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Review Article

An Overview on *Natūl* therapy (therapeutic irrigation) and its importance in Unani System of Medicine

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Abstract

Unani System of Medicine takes entire constitution of the individual and lifestyle into account for prescribing treatment. It provides radical and safe cure for various chronic and lifestyle disorders. USM incorporates 'Ilāj bi'l Tadbīr (Regimenal therapy) as a treatment plan as well as the modification in Asbāb Sitta Darūriyya (six essential factors) through certain interventions. Natūl therapy, also known as therapeutic irrigation is one of the classical and effective method in regimenal therapy, which refers to pouring or dripping of liquid slowly and steadily over a body part from a pre-fixed height. Usually decoctions of drugs and medicated oils are used for this purpose. Natūl is done with a purpose of acceleration of process of Tanqiya Mawād-i-Fāsida (evacuation of morbid materials), Imāla-e-Mawād (diversion of matter) and Ta'dīl Mizāj-i-A'ḍā' (normalization of morbid temperament). It also works by local absorption of medicines at the site. The benefits achieved are the combination of neurological effects, psychological effects and pharmacological actions of the procedure and the drugs used. It is specifically useful as an adjuvant treatment in the management of nervous system disorders like headache, insomnia, migraine, amnesia, melancholia, vertigo, epilepsy etc; and also in various other disorders like cystitis, mastitis, arthralgia etc. These therapeutic effects are achieved either by kayfiyāt (quality) of liquid or the constituents of the formulation used in the procedure. Natūl therapy also exhibits analgesic effect, thereby, suppressing musculoskeletal problems such as waja'al-mafāṣil (osteoarthritis), waja'al-zahr (low backache), waja'al-azlāt (myalgia), 'irq al-nasā (sciatica), etc. The need of the hour is to further evaluate these age-old prescriptions on modern parameters, thus, highlighting its clinical importance in light of classical Unani literature.

Keywords: Natūl, 'Ilāj bi'l Tadbīr, Sakūb, Tadbīr, Unani, Joshānda

INTRODUCTION

Unani System of Medicine uses non-drug factors very frequently and extensively for the preservation of health and treatment of diseases. This involves enhancing the body's constitution by either eliminating (Tangiya) or redirecting (Imāla) unhealthy bodily humors, thereby fortifying the body's defense mechanisms. These methods are widely recognized as effective detoxification techniques. In other words, these are the best known "detoxification methods" 1. Among these methods, Natūl stands out as an innovative and non-invasive method. It involves pouring liquid over specific areas of the body from a designated height to target particular diseases. It is a distinctive therapy where medicated oils or herbal decoctions are poured continuously over a particular area of the body for a set duration ². The therapeutic effects are believed to be influenced by both the medicinal properties of the substance used and, notably, by the mechanical action of the oil or decoction dripping. In certain contexts, the term $sak\bar{u}b$ is used with *natūl* ³. The fundamental interchangeably distinction between *natūl* and *sakūb* is determined by the distance from which the medications are dripped. If the

drugs are administered from a close range, it is termed $sak\bar{u}b$, while if the distance is increased, it's referred to as $nat\bar{u}l^4$.

Ibn Sīnā emphasizes that this therapy stands out as highly beneficial for resolving inflammation and for adjusting the temperament of bodily organs when needed. It additionally contributes to strengthening the organs. Therefore, *Natūl-i-mugawwi* (*natūl* performed to strengthen an organ) commences with the use of warm medications when there are no signs of inflammation, followed by the application of cold medications. However, if inflammation is present, it's advisable to start the therapy with cold drugs to address the inflammation first, followed by the use of warm drugs. For the same reason, the therapy for erectile dysfunction incorporates alternating applications of hot and cold water *natūl* to the external genitalia ⁵. The reason for this approach is that warmth relaxes the tissues and promotes improved oxygenation, while the subsequent use of cold drugs aids in restoring normal tonicity.

