

# “Effectiveness of Hatha Yoga as a Complementary Intervention in Reducing Smoking Craving among Male Smokers.”

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## ABSTRACT

**Background:** Smoking is a major public health problem and nicotine craving is a key factor contributing to continued smoking and relapse. Non-pharmacological interventions such as yoga have gained attention for their role in reducing stress and addictive behaviours. Hatha Yoga, which integrates physical postures, breathing exercises, and relaxation, may help reduce craving for smoking by improving self-regulation and autonomic balance.

**Objectives:** The study aimed to assess the level of smoking craving among male smokers, evaluate the effectiveness of Hatha Yoga practice in reducing smoking craving, and determine the association between reduction in craving and selected demographic variables.

**Methods:** A quantitative pre-experimental one-group pre-test–post-test design was adopted. The study was conducted among 30 male smokers residing in Keezhmaruvathur village, Kanchipuram district, selected using simple random sampling. Participants practiced Hatha Yoga for six weeks. Data were collected using a structured craving assessment tool and analysed using descriptive and inferential statistics, including paired *t* test.

**Results:** Pre-test findings showed that 70% of participants had high craving and 30% had moderate craving for smoking. Post-test results revealed that 93.3% had low craving and 6.7% had moderate craving, with none having high craving. The mean improvement score was  $30.03 \pm 1.97$ . The paired *t* test value (27.21) was statistically significant at  $P < 0.05$ , indicating a significant reduction in smoking craving following Hatha Yoga practice.

**Conclusion:** The study concluded that Hatha Yoga practice was highly effective in reducing craving for smoking among male smokers. Hatha Yoga can be considered a simple, cost-effective, and complementary intervention to support smoking cessation and promote healthier lifestyles in community settings..

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## INTRODUCTION

Smoking remains one of the leading causes of preventable morbidity and mortality worldwide and continues to pose a serious public health challenge despite decades of tobacco-control efforts. According to the World Health Organization (WHO), tobacco use is responsible for more than eight million deaths annually, of which approximately seven million are attributable to direct tobacco use, while over one million deaths result from exposure to second-hand smoke (1). Tobacco consumption contributes significantly to the global burden of non-communicable diseases, including cardiovascular diseases, chronic respiratory disorders, and various forms of cancer. In addition to physical illness, smoking also exerts profound psychological and social consequences, further complicating cessation efforts.

Nicotine, the primary psychoactive and addictive substance in tobacco, plays a central role in the development and maintenance of smoking behavior. Nicotine rapidly crosses

the blood–brain barrier and stimulates the release of neurotransmitters such as dopamine, producing pleasurable sensations and reinforcing repeated use (2). Over time, neuroadaptation occurs, leading to tolerance and dependence. When nicotine intake is reduced or stopped, withdrawal symptoms such as irritability, anxiety, restlessness, difficulty concentrating, and intense cravings emerge. Among these, craving is considered the most powerful predictor of relapse, often persisting long after physical withdrawal symptoms subside (3).

Craving is a multidimensional phenomenon influenced by physiological dependence, psychological conditioning, environmental cues, and emotional states. Smokers frequently report heightened urges to smoke during periods of stress, emotional discomfort, boredom, or exposure to smoking-related cues (4). These cravings significantly undermine quit attempts, making long-term abstinence difficult even among individuals who are highly motivated

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to quit. Consequently, addressing craving has become a central focus of smoking-cessation interventions.

Conventional smoking-cessation strategies primarily include pharmacological approaches such as nicotine replacement therapy (NRT), bupropion, and varenicline, along with behavioral counseling. Although these interventions have demonstrated effectiveness, their accessibility, affordability, and acceptability remain limited, particularly in rural and resource-constrained settings (5). Moreover, pharmacological therapies may be associated with side effects and are not universally acceptable due to personal beliefs or cultural preferences. These limitations have led to growing interest in complementary and alternative non-pharmacological interventions that target both the physiological and psychological components of addiction.

