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#### Review article

# Yoga and substance use disorders: A narrative review



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#### ABSTRACT

Yoga has been utilized for promotion of health and alleviating distress. It has also been used as a therapeutic measure in the field of mental health, including substance use disorders. This narrative review discusses the literature pertaining to use of yoga in the treatment of substance use disorders. The evidence base especially with regards to randomized trials is <u>presented</u>. The possible mechanisms how yoga might be helpful in the treatment of substance use <u>disorders</u> are explored. Subsequently, implications of yoga in clinical practice are elaborated, followed by examination of the issues in interpretation of the literature of published yoga related studies.

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#### Contents

| 1  | Intro   | Introduction   |  |     |  |  |  |
|----|---|--|--|-----|--|--|--|
| 1. | 1.1. Efficacy of yoga in substance use disorders  1.2. Mechanisms of how yoga might be helpful in substance use disorders |  |  |     |  |  |  |
|    |   |  |  |     |  |  |  |
|    |   |  |  |     |  |  |  |
|    | 1.3.  | Implications for clinical practice for substance use disorders |  |     |  |  |  |
|    |   | 1.3.1.   | When would be a good time to initiate yoga intervention?         | 194 |  |  |  |
|    |   | 1.3.2.   | Who should deliver the yoga intervention?                        | 194 |  |  |  |
|    |   | 1.3.3.   | Group or individual format                                       | 194 |  |  |  |
|    |   | 1.3.4.   | Residential or outpatient?                                       | 194 |  |  |  |
|    |   | 1.3.5.   | Add-on treatment?  | 194 |  |  |  |
|    |   | 1.3.6.   | For how long?  | 195 |  |  |  |
|    | 1.4. Issues in deciphering the literature   |  |  |     |  |  |  |
|    | 1.5.  | What tl  | he future holds for yoga in the field of substance use disorders | 195 |  |  |  |
|    | 1.5. What the future holds for yoga in the field of substance use disorders   |  |  |     |  |  |  |

### 1. Introduction

Yoga has been conceptualized as a science of consciousness, which deals with the evolution of personality of the individual (Nagendra, 2008). It has been described by Patanjali to comprise of several aspects including yamas (restraints), niyamas (observance of rules), asana(posture), pranayama (control or breath), pratyahara (withdrawal of senses), dharana (concentration), dhyana (meditation), and Samadhi (self-realization) (Khanna and Greeson, 2013). Yoga has been in practiced in the Indian sub-continent for centuries and has been promoted as a way of life, as well as means

for improving the overall health of the individual. Yoga has been practiced in various forms. Hatha yoga, i.e. the yoga of attaining mental and physical purity remains the most commonly practiced forms of yoga, though other forms of yoga like *raj* yoga (yoga of awakening the consciousness), *jnana* yoga (yoga of knowledge and wisdom) and *karma* yoga (yoga of action) do exist. Hatha yoga has been popularized in various forms and styles, including that of lyengar yoga, Bikram yoga, Kundalini yoga etc. It generally refers to a set of physical exercises (known as asanas or postures), and sequences of asanas, designed to align your skin, muscles, and bone (Khanna and Greeson, 2013; Shaffer et al., 1997).

Yoga has been utilized for promotion of health and alleviating distress (Chong et al., 2011). Yoga as a therapeutic measure has been used in the field of mental health (Posadzki et al., 2010). Not only yoga has been used in the treatment of stress, depression,

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anxiety disorders, and childhood disorders, (Cramer et al., 2013; da Silva et al., 2009; Galantino et al., 2008; Shaibani et al., 2015, n.d.; Singh et al., 2015, n.d.) it has also been utilized in the treatment of substance use disorders (Khanna and Greeson, 2013; Posadzki et al., 2014). Substance use disorders are among the common disorders across the world, and are associated with considerable social costs (Rehm et al., 2006, 2009). The course of substance use disorders is often protracted with relapses and remissions. High rates of discontinuation of treatment have propelled the search for newer therapies. Yoga, as a form of alternate and complementary therapy holds promise of providing a yet another treatment option in the armamentarium for therapeutic options for substance use disorders. Hence, this narrative review aims to discuss yoga as therapeutic option for substance use disorders.

The review discusses the evidence available for yoga as an option for substance use disorders, followed by mechanisms purported to describe its action, followed by the limitations in the literature and the future directions for the field. The review is based upon the English language literature published in peer reviewed journals and indexed in PubMed database conducted in July 2016. The keywords for the search included 'yoga' with terms implying various substance use disorders. A scoping review of Google Scholar and Medknow search engines was also done to identify additional studies of interest. The review does not include other related meditative practices like mindfulness based stress reduction until they specifically identified themselves as a form of

yoga. A quantitative synthesis or *meta*-analysis was not performed as a part of this review.

## 1.1. Efficacy of yoga in substance use disorders

The clinical studies that have evaluated the efficacy of substance use disorders have been highlighted in Table 1.

