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## The Medicinal Use of Cannabis Documented by Muslim Scientists

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### Abstract

Clinical studies have demonstrated many therapeutic benefits of cannabis, which has been used for medicinal purposes for over 6000 years. Despite its curative properties and therapeutic advantages, Muslim-majority countries impose strict regulations due to the stigma attached to cannabis use as a medicine associated with its use as a medicine. The majority of Muslim nations forbid the use of cannabis for either recreational or therapeutic purposes and impose punishments such as imprisonment or death sentences. However, history shows that cannabis was used as a medicine in the past by Muslim scientists. Therefore, this article intends to examine the practice of Muslim scientists in using cannabis for medicinal purposes. In achieving the objective, the researchers use a qualitative method by analysing previous literature using content analysis. Findings showed that cannabis is used as a medicine for various types of illness by Muslim scientists. It is important to note that a review of pertinent scientific materials provides support for the traditional use of medical cannabis practised by Muslim medical professionals. Hopefully, this article will enlighten readers' knowledge on this topic, especially among Muslims, to correct any misconceptions and misapprehensions surrounding cannabis. It is suggested that Muslim countries embark on more research on cannabis' therapeutic benefits.

**Keywords:** Cannabis, Medicinal Cannabis, Therapeutic Uses, Islamic Medicine, Hemp.

### Introduction

Canabis Sativa L. is one of the world's earliest cultivated plants (Zuardi, 2006) and is widely used as a medicine (Li, 1974; Touw, 1981; Clarke and Merlin, 2013), recreational (Small, 20017), food, fibre, and textile (Aroonsrimorakot et al., 2019; Hamarneh, 1972; Zuardi, 2006). The earliest records of its medicinal use date back to China (Li, 1974; Touw, 1981). It spread quickly to Asia, the Middle East, and Africa. Cannabis was unknown among people in pre-

Islamic Arabia. In the ninth century, cannabis appears to have entered Arabic countries via two routes. First, from India via Persia. Therefore, the Arabs called cannabis Indian hemp (Taha, 2010). Secondly, it resulted from knowledge with Greek medical and cultural literature (Hamarneh, 1972). Cannabis is also known as hashish, banj, (Safian, 2013) in fiqh literature, shadanaj (Russo, 2007) / shahdanj, ghonabv (Golshani & Mosleh, 2015), qinnab (Clarke, 1998; Lozano, 2001; Rosenthal, 2014a; Russo, 2007) and shartathd in the Nabataean language (Hamarneh, 1972).

Cannabis sativa L is a miracle species with over five hundred chemical compounds (Radwan et al., 2009). The most studied chemical compounds are cannabidiol (CBD) and tetrahydrocannabinol (THC) (Russo and Marcus, 2017; Chandra et al., 2017). THC is the cannabinoid that causes the psychoactive and euphoric effects desired by recreational users, such as high relaxation and enhanced sensory experiences (NASEM, 2017). There is also scientific proof that THC can be used medically to decrease nausea and vomiting, increase appetite, reduced cancer growth, and lessen chronic pain (Temple & Leikin, 2020). On the other hand, CBD is non-psychoactive and non-toxication and approved by World Health Organisation as a safe medicine (World Health Organisation, 2018). CBD also has medicinal properties, such as reducing anxiety, depression, pain, epileptic seizures, and headaches (Pisanti et al., 2017; NASEM, 2017). However, these two cannabinoids were not discovered in Islamic medicine. Therefore, Muslim scientists used cannabis leaves or seeds, hemp seeds, stem, flowers, cannabis roots, or cannabis juice to treat illnesses.

Recently, there has been an expanding fascination with the therapeutic benefits of cannabis and its growing utilisation in contemporary medicine. Due to the psychoactive component of cannabis, there is a stigma around the use of cannabis for medicinal purposes (Reid, 2020; Troup et al., 2022), especially the status of cannabis as a medicine in Islam. Therefore, this paper intends to examine the practice of Muslim scientists towards cannabis for medicinal purposes. The motivation behind this study is to gain a deeper understanding of the historical use of cannabis in medicine and to emphasise the historical significance of the contributions made by Muslim scientists in studying its medicinal properties. Understanding their contributions provides a historical context and a deeper understanding of medical knowledge and practice evolution. It can also help inform contemporary medical practice and further advance the field.

