

## Impact of COVID-19 on Sleep and Role of Yoga as a Non – Pharmacological Intervention

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### ABSTRACT

COVID-19 pandemic vastly affected the mental health of people causing psychological distress with problems as emotional disturbance, stress, mood alterations, anger, depression, irritability, confusion, emotional exhaustion, emotional isolation, insecurity, social stigma, post-traumatic stress symptoms, insomnia reported in almost all sectors and strata of the society globally. The impact of ongoing mutations in the nature of the SARS COVID -2 virus, changing presentations of the disease, ongoing disease and deaths, quarantine, isolation, post COVID complications, lock-down, socio economic crisis all have impacted the mental health of people negatively having a major brunt on the sleep. Sleep is a vital biophysiological phenomenon playing a crucial role in systemic physiology, including metabolism, immunity, endocrinal, brain and cardiovascular functions. Disruption of sleep is related with both short-term as well as long term consequences, ranging from increased stress responsivity, mood disorders, impaired cognition and performance, somatic problems like headache, abdominal pain to hypertension, dyslipidemia, CVD, metabolic syndrome, type 2 diabetes mellitus, and increased risk of cancers and death. Studies have reported mental health and sleep to be affected by COVID-19 in general population as well as in health care workers. Mental health and sleep are deeply interrelated with one affecting the other and also the general health, healing and quality of life of the individual. Still, sleep remains to be an underrecognized component of health as concerned to its management. This paper presents the impact of COVID – 19 on sleep form the studies documented and how yoga can be an effective non-pharmacological intervention for prevention and managing the sleep disturbances.

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**Received:** January 30, 2023; **Accepted:** February 08, 2023; **Published:** February 21, 2023

**Keywords:** COVID-19, Psychological Stress, Insomnia, Mental Health, Sleep, Yoga

### Introduction

COVID-19 pandemic has affected the world at large causing negative psychological effects as stress, anxiety, depression, anger, post-traumatic stress disorder, sleep disorders in the general population as well as in healthcare workers. Increased news availability regarding COVID-19, disease and death of near and dear ones, fear of uncertainty and outcome of the disease, socio-economic instability, post COVID complications, misinformation regarding the disease are some of the important factors recognized to negatively affect the mental health of the people [1,2]. It is equally important to note that the measures taken to contain the spread of COVID-19 as quarantine, isolation, lock-down also caused several psychological problems affecting almost all strata of the society [3,4,5]. Health care workers have been reported to suffer from several psychological disturbances and poor sleep due to the long working hours, higher chances of exposure to virus, work pressure, concern for loved ones and resultant psychological sequelae. Several studies have reported the impact of COVID 19 on sleep in different populations with prevalence of sleep problems affecting approximating 40% of general population and

health care workers. Sleep problems are reported to be closely associated to various mental health problems [4-7], with one affecting other, leading to cycle. Studies report for the requirement of higher prioritization to addressing disrupted sleep in mental health provision [8]. Various studies have emphasized the necessity of effective interventions for management of sleep disorders, for having better outcomes in physical and mental health and improved healing and quality of life [9]. This article documents importance of yoga as a non-pharmacological intervention for the management as well as prevention of sleep disorders along with improved mental and physical health and healing as associated other positive outcomes.

### Materials and Methods

This article is a narrative review of the published literature on sleep and COVID -19 pandemic and yoga interventions relevant to it. A search of the electronic databases of Science direct, PubMed and Google scholar were searched with the key words “sleep”, “COVID-19”, “impact” “yoga” in various combinations and permutations. Relevant articles retrieved were stored in a folder. Net surfing on google and the references of the articles were also searched to retrieve other relevant articles. The articles were then screened for relevance and final inclusion in the study by VS

and SR independently. Any difference of opinions was sorted by mutual discussion. The matter of this non- systematic review was then systematically developed and presented.

