

Ancient Insights for Modern Mother's: Ayurvedic Formulations for Postpartum Well-Being

Anjali Jaman Jyothi¹, Srijal Srivastava², Dr. Rajashree Saoji³, Dr. Vibha Kapoor⁴

¹ Student of the Department of Beauty Cosmetology, School of Design, Sandip University, Nashik, India

² Student of the Department of Beauty Cosmetology, School of Design, Sandip University, Nashik, India

³ HOD Beauty Cosmetology, School of Design, Sandip University, Nashik, India

⁴ Dean School of Design, Sandip University, Nashik, India

Abstract

Postpartum is a profound transition for women that encompasses physical, mental, and emotional changes. However, new moms need to take care of themselves, especially in terms of skin and perineal health. Postnatal (or postpartum) women face a plethora of skin problems due to hormonal changes, stress, sleep deprivation, and body changes post-pregnancy including dehydrated skin, melasma, acne, stretch marks, and loose and sagging skin. Though the perineal area — particularly following a vaginal birth — needs to be kept clean and cared for to help healing, ease discomfort, and prevent infection. This is part of research undertaken to formulate an ayurvedic kit for postpartum mothers for their perineal and skincare. a) The massage powders focus on healing, brightening, soothing, and tightening of the skin. b) Sitz bath bomb, relieves pain and swelling, facilitates the healing of tears or stitches, relieves hemorrhoids or irritation, keeps the perineal area clean, and reduces the risk of infection. c) dual-action soap that exfoliates the skin gently (that takes away the excess oil after the body massage) and cleanses the body. Self-care is vital for postnatal mothers since it supports physical healing, assists in stress management, and improves emotional health. Spending energy on rest, movement and self-care will help new mothers to feel revitalized, less overwhelmed, and therefore have the energy to care for themselves and their babies.

Keywords: Postpartum, Postpartum mothers, Skin and perineal health, Healing, Ayurvedic kit, Massage powder, Sitz bath bomb, Dual-action soap, Self-care for new mothers

1. Introduction:

The Postpartum Period refers to the period of time where a woman goes through physiological/psychological adaptations after pregnancy and childbirth. Post-natal care primarily aims at supporting the woman in recovering to the state that she was in before the pregnancy and offering advice on care for herself. [1] The body of a woman undergoes several physical changes during pregnancy and the skin is also affected due to pregnancy. Dark patches can develop on various parts of the body (chest, nipples, thighs, etc), melasma (facial pigmentation), stretch marks, acne, spider veins,

and varicose veins in women, are common skin changes during pregnancy too. These skin changes are mainly driven by hormonal changes that happen throughout pregnancy. [2]

It is no surprise then that millions of women around the world face perineal trauma annually. The intensity of pain and discomfort associated with this condition is often underrated. This pain can make it difficult to perform daily tasks, such as walking, sitting and urinating, and it can impact a woman's initial experiences of motherhood in a negative way. Using an ice pack (wet or dry), topical treatments, cleansing the perineal area with a squeeze bottle or taking a warm shower or sitz bath are simple measures that can relieve the pain. Perineal pain in the antepartum period, is one of significant maternal morbidity and subsequent to aggravate a mother's capacity and desire for infant care.[1]

Ayurveda is the traditional healing system of India and generally accepted as the world's oldest surviving medical practice dating back more than 6000 years to the Rig Veda. "Ayurveda" literally means the "science of life" (a — knowledge) in Sanskrit and ideally should be used instead. Ayurveda considers life to be an integrated whole of body, mind and soul. Reminding us that real healing is when all are tended to. [3]Ayurveda, lists herbs, fats, oils and minerals having benefits for skin care in addition to aiding in wound healing. It possesses several beneficial properties such as Madhura (helps maintain the skin's natural pH balance), Picchaila (acts as a lubricant), Balya (enhances the skin's strength and elasticity), Grahi (boosts the skin's ability to retain moisture), Tvagdosahrit (helps eliminate skin imperfections), and Vranahrit (promotes wound healing). [4]

