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Single Case Report for the Management of Cognitive Deficit in Children Through Siddha Traditional Medicine Brahmi Nei

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Abstract: From birth through adolescence and to adulthood, cognitive development involves the formation of the mental process, which includes remembering, problem-solving, and decision-making. Any trait that interferes with cognition is referred to as having a cognitive deficiency or having a cognitive impairment. Congenital or environmental factors, such as brain injuries, neurological conditions, or mental illnesses, may be to blame for this deficiency. A popular Siddha compound known as "brahmi nei" is utilised to manage cognitive abilities. One medication with nootropic effects is brahmi, which is suggested for a number of psychosomatic and mental problems. The aim of this study was to assess Brahmi ghee's effectiveness in treating cognitive deficiency. The goal was to investigate a novel route for improving cognitive abilities using siddha therapeutic treatment. To assess the impact on clinical symptoms of cognitive deficit and changes in the Malin intelligence scale for Indian children (MISIC) for a patient with cognitive deficit chosen from the OPD of NIS, Brahmi nei was given orally in a dose of 2.5 ml for 3-6 year old child and 5 ml for 7-12 year old child twice daily with food for a period of 3 months. Child with cognitive deficits responded well to traditional Siddha drug Brahmi ghee formulations in terms of symptoms such as lack of curiosity, poor attention, moderate decrease in learning activity, mild retarded language skill symptom, asking the same questions repeatedly, and inability to understand and follow instructions. In kids with cognitive deficits, it shows good increased MISIC scores.

Keywords: Siddha traditional medicine, Brahmi nei, Bacoside A, Bacoside B, Cognitive deficits

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Introduction

A baby's brain begins to form in the womb, where it continues to grow and develop until birth. This ability evolves throughout the course of a lifetime. From infancy until maturity, a person's brain is hard at work building the structures necessary for memory, analysis, and judgement, all of which are part of cognitive development. Cognition deficit arises when intellectual performances fall short, since this lack of process prevents full cognition from developing. Any trait that hinders one's ability to think clearly might be categorised as a cognitive deficiency or impairment (Bjorklund, 2004). This deficiency might be innate, as in the case of a child born with Down syndrome, or acquired, as in the case of a child with a brain injury, neurological ailment, or psychiatric. Mild cognitive deficiency in certain youngsters becomes more noticeable after they enter school. A cognitive impairment may lead a kid to grow and learn at a slower rate than typical children, making it harder for them to master skills like speaking, walking, and taking care of their own basic requirements like feeding and clothing (Hockenbury, 2004).

Mental (mantham) and bodily (Vatham, Pitham, and Kabam) discord are linked in Siddha texts as the root of all mental illness. Deficits in intellectual functioning, often known as cognitive deficits, may be referred to as pagutharivu inmai in siddha. Congenital factors, desire unfulfillment during pregnancy (leading to vata vitiation), parental atheism and bad karma, incompatible and improper diet, emotional and behavioural factors of the mother during pregnancy, urge suppression, and gynaecological disorders are all cited as possible causes of this cognitive deficit in Siddha.

Ghee-based formulations are able to permeate the blood-brain barrier and exhibit a beneficial influence on the brain, unlike many of the other medications utilised in the Indian system of medicine back in the day. The Siddha texts advocate for the use of ghee in the treatment of mental illness in youngsters. It enhanced cognitive abilities and had lipophilic activity. The

Siddha concoction Brahmi nei, which consists of many herbs, is often used for cognitive enhancement. Every Siddha literature agrees that Brahmi (*Bacopa monnieri*) is one of the main constituents in Brahmi Ghee, even if the exact method of its manufacture varies. Brahmi is one medicine with nootropic activity that is indicated for a wide range of psychosomatic and psychiatric conditions. Brahmi's active principle, bacoside, is responsible for boosting memory-related activities due to its capacity to increase the production of acetylcholine. Efficiency of nerve impulse transmission, enhancing one's capacity for learning and remembering. Bacoside A and B are the active ingredients that cause mental effects (Chakravarty, 2001).

Brahmi ghee has been the subject of numerous clinical and experimental studies, with results showing its effects on learning and memory, anticonvulsant action, central nervous system (CNS) depressant activity, anti-amnestic actions, antinociceptive action, depression, and ADHD in children, and many more on its neurocognitive actions.

