

RESEARCH PROTOCOL EFFECT OF UJJAYI PRANAYAMA ON PULMONARY FUNCTION OF POST COVID 19 PATIENT

Author 1: Dr. Payal S. Chavhan Assistant Prof. Swasthavritta evam Yoga Dept
SVAMCH Wandhari ,Chandrapur

Author 2: Dr. Jyoti K. Varthi Associate Prof. Swasthavritta evum Yoga Dept GAC Nagpur,

Abstract

Ayurveda the holistic science not only means for disease but also for healthy well being for betterment of life. In Ayurveda *Ashtang yoga* has been described. In which pranayama is very helpful to people in maintain good physical health. COVID-19 pandemic is a global challenge to public health. COVID 19 caused by severe acute respiratory syndrome corona virus 2 (SARS- COV-2). The disease mainly affect upper respiratory and lower respiratory tracts.

In India the covid-19 spreads tremendously which raised concern about it. The SARS COV-2 primarily triggers lung infection which impaired its function. Patient recovering from covid-19 identified respiratory problems including chronic cough, fibrotic lung disease, impaired diffusion capacity and reduce exercise capacity. Also there is lot of psychological condition like stress, anxiety, depression has seen.

By considering the current pandemic the pranayama may have main role on lung function. It improves overall performance of body and respiratory breathing capacity by increasing chest wallexpansion .The regular practice of pranayama increases almost all lung function. In *Hathyoga* and *Gherand samhita Ujjayi pranayama* describe as *kapha Dosh har ,kasanashak* .Thus Ujjayi pranayama could be the supportive intervention for increasing post covid subject Pulmonary Function.

Keywords: *Yoga, Pranayama, SARS COV 2, Pandemic*

INTRODUCTION

Yoga is traditional practice that aims to improve an individual's physical, mental well being .COVID-19 pandemic is a global challenge to public health. The 2019 Novel corona virus which is originated from wuhanchina,caused massive spread across India and also become a pandemic worldwide.

COVID 19 caused by severe acute respiratory syndrome corona virus 2 (SARS- COV-2). Transmission of covid 19 occurs when people are exposed to respiratory droplets containing virus which is exhaled by an infected person. This disease mainly affect upper respiratory and lower respiratory tracts.

In India the covid-19 spreads tremendously which raised concern about it. The SARS COV-2 mainly affect lung. It primarily triggers lung infection in the form of pneumonia with characteristic of the acute respiratory distress syndrome which impaired the lung function.

Patient recovering from covid-19 identified respiratory problems including chronic cough, fibrotic lung disease, impaired diffusion capacity and reduce exercise capacity. Also there is lot of psychological condition like stress, anxiety, depression has seen.

In Ayurveda *Ashtang yoga* has been described. It includes *Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana, samadhi, Aasna, Pranayama* described for Physical health. In this pandemic maintaining the physical and mental health is most important .by practicing pranayama one can achieve better health. *Pranayama* made up of two words prana + ayama . In *Hatha yoga* text eight types of Kumbhaka has been described, one of them is In {*Ujjayi 1* }by closing the mouth air inspired through both nostrils while slightly contract the epiglottis it produces sound after filling lungs with air do kumbhaka then expire air through left nostril. It increases Oxygen saturation in the body and removes congestion from the throat and strengthens the larynx and pharynx.

By considering the current pandemic the pranayama may have main role on lung function. It improves overall performance of body and respiratory breathing capacity by increasing chest wall expansion .The regular practice of pranayama increases almost all lung function. In *Hathyoga* and *Gherand samhita Ujjayi pranayama* describe as *kapha Dosh har, kasanashak* .Thus Ujjayi pranayama could be the supportive intervention for increasing post covid subject Pulmonary Function.

Aim & Objectives:

A) Aim :

Assessment of efficacy of Ujjayi Pranayama on pulmonary function of post covid 19

B) Objective :

1. Primary:

1. To evaluate the efficacy of *Ujjayi Pranayama* on pulmonary function of post COVID 19 subject when compare with post COVID 19 intervention protocol.

2. Secondary:

1. To study the *Ujjayi Pranayama*.
2. To study Post COVID-19.
3. To study pulmonary function

REVIEW OF LITERATURE:

1. Review of COVID 19
2. Review of pulmonary function 3
3. Review of Anatomy and Physiology of respiratory system 4
4. Review of Yoga
5. Review of pranayama 5
6. Review of *Ujjayi Pranayama*

Method and Methodology:

Prospective, Randomize, controlled clinical trial

Study Setting: In OPD and IPD of study institute.

Study population: Study will be conducted on postcovid patients from IPD and OPD of study institute /other institute and covid center.

Duration of Study:

Each subject of trial group will be given intervention of at 7 am for 2 min daily for 90 days. Also he will be asked to continue his post covid treatment whichever he is taking for the same period. Follow ups will be taken on 0th, 30th, 60th, 90th, 105th day. Study will be carried out in the duration of post graduation.

