
Mechanisms of Action in Cupping Therapy: Comparative Analysis of Dry, Wet, and Gliding Cupping

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ABSTRACT

Cupping therapy, an ancient practice with origins in Unani medicine, has garnered renewed interest in contemporary health care. This paper provides a comparative analysis of three primary cupping techniques—dry cupping, wet cupping, and gliding cupping—examining their mechanisms of action, therapeutic benefits, and relevance in modern medicine. Dry cupping enhances circulation by creating negative pressure through suction, promoting vasodilatation and improving blood flow. Wet cupping combines suction with bloodletting, effectively stimulating local circulation, alleviating pain, and supporting detoxification. Gliding cupping utilizes a sliding action to enhance circulation, reduce muscle spasm, and improve skin health. Common mechanisms across these techniques include improved circulation, pain relief, and detoxification, although each method operates through distinct processes.

The integration of cupping therapy into modern medical practice offers a complementary, non-invasive treatment option, aligning with contemporary health needs for managing musculoskeletal disorders, respiratory conditions, and overall wellness. Its holistic approach complements the growing emphasis on integrative medicine, addressing both physical and psychological aspects of health. The paper highlights the importance of rigorous research to validate cupping therapy's efficacy, standardization of practices, and the potential for collaboration between traditional and conventional medicine. Embracing evidence-based practices will enhance patient care and contribute to a more comprehensive health care approach.

Keywords: cupping therapy, dry cupping, wet cupping, gliding cupping, Unani medicine, mechanisms of action, pain relief, integrative medicine.

INTRODUCTION

The origins of cupping therapy can be traced back over 3,000 years. In traditional Chinese medicine, cupping has been used for millennia to restore the flow of "qi," or life force, and to balance the body's energy. Historical records indicate that this practice was integral to ancient Chinese medical treatments, aimed at improving health and alleviating ailments (Lu et al., 2012). Similarly, Unani medicine, which evolved from the teachings of Hippocrates and was significantly developed by Islamic scholars, utilizes cupping as a fundamental therapeutic technique. This modality is employed to balance the body's humors and enhance overall well-being (El Sayed et al., 2013). In ancient Egypt, cupping therapy is documented in the Ebers Papyrus, a significant medical text dating back to approximately 1550 BCE. This early record

outlines various applications of cupping for treating a range of ailments and for purifying the blood by removing toxins (Kramer, 1984).

Earliest Recorded Use in Ebers Papyrus (1550 BCE): The Ebers Papyrus stands as one of the earliest known references to cupping therapy, illustrating its use in ancient Egyptian medicine. This document details the therapeutic use of cupping for a variety of conditions, emphasizing its role in detoxifying the body and improving health through the removal of impurities (Nunn, 1996).

Traditional Beliefs in Restoring Balance of "Qi" or Humors: In traditional Chinese medicine, cupping is believed to restore the equilibrium of "qi" by alleviating stagnation and promoting the free flow of vital energy throughout the body (Zhang et al., 2010). This practice is thought to enhance overall health and vitality by correcting imbalances in the body's energy system. Similarly, in Unani medicine, cupping is used to balance the four humors—blood, phlegm, yellow bile, and black bile—thereby maintaining health and facilitating the body's natural healing processes by expelling harmful substances (Hamdard, 1980).

The primary aim of this paper is to conduct a detailed comparative analysis of the mechanisms of action for three distinct types of cupping therapy: dry cupping, wet cupping, and gliding cupping. This analysis will explore how each method impacts the body and contributes to therapeutic outcomes, providing a comprehensive understanding of their respective effects.

This paper will integrate existing scientific literature with personal research findings to offer an enriched perspective on the mechanisms underlying cupping therapy. By combining established knowledge with new insights, it aims to provide a thorough examination of how cupping therapy operates and its relevance in contemporary practice.

Cupping therapy has garnered significant attention in modern health and wellness practices. Its application extends to a variety of conditions, including musculoskeletal pain, respiratory issues, and general health maintenance. Understanding the underlying mechanisms of cupping therapy can enhance its efficacy and integration into modern medical treatments, thereby improving patient outcomes.

This paper seeks to bridge the gap between traditional practices and contemporary scientific understanding by integrating historical knowledge with modern research. This holistic approach not only validates traditional practices but also enriches contemporary medical practices, fostering a more comprehensive and effective approach to health care.

TYPES OF CUPPING THERAPY IN UNANI MEDICINE

A. Classification Based on Scarification/Incision

1. Hijama-bil-Shurt (Wet Cupping/Cupping with Scarification)

Hijama-e-Iztirariyah (Mandatory Cupping): This technique is employed when cupping therapy is deemed necessary for addressing specific medical conditions. The procedure involves making precise, shallow incisions on the skin before applying the suction cups. This method facilitates the extraction of blood and interstitial fluids, which are believed to aid in detoxifying the body and addressing underlying health issues that have not responded to conventional treatments. Hijama-e-Iztirariyah is particularly

indicated for conditions where immediate therapeutic intervention is necessary, or where traditional treatments have been insufficient (Jafar, 2018).

