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A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF *YASTIMADHU* GRANULES AND SYRUP *BRAHMI* IN MANAGEMENT OF *SHAYYAMUTRA* W.S.R TO ENURESIS IN CHILDREN

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ABSTRACT

Ayurveda is not only a system of medicine but in true sense it is a science of life. The whole philosophy of *Ayurveda* is based on achieving, maintaining and promoting health. *Kaumarbhritya* emerged as an independent medical specialty. Child health has assumed great significance in all over world. Psychiatric disorders in children are very common interfering with their development, education and their future by repercussions on their day by day quality of life. Enuresis is defined as involuntary discharge of urine after the age at which bladder control should have been established. Children may afraid to sleep over at friends home for fear of having enuresis. Parents often feel helpless to stop it. This problem can lead to long lasting effects on children's psychological life and children lack in study and other activities. **Aim:** Determine the role of *Yastimadhu* Granules and Syrup *Brahmi* in management of *Shayyamutra* w.s.r to Enuresis in Children**. Materials and Methods:** The study was conducted on 36 children of Enuresis for a period of 4weeks. Cardinal symptom of disease i.e. passing of urine in bed and other associated features like deep sleep, shamefulness etc. were documented before, during and after treatment**. Statistical Analysis Used:** Observations of the study were analyzed and findings were evaluated by using statistical methods **Results:** In the present study 54.42% improvement in Passing of urine in bed was observed with *Yastimadhu* Granules, 69.53% with Syrup *Brahmi*. No adverse effect of the trial drug was observed during the study. **Conclusion:** The results suggest that Syrup *Brahmi* showed better result than *Yastimadhu* Granules in Enuresis.

KEYWORDS: *Shayyamutra*, Psychiatric disorder, Enuresis, Involuntary, Cardinal symptom.

INTRODUCTION

Child health has assumed great significance in all over world. Its importance is being realized more and more by paediatricians and general public in developing as well as developed countries. Here the health means, should be physically and emotionally fit in all directions, because almost every organic illness results in some degree of emotional disturbance and vice versa. In *Ayurvedic* classics, the brief description regarding *Shayyamutra* is found in *Sharangadhara* and *Vangsena Samhita*. In this disease mainly *Vata* (*Apanavayu*), *Pitta* (*Pachaka*), *Kapha* (*Tarpaka*), along with *Manasika dosha (Tama*) are vitiated. Main *Dushya* involved in this disease is *Rasa* (*Ambu*) *dhatu*. Vitiation of *Mutravaha* and *Manovaha srotas* is found in the form of untimely and increased frequency of urine at night. Enuresis is a behavioral problem and prevalence wise it comes next to allergic disorders. Children are not considered for enuresis until they have reached 5 years of age and this behaviour is clinically significant as manifested by either a frequency of at least twice a week for three consecutive months or the presence of clinically significant distress in social academic or other important areas of child's functioning. The prevalence of enuresis is about 15-25% of children at 5 years of age, 8% of 12 years old boys and 4% of 12 years old girls, only 1-3% of adolescent are still wetting their bed. Boys suffer more often than girls because girls typically achieve each milestones before boys. Indian data on incidence and prevalence of enuresis is very limited. In general, prevalence of nocturnal enuresis is higher among male children than female children. The prevalence in India is 7.61%-16.3%. The prevalence is highest in children aged 5-8 years. In rural areas in India the prevalence is higher among children from poor socioeconomic class compared to those from the upper middle class. The prevalence of bed wetting decreases with age.

Enuresis is a multi factorial condition which is classified as primary enuresis (urinary incontinence in a child who has never been dry) and secondary enuresis (urinary incontinence in a child who has been dry for at least 6 months). Nocturnal enuresis (bedwetting) is defined by the National Institute for Health and Care Excellence (NICE) guidelines as the involuntary wetting during sleep without any inherent suggestion of frequency of bedwetting or patho physiology. It is considered normal up to the age of 5 years, and is common up to the age of 10 years. Children with nocturnal enuresis may have excessive nocturnal urine production, poor sleep arousal and/or reduced bladder capacity. Children with nocturnal enuresis may

also have daytime urinary urgency, frequency or incontinence of urine. Enuresis can cause a variety of behavioral, psychological, and social problems including embarrassment, blushing, lack of self-esteem, and aggression.

- Moreover whatever pharmaco-therapeutic measures are available in current days cause much more hazardous side-effects than the benefits. The recurrence of the disease on stoppage of the treatment cause more awfulness to the parents as well as the child. Though other alternatives like the conditional devices i.e. Enuretic alarms are on hands but they are less affordable due to their expensive makeup, moreover the child with enuretic alarm disturbs his surrounding to a major extent. Considering the above mentioned factors this problem was
- To study the efficacy of *Yastimadhu* Granules and Syrup *Brahmi* in management of *Shayyamutra.*
- To clincally assess the comparative efficacy of both trial drugs. selected for the present study. A genuine effort was made to understand the psychological state of the patients and guide them appropriately.