Additionally, it can dispel the misconception that using cannabis for medicinal purposes is wrong when in actuality, it was widely utilised by Muslim scholars during the prime era of Islam. This paper employs a qualitative method to achieve the objectives and uses content analysis to analyse the existing literature. This study provides deeper insight into the historical use of cannabis for medicinal purposes, including its development and evolution over time. This increased knowledge can help shape modern understandings of cannabis and its therapeutic applications.

### **Usage of Medicinal Cannabis Documented by Muslim scientists**

Muhammad, the Holy Prophet, stated that there is no disease that Allah has created except that He also has created its treatment. This has inspired Muslim scientists to indulge in medical research and pursue medical treatments for diseases. Therefore, many Muslim scholars during the medieval Islamic civilisation era acknowledged and documented the consumption of cannabis for medication and cannabis's medicinal use as a herbal remedy. Muslim pharmacopoeia was influenced by Galen and Dioscurides work, a classic Greek paradigm. Lozano (2001), in his findings, stated that Arab doctors from the 8 until the 18<sup>th</sup>

centuries documented that cannabis contained a wide range of pharmacological properties which possess medical benefits. Muslim texts indicated cannabis was used as a digestive, diuretic, anti-inflammatory, anti-epileptic, painkilling, anti-flatulent, appetite-stimulant, anti-emetic, antipyretic effects, anxiolytic, antipsychotic, antitumor, anti-spasmodic, and to cure other types of ailments (Lozano, 2001). Muslims Jurists used various parts of the cannabis plant to help the patients. The most used part was juice and seeds oil from the green seed's oil and leaves (Lozano, 2001). The following are some of the usages of cannabis for medical purposes documented by Muslim scientists in Arabic medicine, which were later verified by current scientific findings

### **a) Surgical Anaesthetic**

Sedatives and analgesics have been used since the ancient era. Before and after the arrival of Islam, Ghonab (*Cannabis sativa*) or Shahdanj was used as an analgesic substance. Muslims reportedly used cannabis to prescribe sedatives and analgesic mixtures before surgical procedures (Ahmed et al., 2016; Haddad, 2006; Mohamed, 2008; Oncel & Erdemir, 2007; Takroui, 2010). In fact, Arabs were the first to invent the soporific sponge (anaesthetic sponge) (Taha, 2010). It was often used as an anaesthetic in the Medieval Ages and served as the forerunner of modern anaesthesia. It was soaked with aromatics and narcotics and then immersed in a combination of hashish, a herb named Zoan, hyoscyamus and opium to be sucked and then placed under the patient's nostril before surgery, resulting in anaesthesia (Taha, 2010; Mohamed, 2008; Takroui, 2010) and relief of surgical pains. The drug used was described as "sleep and insensibility-inducing substances" (Takroui, 2010). The introduction of inhalational anaesthesia may also be attributed to Islamic scientists (Jasser Mohamed Taha, 2010). In his book "Al-Omda Fil-Jiraha or The Mayor on Surgery", Ibn al Quff indicated that anaesthetics could be given by means of inhalation, and some were used orally (Takroui, 2010) ingestion.

Meanwhile, Ibn Sīnā wrote in his famous book, *The Canon of the Medicine*, that a patient undergoing organ amputation surgery needed to consume a drink made up of mandagora and other sleeping drugs (Taha, 2010; Mohamed, 2008; Takroui, 2010). Other sleeping drugs were also documented as opium poppies, Hashish, Hyoscyamus and hemlock (Ahmed et al., 2016). The use of anaesthesia was one major factor contributing to the increase of studies on surgery in the Islamic world (Takroui, 2010).

After the 4th century, Banj (hemp) was described as a toxin in Muslims' medical texts. For example, A.H. Geber mentioned Banj as a sedative medicine in his book *Al-Somum* (toxins) (Golshani & Mosleh, 2015).