### **Impact of COVID-19 Pandemic in Changing Sleep Pattern on Community**

COVID-19 pandemic is considerably affecting the world health system, development and economies apart from disturbing the normal life of individuals. Novel corona virus outbreak is reported to initiate emotional and psychological and reactions such as elevated levels of anxiety, fear, stress, sleep disorders [10]. The initial studies after first wave from China reports for 18% participants to suffer from poor sleep quality, and 20% and 35% to suffer from depression and general anxiety [6]. A survey of 2291 Italians revealed anxiety related to COVID-19 to be highly associated with disturbed sleep [11]. Later studies have reported the global pooled prevalence of sleep problems from 34%, 35.7%, and 40% in the general population, of which the COVID patients seem to be affected the most (74.8%), followed by health care workers (36.0%) and general population (32.3%). Another cross-sectional study reported for 69.4% of the participants to have experienced a change in the sleep pattern of which 42.3% had ‘disrupted sleep’, 35.2% had ‘falling asleep unintentionally’, 30.9% and 30.8% respectively had ‘difficulties falling’/‘staying asleep’ and 30.0% had ‘later bedtimes’. More sleep abnormalities and nightmares were reported by suspected COVID-19 respondents [12-15].

### **Sleep Pattern in COVID-19 Patients during This Pandemic**

Several scientific studies report the affliction of sleep in the patients of COVID-19 ascribing to the different aspects affecting sleep. Brookes et al reported being in isolation or quarantine to brutally blow people’s mental health to the degree that they could be diagnosed as having post-traumatic stress syndrome (PTSD) [16]. PTSD has unexplainable symptoms including sleeplessness, anxiety, unhappiness and signs of hyper alertness [17]. Study carried out by Siyixina et al reveals that primary symptoms of COVID-19 i.e. cough doesn’t affect sleep initially, but, fatigue developing later with the progression of the disease associated with increased cough affects both life as well as sleep considerably [18]. S.M. Didar-Ul Islam et al reported 85.60% of the patients to be in COVID-19-related stress, which hampered their sleep, making them short tempered and creating chaos in family [19]. Zambrelli E et al notified that sleep disturbance and scarcity is a major symptom and could be a variable factor for delirium in COVID-19 patients [20]. Contrarily, some studies document that sleep is not much affected by this pandemic, but other psychological symptoms arise. The percentage of people getting affected in different studies is variable. W. Fu, et al reported only 3 % of moderate COVID-19 patients to suffer from obstructive sleep apnea-hypopnea syndrome (which is a non-respiratory symptom) [21]. Xiao H et al reported for positive correlation between anxiety and stress; and negative correlation with sleep and social capital [22].

### **Impact of COVID-19 on Health Care Workers**

COVID -19 pandemic both physically as well as mentally affected HCWs. Previous researches also document fear, anxiety, and sleep disorders in HCWs coming in contact with highly communicable diseases such as SARS, Ebola, MERS-Cov etc [23]. Pilar A et al. conducted a survey to evaluate the practical and psychosocial impact on radiation oncology fellows during the first month of the pandemic in which majority of respondents felt uneasy (9/15, 60%), and 46.7% (7/15), had complexity sleeping at night, while others endorsed that they felt terrified (5/15, 33.3%) [24]. A qualitative study on psychological experience of caregivers

in COVID-19, documents that majority of the respondents felt extremely stressed and yearned for more sleep quoting it as best stress relief [25]. Health care providers working in COVID-19 crisis have reported deep exhaustion with generalized body pain to the extent that they could sleep even while standing [26]. Facing such kind of mental exhaustion and stressed by work, most of the health workers adjust their sleep to combat it, which is positively significant for mental health [27]. A study on nurses reports sleep to be affected significantly over the period of COVID pandemic [28]. A study on China frontline medical staff reported 39.8 of respondents with poor sleep quality [29]. 43.9 % of Saudi physicians reported to suffer from sleep disorders with higher prevalence recorded in associate consultants and doctors of age group 31-40 years; more difficulty in falling asleep reported by medical interns, laboratory, pathology, microbiology doctors; resident doctors had more problem in staying awake; residents and consultants had decreased sleep duration; while internists and surgeons had higher percentage of using sleeping pills [30]. Providing sufficient off duty hours to provide for adequate sleep for health care providers is recommended as a strategy for managing nursing problems at work place by Amal Reefat et al [31]. A multivariable linear and logistic regression model applied in HCWs of six countries revealed 12% lower odds of COVID-19 ( $p=0.003$ ) with 1-hour longer sleep duration at night. Similarly presence of three sleep problems was associated with 88% greater odds of COVID-19 as compared to no sleep problems, suggesting improper sleep as a significant risk factor for COVID-19 [32].

