

Traditional Eye Therapies in Yemen

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Abstract

Objective: To obtain information about patients who have been treated with traditional eye therapies (TET). A survey of TET used in the treatment of common eye diseases was conducted among ophthalmologists; the questions were related to uses of TET in Yemen.

Methods: Data were collected via a questionnaire sent to 50 ophthalmic consultants and specialists treating patients who administered TET for acute or chronic eye diseases before or after visiting an ophthalmologist. This descriptive study was conducted from 01 January to 30 June 2017 in different Yemeni Governorates.

Results: Kohl is a common TET used for allergic eye diseases, visual improvement, and for cosmetic purposes. Natural honey is another common traditional remedy used for allergic conjunctivitis, corneal ulcers, and visual improvement. Cautery is used for painful eye, squint, and facial nerve palsy. Herbal products are mostly used for ocular infections, including corneal ulcers. Couching is used as a treatment for cataract. Foreign body removal from the conjunctival sac, conducted by a few traditional healers with their tongue (tongue picker) is an unusual TET. Most people reported worsening of their eye problems, probably due to toxicity and unhygienic application of TET.

Conclusion: The collected data is an example of use of TET in Yemen. There is a need to increase public awareness about the dangers of some TET. More research on the traditional eye therapies in Yemen is required.

Keywords: Cautery; Couching; Kohl; Honey; Traditional Therapies; Yemen

Introduction

Republic of Yemen is located in the south west part of the Arab peninsula with an area of 555,000 square kilometers. Yemen population is around 25.3 Million distributed in 21 governorates in addition to the capital city of Sana'a [1]. About 68.2 percent of the population lives in rural areas [2].

Yemen is included in WHO's Eastern Mediterranean Countries Region which has an estimated prevalence of blindness of 0.97% and Yemen is considered among the countries with high prevalence rate of blindness [3].

The World Health Organization (WHO) defines traditional medicine as "the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness" [4]. Traditional medicine views health and

disease in the context of the human totality of body, mind and spirit [5]. Traditional management of eye diseases is based on the patients concept of the disease causation as well as their little knowledge of the herbal, animal and chemical substances that possess (or are reported to possess) remedial effects on the disease. This study is designed to light the different traditional eye therapies in Yemen since there is no similar research published in scientific journals.

Around 80% of developed and developing countries population use traditional therapy either for treatment, prevention of disease and maintenance of good health [6]. Traditional eye therapies (TET) are commonly used in different countries. Kohl, Natural Honey, cautery, couching, bloodletting and herbs are used by some people in the developing world including Yemen.

In Yemen, like other developing countries the demand for eye care services is increasing [7-9]. In general, patients' dependence on TET is attributed to several reasons including availability of eye care services, affordability, high rate of illiteracy, religious beliefs, cultural familiarity of traditional medicine and difficulties to reach health facilities due to geographical and transportation constraints [10].

Patients and Methods

We conducted this descriptive study since there is no data on traditional eye therapies in Yemen. The data was collected from 50 Yemeni ophthalmic consultants and specialists whom their patients who suffered from acute or chronic eye diseases were exposed to traditional eye therapies (TET). The eye doctors who were surveyed are located in different Yemeni governorates and the survey was done during the period from 01 January to 30 June 2017.

This is a descriptive study in which a structured questionnaire was used to collect the necessary data and the questionnaire was sent by email or social media network and some detailed information was taken by telephone call. The collected information was concerned with the type of traditional eye therapy used by their patients and indication of usage. The study was approved by the Research and Ethics committee of Noor-Al-Yemen Eye Center Ethical Committee, and the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional), and with the Helsinki Declaration of 1975, as revised in 2000.

Results

The collected data obtained from surveyed eye doctors were analyzed and sorted into groups according to the types of traditional eye therapy used and their indications. Table 1 shows traditional eye therapy and their uses in Yemen.

Kohl is a common TET used for allergic eye diseases, visual improvement and cosmetic purposes. Natural Honey is another common traditional remedy used for allergic conjunctivitis, corneal ulcer and visual improvement. Cautery is used for painful eye, squint and facial nerve palsy. Herbal products are mostly used for eye infections and corneal ulcers. Bloodletting is used for ocular pain, blurred vision and headache. Couching is used as a treatment for cataract. Picking foreign bodies by few traditional healers' tongue (tongue picker) from conjunctival sac is an unusual TET. Most people reported worsening of their eye problems, probably due to toxic effects and unhygienic applications of TET.

