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Toxic Truths of commercial hair oils and healing oils of Ayurveda

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ABSTRACT:

Hair oil used all over the world since a long time. The growing use of commercial hair oils containing paraffin, phthalates, TBHQ, synthetic colorants, sulphates, silicones, and heavy metals poses significant risks to hair and scalp health. These toxic ingredients can cause hair fall, thinning, scalp irritation, hormonal, and long-term toxicological effects. Ayurveda associates such damage with khalitya (baldness) and palitya (premature greying), arising from tridosha imbalance. Promoting the use of pure, additive-free ayurvedic oils offers a safer and holistic approach to maintain healthy hair. Dermatologist needs to be aware of effects of hair oil and their usage and hence need to know about the common herbal hair oils. This article focused on the different types of herbal hair oil and their possible benefits. In India & many part of the world, oil have been used on the scalp that it prevents hair loss, brings shine & prevents graying of hair.

KEYWORDS:

Hair care, Hair oil, Khalitya, Palitya, Ayurveda, Tridosha, Toxic ingredients in hair oil, Toxicology

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INTRODUCTION:

Hair care, far from being a mere aesthetic concern, profoundly affect human life in the Grooming world, touching upon aspects of health, hygiene, confidence, self-expression and social interaction. Hair loss and premature greying are common concerns affecting individuals across all ages and demographics. Hair loss and premature greying are influenced by a combination of genetic predisposition, lifestyle choices and underlying health conditions. Genetics, hormonal imbalances, stress, and nutritional deficiencies are key factors affecting both hair loss and premature greying, while environmental factors and certain medical conditions can also play a role. Understanding their underlying causes and exploring available Treatment options can help manage these conditions effectively. In Ayurveda, the ancient Indian system of medicine, hair-related conditions are often explained through the lens of the three doshas: Vata, Pitta, and Kapha.

Khalitya (Hair Fall/Alopecia)

Khalitya (hair fall or hair loss)

It encompasses conditions like alopecia or baldness in modern science.

1. Ayurveda primarily attributes Khalitya to imbalances in the Pitta dosha, Often combined with disruptions in Vata and Kapha. An increase in Pitta, particularly the heat aspect (Teja), is believed to weaken hair roots and cause hair fall. Vata imbalance can exacerbate dryness and brittleness, increasing Hair breakage. Kapha imbalance can lead to excessive oiliness and clogged hair Follicles, hindering hair growth. Modern lifestyle factors like stress, poor diet, and exposure to pollutants are also recognized as contributing to Khalitya.

2. Palitya (Premature Greying of Hair) Palitya refers to premature graying of hair or canities. It describes the condition where hair loses its natural color and turns grey or white at a

younger age than expected (typically before 35 years). According to Ayurveda, Palitya is primarily associated with an imbalance in the Pitta dosha, specifically the Bhrajaka Pitta, which is responsible for hair pigmentation.

Excessive heat (Ushna) and sharp qualities (Tikshna guna)

Associated with aggravated Pitta can disrupt melanin production, leading to premature greying. Factors like stress, anger, grief, exposure to excessive sunlight, and certain dietary habits can aggravate Pitta and contribute to Palitya. Genetics, nutritional deficiencies (like Vitamin B12, iron, copper), and Hormonal imbalances (like thyroid problems) are also recognized as causes of premature greying. In essence, Khalitya focuses on hair loss, while Palitya deals with premature Greying of hair, both understood in Ayurveda as reflecting underlying dosha Imbalances, particularly Pitta.

1. Nourishing and Strengthening

Herbal hair oils, containing ingredients like Bhringraj, Amla, Brahmi, and Coconut oil, Nourish the scalp and strengthen hair follicles from the root. Bhringraj, often referred to as the “King of Herbs” for hair, is known to stimulate hair growth, Improve blood circulation in the scalp, and prevent premature graying. Amla, rich in Vitamin C and antioxidants, strengthens hair roots, prevents premature Greying, and nourishes the scalp. Brahmi cools the scalp, reduces stress, and strengthens roots, helping to prevent hair loss and thinning.

