816	NS
MONOCYTES	2.87	2.09	0.78	27.27	1.28	0.27	0.3434	NS
BASOSPHILS	1.58	0.74	0.84	53.33	1.01	0.23	0.5911	NS

Statistically non-significant (p>0.05) result were found on haematologicalparameters by group A, B and C. (Table 04, 05 and 06)

Table No. 8 Comparative effect on haematological parameters in Group A, B and C

Objective Parameters	M. diff. Gr. A	M. diff. Gr. B	M. diff. Gr. C	P Value	Result
HB	0.00	0.10	-0.10	0.7105	NS
HCT	-0.20	-0.30	-0.30	0.9936	NS
TEC	0.00	-0.10	-0.30	0.5054	NS
TLC	-127.00	-150.00	-130.00	0.9994	NS
PLATELET	-0.20	0.30	-0.30	0.0755	NS
M.C.V	-1.60	1.70	3.70	0.3745	NS
M.C.H	-1.00	0.70	1.50	0.2534	NS
M.C.H.C	-0.20	-0.30	0.40	0.3937	NS
NEUTROPHILS	1.20	2.90	0.50	0.8218	NS
LYMPHOCYTES	0.42	0.05	-0.05	0.9509	NS
EOSINOPHILS	0.82	1.14	1.41	0.6411	NS
MONOCYTES	0.78	0.78	0.78	<0.0001	ES
BASOPHILS	0.79	1.00	0.84	0.3003	NS

Non-significant results were found in Objective parameters after doing intergroup comparison except monocytes where results were extremely significant (p<0.0001). (Table - 07)

DISCUSSION:

As mentioned in Samhita, *Samprapti* (pathogenesis) of *Sthoulya* (obesity) occurs due to *NidanaSevana* (reason),*Tikshna Jatharagni* (intensive digestive fire) and *Medodhatvagnimandya*(decrease *Agni* of *MedaDhatu*)[ix].As, per Figure no. 1, maximum number of subjects (86.66%) were from Hindu community. From this observation it can't be concluded that Hindus are more prone to this disease, because maximum number of subjects attending the hospital are Hindu and this region has got the Hindu community

dominance. And maximum number of patient were male because subjects were selected randomly in this study. This trend may be contradictory to the incidence level that obesity is more prone to female which confirms the findings of National family health survey, 2007. On considering the nature of occupation, it has been found that 33.33% subjects were in service by occupation category and this is showing the highest prevalence of obesity in service persons. The reason behind this might be lack of exercise with long hours of desk work; increased use of tea/coffee in office

time which are factors affecting the digestion. In these study maximum 50% subjects had family history of Obesity which is the genetic factor and susceptibility towards obesity in the subjects. In the present study maximum number of subjects i.e. 50% subjects were graduates and this shows that there is more awareness about losing weight. Even it can be seen that by higher level education, life becomes more sedentary that lead to obesity. In these study maximum 83% subjects belonged to middle economical class while 13.33% subjects were from Upper class. It is believed that obesity is a disease of only upper socioeconomic class. Above observation clarifies that the prevalence of obesity is not related with quantum of money, but today it depends upon mode of life style & eating habits. So obesity widespread in all classes. It is generally believed that obesity is more prevalent in affluent class of society, due to luxurious life, less mental work and physical activity. While middle classes of society is growing fast and easy availability equipment leads to sedentary life style. This may also be due to the regional habits where there is dominancy of oily and fried foods in all classes. In these study diet reveals that majority of 86.67% subjects were vegetarians. This can be because maximum

numbers of subjects belonged to Hindu religion which prefers vegetarian food than non-vegetarian food. Choice of food and habit of diet timings may cause of obesity. 53.33% of patient had *Adhyashana.* As per *Ayurvedic* principles; *Adhyashana* is a major cause *Agnivaishamya* as well as S*thoulya*[x]. In the present study maximum number of Subjects i.e.100 % consumed *Madhur Rasa Pradhana Ahara*, 73.33% consumed *Amla* Rasa, 70% consumed *Lavan* Rasa, 43.33% *Katu* Rasa. 36.67% *Tikta* Rasa. In *Ayurvedic* texts, it is clearly mentioned that dominancy of *Madhura, Amla* and *Lavana Rasa* responsible for production of *Kapha Dosha* and diseases related to it[xi]. In these study, maximum 46.67% subjects were of *Madhyam Koshtha*, followed by 33.33% subjects were of *Krura Koshtha* and only 20% subjects were reported with *Mridu Koshtha.* The reason behind these observations might be that *Madhyama Kostha* is found in *Kapha* predominance *Prakriti*, which increases prevalence of *Sthoulya*[xii]. In these study 40% subjects were having *Vishamagni* whereas 26.67% subjects were having *Mandagni*. Deranged *Agni* is the main cause for diseases[xiii].The reason behind these observations might be that *Agnisandushanas* due to *Samana Vayu Prakopa* &*Dushyas* involved i.e. *Kapha-*