The aim of this study was to evaluate the efficacy of Brahmi ghee in the management of cognitive deficit and to explore a new pathway of developing the cognitive skills using siddha therapeutic management.

Materials and Methods

Method of Study: Single case study

Study and Practical place: OPD of Kuzhandhai Maruthuvam in National Institute of Siddha

Study design: 3 months

Sample size: Single child

Experimental formulations and procedures:

Internal Medicine: Brahmi nei (Twice a day with food)

Dose: 3-6 years (2.5 ml) and 7-12 years (5 ml)

Route of Administration: Oral administration

Ingredients of Brahmi nei:

(1) *Bacopa monnieri* (2) *Acorus calamus* (3) *Alpinia galangal* (4) *Operculina turpethum* (5) *Piper longum* (6) *Limonia acidissima* (7) *Gingiber officinalae* (8) *Emblic myrobalan* (9) Sodium chloride (Rock salt) (10) *Curcuma aromatic-* (11) Sugar candy (12) Cow's milk (13) Cow's Ghee.

Cognitive impairment may be identified with the use of standardised tests of intellect and adaptive behaviour. WHO's International Statistical Classification of Diseases and Related Health Problems (ICD- 10) chapter 'F' categorises psychiatric diseases as mental and behavioural disorders and assigns them number codes between F00 and F99. The range of cognitive impairment that includes mental retardation (F70-F79) is as follows: Average 90–109; Dull normal 80–90; Borderline 70–79; Mild MR 50–69; Moderate MR 35–49; Severe MR 21–34; and Profound MR < 20.

In this study Malin intelligence scale for Indian children (MISIC) was used for calculation of IQ and the range of IQ was taken from 70–84 which falls between borderline to dull normal.

The test comprises of 11 subtests divided into two groups: (A) Verbal tests and (B) Performance Tests. Verbal Scale consists of 6 subtests: (i) Information Test, (ii) General Comprehension Test, (iii) Arithmetic Test, (iv) Analogy and Similarity Test, (v) Vocabulary Test, and (vi) Digit Span Test. Performance Scale consists of 5 subtests: (i) Picture Completion Test, (ii) Block Design Test, (iii) Object Assembly, (iv) Coding, and (v) Maze.

Child was assessed for improvement on 0, 30th, 60th, and 90th day of treatment and the results were filled in the assessment forms.

Results and Discussion

Case Study: Mast J.A. Haribalan –OP No –H66746

Haribalan, now 11 years old, was born to his parents by LSCS when he weighed 3.4 kg and began crying shortly after his arrival into the world. This was the first time Seizure had ever

been mentioned. Passing universal rungs on the development ladder is typical. His parents first recognised he was struggling with demanding day-to-day tasks when he was 2 years old.

Vocabulary Scale Summary from 0th to 90th days:

From Figure 1, the inference of verbal scale Score 70 on 0th Day and Score 92 on 90th day in Information test. Score 76 on 0th Day and Score 90 on 90th day in General comprehension test. Score 79 on 0th Day and Score 99 on 90th day in Arithmetic test. Score 70 on 0th Day and Score 100 on 90th day in Analogy and Similarity test. Score 77 on 0th Day and Score 102 on 90th day in Vocabulary test. Score 72 on 0th Day and Score 98 on 90th day in Digital span test (Hou *et al.*, 2002).

Performance Scale Summary from 0 to 90th days:

From Figure 2, the inference of Performance scale Score 70 on 0th Day and Score 93 on 90th day in Picture completion test. Score 76 on 0th Day and Score 100 on 90th day in block design test. Score 76 on 0th Day and Score 102 on 90th day in Object assembly test. Score 77 on 0 Day and Score 100 on 90th day in coding test. Score 72 on 0 Day and Score 90 on 90th day in Maze test (Mahato, 2000).