2. Delaying and Reversing Premature Greying

Certain herbs in hair oils, such as Amla, Bhringraj, Curry Leaves, and Henna, help maintain the natural color of hair and delay the onset of graying.

Amla oil, in particular, is known for its ability to slow down the greying process and even reverse premature greying with consistent use. Some herbal oils contain components

that promote melanin production, the pigment responsible for hair color, helping to restore the hair's natural pigment.

3. Improving scalp health

Herbal hair oils can address scalp issues like dandruff, dryness, and infections that can contribute to hair loss and unhealthy hair growth.

Neem, for instance, has antifungal and antibacterial properties that help keep the scalp Clean and balanced.

Regular use of these oils can improve blood circulation to the scalp, ensuring adequate Oxygen and nutrient supply to the hair follicles.

4. Addressing stress-related hair concerns

Stress is a major factor in premature greying and hair loss.

Massaging the scalp with certain Ayurvedic hair oils containing calming herbs like Brahmi And Bhringraj can help alleviate stress and promote relaxation, potentially reducing stress related hair fall.

In conclusion, herbal hair oils, deeply rooted in Ayurvedic traditions, offer a holistic and Natural approach to maintaining hair health and addressing issues like hair loss and premature greying. Their blend of nourishing, strengthening, and restorative properties, combined with their ability to promote scalp health and reduce stress, makes them a valuable component of a comprehensive hair care routine.

Methods of Preparation:

- 1) Various ingredients such as coconut oil, curry leaves, amla fruit, fenugreek seeds, hibiscus flowers, hibiscus leaves, and nagarmotha roots are used in the formulation of herbal hair oil.
- 2) Firstly, coarsely grind the fenugreek seeds and gooseberry (amla).
- 3) Take a glass vessel and transfer the powder into it.

- 4) After that, add 100 ml of coconut oil into it. Also, add the curry leaves and hibiscus flowers.
- 5) Now, add the hibiscus leaves to the oil.
- 6) Switch on the stove and let it boil. In between, mix it well and allow it to boil on a low flame.
- 7) Boiling takes 10 to 15 minutes. Boil until it gets a brownish color.
- 8) Now, switch off the stove and allow it to cool down.
- 9) After that, filter it twice with the help of a clean cotton cloth.
- 10) To extract the oil completely, use a cotton cloth and transfer the mixture into it, then squeeze it.
- 11) After extracting, transfer it into a container bottle and store it. Herbal oil is ready for use.

Aim and objective

- 1.To Evaluate toxically products in Commercial hair oil and its harmful effects.
2. To understand what exactly Herbal Hair Oil meaning. its contents f possible benefits from Ayurvedic Samhita
3. To Review for hair Oil Literture from Ayurveda for further research

Review of literature

Nowadays, we come across many hair oils that show adverse effects on our hair roots, shafts and scalp as well .

The root cause of these adverse effects are toxic ingredients Involved in the formulation of those hair oils .

These ingredients not only damage our hair but also decrease their growth.

Let's discuss some of those most common toxic ingredients and their side effects on our hair health :

- 1) Paraffin - Paraffin forma a layer over the hair shaft which traps the dirt, sweat and sebum . This leads to greasiness, dullness and weak hair Stops scalp breathing.

Clogs the pores which leads to itchiness, dandruff and hair fall .

Paraffin do not nourish the hair roots and shafts , *they only coat the hair* , offering temporary shine to the hair.

Hair oils which include Paraffin in their formulations are very difficult to wash off.

We come across many coconut hair oils nowadays , in many of them , *50% coconut oil and 50% Paraffin* are included in their formulations.

Another example is seen in some almond hair oil that includes *mineral oil* in their formulations.

Mineral oil is basically nothing but *liquid paraffin* , which are derived from petroleum.

