Medhya Rasayana And The Axiology Of Cognitive Health: An Observational Study Of Physicians' Experience With Geniekot Syrup In Contemporary Ayurvedic Practice

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Abstract

Neurodevelopmental disorders constitute not only biomedical challenges but also axiological concerns that affect human potential, social participation, and cultural continuity. In the Indian context, childhood cognition is traditionally regarded as the foundation of ethical and intellectual development, a perspective articulated in Ayurveda through the concept of Medhya Rasayana. This study explores the experiential knowledge of Ayurvedic physicians regarding the therapeutic value of Geniekot Syrup, a medhya formulation used in practice.

Geniekot Syrup, developed by Arya Vaidya Sala, Kottakkal, Kerala, is traditionally prescribed to enhance memory, intelligence, concentration, learning ability, and behavioural regulation in children. A descriptive cross-sectional survey was conducted among 220 Ayurvedic physicians across India to assess their perceived effectiveness, indications, age-specific utility, and patterns of administration. The findings reveal that 91% of respondents consider Geniekot Syrup effective, particularly in improving smrti (memory), buddhi (intellect), learning capacity, and behavioural balance during balya avastha (childhood).

Beyond clinical outcomes, the study highlights broader cultural dimensions of cognitive enhancement in Ayurveda, where therapy is oriented toward nurturing mental equilibrium, ethical disposition (sila), and long-term well-being. By situating clinical experience within an axiological framework, this article argues that Geniekot Syrup exemplifies how medical knowledge integrates values of cognition, care, and flourishing in practice.

Keywords: Medhya Rasayana, Cognition, Neurodevelopment, Axiology, Childhood health

SECTION 1- INTRODUCTION - COGNITION AS A CULTURAL AND AXIOLOGICAL CONCERN

Among the various stages of human life, childhood occupies a uniquely formative position, exerting a lasting influence on cognitive, emotional, and behavioural development. Experiences during this early phase significantly shape patterns of thought, emotion, and conduct in later life. While physical well-being was once regarded as the primary indicator of health, contemporary understanding increasingly recognizes mental health as an equally essential dimension of human flourishing.

In recent decades, there has been a marked rise in the prevalence of neurodevelopmental disorders (NDDs), which currently affect more than three per cent of children worldwide, thereby constituting a serious global health concern[1]. NDDs are characterized by difficulties in achieving age-appropriate cognitive, emotional, and motor developmental milestones, typically manifesting in early childhood and often persisting throughout the lifespan. Major conditions within this category include autism spectrum disorder, attention-deficit/hyperactivity disorder, developmental learning disorders, motor and coordination disorders, and intellectual disabilities[2]. Childhood, as a particularly vulnerable phase of life, presents distinctive challenges, further complicated by the fact that cognitive impairments may obscure coexisting psychiatric conditions, thereby hindering accurate diagnosis and comprehensive care.

Cognitive impairment during childhood can significantly affect educational attainment, occupational prospects, mental well-being, and overall quality of life. This underscores the ethical and social imperative to identify therapeutic interventions that are both effective and minimally invasive. From this perspective, any intervention capable of enhancing the ability to comprehend, retain, and recall information assumes particular significance within pediatric care.

Although classical Ayurvedic texts do not explicitly correlate specific cognitive deficits with modern diagnostic categories, such conditions may be understood within the framework of Janma Bala Pravritta Vyadhi, referring to congenital conditions affecting mental functions, with or without associated physical disabilities[3]. Ayurveda addresses these disturbances through Medhya Rasayana, a class of formulations traditionally employed to strengthen intellect and memory by supporting neuro-nutritive processes and cerebral metabolism[4]. Several herbs, including Jyotishmati, Guduchi, Jatamansi, Yashtimadhu, and Shankhapushpi, have been explored for their nootropic potential in experimental contexts.

Geniekot syrup, formulated by Arya Vaidya Sala, Kottakkal, Kerala, incorporates key ingredients such as Brahmi (Bacopa monnieri), Vacha (Acorus calamus), Aparajita (Clitorea ternatea), and Jatamansi (Nardostachys jatamansi). Traditionally prescribed to support cognitive functions, including memory, intelligence, concentration, and learning, it has also been observed to be beneficial in conditions such as speech impairments, stammering, and learning difficulties. In addition to its cognitive applications, the formulation is considered to contribute to immune support and mental vitality.

To assess the perceived effectiveness and additional benefits of Geniekot syrup, a cross-sectional survey was conducted among 220 Ayurvedic practitioners across different regions of India who routinely employ this formulation in their clinical practice. The article is structured as follows: Section I presents a conceptual introduction; Section II outlines the methodology; Section III discusses the observations, analysis, and interpretation of survey findings; Section IV offers a Discussion; and Section V concludes with broader implications.

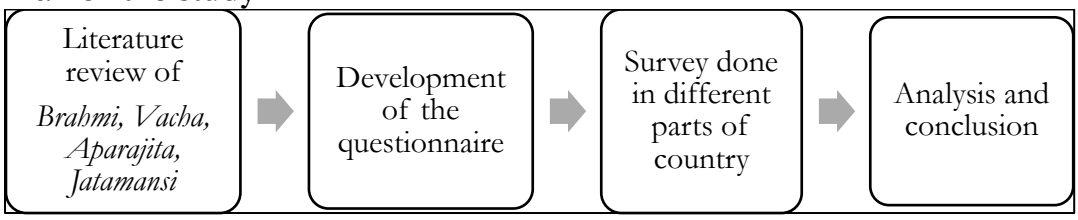
SECTION 2- METHODOLOGY - CLINICAL EXPERIENCE AS A SOURCE OF KNOWLEDGE

Review of Literature: Compilation of references on contents of Geniekot Syrup (Brahmi, Vacha, Aparajita, Jatamansi, Sukshma Ela & Sita) from Ayurvedic classics and journals.