AIMS AND OBJECTIVES

- To analyze the prevalence of *Shayyamutra* in children.
- To evaluate the safety of both the drugs in children.

MATERIALS AND METHODS

Selection of patients

For the present study, patients were selected from OPD of Department of Kaumarbhritya – Balroga, R.G.G.P.G Ayurvedic Hospital, Paprola. Total 40 patients were registered and divided in to two groups 20 patients in each group satisfying inclusion and exclusion criteria were selected for clinical trial.

Inclusion criteria

- Patient between 5 to 16 years of age.
- Patient with complaint of repeated involuntary voiding of urine in to bed or clothes.
- The behaviour is clinically significant as manifested by either a frequency of once a week or more.
- Parents of patient willing to participate in the trial.

Exclusion criteria

- Children with congenital anomaly.
- Children with Chronic ailments like Tuberculosis, Malignancy, Cardiac and Renal problems.
- Children suffering from UTI, Diabetes mellitus etc.
- Children suffering from worm infestation.
- Children with symptomatology of any syndrome.
- Children with physical disability.
- Children below or above the mentioned age group.
- Parents of the patient not willing to participate in the trial.

Discontinuation Criteria

- Any acute or severe illness.
- If the condition of the patient deteriorates during the trial.

Trial Drugs

Yastimadhu Granules and Syrup *Brahmi* have been selected for the present study.

Trial drug for Group A – *Yastimadhu* Granules.

Table 1: Ingridients of *Yastimadhu* Granules.

Sr.no.	Name	Botanical name/English name	Family	Part used
1	*Yastimadhu*	*Glycyrrhiza glabra*	Fabaceae	Root

Trial drug for Group B- Syrup *Brahmi.*

Table 2: Ingridents of Syrup *Brahmi.*

Sr.no.	Name	Botanical name/English name	Family	Part used
1	*Brahmi*	*Bacopa monnieri*	Scrophulriaceae	Whole plant

Protocol of Research

I.E.C. Approval: Approval of Institutional Ethical Committee was obtained before commencement of research work.

Consent: Written and informed consent of patients/parents/guardians was taken before inclusion in the trial.

Diagnosis of patients: A detailed history and complete physical examination, laboratory investigations were carried out based on both *Ayurvedic* and modern system parameters. patients fulfilling the diagnostic criteria were included in the present study.

This trial was also enrolled in Clinical Trial Registery India(CTRI),Ref.no. REF/2019/10/028839.

Grouping of patients

Registered 40 study subjects were randomly divided into following two groups.

Group - A – In this group 20 patients were managed with *Yastimadhu* Granules.

Route of administration: Oral.

Drug dose: 60-80 mg/kg/day in two divided doses.

Anupana: *Ksheer.*

Group - B – In this group 20 patients were managed with Syrup *Brahmi.*

Route of administration: Oral.

Drug dose: 1ml/kg/day in two divided doses.

Duration of trial **:** 4 Weeks.

Follow up: Two follow ups.

1st follow up- after 2 weeks of enrollment

2nd follow up- after 4 weeks of enrollment i.e. completion of therapy

During follow ups patients were thoroughly evaluated on various subjective and objective criteria.

Criteria of Assessment

Assessment of effect of therapy was done on the basis of various subjective and objective parameters.

Subjective assessment

To assess the improvement in clinical symptomatology of the patients, scoring system was

adopted. Symptoms were accorded according to their severity .Gradation of *Shayyamutra* and its associated symptoms are as follows:

Cardinal symptom	**Grade**
1. Passing of urine in bed	
Nil	: 0
Occasional/once in month	: 1
More than once in a month	: 2
Once in a week	: 3
More than once in a week	: 4
Daily once	: 5
More than once daily	: 6

Associated symptoms

2. Lack of memory	
Both remote and recent memories are clear with easy retention and recall	: 0
Both remote and recent memories are clear but retention and recall are not seen	: 1
Remote memory is impaired but recent memory is intact power of retention and recall is not seen	: 2
Both remote and recent memories are impaired with difficult retention and recall	: 3
3. Shamefulness	
No feeling of shame at all	: 0
Feeling of shame in the presence of other Which recover after mixing	: 1
Feeling of shame, which continue for long	: 2
Feeling of shame which does not recover	: 3
4. Irritiability	
None	: 0
Sometimes	: 1
Always	: 2

