Release of Protocol for Psychosocial Rehab of COVID-19 Patients and Online Workshop for BNYS Doctors

Yoga Intervention for COVID-19

organized by
CCRYN, Ministry of AYUSH

in collaboration with
NIMHANS, Bengaluru and S-VYASA University, Bengaluru

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Background

• COVID-19 pandemic has become a global concern
• There is huge demand on the Health care sector to contain this pandemic
• Clinically the disease is classified into:
  – Mild: Fever and URI
  – Moderate: Pneumonia with RR below 30/min; SpO2 above 90%
  – Severe: Severe Pneumonia/ARDS/Septic shock, RR above 30/min; SpO2 below 90%

  (Guidelines from MoHFW, GoI, 2020)
Background

• Severe Symptomatic phase of illness is characterized by ‘cytokine storm’: IFN-α, IFN-γ, IL-1β, IL-6, IL-12, IL-18, IL-33, TNF-α, IFN-γ Inducible Protein-10 (IP-10), Macrophage Inflammatory Protein-1 alpha (MIP-1α), Monocyte Chemoattractant Protein-1(MCP-1)
  (Ye et al., 2020)

• Reduction in the CD4 and CD8 cells

• Downregulation of the cell-mediated immune responses
  (Li et al., 2020)

• Recent review: 28% of all the screened subjects, reported symptoms of stress, anxiety and depression (general public as well as the health care workers)
  (Rajkumar et al., 2020)

• A cohort of men with HIV, those who scored as depressed on the Center for Epidemiologic Studies Depression Scale (CES-D) had a 38% greater decline in CD4+ T cells compared with men who were not depressed, stressful life events and depression enhanced progression to AIDS and increased risk of mortality
  (Ickovics et.al, 2001)
Stress and Immune System

A meta-analysis of 300 studies - an inverse relationship between psychological stress and parameters of the immune system

(Segerstrom & Miller, 2004)

Figure 1. Stressors which result in maladaptive functioning can elicit a series of psychological, neuro-endocrinological and immunological events which may result in faster progression in HIV Infection [56].

(Antoni et al, 1990)
Ancient References for Pranayama

• Prāṇa is the basic life principle.
• Prāṇāyāma is a process for gaining control over prāṇa.
• Maharśi Patanjali defines Prāṇāyāma as cessation of movement of inhalation and exhalation after having attained mastery over āsana (P.Y.S.2.49).
• Mind and breath are united together, by suspension of one, therefore comes suspension of another (H.Y.P 4.22-4.25)
• Wherever there is affliction due to disease, the prana and breath should be steadied to destroy the disease. (H.Y.P. 4.27)
• Bhastrikā removes imbalances of all three doṣas (basic humors according to ayurvedic science); vāta, pitta and kapha. (H.Y.P. 2.65)
• It also improves body fire (H.Y.P.2.65) and those who do 20 counts thrice daily, they shall never suffer from any disease and will always be healthy (G.S. 5.77).
Contd..

- **Nādishuddhi** clears subtle channels in 3 months, it is useful in balancing vāta (H.Y.P. 2.7, 2.10).
- When pranayama are performed properly they eradicate all diseases but an improper practice generates all diseases (H.Y.P. 2.16)
- **Ujjayī Prāṇāyāma** should form the core, as it destroys all the diseases of the nādis, dropsy, and diseases of the dhātus (sevenfold structural components that support the body according to ayurvedic science) and increases gastric fire (H.Y.P. 2.52).
- We observed increased pre-frontal oxygenation in healthy subjects after Kapalabhati practice for 1 minute as compared to schizophrenia patients (Bhargav et al, 2014)
Yoga and Stress

- Bormann et al examined the effect of psycho-spiritual intervention of mantra repetition, “a word or phrase with spiritual associations repeated silently throughout the day” on psychological distress, quality of life enjoyment and satisfaction, and existential spiritual well-being, in 93 HIV infected adults.
- Mantra group had reduced trait anger and increased spiritual faith and connectedness. Mantra practice was positively associated with quality of life and total existential spiritual well-being and inversely associated with HIV-related intrusive thoughts.
  