Non-pharmacological strategies such as yoga, meditation, mindfulness-based interventions, and relaxation techniques have gained increasing recognition for their role in managing stress, enhancing emotional regulation, and reducing addictive behaviours (6). Yoga, an ancient mind-body discipline originating in India, integrates physical postures (asanas), breathing techniques (pranayama), and relaxation or meditation practices (dhyana). Among the various forms of yoga, Hatha Yoga is one of the most widely practiced and emphasizes gentle physical movements, controlled breathing, and mental relaxation, making it suitable for individuals of varying ages and fitness levels.

Hatha Yoga has been shown to exert beneficial effects on both the autonomic nervous system and the hypothalamic-pituitary-adrenal (HPA) axis. Regular practice is associated with reduced sympathetic activity and enhanced parasympathetic dominance, resulting in decreased stress, improved mood, and better emotional control (7). These physiological effects are particularly relevant in the context of smoking cessation, as stress and negative affect are well-established triggers for nicotine craving and relapse. By promoting relaxation and mindfulness, Hatha Yoga may help individuals become more aware of craving sensations without reacting impulsively to them.

Emerging evidence suggests that yoga-based interventions can significantly reduce cigarette consumption, craving intensity, and withdrawal symptoms. Studies conducted in both Western and Indian populations have demonstrated improvements in lung function, reductions in anxiety and depressive symptoms, and enhanced self-efficacy among individuals practicing yoga as part of smoking-cessation programs (8,9). Mindfulness cultivated through yoga practice enables individuals to observe cravings as transient experiences rather than compulsive urges, thereby improving self-regulation and coping capacity.

In India, tobacco use remains highly prevalent, particularly among adult men in rural and semi-rural areas. Cultural acceptance of smoking, limited access to structured cessation programs, and lack of awareness regarding non-pharmacological interventions contribute to sustained tobacco use in these communities. Keezhmaruvathur, a semi-rural region, reflects this broader national pattern, with a considerable proportion of male smokers who face

barriers to accessing comprehensive cessation support. Despite the cultural roots of yoga in India, its structured application as a therapeutic intervention for smoking cessation remains underutilized at the community level.

Although previous studies have explored the role of yoga in substance-use reduction, limited research has focused specifically on the effectiveness of Hatha Yoga in reducing smoking cravings among male smokers in rural settings. Furthermore, there is a paucity of localized evidence that could inform community-based nursing interventions and public health policies. Addressing this research gap is essential to determine whether Hatha Yoga can serve as a feasible, cost-effective, and culturally acceptable complementary strategy for smoking-cessation efforts.

The present study aims to assess the effectiveness of Hatha Yoga practice in reducing smoking cravings among male smokers in Keezhmaruvathur. By generating evidence within a rural Indian context, this study seeks to contribute to the growing body of literature supporting integrative approaches to tobacco-use reduction and to inform nursing practice, community health programs, and policy formulation.

#### **NEED FOR THE STUDY**

Tobacco use continues to be a major public health concern in India and is a leading cause of preventable death and disease. It is estimated that tobacco consumption accounts for nearly 1.35 million deaths annually in the country, with smoking being a predominant contributor among adult males (10). The burden of tobacco-related illnesses places significant strain on the healthcare system and adversely affects productivity, family welfare, and economic stability. Data from the Global Adult Tobacco Survey (GATS) indicate that a substantial proportion of adult men in rural India continue to smoke despite being aware of its harmful consequences (11). Awareness alone has proven insufficient to drive cessation, highlighting the complex interplay of addiction, behavioural conditioning, and psychosocial factors. One of the most significant barriers to successful cessation is intense nicotine craving, particularly during the early phases of abstinence. Craving-induced relapse often occurs within days or weeks of quitting, undermining long-term cessation efforts.

In rural communities, access to conventional smoking-cessation services such as pharmacotherapy and professional counselling is often limited due to financial constraints, lack of trained personnel, and inadequate healthcare infrastructure. Even when available, these interventions may not be culturally acceptable or sustainable in the long term. As a result, there is a pressing need for alternative strategies that are affordable, accessible, and acceptable to rural populations.