### **Impact of COVID-19 on Guardian and Children**

As children stay confined during COVID pandemic with no outdoor activities, studies from home, and increased screen time, is reported to trigger stress and other harmful behaviours such as poor sleep, irregular eating habits, anxiety, loneliness, sedentary lifestyle, smoking and depression [33]. Delay in sleep/wake schedule along with increased sleep disturbances and increased prevalence of difficulty falling asleep, anxiety at bedtime, night awakenings, nightmares and sleep terrors are reported in all age groups of children except adolescents [34]. Increasing pattern of sleep duration since COVID-19 outbreak has been reported by Guerrero et.al [35].

### **Increasing Stress and Mental Health Problems in Communities**

One of the study worked upon psychopathologies arising in people due to confinement in this pandemic in which they find rebellious attitudes and disturbing nature of people with the consequences of social isolation, loneliness, stress and sleep deprivation [36].

This pandemic increased stress at every level; Steven Taylor et.al. conducted a study on validation of stress scale. They developed a scale named COVID Stress Scales (CSS) including 36 items, in which one question related to sleep was categorised in traumatic stress. Manel Herat compared this situation as wartime, which affects communities in large and people start reacting in different ways [37].

### **Mood Disorders and Sleep Disturbances Co-Exist**

These studies also report for the pooled prevalence of generalized anxiety and depression, and 65.2% reported an impact on their mental health [12]. An impact on mental health was strongly associated with sleep-related alterations [15]. European task force advocates that symptoms of insomnia could be related to psychosocial factors and to the confinements [38]. Xiao H et al reported for positive correlation of anxiety with stress, and negatively with sleep in the medical health care workers treating

patients with COVID-19 [39]. Nurses reported for increased depression, anxiety, stress during the COVID-19 outbreak correlating to the fear to get infected or infect others [40].

### Other Factors Affecting Sleep

Olufolahan O. Osunmuyiwa et al carried out a study which is based upon the role of identity, values and situational factors on cooling consumption patterns in India. During pandemic, air conditioner and other heavy electrical devices were banned for sometime to facilitate environment healing, but a case study with in-depth interviews from a community, reveals that people are too adamant to the comfort zone of their sleeping and pleasure in this pandemic [41]. Renata Defelipe et al conducted a study through Mann-Whitney statistical test and found that people who owned a pet had improved sleep quality, better relationship with neighbours and less sadness, due to which 60 % homes in Brazil have pets [42].

### Strategies to Combat the Situation and Sleep Related Disorders in Pandemic

Through emotional and spiritual terms communities have to make essential roles to improve mental health of HCWs. A recent study publicized that there are key relations between increased social support through the appearance of sympathy which helps in improving declining sleep quality, anxiety, and stress in health care workers [43]. Avoiding sharing space, having own toilets and soaps for hand washing are indicated in a study to promote sound sleep, as intra house hold crowding, hand hygiene, social distancing etc. are significant factors affecting COVID-19 [44].

Hui Wang et al developed an expert consensus providing holistic care to the patients with severe coronavirus disease 2019, ensuring adequate sleep and rest in bed, during hospital care as well as after discharge. Patients were instructed to work and rest regularly, ensure maintaining adequate sleep, a balanced diet, and a calm emotional state and were to be managed for any sleep disorders by drugs as per medical orders [45]. Pharmacological treatment of insomnia is found to be associated with hazardous side effects such as states of confusion, psychomotor performance deficits, nocturnal falls, dysphoric mood, impaired intellectual functioning, and daytime sleepiness [46]. Staying connected to family members, relatives and close friends, discussing critical symptoms to doctors through telemedicine helps to reduce strain and worry related to corona virus [28].

This pandemic resulted in the outburst of many applications and online portals for the updates of COVID-19 infected patients in locality. As it is a contagious disease so one of the studies was carried out by A. Chaturvedi in which he compiled top 10 smart phones application which could easily detect the infected patient coverage. Among them a German smart watch app was launched by Ministry of Health, which was useful for tracing the stretch of the contagion along with monitoring the spread of corona virus by detecting the symptoms like sleep patterns, pulse rate, body temperature, to notice any signs of caution before time. It is a kind of fitness tracker which can be worn like a smart watch on wrist [47].