Materials: Primary resources**:** Bruhattrayi and Laghutrayi (Classical Ayurveda text books) with available commentaries, Classical texts like Baishjyaratnavali, Nighantus like Raja Nighantu, Bhavaprakasa, etc.

Secondary resources:
Relevant modern literature, previous research works, MD and PhD theses, journals, articles, published research papers and subject-related data available online.
Developed questionnaire-Done face validity- Initially, a questionnaire was developed, and expert suggestions were collected. More than 90% of the contents were agreed upon by the experts, like clinicians with more than 25 years of experience.

Methods
Plan of the study



Primary and secondary resources were reviewed, and necessary materials were compiled. Compiled materials were thoroughly studied, re-arranged, and critically analyzed to provide the logical base for the survey study.
Conduct of the survey
Study Design: Observational Descriptive cross-sectional study
Study Population: Physicians practicing Ayurveda in different parts of India.
Inclusion Criteria:
Age group: Physicians within 25 – 80 years
Gender: Both genders included.
Exclusion Criteria:
Physicians who are not willing to participate in the survey
Sample size:
It was calculated by using the following formula:

$$n = \frac{Z^2_{1-\alpha/2} p(1-p)}{d^2}$$

(Expected Proportion; Absolute Error)

$Z_{1-\alpha/2}$ = 1.96
P = 60 %
d = 7 %
Expecting a 60% prevalence of effectiveness of Geniekot Syrup and considering a 7% margin of precision, the sample size is calculated as 196. Considering a dropout of 10%, the total sample size is considered 215, but we got 220 responses from the physicians.
Conduct of survey.
A request form and a brief introduction about the study were sent to the physicians along with the Google form.
Data Collection: Primary collection of data with a structured questionnaire through Google Form

Statistical analysis

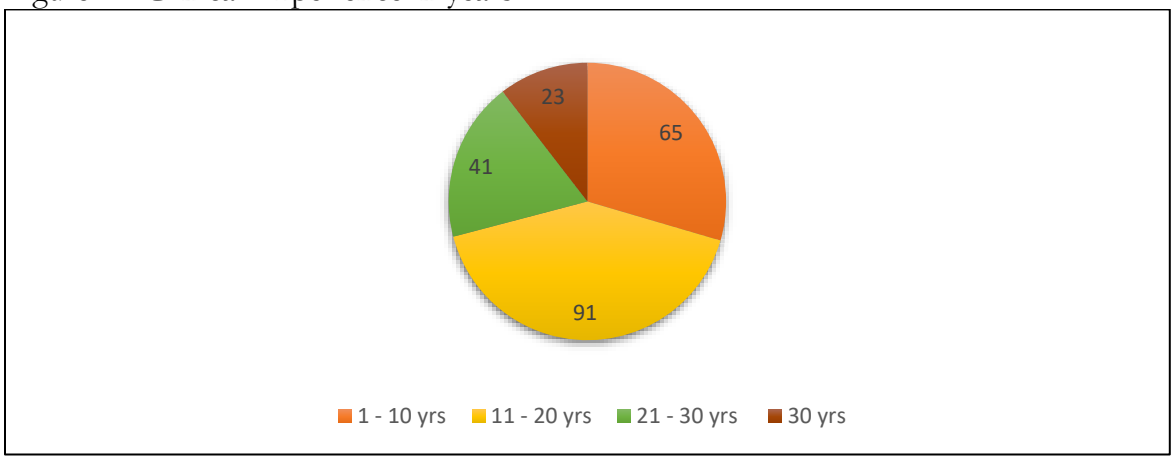
Cross-sectional study- Prevalence in terms of frequency and percentage, and its tabular and diagrammatic representation is included in the study. Crosstabs and Chi-square test were also included in the statistical analysis

Section 3: **Observation, Analysis and Interpretations**

Observation

1. Clinical experience of Ayurvedic practitioners

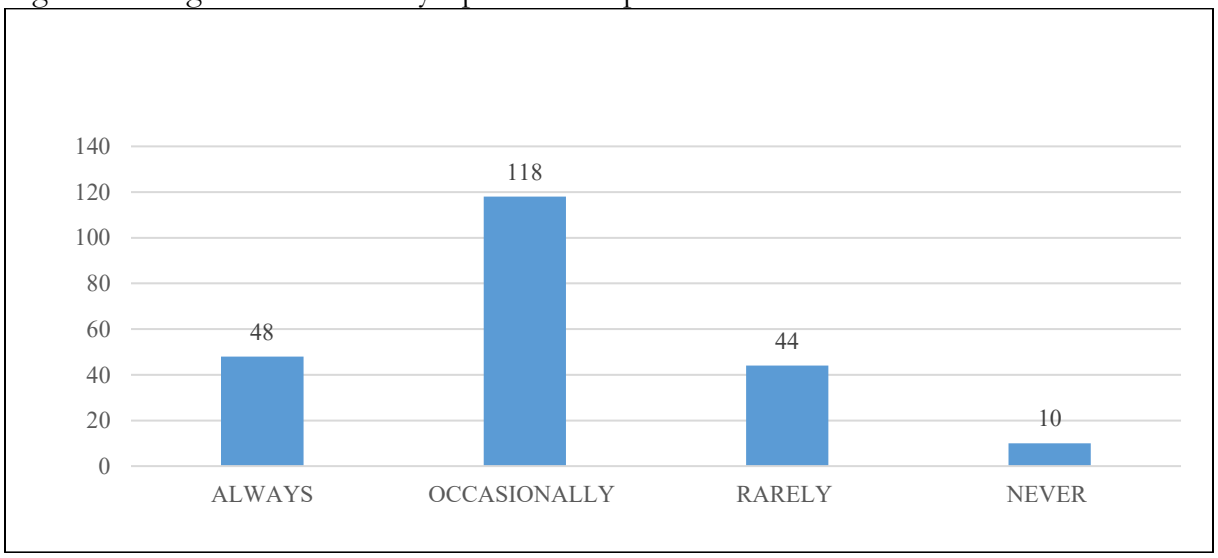
Figure 1 - Clinical Experience in years



Out of 220 responses, 91(41.3%) physicians have 11-20 years of experience. 41(19%) have more than 20 years. 23(10.4%) physicians have more than 30 years of experience.