Conclusion

Cognitive deficit is a known disorder in children. It can be understood and treated in siddha. Classical formulations of Siddha drug Brahmi ghee in cognitive deficit children showed good responses in the symptoms, lack of curiosity, poor attention, moderate response in decreasing learning activity, mild response in the symptom of retarded language skill, symptom of asking the same questions repeatedly, symptom of inability to understand and follow the directions . It exhibits good improved scores of MISIC in cognitive deficit children. Today it is recognized as an independent neurologically based disorder of significance, a major public health problem, and a topic of much research. We will overcome this disease by regular practice of Interventions, Public Policies, Personal preparation. Further research can be initiated by

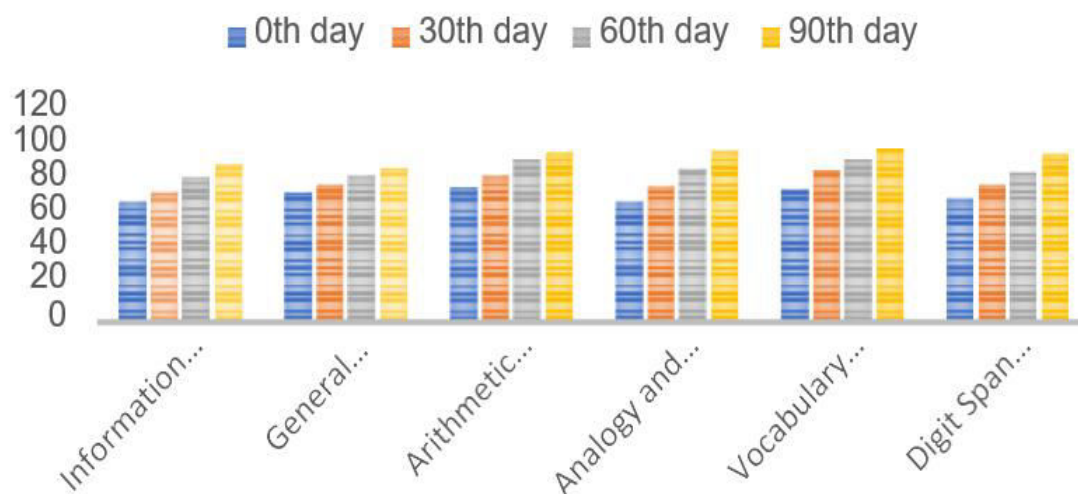


Fig.1: Vocabulary Scale Summary from 0 to 90th days.

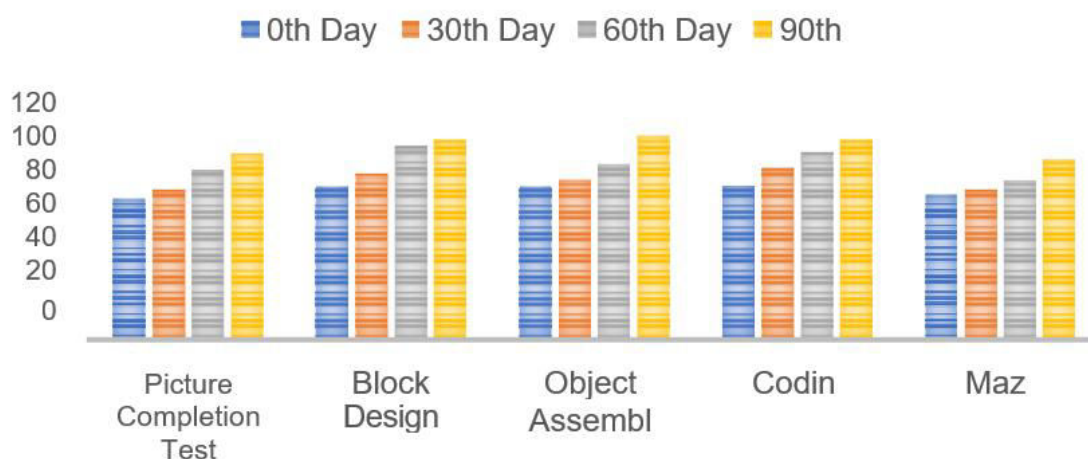


Fig. 2: Performance Scale Summary from 0 to 90th days.

taking into account the specific causative factor or Siddha treatment and also with help of Role of Families, Educational services, Effective a specific component of cognitive deficit to establish the core effect of this classical formulation.

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