### Yoga as an Intervention for Promoting Sleep in COVID-19: Support from Past Evidences

Yoga and *Pranayama* (voluntarily regulated breathing) are two crucial Ayurveda components which have a very wide range of benefits for the healthy as well as the diseased. Yoga is a way of life which brings peace of mind and healthy living. Studies document the beneficial effects of yoga in various diseased

conditions including insomnia, stress, anxiety and other mood disorders which are all intricately linked to each other. Here we present the researches on the beneficial effects of yoga. Meditation and yoga practices significantly improve sleep disorders, anxiety, and depression [48].

Kai liu et al carried out a randomised control clinical trial on effect of muscle relaxation therapy on anxiety and sleep quality in patients with COVID-19, as lack of sleep becomes one of the major symptoms in isolation for patients. Sleep State Self-Rating Scale (SRSS) was used to assess and document patient's sleep quality before and after the intervention of muscle relaxation therapy. Results revealed statistically significant difference after intervention in the sleep quality with the p value <0.001 which was not statistically significant before the therapy. (p= 0.838) [49].

A study was conducted to compare the effects of Yoga and Ayurveda on self-rated sleep in a geriatric population, in which the Yoga group showed a significant decrease in the time taken to fall asleep with the value of P<0.05 which interpreted that Yoga practice improved the sleep pattern. Eight weeks of yoga therapy significantly improved sleep in patients with insomnia along with improvement in stress scores simultaneously [50,51]. Other studies have also reported yoga to be beneficial for patients with sleep disturbances [52,53]. A meta-analysis of 19 studies conducted on insomnia in women also reports for benefits of yoga [54]. 8 weeks hath yoga intervention is also reported to improve depression in a study [55]. Researches have closely related psychological problems to insomnia as revealed in researches mentioned above. Yoga is reported as one of the most opted wellness approach, with higher perceived rates of all of the self-reported wellness-related health outcomes [56]. Yoga has overall mind body benefits which is also documented through a meta analysis of published researches on various physical and mental health domains for disorders of depression, fatigue, anxiety and anxiety disorders, stress, posttraumatic stress disorder, physical fitness, sympathetic/parasympathetic activation, cardiovascular endurance, blood pressure and hypertension, pulmonary function, glucose regulation, menopausal symptoms, musculoskeletal functioning and pain, cancer, epilepsy. Application of Yoga practices also have the benefit of being delivered remotely and being yet effective. A study on remotely delivered Yoga Nidra documents the same as it demonstrates potential benefits for anxiety and insomnia.

### Conclusion

COVID-19 affected the sleep and psychological behaviour of almost all strata of the society, with due impact on their physical and mental health. This also led to a vicious cycle which increased the predisposition towards the development of COVID-19. Sleep plays an important physiological role in health and in recovery from diseases. Previous researches on yoga interventions on sleep disorders have demonstrated the beneficial effects in different age groups. The remote application of yoga techniques have also been found to be useful in the management of sleep disorders related with COVID-19. This paper presents sufficient evidence to suggest that Yoga techniques can be applied as a suitable non-pharmacological intervention for the management of sleep and related disorders. Multi centric randomised controlled trials are however yet required to derive the actual benefits.

### References

1. Gualano MR, Lo Moro G, Voglino G, Bert F, Siliquini R (2020) Effects of COVID-19 Lockdown on Mental Health and Sleep Disturbances in Italy. International Journal of Environmental Research and Public Health 17: 4779.