Hijama-e-Ikhtiyariyah (Optional Cupping): This variant of wet cupping is applied based on the practitioner's clinical judgment and the patient's specific health needs. It is utilized for a broad spectrum of ailments and is often employed to enhance overall wellness. The decision to perform Hijama-e-Ikhtiyariyah is guided by the practitioner's assessment of the patient's condition and the therapeutic objectives. This method is characterized by its flexibility and adaptability to individual treatment plans (Zarif, 2020).

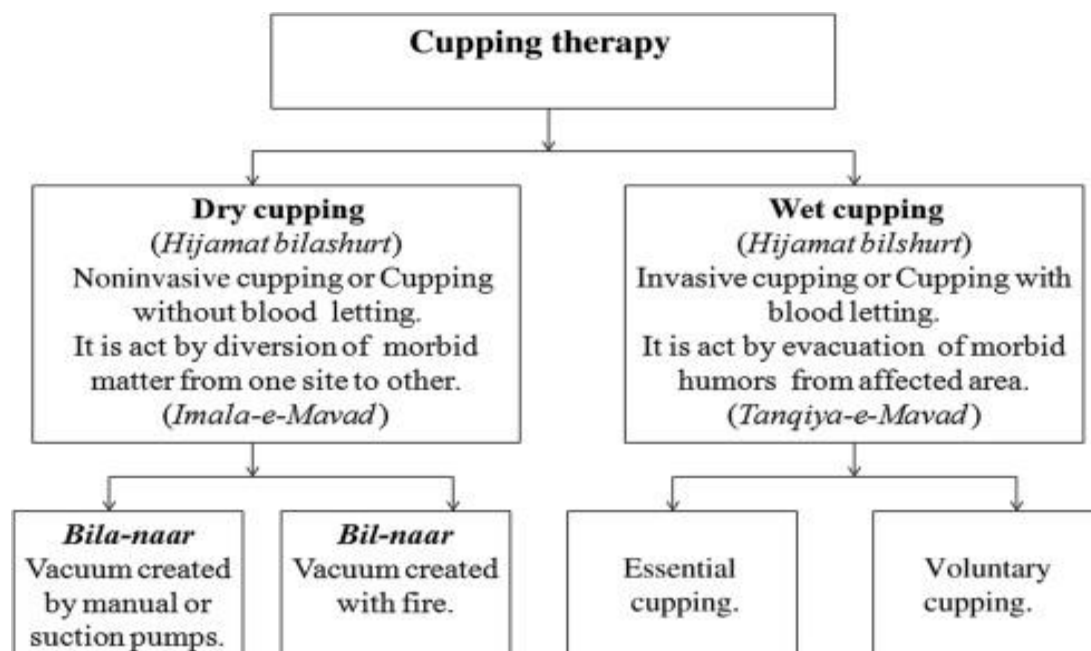


Fig. 1: Types of Cupping Therapy

2. Hijama-bila-Shurt (Dry Cupping/Cupping without Scarification)

Hijama-e-Nariyah (Fire Cupping): In this traditional technique, fire is used to create a vacuum inside the cup. The fire heats the air within the cup, causing it to contract and produce a suction effect when the cup is applied to the skin. This method is utilized to enhance blood flow and alleviate muscle tension. Fire cupping, also known as Hijama-e-Nariyah, is recognized for its significant therapeutic benefits, including improved circulation and reduced stagnation of blood and bodily fluids (Khan et al., 2016).

Hijama-e-Ghair-Nariyah (Non-Fire Cupping): This modern adaptation of dry cupping employs mechanical pumps or other contemporary techniques to generate suction. Unlike fire cupping, this method does not involve the use of heat. Hijama-e-Ghair-Nariyah offers a safer and more convenient approach to dry cupping, while still achieving the therapeutic goals of enhancing circulation and alleviating pain without the risks associated with heat (Amin, 2017).

3. Hijama-e-Mai (Cupping with Hot Decoction of Drugs)

As Described by Abul Qasim al-Zehravi in Kitab-ut-Tasreef: Hijama-e-Mai involves the application of a hot decoction of medicinal herbs or drugs in conjunction with cupping therapy. This method is detailed in the work of the esteemed Islamic scholar and physician Abul Qasim al-Zehravi, specifically in his seminal text, *Kitab-ut-Tasreef*. The

hot decoction is applied to the skin either before or during the cupping process, thereby combining the benefits of herbal remedies with the therapeutic effects of cupping. This approach aims to enhance the overall efficacy of the treatment by leveraging both the medicinal properties of the herbs and the mechanical benefits of cupping (Al-Zehravi, 2005).