For the purpose of *natūl*, the affected area should be kept uncovered, preferably in supine position. Then,

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medication or oil at the prescribed temperature is poured either manually or with the aid of modern equipment available, continuously for approximately 20 to 45 minutes from a height of around 0.5 feet. When performing $nat\bar{u}l$ on the forehead, it's important to ensure that the eyes are covered with sterile gauze to avoid any medication from spilling into them 6 .

MATERIALS AND METHOD

PUBMED, MEDLINE, and GOOGLE SCHOLAR databases were searched for the published articles with *nutool*, *natūl*, *shirodhara*, regimenal therapy, Unani medicine, *'Ilāj bi'l Tadbūr*, etc. Relevant clinical trials published in peer-reviewed journals in the English language were only included in this review article. Unani literature was extracted from the classical Unani books.

Objectives of *Natūl*

- 1. $Tahlil-i-Maw\bar{a}d$ to disperse the $akhl\bar{a}t-i-f\bar{a}sida$ (morbid humours) from the affected part
- 2. $Ta'd\bar{\imath}l$ -i- $Miz\bar{a}j$ to normalize the $s\bar{u}'$ -i- $miz\bar{a}j$ (Altered Temperament) of an organ
- 3. *Taskīn-i-Alam* to relieve the painful condition through *imāla akhlāṭ-i-fāsida* (diversion of morbid humours)
- 4. *Muqawwi-i-'Aṣab* to strengthen the nerves through increasing circulation and nutrition
- 5. *Dāfi'-i-Tashannuj* to relieve spasm
- 6. *Tanqiya-i-Mawād* to evacuate the morbid matter locally
- 7. To enhance or improve the blood circulation ^{1,7}

Mechanism of action

In the process of $nat\bar{u}l$ the temperature of the affected part is raised as a result of which the blood circulation increases, the morbid material get dissolved $(Tahl\bar{u}l)$ and more nutrients reach the organ changing its $miz\bar{a}j$ (temperament). $B\bar{a}rid$ $nat\bar{u}l$ is performed to induce vasoconstriction, preventing the entry of morbid material into the main circulation. In the absence of congestion ($Imtil\bar{a}$), $H\bar{a}rr$ $nat\bar{u}l$ is administered. 8.

Types

Natūl is categorized into following types based on the nature of the liquid utilized:

- 1. *Natūl barid* (Cold irrigation); involves the use of cold water, cold medicated decoction, or cold-tempered oil. e.g. in Sarsam (Meningitis) it is poured on head.
- 2. Natūl haar (Hot irrigation); involves the application of hot water, hot medicated decoction, lukewarm oils, or oil with a hot temperament. It is mainly used in inflammatory conditions as a Muhalil-e-warm (anti-inflammatory).
- 3. *Natūl-e-muqawi* (Tonic irrigation): It is primarily used to provide nutrition to weakened organs. Initially *Haar natūl* and then *Barid natūl* is given to improve blood circulation of the organ thereby acting as a nerve tonic ^{8, 9}.

PHYSIOLOGICAL EFFECTS OF NĀTŪL

During the procedure of $nat\bar{u}l$, the temperature of the affected area is raised, leading to enhanced blood circulation. This increased circulation helps dissolve $(tahl\bar{u}l)$ the morbid matter, facilitating better nutrient delivery to the organ altering its Mizaj (temperament). $Barid\ nat\bar{u}l$, on the other hand, is performed to induce vasoconstriction, preventing the entry of morbid matter into the main circulation. $H\bar{u}r$ $nat\bar{u}l$ is carried out when there is no congestion present 10.

The clinical uses of $nat\bar{u}l$ in Unani medicine often encompass several indications. Firstly, it is employed to disperse toxic matter, with drugs administered at a warm temperature. Secondly, it serves for analgesia and tissue relaxation, requiring drugs of warm temperament. Thirdly, it induces vasoconstriction, as seen in $nat\bar{u}l$ with cold water to prevent inflammation, similar to cold compression advised in modern medicine for acute inflammations or post-surgical care. Lastly, it contributes to strengthening tissues, utilizing drugs at lower temperatures for this purpose 5 .