2. Yue L, Zhao R, Xiao Q, Zhuo Y, Yu J, et al. (2021) The effect of mental health on sleep quality of front-line medical staff during the COVID-19 outbreak in China: A cross-sectional study. *PLOS ONE* 16: e0253753.
3. Bartel K, Richardson C, Gradisar M (2018) Sleep and mental wellbeing: exploring the links, Victorian Health Promotion Foundation, Melbourne. Retrieved from [https://www.sleephealthfoundation.org.au/files/Sleep\\_and\\_Mental\\_Well\\_being/Sleep\\_and\\_mental\\_wellbeing\\_exploring\\_the\\_links\\_full\\_report.pdf](https://www.sleephealthfoundation.org.au/files/Sleep_and_Mental_Well_being/Sleep_and_mental_wellbeing_exploring_the_links_full_report.pdf).
4. Li Y, Qin Q, Sun Q, Larry D Sanford, Alexandros N Vgontzas, et al. (2020) Insomnia and psychological reactions during the COVID-19 outbreak in China. *J Clin Sleep Med* 16: 1417-1418.
5. Huang Y, Zhao N (2020) Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry Res* 288: 112954.
6. Zhou J, Liu L, Xue P, Yang X, Tang X, et al. Mental Health Response to the COVID-19 Outbreak in China. *Am J Psychiatry* 177: 574-575.
7. Daniel Freeman, Bryony Sheaves, Guy M Goodwin, Ly-Mee Yu, Alecia Nickless, et al. (2017) The effects of improving sleep on mental health (OASIS): a randomised controlled trial with mediation analysis. *Open Access Published* 4: P749-758.
8. Zainab Alimoradi, Anders Broström, Hector WH, Tsang Mark D, Maurice M Ohayon, et al. (2021) Sleep problems during COVID-19 pandemic and its' association to psychological distress: A systematic review and meta-analysis 36: 100916.
9. Marom Bikson, Colleen A Hanlon, Adam J Woods, Bernadette T Gillick, Leigh Charvet, et al. (2020) Guidelines for TMS/tES clinical services and research through the COVID-19 pandemic. *Brain Stimulation* 13: 1124-1149.
10. Casagrande M, Favieri F, Tambelli R, Forte G (2020) the enemy who sealed the world: effects quarantine due to the COVID-19 on sleep quality, anxiety, and psychological distress in the Italian population. *Sleep Med* 75: 12-20.
11. Deng J, Zhou F, Hou W, Silver Z, Wong CY, et al. (2021) The prevalence of depression, anxiety, and sleep disturbances in COVID-19 patients: a meta-analysis. *Ann N Y Acad Sci* 1486: 90-111.
12. Jahrami H, BaHammam AS, Bragazzi NL, Saif Z, Faris M, et al. (2021) Sleep problems during the COVID-19 pandemic by population: a systematic review and meta-analysis. *J Clin Sleep Med* 17: 299-313.
13. Jahrami H, BaHammam AS, Bragazzi NL, Saif Z, Faris M, et al. (2021) Sleep problems during the COVID-19 pandemic by population: a systematic review and meta-analysis. *J Clin Sleep Med* 17: 299-313.
14. Laura Pérez-Carbonell, Imran Johan Meurling, Danielle Wassermann, Valentina Gnoni, Guy Leschziner, et al. (2020) Impact of the novel coronavirus (COVID-19) pandemic on sleep [published correction appears in *J Thorac Dis. J Thorac Dis*. 12: S163-S175.
15. Brookes S, Webster R, Smith L, Woodland L, Wessely S, et al. (2020) the psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet* 395: 912-920.
16. Jones E, Wessely S (2005) from shell shock to PTSD: Military psychiatry from 1900 to the Gulf war (maudseley series). London: Psychology Press.
17. Siyi Xin, Xueqi Cheng, Bo Zhu, Xiaolong Liao, FengYang, et al. (2020) Clinical retrospective study on the efficacy of QingfeiPaidu decoction combined with Western medicine for COVID-19 treatment. *Biomedicine & Pharmacotherapy* 129: 110500.