Method of selection of study subjects:

a) DIAGNOSTIC CRITERIA:

1. History of Rapid antigen positive for covid 19
2. History of Real time polymerase chain Reaction positive for covid 19

b) INCLUSION CRITERIA:

1. Previously RTPCR positive subject
2. Subject who completed quarantine period
3. Subjects of age between 18 -60 years of either gender

Note: according to expert opinion of epidemiologist changes will be done in inclusion criteria of post covid 19 subjects.

c) EXCLUSION CRITERIA:

1. Subjects suffering from Cardiac Disease, Hypertension, Diabetes, Anaemia
2. CA Thyroid, Thyroidectomy and having Thyroid complications.
3. Subjects with cervical, lumbar spondylosis or injury to Neck.

4. Post covid patients with 90 days completed.
5. Subjects who had undergone abdominal surgeries minimum three months period
6. Subjects who are not willing for the study trial.
7. Pregnant Women
8. Subjects who are already been doing *pranayama*.

Intervention Programme:

Table 1 : Show plan of research study:

| Group | No. of subjects | No. of subjects with withdrawal of 20% | Planning | Duration of intervention |
|---------|-----------------|--|--|--------------------------|
| Group A | 30 | 6 | <i>Ujjayi Pranayama</i> on post covid subject with post covid protocol | 90 days |
| Group B | 30 | 6 | Subject with post Covid protocol | 90days |

OBJECTIVE CRITERIA:

Will be done on before and after intervention.

Spirometry (breeze suite 6.4 computerized spirometer)

- 1) FEV1 (Forced Expiratory Volume)= 83% of total vital capacity
 FEV2= 94% of total vital capacity
 FEV3= 97% of total vital capacity
 After 3rd second=100% of total vital capacity
- 2) FVC (Forced Vital capacity): male: 4.5 to 3.5 lit.
 Female 3.2 to 2.5 lit.
- 3) MVV (Maximum Ventilation Volume): male: 150- 170 lit/min
 Female: 80- 100lit/min
- 4) PEFR (Peak Expiratory Flow Rate) : 400 lit/min
- 5) Respiratory Rate
- 6) Pulse Rate
- 7) Blood Pressure
- 8) Temperature
- 9) Spo2
- 10) Breath Holding Capacity
- 11) 6 minute walk Test

SUBJECTIVE CRITERIA:

- 1) **Table no 2:** shows gradation of symptoms of *Pranavaha Strotas 6* given by WHO scoring.

Shwaas Vega:

| | | |
|---|---|---|
| 1 | Normal life / Good quality / can enjoy every thing | 0 |
| 2 | Dyspnoea after exertion only | 1 |
| 3 | Dyspnoea without exertion but can do routine work | 2 |
| 4 | Needs rest or medication for routine work due to dyspnoea | 3 |

Kaasa in Shwasa:

| | | |
|---|--|---|
| 1 | No cough | 0 |
| 2 | Coughing | 1 |
| 3 | Persistent cough with expectoration , relieving with expectoration | 2 |
| 4 | Persistent cough with occasional repetition with expectoration | 3 |

Shvasakrichhrata:

| | | |
|---|--|---|
| 1 | No sign of Shvasakrichhrata | 0 |
| 2 | can speak complete sentences during dyspnoea | 1 |
| 3 | Speaks in phrases or partial sentences during dyspnoea | 2 |
| 4 | Cannot able to speak during dysnoea | 3 |

Breath Holding Time

Sample size:

Table no 3: Prevalence of covid 19

| Sr No. | Article | Prevalence |
|--------|--|------------|
| 1 | Prevalence of Covid 19 in study place 12 | 2.71% |
| 2 | Prevalence of Covid 19 in Maharashtra 13 | 4.85% |

So; considering all above prevalence 2.71% prevalence is taken in account.

Sample size will be calculated by Danniell 1999 formula :

$$N = \frac{Z^2 p(1-p)}{d^2}$$

$$d^2$$

SAMPLING TECHNIQUE:

Simple random technique

Data collection tools:

Method for data collection relevant to objective data will be collected from the subjects by following ways.

- 1) By taking history.
- 2) By questioning.
- 3) By general examination.
- 4) Spirometry.

References:

1. Swatmaram yogendravirchita, hathyogpradipika ,khemrajshrikrshnadas ,shrivenkateshwarpres Bombay 4, khetwadi , Edi 1985- 2041 chapter 2/ 51/52 ,pranayamprakaran, page no. 69
2. www.cdc.com / www.who.int
3. k. sembulingam, essential of medical physiology, 5th edition, reprint 2011, section 9, respiratory system and environmental physiology, chapter 121
4. B.D.Chourasia, Human Anatomy forth edition, section-2, chapter-16, pg No.223
5. Swatmaram yogendra virchita,hathyogpradipika , 1985- 2041khemraj shrikrshnadas ,shrivenkateshwar pres Bombay 4, khetwadi , chapter 2/ 3, page no. 41
6. Park k: editor Parks textbook of preventive and social medicine , m/s Banarasidas Bhanot Publishers Jabalpur , edition 22
7. Sharma P.V: editor,Charak Samhita , vol 1, Varanasi chaukhamba Orientalia , reprint 2011:237
8. k.Park, Parks textbook of Preventive and social medicine , 27th edition,M/s banarsidas bhanot , Jabalpur
9. Swami Muktibodhananda, Hatha Yoga Pradipika,Light on Hathyoga, Yoga Publication Trust, Munger , bihar , india , 3rd edition 1998, reprinted 2006, chapter 1, page no. 56