



Research Article

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EFFECT OF YOGIC PRACTICES AND MEDHYA RASAYANAS ON MANASA PRAKRITI, ADJUSTMENT AND AGGRESSION OF ADOLESCENT JUVENILE DELINQUENTS

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ABSTRACT

Present global scenario is full of crime and violence with an early onset. Even in India over 33,000 juveniles were arrested for various crimes in 2011 i.e. highest in last decade. Mental stress, worries, non-fulfilment of desires make people mentally ill and gets manifested in the form of aggressive and violent behavior and mal adjustment tendencies in the society which can up shoot in to delinquency. The mental abnormalities like excessive aggression and tendency of maladjustment can be included in one or other form of Manasa vikaras of Ayurveda. The Manasa Prakriti also plays a key role in these mental faculties. This requires the management in the form of adopting Yoga and ingestion of Medhya Rasayana. The present study was designed to study the beneficial and adverse effects of Medhya Rasayana and Yoga if any, on adjustment and aggressive behavior of juvenile delinquents. Further to study the Manasa Prakriti in relation to the behavior of the delinquents. A study among 60 juvenile delinquents of the Government observation home was designed, comprising of administration of four Medhya Rasayanas Mandukaparni, Yashtimadhu, Guduchi and Shankhapushpi as mentioned in Charaka Samhita and regular practice of a set of Asanas, Pranayama and meditation to control and concentrate the mind. The 60 subjects were divided into two groups with each having 30 subjects. General history, general physical examination, and systemic examinations were done to rule out any illness. Group A was administered Medhya Rasayana (Fine Powder 5gm twice daily with milk for three months.) and Group B was advocated Yogic Practices and Medhya Rasayana. The Assessment was done before and after treatment on the basis of Aggression scale, Adjustment scale and Manasa Prakriti scale. In this study on intra-group comparison both group A and B were significant with respect to Aggression and Adjustment scale, whereas with respect to Manasa Prakriti scale only group B was statistically significant. Group B treated with Yogic practices and Medhya Rasayana was found highly significant and most effective with respect to parameters in all the three tests viz. Adjustment scale, Aggression scale and Manasa Prakriti scale.

Keywords: Medhya Rasayanas, Shankhapushpi, Achara Rasayana, Manasa Prakriti

INTRODUCTION

Ayurveda believes in the concept of Achara Rasayana i.e practice of truth, nonviolence, peacefulness, politeness, abstinence from anger, alcohol, sex etc. But present global scenario is a pool of crime and violence starting at a very early stage of life. In India over 33,000 juveniles between the age group of 16 to 18, have been arrested for crimes like rape and murder across the country in 2011 i.e. highest in last decade. In present day life, mental stress, worries, non fulfilment of desires make people mentally ill at some extent. The result of these illness gets manifested in the form of aggressive and violent behavior and mal adjustment tendencies in the society which can up shoot in to delinquency. The mental abnormalities like excessive aggression and tendency of maladjustment can be included in one or other form of Manasa vikaras of Ayurveda. The Manasa Prakriti also plays a key role in these mental faculties. This requires the management in the form of adopting Sadvritta along with Yoga and ingestion of Medhya Rasayana.

Hence a study among juvenile delinquents of the observation home was designed, comprising of

administration of four Medhya Rasayanas Mandukaparni, Yashtimadhu, Guduchi and Shankhapushpi as mentioned in Charaka Samhita ¹ and regular practice of a set of Asanas, Pranayama and meditation to control and concentrate the mind. These help to reduce the aggressive behavior and to increase the adjustment tendency and influence the Manasa Prakriti. The measures used to assess the mental condition are Aggression scale, Adjustment scale and Manasa Prakriti scale.

MATERIALS AND METHODS

This study was conducted on adolescent juvenile delinquents at Government Observation Home, Ramanagar, Varanasi. Consent was obtained for conducting the study, from the DM, authorities of Government Observation Home and subjects participating in the study. And also approval was obtained from the departmental research committee and ethical committee of the institute wide letter No. Dean/2012-13/528 dated: 23.03.2012.

Research design

The study involved intra-group comparison as well as intergroup comparison of groups A and B. It was an open, prospective, and randomized clinical study.

Inclusion criteria

Age: 14 – 25 years

Sex: Male Delinquents willing to undergo for study

Exclusion criteria

- Age below 14 years and above 25 years
- Any systemic illness like hypertension, cardiac disease, metabolic disorders etc.

