IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

Recent Formulation and Evaluation of Polyherbal Antiepileptic Candy

Miss. Urvashi Sunil Jadhav , Dr. Avinash S. Jiddewar, Miss. Shraddha C. Kewate
Miss. Ishwari Gate, Miss. Nandini Kalmore, Miss. Achal Chungade
NSPM College of Pharmacy, Darwha, Yavatmal

Abstract: *Epilepsy is a chronic neurological disorder characterized by recurrent and unprovoked seizures caused by sudden abnormal electrical discharges in the brain. It is one of the most common disorders affecting the central nervous system and may occur in individuals of all age groups. According to the World Health Organization (WHO), approximately 50 million people worldwide suffer from epilepsy, making it a major global public health concern (WHO, 2023). Seizures associated with epilepsy may vary from brief lapses of attention or muscle jerks to severe and prolonged convulsions. The condition significantly affects the physical, psychological, social, and economic well-being of patients.*

Keywords: Polyherbal Anti-Epileptic Candy, Epilepsy, Herbal Formulation, Ayurvedic Candy, Brahmi Extract, Ashwagandha Extract, Jatamansi Extract, Shankhpushpi Extract, Neuroprotective Activity, Anticonvulsant Activity, Herbal Drug Delivery System, Phytoconstituents, Natural Antiepileptic Therapy, Central Nervous, System Disorders, Herbal Medicine, Polyherbal Formulation, Nutraceutical Candy, Brain Tonic, Antioxidant Activity, Dissolution Study, Friability Test, pH Determination, Weight Variation Test, Organoleptic Evaluation, Stability Study, Ayurvedic Proprietary Product, Pharmaceutical Evaluation, CNS Protective Herbs, Traditional Medicine, Herbal Therapeutics.

I. INTRODUCTION

Epilepsy is a chronic neurological disorder characterized by recurrent and unprovoked seizures caused by sudden abnormal electrical discharges in the brain. It is one of the most common disorders affecting the central nervous system and may occur in individuals of all age groups. According to the World Health Organization (WHO), approximately 50 million people worldwide suffer from epilepsy, making it a major global public health concern (WHO, 2023). Seizures associated with epilepsy may vary from brief lapses of attention or muscle jerks to severe and prolonged convulsions. The condition significantly affects the physical, psychological, social, and economic well-being of patients.

Conventional antiepileptic drugs such as phenytoin, carbamazepine, valproic acid, and phenobarbital are widely used for seizure management. However, prolonged use of these synthetic drugs is often associated with several adverse effects including sedation, dizziness, hepatotoxicity, cognitive impairment, gastrointestinal disturbances, and drug dependence (Kaur et al., 2018). In addition, poor patient compliance due to unpleasant taste and difficulty in swallowing conventional dosage forms is commonly observed, especially among pediatric and geriatric patients. Therefore, there is an increasing demand for safer, natural, and patient-friendly herbal formulations for supportive epilepsy management.

Medicinal plants have been utilized in traditional systems of medicine such as Ayurveda for centuries for the treatment of neurological disorders. Herbal medicines are considered comparatively safer, economical, and associated with fewer side effects. Various medicinal plants have been scientifically investigated for their anticonvulsant, anxiolytic, neuroprotective, and memory-enhancing properties. In the present research work, selected medicinal herbs including Brahmi (Bacopa monnieri), Ashwagandha (Withania somnifera), Jatamansi (Nardostachys jatamansi), and Shankhpushpi (Convolvulus pluricaulis) were incorporated in the formulation due to their reported beneficial effects on the central nervous system.

DOI: 10.48175/IJARSCT-35824

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

Brahmi is a well-known Ayurvedic herb reported for cognitive enhancement, neuroprotection, and anticonvulsant activity. It contains active phytoconstituents known as bacosides that improve neuronal communication and reduce oxidative stress in the brain (Singh and Dhawan, 1997). Ashwagandha possesses adaptogenic, anxiolytic, and neuroprotective activities due to the presence of withanolides and alkaloids. It is traditionally used for stress reduction and nervous system support (Kulkarni and Dhir, 2008). Jatamansi is reported to exhibit anticonvulsant and sedative properties and helps in calming neuronal excitation. Shankhpushpi is widely used as a brain tonic and memory enhancer in Ayurvedic medicine and is reported to improve mental performance and reduce anxiety.

The present study focuses on the development of a polyherbal anti-epileptic candy, which serves as a novel herbal confectionery dosage form designed to improve patient compliance, palatability, and ease of administration. Herbal candies provide several advantages such as convenient dosing, pleasant taste, longer shelf life, portability, and better acceptance among children and elderly patients. Natural excipients such as jaggery, honey, ghee, lemon juice, and permitted sweeteners were used in the formulation to enhance taste, texture, stability, and overall acceptability of the product.

The prepared polyherbal candy was evaluated for various physicochemical parameters including organoleptic characteristics, weight variation, pH determination, friability, dissolution behavior, and stability studies. The objective of the present research was to formulate a stable, effective, safe, and patient-friendly herbal dosage form that may provide supportive management in epilepsy and improve the quality of life of affected individuals.

