Research Article

EFFECT OF *MAMSYADI KWATHA* ALONG WITH STRUCTURED *SATVAVAJAYA* MODULE IN THE MANAGEMENT OF POST STROKE MOOD AND EMOTIONAL DISTURBANCES - SINGLE GROUP PRE-TEST POST-TEST DESIGN

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Article info	ABSTRACT
	Stroke is considered as one of the major causes of physical disability which has a serious impact on mental health and affecting the quality of life (QoL) of an individual. This study is intended to explore the effect of *Mamsyadi kwatha* along with structured module for addressing the psychological problems of stroke survivors and to measure its effects on improving the issues like depression, anxiety, anger proneness, fatigue, emotional incontinence and quality of life in them. *Mamsyadi kwatha* with proven efficacy in anxiety and depression was selected with the structured *Satvavajaya* module and administered in 21 participants. The participants were in the age group of 30-75 without any history of psychiatric illness and recent stressful life events or trauma and those who can communicate properly were recruited for the study. *Mamsyad kwatha* and *Satvavajaya* module were administered for initial 14 days. Assessments were done on 0th day/ 7th day/ 15th. Main outcome measures included emotional problems like depression and anxiety, fatigue, emotional incontinence, anger proneness and stroke related QoL. After the treatment, significant improvements were noted in depression (p<0.001), anxiety (p<0.001), anger proneness (p<0.001) and in majority of the domains in SSQoL (p<0.001)- quality of life.

INTRODUCTION

Stroke is a clinically defined syndrome of rapidly developing symptoms or signs of focal loss of cerebral function with no apparent cause other than that of vascular origin, but the loss of function can at times be global (applied to patients in deep coma and to those with subarachnoid haemorrhage). Symptoms last more than 24 hr lead to death.[1]The syndrome varies in severity from recovery in a day, through incomplete recovery, to severe disability, to death. Stroke is a major cause of death and disability worldwide.[2]

Apart from physical debility stroke may have a serious impact on mental health. It includes-Post Stroke Depression, Post Stroke Anxiety (PSA), Post Stroke Emotional Incontinence (PSEI), Post stroke anger proneness (PSAP) and post stroke fatigue (PSF)[3]

There is increased long-term mortality in patients with poststroke depression and extends this finding to show that other mental health conditions are also independently associated with an in-creased risk of death after an ischemic stroke., mental health diagnoses in the first 3 years after stroke increase the risk of death by more than 10%. The mortality risk was still higher in those with poststroke de-pression and other mental health diagnoses. Since the presence of a mental health condition confers as much risk for subsequent mortality as many other cardiovascular risk factors.[4]

Many advancements are therein the management of stroke which help to reduce the mortality as well as morbidity status. Multidisciplinary approach including various physiotherapies, speech and language therapies are useful. But mental health issues in stroke survivors negatively affects their recovery from stroke disability. But measures to

address the mental health of stroke survivors are in minimal concern only (CBT, SFBT, Motivational interviewing etc. are in practice).

There is further scope to explore and implement Ayurvedic management of stroke. *Paksawadha* and *Paksaghata* explained by *Acarya Caraka* and *Sushruta* are comparable with the concept of stroke. It is not a *Shuddha vataja* condition, other *Doshas* as *Anubandha* or *Avarana* may accompany *vata*. *Rakta dusti* is mandatory (*Dhamani/ Sira asrita roga*)

In the opinion of *Acarya Sushruta* "*atmavantam* (self-restraint)" (self-restraint) is considered as a criterion for better prognosis in *Paksaghata.*[5] Stroke patients have mental health issues either due to the organic cause or due to the feeling that now he is dependent on someone even for basic needs, this thought precipitate or trigger the development of mental health problems. Hence to increase the *Satva bala* in this stage, *Satvavajaya* can play a vital role.