### **b) Painkillers to Alleviate Pain**

During the medieval Islamic civilisation era, cannabis was also documented to be used to treat various forms of pain, including several neuropathic varieties. Ibn al-Baytar noted cannabis' potential (hemp seed oil) to alleviate neuropathic pain. His findings have been validated in recent clinical investigations (Russo, 2017). The hashish was pounded and strained, and all of its parts were used: seed, stem, leaf, and flower. Similarly, the medieval Islamic physician and pharmacist Al-Razi (Rhazes) described the therapeutic properties of cannabis in his book "The Comprehensive Book on Medicine". He wrote that cannabis could be used as a pain reliever to treat various conditions, including dysentery and intestinal worms.

In addition, Ibn Sina also used seeds, leaves, and the root of hashish to cure toothache (Ahmed et al., 2016; Taha, 2010). Furthermore, a 17<sup>th</sup>-century Persian medical book entitled

Makhzon-ul-Adwiya documented boiled hashish roots used as a poultice to reduce neuralgic pains (Alakbarov, 2001).

### **c) Treatment for Ear Diseases**

Cannabis is also documented to possess beneficial effects for treating ear ailments. The earliest documented therapeutic application of medical use of cannabis for medicine dates back to the ninth century (Fakhry et al., 2021). As antiquity's greatest botanist, Dioscorides prescribed cannabis seeds to 'quench geniture' and its juice to treat earaches (Dioscorides, 2000). Next, in the 12th century, Al-Biruni stated that Galen reported that cannabis leaves could cure flatus. For earaches, its fresh seeds are squeezed and applied as medicine. In addition, Galen believed that it is used in chronic pain (Russo, 2001). Arabic doctors discovered the benefits of using the juice of cannabis (green hemp seeds) to treat earaches caused by an ear obstruction from them (Lozano, 2001). In addition, Ishaq ibn Sulayman emphasised the use of cannabis to treat otalgia or ear moisture (Russo, 2007). Furthermore, Ibn al-Baytar advised using hemp seed oil to cure ear infections (Lozano, 2001). Similarly, in the book entitled *Al-Abniyah An Haghayegh Al-Adwiyah*, a medieval author of pharmaceutical and medical writings, Abu Mansour Movaffagh ibn Ali Al-Heravi identified shahdanj (cannabis) as a remedy for earache in the medical text entitled *Al-Abniyah An Haghayegh Al-Adwiyah*. (Golshani & Mosleh, 2015).

### **d) Treatment for Depression**

Cannabis is an effective tranquilliser or anti-depressant in the treatment of psychiatric disorders. Cannabis, hellebore, and mandrake were recorded in medieval medical texts to be used as anti-depressants. Traditionally, they were used as purgatives, sedatives, digestive aids, and emetics (Taha, 2010).

### **e) Treatment for Epilepsy**

The earliest accounts of cannabis being used to treat epilepsy came from medieval Arabic medical texts (Fouad Salim Haddad, 2006; Jasser Mohamed Taha, 2010). Lozano (1998) reported an early description of the use of cannabis to treat epilepsy by Al-Razi, an esteemed Persian physician (Russo, 2001). Ali ibn Makki treated Zahir al-Din's epilepsy with hashish and music (Russo, 2001). Zahir used to have a seizure attack every week, and doctors treated him for around six months without success. Al-Razi explained the use of cannabis leaf for epilepsy able to cure his disease immediately (Russo, 2017).

In the tenth and eleventh centuries, Ali ibn al-Abbas Al-Mayusi recognised the therapeutic value of insufflate cannabis preparation to treat seizures (Russo, 2007). To avoid seizures, he suggested instilling cannabis leaf juice into the nostril (Lozano, 2001; Russo, 2001). This parenteral method of administration may have been an advantage in cases of acute attacks where the oral route would be harmful, impractical, or dangerous.

Ibn al-Badri recorded that in the 15th century, the epileptic child of the caliph's chamberlain was cured with the hashish resin cannabis cured him completely (Aldrich, 1997; Lozano, 2001; Russo, 2017). However, the patient developed an addiction to cannabis (Zuardi, 2006).