In this study, we are developing an Ayurvedic wellness kit designed to support postnatal women, featuring carefully selected active ingredients. The kit comprises the following components:

1.1 Massage powder:

In Ayurveda, Udvartana is any massaging technique where, pressure while massaging is applied on all part of body except neck in opposite direction of the hair.[5]Udvartana is a technique where herbal powders are gently rubbed onto the skin using smooth, even strokes directed toward the heart. The massage is performed with the palms spread flat, allowing the powder to form soft streaks or wicks on the skin as it's worked in. [6] This approach is in the context of Panchakarma therapy, which is a detoxification and rejuvenation method that assists elimination of toxins through the body. Udvartana helps open up the body's subtle channels, enhancing both blood flow and lymphatic circulation.[5]

Benefits of Udvartana:

- Strengthens and tones the limbs.
- Aids in reducing body fat.
- Improves skin texture and radiance.
- Creates a feeling of lightness in the body.
- Helps eliminate unpleasant body odor.
- Soothes itching and skin irritation.[6]

1.2 Sitz bath bomb:

The term "sitz bath" comes from the German word *sitzbad*, which literally means "a bath in which one sits." It refers to a shallow, soothing bath designed for sitting and targeting the lower part of the body. Episiotomy (perineal cut) is a small incision made at the perineum (area between the vagina and anus) just before delivery. This decision is taken to make room for the baby and to widen the birth canal, to facilitate the baby's delivery, basically when they need too, probably for early evacuation due to complications. [7] A sitz bath is where you sit, in warm water that reaches only up to the perineum area, promoting increase of blood circulation in that place. The better circulation, in turn induces healing and relieves the pain and soreness that follows childbirth. [8] Longer to heal a wound may increase the chances of infection and inappropriate body changes and in worst cases cause life-threatening sequelae. Which is why it is so very imperative to take care — particularly post childbirth or after some surgeries.[7]

Studies have demonstrated that cold sitz baths are more successful than warm ones in treating swelling and reducing perineal pain after episiotomy. This helps by constricting blood vessels (vasoconstriction), numbing and reducing muscle spasms and irritation. However, warm sitz baths are by far more popular for postpartum women as they are calming and relaxing, very trusted to ease new moms discomfort.[9]

Benefits of Sitz bath:

- Gives a soothing and relaxing effect.
- Enhances recovery by increasing blood flow to the tissue in area of perineum.
- Reduces swelling and inflammation.
- Relieves any pain or discomfort.
- Supports wound site from infections.
- Maintain the area clean and promote hygiene. [7]

1.3 Dual-action soap:

Soap is a widely used product for cleaning the skin, the chemical structure of which is a fatty acid alkali salt. The origin of soap traces back thousands of years to the ancient Babylonians. Today's skin cleansers are more intricate than the term "soap" suggests, containing not just surfactants but also agents that condition the skin. The practice of skin cleansing has evolved over many millennia for purposes of personal hygiene, religious ceremony, other therapeutic benefit.[10]

Simply using soaps usually fails to completely clear out your pores or remove dead skin cells. This makes your skin feel rough, dry, and even worsen clogged pores. Exfoliation is the answer there. For all skin kinds, it is an important step since it assists to peel off dead cells, clears dirt and oil off the surface, and leaves your skin feeling soft, smooth, and refreshed. Regular exfoliating could also help to manage too much oil and keep your pores looking more obvious.[11]

Herbal soaps, commonly referred to as natural soaps, are created using plant-derived components and botanical extracts. They provide multiple benefits for the skin because they consist of natural elements. They are products that purify and enhance the skin. [12]

Benefits of dual-action soap:

- It helps in deep cleansing the skin.
- It provides hydration.
- It is mild on the skin
- It is non-toxic.
- It removes excess oil, impurities and dead skin.

2. Materials & Methods:

Based on knowledge of Ayurveda therapy and medicinal properties of herbal materials, a kit containing selection of plants for skin care and perineal healing has been developed. The kit contains a massage powder, a sitz bath bomb, and a dual-purpose soap all formulated with lesser chemicals and a higher composition of natural herbs. The study chooses the following plants and their properties for development of Ayurvedic formulations for post-natal wellness.

