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## Historical background and medical significance of *Dalk* (Massage): A review

**Abdul Khalique and MY Siddiqui**

### Abstract

*Dalk* (massage) is believed to be one of the oldest forms of medical care, dated thousand years back. The word “*massage*” is derived from Arabic word “*mass*” (to touch) or from the Greek word “*massein*” (to knead). In India, French used the term *massage* for the first time during 1761-1773. In Unani System of Medicine, various types of *massage* have been recommended for different purposes. Unani Physicians had also discussed very elaborately the types, methodology, possible mechanism of action and the diseases where *Dalk* is highly effective. About mechanism of action of *massage* there are two fundamental concepts i.e. Evacuation of morbid matter (*Tanqiya-e Mawad Fasida*) and Diversion of morbid humours (*Imala-e Mawad Raddiya*). In Modern Medicine, more than 250 known types of *massage* and bodyworks are known, and their use depends on the experience of the therapist and clinically desired advantage. The duration depends upon conditions of *massage* that may last for 15-90 minutes. *Dalk* tones flabby and loose muscles to make the body firm, softens hard muscular structure, dissolves morbid gases accumulated in the body, removes cold temperament of the body, relieves pain due to injury, fatigue etc. It is beneficial in debilitated and thin built people and for alignment of body posture, the treatment of various kinds of diseases like musculoskeletal ailments, nervous system abnormalities, respiratory diseases, reduction from anxiety and symptomatic relief.

**Keywords:** *Dalk*, *Massage*, Unani Medicine, Musculoskeletal and Neurological ailments;

### Introduction

Unani System of Medicine like other systems of medicines focuses on the objectives of preservation and restoration of health with a glorifying history of serving humanity since Hippocratic era. *Dalk* (massage) is one of the areas where a lot has been written in Unani classical literatures. The details about this important regimenal therapy were also discussed dating back to the pharaohs of ancient Egypt, and has a long history in cultures around the world. The word “*massage*” is derived from Arabic word “*mass*” (to touch) or from the Greek word “*massein*” (to knead). The term “*anatripsis*” was used by Hippocrates, meaning to rub down and this was translated into the Latin “*frictio*” meaning friction or rubbing. In India, the term *massage* was first time used by French during 1761-1773 and was added in French German dictionary in 1812 A D. According to Oxford dictionary, this word entered in the English literature in 1879. [1, 5]

### Historical background

*Massage* is believed to be one of the oldest forms of medical care, dated back thousands of years. It has always been one of the most natural and instinctive means of relieving pain and discomfort. References to *massage* appear in writings from pharaohs of ancient Egypt, China, Japan, India, Arabia, Greece and Rome. The first description of *massage* was found in medical part of Atharvaveda in 2<sup>nd</sup> millennium BC. In 2700BC, a Chinese book of Internal Medicine recommended “the *massage* of skin and flesh”. In 1200BC, Asclepius used *massage* for relieving pain and first-time *massage* was recognised as a part of medical practice in Tang dynasty (907-619BC). Hippocrates (460-375 BC), the father of medicine wrote that “the physician must be acquainted with many things and assuredly with rubbing” [6, 7]. In first century, Corneus Celsus (25 BC-50AD) deliberately wrote the use of *massage* for prevention and therapeutics of some ailments. Galen (125-195 AD) wrote many materials on early manual medicine (*massage* and exercise). Ibn-Sina (980-1037 AD) discussed many types of *Dalk* (*massage*) in the first volume of his “Canon of Medicine”. *Massage* was continued to be a folk medical culture during the middle ages. Its use by the common people ensured its separation from scientific and medical milieu. *Massage* was thus denigrated by the medical establishment. Application of *massage* to surgical patients was advised by

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Ambroise Pare (1510-1590 AD). In 16<sup>th</sup> century, Fabricus Ab Aquapendente wrote a book on massage and in 18<sup>th</sup> century, Nicholas Andry (1741 AD) has mentioned effects of massage on the circulation and the colour of skin in his book "L'Orthopedie". Massage was widely used in Europe during renaissance. Per Henrik Ling systemized European massage (Swedish massage) in the 18<sup>th</sup> century. The French colonists in India first used the term "Massage" during 1761-1773. In the 1850, two American physicians introduced massage therapy in the United States, where it became popular and was promoted for a variety of health purposes. With scientific and technological advances in medical treatment, during the 1930 and 1940, massage fell out of favour in the world, when the focus of care moved to biological sciences. Again, interest in massage revived in the 1960, especially among athletes. Nowadays the practice of massage is widely used in the various health care system, especially in the Complementary and Alternative Medicine [2, 4, 6].