2. Usage of Geniekot Syrup in clinical practice

Figure 2- Usage of Geniekot Syrup in clinical practice



Out of the respondents, 48 reported that they always use Geniekot in their clinical practice, while 118 mentioned that they use it occasionally.

3) Effectiveness of Geniekot Syrup

Table 1- Conditions in which Geniekot syrup is found to be effective according to Ayurveda classics

Conditions where Geniekot is found effective	Expert opinion
Smriti *(*Memory)	133
Buddhi *(*Intellect)	133
Sila *(*Habits & Behaviour)	98
Chesta *(*Neurological conditions)	84

Table 2- Other conditions in which Geniekot syrup is found to be effective

Conditions where Geniekot is found effective	Expert opinion
Promotes brain functions like memory, intelligence, concentration and improves learning	159
Relieves anxiety and stress	95
Reduces Hyperactivity, restlessness and aggressiveness in children	95
Reduces the intensity and frequency of seizures	22
Promotes urine holding properties and helps in treating enuresis	13

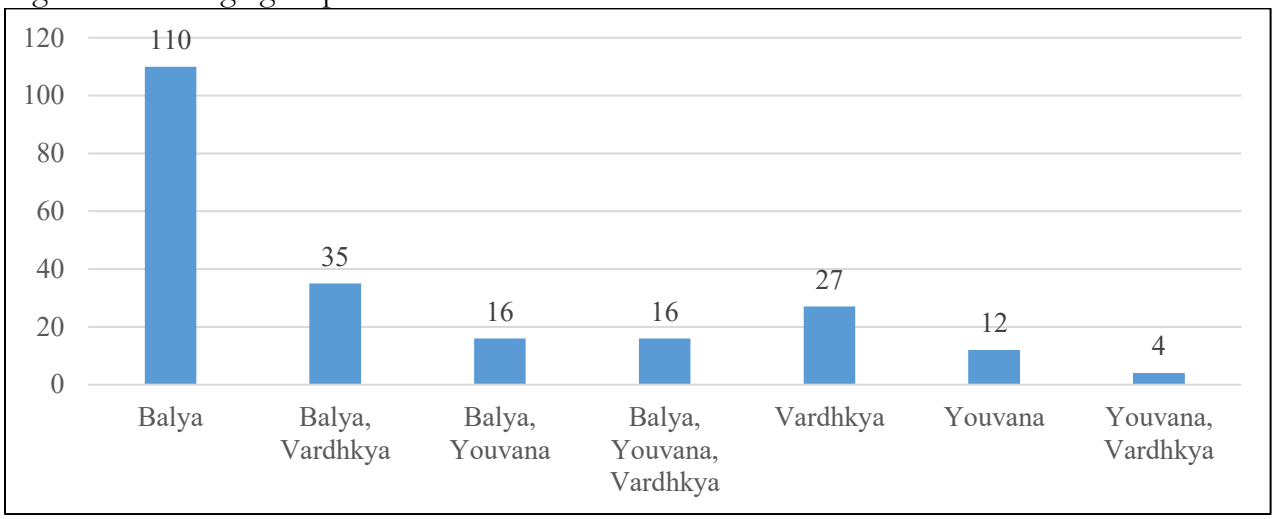
4) Ideal time of administration of Geniekot syrup

Table 3- Time of administration of Geniekot

Ideal time for administration of Geniekot	Expert opinion
After Breakfast, After Dinner	54
Bed Time	22
Before Breakfast	14
After Breakfast, Bed Time	13
After Dinner	13
Before Breakfast, Before Dinner	13
Empty stomach	11

5) The age group in which Geniekot is observed to be most effective

Figure 3 - The age group in which Geniekot is observed to be most effective



Out of the respondents, 110 mentioned that they prescribe Geniekot for Balya (up to 16 years). Additionally, 35 reported using it for both Balya and Vardhakya (above 70 years). A smaller group, 32 respondents, noted that they use Geniekot across all stages—Balya, Youvana(17-70 years) and Vardhakya. Meanwhile, 27 respondents specifically prescribe it for Vardhakya, and 12 indicated that they use it primarily for Youvana.

Analysis

Table 4: Cross tabulation between clinical experience in years and effectiveness in Smruthi & Buddhi

Clinical experience in years		Effective in Smruthi		Total
		Not effective in smruthi & Buddhi	Effective in Smruthi & Buddhi	
	1-10 years	16	49	65
	11-20 years	45	46	91
	21-30 years	17	24	41
	More than 30 years	9	14	23
Total		87	133	220

Out of 220 responses, 60% of practitioners (133) reported that Geniekot is effective in smruthi & Buddhi. Of these, 71% (95practitioners) had 10 to 20 years of clinical experience.