Study design and treatment schedule

In this study, 60 subjects were selected after taking consent from authorities of Government Observation Home, Ramanagar, Varanasi and subjects. The 60 subjects were divided into two groups with each having 30 subjects. General history, general physical examination, and systemic examinations were done to rule out any illness. The groupings were as follows:

Group A: Medhya Rasayana (Fine Powder 5gm twice daily with milk for three months)

Group B: Yogic Practices and Medhya Rasayana as mentioned above

Group A: Subjects treated with Medhya Rasayana. Medhya Rasayana consists of Mandukaparni (*Centella asiatica Linn.*) (Panchanga), Yashtimadhu (*Glycyrrhiza glabra Linn.*) (Root), Guduchi [*Tinospora cordifolia (Willd.) Miers ex Hook. f. and Thoms.*] (Stem), and Sankhapushpi (*Convolvulus pluricaulis Choisy*) (Panchanga). These four raw drugs were identified with the help of the experts in the Department of Dravyaguna, IMS, BHU. After identification, they were taken in equal proportion and made in to Sukshmacurna (fine powder) at the Ayurveda Pharmacy, Faculty of Ayurveda, Institute of Medical Sciences, Banaras Hindu University, Varanasi. Subjects of this group were given churna packed in polythene bags (containing 15 days medication) and were advised to take Medhya Rasayana 5 g twice daily with milk for 3 months.

Group B: Subjects treated with above said Medhya Rasayanas along with certain Yogic practices. They were

asked to practice Yogic practices regularly in the following order.

General schedule for Yoga

- Joint movements: 5 rounds each/day
Toes- flexion and extension, foot- flexion and extension, ankle- rotation, knee- rotation, hip- rotation, finger- flexion and extension, wrist- rotation, elbow- flexion and extension, shoulder- rotation, neck- rotation
- Standing Asanas: 5 rounds each/day
Tadasana, Vrukshasana, Virabhadrasana, Vajrasana, Bhujangasana, Shalabhasana, followed by Shavasana for 15 minutes.
- Pranayama- Anuloma-Viloma- 15 rounds/day, Bhramari- 10 rounds/day,
- Dhyana: Omkar Dhyana- 15 min/day

Assessment Criteria

The following Parameters were used to evaluate the improvement.

- Aggression Scale
- Adjustment Scale
- Manasa Prakriti Scale

The assessment of aggression scale and adjustment scale was done initially, after 45 days i.e. first follow up and after 90 days i.e. second follow up was taken. While assessment of Manas Prakriti done before starting of the study and after completion of study.

OBSERVATION AND RESULTS

The collected data were computed in Microsoft Excel sheet showing various variables, and analysis was done using statistical software SPSS version 16.0. Observed raw scores of Adjustment and Aggression scale were classified in specified grades. Then number and percentage of cases according to these grades were determined according to each group and statistical comparisons were done. For inter group comparison, Pearson’s chi-square test is applied. Wherever expected frequencies came less than 5, Pearson Chi-Square has been calculated after suitably pooling the rows/columns. For intra group comparison, Friedman Test is applied. Corresponding to t value, p-value was determined. p< 0.05 considered as statistically significant and p< 0.01 or p < 0.001 as statistically highly significant. p> 0.05 not statistically significant.

Table 1: Intra-group and Intergroup comparison of initial and final follow-ups of Adjustment scale

Groups	Number of cases and Percentage						Intra group comparison Friedman Test
	Scale Category	Initial	%	FU1	%	FU2	
Group A	Normal	12	40	18	64	20	80
	Mal Adjustment	18	60	10	36	5	20
Group B	Normal	12	40	20	71	21	96
	Mal Adjustment	18	60	8	29	1	4
Inter Group Comparison Chi-Square Test		$\chi^2=0$ P=1 NS		$\chi^2=0.33$ P=0.57 NS		$\chi^2=2.51$ P=0.11 NS	

Results of group A on Adjustment scale after 1st follow up as well as 2nd follow up compared to initial was statistically significant as the P value is less than 0.01. Results of group B on Adjustment scale after 1st follow up as well as 2nd follow up compared to initial was statistically Highly

significant as the P value is less than 0.001. The inter group comparison of initial, first follow up as well as second follow up of both groups showed no significant difference as the P values of all are greater than 0.05. By this it can be inferred that both the group were equally effective.