### Definitions

Defining massage therapy poses a difficult challenge because it is varied and multidimensional topic. In *Unani Medicine*, *Dalk* (massage) is a type of "*Riyazat*" undertaken by means of hands as manipulative technique over the muscles. The term massage therapy encompasses many different techniques. In general, therapists rub, press, and manipulate the muscles and other soft tissues of the body (skin, ligaments and tendons). They mostly use their fingertips and hands, sometime may use their fist, forearms, elbows and even feet or other objects like rough cloth with or without oil.

The American Massage Therapy Association (AMTA) defines massage as "manual soft tissue manipulation, holding, causing movement, and/ or applying pressure to the body." [8]

Kenny (2011) stated that massage can be defined as "manual soft tissue manipulation, and includes holding, causing movement, and/or applying pressure to the body" [9]. massage therapy is "the practice of massage by accredited professionals to achieve positive health and wellbeing" [9].

As reported by Harrison (1986), Massage is "the therapeutic manipulation of soft tissues of the body to alleviate pain and reduce fatigue" [10].

Nafees (1934) defined *Dalk* as "a substitute of exercise because it provides the passive movements to the body" [11].

Ibn Rushd (1980), mentioned that "*Dalk* is a kind of *Riyazat* that is used for the removal of metabolites of digestion" [12].

Craig (2003) defined massage therapy as "the manipulation of soft tissues of whole body areas to bring about generalized improvement in health (like relaxation or improved sleep) or specific physical benefits (like relief of muscular ache and pain)" [13].

Sinha (2010) reported that "any technique, which imparts mechanical energy to the soft tissues of the body without producing any change in the position of joint, to elicit certain physiological or psychological effect which can be utilised for therapeutic, restorative or preventive purposes either on healthy or sick individual can be defined as massage" [1].

### Classification

In Unani System of Medicine, various types of massage are being recommended for different purposes. Ibn-Sina and Ibn

Rushd classified *Dalk* into *Baseet* (single) and *Murakkab* (composite), further they divided *Dalk Baseet* based on *Kaifiyat* (quality) and *Kammiyat* (quantity) into six types as follows [12, 14, 17].

#### On the basis of *Kaifiyat*

1. *Dalk-e-Sulb* (Hard friction) it strengthens organs and makes them hard.
2. *Dalk-e-Layyin* (Soft friction) it makes organs soft and relaxes the muscles.
3. *Dalk-e-Mo'atadil* (Moderate Friction) it is carried out with moderate pressure.

#### On the basis of *Kammiyat*

1. *Dalk-e-Kaseer* (Long duration massage) it makes the organ thin, done in obese.
2. *Dalk-e-Qaleel* (Short duration massage) it produces heat in small quantity.
3. *Dalk-e-Mo'atadil* (Moderate duration massage) it makes body fat.

#### On the basis of *Raftar (speed)*

1. *Dalk-e-Saree* (Rapid friction) it produces heat and dryness in the body.
2. *Dalk-e-Batee* (Slow friction) it produces heat in small quantity.
3. *Dalk-e-Mo'atadil* (Moderate speed friction) it produces heat and dryness moderately. (combination of different types of *Dalk Baseet*)

#### *Dalk Murakkab*

It is divided into nine types as under:

1. *Dalk-e-Sulb Kaseer*
2. *Dalk-e-Layyin Kaseer*
3. *Dalk-e-Mo'atadil Kaseer*
4. *Dalk-e-Sulb Qaleel*
5. *Dalk-e-Layyin Qaleel*
6. *Dalk-e-Mo'atadil Qaleel*
7. *Dalk-e-Sulb Mo'atadil*
8. *Dalk-e-Layyin Mo'atadil*
9. *Dalk-e-Mo'atadil Mo'atadil*

