

ROLE OF PANCHAGAVYAGHRITA IN THE MANAGEMENT OF ATATTVABHINIVESHA (OBSESSIVE COMPULSIVE DISORDER)

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ABSTRACT

Background: *Atattvabhinivesha* is a thought disorder due to *Buddhi Vaishamyā* (impaired judgement) along with the impairment in functioning of *Manas* (mind), *Smriti* (memory) and *Chesta* (psychomotor activities). The clinical features and line of management are suggestive more of Anxiety neurotic states. Among them Obsessive Compulsive Disorder (OCD) is one and the study was carried on it as there are nominal studies conducted on *Atattvabhinivesha*. **Objectives:** To assess the efficacy of *Panchagavya Ghrita* in the management of *Atattvabhinivesha* (OCD). **Methods:** 22 patients who fulfilled the inclusion criteria of Obsessive Compulsive Disorder from OPD and IPD of SDM Ayurveda College and Hospital, Hassan were included in the study. Among them 20 patients completed the study, whereas 2 patients dropped out. For diagnosis the ICD-10 criteria of Obsessive Compulsive Disorder was used and was assessed with Yale- Brown Obsessive Compulsive Scale (Y-BOC'S) and *Manasika Bhava Scale*. The subjects with scale score 8 – 23 from Y-BOC'S were considered for the study. A single group intervention study of 20 subjects was conducted. *Panchagavya ghrita* was given in the dose of 6 grams in the morning and 6 grams in the night, 30 minutes before food with warm water for duration of one month. Friedman's test and Wilcoxon signed rank test as post hoc test were used to assess the subjective parameters. **Results:** Symptoms like Contamination obsession distress, Contamination obsession resistance, Contamination Obsession control in 9 subjects had improvement after treatment which showed statistically significant changes (with $p < 0.05$) but was statistically insignificant ($p > 0.05$) after follow up. *Manasika Bhavas* (Psychological factors) like *Bhaya* (Fear) *Chinta* (worry), *Medha* (comprehension), *Preeti* (affection) were mildly deviated in the study in 12 patients which showed statistically significant results after treatment (with p value < 0.05) but statistically insignificant after follow up (with p value > 0.05). Other symptoms in all the subjects showed statistically insignificant change (with p value > 0.05), in total scale score after treatment and follow up. **Interpretation and Conclusion:** Out of 20 subjects no one reported to have complete remission, 15% subjects reported moderate improvement, 35% subjects reported mild improvement, and 10 subjects were recorded in the unchanged category. Considering the overall result in obsessions and compulsions, there was no significant change in the study group. So it was concluded that *Panchagavya ghrita* given 6 gm in morning and night, 30 minutes before food with warm water for one month had no significant effect in the management of *Atattvabhinivesha* (OCD).

Keywords: *Atattvabhinivesha*; *Vishama Buddhi*; Obsessive Compulsive Disorder;

INTRODUCTION

Anxiety disorders are the most common health problems in the present world due to stress, life style, sedentary habits, excessive worry and fear. In today's fast growing society Anxiety Disorders are increasing day by day. The conceptual study shows that *Atattvabhinivesha* could be better studied in terms of Anxiety disorders in Ayurvedic parlance¹. Obsessive Compulsive Disorder (OCD) is one among the Anxiety disorders². In the present study OCD is considered. Obsessive-compulsive disorder (OCD) is a chronic and often disabling anxiety disorder and is characterized by obsessions and compulsions to reduce this distress. Data from the Epidemiological Catchment Area survey and other epidemiological studies demonstrated the lifetime prevalence of OCD to be very frequent with the rates of 2% and 3% in the general population³. The finding of high rates of OCD in epidemiological studies resulted in being labeled as "Hidden Epidemic"⁴. In India prevalence rate of OCD is 0.9% among the psychiatric disorders.⁵

Psychiatric disorders in Ayurveda are characterized by derangement in *Mana* (mind), *Buddhi* (intellect), *Sanjna jnana* (orientation), *Smriti* (Memory), *Bhakti* (inclination), *Sheela* (mannerism), *Chesta* (Psychomotor activities) and *Aachara* (conduct) either individually or whole⁶. *Atattvabhinivesha* is one of the psychiatric diseases that has been depicted as *Eko Mahagada* (difficult to treat) due its poor prognosis and distress to the patient himself and to the family⁷. It is a disease characterized by perception of *Anitya* (non-occurring/ non-existence) as *Nitya* (Oc-curing/ existence) and recognition of *Ahita* (unwholesome) as *Hita* (wholesome) due to *Vishamata* of *Buddhi*, *Mana* but

Sanjajnana, *Bhakti*, *Sheela*, *Chesta* , *Smriti* and *Aachara* remain intact⁸.