### **f) Treatment for Headaches or Migraine**

In his excellent historical analysis, Russo (2001) reported that cannabis had been used in Islamic medicine for over a thousand years to prevent and treat migraine headaches. The

earliest reference to cannabis in Muslim medicine dates back to ninth-century Persia putting cannabis juice directly into the patient's nose to prevent vomiting (Russo, 2017; Lozano, 2001). Ibn Sahl discovered a compound medicine that included juice taken from cannabis flowers and seeds is effective for treating headaches (Russo, 2017; Lewis et al., 1971; Russo, 2001). Lozano (2001) translated the text of Ibn Sahl and noted that cannabis is used to treat migraines, agonising pains, uterine pain and avoid miscarriage.

Similarly, in his book entitled, "Book of the Foundations of the True Properties of Remedies" Abu Mansour Movaffagh ibn Ali Al-Heravi mentioned the use of shahdanj (cannabis) as a headache analgesic (Golshani & Mosleh, 2015). Furthermore, in the 13th century, Umar ibn Yusuf ibn Rasul continued to advocate cannabis use as a remedy for ear and head pain (Russo, 2007; Lewis et al., 1971).

#### **g) Vermifuge and Vermicide (Anthelmintic)**

In the 9th century, Ibn al-Baytar, a Moorish Spaniard, moved to Egypt. He was the pioneer who mentioned cannabis' vermifugal and vermifuge effects practice by Egyptian people claiming that it has the ability to kill and eradicate the "worms" (al-didan) that grow in the human body (Russo, 2007). The finding was supported unnamed writer of 'Umdat al-tabib' between the 11-12<sup>th</sup> century, who stated that a person with tapeworms should eat hemp seeds because it is anti-parasite (internal and external worms) and it kills worms in man (Lozano, 2001).

#### **h) Anti-parasitic Properties**

Ibn al-Baytar revealed the anti-parasitic property of medical cannabis (Lozano, 2001). According to Lazono (2001), Al-Antaki boiled the leaves of "Anatolian hemp" to kill lice and nits by cleaning the part of the body where these parasites dwell with it.

#### **i) Anti-tumour Properties of Cannabis**

Lozano cited Ibn al-Baytar with regard to the anti-tumour properties of cannabis (Lozano, 2001). Ibn al-Baytar stated that hardened tumours dissolved when oily wax was prepared with hemp seed oil (Lozano, 2001). In the 17th century, Muhammad Riza Shirwani used hemp seed oil to treat uterine tumours (Russo, 2002).

#### **j) Treatment of Skin Diseases**

Ibn Sina, the Persian philosopher and scientist, is best known as the physician who wrote The Canon of Medicine. The Canon of Medicine states that "Kunnabis" treats ear infections, skin rashes, and inflammation (Frye & Smitherman, 2018). Ibn Sina also used cannabis to heal joint diseases, ophthalmitis, edema, and wounds (Fakhry et al., 2021). Similarly, Al-Razi mentioned the use of cannabis for skin diseases (Fakhry et al., 2021).

#### **k) Obstetrics and Gynaecology**

Russo's study demonstrated that cannabis compounds could be a viable and safe treatment option for treating various female ailments (Russo, 2002). Sabur ibn Sahl described an intranasal base mixture of cannabis seed juice blended with various other medicines to cure uterine pain, to keep fetuses alive in their mothers' wombs, and to prevent miscarriage in the 9<sup>th</sup> century (Russo, 2002). However, Ibn Wafid al-Lajmi, in the 11th century, explained that the drying properties of hemp seeds would prevent mothers from producing milk (Russo, 2002). Meanwhile, in the 13th century, Ibn Sina stated that cannabis leaves and seeds were

used to cure and evacuate uterine gases (Lozano, 2001). Hemp seed oil, according to Ibn al-Baytar, could help with uterine hardness and contractions.