Apart from the above-mentioned types of *Dalk*, there are some other kinds also such as *Dalk-e-Istedad*, *Dalk-e-Isterdad*, *Dalk-e-Khashin*, *Dalk-e-Amlas*, *Dalk-e-Taweel*, *Dalk-e-Qaseer*. [11, 14, 17]

*Dalk-e-Istedad* (Preparatory Massage): It is done about 30-45 minutes before exercise, gently in the beginning and vigorously at the end for the purpose to prepare the body for exercise. It helps in elimination of toxins by liquefying them. It is of two types *Qawee* (done vigorously for short period in winter) and *Zaeef* (done sluggishly in summer). [11]

*Dalk-e-Isterdad* (Post event Massage): It is done for 30-60 minutes at the end of exercise to restore the energy of the body. It is also known as *Dalk-e musakkin* and most preferably carried out with oil [11].

*Dalk-e-Khashin*: It is done with a rough cloth or rough hands, and draws the blood rapidly towards the surface of the body and makes it red [11].

*Dalk-e-Amlas*: It is carried out with soft hand or smooth clothes like silk. It increases the blood towards the organ slowly [11].

*Dalk-e-Taweel*: It is done for a longer period with gentle hands during autumn or beginning of winter season to

maintain the body posture at equilibrium [18].

*Dalk-e-Qaseer*: It is done for a shorter time with gentle hands during summer season [11].

### Types of massage in modern system of medicine

There are more than 250 known types of massage and bodywork. Most of the massage style consist of one or more actions like Effleurage (a gliding or sliding movement over the skin), petrissage (lifting, wringing or squeezing of soft tissues in a kneading motion, or pressing or rolling of the tissues), friction (penetrating pressure applied through the fingertips), tapotement (strike the tissues at a rapid rate) and vibration [19, 21].

Some commonly used types are Swedish massage, Deep Tissue Massage, Sports Massage, Trigger Point Massage, Chair Massage, Lymphatic Massage, and Hot Stone Massage.

**Swedish massage:** It is the most common form of massage currently used around the world, a full body massage (usually the arms, neck, back and legs), a kind of gentle massage that uses long strokes, kneading, deep circular movements, vibration and tapping. Therapist may use oil, lotion, or powder to reduce friction. It relaxes tense and spastic muscles, reduces swelling, soothes the nervous system, improves circulation, speeds healing and recovery, primarily relaxes and reduces stress [22, 26].

**Deep tissue Massage:** It is another common massage technique that uses slower, more force-full strokes to target the deeper layer of connective tissue, therapists usually use their forearms, and elbows to provide the necessary pressure. It is commonly used to help muscle damage from injuries and loosen tight muscles, breaks down scar tissue and adhesions, and reduces chronic tension and pain. [22, 26]

**Sports Massage:** It usually works on one problem area, therapist works according to the needs of the athlete and the type of sport, it often helps in prevention and treatment of injuries (chronic pain, limited range of motion), treatment is designed to help prepare an athlete for an event and to help him or her to recover. [22, 24, 26]

**Trigger Point Massage:** This massage focuses on trigger points or areas of tight muscle fibres that can form in your muscles after injuries or overuse. These knots are painful when pressed and can cause symptoms elsewhere in the body. [22, 25]

**Chair Massage:** Chair massages are usually done in open spaces like the mall. Patient sits in a specially designed chair and remains fully clothed. Therapist massages the upper body usually for 15-30 minutes. [23, 25]

**Lymphatic Massage:** It is gentle massage techniques where therapist uses slow light strokes in concentrated areas of lymph nodes. It enhances the flow throughout the lymphatic channel. It can help to prevent or reduce, swelling, oedema, puffiness of the face after dental or cosmetic surgery, and may be used after surgeries where lymphatic tissues are removed. [23, 26]