Table 5: Cross-tabulation between clinical experience in years and Effectiveness in Sila

Clinical experience in years	Effective in Sila	Total

		Not effective	Effective for Sila	
	1-10 years	27	38	65
	11-20 years	63	28	91
	21-30 years	22	19	41
	More than 30 years	10	13	23
Total		122	98	220

The cross-tab shows the effectiveness of Geniekot in Sila-related ailments (Habits & Behaviour). Out of 220 responses, 45% of practitioners (98) opined that Geniekot is effective in treating Sila-related ailments. Of these 85 practitioners with 10 to 30 years of clinical experience recommend Geniekot for Sila-related ailments.

Table 6: Cross-tabulation between clinical experience in years and Effectiveness in Cheshta

Clinical experience in years		Indicated in Cheshta		Total
		not indicated	Indicated in chesta	
	1-10 years	32	33	65
	11-20 years	65	26	91
	21-30 years	26	15	41
	More than 30 years	13	10	23
Total		136	84	220

Out of 220 responses, 38% of practitioners (84) found Geniekot effective in cheshta-related ailments. Of these, 59 practitioners (27%) with 10 to 20 years of clinical experience recommend Geniekot for cheshta-related ailments (Neurological conditions).

Table 7: Cross tabulation between Clinical experience in years and Effectiveness in improving memory, intelligence, concentration and learning

Clinical experience in years		Effective in memory, intelligence, concentration &improves learning		Total
		Not Effective	Effective	
	1-10 years	12	53	65
	11-20 years	33	58	91
	21-30 years	10	31	41

	More than 30 years	6	17	23
Total		61	159	220

Out of 220 responses, 72% (159) of practitioners recommend Geniekot for these cognitive improvements. Notably, 111 of these practitioners, with 10 to 20 years of clinical experience, are more inclined to recommend Geniekot and found to be effective in memory, intelligence, concentration and improving learning.

Table 8: Cross-tabulation between Clinical experience in years and Effectiveness in Relieving anxiety and stress

Clinical experience in years		Effective for anxiety and stress		Total
		Not effective	Effective in relieving anxiety and stress	
	1-10 years	28	37	65
	11-20 years	64	27	91
	21-30 years	23	18	41
	More than 30 years	10	13	23
Total		125	95	220

Out of 220 responses, 43% of practitioners (95) recommend Geniekot for relieving anxiety and stress. Notably, 64 of these practitioners, with 10 to 20 years of clinical experience, are more inclined to recommend Geniekot in anxiety and stress conditions.

Table 9: Cross tabulation between Clinical experience in years and Effectiveness of Geniekot in Balya Avastha

Clinical experience in years		Effective in Balya Avastha		Total
		not effective	Effective in Balya Avastha	
	1-10 years	19	46	65
	11-20 years	52	39	91
	21-30 years	18	23	41
	More than 30 years	9	14	23
Total		98	122	220

Out of 220 responses, 55% of practitioners (122) recommend Geniekot in Balya Avastha. Notably, 85 of these practitioners, with 10 to 20 years of clinical experience, are more inclined to recommend Geniekot in Balya Avastha.

Table 10 Cross Cross-tabulation between Clinical experience in years and Overall effectiveness

Clinical experience in years	Overall effectiveness		Total
	Not effective	overall effective	

	1-10 years	4	61	65
	11-20 years	8	83	91
	21-30 years	5	36	41
	More than 30 years	2	21	23
Total		19	201	220

Among the respondents, 91% of practitioners (201) opined that Geniekot is effective.

Table 11. Cross-tabulation between the usage of Geniekot in clinical practice and Overall effectiveness

Usage of Geniekot in clinical practice		Overall effectiveness		Total
		Not effective	Overall effective	
	Never	0	10	10
	Rarely	4	40	44
	Occasionally	11	107	118
	Always	4	44	48
Total		19	201	220

In this survey, 91% of practitioners (201) opined that Geniekot is effective. Of these 201 responses, 75 % (107+44) of the practitioners almost always recommend Geniekot.

Table 12 Cross-tabulation between Usage of Geniekot in clinical practice and Effectiveness in Smruthi & Buddhi

Usage of Geniekot in clinical practice		Effective in Smruthi & Buddhi		Total
		Not effective in smruthi & Buddhi	Effective in smruthi & Buddhi	
	Never	1	9	10
	Rarely	13	31	44
	Occasionally	55	63	118
	Always	18	30	48
Total		87	133	220

Out of 220 responses, 60% of practitioners (133) opined that Geniekot is effective in smruthi & Buddhi. Of these 133 responses, 70% (63+30) of the practitioners almost always recommend Genikot for improving smruthi & Buddhi

Table 13: Cross-tabulation between usage of Geniekot in clinical practice and Effectiveness in sila

Usage of Geniekot in clinical practice	Effective in Sila	Total

		Not effective in sila	Effective for Sila	
	Never	2	8	10
	Rarely	16	28	44
	Occasionally	76	42	118
	Always	28	20	48
Total		122	98	220

Table 14: Cross-tabulation between usage of Geniekot in Clinical practice and Effectiveness in Cheshta

Usage of Geniekot in clinical practice		Indicated in Cheshta		Total
		Not indicated	Indicated in chesta	
	Never	2	8	10
	Rarely	18	26	44
	Occasionally	83	35	118
	Always	33	15	48
Total		136	84	220

Table 15: Cross tabulation between usage of Geniekot in Clinical practice and Effectiveness in improving memory, intelligence, concentration &learning

Usage of Geniekot in clinical practice		Geniokot is found to be effective in improving memory, intelligence, concentration &improves learning		Total
		not effective	Effective	
	Never	0	10	10
	Rarely	11	33	44
	Occasionally	39	79	118
	Always	11	37	48
Total		61	159	220

In the survey, 159(72%) physicians indicated that Geniekot is effective in enhancing memory, intelligence, concentration, and learning. Of this 72%, 116(79+37) practitioners (73%) almost always recommend Geniekot.