  (Bormann et al, 2006)
- We observed that 8 weeks of Bhashrika and Ujjayi practice was useful in reducing depressive symptoms in patients with Major depression in 4 weeks
  
  (Janakiramaiah et al, 2000)
- Telles et al checked the effect of breathing exclusively through one nostril on autonomic functions. 48 male subjects were divided randomly into three groups (viz. right nostril breathing, left nostril breathing or alternate nostril breathing). 27 respiratory cycles were repeated 4 times daily for one month. Right nostril breathing increased metabolism and left nostril breathing brought parasympathetic dominance.
  
  (Telles, et al,1994)
- Forced right nostril breathing increases heart rate compared to left forced nostril breathing whereas forced left nostril breathing leads to rise in end diastolic volume and stroke volume
  
  (Shannahoff-Khalsa & Kennedy, 1993)
Yoga and Immune Functions

• Systematic review ~15 RCTs: practice of Yoga significantly downplayed the pro-inflammatory markers such as Interleukins: (IL)-6, IL-1β and Tumor Necrosis Factor (TNF-α) and increased the levels of anti-inflammatory markers such as IL-10 and IL-12  
  (Falkenberg et al., 2018)

• 8-week mindfulness meditation program led to increase in antibody titre in response to influenza vaccine  
  (Davidson et al., 2003)

• Meditators and yoga practitioners higher levels of circulating CD3, CD4 and CD8 cells than non-practitioners  
  (Infante et al., 2014)
Yoga and Immune Functions

- RCT of Yoga in HIV: Regular practice of integrated yoga (joint loosening, sun salutations, breathing practices, pranayama and relaxation techniques) for 12 weeks as an adjunct to antiretroviral treatment (ART) for a month demonstrated a trend towards increase in CD4 counts and reduced depression in HIV positive patients, compared to ART alone (Naoroibam et al., 2016)

- RCT of Yoga in TB: 8-week Integrated Yoga program led to reduction in the disease symptom scores, lesser sputum conversion on microscopy and improvement in the lung capacity and radiographic pictures (Visweswaraiah & Telles, 2004)

- 24 weeks of Sudarshan Kriya Yoga practice increased NK cell Count, lowered blood lactate levels and enhanced anti-oxidant status (Kochupillai et al., 2005)

- 12 weeks of Integrated Yoga improved NK cell (CD 56) activity in Cancer patients (Rao et al., 2009)
Tele-Yoga: Current Evidence

• Most of the studies on tele-yoga have focused on medical disorders (Heart failure, COPD, CA breast) and psychological symptoms secondary to a medical problem or stressors.

• Preliminary data confirm the feasibility and safety of tele-yoga for chronic pain

• There is some evidence of tele-yoga being as effective as in-person Yoga sessions.

• Tele-yoga in a group format, with flexible schedule has been found feasible and acceptable in a study on patients undergoing breast cancer
Preliminary Data - NIMHANS

• We developed a 45-minute Tele-Yoga program (TYP): 10 Experts
• Online participation in 24 sessions conducted in one month: 1928
• Subjects consented to participate: 91 (M = 26; F = 65; 30% M and 70% F); the age range of 18 to 68 years (average 40.79+\(\pm\) 18.33 years)
• Low Back Pain: 39%; Hypertension: 23.5%; Type 2 Diabetes Mellitus: 15.7%; Depression: 4%; Cardiac disorders: 4%.
• 53 subjects completed the 1-month Tele-Yoga program
• Average attendance was 11.68 sessions
• Average perceived difficulty at the end of 1 month in practicing the yoga module was 2.40
• Average 9.84 supervised yoga sessions to learn the module
Preliminary Data

- 95.6% of subjects reported it to be safe and useful
- Significant reduction in their stress levels on perceived stress scale (P < 0.05)
- Attributed 75% of their stress reduction to the Yoga practice
- 28% reported reduction in pain killer intake
- 12.5% reported reduction in need for sleep medications
- Overall rating of the module in its usefulness: 8.8 out of 10
Tele-yoga for stress management: Need of the hour during the COVID-19 pandemic and beyond?