Atattvabhinivesha is a *Tridoshaja Vyadhi* mainly involving the *Aavarana* in *Buddhi* and *Manovaha srotas* caused by *Tama dosha* leading to derangement in the functioning of *Sadhaka Pitta*⁹. The line of treatment suggested is *Medhya Rasayana* (nootropic drugs), *Satvavajaya Chikitsa* (Counseling techniques) and *Shodhana* (Purificatory measures)¹⁰. Drug which is having *Teekshna*, *Srotoshodhaka*, *Tridoshahara* and *Medhya* is the ideal for combating the pathogenesis of *Atattvabhinivesha*¹¹. *Panchagavya ghrita* is one of the *Medhya Rasayana* which possesses *Teekshna*, *Ushna* and *Srotoshodhaka* property¹². In the present study *Medhya Rasayana* has been taken, as *Bud-dhi* is the prime factor which is deranged.

MATERIALS AND METHODS:

OBJECTIVE: To evaluate the efficacy of *Panchagavyaghrita* in the management of *Atattvabhinivesha* with special reference to Obsessive Compulsive Disorder

SOURCE OF DATA: 22 Patients of *Atattvabhinivesha* (OCD) were selected for study from the OPD and IPD of SDM College of Ayurveda & Hospital, Hassan.

METHOD OF COLLECTION OF THE DATA: 22 diagnosed patients of OCD who fulfilled the inclusion criteria were randomly selected. Study was single group. Duration of the study was 1 month. Assessment was done by Yale- Brown Obsessive Compulsive scale (Y-BOC'S scale) and *Manasika bhava* scale before and after treatment (30th day) and after follow up (60th day).

CRITERIA OF DIAGNOSIS: For diagnosis detailed medical history was taken and physical examinations were done, according to both Ayurvedic and Modern clinical methods. The diagnostic guide-

lines as mentioned in ICD-10 diagnostic criteria for OCD were followed:

INCLUSION CRITERIA:

- 1) Patients diagnosed as O.C.D. according to ICD-10 criteria
- 2) Patients willing to sign the informed consent form.
- 3) Age group between 18-50 years of either sex.
- 4) Patients who scored YBOC's 8-23

EXCLUSION CRITERIA:

1. Organic brain disease
2. Schizophrenia, Dementia
3. Conversion disorder
4. Substance abuse
5. Uncontrolled diabetes and uncontrolled hypertension/tuberculosis

ASSESSMENT CRITERIA: Subjects were assessed as per Y-BOC'S and *Manasika Bhavas* scale before and after treatment (30th day) and follow up (60th day)

PLAN OF STUDY: 22 subjects fulfilling the inclusion criteria were randomly selected. The study was single group. *Panchagavya ghrita* was given in the dose of 6 grams in the morning and 6 grams in the night, 30 minutes before food with water for duration of one month. During treatment period subjects were asked to report once in 15 days for one month and followed up to 60th day.

STATISTICAL ANALYSIS: The statistical analysis was done by using SPSS VER.16 of the completed 20 cases. Friedman's test and Wilcoxon signed rank test as post hoc test were used to assess the subjective parameters.