Hatha Yoga offers a holistic approach that addresses the physical, psychological, and emotional dimensions of nicotine addiction. It requires minimal equipment, can be practiced in group or individual settings, and aligns well with cultural beliefs and practices in India. Research suggests that yoga improves respiratory function, enhances stress tolerance, and promotes emotional stability, all of

which are critical in managing nicotine withdrawal and craving (12).

A randomized controlled trial examining yoga-based interventions among smokers reported significant reductions in craving intensity and improved abstinence rates compared to standard care (13). Another study demonstrated that yogic breathing techniques modulated autonomic nervous system activity, leading to reduced withdrawal symptoms and improved psychological well-being (14). These findings highlight the potential of yoga as an adjunctive therapy in smoking cessation.

Despite growing evidence, there is a notable lack of localized research examining the effectiveness of Hatha Yoga specifically among male smokers in rural settings such as Keezhmaruvathur. Community-specific data are essential to design effective, contextually appropriate interventions. Nurses, particularly community health nurses, are well-positioned to implement and evaluate such interventions, given their close engagement with rural populations.

Therefore, this study is essential to evaluate the effectiveness of Hatha Yoga in reducing smoking cravings among male smokers in Keezhmaruvathur. The findings may provide valuable insights for integrating yoga-based interventions into community health programs, strengthening tobacco-control strategies, and promoting healthier lifestyles among vulnerable populations.

#### OBJECTIVES:

To assess the level of smoke craving among male smokers

To determine the effectiveness of hatha yoga practice in reducing craving of smoking among male smokers

To find out the correlation between the effectiveness of hatha yoga practice in reducing craving of smoking among male smokers

#### HYPOTHESES

**H<sub>0</sub>:** There was **no significant difference** in the smoking craving scores of male smokers before and after Hatha Yoga practice.

**H<sub>1</sub>:** There was a **significant difference** in the smoking craving scores of male smokers before and after Hatha Yoga practice.

**H<sub>2</sub>:** There was a **significant association** between reductions of smoking craving with selected demographic variables.

#### METHODS:

Quantitative research approach and Pre - experimental one group pre-test – post-test research design was used for assessing the effectiveness of hatha yoga practice on craving for smoking among persons with smoking behaviour in selected community setting at Kanchipuram district. The target population of the study comprised of all male with smoking behaviour and who were residing at keezhmaruvathur village, kanchipuram district. The sample size was 30 male smokers who are having the habit of smoking and who have the willingness to stop smoking. The period of study was six weeks. Simple random sampling technique was adopted for the present study. Modified

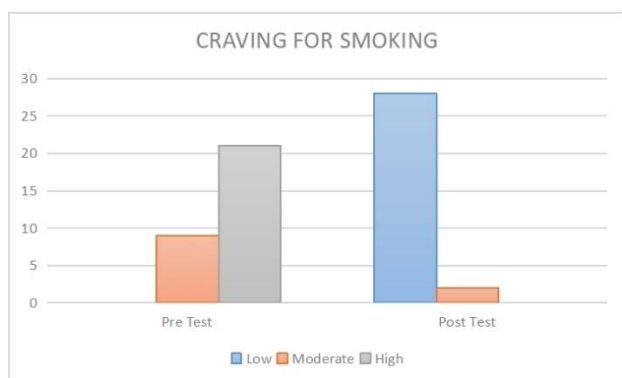
Ludwig von Bertalanffy’s general system theory was adopted for the study and successful outcome of the Hatha practice was evaluated. Data was analysed using descriptive & inferential statistics.