Table 2: Intra-group and Intergroup comparison of initial and final follow-ups of Aggression scale

Groups	Number of cases and Percentage						Intra group comparison Friedman Test	
	Scale Category	Initial	%	FU1	%	FU2		%
Group A	Low Aggression	0	0	0	0	1	4	$\chi^2=8.78$ P<0.02 S
	Average Aggression	9	30	12	42.9	18	72	
	High Aggression	21	70	16	57.1	6	24	
Group B	Low Aggression	1	3.3	0	0	1	4.6	$\chi^2=19.22$ P<0.001 HS
	Average Aggression	5	16.7	8	28.6	16	72.7	
	High Aggression	24	80	20	71.4	5	22.7	
Inter Group Comparison Chi-Square Test		$\chi^2=1.78$ P=0.411 NS		$\chi^2=1.24$ P=0.26 NS		$\chi^2=0.008$ P=0.99 NS		

The results of group A on Aggression scale after 1st follow up as well as 2nd follow up compared to initial was statistically significant as the P value is less than 0.05. The results of group B on Aggression scale after 1st follow up as well as 2nd follow up compared to initial was statistically Highly significant as the P value is less than 0.001. The

Intra group comparisons after initial, first follow up as well as second follow up between both groups showed no significant difference as the P values of all are greater than 0.05. By this it can be inferred that both the group were equally effective with respect to aggression scale.

Table 3: Intra and Intergroup comparison of initial and final follow-ups of Manas Prakriti scale

Groups	Number of cases and Percentage				Intra group comparison Wilcoxon Signed Rank Test	
	Scale Category	Before	%	After		%
Group A	Satwika	0	0	3	12	Z=1.07 P=0.285
	Rajasa	18	60	13	52	
	Tamasa	12	40	9	36	
Group B	Satwika	0	0	8	36.4	Z=3.85 P<0.001
	Rajasa	14	46.7	12	54.5	
	Tamasa	16	53.3	2	9.1	
Inter Group Comparison Chi-Square Test		$\chi^2=2.40$ P=0.121		$\chi^2=12.79$ P=0.002		

The intra group comparison in group A on Manas Prakriti scale after study compared to before study was statistically not significant as the P value is greater than 0.05. The intra group comparison in group B on Manas Prakriti scale after study compared to before study was statistically highly significant as the P value is less than 0.001. The inter group

comparison before study between two groups showed no significant difference, this shows that both the groups had similar kind of distribution of Manas Prakriti, but values after study on Manas Prakriti scale, show a statistically significant (P<0.002) result, and Group B is more effective than Group A.

Table 4: Mean and Standard Deviation scores of Aggression scales

Groups		Aggression Scale			
		Mean	± SD	Minimum	Maximum
Group A	Initial	227.33	± 29.57	133	265
	FU1	223.54	±25.928	165	258
	FU2	195.60	± 27.56	114	256
Group B	Initial	217.97	±28.085	165	270
	FU1	121.18	±29.789	160	270
	FU2	197.67	±27.848	127	256

Mean values of Aggression scale after first and second follow up shows significant difference in scores of both group A and B.

Table 5: Mean and Standard Deviation scores of Adjustment scales

Groups		Adjustment Scale			
		Mean	± SD	Minimum	Maximum
Group A	Initial	61.37	± 5.62	50	70
	FU1	59.39	± 5.69	45	68
	FU2	55.12	± 6.62	45	67
Group B	Initial	61.00	± 5.36	50	70
	FU1	57.04	± 6.81	45	68
	FU2	49.83	± 6.91	39	67

Mean values of Adjustment scale after first and second follow up also shows significant difference in scores of both group A and B.

DISCUSSION

In the study maximum number of subjects (68.33%) belonged to the age group of 14-18 years followed by 31.66% in 19-25 years and all the subjects are male delinquents. About 86.66% subjects belonged to Hindu religion followed by Muslims (13.33%), this signifies Hindu dominant population in and around Varanasi. About 30% subjects belonged to middle class and majority of delinquents (70%) were from lower class while none of the inmates belonged to upper class. This signifies that the incidences of delinquency are more in lower class of society, and poverty can be considered as the chief cause for majority of crimes in India. 30% delinquents were educated up to primary school and 55% delinquents were educated up to 10th class, and only 15% were educated above matric and up to higher secondary or graduation. This shows a poor education level among delinquents.