OBSERVATIONS: The study was single group. 22 subjects of *Atattvabhinivesha* (OCD) were registered for this clinical study. Among them 2 dropped out. The 80% (n=16) of subjects were in 20-30 years, 15%(n=3) of subjects were in 40-50 years and 5% (n=1) were in 30 -40 years of age group. Among them 70%(n=14) sub-

jects were male and 30%(n= 6) were females. 95% (n=19) of subjects were Hindu and 5%(n=1) Muslim subjects. While 60%(n=12) of subjects were from urban area and 40%(n=8) from rural area. The present study constituted 55% (n=11) of subjects from lower middle class, 45% (n=9) of subjects from upper middle class. 65% (n=13) of subjects unmarried and 35% (n=7) of subjects married of them 7 subjects were satisfied in their married life. 55% (n=11) of subjects had nuclear family and 45% (n=9) of subjects were from joint family. 60% (n=12) of subjects were educated up to higher secondary, 30% (n=6) of subjects were graduated, 5% (n=1) of were educated up to secondary and 5% (n=1) were illiterate. 55% (n=11) of subjects in the study group were students, 30% (n=6) were doctors and 5% (n=1) of each were nurse, business man and house wife. The study has 60% (n=12) subjects were of *Rajasika Prakriti* and remaining 40% (n=8) were of *Tamasika Prakriti*. 45% (n=9) of subjects were *Vata-Pittaja Prakriti*, 30% (n=6) were *Pitta-Kaphaja Prakriti* and 25% (n=5) were *Vata-Kaphaja Prakriti*. In the present study, 70% (n=14) of subjects were anxious, 15% (n=3) were hysterical, 5% (n=1) were hypomanic and 10% (n=2) were aggressive. The study constitutes 25% (n=5) of subjects who got treatment previously whenever required and 75% (n=15) of subjects who had never on any treatment. Precipitating factors of the disease were absent in 60% (n=12) of subjects and present in 40% (n=8) of subjects. Among them 30%(n=6) subjects had academic stress, 35%(n=7) had identity crisis, 10% (n=2) had emotional disturbances and 25% (n=5) of subjects showed over hygiene/over discipline atmosphere of family history. 10% of subjects had family history of OCD. 60% (n=12) of subjects had 0-5 years

of chronicity, 30% (n=6) had 5-10 years of disease chronicity and 10% (n=2) had 10-20 years of Chronicity. The course of the disease was progressive in 55% (n=11) of subjects, static in 40 % (n=8) of subjects and episodic in 5% (n=1) of subjects.

45% (n=9) of subjects had contamination obsession, 25 % (n=5) each had checking, religious, symmetrical, aggressive, miscellaneous obsessions, while 10% (n=2) of subjects had sexual obsessions and 5% (n=1) of subject showed hoarding obsession. Cleaning/ washing compulsion was present in 45% of subjects (n=9), 25 % (n=5) each had checking, ordering, avoiding, miscellaneous compulsions and 5 % (n=1) had hoarding compulsion. The severity of illness was mild in 65% (n=13) of subjects and moderate in 35% (n=7) of subjects.

Effect of the Therapy on the Patients of Atattvabhinivesha: Effect on distress from contamination obsession (n=9) was 45%, resistance to contamination obsession (n=9) was 52%, control to contamination obsession (n=9) was 50% are statistically significant ($p < 0.05$) after treatment. While effect of therapy on time spent on contamination obsession (n=9) was 3.84%, aggressive obsession (n=5) was 7.63%, religious obsession (n=5) was 6.2%, symmetrical obsession (n=5) was 6.2% , miscellaneous obsession (n=5) was 3.81%, interference from contamination obsession (n=9) was 4.89%, aggressive obsession (n=5) was 2.77%, symmetrical obsession (n=5) was 6.2% and miscellaneous obsession (n=5) was 3.81%, on distress from aggressive Obsession (n=5) was 4.5%, symmetrical obsession (n=5) was 2.32% and miscellaneous obsession (n=5) was 1.31%, on resistance to aggressive obsession (n=5) was 3.84%, symmetrical obsession (n=5) was 1.42% and miscellaneous obsession (n=5) was

1.5, on control over aggressive obsession (n=5) was 3%, symmetrical obsession (n=5) was 2.4% and miscellaneous obsession (n=5) was 3.3% which are statistically insignificant ($p > 0.05$) after treatment. No improvement was noted in hoarding obsession (n=1), sexual obsession (n=2) and checking obsession (n=5) and religious obsession (n=5) in all the parameters after treatment and follow up. No improvement and statistically significant change was noted in the entire obsession after follow up.