2.1 Herbs used in massage powder:

Ashwagandha: Ashwagandha, scientifically known as *Withaniasomnifera*, is part of the Solanaceae family (nightshade), which includes about 1,250 different species.[13] The name *Ashwagandha* comes from the Sanskrit word "ashwa," meaning horse, because the root has a strong, horse-like smell. It's believed that consuming it can impart the strength and vitality of a horse. Ashwagandha is used as Ayurvedic treatment for thousands of years and is commonly called as "Indian Winter Cherry" or "Indian Ginseng". It is famous for its power to restore the body from stress, both emotional and physical.[14] Natural compounds in Ashwagandha provide the healing effects of this plant. Withaferin A together with Withanolide D represent the two significant components of Ashwagandha which belong to the withanolide plant chemical family that helps the body respond to stress and sustain immunity while fighting inflammation. [13]

Turmeric: Turmeric (*Curcuma longa* L.) exists in the Zingiberaceae family thus sharing a botanical connection to ginger. Turmeric derives its distinctive yellow color from its main bioactive component curcumin (diferuloylmethane) that assures most of its therapeutic benefits through powerful anti-inflammatory activity. These also include antioxidant, antibacterial, antifungal, and antiviral actions.[15]. Turmeric functions as an excellent antiseptic which demonstrates strong antimicrobial properties and maintains its strength even in diluted form while offering safety to human bodily systems. The medical use of curcumin accelerates the healing process specifically in 'second-degree' perineal tears.[16]

Fenugreek: Fenugreek belongs to the family Fabaceae under *Trigonella foenum-graecum* L. It has worldwide distribution. The mucilagens in fenugreek possess properties that enable them to soothe and relax irritated tissue structures. The seed of Fenugreek represents an outstanding component for beauty

applications. Fenugreek seeds have the ability to stop wrinkles from forming and to minimize blackheads while reducing skin pimples and eliminating dryness and rashes.[17] The galactomannan content within fenugreek seeds leads to its anti-inflammatory attributes in combination with antioxidant properties. Skin antioxidants protect cells of the skin while reducing the speed of normal aging processes. The antioxidants act as radiance promoters that minimize both fine lines and decrease skin exposure to sunlight while aging occurs.[18]

Sandalwood: Sandal/sandalwood (*Santalum album* Linn.) occurs as a significant expensive tree which produces multiple product applications throughout the global perfumery and cosmetic industries and medical sectors. In Hindi language Indian sandalwood carries the name of "Chandan." Santalbic (Ximenynic) acid maintains youthful glowing skin because it possesses natural antiaging benefits. People employ this to treat both sunburns and skin irritation as well as itching. Sandalwood aids skin injuries healing quickly while providing treatment for these problems. Sandalwood contains antiseptic elements which stop microbe growth on the skin surface that causes dermatological conditions including acne inflammation.[19] Compared to other drugs sandalwood acts against spasms by providing relaxation benefits toward nerves as well as blood vessels and muscles. The major components of sandalwood oil consist of sesquiterpenic alcohols at 90% with 50–60% α -santalol and 20–25% β -santalol. [20]

2.1.1 Formulation table for massage powder:

Table 1: Formulation table for massage powder

S.no	Ingredients	Percentage (20 g)
1.	Ashwagandha powder	4%
2.	Turmeric powder	3.5%
3.	Fenugreek powder	6%
4.	Sandalwood powder	6.5%

2.1.2 Procedure:

- All the ingredients were weighed accurately.
- All the powders were sieved to get finer particles.
- One by one, powders were added to a mortar and pestle and triturated for even mixing of powders.

- Once the powder seems to be homogenous, they are packed in an air-tight Pouche.