Table 16: Cross-tabulation between clinical usage of Geniekot syrup and Effectiveness in relieving anxiety and stress

Usage of Geniekot in clinical practice	Relieves anxiety and stress		Total
	Not indicated	Relieves anxiety and stress	

	Never	2	8	10
	Rarely	16	28	44
	Occasionally	78	40	118
	Always	29	19	48
Total		125	95	220

95 doctors indicated that Geniekot is Effective in relieving anxiety and stress. Of this, 59(40+19) practitioners (62%) almost always recommend Geniekot.

Table 17: Cross-tabulation between the usage of Geniekot in clinical practice and the Effectiveness in reducing the intensity and frequency of seizures

Usage of Geniekot in clinical practice		Reduces the intensity and frequency of seizures		Total
		not indicated	Reduces the intensity and frequency of seizures	
	Never	6	4	10
	Rarely	38	6	44
	Occasionally	111	7	118
	Always	43	5	48
Total		198	22	220

22 respondents opined that Geniekot is useful in reducing the intensity and frequency of seizures.

Table 18: Cross-tabulation between Clinical experience in years and usage of Geniekot in clinical practice

Clinical experience in years		Usage of Geniekot in clinical practice				Total
		Never	Rarely	Occasionally	Always	
	1-10 years	7	16	31	11	65
	11-20 years	3	16	48	24	91
	21-30 years	0	11	21	9	41
	More than 30 years	0	1	18	4	23
Total		10	44	118	48	220

In this survey, out of 220 physicians, 155 (70.45%) have more than 10 years of experience. Of these, 75% of physicians (166) almost always recommend Geniekot syrup in their clinical practice.

The survey primarily focuses on the physician's clinical experience, the usage of Geniekot, the conditions in which it is found to be effective, the optimal timing of its administration, and the ideal age group for its effectiveness.

Table 19 - Significant chi-square values

Sl.No	Test for Association Chi-square	P Value (Test for association)
1	The test for the association of the effectiveness of Geniekot in smruti and clinical experience	0.020(<.05)
2	Test for the association of the effectiveness of Geniekot in reducing the intensity and frequency of seizures and clinical experience	0.003(<.05)
3	test for the association of the effectiveness of Geniekot in Buddhi and clinical experience	0.020(<.05).
4	test for the association of the effectiveness of Geniekot kot in Sila related ailments and clinical experience	0.004(<.05).
5	test for the association of the effectiveness of Geniekot in chesta-related ailments and clinical experience	0.004(<.05).
6	test for the association of the effectiveness of Geniekot in relieving anxiety and stress, and clinical experience	0.004(<.05)
7	test for the association of the effectiveness of Geniekot kot in Balya Avastha and clinical experience	0.006(<.05)
8	test for association of the effectiveness of Geniekot kot in Youvana Avastha and clinical experience	0.003(<.05)
9	test for the association of the effectiveness of Geniekot kot in smruthi and clinical usage	0.045(<.05)
10	test for the association of the effectiveness of Geniekot kot in Buddhi and clinical usage	0.045(<.05).
11	Test for the association of the effectiveness of Geniekot kot in sila-related ailments and clinical usage	0.001(<.05).
12	Test for the association of the effectiveness of Geniekot kot in Chesta - related ailments and clinical usage	0.001(<.05).
13	Test for the association between the use of Geniekot in clinical practice and its effectiveness in relieving anxiety and stress	001 ($p < 0.05$).

14	Test for the association of the Usage of Geniekot in clinical practice and the reduction in the intensity and frequency of seizures	0.005 (<.05).

Descriptive statistics indicate that the overall effectiveness of the treatment is not strongly influenced by the number of years of clinical experience, as both experience groups show nearly identical distributions. The only significant predictor of overall effectiveness in the model is whether the treatment is indicated for improving memory, intelligence, concentration, and learning (**B = 0.313, p < 0.001**). This suggests that treatments with these indications are perceived as more effective. All other predictors, including years of clinical experience, use of Geniekot, and other indications (such as reducing seizures or relieving anxiety), do not show a statistically significant impact on perceived overall effectiveness. Thus, according to the regression analysis, a focus on treatments aimed at improving cognitive functions appears to be the most important determinant of overall effectiveness.

Interpretations

Table 20- **Interpretations**

Sl.No	Effective Conditions	Recommended experts (%)	Clinical experience In years & Clinical usage
1	Enhancing Smruti (memory) and Buddhi (intellect).	60%	43% (95 practitioners) with 10 to 20 years of clinical experience 70% - almost always recommend Genikot
2	Effective in addressing ailments related to Sila (Habits & Behaviour)	45%	66 practitioners (45%) have 10 to 20 years of clinical experience.
3	Effective in addressing ailments related to (Neurological conditions)	38%	66 practitioners (45%) have 10 to 20 years of clinical experience.
4	Effective in promoting brain functions like memory, intelligence, concentration and learning.	72%	70% (95 practitioners) with 10 to 20 years of clinical experience 73% - almost always recommend Geniekot
5	Effective in relieving anxiety and stress,	43%	67% (64 practitioners) have 10 to 20 years of clinical experience. 59 practitioners (62%) almost always recommend Geniekot

6	Effective in reducing the intensity and frequency of seizures	10%	
7	Effective in promoting urine retention and helps treat enuresis.	6%	