**Hot Stone Massage:** A special treatment in which warm smooth stones are used, these stones are highly regarded for

their heat retaining qualities. These stones are heated with hot water and placed on the body to provide the warmth necessary for treatment. It provides deep relaxation, increases circulation of blood and lymph. [23]

### Mechanism of action of Dalk (massage)

According to Unani System of Medicine, the mechanism of action of massage is based on holistic approach, there are two fundamental concepts i.e. Evacuation of peccant matter (*Tanqiya-e Mawad Fasida*) and Diversion of morbid humours (*Imala-e Mawad Raddiya*). *Tanqiya-e-Mawad* is the process of the resolution and excretion of morbid fluids and excess humours from the body, thereby maintaining the homeostasis in the bodily humours qualitatively and quantitatively, which is responsible for the maintenance of normal health. *Imala-e-Mawad* means the diversion of the morbid humours and fluids from the affected organs to the site from where it is easily expelled out from the body tissues. Massage therapy also induces analgesia, sedation, and increases circulation of blood. [4, 27]

**According to modern medical science:** the mechanism by which massage therapy exerts its effects on our bodies remains unknown, however there are some prevailing mechanisms like biomechanical, physiological, neurological and psychological. The effects of massage are most likely produced by more than one mechanism.

**Biomechanical Mechanism:** Application of mechanical pressure on muscle tissue decreases tissue adhesions, increases muscle tendon compliance by mobilizing and elongating adhered connective tissue. It also increases range of motion and reduces active and passive stiffness. [28, 31]

**Physiological Mechanism:** Superficial skin friction increases local heating, and consequently increases local blood circulation. Massage aids in the mechanical emptying of the veins and the lymphatics, and thereby reduces the chance of stagnation of the blood and the lymph in the tissue space. Mechanical pressure of massage might stimulate parasympathetic activity evidenced by reducing heart rate, blood pressure, increasing relaxation and decreasing stress substances. [31, 36]

**Neurological Mechanism:** Massage is believed to stimulate sensory receptors and decrease muscle tension by reducing neuromuscular excitability as measured by changes in the Hoffman reflex amplitude. Massage has been applied to relieve pain. It may reduce pain by activating neural gating mechanism in the spinal cord. [32, 37, 39]

**Psychological Mechanism:** Massage therapy promotes relationship between body and mind, resulting increased relaxation and decreased anxiety due to raised endorphin level and suppressed arousal level and decreases stress hormone levels or an activation of the parasympathetic response. [32, 33, 40]

### Methods of massage

Massage should be done from peripheries to central part of the affected organ (centripetal). In case of head and neck massage it should be performed from upper to lower side. [18]

### Posture during massage

Good posture for massage makes the patient comfortable, surface should be hard and straight, patient should lie in supine position, pillow may be kept below neck and knee joints, when patient is in prone position, pillow should be under clavicle. [18]

### Timing of massage

It is very important to know when massage should be done for better benefits and results and also to avoid adverse side effects. Massage should preferably be done in morning and evening hours of the day in spring and autumn season massage should be done at noon. Massage should neither be done immediately after food intake nor in empty stomach. [4, 17]

### Duration of massage

In *Unani literatures*, no such exact duration of *Dalk* (massage) has been mentioned. Duration of massage depends upon conditions such as organ strength and their temperament, temperament of disease and person, desired outcome and types of oil used. A massage session may last for 15-90 minutes, for non-specific problems like for relaxation it is done for 30-40 minutes, one hour is required for old peoples, in physically weak persons initially applied slowly for 15-20 minutes, then increased to 30-35 minutes, in specific problems as in pains and aches massage is done for longer duration, for those who are habitual to it daily massage is given for 25-30 minutes. [4, 5, 17, 18]

### Some specific conditions and duration of massage. [18]

- Gout 5-10 minutes
- Arthralgia 10-15 minutes
- Insomnia 15 minutes
- Paralysis 20-25 minutes
- Tremor 20-25 minutes
- Sciatica 30 minutes
- Obesity 30 minutes
- Atony of muscles 30 minutes