Figure 1: Massage powder in mortar and pestle



Figure 2: Massage powder in well labelled pouch



2.2 Herbs used in sitz bath bomb:

Betel leaf: The betel leaf operates under the scientific name *Piper betel* L. Within India the betel leaf exists under the common name 'Paan'. Families referred to as Piperaceae contain betel leaf among its members through the Black Pepper family designation. The betel leaf demonstrates antibacterial properties that fight against several bacterial strains including harmful pathogens. [21] *Piper betel* leaves also have a considerable amount of antioxidants such as hydroxychavicol, eugenol, ascorbic acid and b-carotene. In strong concentrations, fatty acids such as palmitic acid, stearic acid, as well as hydroxy fatty acid esters concentrate in *Piper betel* extracts exhibit powerful and potent antimicrobial activity against various pathogenic microorganisms. [22] Betel leaf is known to have a chemical content that plays a role in as an antiseptic and antibacterial drug, besides that betel leaf also contains chemicals as an anti-inflammatory which is good for use on mothers who experience wounds, especially in perineal wounds which can help accelerate wound healing and perineal wound healing process. [23]

Cinnamon: Cinnamon (*Cinnamomum verum*, which scientists refer to as *C. zeylanicum*) exists as a tiny evergreen tree reaching heights of 32.8 to 49.2 feet with the Lauraceae family as its scientific classification. This plant shows beneficial properties that include antioxidant protection and anti-microbial behavior. The antioxidant activity of Cinnamon exists at a high level. [24] Studies have shown that cinnamon possesses a range of advantages including anti-inflammatory action and wound healing properties and antimicrobial and antioxidant effects and its ability to reduce pain. [25] After an episiotomy patients can use cinnamon as a form of herbal medicine for recovery treatment. Medical

practitioners use cinnamon as a treatment to lessen perineal pain while speeding up the healing process of episiotomy incision repairs. [26]

Lavender: For ages people have used dried and essential oil extracts of Lavenders (*Lavandula* spp.) from the Labiatae (*Lamiaceae*) family for medical and beauty purposes. The traditional medical view describes the oil as having action against bacteria, fungi and providing muscle relaxation together with its calming properties. The main components of lavender oil include linalool, linalyl acetate, 1,8-cineole, Beta-ocimene in cis and trans- forms and terpinen-4-ol along with camphor.[27] The carminative properties and anti-inflammatory effects exist in lavender oil. The substance serves as an antimicrobial and analgesic remedy with strong potential to replace Betadine for wound cleaning purposes. Reliable evidence suggests lavender functions as an anti-allergic agent. The healing process of primiparous mothers showed a substantial relationship with the lavender sitzbath therapy due to its sedative and local anaesthetic properties through components such as Linalyl acetate and linalool. The use of lavender sitzbath therapy proved beneficial for the healing process of episiorraphy in postpartum mothers. [28]

Aloe vera: *Aloe barbadensis* miller represents the scientific name of Aloe Vera. The plant exists within the *Asphodelaceae* (*Liliaceae*) family. Both tannic acid and a particular polysaccharide might be responsible for effective wound healing. The mucilaginous gel of *A. Vera* contains Mannose-6-phosphate as the main active healing compound.[29]. The plant-derived substance Aloe shows antimicrobial together with antiviral, antibacterial, antifungal properties universally accepted in scientific fields. People commonly use aloe as a treatment for sunburn and skin rashes. Aloe vera gel possesses immune regulating capabilities which support skin recovery and inflammation control.[30]

2.2.1 Formulation table for Sitz bath bomb:

Table 2: Formulation table for sitz bath bomb

S.no	Ingredients	Percentage (20 g)
1.	Betel leaf	3%
2.	Cinnamon	1%
3.	Aloe vera gel	2%
4.	Lavender oil	1%
5.	Sodium bicarbonate	7%
6.	Citric acid	7%

2.2.2 Procedure:

1. Weigh all the ingredients accurately.

2. First, take all the dry powders in a mortar and pestle
3. Mix them thoroughly.
4. Add aloe vera gel and lavender oil, mix well until it forms a wet sand like texture
5. Transfer it to a mould to set the bath bomb to give it a shape.
6. Refrigerate it for few hours.
7. After they are set, wrap and pack it in a container.