Effect of therapy on time spent on cleaning compulsion (n=9) was 3.92%, checking compulsion (n=5) was 2.8%, on interference from cleaning compulsion (n=9) was 1.2%, on distress from cleaning compulsion (n=9) was 5.3%, checking compulsion (n=5) was 2.8%, on resistance to cleaning compulsion (n=9) was 9.3%, checking compulsion (n=5) was 3.2% and ordering compulsion (n=5) was 3.6% , on control to cleaning compulsion (n=9) was 4.8%, checking compulsion (n=5) was 2.8% statistically insignificant ($p > 0.05$). No improvement was present in avoiding compulsion (n=5), hoarding compulsion (n=1). No statistically significant improvement was present after follow up in all the compulsions.

Effect on *Bhaya* (n=12) was 23%, *Krodha* (n=10) was 5%, *Shoka* (n=12) was 4.1%, *Rajas* (n=6) was 3%, *Chinta* (n=12) was 20%, *Manasa Artheshu* (n=6) was 7%, *Preeti* (n=12) was 20%, *Dhriti* (n=6) was 2%, *Dhairya* (n=6) was 2.5%, *Smriti* (n=8) was 8%, *Vijnana* (n=6) was 2.7%, *Medha* (n=12) was 17.7%, *Harsha* (n=6) was 4.4%, *Upadhi* (n=3) was 5.8% and *Avasthana* (n=3) was statistically insignificant ($p > 0.05$). No improvement on follow up was present on *Manasika Bhavas*.

DISCUSSION

Obsessions are the recurrent ideas or images or impulses that enter persons mind again and again in a stereotyped manner which are perceived as his own thoughts¹⁴. Thus in the obsessions there is impairment of *Prana Vata*, *Udana Vata*, *Sadhaka pitta* and *Tarpaka Kapha* leading to *Vishama Buddhi*. Due to *Avarana* of *Manovaha* and *Buddhivaha srotas* caused by *Tamadosha* leads to obsession and compulsion. *Panchagavya ghrita* due to *Teekshna Guna* acts as *Srotoshodaka* and removes *avarana*. It's mainly *Tridosahara*.

Significant changes seen in moderate group subjects (n=9) with contamination obsession in distress, resistance and control parameters. No significant changes were noted in mild group as distress was not a major issue in them. *Panchagavya ghrita* has *Goksheera*, *Godugdha*, *Gomaya* and *Gomutra* which are considered as *Alakshmihara*, *Papmahara*, *Manglayakara* may have acted on the contamination obsession¹⁴. By analyzing the chemical constituents of drug, cow's milk and curd consists of primary group of proteins called as Caseins and secondary group of proteins called as Whey proteins which comprise of beta lactoglobulin and alpha lactalbumin. Alpha lactalbumin is the main component of secondary group of proteins, rich in amino acid tryptophan which is a precursor to the neurotransmitter serotonin and the neurosecretory hormone melatonin¹⁵. Serotonin is the main neurotransmitter which is decreased in OCD¹⁶. Recent researches have shown that bovine protein alpha lactalbumin increases the plasma ratio of tryptophan to the other large neutral amino acids. In vulnerable subject's it increases the brain serotonin activity, decreases the cortisol concentration and there by improves mood and decreases stress¹⁷.

Another research shows that evening intake of alpha lactalbumin increases the plasma tryptophan availability and improves morning alertness and brain measures of attention.¹⁸ Various studies on Bovine milk fat globule membrane (MFGM) proved to be effective in Alziemeirs disease, depression and stress¹⁹. The study on effect of daily intake of yoghurt enriched with bioactive components like alpha lactalbumin, casein peptides and B vitamins is shown to be effective on chronic stress²⁰. Cow's milk and curd consists of casein peptides and vitamin B complex²¹. The above properties of the drug may be responsible in reducing the distress.