It also induces relaxation similar to that in meditation which is reflected by decreased heart rate, bradycardia, lowered sympathetic tone, slowing of alpha waves on EEG, decreased tidal volume and CO₂ excretion ¹¹. Natūl applied to the forehead is recognized for its psychoneuroimmunologic effects, resulting in a shifted state of consciousness and consequent reduction in anxiety. Biochemical alterations involve the suppression of noradrenaline, a decrease in the PMN/lymphocyte ratio, and the modulation of alpha receptors, indicating a suppression of the sympathetic nervous system rather than activation of the parasympathetic nervous system. Impulses originating from the forehead trigger stimulation of the trigeminal nerve and initiate a somatoautonomic reflex. Concurrently, there are fluctuations in neurotransmitter levels, including serotonin and catecholamine. These combined effects lead to the suppression of the sympathetic nervous system and induce physioimmunologic changes in peripheral circulation, ultimately affecting natural killer cell activity

Further examination of this effect unveils that the stimulus originating from the skin over the forehead travels through the ophthalmic branch of the trigeminal nerve to reach reticulospinal neurons. A portion of this stimulus elicits an immediate motor response, while the majority is retained for future regulation of motor activities. As a result, repeated stimuli are necessary for the consolidation of this information, with a minimum of 5-10 minutes required for minimal consolidation and approximately one hour for more robust consolidation. This clarifies why *natūl* is typically conducted for approximately 45 minutes. Moreover, for a lasting effect of *natūl*, there needs to be a modification in the response characteristics of various neuronal pathways, which can be accomplished through consistent therapy over a period of two weeks. Consistent or uninterrupted pressure input ensures a continuous impulse to the central nervous system (CNS), thereby sustaining CNS

stimulation. Engaging in this procedure regularly for 15 days may result in prolonged CNS stimulation ¹³.

Duration of therapy

The frequency of natūl sessions varies depending on the chronicity of the disease and is gradually reduced as signs and symptoms improve. For instance, an initial regimen might involve seven sessions over the first 14 days, followed by alternating periods of four sessions twice weekly for two weeks, and eventually transitioning to one session weekly. The regimen can be adjusted according to the patient's improvement ⁹.

INDICATIONS AND ITS FORMULATION IN VARIOUS DISORDERS

Disease management in Unani medicine takes into account the nature and pathology of the disease, general constitution and nature of the patient; with special emphasis on the temperament. Every disease is associated with particular humoral and temperamental alterations in the human body, which can be recognized through the ten signs known as *ajnās 'ashara* as described in the texts. ¹⁴. Hence, medications are prescribed considering the temperamental irregularities of the patient, a practice known as '*llāj bi'l-Didd* (heteropathy). This entails prescribing drugs that induce a temperamental change opposite to that caused by the disease condition ¹⁵. Below are some common disease conditions along with recommended nutool formulations as adjuvant therapy.