Never : 3

5. Lack of concentration

Can grasp the event at an instance, no confusional status. : 0

Can grasp the event at an instance but can confuse. : 1

Delayed grasping with frequent confusion . : 2

Grasping and understanding is difficult
with lack of confusion : 3

6. Hyperactivity

Playful all the day. : 0

Playful but easy fatigability . : 1

Occasional playful. : 2

Reduced normal activity. : 3

7. Fear

No fear for any cause : 0

Fear only for reasonable cause, occasionally recover : 1

Fear even without reasonable cause and helped by counseling : 2

Cannot be helped by counseling : **3**

8. Violence /Aggressiveness

No anger even for reasonable cause : 0

Gets angry only for reasonable cause : 1

Gets angry even for unreasonable causes : 2

Uncontrollable anger with body gesture for no cause : 3

9. Sleep

Normal sleep – Awaken to stimulate : 0

Disturbed sleep : 1

Deep : 2

Objective Assessment

Following objective parameters were adopted for assessment of effect of therapy

Biochemical Investigations

CBC(Hb, TLC, DLC, ESR)

FBS

LFT

Urine examination

Investigations were done before and after the trial to exclude any pathology.

Statistical Analysis of Results

The results obtained on different variables, were analyzed using the standard statistical methods. Student's paired 't' test was used for individual group and unpaired 't' test was used for intergroup comparison . Their significance was estimated by means of 't' table on (n-1) degrees of freedom. 't' test was carried out at p >0.05, <0.05, p<0.01, p<0.001. The obtained results were interpreted as:

Insignificant -p>0.05

Significant -p<0.05 and p<0.01

Highly significant -p<0.001

Total Effect of Thearpy

The assessment of overall effect was done after completion of course of treatment i.e. after4 weeks. Suitable scoring pattern was used to assess the cardinal features of patients before and after the treatment. At the end of treatment, overall effect of therapy was calculated with reference to percentage improvement in all cardinal features by using the scoring pattern. The obtained results were measured according to the grades given below.

Complete Remission : 100% relief

Marked Improvement : >76%relief

Moderate Improvement : 51% to <75% relief

Mild Improvement : >26 to <50% relief

No improvement :< 25% or no relief

OBSERVATIONS AND RESULTS

In the present study total 40 patients were registered out of which 36 patients completed the trial while 4 patients dropout from trial.