Shaffer et al. (1997) assessed the compared the efficacy of addon Hatha yoga to group psychodynamic therapy in a group of patients on methadone maintenance. The investigators randomized 61 patients on methadone maintenance into Hatha Yoga and group psychodynamic therapy interventions. The authors found that both the interventions resulted in improved outcomes for the patient in terms of drug use and criminal behaviour. There were no significant differences between the groups in terms of the efficacy measures.

Raina et al. (2001) studied the effect of Yoga sessions of 40 min duration conducted 6 days a week for 8 weeks with physical exercise. The investigators randomized 50 alcohol dependent men into yoga and physical exercise groups. Improvement or recovery at 8 weeks was noted in 80% of the subjects in the yoga group and 48% subjects in the control group, suggesting that yoga performed better than physical exercise among patients with alcohol dependence.

McIver et al. (2004) studied the effect of yoga intervention that occurred once a week for 60 min over a period of 5 weeks among 20

**Table 1**Studies which have evaluated the efficacy of yoga in substance use disorders.

| Author, year                   | Type of study     | Yoga description  | Substance(s)                                     | Findings  |
|--------------------------------|-------------------|---|--|---|
| Shaffer et al.,<br>1997        | RCT               | Yoga, 75 min for 22 weeks   | Methadone<br>maintenance                         | No difference between add-on Yoga and dynamic group<br>psychotherapy. Both treatments reduced drug use and criminal<br>activities         |
| Raina et al., 2001             | RCT               | Yoga, 40 min, 6 days a week for 8 weeks   | Alcohol  | Yoga group improved more significantly as compared to physical exercise at 8 weeks  |
| McIver et al.,<br>2004         | Single<br>Group   | Yoga, 60 min, once a week for 5 weeks   | Tobacco in a residential therapeutic community   | Improvement in the motivation for change stage. Post test motivation scores better than pre-test ones.                                    |
| Kochupillai et al.,<br>2005    | Single<br>Group   | Sudarshan Kriya Yoga  | Tobacco  | Seventeen of the 34 tobacco users followed up at 6 months were abstinent  |
| Sharma and<br>Corbin, 2006     | RCT               | Yoga scheduled at convenience of participants                                       | Tobacco  | Yoga group had significant increase in mean total self control for quitting as compared to controls who were just given reading materials |
| Vedamurthachar<br>et al., 2006 | RCT               | Sudarshan Kriya Yoga hourly for 2 weeks   | Alcohol  | Depressive symptoms decrease more significantly in the Sudarshan<br>Kriya Yoga group  |
| Sareen et al.,<br>2007         | RCT               | Yoga, 1 h sessions thrice a week for 12 weeks                                       | Alcohol <sup>a</sup>                             | Improvement in mood profile and stress symptoms in yoga group as compared to controls   |
| Khalsa et al.,<br>2008         | Single<br>Group   | Kundalini yoga residential program of 90 days                                       | Mixed (alcohol, opiates, barbiturates)           | Improvement in psychological symptoms over the course of yoga intervention  |
| Elibero et al.,<br>2011        | RCT               | Hatha yoga for 30 min on 1 occassion  | Tobacco  | Hatha yoga and physical exercise had significant decrease in craving to smoke compared to controls  |
| Marefat et al.,<br>2011        | RCT               | Yoga, three times a week for 5 weeks  | Clients in therapeutic community                 | Yoga resulted in significant reduction in anxiety and depression as compared to wait-list control   |
| Rawat et al., 2011             | Controlled design | Yoga compared to Yoga with Sudarshan<br>Kriya                                       | Tobacco  | Additional Sudarshan Kriya with yoga helps better to quit smoking   |
| Bock et al., 2012              | RCT               | Vinyasa yoga twice weekly of 60 min<br>duration for 8 weeks, as an add-on to<br>CBT | Tobacco  | Yoga add-on group had greater abstinence rates at 8 weeks, but difference was not significant at 6 months follow-up                       |
| Shahab et al.,<br>2013         | RCT               | Yogic breathing exercises for 10 min  | Tobacco  | In the immediate intervention period, yogic breathing exercises group had lower craving as compared to video control group                |
| Zhuang et al.,<br>2013         | RCT               | Yoga, 6 days a week for 6 months  | Heroin   | Mood state and quality of life improved in the intervention group as compared to control  |
| Devi et al., 2014              | RCT               | Yoga for 70 min daily for 4 weeks   | Multiple (Heroin,<br>alcohol,<br>spasmaproxyvon) | Improvement in the yoga group in terms of depressive symptoms and quality of life (physical, psychological and social domains)            |
| Hallgren et al.,<br>2014       | RCT               | Weekly group session for 10 weeks   | Alcohol  | Non-significant difference in add-on yoga group in terms of alcohol consumption   |
| Dhawan et al.,<br>2015         | RCT               | Sudarshan Kriya Yoga 3 h (12 h<br>program)  | Opiate   | Intervention group had better outcomes in physical, psychological and environmental quality of life than controls.                        |

CBT Cognitive Behaviour Therapy, RCT Randomized Controlled Trial.

<sup>&</sup>lt;sup>a</sup> Conducted among patients with chronic pancreatitis majority of whom were alcoholics.

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