1. Out of 220 physicians involved in the survey, 155 (70.45%) physicians have more than 10 years of experience.
2. Among these 220 physicians, 166physicians almost always recommend Geniekot syrup in their clinical practice.
3. The ideal time for consuming Geniekot syrup is observed to be after breakfast and after dinner.
4. The ideal age group in which Geniekot is observed to be most effective is Balya Avastha(up to 16 years)
5. 37% (82 practitioners) suggested that Geniekot is also effective during the Vardhakya stage (above 70 years)
6. Of the 72% of practitioners who recommend Geniekot for cognitive improvements, 70% of practitioners (111) with 10 to 20 years of clinical experience are more inclined to recommend Geniekot.
7. Regarding the overall effectiveness, 91% of practitioners (201) opined that Geniekot is effective. Of these 201 responses, 75% (107+44) of the practitioners almost always recommend Geniekot.
8. Some additional benefits observed with the use of Geniekot syrup include improvements in speech impairments such as stammering, learning disabilities, and immune function, along with reductions in hyperactivity, restlessness, and aggressiveness in children.

SECTION 4: DISCUSSIONS

Geniekot contain Brahmi, Vacha, Aparajita and Jatamansi and its properties are given in the following table.

Table: 21 -About the product – Geniekot

Sl no	Ingredients	Rasa	Guna	Veerya	Vipaka	Doshakarma
1	Jatamamsi	Tikta, kashaya, madhura	Laghu, snigdha, tikshna	seetha	katu	Tridoshahara
2.	Bramhi	Tikta, Kashaya, Madhura	Sara, Laghu	Sita	Madhura	medhya,rasayana, swarya
3.	Aparajita	Katu, Tikta,	Laghu, Rooksha	Seeta	Katu	

		Kashaya rasa				
4	Vacha	Katu Tikta	Laghu Teekshna	Ushna	Katu	Medhya, Kanthya, Krmihara, Vamaka, Mala-utravisodhana

1. DISCUSSION ON INDICATIONS OF GENIEKOT SYRUP

Indicated in improving smruthi & Buddhi

Geniekot syrup mainly contains Brahmi, Vacha, Aparajita and Jatamansi. Out of 220 respondents, the majority of practitioners (60%) found Geniekot effective in enhancing Smruti (memory) and Buddhi (intellect). In ancient Ayurvedic texts, the Acharyas (scholars) have extensively mentioned Medhya drugs for addressing various Mana (mind) related problems[5]. According to recent studies, Medhya drugs, also referred to as nootropics, are believed to enhance mental performance and improve brain function. All the ingredients of Geniekot (Brahmi, Vacha, Aparajita and Jatamansi) have Medhya action.

Brahmi is categorised under the gana (Group)of Prajnasthapana (Promoting cognition), Samjasthapana (Restoration of consciousness), Shiro Virechana (Nasal purgation), and Medhya, reflecting its wide range of therapeutic benefits. It is a highly versatile herb with multiple attributes and empirically proven efficacy in various treatments. Several studies have been done with an alcoholic extract. On rats, the extract increases both cognitive function and retention capacity, decreases retrograde amnesia and protects from phenytoin-induced cognitive deficit.[6]

Vacha is included under sirovirechana and samjnasthapana gana by Charaka Acharya. It possesses katu tikta rasa (Pungent and bitter), laghu teekshna guna (Light and sharp qualities), ushna veerya (Hot potency) and katu vipaka (Pungent post-digestive effect). Sayana Acharya explained that vacha improves intelligence and speech because of its Medhya Prabhava (Cognition-enhancing specific action). The Ushnatva of vacha being Samanya (Similar) to that of Pittaguna (One among tridosha) stimulates the same and specifically may influence Sadhaka pitta (One among the five divisions of pitta), which governs the Buddhi and Medha. Drugs that have Sukshma (Subtle), Vishada (Clear), Ruksha (Dryness), Gunas are Srothoshodhaka (Channel-cleansing) in nature, and Vacha, consisting of Suksma guna, keeps the channels/ pathways of the brain clear and promotes medha. Studies reported that vacha churna shows better memory boosting activity in children in comparison with dextrin.[7]

Caraka acharya mentioned Aparajita as the best example for medhya rasayana (Cognition-enhancing rejuvenative therapy). It is reported as a brain tonic and a nervine tonic. It has also been found effective in anxiety and neurosis due to its clinical anti-anxiety effects and improved mental functions[8].

Jatamansi (Nardostachys jatamansi), belonging to the Valerianaeae family, is classified under the Tikta skanda (bitter drugs group) and Samjnasthapana gana by Charaka. Traditionally, Jatamansi is renowned for its effectiveness in treating insomnia and mental disorders. It exhibits tikta (bitter), kashaya (astringent), and madhura (sweet) tastes, with laghu (light) and snigdha (unctuous) qualities, sita (cooling) potency, and katu (pungent) post-digestive effect. Additionally, Jatamansi is known for its medhya and balya (strengthening) actions. In various studies on jatamansi have demonstrated its antioxidant properties through both in vitro and in vivo experiments. It was found to reduce stress-induced biochemical changes in the brain

and stomach. The antioxidant and anti-stress effects of jatamansi are attributed to alterations in the properties of flavonoids and polyphenols.[9]

Out of 220 respondents, 72% of practitioners found Geniekot effective in promoting brain functions like memory, intelligence, concentration and learning**.** Of the 72% of practitioners, **70%** of practitioners (111) with 10 to 20 years of clinical experience, are more inclined to recommend Geniekot. As this is a novel product, clinicians who are newly acquainted with it have reported excellent results. Their experiences will likely serve as an eye-opener, encouraging more physicians to prescribe this product.