Figure 1. Raw materials used in the formulation and the prepared polyherbal nutraceutical chews.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

II. FORMULATION CHARACTERISTICS

PARAMETER	DESCRIPTION
Dosage Form	Polyherbal Medicated Candy
Colour	Dark brown
Shape	Square – shape molded candy
Average Weight	7.89
Taste	Sweet with mild menthol flavour
Odour	Characteristic aromatic herbal odour
Texture	Smooth and slightly hard
Nature	Herbal oral confectionery

Figure No: 2. Formulation characteristics Table

Aim

Recent Formulation & Evaluation of Polyherbal Antiepileptic Candy

III.OBJECTIVE

1. To develop a novel herbal candy dosage form using Brahmi, Ashwagandha, Jatamansi, and Shankhpushpi for supportive epilepsy management.
2. To utilize medicinal herbs possessing anticonvulsant, anxiolytic, neuroprotective, adaptogenic, and cognitive-enhancing properties in a patient-friendly formulation.
3. To improve palatability and patient compliance by masking the unpleasant taste of herbal drugs through confectionery formulation.
4. To formulate an oral herbal candy suitable for pediatric and geriatric patients who may experience difficulty in swallowing conventional dosage forms.
5. To evaluate the prepared formulation for physicochemical parameters including:
   - Weight variation
   - pH determination
   - Friability
   - Dissolution behavior
   - Organoleptic properties
   - Stability studies
6. To study the dissolution profile of the herbal candy for assessing the release behavior of active phytoconstituents.
7. To determine the mechanical stability and handling characteristics of the candy through friability testing.
8. To assess the stability of the formulation under suitable storage conditions.
9. To develop a cost-effective, safe, and herbal alternative dosage form with minimal side effects compared to conventional antiepileptic drugs.
10. To combine traditional Ayurvedic knowledge with modern pharmaceutical formulation techniques for the development of an innovative herbal confectionery system.

IV. LITERATURE REVIEW

A] Manchishi (2018)

Manchishi (2018) reviewed a wide range of medicinal plants with anticonvulsant activity and critically discussed their experimental formulation and extraction approaches used in preclinical studies. The author highlighted that most herbal anticonvulsant investigations involve preparation of crude aqueous, ethanolic, and hydroalcoholic extracts, which are then standardized based on phytochemical screening for alkaloids, flavonoids, and terpenoids. In formulation-related

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 11, May 2026 Impact Factor: 8.2

observations, the study noted that herbal extracts are commonly administered in oral suspensions, capsules, or intraperitoneal injections in animal models (PTZ and MES seizures), rather than in advanced dosage forms. Manchishi emphasized that although these extracts show significant seizure protection, there is a lack of transformation into patient-friendly dosage systems. This gap provides a strong scientific basis for developing novel formulations like herbal candies, where standardized extracts can be incorporated into a stable, palatable matrix to improve compliance and controlled dosing.

B] Liu et al. (2017)

Liu et al. (2017) provided an extensive review of traditional antiepileptic medicinal plants and described their formulation approaches primarily in experimental and ethnopharmacological contexts. The authors reported that most herbal anticonvulsant studies utilize simple extraction techniques such as maceration, Soxhlet extraction, and decoction methods, followed by concentration and drying to obtain crude extracts. These extracts are then formulated into oral dosage forms like powders, decoctions, or capsules for experimental evaluation in seizure models. The study also highlighted key plants such as Bacopa monnieri, Withania somnifera, and Acorus calamus, which have shown promising CNS depressant and anticonvulsant effects. However, the authors clearly pointed out that there is a lack of modern pharmaceutical formulation development, especially in innovative delivery systems like gummies or candies. This supports the need for converting these extracts into herbal confectionery-based systems for improved stability, taste masking, and patient compliance.

C] Sharma et al. (Polyherbal Formulation Study)

Sharma et al. conducted a significant polyherbal formulation and evaluation study using a combination of Terminalia chebula, Tinospora cordifolia, Acorus calamus, Convolvulus pluricaulis, and Centella asiatica. The formulation was prepared by standardized extraction of each plant material using hydroalcoholic solvent, followed by drying and blending in defined ratios to obtain a uniform polyherbal powder mixture. This formulation was then administered orally in experimental animals for anticonvulsant evaluation using PTZ-induced and MES-induced seizure models. The results showed a significant increase in seizure threshold and reduction in seizure severity. Biochemical studies demonstrated enhanced GABA levels, increased antioxidant enzyme activity (SOD, catalase, glutathione), and decreased lipid peroxidation, indicating strong neuroprotective action. The authors concluded that polyherbal combination therapy enhances synergistic activity, making it more effective than individual extracts. This formulation-based evidence strongly supports the concept of incorporating multiple standardized herbal extracts into a single chewable candy system for sustained neurological benefits.