### Benefits of *Dalk* (massage)

Ibn Sina stated that *Dalk* tones flabby and loose muscles to make the body firm. It is useful in debilitated and thin built people and for alignment of body posture. *Dalk* softens hard muscular structure, spasmodic condition, sprain, atony and rigidity of muscles. It eliminates the body fluid left after purgation, dissolves morbid gases from the body, removes cold temperament of the body and used to relieve pain due to injury and fatigue etc. [4, 11, 12, 14, 41, 46]

Massage is done by using *Roghan* (oils) with an aim to retain the moisture of the body. Various type of massage oils is used in different diseases like *Roghan-e-Darchini* in paralysis, *Roghan-e-Surkh* in joint pain, *Roghan-e-Hanzal* in gout, *Roghan-e-Aaqar Qarha* in sciatica, *Roghan-e-Qust* in obesity, *Roghan-e-Banafsha* in insomnia, *Roghan-e-Sosan* in tremor and *Roghan-e-Zaitoon* in loss of muscular tonicity. [18]

Massage speeds healing from pulled muscles and sprained ligaments, promotes deeper and easier breathing, prevents body from skin disease, boosts immune system, assists with shorter, easier labour for expectant mothers, shortens maternity hospital stay and increases daily stamina and reduces nerve pain. [6, 23, 25, 26, 31]

### Indications

*Unani System of Medicine* recommends *Dalk* for the objectives of preservation and restoration of health. As preventive measures, children in early days of life should be massaged lightly when they wake-up from the sleep in the morning and be given bath to boost their immunity. In youngster phase, massage is performed on completion of digestion of meal with *Roghan-e-Zaitoon* to prepare the body for exercise. After exercise, body is massaged with firm hands for evacuation of the stagnant waste metabolites in subcutaneous tissues and making the body muscular and strong. [12] In elderly people, moderate massage is very effective if done with oil. [15] Razi says that pregnant women should be massaged on back, abdomen and pubic area, few days before the delivery with *Roghan-e-Zambaq* and *Roghan-e-Kheeri* as it facilitates in the easy passage of foetus at the time of labour. [47]

For therapeutic purposes, massage is recommended in various diseases and pain managements, such as the pain due to excessive cold, excessive heat, neurologic pain or/and headache. [15, 47, 48] In musculoskeletal ailments like Gout, arthritis, cervical spondylosis, frozen shoulder, sports related injuries, stiffness, low backache, fibromyalgia, severe osteoporosis, chronic fatigue syndrome. [13, 15, 24, 47, 49, 50]

In nervous abnormalities like hemi-paresis, para-aesthesia, Bell's palsy, meningitis, vertigo, sciatica, epilepsy, flaccidity, tremor, insomnia, dementia, anxiety, stress, depression, mood disorder, agitated behaviour. [9, 23, 47, 49, 51]

In respiratory problems, massage is recommended in haemoptysis and asthma. [47, 52] Massage is also useful in general debility, swollen limb, sexual disorders, nausea and vomiting. [15, 50, 53] Anxiety reduction is the most common longer-term benefit of all reported benefits. [8]

### Contraindications

Despite of its immense benefits, massage is also contraindicated in inflammatory conditions, all kinds of pyrexia, fragility of arteries, bleeding disorders, skin wound and ulcers, skeletal disorder, rheumatoid arthritis, severe osteoporosis, severe renal and cardiac diseases. [1] Massage should not be done in any area of the body with blood clot, fracture, open or healing wound, skin infections. Vigorous massage is also contraindicated in people having low blood platelet counts, and are on warfarin treatment.

### Risk /danger of massage

Massage is generally safe if it is done by a trained massage therapist, but it is not appropriate for everyone. Most serious problems occur due to too much pressure during massage. Serious complications include nerve damage, internal bleeding, allergic reactions to massage oil or lotions, temporary paralysis, fracture, dislocation, and hepatic haematoma etc. [1]

### Conclusions

Massage is a time-tested tool and instinctive means of relieving pain and discomfort. The physician must be aware with the consequences of the diseases and acquainted with the latest technological procedures. Keeping in view of its high medical significance, the practice of massage should be widely highlighted for the benefits of humankind.

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