Additionally, 45% and 38% of practitioners also reported the effectiveness of Geniekot in addressing ailments related to sila **(**Habits & Behaviour) and chesta **(**Neurological conditions), respectively

Indicated for relieving anxiety and stress

Stress is a major exacerbating factor for both hypertension and diabetes, which are major killers worldwide. High stress is also a common trigger for mood disorders such as anxiety and depression.[10] This survey also reveals that Geniekot is effective in relieving anxiety and stress. One of the major ingredients of Geniekot is jatamansi. In various studies it has been shown that the tendency affects the functioning of the Manovaha Srotas (Channels of the mind). It reduces the stress-induced biochemical changes in the brain as well as in the stomach. The antioxidant and anti-stress properties of jatamansi are attributed to the changes occurring in its flavonoids and polyphenols.[9]

A study on shankhpushpi has revealed its antioxidant properties through both in vitro and in vivo experiments. In a rat model of chronic mild stress, one week of treatment with a methanolic extract of shankhpushpi significantly reduced stress responses. Shankhpushpi has also been found effective in decreasing pentobarbitone-induced sleep, reversing social isolation-related stress, increasing total motor activity, and reducing stress-induced antinociception in experimental models. Additionally, it enhances memory, supports brain cell regeneration, and promotes dendritic arborization, which serves as the neuronal basis for improved learning and memory[11].

Indicated in Hyperactivity, restlessness and aggressiveness in children

95 doctors opined that Geniekot syrup is effective in reducing hyperactivity, restlessness and aggressiveness in children. Cognitive deficits in children can be present from birth or result from environmental causes such as brain damage, mental illness, or neurological abnormalities. This causes significant restrictions to the ability to learn and operate, like in ADHD. Structural, functional, and physiological abnormalities in various regions of the brain by complex interactive operations of genetic and environmental factors, lead to the pathogenesis of ADHD. The core symptoms of ADHD include inattention, hyper-activity and impulsivity[12]. In Ayurveda classics, there is no specific description of ADHD, but it can be considered as an increase in the chalatwa gunam (Mobility/dynamic quality) of vayu and raja that leads to hyperactivity. Dhrithi Bhramsa (Loss of mental restraint) also leads to hyperactivity and restlessness, so the main mode of treatment is to bring vitiated vata dosha back to normalcy and proper maintenance of agni. Medhya drugs like brahmi, vacha, aparajita, and jatamansi have multi-dimensional actions, including an effect on memory. These not only enhance the intellectual capacity but also rejuvenate the whole-body system and its pathways. They also produce a neuroprotective effect by improving cerebral metabolism. Thus, these drugs work on the intellect (Dhee), retention power (Dhriti) and memory (Smriti). These drugs are known to have a specific effect on mental performance by promoting the functions of "Buddhi" and

"Manas" by correcting the disturbances of "Rajas" and "Tamas", which are vitiated in an ADHD child.[13]

Ideal time of administration of Geniekot syrup

For any medicine to exert its full effect on a disease, it must be administered at the appropriate time (kala), taking into account factors such as dosa predominance, the state of agni, and the strength (bala) of the patient. This specific time is referred to as aushadha sevana kala, which means the optimal time for administering medicine.

Acharaya Charaka says that aushadha given at the appropriate kala is more efficacious than one given at an inappropriate kala. Optimum digestion and metabolism in a healthy individual are attributed to agni. Acharya Vagbhaṭa has stated, "kalo bheshaja yogakrt," meaning that the timing ensures the efficacy of the medicine.[14] This emphasizes the crucial role of aushadha sevana kala in treatment.

In the survey, 41% of physicians indicated that the ideal time to administer Geniekot syrup is after dinner. This aligns with the classical concept of bheshaja kala for udana vata, described as "sayamaasasya tu uttare," where medication is administered after the evening meal.[15] This is significant because Udana Vata disruption affects speech (vak pravrutti) and memory (smriti kriya)[16]. Additionally, 32% of physicians also suggested administering Geniekot at bedtime, as night-time administration is considered ideal for treating conditions affecting areas above the shoulders[17]. The primary indications of Geniekot syrup are also related to brain functions.

The age group in which Geniekot is observed to be most effective

Developmental disabilities in children include a complex group of disorders that cause physical, intellectual and speech disabilities. A broad definition of developmental disabilities included: mental retardation, cerebral palsy, communication disorders, learning disability, attention deficit hyperactive disorder and childhood autism. Studies reported that the use of medhya drugs (Herbal nootropic drugs) can help children in improving their mental power and intelligence. Acharya Kashyapa has recommended the use of medhya drugs such as brahmi, immediately after birth. This highlights that our acharyas were aware of the importance of proper nourishment for both the body and mind from birth, ensuring optimal growth and development of the child.

As per the survey, out of 220 respondents, 81% (177 practitioners) opined that the ideal age group in which Geniekot is observed to be most effective is Balya (up to 16 years). Medhya drugs are known to have a specific effect on mental performance by producing a neuro-nutrient effect and improving cerebral metabolism. These drugs support the intellect (Dhi), Retention power (Dhriti) and memory (Smriti).

37% (82 practitioners) suggested that Geniekot is also effective during the vardhakya stage (>70 years). All the ingredients in Geniekot possess rasayana properties, meaning they act at the cellular level, enhancing natural physiology and protecting cells from harmful metabolites. Rasayana has been proven to have antioxidant effects, which are crucial for prolonging life by preventing excessive wear and tear on cell structures and maintaining optimal cell function.

The ingredients in Geniekot also exhibit neuroprotective, intellect-enhancing, free radical scavenging, and antioxidant activities. CCRAS developed Ayushman-8, which is effective in treating mental retardation, with its key ingredients being shankhpushpi, brahmi, and vacha[17]. Shankhpushpi, in particular, is beneficial for anxiety, neurosis, insomnia, and cerebral disorders, serving as an excellent nervine tonic. Its memory-enhancing effects are due to its antioxidant and acetylcholinesterase inhibitory properties[18].