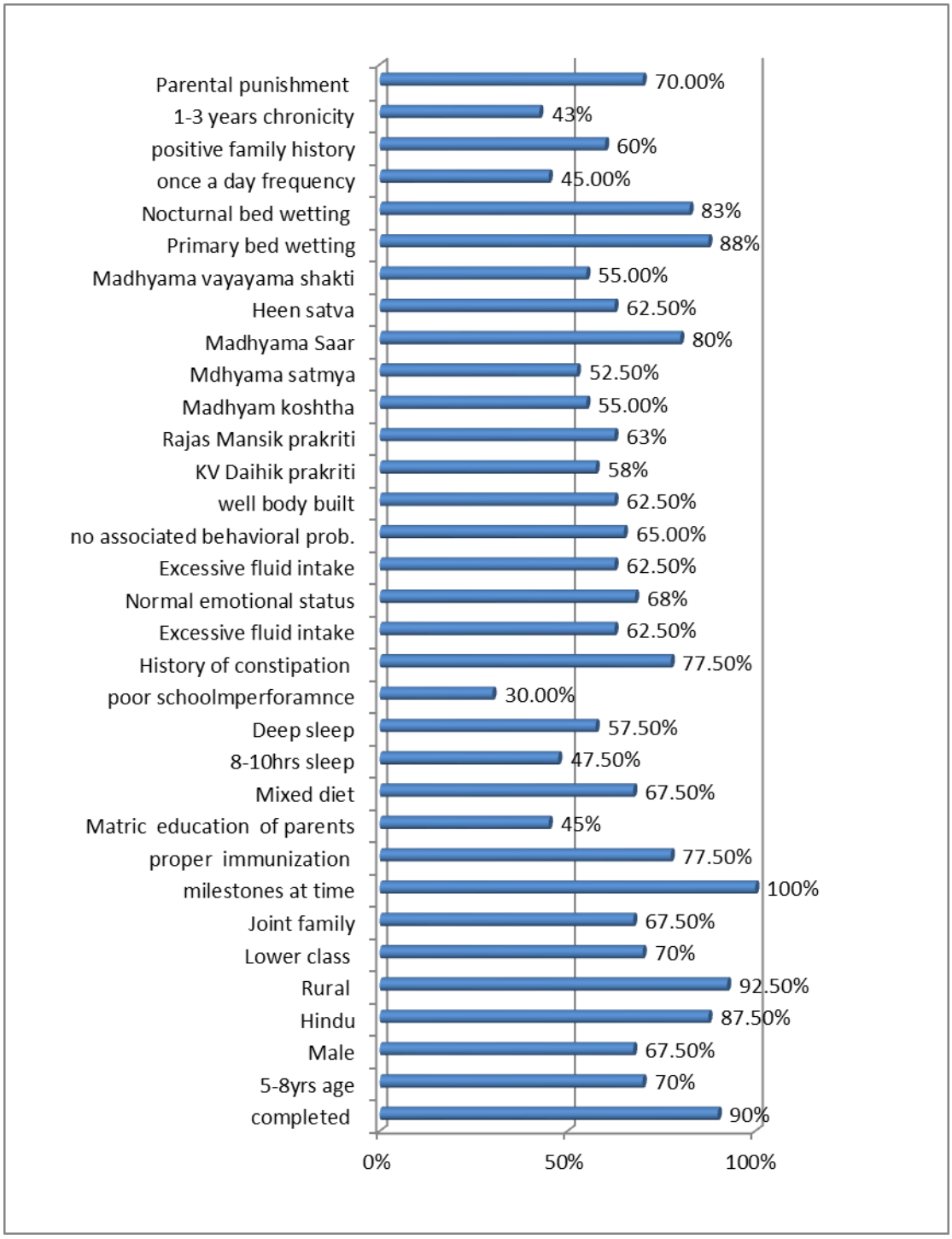

Figure 1: Observations.

Maximum number of patients (70.00%) was of 5-8 years age followed by (20.00%) 9-12 years children. In this study male children were found higher (62.50%) incidence of *Shayyamutra* as compared to female children. Maximum number of patients (87.50%) was from Hindu religion and (92.50%) were from rural habitat. Maximum number of patients (70.00%) belonged to lower class followed by middle class. Majority of patients (67.50%)

were from joint family. All patients (100.00%) attained all the milestones at proper time and maximum number of patients (97.50%) was immunized according to National immunization schedule. Parents of maximum number of patients (45.00%) were educated up to matric standard followed by with secondary qualification. The data of present study showed that maximum number of patients (67.50%) was enjoying mixed food where as other were vegetarian. Maximum number of patients (47.50%) had 8-10 hours sleep. Maximum number of patients (57.50%) showed deep sleep. Maximum patients (45.00%) showed poor school performance. History of constipation was present in maximum number of patients (77.50%). Majority of the patients (67.50%) were with normal emotional status. Maximum number of patients (62.50%) was taking excessive fluids. Maximum number of patients (65.00%) had no other associated behavioral problem. Maximum patients (62.50%) were of well body built. Maximum number of patients (57.50%) had *kapha-vataj daihik prakriti* and maximum patients (62.50%) had *Rajas mansik prakriti*. Maximum number of patients were having (55.00%) *Madhyam Kostha*, (80.00%)Saar, (52.50%)*Satmya* and (55.00%) *Vayayama shakti* and (62.50%) *Avar Satva*. Maximum number of patients (87.50%) had primary and maximum number of patients(82.50%) had Nocturnal type of Bed wetting. Maximum number of patients (45.00%) were presented with bed wetting once in a day followed by bed wetting twice in a day. The patients of study showed that maximum number of patients (62.50%) had positive family history. Study showed that maximum patients (42.50) suffering from bedwetting since 1-3year.Maximum number of patients (70.00%) showed frequent and occasional parental punishment.

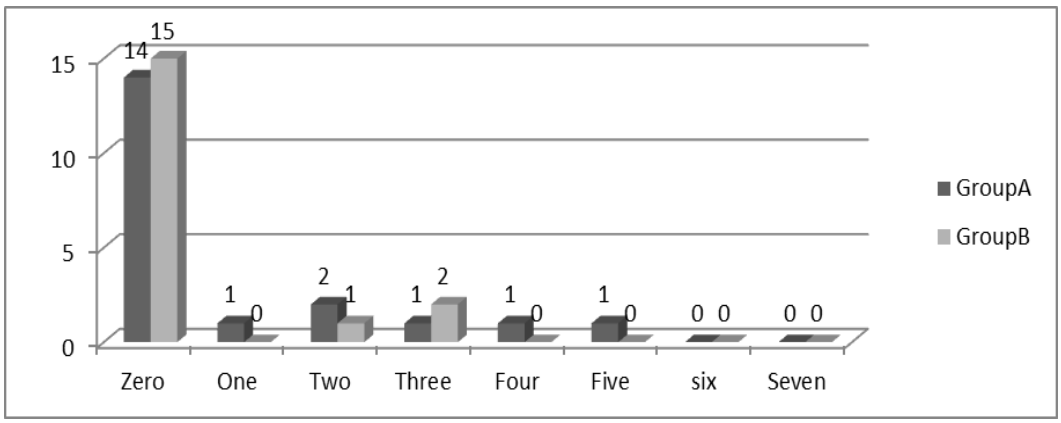

Figure 2: Status of history of dry night in last one week.