Maximum subjects belonged to Vata-Pittaja Dehaprakriti (63.33%), followed by Kapha-Pittaja Dehaprakriti (21.66%), it signifies that Vata-Pittaja subjects were more aggressive by nature. Basically the Vata Dosha has Rajasika properties which make that individual more aggressive by nature. Pitta with its Ushna and Tikshna qualities stimulate the mind and along with Vata it makes the individual very short tempered, so it can be inferred that maximum subjects belonged to Vata-Pittaja Prakriti. Further Manasa Prakriti of delinquents showed the predominance of Rajasika trait of individuals (53.33%), which is followed by Tamasika trait (46.66%). This shows the effect of Kama, Krodhadi Manasa Vikaras present due to Manasika Prakriti of delinquents. Majority of subjects belonged to Avara Satva (60%) whereas 40% belonged to Madhyama Satva and none of them had Pravara Satva. This shows that the Avara Satva personality people are not able to control mental modification resulting in criminal behavior.

About 91.66% subjects consumed non-vegetarian food while only 8.33% subjects took vegetarian food. This shows the effect of Rajasika food like meat can influence the minds of these delinquents. Maximum subjects (51.66%) belonged to Madhyama Satmya category followed by Avara Satmya (33.33%). Majority of subjects (56.56%) had Pravara Abhyavaharana Shakti, while 27.78% subjects had Madhyama Abhyavaharana Shakti. Jarana Shakti was also found to be Pravara in majority of subjects 61.11%. This indicates that delinquents were basically physically active and young in age because of it

their Agni is increased, hence they need good amount of energy through food. About 61.66% subjects had Madhyamasara, 35% had Avara Sara, while only 3.33% subjects had Pravara Sara. This indicates that many delinquents were not properly nourished and the reason may be unawareness about health and diet in middle and low economic status people. Maximum subjects belonged to Madhyama Sara, so the subjects were fit to perform Yogic practices. Regarding to Samhanana, maximum subjects (53.33%) had Madhyama Samhanana and only 16.66% had Pravara Samhanana. Majority of subjects i.e. 61.33% were having Madhyama Vyayama Shakti. This also indicates that subjects were physically fit for doing Yoga.

In this study four Medhya Rasayanas Mandukaparni, Yashtimadhu, Guduchi, Shankhapushpi were administered. Medhya Rasayanas are group of nootropic drugs that are used enhance the cognitive effects of including the effects on brain and nervous system². The Medhya Rasayana and Yogic practices always enhance the mental capabilities, reduce stress, anxiety etc. which are the causative factors for violence and crime. Medhya Rasayana is given to both groups in 5 gm twice daily for 3 months.

Mode of Action of Medhya Rasayana

Medhya Rasayanas strengthen the mind as well as body and help to control the mind. Pitta Dosha is responsible for aggression, anger etc. mental modification along with good intelligence. Kapha is responsible for strength, endurance, patience, courage, mental strength etc. factors. Prana Vata executes the intellectual functions like Buddhi, Indriyas, Chitta and Dhriti. Sadhaka Pitta performs the function like discriminations and intelligence. Medhya Rasayanas help to maintain Vata, Pitta and Kapha Doshas in the state of equilibrium, so that individual has physical and mental balance.

Shankhapushpi (*Convolvulus pluricaulis Choisy*) is the most effective among the four Medhya Rasayanas drugs mentioned by Acharya Charaka³. It has Kashaya Rasa and Ushna Guna may enhance the alertness and quick understanding and retention of experiences. The purpose behind giving Medhya Rasayana is to impart the Satvika Bhavas among the delinquents because they reduce stress, anxiety and promote Satvikata in an individual. Many previous studies have reported the traditional uses of *Convolvulus pluricaulis Choisy* to improve memory and it acts as a psycho-stimulant and tranquilizer, and reduces mental tension⁴. The pharmacological studies of the herb have shown varying degree of its hypotensive and tranquilizing effects. Clinical studies have shown beneficial effects of *C. pluricaulis* on the patients of anxiety neurosis. The herb induces a feeling of calmness

