



AYUSH: International Research Journal of Ayurveda Teachers Association

Journal Home Page: www.airjata.org

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Experiment

Title of Article

Formulation of Novel Herbal Shampoo Based on Human Prakriti: Perception of First BAMS Professionals

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Article Info:

Article History:

Received: 22 June 2023

Accepted: 10 Dec 2023

Published: 05 May 2024

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ISSN No.: 2583-5971

ABSTRACT

Strong, long, and healthy hair significantly enhances one's personality. Studies have shown that chemical-based shampoos, which contain surfactants, strip natural oils from hair and scalp, leaving them dry and dull. Long-term use of surfactants like sodium lauryl sulfate and sodium laureth sulfate can even disrupt hormones. Individuals with *vata prakriti* typically have dry and thin hair prone to breakage, while *pitta prakriti* leads to early greying, though with somewhat smoother hair. *Kapha prakriti* is characterized by thicker hair. Hair color and other attributes are also influenced by *prakriti*. Parameters such as *Roma kupa sankhya*, *keshothpathi*, *kesha poshana*, and *kesha* are used for various clinical assessments. Classical texts, or *samhithas*, emphasize the importance of hair care, including trimming and maintenance. This study aimed to formulate a completely herbal shampoo that matches the effectiveness of synthetic shampoos available on the market. We used traditional plant parts and extracts known for their hair cleansing properties across Asia and now globally. The ingredients are safer than silicones and polyquaterniums. Our effort resulted in a completely natural, herbal, and *prakriti*-based shampoo, free from sulfates and parabens, tailored to the individual's *prakriti*, an inherent nature according to Ayurvedic science that remains unchanged throughout one's lifetime.

Keywords: Hair, Natural, *Prakriti*, Shampoo

INTRODUCTION

Shampoos are most probably used as cosmetics. It is used for cleaning the scalp and hair in our daily lives as a hair care product. They are most likely utilized as beautifying agents and are a viscous solution of detergents containing

suitable additives, preservatives and active ingredients. They are applied on damp hair, massaged into the scalp, and cleansed afterward by rinsing with water. The ultimate aim of using shampoo is to remove dirt and

pollution that is build up on the hair without removing necessary sebum^[1-3]. Many synthetic shampoos are present in the market that are both medicated and non-medicated and claim to be easy on the scalp but damage the hair quality in the long run; however, herbal shampoos popularized due to their plant-based natural origin which is, of course, safer, increases consumer demand, protects your hair and are free from side effects. Surfactants (synthetic) are added mainly for cleansing and foaming properties in synthetic shampoos, but the continuous use of these surfactants causes to serious effects such as, dryness of hair, scalp irritation, eye irritation, loss of hair.^[4] Shampoos having natural herbs are alternative to synthetic shampoo. Formulating herbal shampoo containing only natural substances is very difficult and is a tedious process.^[5] Various medicinal plants have been used traditionally for years around the world and are incorporated in shampoo formulations with marvelous effects on hair^[6]. These medicinal plants are used in the form of extracts, crude, powdered, or their derivatives^[7]. In this study, the herbal shampoo was made using suitable ingredients such as Hibiscus rosa-sinensis, Emblica officinalis^[8], Acacia concinna, Sapindus indica, Eclipta prostrata, Aloe barbadensis, and Cassia auriculata in different proportions.

Ayurvedic herbal shampoo is a widely used product all over the world. It has been used for many years. Nowadays, markets are filled with chemical based shampoo. Chemicals can cause some hair problems but it is also responsible for cancerous disorders and honestly, the future of shampoo is going to be the herbal one^[9]. It contains all the natural ayurvedic ingredients with various herb extracts. The natural herb extracts help hair to improve^[10] and retain moisture, shine, growth and strength. The most important thing about ayurvedic herbal shampoo is that it has no side effects. The ayurvedic shampoo contains amla (gooseberry), reetha, shikakai, alovera, brahmi, alovera extract etc. It contains all the natural ingredients. The future market will be only for ayurvedic shampoo as it is completely free from chemicals and without any side effects^[11]. The term *Kesha* is formed from the root 'shi' with the prefix 'ech' and conjugation 'kulak', which means 'head'. By "*Kesha Mastake Shete,*" *halayudha kosha* has illustrated it^[12]. *Mastak*, *Shirah*, and *Kesha* are components that grow on the scalp. *Kesha* is considered a *parthiva dravya*^[13], i.e. it is derived from the *prithvi mahabhuta* and is one among the *pitruja bhava* (paternal entities)^[14]. In the ayurveda text *putreshti yajna* mentioned that it help to obtain a healthy progeny^[15], with black, soft and long hair is among the ideal features.