2) Phthalates

Phthalates are often hidden as “fragrance or perfumes“ in the hair oil formulations.

These are *endocrine disruptors* which lead to hormonal imbalance.

Phthalates interfere with estrogen and testosterone levels, affecting reproductive health.

They cause itching on the scalp and weaken the hair roots.

The two most commonly used phthalates in the hair oils are –

a) Dibutyl phthalates (DBP)

b) Dimethyl phthalates (DMP)

3) TBHQ-

TBHQ stands for *Tertiary butyl hydroquinone*

It is used as a *preservative* and *antioxidant* to prevent hair oils from becoming rancid .

It should be used in small amounts but long-time exposure to TBHQ can cause itching, redness, irritation, burning sensation, allergic rashes on scalp.

TBHQ can cause dryness and brittleness to hair shafts.

On heating hair oils which contains TBHQ as their constituents , their vapors inhalation may cause headache and dizziness .

4) Synthetic colorants -

These are petroleum derived synthetic colorants , they cause allergic reactions , scalp irritation, hormonal disruption and carcinogenic concerns .

Some of the commonly used synthetic colorants in hair oils are

a) CI 47000 (D & C yellow no. 11)

b) CI 26100 (D & C red no. 17)

c) CI 61565 (green no. 6)

d) CI 42090 (F D & C blue no. 1)

5) Sulphates

Sulphates cause hair dryness & frizz, hair fall & hair thinning and fading of hair color .

Some of the commonly used sulphates in the hair oils formulations are –

a) Sodium lauryl sulphate -SLS

b) Sodium Lauret sulphate –SLES

During the past ten years it has been focused on growing interest that using commercial hair oils can pose potential health risks including – scalp irritation, dandruff, allergy, hair loss, split ends, breakage and the common conditions like hair fall, etc. which leads to hair thinning.

As per various number of studies it has been identified that commercial hair oils contain various toxic ingredients. These ingredients are adversely affecting natural shine of the hair, causing hair loss and premature greying of hair .

These toxic ingredients are -

- Paraffin
- Sulphate
- Phthalates
- Formaldehyde
- Alcohol
- Silicon based compounds
- Synthetic colors and many more

All of these can cause serious effects on human health including cytotoxicity, genotoxicity, carcinogenic effects (cancer), and hormonal imbalance which can leads to PCOS, PCOD and many more conditions

through which many peoples are suffering nowadays.

As per Indian data 50% of men are facing baldness at the age of 25 years and one of its cause is using these commercial hair oils. Some side effects which are commonly seen by using such commercial hair oils.

Research indicates that some individuals, particularly younger people, who experience premature greying or hair loss can face teasing or bullying from peers.

This creates a negative impact on their mental health.

- Preventing these conditions can help avoid such negative experiences and foster a more positive self-esteem.

In conclusion, while hair loss and greying are often viewed as simple cosmetic changes, their impact on an individual's well-being are considered to be significant.

Addressing these concerns proactively, when possible, can contribute to maintain self-esteem, confidence, and overall health and happiness.

According to Ayurvedic principles, hair (Keshha) is considered a byproduct (Mala) of Asthi Dhatu, or bone tissue.

Understanding the connection:

Dhatu: In Ayurveda, the body is believed to be composed of seven fundamental tissues, called Sapata Dhatu, which together coordinate for proper physiological functioning and anatomical morphology of human body.

Asthi Dhatu: This Dhatu represents the skeletal framework and the hard, dense structure of the body, including bones and teeth.

Mala: The waste products or byproducts generated during the process of Dhatu formation are known as Mala.

The Connection: Since hair is considered a Mala of Asthi Dhatu, according to the International Journal of Pharmaceutical Research and Applications (IJPRA), its health

is directly related to the health and quality of the bones.

Implications for hair health:

Nourishment: If the Asthi Dhatu is well-nourished, it will contribute to healthy hair.