The history of bedwetting in last one week before treatment shows that maximum patients of group A (70.00%) and group B (75.00%) had no dry night i.e. total 72.50% patients had no

dry nights, 05% patients in group A and 00% in group B i.e. total 02.50% patients had single dry night, 10% patients of group A and 05% patients of group B i.e. 07.50%had two dry nights. 05% patients of group A and 10% patients of group B i.e. 07.50% had three dry nights, 05% patients of group A and 00% patients of group B i.e.02.50% had four dry nights. 05% patients of group A and 00% patients of group B i.e. 04.44% had five dry nights. 00% patients of group A and 10% patients of group B i.e. 05.00% had six dry nights.

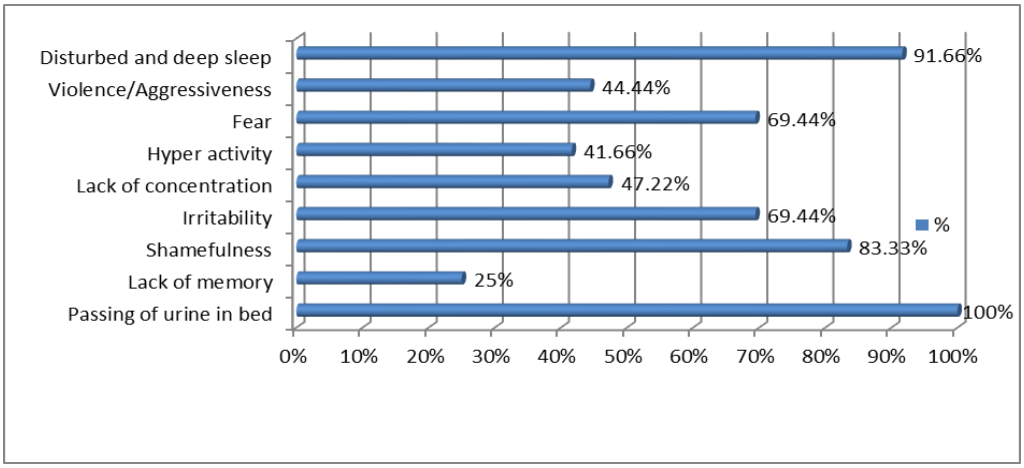

Figure 3: presentation of symptomatological data.

Profile of clinical symptamotology in the study revealed that all patients 36(100%)had history of passing of urine in bed followed by disturbed and deep sleep33(91.66), shamefulness30(83.33%),irritiabilityandfear25(69.44%),lackofconcentration17(47.22%),violence/aggressiveness16(44.44%),Hyperactivity15(41.66) and 09(25.00%)patients had lack of memory.

DISCUSSION

Table 3: Effect of thearpy on dry nights per week.

Dry night	Group A (N=18)				Group B (N= 18)			
	BT	%	AT	%	BT	%	AT	%
Zero	12	66.66	03	16.66	13	72.22	01	05.50
One	01	05.50	02	11.11	00	00	01	05.50
Two	02	11.11	01	05.50	01	05.50	00	00.00
Three	01	05.50	00	00.00	02	11.11	01	05.50
Four	01	05.50	03	16.66	00	00.00	02	11.11
Five	01	05.50	06	33.33	00	00.00	06	33.33
Six	00	00.00	03	16.66	02	11.11	07	38.88
Seven	00	00.00	00	00.99	00	00.00	00	00.00

The efficacy of the drug was assessed on the basis of improved status in the number of dry nights. For the purpose of making comparison between before and after treatment, the history of bedwetting in last one week was documented data of effect of therapy on the dry nights per week revealed that in Group -A12(66.66%)patients had zero dry nights per week before trial and 03 (11.66%) patients had zero dry nights per week after trial,1(05.50%)patient had one dry night per week before trial and 02(11.11%)patients had one dry night per week after trial, 2(11.11%)patients had two dry nights per week before trial and only 1(05.50%)patient had two dry nights per week after trial, only 1(05.50%) patient had three dry nights per week before trial and after trial zero patient had three dry nights per week, 1(05.50%) patient had four dry nights before trial and 3 (16.66%) patients had four dry nights per week after trial, only 1(05.50%) patient had five dry nights per week and after trial 6(33.33%) patients had five dry nights per week, zero patient had six dry nights per week before trial and after trial 3(16.66%) patients had six dry nights per week, zero patient had seven dry nights before and after trial.

Effect of therapy on dry nights per week in Group-B showed that 13(72.22%)patients had zero dry nights per week before trial and01(05.50%)patients had zero dry nights per week after trial, zero patient had one dry night per week before treatment and 01(05.50%)patient had one dry night per week after trial, 1(05.50%)patient had two dry nights per week before trial and Zero patient had two dry nights per week after trial, 2(11.11%) patients had three dry nights per week before trial and after trial only 1(05.50%)patient had three dry nights per week, zero patient had four dry nights per week before trial and 2 (11.11%) patients had four dry nights per week after treatment, zero patient had five dry nights per week before trial and after trial 6(33.33%) patients had five dry nights per week, 2(11.11%) patients had six dry nights per week before trial and after trial 7(38.88%) patients had six dry nights per week, zero patient had seven dry nights before and after trial.