D] Kaur et al. (2021)

Kaur et al. (2021) reviewed phytoconstituent-based anticonvulsant therapy and discussed formulation strategies for improving herbal drug delivery systems. The authors described that most active compounds such as flavonoids and alkaloids are extracted using solvent extraction methods and then standardized using chromatographic techniques (HPLC, TLC) before pharmacological evaluation. In terms of formulation, the study highlighted that these compounds are often unstable in crude form and therefore require encapsulation, solid dispersion, or incorporation into oral solid dosage forms like tablets and capsules to improve stability and bioavailability. The authors also suggested that innovative dosage forms such as chewable formulations, gummies, and candies can significantly enhance patient adherence, particularly in long-term neurological disorders like epilepsy. This directly supports the development of herbal anti-epileptic candy as a modern dosage form.

E] Kalra et al. (2024)

Kalra et al. (2024) provided an ethnopharmacological review of antiepileptic medicinal plants and discussed their traditional and experimental formulation methods. The study reported that most plants are traditionally prepared as

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 11, May 2026 Impact Factor: 8.2

decoctions, infusions, and crude powders, which are then used directly or tested in preclinical models. The authors emphasized that modern research is gradually shifting toward standardized extraction, phytochemical isolation, and controlled dosing formulations. However, they noted that very few studies have translated these herbs into pharmaceutical dosage forms such as syrups, tablets, or confectionery-based systems. The study strongly recommended the development of novel herbal delivery systems that ensure dose accuracy, stability, and improved organoleptic properties, making herbal candies a promising approach for epilepsy management.

Integrated Conclusion (Formulation Perspective)

Overall, the reviewed literature clearly shows that while numerous medicinal plants possess strong anticonvulsant activity, their formulation development is still largely limited to crude extracts and basic dosage forms used in experimental studies. Very few studies have advanced toward modern pharmaceutical systems such as chewable candies or gummies, despite strong evidence of efficacy. This creates a significant research gap and strongly justifies the development of an anti-epileptic herbal candy formulation, which can combine standardized polyherbal extracts into a stable, palatable, and patient-friendly dosage form with improved compliance and therapeutic consistency.

V. MATERIALS AND METHODS

1. Brahmi Powder

- **Biological Name**: Bacopa monnieri
- **Family**: Scrophulariaceae
- **Part Used**: Whole plant powder

- **Description**

  Brahmi is a well-known Ayurvedic medicinal herb traditionally used as a brain tonic and nervine stimulant. It contains active phytoconstituents such as bacosides, alkaloids, flavonoids, and saponins which contribute to its neuroprotective and cognitive-enhancing activities.

- **Role in Formulation**

  1.Provides neuroprotective activity
  2.Helps in reducing neuronal excitability
  3.Improves memory and cognitive function
  4.Supports anticonvulsant activity

- **Research Significance**

  Scientific studies have reported that Brahmi possesses antioxidant and anticonvulsant effects by modulating neurotransmitter activity in the central nervous system.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

2. Ashwagandha Powder

- **Biological Name:** Withania somnifera
- **Family**: Solanaceae
- **Part Used**: Root powder
- **Description**

  Ashwagandha is an important adaptogenic herb widely used in Ayurveda for stress management and nervous system disorders. It contains withanolides, sitoindosides, and alkaloids responsible for its pharmacological activities.

- **Role in Formulation**

  1.Exhibits anxiolytic and adaptogenic activity
  2.Reduces stress-induced neuronal damage
  3.Enhances nervous system stability
  4.Supports calming effect in epilepsy
- **Research Significance**

  Research studies indicate that Ashwagandha demonstrates neuroprotective and anticonvulsant effects through antioxidant and GABA-mimetic mechanisms.

3. Jatamansi Powder

- **Biological Name:** Nardostachys jatamansi
- **Family:** Caprifoliaceae
- **Part Used:** Rhizome powder
- **Description**

  Jatamansi is an aromatic medicinal herb traditionally used for mental relaxation and neurological disorders. The herb contains jatamansone, sesquiterpenes, and essential oils possessing sedative and anticonvulsant activities.

- **Role in Formulation**

  1.Produces calming effect on CNS
  2.Acts as mild sedative
  3.Helps in seizure control
  4.Improves mental relaxation

Research Significance

Previous studies have demonstrated that Jatamansi possesses significant anticonvulsant and neuroprotective activity in experimental seizure models.

DOI: 10.48175/IJARSCT-35824

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

4. Shankhpushpi Powder

- **Biological Name:** Convolvulus pluricaulis
- **Family:** Convolvulaceae
- **Part Used:** Whole plant powder
- **Description**
  Shankhpushpi is a traditional Ayurvedic herb used as a brain tonic and memory enhancer. It contains flavonoids, alkaloids, glycosides, and coumarins responsible for its therapeutic activities.
- **Role in Formulation**
  1.Enhances cognitive function
  2.Provides anxiolytic activity
  3.Supports central nervous system relaxation
  4.Improves mental performance

- **Research Significance**
  Studies suggest that Shankhpushpi exhibits nootropic, anticonvulsant, and anxiolytic properties beneficial for neurological disorders.