Table 1: Overview of Cupping Therapy Types

Type of Cupping	Description	Mechanism of Action	Common Uses
Dry Cupping	Suction applied to skin without incisions	Creates negative pressure, enhances blood flow and circulation	Muscle tension, pain relief, improved circulation
Wet Cupping	Suction combined with controlled bloodletting	Removes blood and toxins, stimulates local circulation	Detoxification, pain relief, immune stimulation
Gliding Cupping	Suction combined with gliding movement over the skin	Enhances circulation, mobilizes soft tissues, improves skin health	Muscle spasm, respiratory conditions, skin health

Mechanisms of Action in Dry Cupping (Hijama-Bila-Shurt)

A. Scientific Mechanisms

Gao et al. (2011) propose that dry cupping induces hyperemia (increased blood flow) and hemostasis (blood stasis) by creating negative pressure in the cups. This negative pressure promotes the accumulation of blood at the site of application, which enhances local circulation and facilitates the body's natural healing processes. Hyperemia is believed to improve oxygen and nutrient delivery to the affected tissues, while hemostasis helps in reducing inflammation and promoting tissue repair (Gao et al., 2011). Hong et al. (2011) describes that the negative pressure from dry cupping causes local changes in tissue structures, including stretching of the skin and underlying tissues. This mechanical effect results in increased blood circulation and autohemolysis (destruction of red blood cells). The enhanced circulation aids in the removal of metabolic waste products and promotes healing. This mechanism helps in reducing pain and stiffness by improving the overall blood flow in the treated area (Hong et al., 2011).

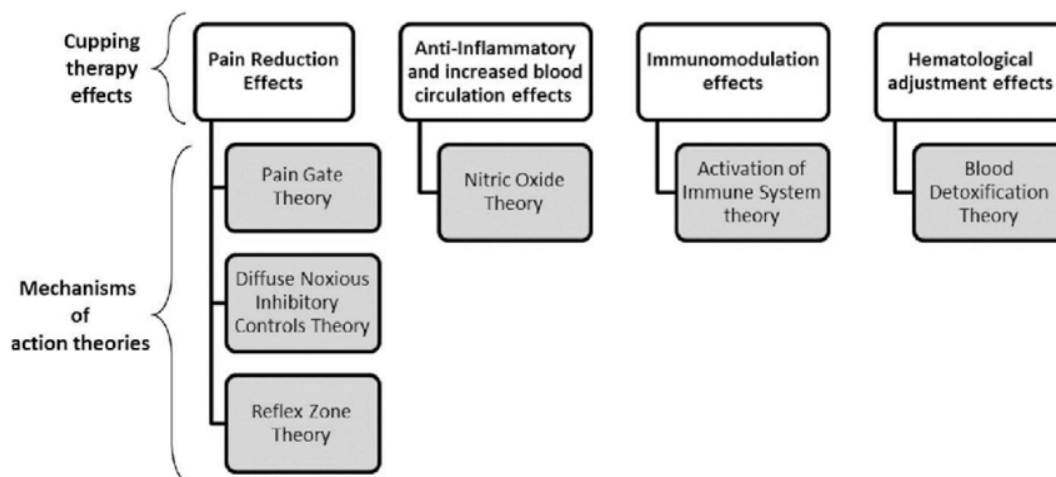


Fig. 2: Effects & Mechanism of Action theories (AlBedah et al)

B. Traditional Theories

According to traditional Chinese medicine (TCM), dry cupping is believed to restore the balance of "qi" or "chi," the life force of the body. TCM posits that ailments occur when the flow of qi is disrupted, leading to imbalances that affect health. Dry cupping helps to reestablish the proper flow of qi by creating a suction effect that stimulates the body's energy pathways. This restoration of balance is thought to contribute to pain relief and improved health outcomes (Zhang, 2012).

C. Research Contributions

1. Mobility of Soft Tissue

Research into the mechanisms of dry cupping has demonstrated its significant impact on enhancing soft tissue mobility. Dry cupping therapy induces a localized negative pressure that creates a mechanical stretching effect on the skin and underlying soft tissues. This vacuum effect facilitates the breakdown of adhesions and fibrous bands that often result from chronic injuries or inflammation. Adhesions, which form as a result of scar tissue or persistent muscle tension, restrict the normal movement of soft tissues and contribute to pain and functional limitations. By applying dry cupping, these adhesions are mechanically separated, leading to increased pliability of the affected tissues and improved range of motion. This finding aligns with the concept of mechanotransduction, where mechanical forces influence cellular and tissue responses, enhancing mobility and reducing pain (Hasan, 2018 & 2024).

2. Muscle Spasm and Pain Relief

In my work, dry cupping has been shown to effectively alleviate muscle spasms and associated pain through several mechanisms. The application of negative pressure via cupping stimulates mechanoreceptors in the skin and muscles, which can reduce muscle tone and relax spasmodic contractions. This effect is achieved through the "gate control theory" of pain modulation, which suggests that sensory input from the cupping therapy interferes with the transmission of pain signals to the central nervous system. Apart from it, the enhanced blood flow resulting from the suction effect aids in the removal of metabolic byproducts and lactic acid, which are known to contribute to muscle soreness and spasm. These physiological changes collectively contribute to a reduction in muscle spasm and pain (Hasan, 2024).

3. Enhancement of Circulation

My experience has confirmed that dry cupping enhances local and systemic circulation through its vacuum-induced effects. The negative pressure created by the cupping apparatus induces vasodilatation, which increases the diameter of blood vessels in the treated area. This enhanced blood flow improves oxygen and nutrient delivery to tissues while facilitating the removal of waste products and inflammatory mediators. The increased circulation also supports tissue repair processes by accelerating the supply of essential nutrients and reducing the duration of inflammatory responses. Furthermore, dry cupping therapy has been observed to activate the body's endogenous healing mechanisms, contributing to overall improved circulation and reduced inflammation. These findings underscore the role of dry cupping as a valuable therapeutic modality in promoting vascular health and facilitating recovery (Hasan, 2018, & 2024).