and peace, good sleep and relieves anxiety, stresses, mental fatigue, producing a significant reduction in the level of anxiety, neuroticism arising due to various levels of stresses⁵. This property of Shankhapushpi helps in reducing the negative thoughts and stress and reduces the aggressive behavior among the delinquents. The herb appears to produce its action by modulation of neurochemistry of the brain. The plant improves the balance of vitiation in Kapha-Vata-Pitta Doshas, and the herb is astringent and bitter helps to reduce the increased pitta, which is mainly responsible for mental factors like Krodha (aggression), Irshya (jealousy) and Dvesha (hatred).⁶ Central GABAergic mechanism is the major inhibitory pathway which is closely linked with human behavioural disorders such as aggression, sleep and anxiety. Shankhapushpi modifies the phenomenon of GABA system at the level of the synthesis of GABA mediators, release or reuptake or metabolism^{7,8}. Since GABA agonism has been linked to sedation and anxiolysis and well documented sedative effect of action of *Convolvulus pluricaulis Choisy* is because of the involvement of GABA- benzodiazepine chloride channel complex. The results obtained are indicative towards the GABA action of *Convolvulus pluricaulis Choisy* for its anti-anxiety activity.

Experiments done with the ether extracts of *Guduchi* showed that the petroleum ether extract of *Tinospora cordifolia* (Willd.) Miers ex Hook. f. and Thoms produces the antidepressant-like effect, but the precise mechanisms are not completely clear. However from the experiments it is clearly observed that the antidepressant-like effect of the extract was significantly reversed by pre-treatment of animals with prazosin (a α_1 -adrenoceptor antagonist), sulpiride (a selective dopamine D₂-receptor antagonist), p-CPA (a serotonin synthesis inhibitor) and baclofen (GABA_B agonist), when tested⁹.

This suggested that the petroleum ether extracts of *Guduchi* produced the antidepressant-like effect by interaction with α_1 -adrenoceptors, dopamine D₂-receptors, serotonergic and GABA_B receptors, hence increasing the levels of norepinephrine, dopamine and serotonin; and decreasing the levels of GABA in brains of mice. Out of these all neurotransmitters, serotonin, GABA and dopamine, norepinephrine are mainly responsible in the physiology of aggression because the levels of monoamines like norepinephrine, serotonin and dopamine are decreased in depression and aggressive tendencies¹⁰. This suggests the use of *Guduchi* (petroleum ether extract of *Tinospora cordifolia* (Willd.) Miers ex Hook. f. and Thoms) is very useful in the treatment of aggressive juvenile delinquents by inhibiting MAO-A and MAO-B, thus increasing the levels of monoamines like noradrenaline, serotonin, and dopamine; and decreasing the levels of GABA. According to results of phytochemical screening and literature, the antidepressant-like action of petroleum ether extract might be due to the presence of berberine (alkaloid), since it has been reported to have antidepressant-like activity¹¹. Possible involvement of l-arginine-nitric oxide (NO)-cyclic guanosine monophosphate (cGMP) signalling pathway in the antidepressant activity of berberine chloride¹². Amongst the four Medhya Rasayanas licorice root (*Glycyrrhiza glabra* Linn) is one of the highly regarded

herbs used to treat conditions associated with diminished adrenal function. Licorice is known to have multiple pharmacological actions including adrenocorticoid-like activity¹³ this property of Yashtimadhu is helpful in decreasing the aggressive behaviour of the delinquents as the adrenalin hormone secreted from adrenal gland plays a key role in the physiology of aggression. Madhura and Shita properties and Rasayana effect of Yashtimadhu brings about soothing effect and probably this helps in bringing about stability of mind. Guduchi another component of Medhya Rasayana has Katu, Tikta Rasas which help in keeping the mind alert. Further Rasayana Prabhava helps in calming the mind.

According to Ayurveda, Mandukaparni is Medhya by Prabhava (Special effect). It also reduces stress which is one among the factors leading to aggressive behaviour. It also shows immune-modulatory activity strong antioxidant activity as revealed by increased level of SOD, glutathione peroxidase and glutathione in mice. *Centella Asiatica* Linn extract and powder may ameliorate H2O2 induced oxidative stress by decreasing lipid peroxidation via alteration of the antioxidant defence system of the rats¹⁴. Thus it is a general health promoter. It has neuronal dendritic growth stimulating property¹⁵. Asiaticoside an active principle present in *Centella Asiatica* Linn, imparted anxiolytic activity¹⁶, thus it helps in reducing the anxiety which is one of the factors responsible for criminal behaviour.