Table 4: Effect of therapy on Subjective parameters.

Parameters	Groups	N	Mean		Diff.	% Relief	SD±	SE ±	't'	'p'
			BT	AT						
Passing of urine in bed	GroupA	18	5.611	2.556	3.056	54.42	.725	.171	17.872	<.001
	GroupB	18	5.833	1.778	4.056	69.53	.998	.235	17.234	<.001
Lack of memory	GroupA	04	3.000	1.250	1.750	58.33	0.957	0.479	3.656	0.030
	GroupB	05	2.600	0.800	1.800	69.23	0.837	0.374	4.811	0.009
Shamefulness	GroupA	13	2.692	1.308	1.385	51.44	0.650	0.180	07.67	<.001
	GroupB	17	2.765	0.882	1.882	68.061	0.060	0.146	12.93	<.001
Irriatability	GroupA	14	2.857	1.214	1.643	57.50	0.842	0.225	7.308	<.001
	GroupB	11	2.818	0.727	2.091	74.41	0.701	0.211	9.898	<.001
Lack of concentration	GroupA	08	2.625	1.500	1.125	42.85	0.835	0.295	7.308	.007
	GroupB	09	2.667	1.333	1.335	50.12	0.707	0.236	9.898	<.001
Hyperactivity	GroupA	07	2.714	1.286	1.429	52.65	0.976	0.369	3.873	0.008
	GroupB	08	2.250	0.875	1.375	61.11	0.916	0.324	4.245	0.004
Fear	GroupA	13	2.538	1.231	1.308	51.53	0.751	0.208	6.278	<.001
	GroupB	12	2.417	0.917	1.500	62.06	0.674	0.195	7.707	<.001
Violence/Aggressiveness	GroupA	07	2.143	1.000	1.143	53.07	0.378	0.143	8.000	<.001
	GroupB	09	2.222	0.889	1.333	60.00	0.866	0.289	4.619	.007
Disturbed and deep sleep	Group A	17	1.647	0.765	0.882	53.55	0.600	0.146	6.061	<.001
	Group B	16	1.688	0.500	1.188	70.00	0.655	0.164	.251	<.001

Cardinal symptom

Passing of urine in bed

This is the main cardinal symptom and it was present in all patients of both groups. In group-A, 54.42% and in group-B, 69.53% relief was observed after the therapy. Results were statistically highly significant for both groups A&B ($p<0.001$). Intergroup comparison shows that the effect of therapy on passing of urine in bed was better in group-B patients, with 15.00% more relief than group-A. This difference was statistically significant i.e. p=.010.

Associated symptoms

Lack of memory

This symptom was recorded in25.00% registered patients (22.22% patients in group- A and 27.77% in group-B). In group-A 58.33% and in group-B 69.23% relief was observed. Results were statistically significant (p=.030) for group-A and also significant for group-B (p=.009). Intergroup comparison shows that effect of therapy on lack of memory was 10.09% more in group-B patients. However, statistically the difference was insignificant i.e. p=0.563.

Shamefulness

83.33% patients (72.22% patients in group- A and 94.44% in group-B) were having Shamefulness. After trial 51.44% relief in group-A and 68.06% relief in group-B was

assessed. Results were statistically highly significant in both groups i.e. (p<0.001) for group-A and group-B. Intergroup comparison shows that the effect of therapy on Shamefulness was 16.62%more in group-B patients. However, statistically the difference was significant i.e. p=0.039.

Irritability

Irritability was present in 69.44% patients (77.77% in group-Aand 61.11% in group-B).In this symptom 57.50% relief was observed in group-A and 74.41% relief was observed in group-B. This data suggests highly significant results in both groups i.e.(p <.001) Intergroup comparison shows that the effect of therapy on Irritability better in group-B patients,16.91% more relief than group-A. This difference was statistically insignificant i.e. p=0.169.

Lack of concentration

It was reported in 47.22% patients (44.44% patients in group-A and 50.00% group-B). 42.85% relief was observed in group-A and 50.12% relief was observed in group-B. This data suggests significant results in group-A (p=0.007) and highly significant in group-B(p<0.001) statistically. Intergroup comparison shows that the effect of therapy on lack of concentration was better in group-B patients, with7.27% more relief than group-A. This difference was statistically insignificant i.e. p=0.585.

Hyper activity

41.66% patients (38.88% in group-A and 44.44% in group -B) were having hyper activity. This symptom showed 52.65% relief in group-A and 61.11% relief in group-B. Results were significant in both groups with value of P=0.008, 0.004in group-A and group-B respectively. Intergroup comparison shows that the effect of therapy on hyperactivity was 8.46% more in group-B, that is statistically insignificant i.e. p=0.914.