Mood and emotions in post stroke period is often less addressed. Addressing them and giving proper management will improve stroke outcome. Meanwhile Scottish Intercollegiate Guidelines Network-intervention for post stroke disturbances of mood and emotional behaviour (SIGN 118) recommends- antidepressants, psychological support and education of their condition to improve the clinical outcome. However, routine prescription of antidepressant is not recommended as per SIGN 118[6], since they may cause side effects like dizziness, constipation etc. Ayurveda has a major role to play in this arena.

In Ayurveda, it is said that a patient who is having enough mental strength will recover quickly from the ailments. Many a times, even in Ayurvedic management of *Paksaghata*, the mood and emotional disturbances are not given utmost importance and a specific treatment strategy is not planned for that. *Satvavajaya* module from previous study is incorporated since it found to be effective in facilitating stroke recovery. Post stroke mood and emotional disturbances consists of two extremes of symptoms-depression and anxiety. So selected a drug- *Mamsyadi kwatha* contain- *Jatamamsi, Aswagandha* and *Parasika yavani* in a ratio 8:4:1 (*Siddhayoga sangraha* of *Yadavji Trikamji*) which is having a broader range of action.[7]

MATERIALS AND METHODS

Mamsyadi kwatha with proven efficacy in anxiety and depression was selected with the structured *Satvavajaya* module and administered in 21 participants. Participants diagnosed as stroke associated with mood and emotional disturbances with a chronicity of 3 weeks to 3 years in the age group of 30-75 without any history of psychiatric illness and recent stressful life events or trauma and those who can communicate properly were recruited for the study. *Mamsyadi kwatha* and *Satvavajaya* module were administered for initial 14 days. Assessments were done on 0th day/ 7th day/ 15th. Main outcome measures included emotional problems like depression and anxiety, fatigue, emotional incontinence, anger proneness and stroke related QoL

Aim: To explore the role of *Ayurveda* in post stroke mood and emotional disturbances.

Objectives

Primary objective: To assess the effect of *Mamsyadi kwatha* along with structured *Satvavajaya* module in post stroke mood and emotional disturbances

Secondary objective: To assess the effect of *Mamsyadi kwatha* along with structured *Satvavajaya* module in the quality of life of participants with post stroke mood and emotional disturbances

Hypothesis

Null hypothesis: *Mamsyadi kwatha* along with structured *Satvavajaya* module is not effective in post stroke mood and emotional disturbances

Alternative hypothesis: *Mamsyadi kwatha* along with structured *Satvavajaya* module is effective in post stroke mood and emotional disturbance

Subjective and objective parameters

1. Profile of Mood States (POMS)- It is a questionnaire containing 40 items each scored from 0-4, indicating the severity of occurrence of the symptom. Option 0 represents no impairment; option 1 represents a little impairment while Option 2 represents moderate impairment, option 3 represents quite a lot impairment and option 4 represents Extreme impairment. indicating the severity of occurrence of the symptom.

2. Hospital Anxiety and Depression Score (HADS)- It contains 14 questions; 7 questions are specifically designed for assessing anxiety and 7 for depression. Option for each question ranges from 0-3. 3 indicate higher symptom frequencies. Score for each subscale range from 0-21 with scores categorized as follows: normal 0-7, mild 8- 10, moderate 11-14, and severe 15-21.

3. Stroke Specific Quality of Life Scale (SS-QoL) - SS-QoL is a patient centred outcome measure intended to provide an assessment of health-related quality of life specific to patient with stroke. It contains 49 questions under 12 domains. Each question is ranked on a five-point Likert scale ranging from 1-5 in which level 1 means strongly agrees while level 5 means strongly disagree. The summary score of this scale is an un-weighted average of 12 domains. The total score ranges from 49-245.