5. Sugar (Sucrose)

- **Category:** Sweetening agent and candy base
- **Description**
  Sugar was used as the primary candy-forming agent. Upon heating, it forms a hard crystalline matrix responsible for candy texture and stability.
- **Role in Formulation**
  1.Provides sweetness
  2.Forms candy structure
  3.Enhances patient acceptability
  4.Improves texture and appearance

6. Liquid Glucose

- **Category:** Anti-crystallizing agent
- **Description**
  Liquid glucose is a viscous carbohydrate syrup used in confectionery preparations to prevent crystallization and improve smoothness.
- **Role in Formulation**
  1.Prevents sugar crystallization
  2.Improves consistency
  3.Enhances smooth texture
  4.Increases stability of candy

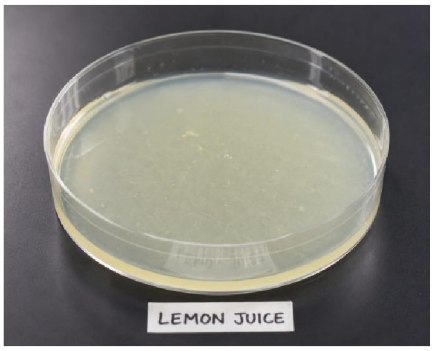
IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

7. Honey

- **Category:** Natural sweetener and binding agent
- **Description**
  Honey is a natural nutritive sweetener possessing antimicrobial and soothing properties.
- **Role in Formulation**
  1.Enhances sweetness
  2.Improves flavor and mouthfeel
  3.Acts as natural preservative
  4.Provides binding property

8. Lemon Juice

- **Category:** Acidulant
- **Description**
  Lemon juice was used instead of citric acid to provide mild acidity and improve flavor.
- **Role in Formulation**
  1.Enhances taste
  2.Maintains acidic pH
  3.Improves stability
  4.Prevents excessive sweetness



9. Beetroot Powder

- **Category:** Natural colouring agent
- **Description**
  Beetroot powder contains betalain pigments which impart natural reddish colour to the candy.
- **Role in Formulation**
  1.Provides natural colour
  2.Improves aesthetic appearance
  3.Enhances patient acceptability

10. Peppermint Oil

- **Category:** Flavoring agent
- **Description**
  Peppermint oil is an aromatic essential oil used to provide cooling sensation and pleasant flavour.
- **Role in Formulation**
  1.Masks herbal taste
  2.Improves flavour
  3.Enhances patient compliance
  4.Provides refreshing sensation

DOI: 10.48175/IJARSCT-35824

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

VI. METHOD OF PREPARATION

1. Preparation of Herbal Powder Mixture

All herbal drugs including Brahmi, Ashwagandha, Jatamansi, and Shankhpushpi were dried properly and powdered separately using a mortar and pestle. The powders were passed through sieve no. 80 to obtain uniform particle size and then mixed thoroughly to prepare a homogeneous polyherbal powder mixture. Each polyherbal drug having weight 100 mg .

Figure No : 3. Preparation of herbal powder

2. Preparation of Candy Base

Accurately weighed sugar was transferred into a clean stainless-steel pan and a small quantity of water was added. The mixture was heated on a low flame with continuous stirring until complete dissolution of sugar occurred and a clear syrup was obtained.

3. Addition of Liquid Glucose and Honey

Liquid glucose and honey were added slowly into the sugar syrup with continuous stirring. Liquid glucose was incorporated to prevent crystallization and improve the smoothness and texture of the candy formulation.

4. Heating to Hard Crack Stage

The syrup was heated further until it reached the hard crack stage. The stage was confirmed by performing a cold water test, in which a small amount of syrup was dropped into cold water. Formation of a hard and brittle mass indicated attainment of the desired candy stage.

5. Cooling of Syrup

The prepared syrup was removed from heat and allowed to cool for approximately 2–3 minutes. Slight cooling was necessary to prevent thermal degradation of heat-sensitive phytoconstituents present in the herbal powders.

6. Incorporation of Herbal Powders

The prepared polyherbal powder mixture was added slowly into the cooled syrup with continuous stirring to ensure uniform distribution of herbal ingredients throughout the candy mass.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 11, May 2026 Impact Factor: 8.2

7. Addition of Flavouring and Colouring Agents

Lemon juice, peppermint oil, and beetroot powder were added to the formulation. Lemon juice was incorporated to improve taste and maintain acidity, peppermint oil was used as a flavoring agent, and beetroot powder was added as a natural coloring agent to enhance appearance.

8. Molding of Candy

The final viscous mass was poured immediately into pre-greased square-shaped molds and allowed to settle uniformly.

9. Cooling and Solidification

The molded candies were allowed to cool at room temperature for 20–30 minutes until complete hardening and solidification occurred.

10. De-molding and Packaging

The prepared candies were removed carefully from the molds and packed in airtight containers to protect them from moisture and environmental contamination.

