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# Hijama therapy (wet cupping) — its potential use to complement British healthcare in practice, understanding, evidence and regulation



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#### ABSTRACT

Wet cupping was used in the nineteenth century for treatment of patients in the United Kingdom (UK) by a few experienced practitioners. Revival Hijama use by practitioners in the UK in recent years has been observed as well as interest from the public, with developments of specific certified training programmes, established businesses providing tailored Hijama therapy Clinical Waste disposal services, provisions of insurance cover, involvement of medical professionals and membership with the General Regulatory Council for Complementary Therapies (GRCCT). However, there has also been noted that there is not much in the way of guidance or regulation. Therefore, we would like to initiate some communication and understanding of Hijama (wet cupping) to benefit medical professionals, discussing recent research undertaken as a basis for potentially more in the future (evidence-based practice), in the likely event that a patient might request to be referred for this therapy during a consultation.

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#### 1. Introduction

Wet cupping was used in the nineteenth century for treatment of patients in the United Kingdom (UK) by a few experienced practitioners. It was a complex procedure used for the treatment of local areas of Inflammation, but the therapeutic use of bloodletting was controversial, and there were periods of decline and revival in usage [1]. Revival of the use of Hijama by practitioners in the UK in recent years has been observed as well as interest from the public, with developments of specific certified training programmes including practical elements, established businesses providing tailored Hijama therapy Clinical Waste disposal services [2], provisions of insurance cover, involvement of medical professionals and membership with the General Regulatory Council for Complementary Therapies (GRCCT). However, there has also been noted that there is not much in the way of guidance or regulation from the Government, Royal College of Surgeons of England (RCS), Health and Care Professions Council (HPC), General Medical Council (GMC) or the National Institute for Health and Care Excellence (NICE) for medical/healthcare professionals with regards to this, as there has been provided previously for Acupuncture [3]. Therefore, we would like to initiate some communication and understanding of Hijama

(wet cupping) to benefit medical professionals, discussing recent research undertaken as a basis for potentially more in the future (evidence-based practice), in the likely event that a patient might request to be referred for this therapy during a consultation.

#### 2. What is Hijama, and what are its origins?

Basic description of the Procedure: Local suction takes place initially using special cups on selected areas of the body. After several minutes, the cup is removed and small scratches are made on the skin using a sterile cupping scalpel. A second suction using cups is then undertaken to carefully draw out a small quantity of blood to remove toxins [4].

It has been reported that knowledge gained from religious texts such as the Qur'an and Hadith may guide the attention of researchers to a starting point for research and possibly gain benefits when comparing such knowledge with modern medical knowledge. There are around one million muslims living in the UK. Over 1000 years ago muslim physicians were the first to perform Caesarean sections, they invented dissolving stitches as well as well-known surgical instruments, and built teaching hospitals with planned wards as we know them today. Obtaining informed consent was previously considered to have been introduced to the West during the twentieth century (the Nuremberg Code and medical malpractice suit), however a recently published study has

shown that the concept of informed consent was already present in the sixteenth century Qadi registers of the Ottoman Empire - an original signed and witnessed written consent for a surgical intervention dating back to 1524 was discovered, demonstrating value and respect by muslim physicians of legal obligations and autonomy. Muslims and Islam have contributed to the study and practice of medicine and surgery in ways from which Europeans have benefitted for centuries afterwards [3.5–9]. Prophetic medicine is the medical knowledge gained from sayings, advice and teachings of Prophet Muhammad (peace be upon him), and Hijama is advised to be highly recommended and one of the best remedies. Arabic civilization named cupping therapy 'Al-hijamah', which means 'to restore to the original size' in Arabic, where it was used in treating hypertension, polycythemia, headache, migraine and drug intoxication. Polycythemia was diagnosed when there was an exaggeration of the pink colour of skin; with this treatment the patient confronts the abundance of blood. Today venesection is still being used currently in many hospitals for treating polycythemia, where blood is drawn out and replaced by saline infusion. There might be harmful complications in extremely thin or obese patients. It is also advised to postpone treatment in patients compromised by diseases, especially where thick phlegm is in abundance. There are also certain days were treatment is encouraged or discouraged according to the lunar cycle. 'Al Hijamah' has been suggested to have solid scientific and medical bases, and its use is as an artificial surgical excretory procedure that clears blood and interstitial fluids from Causative Pathological Substances (CPS), opens the skin barrier, increases natural excretory functions of the skin, boosts immunity and enhances filtration at both capillary ends to clear blood from CPS to restore physiology and homeostasis [4,10,11].

#### 3. What is the mechanism?

It is important to understand scientifically the mechanisms used in this technique. A six-step method of wet cupping therapy (Alhijamah) was reported in Arab literature in the area of prophetic medicine: skin demarcation, sterilization, cupping, puncturing, cupping and sterilization — also known as the Cupping, Puncturing and Cupping method (CPC) [4].