In this way all the drugs mentioned in four Medhya Rasayanas are helpful in developing the adjustment and reducing the aggressive tendencies among the juvenile delinquents.

Mode of Action of Yoga

Manasika Vikaras like Krodha, Lobha etc. are the major problems behind all the crimes, theft, robbery etc., when accompanied with aggressiveness can hurt somebody through physical assault. These problems can be overcome by Yoga, which is like light for the humanity. An integrated approach of Yoga is necessary to live the holistic life. In this study Yogic practices like Tadasana, Vrikshasana, Virabhadrasana, Shalabhasana, Bhujangasana, Shavasana, Kapalabhati, Anuloma – Viloma Pranayama, Bhramari Pranayama and Omkara Dhyana were adopted.

Tadasana develops physical and mental balance. It rejuvenates the body and gives the feeling of freshness, expels dullness and depression, harmonizes the body and mind, increases energy and enthusiasm¹⁷. Vrikshasana gives sense of balance and poise. Strengthens the bones of the hips and legs due to the weight-bearing nature of the pose, Builds self-confidence and esteem, Virabhadrasana, develops concentration power, improves focus, balance and stability, encourages good circulation and respiration, stretches arms, legs, shoulders, neck, belly, groins and ankles, energizes the entire body. At the end of Asanas, Shavasana is done which is helpful in removing the fatigue caused by the other Asanas and induces the calmness of mind. It destroys fatigue and quiets the agitation of the mind. In Shavasana steady, smooth, fine and deep breathing is maintained without any jerky movements of the body, which soothes the nerves and calms the mind. The stresses of modern civilization are strain on the nerves for which Shavasana is the best antidote.

Kapalabhati energizes the mind for mental work and removes sleepiness, thus brings about alertness. It also reduces stress and emotional debris. The path of purification of Nadis, increases and enhances the vitality of life-force and rejuvenates Kundalini Shakti in the body. It also helps in regaining poise in emotions and in this way these all practices collectively bring about the reduction in the aggression and improvement in adjustment among delinquents.

While performing Anuloma – Viloma Pranayama, breathing through the left nostril tends to activate the right hemisphere, breathing through the right nostril activate the left hemisphere. It helps in regaining poise in emotions and the three Doshas Vata, Pitta and Kapha are brought to equilibrium state.

Regular practice of Anuloma Viloma Pranayama helps to increase oxygen supply throughout the body, making one feel calm and peaceful. It is helpful in relieving stress, fever, eye and ear conditions. It improves blood circulation, transforms negative thoughts in to positive thoughts. It has calming effect and relieves anxiety concentration and stimulates Ajnachakra. The brain centres are stimulated to work to their optimum capacity.

Bhramari Pranayama relieves stress and cerebral tension and so helps in alleviating anger, anxiety and insomnia. It is a known fact that vibration of thinking of a human body can be controlled. By these vibrations the cerebral cortex sends impulses directly to the hypothalamus, which controls the 'Pituitary' gland, the master of all glands. The resonance of the brain's metaphysical thinking is taken out and this enhances capacity of brain. Due to humming sound concentration of the mind is also facilitated. It has a positive effect on whole mind and body and particularly on nervous system. Due to humming sound concentration of the mind is also facilitated. The mind becomes calm and peaceful. It is beneficial in mental tension, agitation, high blood pressure, and heart disease etc. Omkara Dhyana produces benefits at many levels of life. It simultaneously influences body, emotions, mental functioning and relationships. Meditation also improves brain functioning, improves positive thought process, calms mind, enhances intelligence, decreases craving for cigarette, alcohol and drug abuse along with decreasing the withdrawal symptoms, induces relaxation and decreases stress.

By the regular practice of meditation nervous system, brain and senses get tuned themselves for best functioning. During meditation the concentration on different Chakras helps to get some specific effects. Chakras works as interconnected self-opening valves; they modulate the flow of life force or Pranic energy, flowing through channels. Muladharachakra enhances health and Vidya. Manipurachakra enhances Vidya and capacity. Concentration over Vishudhachakra brings about improvement in speech and knowledge. The Satvasarata state brought up by these techniques makes the person liberal and responsible and this state can be brought about only by the regular practice of Yoga. These all bring about enhancement in adjustment and reduction of aggression, further influence Manasa Prakriti positively resulting in positive changes in delinquents.