Compulsions are rituals or stereotyped behaviour²². Mainly *Vata* involvement is seen. No statistically significant changes were seen in compulsions in the study. Among the *Manasika Bhava*, *Bhaya*, *Chinta*, *Medha* and *Preeti* in the study (n =12) subjects showed statistically significant reduction after treatment (with p value < 0.05) but statistically insignificant after follow up (with p value > 0.05). *Bhaya* and *Chinta* are due to *Vata guna bahulya*. *Goghrita*, *Goksheera*, *Godadhi* are *Vatahara* due to *Madhura Rasa*, *Guru*, *Snigdha*, *Pichila Guna*, *Madhura Vipaka*. Due to the above reason, the symptoms might have reduced. It is also proved that *Panchagavya ghrita* is having Anti-Stress activity²³. Cow's milk mainly decreases the cortisol level which will be raised in *Bhaya* and *Chinta* conditions due to Anxiety states. A study done on *Medha* effect of *Panchagavya ghrita* shows it is a *Medhya Rasayana*²⁴. As it acts on *Sadhkapitta*, it increases *Medha Guna*.

The recent studies show that Docosahexaenoic acid (DHA), Omega 3 long chain poly unsaturated fatty acids is significantly

higher in *Ghruta* prepared by traditional Ayurvedic method. DHA and omega-3 PUFA is a major component of Retinal and Brain tissues and remains important in prevention of diseases²⁵. Omega-3 fatty acids have anti-inflammatory properties and can alter CNS membrane fluidity and phospholipids composition. Cell membrane fluidity can alter Serotonin and Dopamine neurotransmission level²⁶, the studies on cow ghee show to be anti-carcinogenic and anti-oxidant²⁷.

Cow's Urine contains volatile fatty acids which act as antioxidant²⁸. The recent study shows that cow dung is a potential natural antioxidant²⁹.

Considering the above research works, it is evident that *Panchagavya Ghruta* has its action on *Buddhi*, *Manas*, *Indriya* and corrects the *ManovahaSrotodusti*. It purifies *Rajas* and *Tamas* by increasing Serotonin receptor uptake and normalizing the dopamine level. Thus acts on the *Sadhakapitta* by combating the pathogenesis of *Atattvabhinivesha* and normalizes *Dhee*, *Dhriti* and *Smriti*.

RESULTS

Out of 20 subjects, 35% subjects reported mild improvement, 15% subjects reported moderate improvement and 10 subjects remained unchanged. Statistically significant ($p < 0.05$) improvement was seen after treatment in contamination obsession distress ($n=9$), contamination obsession resistance ($n=9$), contamination obsession control ($n=9$) and also *Bhaya* ($n=12$), *Chinta* ($n=12$), *Medha* ($n=12$), *Preeti* ($n=12$) in mild deviated group. In all of the above subjects the improvement seen was statistically insignificant after follow-up (with p value > 0.05). Other symptoms in total scale score after treatment and follow up was statistically insignificant ($p > 0.05$).

CONCLUSION

Considering the overall result obtained the effect of drug on obsession and compulsion seems to have no significant change statistically in trail group and may be due to small sample size and shorter period of treatment and follow up. At the same time, though statistically insignificant, some improvement that was noticed in contamination obsession in moderate symptom group and in *Manasika Bhavas* like *Bhaya*, *Chinta*, *Preeti* and *Medha*, suggests that study can be carried out with larger sample size and longer duration of treatment and follow up to know the efficacy of drug. *Shodhana* and *Sattvavajaya Chikitsa* (Cognitive Behaviour therapy and Exposure Response Prevention) can also be included in the management for better efficacy. So it can be concluded that, the trail drug *Panchagavya ghruta* given in the dose of 6 grams in the morning and 6 grams in the night, 30 minutes before food with warm water for duration of one month had no significant effect in the management of trail group of *Atattvabhinivesha* (OCD). Thus the alternate hypothesis was rejected and null hypothesis was accepted.