#### RESULTS & DISCUSSION:

**Table 1: Frequency & Percentage distribution of Participants**

S.No	Demographic Variables	Frequency	Percentage
1	Age in Years		
	< 20 Years		
	21 – 30 Years	05	16.67
	31 – 40 Years	10	33.33
2.	31 – 40 Years	08	26.67
	> 41 Years	07	23.33
	Educational Status		
	Illiterate	05	16.67
3.	Primary	06	20.00
	Higher secondary	09	30.00
	Collegiate	10	33.33
4.	Marital Status		
	Unmarried		
	Married	12	40.00
	Widower	12	40.00
5.	Divorced	04	13.33
	Occupational Status		
	Student	03	10.00
	Self employed	09	30.00
	Unemployed	03	10.00
6.	Private Job	11	36.67
	Government Job	04	13.33
7.	Type of Family		
	Nuclear Family	20	66.67
8.	Joint Family	10	33.33
	Monthly Income		
	< Rs. 20000		
	Rs. 20,001 – 50,000	04	13.33
	Rs. 50,001 – 80,000	06	20.00
9.	> Rs. 80,001	13	43.34
	Type of Smoking		
	Filter		
	Plain	06	20.00
	Beedi	10	33.33
10.	Pipe	05	16.67
	Any 2 in the above	03	10.00
	Age of Initiation		
	< 20 Years		
11.	21 – 30 Years	06	20.00
	31 – 40 Years	14	46.67

	> 41 Years	06 04	20.00 13.33
9.	Duration of Smoking < One Year	05	16.67
	1 – 3 Years	07	23.33
	4 – 5 Years	07	23.33
	> 5 Years	11	35.67
10.	Reason of Smoking Enjoyment	05	16.67
	To relieve from Tension	10	33.33
	Social Recognition	06	20.00
	Peer Acceptance	09	30.00



**Fig 1: Effectiveness of Hatha Yoga in reduction of craving smoking**

Figure 1 showed that in pre-test out of 30 samples 9 (30%) had moderate status of craving and 21(70%) had high status of craving for smoking. The post-test reveals that among the 30 samples, 28 (93.3%) had low status of craving for smoking, two (6.7%) had moderate status of craving and none of them was in high status of craving for smoking on post-test. It reveals that there was a significant improvement in the craving for smoking after practicing Hatha Yoga. It implies that smoking behaviour reduces, craving for smoking also reduced.

The above result is supported by a randomized controlled study conducted by Jeffries ER et al. (2020) on the acute impact of Hatha Yoga on craving among smokers attempting to reduce or quit smoking. Adult smokers motivated to reduce or quit smoking were included in the study. The intervention group practiced a 30-minute session of Hatha Yoga, while the control group received general wellness education. Study data were analysed to compare changes in craving levels between the two groups. The results revealed a significant reduction in smoking craving among participants who practiced Hatha Yoga compared to the control group, indicating that yoga practice effectively reduces craving and supports positive smoking behaviour change.(15)

**TABLE 2: Improvement Score of Hatha Yoga Practice on craving for smoking among persons with smoking behaviour**

N=30

VARIABLE	IMPROVEMENT		Confidence Interval		Paired 't' Test
	MEAN	SD	UPPER	LOWER	
Craving for Smoking	30.03	1.97	30.77	29.26	27.21*

( $P < 0.05 = \text{Significant}$ )

Among 30 samples with smoking behaviour the improved mean was 30.03 with the standard deviation of 1.97. The paired “t” test value was 27.21 was compared with tabulated table value at the level of  $P < 0.05$  was significant. This implies that the Hatha yoga practice was effective on reducing the craving for smoking among persons with smoking behaviour. The above result is supported by a randomized controlled research study conducted by Kim et al. (2022) on changes in inhibitory control, craving and affect after yoga versus aerobic exercise among smokers with nicotine dependence. Thirty adult smokers participated in experimental sessions including 30-minute Hatha Yoga and 30-minute aerobic exercise conditions, with pre-test and post-test measurements of craving using validated craving scales. The results revealed a significant reduction in craving for smoking after the yoga intervention, demonstrating that yoga practice effectively decreases craving levels among individuals with smoking behaviour. The findings imply that Hatha Yoga practice can be an effective complementary strategy for reducing cigarette craving and supporting smoking behaviour change. (16)

**CONCLUSION:**

The present study concludes that Hatha Yoga practice was highly effective in reducing craving for smoking among persons with smoking behaviour. The significant improvement in the mean craving score and the highly significant paired *t* test value at  $P < 0.05$  indicate that regular practice of Hatha Yoga leads to a marked reduction in smoking craving. Thus, Hatha Yoga can be considered a simple, cost-effective, and non-pharmacological intervention to support smoking behaviour modification and promote healthier lifestyles.

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