Fear

It was found in 69.44% patients (72.22% patients in group-A and 66.66% in group B). In this symptom 51.53% relief was observed in group-A and 62.06% relief was observed in group-B. The result was statistically highly significant for group-A and group- B (p<0.001). Inter group comparison shows that the effect of therapy on fear was better in group-B patients, with 10.53% more relief than group-A however, the difference was statistically insignificant i.e. p=0.509.

Violence/aggressiveness

This symptom reported in 44.44% patients (38.88% in group -A and 50.00% in group-B). This symptom showed 53.07% relief in group-A and 60.00% relief in group-B. Results were highly significant in group-A (p<.001) and significant for group-B (p=0.007). Intergroup comparison shows that the effect of therapy on violence/aggressiveness was 06.93% more in group-B, that is statistically insignificant p=0.414.

Sleep

It was reported in 91.66% patients (94.44% patients in group-A and 88.88% group- B). 53.55% relief was observed in group-A and 70.00% relief was observed in group-B. This data suggests highly significant results in both groups A and group B(p<0.001) Intergroup comparison shows that the effect of therapy on sleep was better in group-B patients, with 16.45% more relief than group-A. This difference was statistically insignificant i.e. p=0.173

Table 5: Inter group comparison of subjective parameters.

Sr. No.	Symptoms	%Relief GroupA	%Relief GroupB	% Difference	't'	'P'
1.	Passing of urine in bed	54.42%	69.53%	15.00%	-2.915	0.010
2.	Lack of memory	58.33%	69.23%	10.09%	-.607	0.563
3.	Shamefulness	51.44%	68.06%	16.62%	-2.171	0.039
4.	Irritability	57.50%	74.41%	16.91%	-1.419	0.169
5.	Lack of Concentration	42.85%	50.12%	7.27%	-0.557	0.585
6.	Hyper activity	52.65%	61.11%	8.46%	0.110	0.914
7.	Fear	51.53%	62.06%	10.53%	-0.192	0.509
8.	Violence/ Aggressiveness	53.07%	60.00%	6.93%	-0.842	0.414
9.	Disturbed and deep sleep	53.55%	70.00%	16.45%	-1.396	0.173

Intergroup comparison of effect of therapy on passing of urine in bed and shamefulness revealed that therapy given in group- B had better results than the therapy given in group –A. Intergroup difference is statistically significant i.e.(p<.001). Intergroup comparison of effect of therapy on lack of memory, irritability, and lack of concentration hyperactivity, fear, sleep, and violence/aggressiveness revealed that therapy given in Group-B had better results than the therapy given in Group- A. However the intergroup difference is statistically insignificant i.e. (p>.05).

Table 6: Effect of therapy on objective parameters.

Parameters		Mean BT	Mean AT	SD±	SE ±	't'	'p'
Hb	Grp.A	12.022	10.956	1.614	0.380	2.803	0.012
	Grp.B	11.067	11.333	1.709	0.403	-0.662	0.517
TLC	Grp.A	5727	5688	1729.37	407.619	0.095	0.092
	Grp.B	6244	5811	1191.14	280.71	1.543	0.141
Neutrophils	Grp.A	49.049	47.794	6.967	1.642	0.764	0.450
	Grp.B	50.844	48.994	5.517	1.338	1.978	0.065
Lymphocytes	Grp.A	36.917	35.294	5.589	1.317	1.231	0.235
	Grp.B	37.911	35.900	5.397	1.272	1.581	0.066
Mixed	Grp.A	8.272	8.672	1.846	0.435	-0.920	0.371
	Grp.B	8.006	7.978	1.521	0.359	0.077	0.939
FBS	Grp.A	90.944	90.944	0.000	0.000	0.000	1.000
	Grp.B	100.67	89.667	22.142	5.219	2.012	0.060
SGOT	Grp.A	39.111	38.556	14.226	3.353	0.166	0.870
	Grp.B	44.667	34.889	16.286	3.839	2.547	0.021
SGPT	Grp.A	31.056	39.611	22.319	5.261	-1.626	0.122
	Grp.B	31.278	33.111	21.226	5.002	-0.637	0.719

Overall data shows that the effect of therapy on objective parameters hematological and biochemistry were within normal limits in both the groups before and after the trial and statistically insignificant i.e.(p>.05) changes were observed in these parameters.