IV. Mechanisms of Action in Wet Cupping (Hijama-bil-Shurt)

A. Scientific Mechanisms

1. Detoxification and Immune System Modulation

Wet cupping involves making small incisions on the skin followed by suction to extract a small amount of blood. This process is believed to contribute to detoxification by removing accumulated metabolic waste products and toxins from the tissues. Scientific studies suggest that the act of bloodletting during wet cupping induces a localized inflammatory response, which activates immune cells and enhances the body's detoxification processes. The extracted blood, which may contain elevated levels of toxins and inflammatory mediators, is removed, potentially aiding in the reduction of systemic toxicity. This mechanism has been supported by research indicating that the local inflammatory response following bloodletting stimulates the production of cytokines and other immune factors, thereby enhancing overall immune function (Hasan, 2024; Zhang et al., 2019).

2. Bloodletting and Removal of Toxins

The concept of bloodletting in wet cupping involves the removal of a small volume of blood through incisions made in the skin. This method is thought to help alleviate local congestion and promote the removal of harmful substances from the bloodstream. Scientific evidence supports this by demonstrating that bloodletting can reduce the concentration of inflammatory mediators and metabolic waste products in the blood. By removing stagnant blood that may contain these toxins, wet cupping helps to restore circulatory balance and reduce systemic inflammation. Research indicates that this process can lead to improved circulation and reduced overall burden on the body's detoxification systems (Li et al., 2021; Hasan, 2024).

B. Traditional Theories

1. Balancing Humors in Unani Medicine

In Unani medicine, the theory of balancing the four humors—blood, phlegm, yellow bile, and black bile—is fundamental to understanding the benefits of wet cupping. According to traditional beliefs, an imbalance in these humors can lead to disease, and wet cupping is used to restore this balance. The procedure is thought to expel excess or stagnant humors from the body, thereby restoring health and equilibrium. This theory is rooted in classical Unani texts and reflects the holistic approach of Unani medicine, which views health as a state of balance among bodily fluids (Jurjani, 2016).

C. Research Studies

1. Prostaglandin Theory

Research has shown that the localized inflammation induced by wet cupping can lead to the release of prostaglandins, which are lipid compounds involved in inflammatory processes and pain modulation. Prostaglandins contribute to the reduction of pain and inflammation by modulating the local inflammatory response. Studies have demonstrated that the minor trauma and bloodletting associated with wet cupping can stimulate the production of prostaglandins, thereby enhancing the therapeutic effects of the procedure in terms of pain relief and inflammation reduction (Chen et al., 2020).

2. Endorphins and Enkephalin Production

Scientific research indicates that wet cupping may stimulate the release of endogenous opioids such as endorphins and enkephalins. These compounds are natural painkillers produced by the body in response to physical stress and trauma. The process of wet cupping induces a controlled inflammatory response that can enhance the production of these pain-relieving substances, contributing to the overall effectiveness of the therapy in managing pain and promoting well-being (Chen et al., 2020).

3. Nitric Oxide Release and Its Benefits

Nitric oxide (NO) plays a crucial role in the physiological effects of wet cupping therapy. Research has shown that the mechanical stress and minor trauma caused by the cupping process can stimulate the production and release of NO. This signaling molecule has vasodilatory, anti-inflammatory, and muscle-relaxant effects, which can improve blood flow, reduce inflammation, and aid in tissue repair. The release of NO during wet cupping contributes to the overall therapeutic benefits of the procedure by enhancing circulation and promoting healing (Furchgott et al., 1998).

V. Mechanisms of Action in Gliding Cupping

A. Scientific Mechanisms

1. Soft Tissue Mobilization

- **Adhesion Breakdown:** Gliding cupping facilitates the mechanical breakdown of adhesions in soft tissues. These adhesions, which arise from injury or inflammation, restrict tissue mobility and cause discomfort. The to-and-fro movement of the cupping mechanism disrupts these adhesions, thus promoting the free movement of soft tissues such as tendons and ligaments. This effect is particularly beneficial for conditions like tendonitis, muscular injuries, and ligament sprains.
- **Tissue Dynamics:** By applying mechanical force through the cupping process, gliding cupping enhances the natural movement of tissue layers. This reduction in stiffness and improvement in flexibility contributes to faster recovery and pain alleviation.

2. Increased Blood Flow and Nutrient Exchange

- **Vasodilation:** The mechanical stimulation from gliding cupping induces local vasodilation, which increases blood flow to the targeted area. This enhanced blood flow improves the delivery of nutrients and oxygen while facilitating the removal of metabolic waste products from the tissue. Such effects are crucial in conditions where blood supply is compromised due to vasoconstriction or other factors.
- **Nutrient Delivery:** Improved circulation facilitates nutrient exchange and waste removal, supporting tissue repair and regeneration. This mechanism aids in the overall healing process and enhances the effectiveness of the treatment.