Medas showed this varied nature in *Agni* i.e. *Vishamagni* in some cases[xiv]. This study reveals that maximum 43.33% subjects were having disturbed sleep and they have habituated with day nap after food which is the prime cause of Obesity as per Ayurvedic texts[xv].16.67% subjects had *Atinidra.* Excess sleep is one of the main causative factors of obesity which causes *Kapha Prakopa*, increases the *Meda Dhatu* thereby serving as an etiological factor for obesity[xvi]. In these study majority of subjects (56.67%) were having Regular bowl habits, 13 subjects (43.33%) were having Irregular bowl habits. 23.33% subjects with loose stools & 20% subjects were in constipation. Both loose and constipated kind of stool is mentioned as *Saama* type of *Mala.* Due to *Gura* and *SnigdhaGuna* of *Kapha*; sticky and loose stool found commonly in obese subjects.Trial drugs are having *Laghu, Ruksha Guna; Ushna Virya* and *Katu Vipaka Pradhana* along with *Ama Pachaka & Kaphavatahara* properties of *Shunthi, Maricha, Pippali, Chitraka, Panchmoola, Madhu* etc. *Samprapti Vighatana* (pathogenesis breakdown)of disease has been done with these trial drugs having properties of *Kasaya Katu Tikta- Rasa* and *Unushna-Virya Pradhana* which decreases *Meda* by its *Deepana, Pachana, Lekhana,*

Sroto Shoshana and *Kaphanashaka* properties. This indirectly helps in reduction ofbody weight and BMI parameters.The ingredients contained in both *Vyoshadi guggulu* and *Bilwadi Kwath* are capable to annihilate the condition obesity. Foremost, all the contents of *Vyoshadi guggulu* are *Katu rasa* predominant and then followed by *Tikta rasa*. And considering *Bilwadi Kwath*, those contents are *Tikta and Kashay Rasa* predominant followed by *Katu Rasa*. According to *Acharya Sushruta, Katu Rasa* has *Sthoulya, Alasya, Kaphaghna* and *Medonashak* effect. *Katu, Tikta Rasa* posses*Deepana, Pachana, Ruchikara, Shodhana, Srotansi Vivrunoti (Prasaryati Srotansi–Arundatta) and Kaphaghna* actions. It enhances *Jatharagni Deepana* due to their deepana property and thereby *Dhatvagni Deepana* also. *Sthaulya* is one of the *Dhatvagnimandya Janyarogas* and *Medodhatu* is the main factorinvolved in *Samprapti. Tikta Rasa* has been mentioned of *Lekhana*, *Meda-Vasa-Sleshma Upashoshana* properties where indicates for its *Medohara* effect. As it is attributed with *Pachana Karma,* it helps in *Ama Pachana* which is main cause for *Samprapti Vighatana*. *Bilvadi kwath* having *ushna veerya* property and because of this action, *Sang* of *Srotas* will be removedthereby regulates the

function of *Medovahasrotas* correctly. .*Medo Kshaya* and *Sneha Kshaya* properties attenuates excessive medo dhatu kshaya. As *Kapha* is one of the main *Dosha* involved in the *Samprapti* of *Sthoulya*, so *Kaphaghna* action will be administered to treat the condition and these both drugs forward kaphahara action and thereby medohara action. Ruksha and Laghu gunas of contents of *Vyoshadi Guggulu* andBilvadi kwathpropounds actions like *Dhatu Shoshaka, Kapha Shamaka, Lekhana Karma* where as *Laghu Guna* has *Kaphashamaka, Krishtakaraka* and *Srotoshodhaka* properties. Thereby it paves for *Medokshaya* and *Sneha Kshaya* properties which helpful in *Samprapti Vighatana* of *Sthoulya.* The main pathological factors in *Sthaulya* are *Kapha* and *Meda* (both *Snigdha Pradhana*) and they are *Jala* and *Prithvi* dominant. Administered drugs are *Agni, Vayu* and *Nabhasa* dominant because of its *Katu, Tikta Rasa (Ruksha Guna).*Ultimately *Panchabhautik* constituents of *Kapha* and *Meda (Snigdha Guna)* verses *Vyoshadi Guggulu* and*Bilvadi Kwath* (*Ruksha Guna*) counteracts each other. Maximum contents of *Vyoshadi Guggulu* have *Katu Vipaka* which is responsible for *Ama Pachana* and *Srotoshodhana* by enhancing *Jatharagni* and *Dhatwagni.Ushna Virya* of ingredients

digests *Ama* by enhancing *Medo Dhatwagni.* Digestion of *Ama* clears the obstruction of *Rasavaha Srotas* and *Medovaha Srotas* which results in *Vata Shamana* too. It helps in *Samprapti Vighatana* of *Sthoulya.* The known pharmacological action of majority of the drug contents is *Kapha Vata Shamaka* followed by *Tridosha Shamaka Karma.* Drugs are having *Deepana, Pachana, Amapachan, Lekhana, Srotoshodhan* etc. properties. The effect of the study drugs can be attributed to the above mentioned properties of its ingredients. All the contents target with *Deepana, Amapachana, Lekhana and Srotoshodhana* properties primarily and cleanses away the excess medas from body. This results in *medokshaya* and reduction in weight (Table No.2 & 3).

CONCLUSIONS:-

The data obtained after the treatment was statistically computed, and it was found that the results were statistically extremely significant in Group A, B and C. While comparing the results, Group C (*Vyoshadi Guggulu* and *Bilwadi Kwath*) has shown more significant result than Group A and B respectively. Both the formulations are contained with drugs which can act against Sthoulya. The *rasapanchaka* of both medicines exhibits *Amapachana*, *deepana*,

Medohara, *lekhana* and *Srotoshodhana* actions. This aids in reduction of *Kaphadosha* and *medodhatukshaya* and thereby leads to manage the condition *Sthoulya* (obesity).

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