Indications	Formulation	Method	Ref
Sudā' Hārr (Headache due to excessive heat)	Jaw (Hordeum vulgare), peel of kaddu (Cucurbita moschata), Tukhm-i-kāhu (Lactuca sativa Linn), Isapgol (Plantago ovate seeds), Banafsha (Viola odorata), Tukhm-i-khaṭmi (Althea officinalis), Nīlofar (Nelumbium speciosum)	Boil all the medicines in water, once the decoction is formed, use it as <i>natūl</i> on head.	[16]
	Dry banafsha (Viola odorata), Jaw (Hordeum vulgare), Tukhm-i-kaddu (Laginaria siceraria), Tukhm-e-khurfa (Portulaca oleracea), Bazarkatān (Linum usitatissimum), Post khashkhash, Gul-i-khashkhash (papaver somniferum), Beekh-e-luffāh (roots of Atropa belladonna), Tukhm-e-khatmi (Althea officinalis), Tukhm-i-kāhu (Lactuca sativa Linn), Barg-i-baid (Salix alba), Gul-i-surkh (Rosa centifolia)		
	Gul-i-Nīlofar (Nelumbium speciosum), Khubbāzi (Malva sylvestris), Post-e-khashkhash (peel of papaver somniferum), and Jaw (Hordeum vulgare)		
Şudā' Bārid (Headache due to excessive cold)	Ustukhuddūs (Lavendula stoechas), Berg-i-Khaār (Laurus nobilis), Qaisūm (Artimisia abrotanum), Ḥulbah (Trigonella foenum), Saboos-e-gandum (wheat husk), salt, bābūnah (Matricaria chamomilla), Berg-i-turanj (Citrus modica), Badranjboya (Melissa parviflora), Sazij (Cinnamomum obtusifolium), Qaranfal (Syzygium aromaticum), Bādyān (Foeniculum vulgare Mill), Beekh-i-bādyān (Foeniculum vulgare Mill), Beekh-i-karafs (Carum roxburghianum), Gul-i-surkh (Rosa centifolia), Pudina (Mentha arvensis), Suddāb (Ruta graveolence), Hasha (Thymus vulgaris)	Boil all the medicines in water, make decoction and use as <i>natūl</i> on head in the patients of <i>Ṣudā' bārid</i> .	[16]
Zukām (Coryza and catarrh)	Gul-i-Babunah (Matricaria chamomilla), Gul-i-banafsha (Viola odorata), Gul-i-surkh (Rosa centifolia), Berg-i-tulsi (Ocimum tenuiflorum), Marzanjosh (Origanum majorana)	Boil all the medicines in water, once the decoction is formed, use it as <i>natūl</i> on forehead.	[17]
Shaqīqa (Migraine)	Post-i-khashkhāsh (Papaver somniferum), Banafsha (Viola odorata), Nilofar (Nelumbium speciosum), Gul-i-surkh (Rosa centifolia), Berg-i-kahu (Lactuca sativa Linn) and Khatmi (Althea officinalis).	Patients of shaqīqa-i-ḥārr should be treated with bārid advia first. If symptoms persist, a decoction of given medicines should be used as natūl over the head.	[16]