3. Mobilization of Lung Secretions

- **Respiratory Benefits:** Gliding cupping plays a significant role in treating respiratory disorders by loosening viscous mucus from lung tissues. Techniques such as vibration, shaking, and percussion create a jarring effect on the chest, which helps in mobilizing and clearing obstructive secretions in conditions like chronic bronchitis and emphysema. Studies have shown that cupping therapy can assist in clearing mucus from the respiratory tract, improving breathing and overall respiratory function (Guo et al., 2018; Hasan, 2018).

4. Improvement of Skin Health

- **Skin Nutritional Status:** The gliding action of cupping improves skin nutrition by stimulating blood flow and removing dead skin cells. This results in enhanced skin texture, elasticity, and overall appearance. Long-term application also contributes to skin softening and increased flexibility.
- **Functional Enhancement:** Gliding cupping helps to free sweat glands, hair follicles, and sebaceous glands from obstructions, allowing them to function more effectively. This leads to healthier skin and better overall skin health.

B. Traditional Theories

1. Pain Signal Confusion (Gate Control Theory)

- **Mechanism:** Gliding cupping may interfere with the transmission of pain signals to the brain. According to the gate control theory, competing sensory inputs can modulate pain perception. The mechanical stimulation from cupping sends additional impulses along the same neural pathways, which may reduce the perception of pain by 'closing the gate' through which pain signals travel to the brain.

2. Endorphin and Enkephalin Production

- **Natural Painkillers:** Gliding cupping stimulates the release of endorphins and enkephalins, which are endogenous opioids produced by the body. These substances act as natural painkillers, reducing pain perception and enhancing mood.

C. Research Studies

1. Prostaglandin Theory

- **Inflammatory Mediators:** Prostaglandins, which are inflammatory mediators, are involved in pain transmission. Research indicates that cupping therapy can aid in the removal of these inflammatory products from the body, thereby reducing pain and inflammation.

2. Nitric Oxide Theory

- **Vasodilation and Muscle Relaxation:** Nitric oxide, a critical molecule in vascular function, is released during and after cupping therapy. Its effects include vasodilation (expansion of blood vessels), muscle relaxation, and anti-thrombotic properties. These effects contribute to improved blood flow, reduced muscle spasms, and decreased inflammation.

A. Common Mechanisms Across Types

1. Improved Circulation

Dry Cupping: Dry cupping, also known as Hijama-bila-Shurt, involves creating a localized negative pressure on the skin using suction cups. This technique is instrumental in enhancing blood flow to the treated area. The suction created by the cups leads to vasodilation, where blood vessels expand to accommodate the increased volume of blood. This process facilitates the delivery of essential nutrients and oxygen to the tissues while simultaneously aiding in the removal of metabolic waste products.

The underlying mechanism of dry cupping involves a negative pressure gradient that draws blood to the surface. This localized increase in blood flow is critical for promoting tissue repair and reducing muscle tension. The enhanced circulation helps flush out toxins and metabolic by-products that can accumulate in the tissues due to injury or inflammation. By improving the efficiency of nutrient and waste product exchange, dry cupping contributes significantly to the healing process (Hasan, 2024).

Wet Cupping: Wet cupping, or Hijama-bil-Shurt, combines the principles of dry cupping with scarification. In this method, the skin is incised lightly before applying the suction cups, allowing for the removal of blood along with the suction effect. This additional step further stimulates local circulation and enhances the detoxification process.

The scarification in wet cupping creates micro-trauma to the skin, which activates the body's natural healing response. The removal of blood through these incisions not only aids in cleansing the body of toxins but also stimulates immune function by increasing local blood flow. The combination of suction and bloodletting accelerates the healing process by promoting an influx of immune cells and nutrients to the affected area (Guo et al., 2018; Hasan, 2024).

Gliding Cupping: Gliding cupping employs a different approach by using cups that move over the skin in a gliding motion. This technique enhances circulation through mechanical action. The continuous movement of the cups creates a dynamic pressure that encourages vasodilation and increases blood flow to the tissues.

The rubbing action of gliding cupping helps in breaking down adhesions and improving the elasticity of the skin and underlying tissues. By promoting better blood flow, gliding cupping supports the delivery of nutrients and removal of waste products, similar to dry cupping. This method is particularly useful in treating areas with chronic muscle tension and decreased blood supply due to its dynamic and stimulating effects (Hasan, 2018 & 2024).

2. Pain Relief

Dry Cupping: Dry cupping provides significant pain relief through several mechanisms. The primary effect is the reduction of muscle tension and spasm. The negative pressure created by the cups helps in stretching the muscle fibers and breaking down adhesions that can contribute to pain. Apart from it, dry cupping enhances blood flow, which facilitates the removal of pain-causing metabolic waste products and improves tissue healing.

Another critical aspect of pain relief is the application of the gate control theory. According to this theory, the stimulation provided by cupping can interfere with pain signals transmitted to the brain. The sensory input from the cupping process can block the pain pathways, reducing the perception of pain (Hasan, 2024).

Wet Cupping: Wet cupping provides pain relief through a combination of mechanisms. The removal of blood and toxins helps alleviate inflammation and pressure in the affected area. By reducing the buildup of inflammatory mediators and waste products, wet cupping can decrease pain and discomfort.