Weakness: Deficiency or imbalances in Asthi Dhatu causes hair loss, hair thinning, or premature greying.

Holistic Approach: Therefore, Ayurvedic treatments for hair fall often focus on strengthening the Asthi Dhatu through diet, lifestyle modifications, and therapies which enhances the bone health, according to totalayurveda.in. In a recent study conducted in the United States, researchers discovered that silicone-based compounds, particularly cyclopentasiloxane (D5), generally used for the purpose to improve hair appearance and manageability by coating the hair shaft, providing shine, and reducing frizz present in significant amounts in styling products, but their regular use resulted in the release of volatile organic compounds (VOCs) into indoor air (News Medical, 2023). In Animal studies have shown that inhaling these chemicals causes hepatic, neurological, and respiratory damage. Similarly, the Environmental Working Group reported the presence of formaldehyde and formaldehyde-releasing compounds like quaternium-15 in hair oils, particularly those marketed to women of color. These preservatives have been related to cancer-causing effects, hormonal disturbance, and allergic skin reactions. Despite international regulatory warnings, similar chemicals are nevertheless utilized in some hair care brands, owing to regulatory loopholes and weak labeling. Heavy metals including lead, mercury, cadmium, and arsenic, which are occasionally found in tainted or inadequately controlled hair products, add another level of toxicity. According to a Nigerian study, many hair oils had levels of heavy metals above WHO permissible limits, which may have

contributed to neurotoxicity and organ failure over time. Furthermore, case reports and subjective data point to a link between continuous oiling and hair loss, especially when oils are applied in combination with heat styling or left on the scalp for extended periods of time. Users commonly claim symptoms like shedding, scalp irritation, and rashes after using commercial oils—especially those that contain alcohol or synthetic additives—on websites like Reddit and consumer health forums. Natural oils, on the other hand, have long been utilized frequently used for hair growth benefits. However, a comprehensive study by Chattopadhyay (in 2022) discovered insufficient scientific evidence to support such statements. The majority of investigations on these oils used subjective evidence or lacked healthy clinical technique. Although these oils are thought to be quite safe when used in their pure form, adulteration and the addition of synthetic substances to commercial formulations remain a concern. Instead of using commercial hair oil we can shift to natural hair oil which can be made easily at home using basic ingredients. There are many hair oils available in the cosmetic market which claims of being 100 percent ayurvedic without hazardous results. But in contrast, it consist of certain chemicals which enhancing it's liability for preservative purpose so it's actually not like that but a fake ayurveda products which directly or indirectly cause adverse effects. Some ayurvedic hair oil formulations have been recognized in the 'classical ayurvedic Samhita' for their major benefits based on ancient Indian medicine. Hair oils made from natural plants and sometimes pharmaceutical infusions improve overall scalp and hair health. According to Ayurveda, prakriti has a big impact, hence some hair oils are medicated based on the individual's prakriti

Vata – sesame oil Possessing qualities that contradict Ruksha Gunna and Shita Virrya of Vata

Pitta – Coconut oil with Shita Virrya opposes Ushna Virrya of pitta.

Kapha – Mustard oil with Ushna Virrya (opposite to Shita Virrya of Kapha)

The basic ingredients which are used in herbal ayurvedic hair oils are

- Bhringraj – promotes hair growth , reduces hair loss, fights premature graying, and relieves scalp disorders such as dandruff and irritation. Also strengthens the hair follicles, adds shine and luster, and improves overall hair texture.
- Amla -It is rich in vitamin c prevent breakage and frizzed. Vitamin C in amla boosts collagen production, which is essential for hair growth.
- Coconut oil- It is beneficial for your hair and scalp. Coconut oil benefits hair by reducing dandruff, restoring luster to dry and damaged hair, taming frizz, and prevent styling damage.
- Aloe vera- It helps in soothing the scalp, minimizing breakage and split ends.
- Sesame oil -It help moisturize dry hair, protect against sun damage, and potentially reduce dandruff.
- Brahmi -It protects hair follicles, reduces breakage and split ends, eliminates itching scalp and dandruff making hair stronger, thicker, fuller.
- Mustard oil-It protects hair follicles, reduces breakage and split ends, eliminates itching scalp and dandruff making hair stronger, thicker, fuller.