It is formed in the third month of intra-uterine life along with the formation of other organs. *Kesha* is produced as the *kitta bhaga* (waste portion)^[16] of the food^[17] and also as a byproduct of *asthi dhatu*^[18]. In the signs of longevity, newborn having discrete, soft, sparse, oily, deep-rooted and black hairs will enjoy a long life^[19]. The physical attributes of the hair also change according to the *prakriti* (body constitution) and *sara lakshana* (constitutional essence) of the person. The person having *vata prakriti* will have coarse and small hairs^[20], whereas the person belonging to *pitta prakriti* will have soft, sparse, grey hair followed by early hair fall^[21]. The person having a constitutional essence of *meda dhatu* will have soft and oily hairs on his body.^[22] While enumerating, it is mentioned that there are about 29,956 *kesha* present in the body^[23]. The rationale behind this number is that there are about a similar number of *sira* present in the body and these hairs are attached to the end openings of these *siras* hence the number^[24]. *Atma*(soul) is the possessing authority of knowledge and knowledge is perceived with the help of *indriyas* (sensory organs). *Sattva* or *Manas*^[25] being an *ubhayendriya* (both *jnanendriya* and *karmendriya*) assists in conveying the knowledge to the *atma*. The hair and nails don't have *atma* and *indriya*, specifically the *sparshanendriya*. *Doshas* (humors) can affect the *dhatu*s (tissues) till the realm of *sparshanendriya*^[26]. The absence of perception of any sense or knowledge from *kesha* proves that all three entities, i.e. *atma*, *sattva* and *indriyas* are absent in *kesha*. Even anomalies like *palitya*(greying of hair) etc. is the result of *dosha* present in the *sparshanendriya adhishtana* and they cannot affect the *kesha* and *nakha*.

The place of growth of *kesha* is called *keshabhumi*^[27] and any abnormality in *keshabhumi* will reflect in the health of *kesha*^[28]. According to Acharya Charaka, around the seventh month of pregnancy the *keshotpatti kal* in a foetus appears. While according to Vagbhatta, *keshotpatti kal* in the foetus is at six months^[29]. *Kesha poshana & vriddhi* (nutrition and development of hair) According to Acharya Charaka^[23], *ahara rasa* (a nutrition fluid) formed from the swallowed food, which is then separated into two parts: *sarabhaga* (the essential matter) and *kitta* (excretory matter/waste matter). Many things, such as perspiration, urine, and hair, are produced and fed by waste matter,^[13] and among them are hair follicles, hairs of the head and beard, hairs of the body, and so on^[30].

According to Sushruta, *kesha* gets nutrients from the endsection of the *dhamanis* that are related to the *romakoopa*^[31]

According to ayurveda, *teja mahabhuta* is responsible for hair coloration, and *bhrajaka pitta*, one of *teja mahabhuta*'s manifestations, mixes with *prithvi* and *vayu mahabhutas* to form a black hue. The physiology described above can be equated to *krishna varna* = *Teja* + *Prithvi* + *Vayu*.^[32] Hair colour differs from person to person and is determined by his *prakriti*. Varied forms of *prakriti* people may have different *kesha*, depending on the condition of the *kesha prakriti* (hair), In brief
Vata Prakriti person – dry with low-density hair
Pitta Prakriti person – yellowish hair
Kapha Prakriti person – thick, black and curly hairs.

When the metabolism of *asthi dhatu* occurs by its own *agni* and *majja dhatu* emerges from *sara bhaga* (extract portion), hair of the scalp, body, and nails develop as *mala*.^[33] According to Acharya Sharangadhar, scalp and body hair are the *updhatu* of *majja dhatu*.^[34] *Kesha varnotpatti* - The colour of hair differs in different *desha*, *kala*, *bhoomi*, *jati*, etc. A variety of colour range is seen in hairs. Example - black, brown, red, golden etc. But ayurveda has adored the black colour of hair. Ayurveda says that *teja mahabhuta* is responsible for colour of hair and its qualities. *Bhrajaka pitta* one of the manifestations of *teja mahabhoota*, combines with *prithvi* and *vayu mahabhootas* and produces black colour.