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Sarsām (Meningitis)	Joshānda of Bābūnah (Matricaria chamomilla), Shibt (Anethum sowa), Berg-i-reḥan (Ocimum sanctum), Banafsha (Viola odorata), Gul-i-nargis (Narcissus tazetta) is prepared and mixed with Roghan-i-bābūnah (chamomile oil), Roghan-i-kunjad (sesame oil), Roghan-i-bādām (almond oil) and milk	Boil all the medicines in water, once the decoction is formed, use it as <i>natūl</i> on forehead.	[7]
	Joshānda of <i>Khashkhāsh</i> (Papaver somniferum) as <i>natūl</i> is recommended to induce mental relaxation and mixed with bābūnah (Matricaria chamomilla)	Decoction is used as <i>natūl</i> on head for the resolution of inflammation.	[18]
<i>Mālankhūliya</i> (Melancholia)	A Joshānda of <i>Shibbat</i> (Anethum sowa), <i>Sausan</i> (Iris florentina), <i>Bābūna</i> (Matricaria chamomilla), and <i>Nakhūna</i> (Trigonella uncata)	Boil the medicines in water and use as <i>natūl</i> over the scalp in patients of <i>Mālankhūliya</i> .	[19]
	Bābūna (Matricaria chamomilla), Nakhūna (Trigonella uncata), Berg-i-bādranjboya (Nepeta hindostana), Berg-i-saru (leaves of Cupressus semepervirens), Jauz al-saru (Fruit of Cupressus semepervirens), flowers of henna (Lawsonia alba), Ushna (Permelia perlata), Berg-i-khubbāzi (Malva sylvestris), Berg-i-khatmi (Althea officinalis) and wheat husk.	A lukewarm <i>Joshānda</i> of given medicines should be made and used as <i>natūl</i> over the head in the patients of <i>Mālankhūliya Bārid</i> .	[7]
Sahr (Insomnia)	Banafsha (Viola odorata), Gul-i-nīlofar (Nelumbium speciosum), Gul-i-surkh (Rosa centifolia), Tukhm-i-kāhu (Lactuca sativa Linn), Kishnīz sabz (Coriandrum sativum), Post-i-khashkhāsh (Papaver somniferum), and Jaw (Hordeum vulgare)	A decoction of given medicines is used as <i>natūl</i> on the forehead in the patients of <i>Sahr</i> .	[16]
	Babunah (Matricaria chamomilla), and Kashk-e-Jau (Hordeum vulgare)	Decoction of <i>Babuna</i> and <i>Kashk-e-jaw</i> is made and poured over head for elderly insomnia patients.	[19]
<i>Fālij</i> (Hemiplegia)	Sirka (vinegar) and Roghan-i-gul (rose oil)	A warm decoction of <i>Sirka</i> and <i>Roghan-i-gul</i> is used as <i>natūl</i> .	[7]
<i>Duwār</i> (Vertigo)	Bābūna (Matricaria chamomilla), Nākhūna (Trigonella uncata), Marzanjosh (Origanum majorana), Sa'tar (Thymus serphyllum), and Rehān (Ocimum basilicum)	Boil the medicines in water and use as <i>natūl</i> in patients of <i>vitiligo</i> .	[16]
<i>Şar'</i> (Epilepsy)	Bābūnah (Matricaria chamomilla), Nākhūna (Trigonella uncata), and Marzanjosh (Origanum majorana), Sa'tar (Thymus serphyllum), Pudina (Mentha spicata), Shibbat (Anethum sowa), Ustukhudus (Lavandula stoechas) and Ood Saleeb (Paonea officinalis)	Boil all the medicines in water and use as <i>natūl</i> for the patients of epilepsy.	[16]
	Shibbat (Anethum sowa) and Baranjasif (Artimisia abrotanum) may also be added		[7]
Tashannuj Imtilā'ī (Congestive convulsion/ cramp/spasm)	Sirka (vinegar) and Roghan-i-gul (rose oil)	Take 450 grams of vinegar and add 35 ml of rose oil into it. Heat the mixture on slow flame till the vinegar is burnt off. Strain and use for <i>natūl</i> on the head.	[20]
<i>Māniyā</i> (Psychosis/ Mania)	Banafsha (Viola odorata), Nīlofar (Nelumbium speciosum), Gul-i-khatmi (Althea officinalis), Sweet basil (Ocimum basilicum), Jaw (Hordeum vulgare), Berg-i-baid (Salix alba), Gul-i-gulāb (Rosa centifolia), Berg-i-kāhu (Lactuca sativa), Berg-i-makoh (Solanum nigrum)	Boil all the medicines in water, make decoction and use as <i>natūl</i> for the patients of Mania.	[19]
Sala'a (Alopecia)	Jaw (Hordeum vulgare) and Tukhm-i-khashkahsh (Papaver somniferum seeds)	If alopecia is caused due to excessive heat, then <i>natūl</i> with a decoction of <i>Jaw</i> and	[20]

