Phytotherapy of sexual dysfunction: A Review

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Abstract
The study reviews the potential of natural medicines used for sexual dysfunction. Published English literature from the Google Scholar, Science Direct and PubMed databases were searched by using Phytotherapy of sexual dysfunction and herbal treatment of sexual dysfunction as the keywords. The relevant published papers were recognized and reviewed. After screening, some data collection was done and discussed. Medicinal plants having activity include such as Salvia haematodes, Tribulus terrestris L, Anacyclus pyrethrum, Lepidium meyenii, Camellia sinensis, Asteracantha longifolia, Barleria cristata L., Bombax ceiba L etc. The results showed that medicinal plants possess significant aphrodisiac potential and support their traditional use in herbal medicine. Further well designed clinical based studies are required to improve and prove the efficacy of herbal medicine for sexual dysfunction.

Key Words: Sexual Abnormality, Medicinal Plants, Efficacy, Literature Review.

Introduction
Traditional medicines are used to treat various ailments including sexual dysfunction [1]. Traditional medicine is a significant part of the development of modern medicines. Plants extracts and herbal coded formulations are used in the treatment of sexual dysfunction [2]. Antunes et al., (2001) reported the efficacy of traditional medicine catuama and its constituents in the relaxation of isolated rabbit corpus cavernosum [3]. Burnett (1955) reported the potential of nitric acid in the erection physiology [4]. Study conducted by Islam et al., (1991) indicated that Salvia haematodes enhances sexual potential of male rats [5]. Study conducted by Cehn et al., (2000) showed that plant extract (osthole) possess potential to relax
corpus cavernosum tissue of rabbit in vitro [6]. Another study indicated that evodiamine possess potential to relax isolated corpus cavernosum [7]. Sildenafil is used in sexual dysfunction [8]. Various modern medicine used in sexual dysfunction are originated from medicinal plants and traditional medicine are prescribed as an alternative to modern medicine. This is a comprehensive review and is useful for the physicians in their practice.

**Methods**
Published English literature from the Google Scholar, Science Direct and PubMed databases were searched by using Phytotherapy of sexual dysfunction and herbal treatment of sexual dysfunction as the keywords. The relevant published papers were recognized and reviewed. After screening, some data collection was done and discussed.

**Medicinal plants having potential to treat sexual dysfunction**

**Asteracantha longifolia**
**Family:** Acanthaceae, **Part Used:** Seeds, leaves and roots. **Chemical constituents:** Phytosterol, fixed oil, mucilage and potassium salt [9]. This plant is diuretic and is used in the treatment of renal stones [10]. Unani Physicians have reported the analgesic and anti-inflammatory potential of Asteracantha longifolia. It is prescribed to manage anemia. It is tonic and hepatoprotective and is prescribed to manage jaundice and hepatic disorders. It is prescribed in gastrointestinal diseases particularly dysentery and flatulence. It is anti-diabetic and is prescribed to treat diabetes mellitus. It is prescribed in stomach ulcer. It is effective in eye infections. It is prescribed in the treatment of rheumatoid arthritis, gout and osteoarthritis due to anti-inflammatory potential. It is used to treat pelvic inflammatory diseases. It is anti-oxidant and is used in the treatment of cardiovascular disorders [11]. Chauhan et al., (2011) reported the potential of seeds of Asteracantha longifolia on the sexual behavior of male rats [12].

**Camellia sinensis**
**Family:** Theaceae, **Part used:** Leaves. **Chemical constituents:** Catechins, epigallocatechingallate, flavonoids, vitamins, lipids, amino acids, polysaccharides, volatile oils, theophylline, theobromine, caffeine, epigallocatechin, epicatechin, aluminium, magnesium, fluorine, epicatechingallate, catechin, gallocatechin [13]. It is nerve tonic and aphrodisiac [14]. Study conducted by Ratnasooriya et al., (2008) indicated that Camellia sinensis enhances sexual activity in male rats [15]. This study validates its use in sexual disorders.

**Lepidium meyenii**
**Family:** Brassicaceae, **Part used:** Root. **Chemical constituents:** Alkaloids, protein, sterol fractions, amino acids, minerals, carbohydrates, fiber, fatty acids and lipids [16]. This plant is prescribed by Unani physician to treat sexual disorders. It can increase libido and is used to improve quality of semen. It is used to manage sexual dysfunction induced by selective serotonin reuptake inhibitors [17]. Study conducted by Cicero et al., (2001) indicated that Lepidium meyenii Walp. increases sexual behavior in male rats. This study validates its use as enhancer of sexual activity [18].
Anacyclus pyrethrum
Family: Compositae, Part used: Root. Chemical constituents: Chrysanthemin, pyrethrin, pellitorine and essential oil [19]. It is prescribed in sexual disorders. It is used to treat infertility and impotence. Unani physician prescribe this plant to treat spermatorrhea and premature ejaculation. It increases the viscosity of semen [20]. Study conducted by Sharma et al., (2010) indicated that Anacyclus pyrethrum have spermatogenic and androgenic potential [21].