Nishitha Jasti, a Hemant Bhargav, a Sanju George, b, ⁎ Shivarama Varambally, a and B N Gangadhar a

Table A1
Details of the Tele-yoga Program for Stress Management.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Name of the Practice (Sanskrit)</th>
<th>Name of the practice (English)</th>
<th>Number of Rounds</th>
<th>Duration (Minutes)</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shvasa Kriya-1</td>
<td>Hands in and out Breathing</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Shvasa Kriya-2</td>
<td>Hand stretch Breathing</td>
<td>5 rounds each at 90°, 135° and 180°</td>
<td>3</td>
<td>Those with cardiac disorders should not raise the hands above the head.</td>
</tr>
<tr>
<td>3</td>
<td>Kati-chakrasana</td>
<td>Spinal Twisting</td>
<td>10</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Ardha-chakrasana Padhasasanam</td>
<td>Forward and Backward Breathing</td>
<td>10</td>
<td>3</td>
<td>Eyes should be kept open. Elderly above 50 years of age should use wall support.</td>
</tr>
<tr>
<td>5</td>
<td>Tihagiyya Pranayama</td>
<td>Sectional Breathing</td>
<td>5 rounds each in three modes (breathing ratio)</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Kapalabhati Kriya</td>
<td>Skull-shining Breath</td>
<td>30 rounds, 2 cycles</td>
<td>3</td>
<td>(rest for 30 s in between)</td>
</tr>
<tr>
<td>7</td>
<td>Bhastrika</td>
<td>Bellows Breathing</td>
<td>20 rounds, 3 cycles</td>
<td>5</td>
<td>(rest for 30 s in between)</td>
</tr>
<tr>
<td>8</td>
<td>Ujjayi</td>
<td>Victorious Breath</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Nadi-shuddhi Pranayama</td>
<td>Alternate Nostril Breathing</td>
<td>6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Nadamusandhana</td>
<td>Mantra</td>
<td>5 rounds each with A, U, ...</td>
<td>5</td>
<td>Those with migraine/chronic...</td>
</tr>
</tbody>
</table>
Tele-Yoga sessions at NIMHANS

Contact email: yogaforstress.nimhans@gmail.com
Yoga and COVID-19: Current Evidence

• Pubmed: “Yoga” “COVID” today = 67 hits

• 1 study tested feasibility of providing tele intervention in cancer patients and gaining feedback (Kelly et al, 2018)

• Another study tested feasibility yoga for COVID-19 during lockdown (Jasti et al, 2020)

• Systematic review on strategies for physical activity during lockdown:
  – include home-based exercise, exergaming, dancing to music, and participation in yoga.
  – adults - at least 150 min of moderate-intensity and at least 75 min of vigorous-intensity of activity divided in to 5-7 sessions per week.
  – reduced by 30% for children and adolescents
  – progressive model of intensity (Chtourou et al, 2020)
## Literature on Yoga for COVID-19 management