Normally, tissue fluids filtered from the capillary walls cross the interstitial spaces between parenchymal cells so they can gain access to the lymphatic capillaries and return to the vascular system. Metabolic by-products and endogenous free radicals continuously formed inside cells are excreted into the interstitial fluids in interstitial spaces; this is in continuous exchange with the intravascular fluid compartment downstream of arterioles in capillaries and postcapillary venules. In pathological conditions, localisation of pro-inflammatory substances, inflammatory cells, toxins, bacteria and harmful biological or chemical substances tends to occur at particular sites that vary according to disease type and pathological stage. Factors determining the composition of interstitial fluid and subsequently the interstitial pressure comprise the plasma composition, the balance of Starling forces across the capillary wall (predominantly capillary hydrostatic pressure and plasma protein osmotic pressure), capillary permeability, surface area of capillary endothelium, lymph transport, and the physicochemical properties of the interstitial space matrix. In addition, modification, addition or removal of components by peripheral cell metabolism can determine the composition of interstitial fluids. Pathogenesis of pain includes interstitial hypertension and increased amount of neurotransmitters (such as substance P and its receptor calcitonin gene-related peptide and other neurotransmitters in afferent nerves). Substance P is widely distributed in the nervous system and is functionally linked to pain; it releases histamine (which leads to increased cutaneous capillary permeability without any fluid leakage through the intact skin barrier) and induces release of antigen-evoked mediators (tumor necrosis factor-alpha and leukotrienes, which act as inflammatory mediators to enhance pain and tissue swelling). The interstitium plays a role in the development of oedema in burns and in the induction of initial swelling in inflammation. Nerve endings (nociceptors) become sensitized during tissue damage or inflammation. Excretory functions of the skin depend on its histological structure and its large surface area; it excretes many drugs, heavy metals, chemicals and endogenous toxic compounds. Skin also has a drug metabolizing function, drug biotransformation function, and as well as the excretory functions exerted by sweat glands it has antioxidant function. Skin is a barrier and impedes excretion of accumulated toxins, but this is disturbed during skin injury with retention of drugs and endogenous metabolites. Interstitial fluid is continuously filtered at the arterial end of capillaries and is absorbed at the venous end of capillaries. External suction pressure might enhance the excretion of tissue fluids filled with noxious substances [4].

Skin is viscoelastic and this helps it to be sucked to the inside of cups. When the first vacuum pressure is applied during therapy, negative suction pressure collects interstitial fluids in the cupped area causing uplifting of the skin inside cups without any fluid leakage, as intact skin stops extrusion of tissue fluids due to high content of dermal matrix substances. Dermatan sulfate, hyaluronic acid and chondroitin sulphate make up the ground substance surrounding the dermal fibrous elements that add to the viscoelastic nature of the skin. Dermis is strong and elastic because of its high content of elastin and collagen proteins. Collected fluids intercede between skin and subcutaneous tissues, and can help break connective tissue adhesions. Increase in size of skin uplifting inside cups may reduce local pressure inside skin upliftings around blood capillaries as in Boyle's law, and therefore filtration of additional fluids inside skin upliftings. Progressive increase in size of skin upliftings, is associated with a reduction in pressure inside skin uplifting around capillaries leading to more fluid filtration from blood capillaries and more dilution of the inflammatory mediators. The high negative pressure sucks more skin inside cups, leads to increase in the size of skin upliftings and decrease in the pressure inside skin upliftings, which decreases gradually the absorption at the venous end of capillaries. Movement of filtered fluids to skin upliftings from capillaries further decreases this absorption. Accumulation of fluids containing wastes and haemolysed blood cells in uplifted cupped skin area can cause dilution and local redistribution of nociceptive mediators such as substance P, inflammatory mediators and prostaglandins reducing their stimulation. This can reduce neurotransmission of pain sensation leading to an analgesic effect, decreasing pain sensation during superficial skin laceration later. Removal of sucking cups, will lead to decrease in size of skin uplifting instantly [4].

Skin puncturing will allow release of endogenous opioids such as endorphins, enkephalins and dynorphins which decrease pain sensation and intensify the cupping therapy-induced analgesic effect. Derivatives of proopiomelanocortin e.g.  $\beta$ -endorphin and melanocortin hormones may block inflammatory reactions. Blood capillaries in the cupped area can experience compression due to pressure on their walls from outside due to the accumulated collected fluids. The increased capillary hydrostatic pressure leads to greater capillary filtration and more blood clearance as a result until an equilibrium point is reached at which no further fluid will accumulate. Escape and redistribution of fluids from skin uplift to nearby tissues is stopped by maintenance of negative pressure. Removal of negative pressure by removing cups and immediate skin pricking several millimetres depth slows fluid redistribution and allows better results. Compression pressure exerted on the skin

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