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Effect of Panchagavya ghrita on various obsession and compulsionsafter treatment:

Table 1: Effect on time spent on different obsession after treatment

| SL. NO | Time spent on different obsession | Mean Rank | | X ² | P | Remarks |
|--------|-----------------------------------|-------------|-------------|----------------|--------------|---------|
| | | BT | AT | | | |
| 1 | Contamination obsession (n=9) | 2.6 | 2.5 | 2.15 | 0.68 | NS |
| 2 | Aggressive obsession(n=5) | 2.62 | 2.42 | 4.714 | 0.261 | NS |
| 3 | Religious obsession(n=5) | 2.58 | 2.42 | 3.00 | 0.392 | NS |
| 4 | Sexual Obsession(n=2) | 2.48 | 2.48 | 3.12 | 0.412 | NS |
| 5 | Checking obsession(n=5) | 2.5 | 2.5 | 3.3 | 0.456 | NS |
| 6 | Symmetrical Obsession(n=5) | 2.58 | 2.42 | 3.00 | 0.392 | NS |
| 7 | Miscellaneous Obsession(n=5) | 2.58 | 2.48 | 3.5 | 0.512 | NS |
| 8 | Hoarding Obsession (n=1) | 2.78 | 2.78 | 3.8 | 0.614 | NS |

Table 2: Effect on interference from various obsessions after treatment

| Sl. No | Interference from different obsession | Mean Rank | | X ² | P | Remarks |
|--------|---------------------------------------|-----------|------|----------------|-------|---------|
| | | BT | AT | | | |
| 1 | Contamination Obsession(n=9) | 2.68 | 2.55 | 2.69 | 0.154 | NS |
| 2 | Aggressive obsession (n=5) | 2.52 | 2.45 | 3.176 | 0.392 | NS |
| 3 | Religious Obsession (n=5) | 2.65 | 2.65 | 4.15 | 0.412 | NS |

| | | | | | | |
|---|---------------------------------|-------------|-------------|------------|--------------|----|
| 4 | Sexual Obsession(n=2) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Checking obsession (n=5) | 2.7 | 2.6 | 3.61 | 0.254 | NS |
| 6 | Symmetrical Obsession(n=5) | 2.58 | 2.42 | 3.00 | 0.392 | NS |
| 7 | Miscellaneous Obsession(n=5) | 2.58 | 2.48 | 3.5 | 0.512 | NS |
| 8 | Hoarding Obsession (n=1) | 2.78 | 2.78 | 3.8 | 0.614 | NS |

Table 3: Effect on distress from various obsessions after treatment:

| SL. NO | Distress from different obsession | Mean Rank | | X ² | p | Remarks |
|--------|-----------------------------------|-------------|-------------|----------------|--------------|---------|
| | | BT | AT | | | |
| 1 | Contamination obsession (n=9) | 2.62 | 1.42 | 7.654 | 0.047 | S |
| 2 | Aggressive obsession (n=5) | 2.65 | 2.53 | 2.167 | 0.372 | NS |
| 3 | Religious obsession (n=5) | 2.65 | 2.58 | 3.165 | 0.452 | NS |
| 4 | Sexual obsession (n=2) | 2.5 | 2.5 | 3.12 | 0.312 | NS |
| 5 | Checking obsession (n=5) | 2.68 | 2.59 | 4.19 | 0.342 | NS |
| 6 | Symmetrical obsession (n=5) | 2.58 | 2.52 | 3.50 | 0.362 | NS |
| 7 | Miscellaneous obsession (n=5) | 2.28 | 2.25 | 3.25 | 0.412 | NS |
| 8 | Hoarding Obsession (n=1) | 2.48 | 2.39 | 3.91 | 0.214 | NS |

Table 4: Effect on resistance to various obsessions after treatment:

| SL. NO | Resistance to different obsession | Mean Rank | | X ² | P | Remarks |
|--------|-----------------------------------|-------------|-------------|----------------|--------------|---------|
| | | BT | AT | | | |
| 1 | Contamination Obsession (n=9) | 2.62 | 1.25 | 7.293 | 0.034 | S |
| 2 | Aggressive obsession (n=5) | 2.6 | 2.5 | 3.543 | 0.378 | NS |
| 3 | Religious Obsession (n=5) | 2.65 | 2.65 | 4.15 | 0.412 | NS |
| 4 | Sexual Obsession(n=2) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Checking obsession (n=5) | 2.5 | 2.48 | 3.78 | 0.354 | NS |
| 6 | Symmetrical Obsession(n=5) | 2.8 | 2.76 | 4.00 | 0.432 | NS |
| 7 | Miscellaneous Obsession (n=5) | 2.6 | 2.56 | 3.156 | 0.345 | NS |
| 8 | Hoarding Obsession (n=1) | 2.78 | 2.78 | 3.8 | 0.614 | NS |