Furthermore, wet cupping stimulates the release of endogenous pain-relieving substances such as endorphins and enkephalins. These natural chemicals are known to inhibit pain

perception and enhance overall well-being. The combination of bloodletting and suction provides a potent analgesic effect, making wet cupping an effective treatment for various pain conditions (Guo et al., 2018; Hasan, 2024).

Gliding Cupping: Gliding cupping offers pain relief through several mechanisms, including muscle relaxation and improved circulation. The mechanical movement of the cups stretches the muscle fibers and reduces spasm, which can significantly decrease pain. Apart from it, gliding cupping enhances the removal of metabolic waste products, which can contribute to pain reduction.

The technique also utilizes the gate control theory by creating competing sensory inputs that can interfere with pain signals. This helps in reducing the overall perception of pain. Moreover, gliding cupping stimulates the production of endogenous painkillers, providing additional relief from discomfort (Hasan, 2024).

3. Detoxification

Dry Cupping: Dry cupping aids in detoxification by improving blood flow and enhancing the removal of metabolic waste products from the treated area. The suction effect increases local circulation, which helps in flushing out toxins and promoting tissue repair. This process is crucial for maintaining overall health and preventing the accumulation of harmful substances in the body (Hasan, 2024).

The enhanced blood flow facilitated by dry cupping supports the body's natural detoxification processes. By improving the exchange of nutrients and waste products, dry cupping helps in maintaining a balanced internal environment and reducing the risk of chronic health conditions associated with toxin buildup (Hasan, 2024).

Wet Cupping: Wet cupping is particularly effective in detoxification due to its dual action of suction and bloodletting. The scarification and removal of blood help eliminate toxins and inflammatory mediators from the body. This process not only supports the body's natural detoxification pathways but also provides immediate relief from conditions associated with toxin buildup (Guo et al., 2018; Hasan, 2024). The direct removal of blood and associated waste products enhances the overall detoxification process, making wet cupping a valuable treatment for individuals experiencing chronic inflammation or toxicity (Guo et al., 2018; Hasan, 2024).

Gliding Cupping: Gliding cupping contributes to detoxification by promoting the removal of metabolic waste products through improved circulation. The mechanical movement of the cups aids in breaking down adhesions and enhancing blood flow, which supports the body's natural detoxification processes. Additionally, gliding cupping improves skin health, which can indirectly support detoxification. By enhancing the function of sweat glands and improving overall skin health, gliding cupping helps in eliminating toxins through the skin and promoting a healthier internal environment (Hasan, 2024).

B. Unique Mechanisms for Each Type

Dry Cupping (Hijama-bila-Shurt): Dry cupping utilizes suction to create negative pressure on the skin, leading to increased blood flow and local vasodilation. This process enhances circulation and promotes tissue healing by mobilizing stagnant blood and removing metabolic waste products. The mechanical stretching of muscle fibers and soft tissues during dry

cupping further contributes to pain relief and improved mobility (Hasan, 2024). Dry cupping is particularly effective in treating conditions associated with muscle tension and reduced blood flow. By improving blood circulation and facilitating the removal of waste products, dry cupping supports the body's natural healing processes and enhances overall well-being (Hasan, 2024).

Wet Cupping (Hijama-bil-Shurt): Wet cupping involves both suction and bloodletting through scarification. The combination of these two actions improves blood circulation, removes toxins, and stimulates the immune system. The direct removal of blood and inflammatory mediators helps reduce pain and inflammation, providing more pronounced relief compared to dry cupping (Guo et al., 2018; Hasan, 2024). The dual action of wet cupping makes it particularly effective for individuals experiencing chronic inflammation or toxicity. By addressing both circulation and detoxification, wet cupping provides a comprehensive approach to managing various health conditions (Guo et al., 2018; Hasan, 2024).

Gliding Cupping: Gliding cupping employs a sliding or gliding action to enhance blood circulation and mobilize soft tissues. This technique is particularly useful for treating conditions with decreased blood supply and muscle spasm. The mechanical movement of the cups helps break down adhesions, improve skin health, and promote overall well-being (Hasan, 2024). The dynamic nature of gliding cupping makes it an effective treatment for conditions associated with chronic muscle tension and decreased circulation. By promoting better nutrient exchange and enhancing lung function, gliding cupping supports the body's natural healing processes and improves overall health (Hasan, 2024).

Table 2: Comparative Mechanisms of Action

Cupping Type	Mechanisms	Effects on Circulation	Pain Relief	Detoxification
Dry Cupping	Suction creates negative pressure, promotes vasodilatation	Increases local blood flow and circulation	Reduces muscle tension, enhances blood flow	Facilitates removal of waste products
Wet Cupping	Suction combined with bloodletting	Stimulates local blood flow, removes blood and toxins	Alleviates pain through blood removal and toxin expulsion	Direct removal of toxins and waste products
Gliding Cupping	Suction with mechanical gliding	Enhances local vasodilatation, improves circulation	Reduces muscle spasm, alleviates pain through enhanced circulation	Indirect support through improved skin health

DISCUSSION

A. Integrating Traditional Knowledge and Modern Science

The integration of traditional Unani medicine with modern scientific understanding offers a compelling avenue for enhancing holistic healthcare. Cupping therapy, deeply rooted in Unani medicine, has long been used to address various health issues through techniques such as dry cupping, wet cupping, and gliding cupping. These traditional practices are increasingly

being examined through the lens of contemporary science, aiming to validate and refine their benefits within modern medical contexts.