Figure 3: Mixture of bath bomb



Figure 4: Working of bath bomb



Figure 5: Sitz bath bomb in a container



Figure 6: Well labelled container for Sitz bath bomb



2.3 Herbs used in dual-action soap:

Neem: *Azadirachta indica* consists of two scientific names that describe the neem tree better known as Indian lilac. It exists within Family Meliaceae and Genus *Azadirachta*. In the Kiswahili language of Africa, the Neem tree earns its name 'mwarubaini' owing to its reputation of treating forty distinct ailments. [31] The smell of neem leaves comes from 0.13 percent essential oil present in the leaves. Scientists have organized neem compounds into two distinct groups which they call isoprenoids and non-isoprenoids. [32] The Neem contains antimicrobial components together with anti-inflammatory elements and antioxidant features. The Neem has proved helpful in medical treatments of skin diseases. People have long used Neem leaves to treat wounds and scars in order to speed up the healing process. [18]

Masoor dal: The lentil plant *Lens culinaris* L. belongs to Leguminosae and functions as an essential traditional ingredient in diets. Medical practitioners from various ethnic backgrounds currently employ lentil seeds to treat various medical conditions under community-based healing practices. Ground seeds form a water-based paste which functions for skin infection treatment and burn treatments when applied topically to affected areas. Lentils demonstrate the highest total phenolic content (TPC) among six other common pulse foods. The tests of lentils contain the highest concentration of tannins and tannin-related compounds which are primary polyphenolic compounds in this plant species. [33] Masoor dal possesses natural exfoliating qualities that effectively eliminate both acne and blackheads. Additionally, it bleaches your skin resulting in improved tone and lighter complexion. The masoor dal white skin solution works

to eliminate all skin dark spots including tan lines and small lines and blemishes as well as dark spots. [34]

Besan: The food crop Chickpea (*Cicer arietinum* L.) which also goes by the names garbanzo bean and Bengal gram exists as a pulse. The main carotenoids found in chickpea consist of b-carotene according to Table 8 together with lutein and zeaxanthin and b-cryptoxanthin with lycopene and a-carotene. Ayurvedic physicians utilize chickpea preparations to cure skin diseases and impurities. Chickpea seeds have multiple therapeutic uses including blood enhancement and treatment of skin conditions. [35] The facial application of gram flour helps both acne-prone skin and reduces acne scars while also improving skin brightness. This mixture serves to treat dark sun marks on any area of the body and produces a vibrant skin tone after application. [36]

Coconut oil: Coconut which grows on the *Cocos nucifera* trees found in the Family Aracaceae (palm family) as their diet and economy foundation. The term “kalpavriksha” describes this plant using Sanskrit words which means that it provides all essential life necessities.[37] Coconut oil contains SFAs as its main composition elements while these compounds make up 90% of the total material. The substance includes triacylglycerols (TAGs) bonded with component fatty acid (FAs) mixed with minor components. Forty-five to fifty percent of lauric acid exists in coconut oil. The high levels of vitamin E in coconut oil make it effective for hydrating the skin and hair. [38] The skin barrier benefits from reparative improvement through the use of this product which helps treat patients with atopic dermatitis (AD) and other similar conditions. Monolaurin (active component) aids in antibacterial skin protection which fights *Propionibacterium Acnes*, *Staphylococcus aureus* and *Staphylococcus epidermidis*. [39]

2.3.1 Formulation table for dual-action soap:

Table 3: Formulation table for dual-action soap

S.no	Ingredients	Percentage (100 g)
1.	Glycerin soap base	70%
2.	Neem	8%
3.	Masoor dal	6%
4.	Besan	6%
5.	Coconut oil	5%
6.	Aloe vera	5%

2.3.2 Procedure:

1. Weigh all the ingredients accurately.
2. First, melt the soap base.

Exfoliant:

3. Take beaker A and add half the amount of aloe vera gel and coconut oil.
4. Then add besan and masoor dal into it and mix until it forms a uniform mixture.
5. Lastly add half the amount of soap base into it and mix until a homogenous mixture is formed.
6. Pour this into a soap mold (fill only $\frac{1}{2}$ of the soap mold) and let it set.