4. Event Evaluation Scale- it is a scale designed to detect any side effects to mamsyadi kwatha on daily basis. Domains are- photophobia, burning eyes, pyrexia, agitation, convulsion, dry mouth, thirst, head ache, warm flushed skin, confusion, delirium, hallucination and others

RESULTS

Table 1: Symptoms wise Observation of Patients

Disease	Frequency	Percent
Post Stroke anger proneness	1	4.8
Post Stroke anxiety, Post Stroke anger proneness	1	4.8
Post Stroke depression	4	19.0
Post Stroke depression, Post Stroke anger proneness	3	14.3
Post Stroke depression, Post Stroke anxiety	9	42.9
Post Stroke depression, Post Stroke anxiety, Post Stroke emotional incontinence	1	4.8
Post Stroke depression, Post Stroke emotional incontinence	1	4.8
Post Stroke depression, Post Stroke anxiety, Post Stroke anger proneness	1	4.8

Post stroke depression (PSD) was found in 19 participants, among them 4 were purely post stroke depression while 15 were associated with other diagnoses. No participants were with post stroke fatigue (PSF).

Table 2: Percentage of relief in various domains of SSQoL

Domain	Percentage of relief
Energy	37%
Family roles	27%
Language	27%
Mobility	0%
Mood	30%
Personality	25%
Self-care	4%
Social roles	30%
Thinking	28%
Upper extremity function	1%
Vision	0%
Work / productivity	1%

Table 3: Effect of therapy on Profile Of Mood States -POMS

Profile of mood states	Mean	Std. Deviation	Median	Mean Rank	Chi-Square	p value
0th Day	1.692	0.373	1.650	2.976	41.000*	<0.001
7th Day	1.399	0.271	1.350	2.000		
15th Day	1.155	0.311	1.051	1.024		

Friedman Test, *Significant at 0.05 level

Here Friedman Test is used to compare the **Profile of mood states** between the treatment stages. The mean value at 0th Day is 1.692 with standard deviation 0.373. The mean value at 7th Day is 1.399 with standard deviation 0.271. The mean value at 15th Day is 2.762 with standard deviation 0.950. The calculated Z value is 41.000 with p value <0.001. So, there is a significant difference in **Profile of mood states** between 0th Day and 15th Day.

Table 4: Effect of therapy within the group- Pair wise comparison in POMS scale

Profile of mood states	0th Day - 7th Day	0th Day - 15th Day	7th Day - 15th Day
Z value	-3.923*	-4.016*	-3.934*
p value	<0.001	<0.001	<0.001

Wilcoxon Signed Ranks Test, *Significant at 0.05 level

Here Wilcoxon Signed Ranks Test is used to pair wise comparison of the treatment stages. There is a significant difference between 0th Day and 7th Day, since the p value < 0.001. There is a significant difference between 0th Day and 15th Day, since the p value < 0.001. There is a significant difference between 7th Day and 15th Day, since the p value < 0.001.

Table 5: Effect of Therapy on Hospital Anxiety Depression scale

Hospital anxiety depression scale	Mean	Std. Deviation	Median	Mean Rank	Chi-Square	p value
0th Day	1.806	0.319	1.786	2.976		
7th Day	1.466	0.265	1.357	2.000	41.000*	<0.001
15th Day	1.167	0.258	1.143	1.024		

Friedman Test, *Significant at 0.05 level

Here Friedman Test is used to compare the ***Hospital anxiety depression scale*** between the treatment stages. The mean value at 0th Day is 1.806 with standard deviation 0.319. The mean value at 7th Day is 1.466 with standard deviation 0.265. The mean value at 15th Day is 1.167 with standard deviation 0.258. The calculated Z value is 41.000 with p value <0.001. So, there is a significant difference in ***Hospital anxiety depression scale*** between 0th Day and 15th Day.

Table 6: Effect of therapy within the group-Pair wise comparison in HADS scale

Hospital anxiety depression scale	0th Day - 7th Day	0th Day - 15th Day	7th Day - 15th Day
Z value	-3.935*	-4.023*	-3.947*
p value	<0.001	<0.001	<0.001

Wilcoxon Signed Ranks Test, *Significant at 0.05 level

Here Wilcoxon Signed Ranks Test is used to pair wise comparison of the treatment stages. There is a significant difference between 0th Day and 7th Day, since the p value < 0.001. There is a significant difference between 0th Day and 15th Day, since the p value < 0.001. There is a significant difference between 7th Day and 15th Day, since the p value < 0.001.