Objective Assessment

Objective assessment of this study was done on 60 delinquents using three scales namely Adjustment scale, Aggression scale and Manas Prakriti scale.

Subjects were randomly divided into two groups A and B each having 30 subjects. Study was conducted over period of three months on 60 juvenile delinquents. During this period group A was treated with Medhya Rasayana and group B with Medhya Rasayana and Yoga. During this period 5 delinquents from group A and 8 delinquents from group B i.e. total 13 delinquents were not available until last follow up. Out of 13, eleven delinquents were relieved on Bail and two were shifted to District Jail as per orders from juvenile court. Finally the study done on 47 delinquents with all follow ups and the data collected was sorted and statistical results were obtained as follows.

Adjustment scale was graded based on the scores. T value is decided according to scores as per norms of the scale. T value of adjustment scale within 41-60 is considered to be normal adjustment of that individual and T value above 60 is considered as Mal adjustment according to scale norms.

On intra group comparison of Adjustment scale scores at first and second follow up both group A and B show significant and highly significant result with P values less than 0.01 and 0.001 respectively. While inter group comparison showed that the difference among both groups was statistically not significant. But on comparison of difference between mean values of adjustment scale scores before treatment and at the end of second follow up show that group B with mean difference 61 and 49.83 is more effective than group-A, with mean difference of 61.37 and 55 respectively. The results of B group which has both Medhya Rasayana and Yoga as an intervention was highly significant. This may be probably due to the synergistic effect Medhya Rasayana and Yogic practices.

The intra group comparison with respect to Aggression scale showed significant reduction in both group A and B with P values less than 0.02 and 0.001 respectively. While there was no significant difference in inter group comparison. But on comparison of difference between mean values of aggression scale score initially and at the end of follow up show that group A with mean difference 227.33 to 195.6 is more effective than group B with mean difference 217.97 to 197.67 respectively.

The inter group comparison using Chi-Square test showed no significant difference among reduction in aggression within both groups but still group B with both Yoga and Medhya Rasayana showed highly significant reduction in aggression.

Mean values of Aggression scale scores were compared before and after follow ups showed that in group A the mean value of Aggression scale was reduced from 227 to 195 i.e. from high aggression to Average aggression. The mean value of aggression scale score of group B delinquents also reduced from 217 to 197 which show the marked reduction in aggression among all delinquents.

The assessment of Manasa Prakriti of delinquents was done with Mānas Prakṛti scale it was divided in to Manasa Prakriti based on the scores. The scale was having 45 questions 15 for each prakṛti with maximum 60 marks for each trait. The higher score deciding the mental trait of that individual. The scoring of Manasa Prakriti was assessed

initially and at second follow up after 90 days as it takes long time to change the mental trait of any individual.

The intra group comparison of Manasa Prakriti showed no significant improvement in group A (P=0.285) while group B showed highly significant improvement with P value less than 0.001. The inter group comparison between group A and group B initially showed no significant difference indicating that both the groups were identical with respect to Manasa Prakriti of inmates. While at the end of second follow up there was significant difference between group A and B with P=0.002 treated with Medhya Rasayana and Yogic practices is more effective in controlling the mental traits of an individual. This shows that after using Yoga along with Medhya Rasayana is helpful in changing the personality of the delinquent from Rajasika and Tamasika towards Satvika prakriti.

CONCLUSION

In this study on intra-group comparison both group A and B were significant with respect to Aggression and Adjustment scale, whereas with respect to Manasa Prakriti scale only group B was statistically significant. Group B treated with Yogic practices and Medhya Rasayana was found highly significant and most effective with respect to parameters in all the three tests viz. Adjustment scale, Aggression scale and Manasa Prakriti scale. This shows that Yogic practices along with Medhya Rasayana are very helpful in improving mental condition of Delinquents. This intervention is cost effective and devoid of any side effects and everyone can adopt it to enhance mental as well as physical health and can also prevent many lifestyle disorders, hence it can be implemented at community level.