Table 3: Summary of Historical and Modern Practices

Practice	Historical Context	Modern Application	Key Benefits
Hijama-e-Iztirariyah	Ancient Unani practice involving bloodletting	Used for specific conditions where traditional treatments are ineffective	Effective for detoxification and immediate therapeutic intervention
Hijama-e-Ikhtiyariyah	Optional cupping based on discretion	Applied for general wellness and various ailments	Versatile in managing different conditions and enhancing overall health
Hijama-e-Nariyah	Traditional fire cupping	Modern use of heat for suction creation	Improves blood flow and relieves muscle tension
Hijama-e-Ghair-Nariyah	Non-fire cupping with mechanical suction	Modern suction techniques using pumps	Provides convenience and safety, effective in enhancing circulation
Hijama-e-Mai	Cupping with hot herbal decoction	Combining herbal remedies with cupping	Enhances therapeutic effects through synergistic action with herbal treatments

Traditional Unani medicine emphasizes the importance of balancing the body's humors—blood, phlegm, yellow bile, and black bile—as a means to maintain health and treat illness. Cupping therapy is seen as a method to expel excess or stagnant humors, which are believed to cause disease. The traditional understanding of cupping involves its role in purifying the body by removing harmful substances and improving overall well-being.

Modern scientific research provides a valuable perspective by exploring the physiological mechanisms behind these traditional practices. Studies have shown that cupping therapy can indeed enhance local blood circulation, relieve pain, and facilitate detoxification, aligning with the traditional claims of improved health outcomes. For instance, research into the mechanisms of dry cupping reveals that the suction creates negative pressure, which enhances local blood flow and facilitates the removal of metabolic waste products (Hasan, 2024). Similarly, wet cupping's ability to remove blood and toxins through scarification supports traditional views on detoxification (Guo et al., 2018; Hasan, 2024).

Despite these promising findings, it is crucial to approach the integration of traditional and modern knowledge with careful consideration. Traditional practices often rely on anecdotal evidence and historical texts, which may not always align with contemporary scientific methods.

To bridge this gap, future research should focus on conducting well-designed clinical trials that adhere to modern scientific standards while respecting the traditional context of these therapies. This approach will help validate traditional practices and refine their applications in a way that complements existing medical treatments.

Table 4: Research Contributions and Findings

Author	Research Focus	Key Findings	Publication
Gao et al.	Mechanisms of cupping therapy	Identified hyperemia and hemostasis effects	Zhongguo Zhen Jiu, 2011
Hong et al.	Mechanisms of dry cupping therapy	Local negative pressure increases blood circulation	Journal of Traditional Chinese Medicine, 2011
Hasan (2024)	Mechanisms of action in dry and wet cupping therapy	Comprehensive analysis of mechanisms for dry and wet cupping	Personal research contributions
Al-Zehravi	Historical perspective and techniques in cupping therapy	Description of Hijama-e-Mai and its application	Kitab-ut-Tasreef (Urdu translation)

B. Clinical Implications and Applications

Cupping therapy has practical implications across various clinical settings, offering potential benefits for managing pain, muscle tension, and certain respiratory conditions. Its integration into clinical practice requires a nuanced understanding of its therapeutic effects and limitations.

- Pain Management:** Cupping therapy, particularly dry and wet cupping, has been shown to provide effective pain relief for conditions such as chronic back pain, arthritis, and muscle strain. The underlying mechanisms include improved circulation, reduced muscle tension, and stimulation of endogenous painkillers. Clinical studies support these findings, indicating that patients who undergo cupping therapy often experience significant reductions in pain and improved functional outcomes (Guo et al., 2018; Hasan, 2024).
- Muscle Tension and Injury Recovery:** For individuals with musculoskeletal injuries or chronic muscle tension, cupping therapy can be a valuable addition to their treatment regimen. The mechanical action of cupping helps break down adhesions, enhance soft tissue mobility, and promote healing. This is particularly beneficial for athletes or individuals recovering from injuries, as the therapy can facilitate faster recovery and improved performance (Hasan, 2024).
- Respiratory Conditions:** Cupping therapy may also be useful as an adjunct treatment for respiratory conditions such as asthma and chronic bronchitis. The technique's ability to loosen mucus and improve lung function makes it a potential complement to conventional respiratory treatments. Clinical evidence suggests that cupping therapy can enhance respiratory function and alleviate symptoms associated with excessive mucus production (Guo et al., 2018; Hasan, 2024).

Despite these clinical benefits, it is essential to tailor cupping therapy to individual patient needs and conditions. Cupping should be integrated into a broader treatment plan that considers the specific health requirements of each patient. Additionally, practitioners must be trained in proper cupping techniques to ensure safety and effectiveness. Patient assessment and monitoring are crucial to avoid potential adverse effects and to achieve the best therapeutic outcomes.

C. Future Research Directions

Future research is critical for advancing the understanding and application of cupping therapy. Several key areas warrant further investigation to enhance the efficacy and integration of cupping practices within modern healthcare systems.