Figure No: 4. Preparation of candy

VII. EVALUTION PARAMETER OF SOAP

1. Physical appearance

- **Colour:** Dark brown
- **Shape:** Square – shape molded candy
- **Average Weight :** 7.89
- **Taste :** Sweet with mild menthol flavour
- **Odour:** Characteristic aromatic herbal odour
- **Texture:** Smooth and slightly hard
- **Nature**: Herbal oral confectionery

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

2. PH Determination

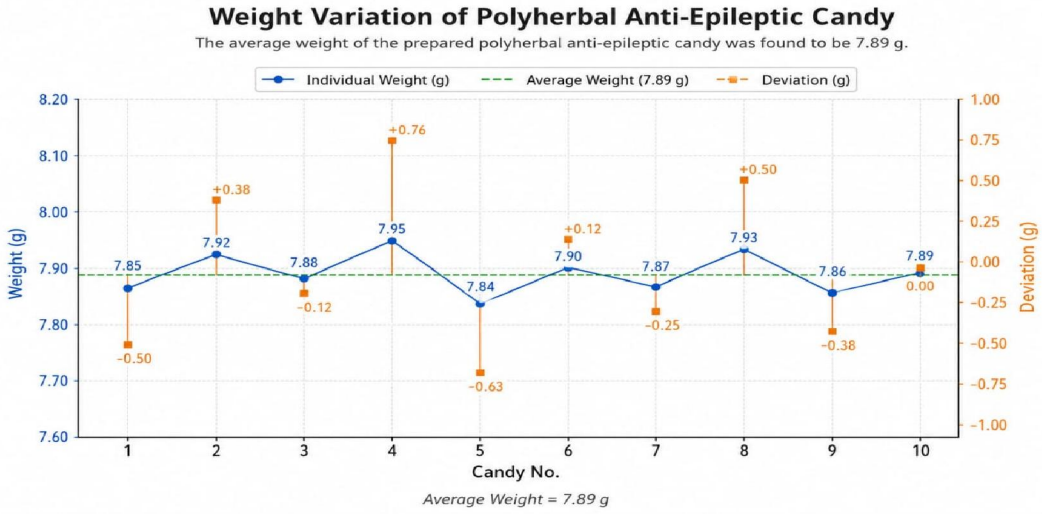
Range: 5.67 ± 0.05

Nature: Slightly acidic

Candy No.	Individual Weight (g)	Average Weight (g)	Deviation
1	7.85	7.89	-0.50
2	7.92	7.89	+0.38
3	7.88	7.89	-0.12
4	7.95	7.89	+0.76
5	7.84	7.89	-0.63
6	7.90	7.89	+0.12
7	7.87	7.89	-0.25
8	7.93	7.89	+0.50
9	7.86	7.89	-0.38
10	7.89	7.89	0.00

3.Weight Variation

The average weight of the prepared polyherbal anti-epileptic candy was found to be 7.89



IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

4.Frability Test

Friability testing was carried out to evaluate the mechanical strength and resistance of candy to abrasion and breakage.

Procedure

The candies were subjected to friability testing using Roche friabilator at 25 rpm for 4 minutes (100 revolutions).

Formula

% Friability = w0-w1/w0 x 100

Where:

W0=Initial weight

W1=Final weight

Observation

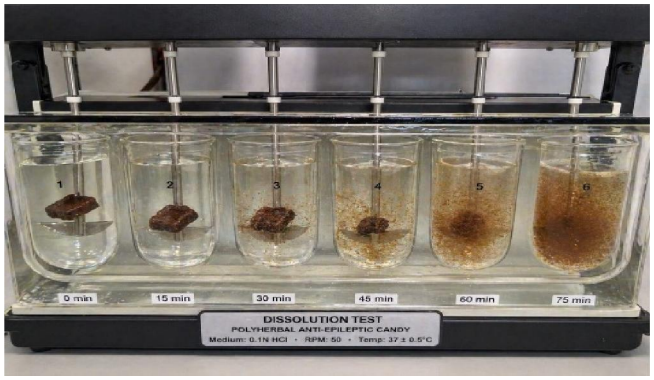
Parameter	Observation
Initial weight	7.89 g
Final weight	7.82 g
%friability	0.89 g

The friability value was below 1% , including good ,mechanical stability.

5. Dissolution Study

Time (min)	Approx.Drug release
15	20%
30	40%
45	60%
60	80%
75	95-100%

The study was carried out using USP Type II dissolution apparatus in 0.1 N HCl at 37 ± 0.5°C and 50 rpm.



IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

6.Stability Testing

The prepared candies were stored in airtight containers at room temperature and evaluated periodically.