No	Traditional Eye Therapy	Use (Indications)
1	Kohl	Cosmetic; Allergic; Visual improvement
2	Honey	Allergic conjunctivitis; Corneal Ulcer Corneal Odema; Visual improvement Trachoma
3	Kaiy (Traditional Cautery)	Painful Eye; Facial Nerve Palsy Cranial Nerve Palsies (III, IV, VI) Corneal Ulcer
4	Herbal products Alsabar (Allovera,) Helf (Imperata cylindrica) Hanzal (Citrullus Colocynthis)	Corneal Ulcer; Cosmetic Allergic conjunctivitis
5	Hijama (Bloodletting)	Red Eye; Blurred Vision; Headache
6	Qat	Diabetic Retinopathy
7	Al-Nekasha (Couching)	Cataract; Pterygium
8	Ruqia (Quran Citing and Dua by Spiritual and religious people)	Hysterical blindness Other causes of blindness Headache; Squint; Pterygium Cranial nerve palsies
9	Zamzam Water	Allergic Conjunctivitis; Red Eye Visual improvement
10	Al-Mulehesa (Tongue picker)	Foreign Bodies; Corneal Ulcer Painful eye
11	Tea bags	Painful eye; Chalazion; Styne Blepharitis; Allergic Conjunctivitis
12	Quran drop (from Sweat)	Cataract treatment
13	Breast human milk	Watery Eye especially in children Herpetic and Leprotic keratitis
14	Oil (Olive Oil, Vaseline)	Allergic Conjunctivitis, Blepharitis Cosmetic for eye lash growing
15	Sea water	Allergic conjunctivitis
16	Child urine	Inflamed eyes
17	Jews cap	Styne and chalazion
18	Stones	Styne and chalazion

Table 1: Traditional eye therapies and their uses in Yemen.

Discussion

The major risk of using traditional eye therapies (TET) may lead to serious eye problems including loss of vision. In Yemen, as in most developing countries, health care services are usually located in the major cities [7,8]. As people migrate to main cities for jobs, practice of traditional medicine is changed in preference to modern medicine. In some rural areas of Yemen some people seek traditional eye therapies before or after consulting an eye doctor and this may lead to some delay in seeking medical or surgical eye care.

Kohl, Natural Honey, cautery, couching, bloodletting, herbs and other TETs are used by some people in Yemen and each method is discussed below in brief.

Kohl (made by grinding stibnite (Sb₂S₂))

Kohl (made by grinding stibnite (Sb₂S₂) is defined as an ultra-fine powder of kohl stone that is used for various eye conditions [11]. This ultra-fine powder in Yemen and other Middle Eastern countries is known as kohl or Ithmid [11]. It is widely used as cosmetics (mas-cara) in almost every civilization to keep eye beautiful, clear, cool and is also applied to the newborns and young children to ward off the evil eye. It is also used for allergic eye diseases and visual improvement.

The general application of kohl is to treat eye diseases such as conjunctivitis, blepharitis, trachoma, chalazion, pterygium and trichiasis. It is assumed by many doctors that kohl causes lead poisoning, but recent scientific papers proved that kohl application is safe and does not cause lead poisoning [12]. The beneficial effect of kohl is attributed to the black and shiny particles of kohl on the lid margin found to be useful to protect the eyes from glare of sun and UV rays harmful effects [12].

Honey

Honey is still widely respected by alternative medicine practitioners, individual consumers and even many medical doctors. It is not only used as a natural sweetener but also as a healing agent. Stone Age drawings which are around 8,000 years ago showed that honey was used by human since that time. It was the most popular ancient Egyptian drug since it was mentioned five hundred times in 900 remedies [13].

Best honey in Yemen is reputed to come from Wadi Dawan in Hadramout governorate [14]. Bee keepers have two high seasons according to the main nectar-bearing plants bloom. The first season is the time of the blooming of the Sumr tree (*Acacia Spirocarpa*) and this lasts around two months (February to April). The other season is in the period (October to December) when the Ilb or Sider tree (*Ziziphus spina-christi* tree) blossoms. Its beneficial effects have been rediscovered in recent decades as antibacterial agent, wound healing effect as well as its safe role in peptic ulcer, gastroenteritis, oncology, ophthalmology, dermatology and dental hygiene. There are around three hundred types of honey due to the different type of nectar source and there are about 200 substances in honey [15].

Worldwide, honey is used for the treatment of different eye diseases like blepharitis, conjunctivitis, keratitis, corneal injuries, thermal and chemical burns to eyes [6]. Honey has anti-angiogenic and anti-inflammatory effect when applied topically in corneal inflammatory and infectious conditions [16]. Honey is also used topically in the treatment of corneal abrasions and endotoxin-induced keratitis in an animal model [16]. It is reported that honey is effective in bullous keratopathy [17] and corneal epithelial wound healing [18]. And there is also beneficial effect of honey in dry eye subjects [19].