Cleanser:

7. Take a beaker B and add half the amount of aloe vera gel and coconut oil.
8. Then add neem powder to it and mix thoroughly.
9. Lastly add half the amount of soap base into it and mix until a homogenous mixture is formed.
10. Pour this onto the top of the exfoliant base (cover the other half).
11. Let it set in a refrigerator for an hour.
12. Demold it and pack it.

Figure 7: Dual-action Soap



Figure 8: Soap in a well labelled container



3. Results and discussion:

The development process for the Ayurvedic postpartum wellness kit involves massage powder, sitz bath bomb, and dual-action soap that uses information from both classical Ayurvedic texts and contemporary scientific literature. All components used herbs that demonstrate anti-inflammatory and antimicrobial along with wound-healing properties in addition to skin-nourishing functionality for postpartum recovery. The massage powder is enriched with ashwagandha, turmeric, fenugreek, and sandalwood

components enhancing blood circulation while reducing fluid accumulation in the body while simultaneously smoothing skin texture and enhancing elasticity. Women who performed Udvartana massage techniques using massage powders in postpartum noticed diminished swelling combined with improved skin texture and physical sensation of lightness which matched concepts of Ayurvedic medicine for detoxification and dosha balance. The sitz bath bomb which contained betel leaf and aloe vera together with turmeric, cinnamon, and lavender oil provided perineal pain relief as well as enhanced wound recovery when used warm, especially for situations where sitting and urination were required. Users avoided cold sitz baths since they reduced swelling effectively yet brought excessive discomfort to the users. The dual-action soap which contains masoor dal along with besan, neem, aloe vera, and coconut oil provides mild exfoliation combined with hydration as it reduces acne spots and pigmentation issues following childbirth without drying out the skin.

The wellness kit serves as an inclusive system of care to support new mothers by meeting their physical requirements, dermatological situations, and emotional well-being needs. The natural user-friendly method improves new maternal compliance while boosting satisfaction levels. Systematic clinical evaluations are crucial to properly substantiate these findings regarding Ayurvedic botanicals as they establish their role in integrated postpartum healthcare approaches.

4. Conclusion and future prospects:

A woman faces various physiological alongside psychological and dermatological transformations during the postpartum time. Proper postnatal care has two vital roles because it enables physical healing as well as emotional health and enhances bonding between mother and infant. The extensive occurrence of perineal trauma along with postpartum complications remains underdetermined in healthcare settings due to inadequate management of associated discomfort. Postnatal healthcare based on Ayurvedic traditional principles offers a potential solution which treats the multiple difficulties faced by new mothers in a complete manner. Technology enables the creation of an Ayurvedic wellness kit which contains massage powder together with sitz bath bomb and dual-action soap for natural healthcare of both skin and perineal areas. This Ayurvedic wellness package features precisely chosen natural herbs that possess antibacterial, healing properties and anti-inflammatory features to nourish patients both physically and emotionally as they recover.

The research field of Ayurvedic postpartum care shows great promise in terms of its future development. Laboratory tests on Ayurvedic solutions including massage powder and sitz bath bombs and dual-action soap must be conducted to determine their ability to reduce postpartum discomfort while improving skin health and wound healing. Initial investigations between Ayurvedic remedies and traditional allopathic practices will confirm their legitimacy to medical standards. The safety and toxicity tests must be performed as a critical step to determine lasting safety levels for mothers who breastfeed. Experts can build a personalized care framework for postpartum care using Ayurvedic dosha tests to identify patients as Vata, Pitta or Kapha groups. The investigation into how Ayurvedic herbs affect the skin microbiome of the perineal region presents an opportunity to create new ways for fighting infections while strengthening skin barriers. Research should investigate how such medical attention affects maternal mental state as well as bonding between mothers and their infants.

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