Parameter	Observation
Colour Change	No significant change
Odour	Stable
Texture	No stickiness
Shape	Maintained
Stability Period	Stable for 30 Days

VIII. BATCHES TABLE

Ingredients	A1	A2	A3	A4
Brahmi Extract	100 mg	120 mg	140 mg	160 mg
Ashwagandha Extract	100 mg	120 mg	140 mg	160 mg
Shankhpushpi Extract	50 mg	75 mg	100 mg	125 mg
Jatamansi Extraxt	50mg	75 mg	100 mg	125 mg
Sugar	5 gm	5.5 gm	6 gm	6.5 gm
Honey	1 gm	1.5 gm	1.5 gm	2 gm
Liquid Glucose	1 gm	1.5 gm	2 gm	2 gm
Lemone Juice	2 drop	2 drop	3 drop	3 drop
Peppermint Oil	1 drop	1 drop	1 drop	1 drop
Beetroot Powder	q.s	q.s	q.s	q.s
Distilled Water	q.s	q.s	q.s	q.s

Figure No: 5. Batch Table

IX. OBSERVATION TABLE

Sr.No.	Test Parameter	Formulation Code A	Formulation Code B	Formulation Code C	Acceptance Criteria
1	Colour	Dark Brown	Dark Brown	Dark Brown	Uniform appearance
2	Odour	Characteristic Herbal Odour	Characteristic Herbal Odour	Characteristic Herbal Odour	Pleasant herbal odour
3	Shape	Square	Square	Square	Uniform shape
4	Surface Texture	Smooth & Glossy	Smooth & Glossy	Smooth & Glossy	Non-sticky surface
5	Average Weight	7.82 g	7.89 g	7.94 g	±5% deviation
6	Weight Variation	Pass	Pass	Pass	Within pharmacopeial limit
7	PH	5.54	5.67	5.71	Suitable for oral use
8	Friability	0.91%	0.74%	0.69%	Less than 1%
9	Hardness	Moderate	Moderate	Good	Sufficient mechanical strength
10	Solubility	Slowly Soluble	Slowly Soluble	Slowly with	Uniform

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 11, May 2026 Impact Factor: 8.2

				gradual dispersion	dissolution
11	Dissolution	18 min	16 min	15 min	Controlled release behaviour
12	Appearance After Storage	No change observed	No change observed	No change observed	Stable formulation
13	Taste	Sweet with mild herbal taste	Sweet with mild herbal taste	Pleasant Sweet herbal taste	Acceptable palatability
14	Overall Acceptability	Good	Very Good	Excellent	Suitable for administration

Figure No : 6. Observation Table

X. RESULT AND INTERPRETATION

- The present study was carried out to formulate and evaluate a novel polyherbal anti-epileptic candy using selected herbal ingredients possessing neuroprotective, anticonvulsant, and cognitive-enhancing properties. The prepared candy formulations were evaluated for various physicochemical, organoleptic, and stability parameters to determine their suitability as an oral herbal medicated confectionery dosage form.
- The prepared candies exhibited uniform dark brown colour, characteristic herbal odour, smooth glossy appearance, and square shape with acceptable consistency. The organoleptic properties of the formulations were found satisfactory and suitable for oral administration. The pleasant sweet taste obtained due to jaggery and honey incorporation improved the palatability of the herbal formulation and may enhance patient compliance.
- The average weight variation test indicated that all formulations complied with acceptable pharmacopeial limits, confirming uniform distribution of ingredients and proper mould filling during preparation. The average weight of the optimized formulation was found to be approximately 7.89 g, demonstrating consistency in batch preparation.
- The pH determination study revealed that the candy possessed a slightly acidic pH ranging between 5.5–5.7, which is considered suitable for oral consumption and compatible with salivary pH. The obtained pH values suggested reduced chances of oral irritation and acceptable stability of herbal constituents.
- Friability testing demonstrated that the percentage weight loss of the candy was below 1%, indicating adequate mechanical strength and resistance to abrasion during handling, packaging, and transportation. The optimized formulation exhibited comparatively lower friability values, suggesting improved structural stability and hardness.
- The dissolution study showed gradual and uniform release of herbal constituents from the candy matrix. The controlled dissolution behaviour may contribute to prolonged release and better availability of active phytoconstituents in the oral cavity and gastrointestinal tract. Solubility studies further confirmed satisfactory dispersion of the candy in aqueous medium without formation of undesirable particulate matter.
- No significant changes in colour, odour, texture, or physical appearance were observed during the stability observation period, indicating acceptable stability of the prepared formulation under normal storage conditions.
- Based on the obtained results, the optimized polyherbal anti-epileptic candy formulation demonstrated satisfactory pharmaceutical characteristics, good stability profile, acceptable mechanical strength, and improved organoleptic properties. The study suggests that the prepared herbal candy may serve as a promising alternative herbal dosage form for supportive management of epilepsy and neurological disorders. However, further in vivo pharmacological studies and clinical investigations are required to establish its therapeutic efficacy, safety, and long-term stability.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

XI. DISCUSSION

11.1 Formulation Development of Polyherbal Anti-Epileptic Candy

The polyherbal anti-epileptic candy was successfully prepared by incorporating herbal extracts such as Brahmi extract, Ashwagandha extract, Jatamansi extract, and Shankhpushpi extract into a jaggery-honey based candy matrix. Lemon juice was utilized as a natural acidifying and flavour-enhancing agent. The selected ingredients were blended uniformly to obtain a homogenous formulation with acceptable consistency and appearance.