REFERENCES

1. Agnivesha, Charaka Samhita, Chakrapaniteeka. Chikitsa Sthana, 1/3/30-31, Varanasi, Chaukhambha Orientalia, 2002
2. Savita HP, Suhas Kumar Shetty, Narayan Prakash B, Critical Appraisal of Rasayanas for mental health in elderly. Int. J. Res. Ayurveda. Pharm 2013;4(4):2013:626-628. <http://dx.doi.org/10.7897/2277-4343.04436>
3. Vd. H. S. Khushvaha, Agniveshakrita Charaka Samhita, Chikitsa sthana 1/3/31, Varanasi, Chaukhambha Orientalia, 2009
4. Atul Shankar Sarokte and Mangalagowri V. Rao, Effects of Medhya Rasayana and Yogic practices in improvement of short-term memory among school-going children, Ayu. 2013;34 (4): 383-389. <http://dx.doi.org/10.4103/0974-8520.127720>
5. Sethiya NK, Nahata A, Mishra SH, Dixit VK. An update on Shankpushpi, a cognition-boosting Ayurvedic medicine, Zhong Xi

- Yi Jie He Xue Bao 2009; 7(11): 1001-1022. <http://dx.doi.org/10.3736/jcim20091101>
6. Bhowmik D, Kumar KPS, Paswan S, SriVatava S, Yadav A, Dutta A. Traditional Indian herbs Convolvulus pluricaulis Choisy and its medicinal importance. J Pharmacogn Phytochemistry 2012; 1(1): 50-58.
7. Mir Hadi Khayat Nouri a, Vahab Babapour b, Morteza Saminic. Involvement of GABAergic System in Increased Pentylentetrazole-Induced Seizure Threshold in Cholestatic Mice Iranian Journal of Pharmaceutical Sciences Winter 2007; 3(1): 25-30
8. Sieghart W. GABAA receptors: Ligand-gated Cl⁻ ion channels modulated by multiple drug-binding sites. Trends Pharmacol Sci 1992; 13: 446-50. [http://dx.doi.org/10.1016/0165-6147\(92\)90142-S](http://dx.doi.org/10.1016/0165-6147(92)90142-S)
9. D. Dhingra and P. K. Goyal, Evidences for the Involvement of Monoaminergic and GABAergic Systems in Antidepressant-like Activity of Tinospora cordifolia in Mice, Indian J Pharm Sci. 2008 Nov-Dec; 70(6): 761-767. <http://dx.doi.org/10.4103/0250-474X.49118>
10. Lowry OH, Rosebrough NJ, Farr AL, Randall R. Protein measurement with folin phenol reagent. J Biol Chem. 1951;193:265-75
11. D. Dhingra and P. K. Goyal, Evidences for the Involvement of Monoaminergic and GABAergic Systems in Antidepressant-like Activity of Tinospora cordifolia in Mice, Indian J Pharm Sci. 2008 Nov-Dec; 70(6): 761-767. <http://dx.doi.org/10.4103/0250-474X.49118>
12. Kulkarni SK, Dhir A On the mechanism of antidepressant-like action of berberine chloride. Eur J Pharmacol. 2008;28(1-3):163-72. <http://dx.doi.org/10.1016/j.ejphar.2008.05.043>
13. Snow JM. Glycyrrhiza glabra L. (Leguminaceae). Protocol J Bot Med Winter 1996:9-14.
14. Mahanom Hussin Azizah Abdul-Hamid, Suhaila Mohamad, Nazamid Saari, Maznah Ismail, Mohd. Hair Bejo. Protective effect of Centella asiatica extract and powder on oxidative stress in rats, Food Chemistry 2007;100:535-541 <http://dx.doi.org/10.1016/j.foodchem.2005.10.022>
15. Mohandas Rao KG, Muddanna Rao S, Gurumadhva Rao S. Centella asiatica (L.) Leaf extract treatment during the growth spurt period enhances hippocampal CA3 neuronal dendritic arborization in rats. Evid Based Complement Alternat Med. 2006;3:349-357. <http://dx.doi.org/10.1093/ecam/nel024>
16. Wijeweera P, J.T. Arnasona, D. Koszyckib, Z. Meralib. Evaluation of anxiolytic properties of Gotukola - (Centella asiatica) extracts and asiaticoside in rat behavioral models, Phytomedicine, 2006; 13(9-10):668-76. <http://dx.doi.org/10.1016/j.phymed.2006.01.011>
17. Satish Patil, K.H.H.V.S.S. Narasimha Murthy, Mangalagowri V Rao. Management of juvenile delinquency through Ayurveda and Yoga, World Journal of Pharmaceutical Research, 2014;3(8): 189-202

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