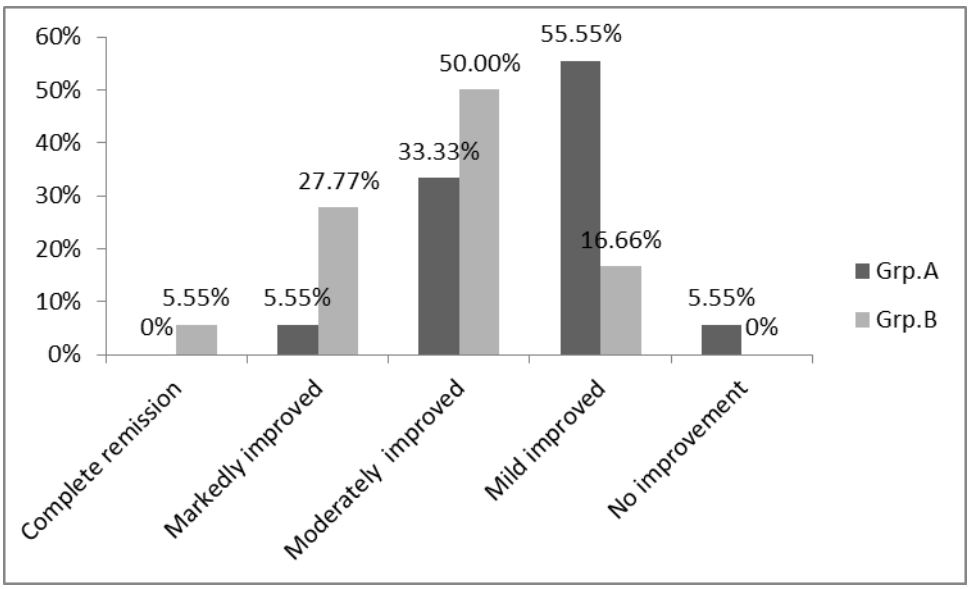

Figure 4: Overall effect of therapy.

Assessment of overall effect of therapy revealed that in group-A none of the patient showed complete remission and in group-B 1(5.55%) patient showed complete remission, 1(5.55%) patient in group-A and 5(27.77%) patients showed marked improvement, 6(33.33%) patients

in group-A and 09(50.00%)patients in group-B showed moderate improvement, 10(55.55%)patients in group-A and 03(16.66)patients in group-B showed mild improvement and 1(5.55%) patient in group- A and zero patient in group- B showed no improvement.

Yastimadhu Possesses *Madhura rasa, Guru Snigdha guna, Sheeta veerya* and *Madhura vipaka* which might have caused *Indriya prasadana*. Also it might havey exerted a beneficial effect on *Medha*. Anti inflammatory and anti-oxidant property of *Yashtimadhu* may be favorable to contribute the memory enhancement effect. It is possible that the beneficial effect of learning and memory was due to facilitation of cholinergic transmission. The central cholinergic pathway plays a prominent role in the learning and memory process due to Acetylcholine. *Madhura rasa, Snigdha guna* and *Sheeta virya* exhibit *Balya, Brimhana* and *Rasayana* properties which strengthen nervous system as well as urinary system mainly urinary bladder muscles and sphincters. Therefore, inhibited bladder contraction and frequency of micturition is controlled by these properties. *Brahmi* possesses *Tikta, Kashaya* and *Madhura rasa, Laghu and Sara guna, Sheeta veerya and Madhura vipaka* which exerted beneficial effect on *Medha*. By virtue of its *Tikta rasa* it causes *Deepana, Pachana* and *Srotovishodhana* and thus had direct action on promotion of *Medha* and due to its *Madhura rasa* it might have cause *Prasadana* (nourishment) to all the *Indriya* and mind. *Brahmi* apparently provides a specialized cleansing and repair system for our nervous system. Its "memory chemicals" are unique saponins known as bacosides. The *Tikta* and *Kashaya* rasa exhibit *Mutra samgrahi* effect. Sheeta virya also exhibit this property along with *Vishyandana* property that controls secretions. *Laghu guna* dispels the *srotorodha* by *Kapha* and *avrodha* by *Tama guna* due to its *Kaphaghna* property. Its *Srotoshodhaka* property helps in breaking down the *Samprapti* of *Shayyamutra.* Therefore, it helps to clear *Srotovarodh* of *Prana vayu, Manovaha srotas* and thus controls *Atinidra*. The phenomenon of *Srotoshodhaka* increases the circulation in brain tissues.

CONCLUSIONS

Shayyamutra is common socially distruptive problem.

Incidence of bed wetting declines with increasing age.

Behavioral modifications play a vital role in the management of *Shayyamutra*. Plenty of fluids should be encouraged at daytime and from late evening onwards fluid intake needs to be restricted. The effect of therapy on various subjective and objective parameters in

Shayyamutra patients was statistically highly significant in both the groups. However the therapy given in group-B where patients were managed with Syrup *Brahmi* showed better results over group-A where patients were managed with *Yastimadhu* Granules.

No untoward effect of the trial drugs was observed during the entire study period.

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