The prepared candies exhibited a uniform square shape with glossy surface and dark brown colour due to the presence of herbal extracts and jaggery. The optimized formulation showed good moulding characteristics without cracking or deformation. The herbal candy demonstrated satisfactory organoleptic properties including pleasant taste, characteristic odour, and smooth texture, which may improve patient acceptability during oral administration.

11.2 Evaluation of Physicochemical Parameters

The prepared candy formulations were evaluated for various physicochemical parameters including weight variation, pH determination, friability, dissolution behaviour, and solubility characteristics.

The average weight variation study revealed uniformity in candy weight with minimal deviation among individual samples, indicating proper mixing and uniform distribution of herbal constituents during formulation. The optimized candy formulation showed an average weight of approximately 7.89 g, confirming reproducibility of the manufacturing process.

The pH determination study indicated that the candy possessed a slightly acidic pH in the range of 5.5–5.7. This pH range is considered suitable for oral administration and indicates compatibility with salivary conditions. The obtained results suggest that the formulation is unlikely to cause oral irritation and may maintain stability of the incorporated herbal constituents.

Friability testing demonstrated satisfactory mechanical strength of the prepared candies. The percentage friability value was found to be within acceptable limits, indicating good resistance to abrasion, handling, transportation, and storage conditions. The low friability value confirmed adequate hardness and structural integrity of the candy matrix.

Dissolution studies revealed gradual dissolution of the candy in aqueous medium, suggesting controlled release behaviour of active herbal constituents. The optimized formulation exhibited uniform dispersion without formation of undesirable residue, indicating satisfactory solubility and drug release characteristics.

11.3 Organoleptic and Stability Evaluation

The organoleptic evaluation demonstrated that the prepared candies possessed acceptable sensory characteristics including colour, odour, taste, texture, and appearance. The sweetening effect produced by jaggery and honey effectively masked the bitter taste of herbal ingredients, thereby improving palatability and patient compliance.

Stability observations indicated that no significant changes in colour, odour, texture, shape, or consistency were observed during the storage period. The prepared formulation remained physically stable without evidence of microbial contamination, cracking, stickiness, or moisture absorption under normal storage conditions. These findings suggest good shelf-life stability of the optimized formulation.

11.4 Therapeutic Significance of Herbal Ingredients

The selected herbal ingredients are traditionally known for their beneficial effects on the central nervous system. Brahmi has been widely reported for its neuroprotective, memory-enhancing, and anticonvulsant activities. Ashwagandha possesses adaptogenic and anxiolytic properties which may help in reducing neurological stress and neuronal excitability. Jatamansi is traditionally used as a brain tonic and sedative herb with potential anticonvulsant activity. Shankhpushpi has been reported to improve cognitive function and provide calming effects on the nervous system.

The synergistic combination of these herbal ingredients in candy dosage form may provide supportive management in epilepsy and other neurological disorders. Additionally, the herbal confectionery formulation offers advantages such as improved patient convenience, ease of administration, enhanced taste masking, and better acceptability among paediatric and geriatric patients.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 6, Issue 11, May 2026
Impact Factor: 8.2

XII. CONCLUSION

- The present study successfully formulated and evaluated a polyherbal anti-epileptic candy containing selected medicinal herbs traditionally known for their neuroprotective and anticonvulsant properties. The formulation was developed using herbal extracts of Brahmi, Ashwagandha, Jatamansi, and Shankhpushpi incorporated into a palatable candy base containing jaggery, honey, ghee, and lemon juice.
- The prepared candy formulation exhibited satisfactory physicochemical characteristics including uniform weight variation, acceptable pH, good mechanical strength, low friability, and desirable dissolution behaviour. Organoleptic evaluation revealed that the formulation possessed an acceptable appearance, pleasant odour, smooth texture, and improved palatability, thereby enhancing patient compliance and acceptability.
- The optimized formulation demonstrated good stability under normal storage conditions without significant changes in colour, texture, odour, or consistency. The herbal constituents used in the formulation may contribute synergistically toward neuroprotective and supportive anti-epileptic activity due to their traditionally reported therapeutic properties.
- The study highlights the potential of herbal medicated candy as an innovative oral delivery system for neurological support and management of epilepsy. The developed polyherbal anti-epileptic candy may serve as a convenient, patient-friendly, and natural alternative dosage form, particularly for paediatric and geriatric patients who experience difficulty in swallowing conventional tablets or capsules.
- Overall, the findings suggest that the formulated polyherbal anti-epileptic candy possesses promising pharmaceutical and therapeutic potential. However, further preclinical studies, pharmacological investigations, toxicity studies, and clinical trials are necessary to establish its efficacy, safety, and long-term therapeutic benefits in the management of epilepsy and related neurological disorders.