### **I) Treatments for Other Types of Ailments**

Al-Razi prescribed cannabis plants for dandruff and resolving flatulence (Marino, 2019; Rosenthal, 2014). In his herbarium, a German botanist Rumphius records the Muslim use of cannabis to cure asthma, gonorrhoea, constipation, and as a cure for poisoning (Nahas, 1982). Other Arab physicians reported that hashish was used to stimulate the appetite (Nahas, 1982). In addition, cannabis was used as a diuretic by Muslim scientists. Ishaq b. 'Imran is recognised as the pioneer of the diuretic properties of hemp seeds (Lozano, 2001)

Besides that, there were many other therapeutic benefits of hashish or cannabis described in medieval texts. The detailed discussions on early findings in the Muslim world of therapeutic benefit are explained by (Lozano, 2001). It could be concluded that this literature indicated that cannabis substances were recorded to be used for various medicinal purposes, even during the medieval civilisation era, to treat multiple types of ailments.

### **Discussion**

Cannabis research is rapidly growing, with data supporting its use for various therapeutic benefits. Studies reveal that medical cannabis has reported therapeutic advantages across a broad spectrum of medical specialities (Nasem, 2018). The historical references to the medicinal use of cannabis made by Muslim scientists were based on the knowledge and understanding of medicine available at the time, which was limited compared to current scientific knowledge. Some of the traditional uses of cannabis described by Muslim scientists, such as the use of cannabis for pain relief, have been supported by current scientific research. For example, NASEM (2017) issued a rigorous scientific assessment on the efficacy and safety of cannabis and the relationship of medical cannabis with health in the treatment of selected medical conditions (National Academies of Sciences Engineering and Health, 2017). NASEM assessment concluded that well-controlled scientific research supports the use of medicinal cannabis to relieve pain (National Academies of Sciences Engineering and Health, 2017). Further, Abrams (2018) concluded in reviewing the results of the NASEM study (2018) that chronic pain patients who took cannabis or cannabinoids were more likely to achieve a clinically significant improvement in pain symptoms (Abrams, 2018). The finding is consistent with (Mucke et al., 2018).

As for epilepsy, the conclusion of Muslim scientists on the medicinal value of cannabis in the treatment of epilepsy is also consistent with the most recent scientific evidence, although not entirely. Stetten et al (2018); Van Rensburg et al (2020) stated that the evidence is conclusive and that the usage of medical cannabis results in a considerable improvement in the treatment of epilepsy. Stetten's finding is in alignment with Jugl et al (2021), showing the strongest evidence for using medical cannabis to decrease the frequency of seizures in kids and adults with treatment-resist-anti epilepsy.

The current scientific evidence also suggests that CBD, a non-psychoactive compound found in cannabis, have anticonvulsant properties and is effective in decreasing the frequency and severity of seizures in certain forms of epilepsy, such as Dravet syndrome and Lennox-Gastaut syndrome (Fiani et al., 2020). This is supported by several studies and clinical trials, which have shown that CBD can effectively reduce seizures in these conditions and improve quality of life (Silvestro et al., 2019; Strickland et al., 2021). Historically, Muslim scientists recognised the use of cannabis as a medicine to alleviate suffering attacks and improve

health; however, their understanding of the therapeutic properties of cannabis was limited compared to current scientific understanding. The route of administration is also different; where Muslim scientists instilled cannabis juice into the nostril, but the modern application is by dropping CBD or cannabis oil under the tongue of the children or patient.

Muslim scientists also found that Cannabis has the ability to treat migraine and headaches. These results are consistent with a clinical trial, which indicated efficacy in migraine symptom reduction, improved sleep quality, and less negative impact of headaches on 68 patients who smoke or vape medical cannabis Aviram et al.(2020). Interestingly, the study also highlighted the patients decreased migraine medication (Aviram et al.,2020). Similarly, Cuttler et al. (2020) reported reduced migraine severity and frequency after the patient inhaled cannabis (Cuttler et al., 2020). The current study also shows different preferred delivery methods for treating migraines, such as edibles, tinctures (oil-based), smoking, vaporisation, concentrates, and vaping, compared to one route of administration during the Islamic era (Piper et al., 2017).