<table>
<thead>
<tr>
<th>Author, Journal &amp; Year</th>
<th>Type of the study</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
</table>
| **Authors:** Mishra A et al.  
**Title:** The use of integrative therapy based on Yoga and Ayurveda in the treatment of a high-risk case of COVID-19/SARS-CoV-2 with multiple comorbidities: a case report.  
**Journal:** Journal of medical case reports.  
**Year:** 2021 Dec | Case study | Ayurveda and Yoga protocol (loosening exercises, breathing exercises, asana, pranayama, dhyana and Yoga nidra) for 2 weeks | Integrative therapy was found to be effective in mitigating the symptoms of COVID-19 in this patient with multiple comorbidities. |
| **Authors:** Bushell W, et al.  
**Title:** Meditation and yoga practices as potential adjunctive treatment of SARS-CoV-2 infection and COVID-19: a brief overview of key subjects.  
**Journal:** The Journal of Alternative and Complementary Medicine.  
**Year:** 2020 Jul 1 | Narrative review | Certain yoga practices of seated meditation, yoga asanas (postures), and pranayama (breathing) with relevance to immune function for consideration for SARS-CoV-2 infection and COVID19 treatment and/or prevention. | Authors found that there is evidence of stress & inflammation modulation, and also evidence for immune system enhancement, accompanying the practice of certain forms of meditation, yoga, and pranayama, along with potential implications for counteracting some forms of infectious challenges. |
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<th>Findings</th>
</tr>
</thead>
</table>
| **Authors:** Nagarathna R, Nagendra HR, Majumdar V.  
**Title:** A perspective on yoga as a preventive strategy for coronavirus disease 2019.  
**Journal:** International Journal of Yoga.  
**Year:** 2020 May | Pilot study | Yoga module for the management of COVID-19 with mild symptoms consisting of loosening exercises, breathing exercises and asanas | Yoga was found to be beneficial on the immune and respiratory systems against varied clinical settings including that of infectious diseases |
| **Authors:** Tillu G, Chaturvedi S, Chopra A, Patwardhan B.  
**Title:** Public health approach of ayurveda and yoga for COVID-19 prophylaxis.  
**Journal:** The Journal of Alternative and Complementary Medicine.  
**Year:** 2020 May 1 | Commentary | Ayurveda and Yoga practices in the prophylaxis and adjuvant therapy of COVID-19. | Pranayama can improve lung function whereas meditation is found to reduce inflammation markers and influence markers of virus-specific immune response. Based on these evidences, it can be said that Yoga including meditation could be a simple and useful home-based practice for the prevention and post-recovery management of COVID-19. |
| **Authors:** Sharma K, Anand A, Kumar R.  
**Title:** The role of Yoga in working from home during the COVID-19 global lockdown.  
**Journal:** Work  
**Year:** 2020 Jan 1 | Review | Yoga practice modules/protocols for work places and at home during the global lockdown due to the COVID-19 pandemic | Current evidence shows that Yoga practice can reduce the risks of comorbid conditions and strengthen the immune system by relieving stress and anxiety or directly improving immune markers or both. Yoga can be employed at home and workplaces alike. |
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<tr>
<th>Author, Journal &amp; Year</th>
<th>Type of the study</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Authors: Roy R, Mukhopadhyay MK.  
Title: Yoga for combat with COVID-19 epidemic.  
Year: 2020 | Review | Yoga practices | Yoga has its positive effects on immune system as well as respiratory system. |
| Authors: Borah H, Goswami A.  
Title: Nasal Irrigation in Covid-19 Pandemic: Is It Justified  
Journal: IOSR Journal of Dental and Medical Sciences  
Year: 2020 June | Commentary | Nasal Irrigation/Jalaneti | Regular nasal irrigation can reduce the viral load and hence its transmission, besides reducing nasopharyngeal inflammation and secondary bacterial load in patient infected with COVID-19 |
| Authors: Karunaratne HK  
Title: Yoga Therapy for Immunomodulation (Prevent & Cure) of COVID-19.  
Journal: International Journal of Health Sciences and Research  
Year: 2021 Feb | Review Article | Yoga Practices for prevention and cure in Covid 19 | Yoga, meditation & other yogic practices enhance the overall immunity, specially Jala Nethi and Pranayama are very important yoga therapies for the prevention and cure of Covid 19. Yoga has immunomodulatory role and yoga therapy can be applied for the prevention and cure of Covid 19 |
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<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zope SA, Zope RA, Biri GA, Zope CS.</td>
<td>International Journal of Yoga</td>
<td>Narrative review</td>
<td>Sudarshan Kriya Yoga (SKY)</td>
<td>SKY is found to balance the autonomic nervous system and thus can alleviate anxiety, routine stress, depression, stress-related medical disorders, and posttraumatic stress. It potentiates natural host immune defenses. Article provided an overview of potential therapeutic benefits that SKY can offer to the population at large during this COVID-19 pandemic.</td>
</tr>
<tr>
<td>Panta P, Chatti K, Andhavarapu A.</td>
<td>EXPLORE</td>
<td>Report</td>
<td>saline water gargling and nasal irrigation (Jala neti)</td>
<td>Saline water gargling and nasal irrigation are simple, economical, practically feasible, and globally implementable strategies with therapeutic and prophylactic value. These methods are harmless interventions, reliable in terms of infection control and are suitable options worth considering in the current crisis.</td>
</tr>
<tr>
<td>Jasti N, Bhargav H et al.</td>
<td>Asian journal of psychiatry</td>
<td>Feasibility study</td>
<td>Tele-yoga for stress management during COVID-19</td>
<td>This preliminary research suggests that tele-yoga intervention can be safe, feasible and useful in improving individual well-being and reducing stress.</td>
</tr>
</tbody>
</table>
Yoga module for COVID-19 management by NIMHANS

• A simple Yoga module was developed by the Department of Integrative Medicine, NIMHANS Bengaluru, in the interest of the current pandemic situation.