Table 5: Effect on control to various obsessions after treatment

| SL. NO | Control to different obsession | Mean Rank | | X ² | P | Remarks |
|--------|--------------------------------|-----------|------|----------------|-------|---------|
| | | BT | AT | | | |
| 1 | Contamination Obsession (n=9) | 2.65 | 1.32 | 8.24 | 0.025 | S |
| 2 | Aggressive obsession (n=5) | 2.65 | 2.57 | 3.632 | 0.292 | NS |
| 3 | Religious Obsession (n=5) | 2.65 | 2.65 | 4.15 | 0.412 | NS |
| 4 | Sexual Obsession(n=2) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Checking obsession (n=5) | 2.7 | 2.6 | 3.61 | 0.254 | NS |
| 6 | Symmetrical Obsession(n=5) | 2.48 | 2.42 | 4.20 | 0.492 | NS |
| 7 | Miscellaneous Obsession (n=5) | 2.65 | 2.56 | 3.74 | 0.442 | NS |

| | | | | | | |
|----------|---------------------------------|-------------|-------------|------------|--------------|-----------|
| 8 | Hoarding Obsession (n=1) | 2.78 | 2.78 | 3.8 | 0.614 | NS |
|----------|---------------------------------|-------------|-------------|------------|--------------|-----------|

Table 6: Effect on time spent on various contaminations after treatment

| SL. NO | Time spent on various compulsion | Mean Rank | | X ² | P | Remarks |
|--------|---------------------------------------|-------------|-------------|----------------|--------------|-----------|
| | | AT | BT | | | |
| 1 | Cleaning compulsion (n=9) | 2.55 | 2.45 | 3.32 | 0.352 | NS |
| 2 | Checking compulsion (n=5) | 2.5 | 2.43 | 3.13 | 0.258 | NS |
| 3 | Ordering compulsion (n=5) | 2.65 | 2.65 | 4.15 | 0.412 | NS |
| 4 | Hoarding compulsion (n=1) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Avoiding compulsion (n=5) | 2.48 | 2.32 | 2.45 | 0.267 | NS |
| 6 | Miscellaneous compulsion (n=5) | 2.76 | 2.76 | 4.00 | 0.432 | NS |

Table 7: Effect on interference from various compulsions after treatment

| SL. NO | Interference from different compulsion | Mean Rank | | X ² | p | Remarks |
|--------|--|-------------|-------------|----------------|--------------|-----------|
| | | BT | AT | | | |
| 1 | Cleaning compulsion (n=9) | 2.5 | 2.47 | 3.87 | 0.43 | NS |
| 2 | Checking compulsion (n=5) | 2.42 | 2.42 | 4.714 | 0.261 | NS |
| 3 | Ordering compulsion (n=5) | 2.42 | 2.42 | 3.00 | 0.392 | NS |
| 4 | Avoiding compulsion (n=5) | 2.48 | 2.48 | 3.12 | 0.412 | NS |
| 5 | Hoarding compulsion (n=1) | 2.5 | 2.5 | 3.3 | 0.456 | NS |
| 6 | Miscellaneous compulsion (n=1) | 2.58 | 2.42 | 3.00 | 0.392 | NS |

Table 8: Effect on distress from various compulsions after treatment:

| SL. NO | Distress from various compulsion | Mean Rank | | X ² | P | Remarks |
|--------|---------------------------------------|-------------|-------------|----------------|--------------|-----------|
| | | AT | BT | | | |
| 1 | Cleaning compulsion (n=9) | 2.25 | 2.13 | 2.322 | 0.335 | NS |
| 2 | Checking compulsion (n=5) | 2.5 | 2.43 | 3.13 | 0.258 | NS |
| 3 | Ordering compulsion (n=5) | 2.65 | 2.65 | 4.15 | 0.412 | NS |
| 4 | Hoarding compulsion (n=1) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Avoiding compulsion (n=5) | 2.48 | 2.32 | 2.45 | 0.267 | NS |
| 6 | Miscellaneous compulsion (n=5) | 2.76 | 2.76 | 4.00 | 0.432 | NS |