18. SM Didar-Ul Islam, Bodrud-Doza, Rafid Mahmud Khan, Abidul Haque, Mohammed A. Mamun (2020) Exploring COVID-19 stress and its factors in Bangladesh: A perception-based study. *Heliyon* 6: e04399.
19. Zambrelli E, Canevini M, Gambini O, D'Agostino A (2020) Delirium and sleep disturbances in COVID-19: a possible role for melatonin in hospitalized patients? *Sleep Med* 70: 111.
20. Imran A, Posokhova I, Qureshi HN, Masood U, Riaz S, et al. (2020) AI4COVID-19: AI enabled preliminary diagnosis for COVID-19 from cough samples via an app, *Informatics in Medicine Unlocked* 20: 100378.
21. Xiao H, Zhang Y, Kong D, Li S, Yang N (2020) Social capital and sleep quality in individuals who self-isolated for 14 days during the coronavirus disease 2019 (COVID-19) outbreak in January 2020 in China. *Med. Sci. Monit* 26: e923921.
22. Su TP, Lien TC, Yang CY, Su YL, Wang JH, et al. (2007) Prevalence of psychiatric morbidity and psychological adaptation of the nurses in a structured SARS caring unit during outbreak: a prospective and periodic assessment study in Taiwan. *J Psychiatr Res*. 41: 119-130.
23. Pilar A, Gravel SB, Croke J, Soliman H, Chung P, et al. (2020) COVID 19's Silver lining – through the eyes of radiation oncology fellows, *Advances in Radiation Oncology* 6: 100527.
24. Niuniu Sun, Luoqun Wei, Suling Shi, Dandan Jiao, Runluo Song, et al. (2020) A qualitative study on the psychological experience of caregivers of COVID-19 patients. *American Journal of Infection Control* 48: 592-598.
25. National Health Commission of the People's Republic of China (2020) the guideline of psychological crisis intervention for 2019-nCoV pneumonia. Available at: <http://www.nhc.gov.cn/jkj/s3577/202001/6adc08b966594253b2b791be5c3b9467>.
26. Sampaio F, Sequeira C, Teixeira L (2021) Impact of COVID-19 outbreak on nurses' mental health: A prospective cohort study. *Environ Res* 194: 110620.
27. Yue L, Zhao R, Xiao Q, Zhuo Y, Yu J, et al. (2021) The effect of mental health on sleep quality of front-line medical staff during the COVID-19 outbreak in China: A cross-sectional study. *PLoS ONE* 16: e0253753.
28. Alnofaiey YH, Alshehri HA, Alosaimi MM, Alswat SH, Alswat HR, et al. (2020) Sleep disturbances among physicians during COVID-19 pandemic. *BMC Res Notes* 13: 493.
29. AmalRefaat Gab Allah, Hayam Ahmed Elshrief, Marwa Hassan Ageiz (2020) Developing Strategy: A Guide For Nurse Managers to Manage Nursing Staff' s Work-related Problems. *July 2020 Asian Nursing Research* 14: 178-187.
30. Kim H, Hegde S, LaFiura C, Raghavan M, Luong E, et al. (2021) COVID-19 illness in relation to sleep and burnout. *BMJ Nutrition file:///C:/Users/User/Downloads/COVID-19\_illness\_in\_relation\_to\_sleep\_and\_burnout.pdf*.
31. Amit Khera, Seth J Baum, Ty J Gluckman, Martha Gulati, Seth S Martin, et al. (2020) Continuity of care and outpatient management for patients with and at high risk for cardiovascular disease during the COVID-19 pandemic: A scientific statement from the American Society for Preventive Cardiology. *Elsevier B.V* 1: 100009.
32. Bruni O, Malorgio E, Doria M, Finotti E, Spruyt K, et al. (2021) Changes in sleep patterns and disturbances in children and adolescents in Italy during the COVID-19 outbreak [published online ahead of print, 2021 Feb 9]. *Sleep Med* 91: 166-174.
33. Guerrero MD, Vanderloo LM, Rhodes RE, Faulkner G, Moore SA, et al (2020). Canadian children's and youth's adherence to the 24-h movement guidelines during the COVID-19