• This is a 40-minutes module which can be given as an add-on treatment in COVID patients

• Contains a set of yoga practices which includes:
  – Breathing exercises
  – Asanas
  – Pranayama
  – Guided relaxation techniques
Objectives of Yoga module for COVID-19 rehabilitation

• To bring modulation in the immune system and to strengthen the respiratory system.

• To improve overall mental wellbeing of the patients as a part of psycho-social rehabilitation.
Yoga room setting

• Ensure proper air conditioning of the yoga room with adequate cross ventilation.

• Restrict the number of participants in each session to ensure adequate floor area (4m$^2$ per person) during the practice.

• Practices can be administered for the individuals in isolation/asymptomatic/symptomatic cases of COVID.

• It can be either practiced in the COVID-19 quarantine centers or in a tele-mode for minimum of 10 supervised sessions.

• Disinfection of the room should be done after each session.
Instructions for the patients

• Practices to be done in empty stomach condition.
• Empty their bladder and bowel before the practice.
• loose and comfortable clothing (preferably of cotton material).
• Social distancing measures (6ft during the practice in the COVID care centers).
• Usage of personal yoga mats.
• Practice within the patient’s comfortable limits.
• Can be done sitting on the chair if required (patients who have breathing difficulty or weak).
• Respiratory etiquettes to be strictly followed by the patients (covering mouth/nose while sneezing/coughing with a tissue/ handkerchief/ flexed elbow and has to dispose the used tissues).
• Spitting to be strictly avoided.
• mindfulness and in a joyful state of mind during the practice.
• To be practiced only under the guidance of trained yoga instructor.
Instructions and precautions to be taken by instructor

- To maintain a safe distance of at least 10 ft – 15 ft from the patient.
- To know about patients’ underlying health condition and administer yoga practices accordingly.
- Flexibility in the practices according to their underlying health condition (e.g., knee pain, back pain, hypertension etc.)
- To monitor patients not to overexert while doing any breathing practices.
- To wear a protective facial mask (in particular N-95 masks) and face shield mandatorily at all times in the premises, however during yoga practice, as far as possible, only a visor may be used (use of N-95 mask during the practice may cause difficulty in breathing.)
Contra-indicated practices in Tele-mode

• Advanced yoga postures - arm-balancing postures, hand-, shoulder- and headstands.
• Advanced postures requiring extreme stretching and flexibility of the body such as crossing the legs around the neck.
• Postures that alter the center of gravity such as forward and backward bending should be done with eyes open.
• Asanas requiring extreme backward bend (Poorna chakrasana/Poorna ustrasana or similar postures).
• Postures which require balancing on only one leg (vrikshasana, garudasana). e.
• Yogic cleansing practices (Shatkriyas) except Kapalabhati and Jatru Trataka.
• Bhashrika with more than 20 strokes/ minute or Kapalabhati with more than 40 strokes/minute.
• Maintaining any posture for more than 3 minutes except meditation and relaxation.
• Advanced meditative practices such as Vipassana and Kundalini yoga.
Yoga Module for COVID-19 patients

• Starting Prayer
• Preparatory Practices:

Shvasa Kriya - 1

Shvasa Kriya - 2
• Asana: Kati-chakrasana

• Sectional Breathing: 1:4:2

• Kriya: Kapalabhati

Chin Mudra

Chinmaya mudra

Adi mudra
• Pranayama

Bhastrika

Ujjayi

Nadi-shuddhi
• Nadanu-sandhana

‘AAA’ chanting
‘UUU’ chanting
‘MMM’ chanting
‘AUM’ chanting

• Positive Affirmation with ending prayer:

“My immune system is getting stronger and stronger, I am happy and Healthy.”
References


References


THANK YOU!

Please send feedback to
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Website: www.nimhansyoga.in