Honey's antibacterial activity is due to its ability to draw moisture out of the environment leading to bacterial dehydration and this is attributed to the low acidity of pH of honey that inhibits the growth of most microorganisms [20]. Recently it has been found that honey has an inhibitory effect to around 60 species of bacteria including aerobes and anaerobes, Gram positives and Gram negatives. Honey also has cleansing effect on wounds since it reduces inflammation and stimulates tissue regeneration [21].

Kaiy (Arabic term for traditional cautery)

Kaiy is regarded as one of the most ancient methods of traditional therapy that is still in use currently. The instrument used for traditional cautery is usually a hot metal rod. Patients who have received traditional cautery reported that it gives temporary relief followed by severe degree of pain and this may be attributed to cautery stimulating effect of releasing endogenous opioids and other neurotransmitters that prevent the feeling of pain similar to acupuncture practices [22]. In our part of the developing world including Yemen people believe that they should not lose any part of their body especially the eye even if this will cause blindness or death and this belief forces them to seek traditional cautery [22].

Kaiy is commonly used to treat painful eye, facial nerve palsy, cranial nerve palsies (III, IV, VI) and corneal ulcer (Figure 1). Lack of evidence-based scientific data on traditional cautery efficacy or safety does not prevent patients in Yemen and other developing countries

from seeking such traditional therapy which should be discouraged as it seems to cause more harm than benefit for the patient and also causes unaccepted cosmesis mainly in the facial area [23].



Figure 1: Cautery (*Kay*) as a treatment of eye diseases.

Herbs

Yemen is a well-known country for its rich horticultural environment. There is variety and abundance of vegetation, where there are around three thousand species of plants on land; 415 species of endemic plants and 236 species found only on Socatra Island, whose vegetation cannot be found anywhere else in the world [24]. There is a lack of research on the herbs effectiveness used in eye diseases treatment.

There are around 160 medicinal plants classified according to their geographical origin and habitat [24]. 22% of these medicinal plants are cultivated in Yemen, 62% grow wild and 16% are imported from elsewhere [25]. Traditional healers and common people select medicinal plants growing wild in a variety of habitats (from the highlands of Yemen to the desert). Out of these 160 medicinal plants of Yemen, 12 plants (7.5%) are used for eye traditional therapies [26].

One of the common herbs used for eye diseases is Aloe vera (*Alsabar*) where a fresh sap is dripped directly into the eye and is used for improving sight or treating eye infections or watery eye. There are also another herbs like Helf (*Imperata cylindrica*) and Hanzal (*Citrullus colocynthis*) are used for eye diseases. A study done in Nigeria showed that some herbal extracts are applied locally to the lids or conjunctival sac [27]. Most of these herbal extracts especially those with high pH or those containing particulate foreign matter are potentially blinding [28]. Alkaline substances may penetrate and opacify the cornea, others may damage the corneal epithelium producing ulceration and even perforation. If microorganisms are introduced in herbal solutions, suppurative keratitis may develop followed by endophthalmitis.

Hijama (Bloodletting)

Hijama ("bloodletting") is the alternative medical procedure and Arabic term for wet cupping, where blood is drawn by vacuum from a small skin incision for therapeutic purposes [29]. It is divided into a generalized method by venesection and a localized method done by sarification with cupping and leeches. Cupping is poorly supported by scientific evidence. Whether cupping has any effect at all, even on pain is supported at best by "tentative" evidence [30]. Any reported benefits are likely due to the placebo effect.

Hijama is practiced in urban and rural areas of Yemen and is indicated for headache, systemic hypertension, red eye and improving vision (Figure 2). It has pain reduction effect in patients with migraine headache [31].



Figure 2: Bloodletting (Hijama) as a treatment of eye diseases.

Qat (*Catha Edulis*)

It is quite impossible to talk about Yemen without mentioning Qat [32]. The most obvious effect of Qat is the stimulant quality, due to phenyl propylamines, cathinone and cathine (norpseudoephedrine) in the fresh leaves that allow the user to stay alert, awake and sense of well-being. Alleged therapeutic values of Qat regarding eyes include sharp sight, itching, painful eye, lacrimating eye and diabetic retinopathy [33]. Qat has been reported to lower blood sugar may be due to insulin stimulation for diabetic patients [34]. This could have positive effect on diabetic retinopathy complications, but there is a need to do more research on the pharmacological and therapeutic effects of Qat in Yemen.

Couching

‘Couching’, which involves treating the cataract by dislocation into the vitreous cavity using a lance or similar pointed object, is a cataract treatment with a long history. There are numerous references to cataracts and their treatment in the literature of many ancient civilizations.