Tribulus terrestris L.
Family: Zygophyllaceae, Part used: Seeds. Chemical constituents: Tribulusamides A and B, protodioscin, quercetin, terrestrosins A-E, Kaempferol, desgalactotigogenin, ruscogenin, Figitonin, hecogenin, desglucolanatigonin, diosgenin, gintonin, stigmasterol, spirosta-3,5-diene, β-Sitosterol and furostanol glycosides, harman, harmine, chlorogenin, resin, tannins, gracilin, dioscin, terrestrosides F and nitrate [22]. Whole plant is used for treatment of various ailments. It has long been a constituent in tonics also used as an aphrodisiac and diuretic [23]. Qureshi et al., reported the ethnomedicinal use of this plant as aphrodisiac [24].

Bombax ceiba L.
Family: Bombacaceae, Local name: Simbal, Semul. Part used: Root. Chemical constituents: Semogossypol, glycosides, β-sitosterol, lupeol, alkaloids and tannins [25]. It is used as aphrodisiac, tonic, stimulant, demulcent, astringent, emetic and hypotensive [26]. Study conducted by Bhargava et al., (2012) indicated that Bombax ceiba L. improves spermatogenesis, sexual behavior and erectile dysfunction in male rats [27].

Nepeta cataria
Family: Labiatae, Part used: Flowers and leaves. Chemical constituents: Amyris, sesquiterpene and nepetalactones, tannins, glycosides and flavonoids, steroids and terpenoids [28]. Catnip is amazing for infants and children when nervousness, gas, spasm and stomach cramps is present. Infusion of this plant is used in the treatment of intestinal worms, pyrexia and headache. The enema will also increase urination. It is mixed with chamomile and lemon balm for nervousness in children and adults. Drink the infusion for headaches caused by digestive disturbances. In Europe, it also is used for diarrhea and bronchitis [29]. Study conducted by Bernardi et al., (2011) showed that Nepeta cataria enhances penile erection in rats [30].

Zingiber officinale
Family: Zingiberaceae, Local Name: Sonth. Parts used: Rhizome. Chemical constituents: β-sitosterol, beta carotene, ascorbic acid, zingerone, zingiberene, tryptophan, shagaols, sesquiterpene hydrocarbons, selenium, paradol, lecithin, limonene, gingerol, curcumin, caffeic acid and capsaicin [31]. It is digestive, tonic and analgesic. The extract is taken orally to cure fever and to improve the taste of the mouth. It cures cough and cold. It acts as a tonic and enhances breast development. It improves the voice quality. It is beneficial in respiratory disorders, sore throat and stomach pain [32]. Kamtchouing et al., (2002) reported androgenic potential of Zingiber officinale in male rats [33].
**Tribulus terrestris**  
*Family:* Zygophyllaceae, *Local name:* Root, fruit.  
*Chemical constituents:* Chlorogenin, diosgenin, gitogenin, kaempferol, resin, tannins, gracillin, dioscin, terrestroside F, nitrates, harmine and harman [34]. It is diuretic, tonic and lactogogue. Fruit is powdered and root extract is taken orally as a strong diuretic and cures stone formation. It is a tonic to cure debility in men. In feeding mother, it enhances lactation and is useful in pregnancy disorders [35]. Gauthaman *et al.*, (2008) reported potential of *Tribulus terrestris* in the management of male erectile dysfunction [36].

**Basella alba** Linn.  
*Family:* Basellaceae, *Local name:* Uroksumbal.  
*Chemical constituents:* Sterols, carotenoids, flavonoids, terpenoids, enzymes, nitrogenous compounds, sugars, basellasaponins, kaempferol, saponins, betalin, polyphenols, quinones, minerals, alkaloids, vitamins, tannins, phenolic glycosides and fats [37]. It is a much branched wild climbing herb. Decoction of the leaves is used to treat hyperlipidemia [38]. It is anti-inflammatory and aphrodiasic [39]. *Basella alba* enhances level of testosterone [40].

**Conclusion**  
This paper indicates that herbal medicines decrease symptoms, including depression and anxiety. Traditional medicines possess activity to manage sexual dysfunction. Traditional medicines possessing potential to treat sexual dysfunction should be further evaluated in clinical trials on large scale.

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