DISCUSSION

Discussion on types of strokes

Six participants were suffering from haemorrhagic stroke. And fifteen had ischemic stroke. Both cortical and subcortical strokes were there. out of 21 participants 16 were of cortical stroke and among these 16, 5 were suffering from subcortical stroke (internal capsule, basal ganglia, thalamic) also. Isolated subcortical stroke was also there. Middle Cerebral Artery territory attack is more compared to Anterior Cerebral Artery territory attack.

Discussion on outcome

It is found that in statistical analysis**,** Depression, anxiety, energy, family role, language, mood, personality, social role, thinking, anger proneness was statistically significant and statistically insignificant results obtained in mobility, self-care, upper extremity function vision and work/ productivity

Discussion on the probable mode of action of *Mamsyadi kwatha*

Mamsyadi kwatha contains *Jatamamsi, Aswagandha* and *Parasikayavani*. All the three components are having *Nidrajanaka/ Nidrakara* property which may be contributing to the anxiolytic action study conducted by sikri etal.[8] Supports the same. Aamir et al. [9] concluded that *Mamsyadi kwatha* is having significant action on stress induced chronic insomnia. *Jatamamsi* is *Tridoshahara* in action other two are *Vatakapha hara*. *Jatamamasi* is also having *Manodoshahara* property as a *Prabhava*. This *Prabhava* may be contributing to the anti-depressant activity in case of reduced interests, reduced energy and depressed mood. Study conducted by sreevatsa et al[10] concluded the anti-depressant activity.

Aswagandha   *Parasikayavani*   *Jatamamsi*

Discussion on the effect of *Satvavajaya* module

In jnana domain, SWOT analysis was done. In this domain attempt was made to impart the fact that acceptance of the disease may have more beneficial effects rather than control over the disease, A study conducted by cohen J et al [11] states the same. patients were informed about both physical and mental strength, weaknesses, opportunities, threats and responsibilities in the coming future, provided confidence and need of getting back to normal. *Vijnana* improves patient and care givers knowledge of stroke. The information given to the bystander was found to have a great impact on both patient and care giver, like giving support and encouraging them to play games with patients, help them to learn and practice new skills etc. Tripathi et al. [12] reported that social skills training programs was found to be effective for correcting behavioral deficits. The exercises like reading, writing etc. were given. For doing this concentration is needed, which may have an action on higher mental functions. Writing exercises and talking therapy helped the patients to improve their confidence. group therapy was most effective tool in this domain on catching the mind of the patients towards more positive SIDE. a study conducted by Faruq etal.[13] highlighted the significant improvement of the stroke patients after group therapy. He concludes that without proper group therapy the recovery of stroke patients cannot be ascertained. chanting A-U-M- helps to improve breath and gain in concentration. Dwivedi etal[14] concluded that, The vibration swing is more in initial in chanting of Aum but after sometimes the mind becomes calm. When the mind becomes calm, the body feel relaxes, the negative thoughts are dramatically swept away that heals the self on a cellular level. Vaksh et al. [15] reported that, *Nadishuddhi pranayama* and *yoga* produces a physiologically relaxed state and concentration.

Discussion on clinical observations in the study

Majority of post stroke mood and emotional disturbances co- exist together, rarely in isolated form Most of the patient's sleep were deranged, started to improve during the course of treatment. *Mamsyadi* is found to reduce anxiety symptoms (in severity) more than depressive symptoms clinically. 8 participants

were having *Apana vaigunya* (haemorrhoids, constipation) from the premorbid stage itself, may be contributed to the severity of mood disturbances after stroke- among them 6 were with anger proneness. Participants with a short duration of mood and emotional disturbances found to have more severity of symptoms

CONCLUSION

1. *Mamsyadi kwatha* along with structured *Satvavajaya* module is effective in post stroke mood and emotional disturbance
2. *Mamasyadi kwatha* along with structured *Satvavajaya* module has significant effect in improving quality of life of participants with post stroke mood and emotional disturbances
3. Hence the null hypothesis is rejected and alternative hypothesis is accepted.

ACKNOWLEDGEMENTS

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