In Yemen unfortunately Couching still persists today among poorer populations living in isolated regions for cataract-blind people by traditional healers [35]. Most traditional healers practicing couching are from a village called “Mols” in Dhamar governorate. After doing the couching procedure, the traditional healer advice patient family to close windows and to avoid light for forty days. Traditional healers practicing couching get good hospitality and fees for few days but if he discovered failure or complication of his couching procedure he disappears and leaves the village. Among the complications noted were glaucoma, corneal opacity, uveitis, posterior capsule opacification and retinal detachment. As a result of the above complications, couching is an ineffective and dangerous method and most patients treated in this way were not satisfied with the results [35,36].

Ruqia (Quran Citing and Dua by spiritual and religious people)

Ruqia (Quran Citing and Dua by spiritual and religious people) is an audio containing verses from the Quran and Dua which literally means “invocation” as an act of supplication in order to tackle the issue of different diseases including eye diseases [37]. Ruqia and Dua are used for some eye diseases such as acute congestive glaucoma, headache, hysterical blindness and retinal diseases.

Zamzam water

Zamzam water is sourced from a water well in Mekka (Saudi Arabia) that is considered holy by Muslims. This water is considered traditionally beneficial and it has a high historical value and is believed to have unique substances that differ itself form other source of water. Some Yemeni patients apply Zamzam water over their eyes to achieve a better and clearer vision of the eye sight and to reduce the impact of many eye disorders.

Mulahesa (Tongue picker)

In some rural areas in Yemen mainly in Mareb, Shabwa and Amran governorates there are few traditional healers who use their tongue (tongue picker; Mulahesa) for removing foreign bodies from eyes (Figure 3). This method involves insertion of the traditional healer tongue’s tip and making rotational movements in the conjunctival sac and the subtarsal area. All these traditional healers are females and some of them practicing this type of traditional method since more than three decades.



Figure 3: Tongue picker (Al-Mulehesa) treating a patient with eye disease.

Tea Bag

A common traditional eye therapy used for treating blepharitis, chalazion, stye, halos around the eye and conjunctivitis [38].

Quran eye drop

Quran eye drop was described by an Egyptian doctor and it is synthesized from the secretions of human sweat glands and the source of inspiration of inventing this eye drop is from the story of Prophet Jacob and his son Prophet Josef in the Holy Quran. It was imported from Egypt and distributed in some areas of Yemen to treat cataract. There is no scientific research to support the efficacy of this eye drop.

Breast human milk

Breast milk is commonly used for watery eye in infants and young children and also for wound healing and conjunctivitis [27,39].

Olive oil

A traditional eye therapy mainly used for growing and lengthening eye lashes used mainly by females for cosmetic purposes.

Sea water

Some patients with allergic conjunctivitis use sea water as a traditional eye therapy to relief redness and itching.

Child urine

The use of urine to treat the eye is at least as old as the history of medicine. In some eastern governorates of Yemen like Mareb governorate they bring a small child to urinate in the patients inflamed eyes. It is also reported that some Bedwins patients use camel's milk and camel's urine for treating inflamed eyes [38]. This traditional eye therapy can have devastating consequences on the eye health [40].

Jew's cap

In Yemen, few Jewish communities live in some areas of Yemen (Amran, Sada'a and Sana'a). Jew's cap is used as an unusual traditional eye therapy for treating stye by sweeping the cap over the stye [38].

Stones

Another unusual traditional eye therapy for treating stye or chalazion is done by collecting seven small stone together then saying some words against the stye or chalazion by asking a Jinni to damage it then hit the seven stones [38].

Limitation

The result of this study depended a lot on the patient's ability to recall their use of traditional eye methods in the past, and this might have constituted some limitations to this study.

Conclusion

It is recommended that patients and, indeed, the public at large be educated on these dangers that occur after use of some traditional eye therapies such as herbs, cautery, couching and tongue picker methods. Additionally, the WHO efforts to integrate, regulate and promote the safety, efficacy and quality of traditional medicine therapy should be encouraged and supported so as to protect ignorant consumers especially at the primary health care level. There is still a space for more research on the different traditional eye methods since it is still used widely in some areas of Yemen. Ophthalmic services in Yemen should be distributed in most Yemeni governorate in order to reduce the unregulated use of traditional eye therapies that could result in hazardous effects which could lead to severe corneal ulcer, unaccepted cosmesis around the eye and even blindness.

The effect of traditional eye therapies especially on corneal ulcer management should be studied in detail in order to increase public awareness about the dangers of such methods.

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