Table 9: Effect on resistance to various compulsions after treatment

| SL. NO | Resistance to various compulsion | Mean Rank | | X ² | P | Remarks |
|--------|----------------------------------|-----------|------|----------------|-------|---------|
| | | AT | BT | | | |
| 1 | Cleaning compulsion (n=9) | 2.56 | 2.32 | 2.25 | 0.223 | NS |
| 2 | Checking compulsion (n=5) | 2.5 | 2.42 | 3.17 | 0.145 | NS |
| 3 | Ordering compulsion (n=5) | 2.75 | 2.65 | 4.15 | 0.412 | NS |
| 4 | Hoarding compulsion (n=1) | 2.65 | 2.45 | 5.12 | 0.526 | NS |
| 5 | Avoiding compulsion (n=5) | 2.48 | 2.32 | 2.45 | 0.267 | NS |

| | | | | | | |
|----------|---------------------------------------|-------------|-------------|-------------|--------------|-----------|
| 6 | Miscellaneous compulsion (n=5) | 2.76 | 2.76 | 4.00 | 0.432 | NS |
|----------|---------------------------------------|-------------|-------------|-------------|--------------|-----------|

Table 10: Effect on control over various compulsions after treatment

| SL. NO | Control over various compulsion | Mean Rank | | X ² | p | Remarks |
|----------|---------------------------------------|-------------|-------------|----------------|--------------|-----------|
| | | BT | AT | | | |
| 1 | Cleaning compulsion (n=9) | 2.57 | 2.68 | 4.62 | 0.135 | NS |
| 2 | Checking compulsion (n=5) | 2.5 | 2.43 | 3.13 | 0.258 | NS |
| 3 | Ordering Compulsion (n=5) | 2.75 | 2.65 | 4.57 | 0.412 | NS |
| 4 | Hoarding compulsion (n=1) | 2.48 | 2.48 | 3.12 | 0.312 | NS |
| 5 | Avoiding compulsion (n=5) | 2.48 | 2.32 | 2.45 | 0.267 | NS |
| 6 | Miscellaneous compulsion (n=5) | 2.76 | 2.76 | 4.00 | 0.432 | NS |

Table 11: Effect on various Manasika Bhavas after treatment

| Manasika bhavas | Mean Rank | | X ² | P | Remarks |
|-----------------------------|------------|------------|----------------|--------------|-----------|
| | BT | AT | | | |
| <i>Bhaya</i> (n=12) | 2.72 | 2.15 | 7.636 | 0.044 | S |
| <i>Krodha</i> (n=10) | 2.68 | 2.54 | 4.56 | 0.312 | NS |
| <i>Shoka</i> (n=12) | 2.88 | 2.76 | 4.86 | 0.453 | NS |
| <i>Rajas</i> (n=6) | 2.62 | 2.54 | 5.82 | 0.121 | NS |
| <i>Chinta</i> (n=12) | 2.7 | 2.13 | 7.132 | 0.047 | S |
| <i>Dwesh</i> (n=6) | 2.5 | 2.5 | 3.89 | 0.392 | NS |
| <i>Manasa Arthesu</i> (n=6) | 2.1 | 1.945 | 4.132 | 0.142 | NS |
| <i>Preeti</i> (n=12) | 2.7 | 2.15 | 8.769 | 0.033 | S |
| <i>Dhriti</i> (n=6) | 2.5 | 2.45 | 3 | 0.392 | NS |
| <i>Dhairya</i> (n=6) | 2.72 | 2.65 | 4.76 | 0.162 | NS |
| <i>Smriti</i> (n=8) | 2.62 | 2.41 | 3.87 | 0.308 | NS |
| <i>Vijnana</i> (n=6) | 2.7 | 2.6 | 3.43 | 0.421 | NS |
| <i>Medha</i> (n=12) | 2.82 | 2.32 | 8.162 | 0.0121 | S |
| <i>Harsha</i> (n=6) | 2.68 | 2.56 | 3.63 | 0.165 | NS |
| <i>Upadhi</i> (n=3) | 2.38 | 2.24 | 3.16 | 0.143 | NS |
| Avasthana (n=3) | 2.3 | 2.3 | 4.714 | 0.134 | NS |

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