REFERENCES

1. Khandelwal KR. Practical Pharmacognosy: Techniques and Experiments. 23rd ed. Pune: Nirali Prakashan; 2019.
2. Kokate CK, Purohit AP, Gokhale SB. Pharmacognosy. 56th ed. Pune: Nirali Prakashan; 2021.
3. Tripathi KD. Essentials of Medical Pharmacology. 8th ed. New Delhi: Jaypee Brothers Medical Publishers; 2019.
4. Sharma PV. Dravyaguna Vijnana. Vol. II. Varanasi: Chaukhamba Bharati Academy; 2018.
5. Ayurvedic Pharmacopoeia of India. Part I, Vol. I–IX. New Delhi: Ministry of AYUSH, Government of India; 2016.
6. World Health Organization (WHO). WHO Guidelines for Assessing Quality of Herbal Medicines with Reference to Contaminants and Residues. Geneva: WHO; 2007.
7. Harborne JB. Phytochemical Methods: A Guide to Modern Techniques of Plant Analysis. 3rd ed. London: Chapman and Hall; 2005.
8. Indian Pharmacopoeia Commission. Indian Pharmacopoeia. Ghaziabad: Government of India, Ministry of Health and Family Welfare; 2022.
9. Rang HP, Dale MM, Ritter JM, Flower RJ. Rang and Dale's Pharmacology. 9th ed. London: Elsevier; 2020.
10. Evans WC. Trease and Evans Pharmacognosy. 16th ed. London: Saunders Elsevier; 2009.
11. Mukherjee PK. Quality Control of Herbal Drugs. 2nd ed. New Delhi: Business Horizons Pharmaceutical Publishers; 2007.
12. Brunton LL, Hilal-Dandan R, Knollmann BC. Goodman and Gilman's The Pharmacological Basis of Therapeutics. 13th ed. New York: McGraw-Hill Education; 2018.
13. Nadkarni KM. Indian Materia Medica. Vol. I. Mumbai: Popular Prakashan; 2015.
14. Anonymous. The Wealth of India: A Dictionary of Indian Raw Materials and Industrial Products. New Delhi: CSIR Publications; 2012.
15. Sharma RK, Dash B. Charaka Samhita. Varanasi: Chaukhamba Sanskrit Series Office; 2017.

IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429 Volume 6, Issue 11, May 2026 Impact Factor: 8.2

16. Singh RH. Exploring Larger Evidence-base for Contemporary Ayurveda. Varanasi: Chaukhamba Sanskrit Series Office; 2010.
17. Kulkarni SK. Handbook of Experimental Pharmacology. 4th ed. New Delhi: Vallabh Prakashan; 2012.
18. Govindarajan R, Vijayakumar M, Pushpangadan P. Antioxidant approach to disease management and the role of herbal antioxidants. Journal of Ethnopharmacology. 2005;99(2):165–178.
19. Patel DK, Kumar R, Laloo D, Hemalatha S. Natural medicines from plant source used for therapy of epilepsy: A review. Journal of Ethnopharmacology. 2012;143(1):1–15.
20. Mathew J, Paul J, Nandhu MS. Herbal medicines in epilepsy management. International Journal of Pharmaceutical Sciences Review and Research. 2015;30(2):120–126.
21. Singh HK, Dhawan BN. Neuropsychopharmacological effects of the Ayurvedic nootropic Bacopa monnieri Linn. (Brahmi). Indian Journal of Pharmacology. 1997;29:359–365.
22. Kulkarni SK, Dhir A. Withania somnifera: An Indian ginseng. Progress in Neuro-Psychopharmacology and Biological Psychiatry. 2008;32(5):1093–1105.
23. Rahman H, Eswaraiah MC, Dutta AM. Neuroprotective activity of Nardostachys jatamansi. International Journal of Pharmaceutical Sciences and Research. 2011;2(4):768–773.
24. Sharma K, Bhatnagar M, Kulkarni SK. Effect of Convolvulus pluricaulis on learning and memory in rodents. Indian Journal of Experimental Biology. 2010;48(5):479–485.
25. United States Pharmacopoeia (USP). USP-NF General Chapters: Dissolution and Friability Tests. Rockville, MD: United States Pharmacopeial Convention; 2021.
26. Lachman L, Lieberman HA, Kanig JL. The Theory and Practice of Industrial Pharmacy. 3rd ed. Mumbai: Varghese Publishing House; 2009.
27. Aulton ME. Aulton's Pharmaceutics: The Design and Manufacture of Medicines. 5th ed. London: Elsevier; 2018.
28. Banker GS, Rhodes CT. Modern Pharmaceutics. 4th ed. New York: Marcel Dekker Inc.; 2005.
29. Allen LV, Popovich NG, Ansel HC. Ansel's Pharmaceutical Dosage Forms and Drug Delivery Systems. 10th ed. Philadelphia: Lippincott Williams & Wilkins; 2014.
30. Remington JP. Remington: The Science and Practice of Pharmacy. 22nd ed. London: Pharmaceutical Press; 2013