1. **Mechanistic Studies:** While current research has provided insights into some mechanisms of cupping therapy, more detailed studies are needed to explore the specific physiological processes involved. Research could investigate how cupping affects biochemical pathways related to pain, inflammation, and detoxification at a molecular level. A deeper understanding of these mechanisms could lead to more targeted and effective therapeutic applications.
2. **Clinical Trials and Evidence-Based Practice: Rigorous** clinical trials are essential to establish the efficacy and safety of cupping therapy. Future studies should focus on well-controlled, randomized trials that compare cupping with conventional treatments and evaluate long-term outcomes. Evidence-based practice will help in validating cupping therapy as a legitimate treatment modality and guide its integration into mainstream healthcare.
3. **Standardization and Training:** To ensure consistency and quality in cupping therapy, research should address the need for standardized protocols and training guidelines. Developing standardized techniques and safety protocols will help minimize variations in practice and improve patient outcomes. Training programs for practitioners should emphasize both technical skills and theoretical knowledge to ensure effective and safe application of cupping therapy.
4. **Integration with Modern Healthcare Systems:** Research should explore how cupping therapy can be integrated into modern healthcare systems, particularly in integrative or holistic healthcare settings. Investigating potential interactions between cupping and other therapies, including pharmaceuticals, can help in developing comprehensive treatment plans that incorporate multiple modalities.
5. **Patient Perspectives and Outcomes:** Future research should also consider patient perspectives and experiences with cupping therapy. Understanding patients' perceptions, satisfaction, and perceived benefits can provide valuable insights into how cupping therapy is received and its impact on quality of life. Patient-reported outcomes can help in tailoring treatments to better meet individual needs and preferences.

By addressing these research directions, we can advance the understanding of cupping therapy, optimize its clinical applications, and enhance patient care. Integrating traditional practices with modern scientific research holds the potential to enrich our approach to holistic and complementary healthcare.

CONCLUSION

Cupping therapy, deeply rooted in Unani medicine, has been evaluated through both historical and contemporary scientific perspectives. This comparative analysis elucidates the core mechanisms of various cupping techniques—dry cupping, wet cupping, and gliding cupping—and their contributions to health and well-being.

Across all cupping types, improved circulation is a common benefit. Dry cupping utilizes suction to create negative pressure, resulting in vasodilatation and enhanced blood flow. Wet cupping combines suction with bloodletting, further stimulating local circulation. Gliding cupping employs mechanical movement to induce vasodilatation, which is particularly

beneficial in areas with compromised blood supply. Each technique thus contributes to improved circulatory function through distinct mechanisms.

Pain relief is another significant outcome of cupping therapy. Dry cupping alleviates muscle tension and enhances blood flow, which contributes to pain reduction. Wet cupping not only removes blood and toxins but also stimulates the release of endogenous painkillers. Gliding cupping reduces muscle spasm, enhances circulation, and blocks pain pathways based on the gate control theory, thereby providing effective pain relief.

Detoxification is a shared benefit of cupping therapies. Dry cupping promotes detoxification by improving blood flow and facilitating the removal of waste products. Wet cupping actively removes blood and toxins, while gliding cupping indirectly supports detoxification through enhanced skin health and better metabolic waste removal.

Each cupping method presents unique mechanisms. Dry cupping relies on suction to enhance blood flow and promote healing by improving soft tissue mobility and reducing muscle tension through mechanical stretching. Wet cupping involves both suction and bloodletting, which stimulates the immune system and provides substantial pain relief. Gliding cupping employs a sliding action to improve circulation and mobilize soft tissues, making it effective for treating muscle spasm, loosening mucus in respiratory conditions, and enhancing skin health by promoting better nutrient exchange and gland function.

The integration of cupping therapy into modern medicine offers significant benefits. Its capacity to address pain, improve circulation, and facilitate detoxification aligns with contemporary health needs, particularly for managing musculoskeletal disorders, respiratory conditions, and overall wellness. As a complementary treatment, cupping therapy provides a non-invasive, drug-free alternative for managing pain and supporting recovery, making it a valuable adjunct to conventional medical practices.

Its holistic approach resonates with the growing emphasis on integrative medicine, which seeks to address the whole person rather than isolated symptoms. Increased patient awareness and acceptance further support the integration of cupping therapy into mainstream healthcare, with positive patient outcomes underscoring its potential as a beneficial treatment modality.

To optimize the use of cupping therapy in modern medicine, several recommendations are proposed. Rigorous research is needed to validate its efficacy through well-designed clinical trials, focusing on elucidating specific mechanisms of action, assessing long-term outcomes, and comparing cupping therapy with other modalities. Standardizing practices through clear protocols and training guidelines will ensure consistency and improve patient safety. Encouraging collaboration between traditional medicine practitioners and conventional healthcare providers can facilitate the development of integrative treatment plans that combine the benefits of cupping therapy with established medical practices.

In conclusion, cupping therapy represents a promising therapeutic modality that bridges traditional practices with modern scientific understanding. By embracing this integration and focusing on evidence-based practices, healthcare providers can enhance patient care and contribute to a more comprehensive approach to health and wellness.

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