CONCLUSION

In the present era, there is an enormous increase in the prevalence of neurodevelopmental disorders. It is unfortunate that despite advancements in modern medicine, its success in treating neurobehavioural and neurodevelopmental disorders remains limited due to the multifactorial nature of these conditions. Geniekot syrup, developed by Arya Vaidya Sala, Kottakkal, Kerala, contains key ingredients like Brahmi, Vacha, Aparajita, and Jatamansi. This syrup is derived from the traditional formulation called Brahmi Vachadi Kashayam. These drugs have varying degrees of psychotropic action and are known to possess antidepressant and tranquilizing action. These drugs promote intellect (Dhi), retention power (Dhriti) and memory (Smriti). In fact, they produce a neuro-nutrient effect by improving cerebral metabolism. The survey also confirms the same findings. It is highly effective in enhancing smruti (memory) and buddhi (intellect), particularly in individuals in the balya avastha (childhood stage). The survey also indicates that Geniekot helps to alleviate anxiety and stress. Most of the physicians recommend administering Geniekot syrup after breakfast and dinner for optimal results.

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Reference

1. "Global Prevalence of Neurodevelopmental Disorders." PLOS Medicine, vol. 15, no. 7, 24 July 2018, doi: 10.1371/journal.pmed.1002615.
2. Khandelwal, R., and H. K. Singhal. "Neurodevelopmental Disorders: An Emerging Issue and Its Correlation in Ayurveda."
3. Nandini, Shah, Deepshikha A., and G. P. Garg. "Management of Cognitive Deficit through Ayurveda." International Journal of Advanced Research, vol. 9, 2021, pp. 576–582, doi:10.21474/IJAR01/13048.
4. Kulkarni, R., K. J. Girish, and A. Kumar. "Nootropic Herbs (Medhya Rasayana) in Ayurveda: An Update." Pharmacognosy Reviews, vol. 6, no. 12, 2012, pp. 147–153, doi:10.4103/0973-7847.99949.
5. Singhal, H. K., et al. "Role of Ayurvedic Herbs in the Management of Attention Deficit Hyperactivity Disorder in Children." Natural Ayurvedic Medicine, vol. 7, no. 1, 2023, article no. 000375.
6. Vollala, V. R., S. Upadhya, and S. Nayak. "Effect of Bacopa monniera Linn. (Brahmi) Extract on Learning and Memory in Rats: A Behavioral Study." Journal of Veterinary Behavior, vol. 5, no. 2, 2010, pp. 69–74.
7. Huddar, Shreedevi, and Elleri Anup Kumar. "Clinical Evaluation of Vacha Rhizome (Acorus calamus Linn.) as a Memory Booster in Children." AYUSHDHARA, vol. 10, no. 5, 2023, pp. 66–71.
8. Kharkwal, S., D. C. Singh, H. Kharkwal, and S. Joshi. "Analytical Study of Vacha (Acorus calamus Linn.)."
9. Razack, Sakina, and Farhath Khanum. "Anxiolytic Effects of Nardostachys jatamansi DC in Mice." Annals of Phytomedicine, vol. 1, no. 2, 2012, pp. 67–73.
10. Chia, Yook Chin, et al. "May Measurement Month 2017 Blood Pressure Screening: Findings from Malaysia–South-East Asia and Australasia." European Heart Journal Supplements, vol. 21, suppl. D, 2019, pp. D77–D79.

11. Gupta, G. L., and J. Fernandes. "Protective Effect of Convolvulus pluricaulis against Neuroinflammation-Associated Depressive Behaviour Induced by Chronic Unpredictable Mild Stress in Rats." Biomedicine and Pharmacotherapy, vol. 109, 2019, pp. 1698–1708, doi:10.1016/j.biopha.2018.11.046.
12. Overview of the DSM-5™ Medical Classification System for ADHD." ADHD Institute, www.adhd-institute.com/assessment-diagnosis/diagnosis/dsm-5tm. Accessed 10 May 2020.
13. Aboobacker, Shifa V. Efficacy of Mahāpaiśācika Ghṛta against Kūśmāṇḍa Ghṛta in Attention-Deficit/Hyperactivity Disorder: A Non-Inferiority Randomized Controlled Trial. PG dissertation, Kerala University of Health Sciences, Thrissur, 2024.
14. Vāgbhaṭa. Aṣṭāṅga Saṅgraha. Sūtrasthāna, chapter 23, Chaukhamba Sanskrit Pratisthan, 2006, p. 428.
15. Vāgbhaṭa. Aṣṭāṅgahṛdaya. Edited by Pt. Hari Sadasiva Sastri Paradakara, Śārīrasthāna, chapter 13, verse 39, Chaukhamba Sanskrita Samsthana, 2017.
16. Vāgbhaṭa. Aṣṭāṅgahṛdaya. Edited by Pt. Hari Sadasiva Sastri Paradakara, Śārīrasthāna, chapter 12, verse 5, Chaukhamba Sanskrita Samsthana, 2017.
17. Vāgbhaṭa. Aṣṭāṅgahṛdaya. Edited by Pt. Hari Sadasiva Sastri Paradakara, Śārīrasthāna, chapter 13, verse 41(2), Chaukhamba Sanskrita Samsthana, 2017.
18. Dhingra, Devinder, and R. Valecha. "Evaluation of the Antidepressant-Like Activity of Convolvulus pluricaulis Choisy in the Mouse Forced Swim and Tail Suspension Tests." Medical Science Monitor, vol. 13, 2007, pp. BR155–BR161.