Modern review of kesha: Recently, modern science has developed a branch that deals with pathophysiology, care and preservation of hair, known as Trichology. Earlier hair and its disorders were described under the heading of skin diseases. Hair, nails and sebaceous glands in particular situations grow on the skin and its process of development such that they are taken to be the integrated part of the skin and usually described as appendages of the skin.

Kesha Parikshana - With the help of the following criteria we can examine the *prakriti* of an individual hair for the recommendation of *prakriti*-based shampoo

a) Sphutitva Examination method –

Darshan pariksha – for splitting of hairs Examination method

Prashna pariksha (example- Q. - Is there any tendency of splitting of hair?)

Sphutit kesha - Splitting of hairs at the end, along with shaft in four quadrants .

b) Snigdhatva Examination method –

Rough to touch and lustreless hairs – *Vataprakriti lakshana*

Soft to touch – *Pitta prakriti lakshana*

Soft to touch along with shining hairs – *Kapha prakriti lakshana*.

c) Ghanata Examination method –

Darshan Pariksha - Trichoscopic examination

d) Kesha Varna Examination method –

Darshan Pariksha- Trichoscopic examination.

Dhusar kesha- Dry, lusterless, rough hairs

Kapil kesha -Dusty hairs

Shyam kesha- Reddish brown hairs or raven black hairs

e) Palitvatva Examination method–

Darshan Pariksha and Prashna Pariksha-

(example Q. Is greying of hairs present before 30 yrs?)

f) Khalitvatva Examination method –

Darshan Pariksha & Prashna Pariksha- Trichoscopic examination

(example Q. Do you have a complaint of severe hair fall?

Q. Do you have patches of baldness in the scalp?)

g) Kutilta Examination method –

Darshan Pariksha - presence of curly hairs – *kutil kesha* – *Kapha prakriti lakshana*.

MATERIALS AND METHODS

Image 1: The following ingredients are used for the preparation of shampoo. All the ingredients are tested and examined by the *dravyaguna* experts.

Reetha- It is good for all three types of *doshas*. It is a cleansing agent, keeps the scalp gentle and protects from any microorganisms responsible for infection. It nourishes hair and keeps them healthy and smooth. It provides shine to the hair and brings back natural texture. It also acts as an anti-dandruff agent.

Brahmi – It is good for *kapha* and *vata*. It nourishes hair. It releases tension, and stress and relaxes the nerves. It also helps in better circulation of the scalp.

Alovera- Good for all three types of *doshas*. It helps with the thickening of hair. It also nourishes hair.



Image 1: Ingredients of Shampoo

Tulsi – Good for all types of *doshas*. It helps in rejuvenating the hair follicles and strengthening the roots which in turn ward off hair loss.

Hibiscus – Good for *kapha* and *pitta prakriti*. It nourishes hair, restores its healthy shine and rejuvenates your scalp to initiate new hair growth. Hibiscus leaves and flowers produce a natural lather making it easy to formulate shampoo.

Shikakai – Balance *kapha* with natural saponins. Cleanses excess sebum. It acts as an anti-dandruff agent. Premature greying strengthens roots and detangles hairs. It promotes long hair growth.

Amalaki – Balances all three types of *doshas*. It nourishes the scalp. Minimize greying, antidandruff and hair repairing. It contains a protein collagen, collagen strengthens hair roots by replacing dead cells with new cells.

Methika – It balances *vata*. Methika gives fast relief from dry dandruff, prevents hair loss and moisturizes the scalp, adds shine and soft texture to hair and prevents premature greying of hair.

Neem – Neem balances *kapha, pitta* while it increases a little bit *vata*. Gives a smooth and silky texture to hair. It treats split ends and frizzy hairs due to deep conditioning properties.

Onion oil - Good for all types of *doshas*. It optimizes the hair growth cycle. Prevents breakage and thinning. Delays premature greying, can be used as a natural conditioner and improves hair texture

Almond oil - Best for all three types of *doshas*. Almond oil is rich in protein, omega fatty acid and vitamin E. It helps in hair growth, smoothening, softening and repair.

Going through this method we have made shampoo using ayurvedic extracts. Some ingredients were brought in fresh form and others were in powdered form. The ingredients in the fresh form are *Alovera, Neem, Tulsi, Amla, Hibiscus, Nimbulika* and the ingredients in powdered form are *Brahmi, Methika, Reetha and Shikakai*. Fresh ingredients were cleaned and a pulp was extracted and kept aside.