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		Tukhm-i-khashkhash may be done over head.	
<i>Phāt al-Janb</i> (Pleurisy)	Warm water	Natūl of warm water is done on affected site for pain relief.	[16]
Waram al Mathāna (Cystitis)	Roghan-i-gul (Rose oil)	Natūl with Roghan-i-gul (Rose oil) is done on pelvic region.	[7]
	Roghan-i-ward mukarrar (a special type of concentrated rose oil)	A warm decoction of given medicines is poured over pelvic region mainly when it involves the neck of bladder.	[21]
<i>Ḥaṣāh wa Raml</i> <i>al-Kulya</i> (Nephrolithiasis)	Gul-i-tesu (Butea monosperma), Gul-i-kasam (Carthamus tictorious), Tukhm-i-kharpaza (Cucumis melo), Tukhm-i-khyārain (Cucumis sativus seed), Khār-i-khask (Tribulus terrestris)	A decoction from 6 grams of each medicine is poured over the site of pain.	[22]
Ḥaṣāh al- Mathāna (Cystolithiasis)	Bābūna (Matricaria chamomilla), Nākhūna (Trigonella uncata), Parsiyaonshan (Adiantum capillus), Hulba (Trigonella foenum graecum), Khar-e-khask (Tribulus terrestris)	Joshānda of given medicines is poured over the pelvic region.	[16]
<i>'Usr al-Bawl</i> (Dysuria)	Babuna (Matricaria chamomilla), Nakhuna (Trigonella uncata), Pudina (Mentha arvensis), Qaiṣūm (Artimisia abrotanum) and wheat husk.	If dysuria is caused due to any wound in the urinary tract, then <i>natūl</i> on the pelvic region is done with a	[18]
	Dissolve <i>Jund baidastar</i> (Castoreum) in <i>Roghan-i-aqrab</i> (scorpion oil) and use it as <i>natūl</i> over urethra.	decoction of given medicines.	[16]
Waja'al-Mafāṣil (Polyarthritis)	Makoh (Solanum nigrum) and Khār-i-khask (Tribulus terrestris) and Roghan-i-Gul (rose oil)	Natūl with the decoction of given medicines is followed by dalk layyin of the affected joint with Roghan-i-gul.	[7]
Waram al-Thadī (Mastitis)	Bābūna (Matricaria chamomilla), Shibbat (Anethum sowa), Hulba (Trigonella foenum graecum), Qaiṣūm (Artemisia absinthium) and Jund baidastar (Castoreum)	Joshānda of given medicines is advocated as natūl over the affected area.	[7]
Nisyān (Amnesia)	Banafsha (Viola odorata), kheeri and babuna (Matricaria chamomilla) Gandum and jau Roghan-e-sausan (orris oil) and Roghan-e-yasmeen (jasmine oil)	Decoction of the given medicines should be used on forehead.	[16]
Samam/Waqr (Deafness)	Marzanjosh (Origanum majorana), Babuna (Matricaria chamomilla), Black tulsi (Ocimum canum), Nargis (Narcissus poeticus), Nakhuna (Trigonella uncata)	Make a decoction of given medicines and use it for natūl on the head for deafness.	[23]
Waram al- Bārīṭūn (Peritonitis)	Hot water	For relief of pain in peritonitis, <i>natūl</i> with hot water on the affected area helps in relieving pain.	[18]
Ramad (Conjunctivitis)	Gul-e-babuna (Matricaria chamomilla), Gul-e-surkh (Rosa centifolia) and Marzanjosh (Origanum majorana)	If conjunctivitis is caused by cold humors, $nat\bar{u}l$ on the head with a decoction of given medicines should be done.	[17]

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CONCLUSION

There is a vast literature in Unani medicine on the therapeutic effects of *natūl* in several disease conditions. Through the careful selection of herbs, oils, and other natural ingredients, natūl formulations are tailored to address specific health concerns, whether they involve inflammation, pain, or other symptoms. Natūl not only targets the affected area but also promotes overall wellbeing by enhancing blood circulation, relaxing muscles, and supporting the body's natural healing processes. The future scope of *natūl* in healthcare holds significant promise, particularly within the context of integrative medicine and holistic wellness practices. As scientific research continues to explore traditional healing modalities, including Unani medicine, natūl is likely to garner more attention for its potential therapeutic benefits. With the increasing prevalence of psychiatric and nervous disorders in the recent years, the search for an all-inclusive therapy continues which can provide both physical and psychological benefits. *Natūl* therapy is one such treatment which is easy to administer, costfriendly and may be employed in low-resource settings also. However, to reap maximum benefits out of this ageold treatment, it is necessary to carry out further detailed researches on the efficacy of the prescribed compound formulations in Unani medicine. Addressing these limitations will require collaborative efforts from researchers, practitioners, policymakers, and healthcare organizations to enhance the evidence base, standardize practices, improve accessibility, and ensure safe and effective integration into comprehensive healthcare delivery models.

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