The current findings also supported the use of cannabis by Muslim physicians to treat inflammation such as rheumatoid arthritis (Lowin et al., 2019, Sarzi-Puttini et al., 2019) and improvement of sleep (Kuhathasan et al., 2019; Vaillancourt et al., 2022) and skin disease (Shao et al., 2021; Souza et al., 2022). Cannabis may be useful in treating various forms of skin diseases, such as dermatitis and psoriasis (Shao et al., 2021).

While some of the traditional uses of cannabis described by Muslim scientists, such as the use of cannabis for pain relief, headache, epilepsy, and anti-inflammation, have been supported by current scientific research. Other cannabis uses, such as the treatment of dysentery, diuretic, and intestinal worms, are not supported by recent medical evidence (Chopda et al., 2016; Paronis et al., 2013). Although research on animals have demonstrated that cannabis has diuretic properties, these findings are not necessarily applicable to humans (Chopda et al., 2016; Paronis et al., 2013). Similarly, in the case of gynaecology, research results on cannabis and gynaecology are mixed (Manusirivithaya & Manusirivithaya, 2018). The current scientific evidence and clinical trials are still lacking on the usage of cannabis in gynaecology. For example, in the case of labour pain, no scientific evidence or clinical study to support cannabis use can lessen the pain. Although there are some testimonies in the lay press that CBD, in conjunction with THC, can lessen labour pain, it is not scientifically proven (Ohle, 2018; Manusirivithaya & Manusirivithaya, 2018).

It is important to note that current scientific research on the medicinal benefits of cannabis is ongoing, and the evidence is still developing. Even though numerous studies have indicated that cannabis and its derivatives may have therapeutic potential for treating a number of ailments, such as chronic pain, depression, anxiety, epilepsy, and PTSD, more research is required to fully understand the efficacy and safety of cannabis for these conditions. Additionally, it is important to consider the potential risks and side effects of cannabis use, especially when it comes to long-term use, as well as the appropriate dosage and administration. Therefore, it is always best to consult with a healthcare professional before using cannabis or its derivatives as a treatment option and to follow their guidance. It is important to note that a review of pertinent scientific materials provides support for the traditional use of medical cannabis practised by Muslim medical professionals.

## **Conclusion**

Summarily, cannabis medical use is documented and is known to be utilised for various medical treatments such as surgical anaesthetics, as painkillers to alleviate pain, treatment

for ear diseases, depression, epilepsy, headache, cannabis for vermifuge and vermicide properties, and others. According to the Muslim text, there is substantial scientific data and proof to support the usage of medical cannabis as a traditional remedy by Muslim scientists. They were several centuries in advance of our current knowledge of the medicinal properties of cannabis. For many years, Muslim scientists have used Cannabis sativa as a medication, and this use has been supported by pertinent pharmacological evidence. This makes it plausible to imply that information contained in Arabic literature could be used as a preliminary step for future studies on the medicinal value of cannabis and hemp seeds. The current scientific evidence on the medical benefits of cannabis supports some Muslim scientists' knowledge of using cannabis as a medicine.

It is important to note that these references are from historical sources and should be considered in the context of the time they were written. Additionally, these references were made at a time before the development of modern medicine and scientific research and, therefore, should be considered in light of current scientific knowledge. It is also vital to keep in mind that the use of medical cannabis should be done under the guidance of a healthcare professional and with close monitoring, as it may have both positive and negative effects on different individuals. Also, it should not be seen as a first line of treatment but rather as an option to be considered after other treatments have been tried and failed.

Currently, only a few Islamic countries permit access to medical cannabis (Lebanon and Morocco). Meanwhile, other Muslim countries adhere to prohibitionist rule following the international drug control policy and prohibit cannabis even for medicinal purposes. As a result, there is limited research available in Muslim countries. Therefore, it is high time for Muslim countries to continue researching the therapeutic benefits of cannabis, which was done by Muslim scientists in the past, so that Muslims can benefit from it.

In conclusion, documenting the knowledge and contributions of Muslim scientists in medical cannabis is essential for preserving the historical and scientific significance of their work and for advancing the field through informed and inspired research.

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