Image 2: Procedure of making Prakriti-wise Shampoo

Vata - In making *vata prakriti* hair shampoo, ingredients like methika- 50 g, reetha- 25 g, Brahmi- 25 g, tulsi leaves, neem, amla and almond oil were added in boiling water. Methika is used as the main ingredient. The mixture was concentrated and kept for cooling. After cooling, the pulp was extracted and added with aloe vera gel and soap base.

Pitta- In making *pitta prakriti* hair-type shampoo, Hibiscus was taken as a main ingredient. Reetha – 25g, brahmi -25 g, neem, tulsi, onion oil, almond oil was added to boiling water. The mixture was concentrated and pulp was extracted and kept for cooling. After cooling, aloe vera gel and shampoo base were added as per need.

Kapha - In making *kapha prakriti* type shampoo, ingredients like shikakai- 50 g, reetha – 25 g, Brahmi – 25 g, neem, tulsi, amla, nimbulika, almond oil was added in boiling water. The extract was concentrated, the pulp was extracted and cooled. Cooled pulp was added with aloe vera gel and shampoo base.



Image 3: Ready to Use Shampoo

DISCUSSION

Hair is one of the foremost desires for being beautiful as well as it plays an important role in normal physiology. Hence, it can be considered as an important part of health. Hair is an essential component of the human body. It adds a lot of value to the beauty of the person. The prevalence of hair problems is rapidly increasing. Depletion of the function of the hair root is caused by poor eating habits, a stressful lifestyle, insufficient nutrients and other irritating causes.

These shampoos are not tested on animals, unlike synthetic shampoo brands and are bio-degradable and eco-friendly. Historically, people in the Indian continent started using ayurvedic extracts of various varieties from very early times. In the early days, people extracted dried gooseberries, amla, and soapberries to clean the scalp and provide effective solutions. Shikakai and reetha are a few of these ingredients in shampoo that are still known to us as one of the best herbal shampoos for getting perfectly healthy hair that also reduce chances of hair fall, dandruff, and hair loss. Fun Fact – The origin of ‘shampoo’ lies in India. The word itself is derived from the Hindi word - ‘Champo’.

The following are the benefits of Herbal shampoo -

- Herbal shampoos provide a multitude of benefits for hair care, primarily because they are formulated with natural Ayurvedic ingredients, oils, minerals, and

herbal extracts. These natural elements work together to hydrate the hair follicles and roots, significantly improving moisture levels. This enhanced hydration, helps reduce common hair problems such as hair fall, dryness, and damage, resulting in healthier hair.

- One of the key advantages of herbal shampoos is their ability to strengthen hair follicles. By delivering essential oils and nourishment directly to the roots and follicles, these shampoos not only support the health of existing hair but also promote the growth of new, healthy hair roots. This leads to increased hair growth and overall hair health.
- Consistent use of herbal shampoos can have transformative effects on the hair and scalp. Our scalps require a delicate balance of oil and pH levels to maintain strong, beautiful, and healthy hair. Herbal shampoos help achieve and maintain this balance, ensuring that the scalp remains well-nourished and the hair retains its natural vitality.
- Additionally, the natural ingredients in herbal shampoos possess antiseptic properties that protect both the hair and scalp from harmful UV rays, thereby preventing skin infections and other related issues. This makes herbal shampoos an excellent choice for maintaining scalp health.
- Herbal shampoos are also universally suitable for all skin types, eliminating concerns about skin allergies. This inclusivity makes them a versatile option for anyone seeking a natural and gentle hair care solution.
- Regular use of herbal shampoos results in hair that is not only healthier but also more lustrous, shiny, and bouncy. The natural ingredients help to enhance the natural color of the hair, giving it a vibrant and well-maintained appearance. By keeping the scalp healthy and well-balanced, herbal shampoos contribute to the overall aesthetic and health of the hair, ensuring that it remains shiny, strong, and full of life.

CONCLUSION

A novel herbal shampoo was formulated using traditional knowledge to create a stable and effective product without any synthetic additives. The long-term use of chemical-based shampoos can be harmful, potentially leading to hair texture damage, hair loss, and even skin cancer. To address these issues, first-year Ayurveda students developed shampoo, which is entirely natural and free from side effects, offering a safer alternative for hair care.

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