Regardless such benefits of these natural ingredients as per ayurvedic criteria of prakriti it is needed to consult with a vaidya (ayurvedic practitioner) before using it directly.

DISCUSSION:**Table No. 1 Ingredients and Their Toxicity**

Ingredients	Causes
Paraffin (Mineral Oil)	<ul style="list-style-type: none"> • Clogs hair follicles, • Locks out moisture • Synthetic and harsh
Phthalates (Fragrance)	<ul style="list-style-type: none"> • Hormone disruption, • potential reproductive issues
TBHQ (Tertiary Butyl Hydroquinone)	<ul style="list-style-type: none"> • May cause allergies, linked to potential carcinogenic effects
Synthetic Colour	<ul style="list-style-type: none"> • Can cause skin irritation and allergic reactions, • may contain heavy metals
Sulphate	<ul style="list-style-type: none"> • Strips natural oils, • causes dryness, irritation, • and scalp issues
Isopropyl Alcohol	<ul style="list-style-type: none"> • Dries out skin and hair, • may cause irritation or flaking

Natural Ingredients and their Benefits

Ingredients	Scientific Names	Benefits
Bhringraj	<i>Eclipta prostrata</i>	<ul style="list-style-type: none"> • Promotes hair growth • reduces hair fall, • prevents premature greying, • improves scalp circulation • strengthens hair follicles.
Fenugreek	<i>Trigonella foenum-graecum</i>	<ul style="list-style-type: none"> • Strengthens hair roots, • reduces hair fall, • stimulates hair growth, adds shine, helps • prevent premature greying, fights dandruff.
Brahmi	<i>Bacopa monnieri</i>	<ul style="list-style-type: none"> • Nourishes and strengthens hair follicles • reduces hair fall, • minimizes dandruff, • soothes scalp irritation.
Hibiscus	<i>Hibiscus rosa-sinensis</i>	<ul style="list-style-type: none"> • Stimulates hair growth, • reduces hair fall, • conditions and adds shine, • prevents premature greying,

Amla	<i>Phyllanthus emblica</i>	<ul style="list-style-type: none"> • Rich in Vitamin C and antioxidants, • strengthens hair follicles, • reduces hair fall, • prevents premature greying, • adds shine.
Aloe Vera	<i>Aloe barbadense</i>	<ul style="list-style-type: none"> • Moisturizes and conditions hair, • soothes an irritated scalp, • promotes hair growth, • helps with dandruff and itchy scalp.
Rosemary	<i>Salvia Rosmarinus</i>	<ul style="list-style-type: none"> • Pacify the Vata and Kapha doshas, • helping to reduce dryness and • inflammation of the scalp, • Adds Shine and Softness • Stimulates Hair Growth

CONCLUSION:

Most of the hair oils are available in the market contain toxic ingredients which leads to various health issues. Chemicals such as: Paraffin/Mineral Oil, Phthalates (Fragrance), TBHQ (Tertiary Butyl Hydroquinone) etc. Using these ingredients on a daily basis leads to Hormonal disruptions (due to phthalates), Skin irritation & allergic reactions, Hair thinning and breakage (especially with alcohol-based ingredients). Many of these ingredients are banned or restricted in other countries but still present in products sold in developing markets.

Recommendation:

- Consumers should read ingredient labels carefully.
- Use natural or organic alternatives oversight
- and labeling transparency are urgently needs when possible.

Using natural ingredients in hair oils such as Bhringraj, Amla, Brahmi, Aloe vera etc. on

daily basis has very tremendous results on hair fall, Dry Scalp etc. Everybody should involve these products in their hair care routine to have smooth and Shiny Hair.

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