- pandemic: A decision tree analysis. *J Sport Health Sci* 9: 313-321.
34. Mengin A, Allé MC, Rolling J, Ligier F, Schroder C, et al. (2020) Consequences psychopathologies du confinement. *L'Encéphale* 46: S43-S52.
35. Manel Herat (2020) "I feel like death on legs": COVID-19 isolation and mental health. *Social Sciences & Humanities Open* 2: 100042.
36. Altena E, Baglioni C, Espie CA, Ellis J, Gavriloff D, et al. (2020) Dealing with sleep problems during home confinement due to the COVID-19 outbreak: practical recommendations from a task force of the European CBT-I Academy. *J Sleep Res* 29: e13052.
37. Xiao H, Zhang Y, Kong D, Li S, Yang N (2020) The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Med. Sci. Monit* 26: e923549.
38. Sampaio F, Sequeira C, Teixeira L (2021) Impact of COVID-19 outbreak on nurses' mental health: A prospective cohort study. *Environ Res* 194: 110620.
39. Osunmuyiwaa OO, Payne SR, Ilavarasanc VP, Peacock AD, Jenkins DP (2020) I cannot live without air conditioning! The role of identity, values and situational factors on cooling consumption patterns in India. *Energy Research & Social Science* 69: 101634.
40. Renata Defelipe, Carine Savalli, Emma Otta (2020) Demographics and self-reported well-being of Brazilian adults as a function of pet ownership: A pilot study. *Heliyon* 6: e04069.
41. Xiao H, Zhang Y, Kong D, Li S, Yang N (2020) The effects of social support on sleep quality of medical staff treating patients with coronavirus disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit* 26: e923549.
42. Rajib Acharya, Akash Porwal (2020) A vulnerability index for the management of and response to the COVID-19 epidemic in India: an ecological study. *Population Council, New Delhi, India Lancet Glob Health* 8: E1142-E1151.
43. Hui Wang, Tieying Zeng, Xinjuan Wu, Hong Sun (2020) Holistic care for patients with severe coronavirus disease 2019: An expert consensus. *International Journal of Nursing Sciences* 7: 128-134.
44. Engle-Friedman M, Bootzin RR (1991) Insomnia as a problem for the elderly. In: Wisocki PA, editor. *Handbook of clinical behavioral therapy with the elderly client*. New York: Plenum Press 273-298.
45. Chaturvedi A (2020) Top 10 popular smartphone apps to track COVID-19. Available from Geospatial World: <https://www.geospatialworld.net/blogs/popular-apps-COVID-19/>
46. Tellhed U, Daukantaite D, Maddux RE, Svensson T, Melander O (2019) Yogic breathing\_ and mindfulness as stress coping mediate positive health outcomes of Yoga. *Mindfulness* 10: 2703-2715.
47. Kai Liu a, Ying Chen, Duozhi Wu, Ruzheng Lin, Zaisheng Wang, et al. (2020) Effects of progressive muscle relaxation on anxiety and sleep quality in patients with COVID-19. *Complementary Therapies in Clinical Practice* 39: 101132.
48. Manjunath NK, Shirley Telles (2005) Influence of Yoga & Ayurveda on self-rated sleep in a geriatric population. *Med Res* 121: 683-690.
49. Sobana R, Parthasarathy S, Duraisamy K, Jaiganesh S, Vadivel (2013) The Effect of Yoga Therapy on Selected Psychological Variables Among Male Patients with Insomnia. *Journal of Clinical and Diagnostic Research* 7: 55-57.
50. Khalsa SB (2004) Treatment of chronic insomnia with yoga: a preliminary study with sleep-wake diaries. *Appl Psychophysiol Biofeedback* 29: 269-278.
51. Taibi DM, Vitiello MV (2011) A pilot study of gentle yoga for sleep disturbance in women with osteoarthritis. *Sleep Med* 12: 512-517.
52. Wei-Li Wang, Kuang-Huei Chen, Ying-Chieh Pan, Szunian Yang, Yuan-Yu Chan (2020) The effect of yoga on sleep quality and insomnia in women with sleep problems: a systematic review and meta-analysis. *BMC Psychiatry* 20: 195.
53. Tungol JG, Fayazmanesh N, Weinmann E, Prathikanti S, Rivera R, et al. (2017) Treating major depression with yoga: A prospective, randomized, controlled pilot trial. *PLoS ONE* 12: e0173869.
54. Stussman BJ, Black LI, Barnes PM, Clarke CT, Nahin RL (2015) Wellness-related use of common complementary health approaches among adults: United States, 2012. *National health statistics reports; no 85*. Hyattsville, MD: National Center for Health Statistics 4: 1-12.
55. Büssing Arndt, Andreas Michalsen, Sat Bir S Khalsa, Shirley Telles, Karen J Sherman (2012) Effects of yoga on mental and physical health: a short summary of reviews. *Evidence-based Complementary and Alternative Medicine* 2012: 165410.
56. Erica Sharpe, Matthew Butler, Doug Hanes, Ryan Bradley (2021) Remotely Delivered Yoga Nidra For Insomnia And Anxiety During COVID-19. In *Basic and Translational Sleep and Circadian Science, Population and Demographics*. *Sleep* 44: A96.

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