Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor

Yoga for COVID-19 and natural disaster related mental health issues: Challenges and perspectives

Dear Editor,

The COVID-19 pandemic has placed the world at risk of an increased incidence of psychological distress and mental disorders (e.g., anxiety, fear, post-traumatic stress disorder) (Ransing et al., 2020; Smith et al., 2020; Tandon, 2020). Though prevention and management of these conditions are imperative, delivery of evidence-based in person psychotherapeutic interventions (e.g., CBT) has been hampered due to lockdown, physical distancing, and overburdened health care systems. The provision of these interventions via telecommunication has its limitations, like the digital divide in low-middle income countries, lack of adequate training in telepsychiatry in many countries (Pereira-Sanchez et al., 2020), and lack of access to a telephone connection (Malathesh et al., 2020). Consequently, the burden of mental illness may remain unaddressed for specific populations if unprovided with viable alternatives.

Some countries have to be ready to deal with the double risk presented by both COVID-19 and natural disasters. For example, Fiji, Bangladesh and India have in May 2020 faced the consequences of Cyclones Harold and Amphan, respectively. Natural disasters have shown to have a significant impact on mental health (Durrani et al., 2019). Unfortunately, natural disasters further increase the difficulties for people to access mental health care, including digital. This dual risk presented by COVID-19 and the possibility of natural disasters reinforces the need to identify and provide viable alternatives to the one of telecare. Ideally, any suggested option should be evidence-based, self--reliant, feasible, acceptable, appropriate, and non-dependent on access to telecommunications.

In this letter, we explore the potential utility of Yoga as such an alternative. In 2014, the United Nations proclaimed 21st June as the International Day of Yoga. 'Yoga' is a Sanskrit word that can be translated as 'to join' or 'to unite,' symbolizing the union of body and consciousness. It is a multi-component discipline that includes three forms of practice, namely postures and physical exercises (Asana), breathing regulation techniques (Pranayama), and meditation-based (control of attention, dissociating oneself from the disturbing thought) activities. The World Health Organization (WHO) describes Yoga as a valuable tool, one that increases physical activity, mental wellbeing, and decreases non-communicable diseases. The positive physical or psychological outcome of Yoga intervention has been hypothesized to be a result of complex pathways involving relaxation, physical flexibility, breathing exercise, coping strategies, acceptance, and self-efficacy (Büssing et al., 2012).

Yoga has been proposed as a non-pharmacological intervention for mental issues (e.g., stress, fear) and disorders, either alone or in combination with other interventions. For example, significant improvement in people with post-traumatic stress disorder has been reported following Yoga interventions (Büssing et al., 2012). Also, it has been found effective in reducing perceived stress, reducing fatigue in people with cancer, improving blood sugar regulation in people with diabetes mellitus, diastolic blood pressure, symptoms of menopause, chronic bronchitis, and asthma (Büssing et al., 2012). Yoga can enhance emotional control, and improve self-efficacy, self-confidence, and overall quality of life.

We searched two databases, PubMed and Scopus till 23rd May 2020, for publications (available in English) about the potential role of Yoga in both COVID-19 pandemic and natural disasters. To our surprise, no studies were exploring the potential role of Yoga as an intervention for mental disorders during COVID-19, and there were only five studies on the role of Yoga as a potential supportive intervention in disaster settings (Table 1) (Descilo et al., 2010; Durrani et al., 2019; Telles et al., 2010, 2007; Thordardottir et al., 2014). These studies were single centric conducted across three countries (India = 3, USA = 1, Iceland = 1) covering four disaster settings (tsunami = 2, hurricane = 1, earthquake = 1, and flood = 1). Yoga was found a beneficial, cost-effective, and feasible intervention in all except one study. But, these findings have some study limitations, including small convenience samples, single centric studies, inconsistent instruments to measure outcome, poor or lack of control groups, poor compliance among the participants, and heterogeneity of Yoga interventions (e.g., form of Yoga, intensity, and frequency).

Yoga may prove an effective, evidence-based preventive or therapeutic supplementary or alternative intervention for COVID-19 related mental health issues. However, before suggesting its adoption as such an alternative or complementary it is necessary to conduct a well-planned study. These future studies should have larger sample sizes, a cross-cultural approach, adequate control of confounding factors, randomized controlled, and more robust and thorough statistical analyses. Some of the studies, as mentioned earlier, found relatively high dropout rates, suggesting the need for future feasibility studies. Cross-cultural, multicentric studies (currently missing) using an identical intervention and well-defined content should be encouraged to explore the transferability of Yoga as an intervention.

Disclosure statement

The authors of this manuscript declare no competing interests.

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Table 1
Yoga Intervention for Mental health Issues in Natural-disasters

Author, Year	Disaster, Country	Sample size, Participants, Study design, Assessment tools	Brief description of Intervention	Outcome	Limitations, Additional points
Durrani et al. (2019)	Hurricane Harvey, United States of America	Five patient-caregiver dyads (n = 10), Patients with head- neck cancer **Mean age (Patient):** 55.6 ± 17.6 years, **Mean age (Caregivers):** 58 ± 21years **Study design:** Qualitative, Pilot Brief semi-structured interviews **Assessment timeline:** Not available	A dyadic Yoga (DY) intervention (Manualized) Number of sessions: 15 Duration of each session: 45–60 min **Four components:** (1) Joint loosening (2) Posture exercise (asanas) (3) Breathing exercise (pranayama) (4) Guided imagery/meditation	Dyads experienced psychological distress during and after Hurricane Harvey. Yoga is acceptable, feasible as social support.	Small convenience sample size, qualitative study design, lack of control
Thordardottir et al. (2014)	Earthquake, Iceland	Yoga group (n = 26), Control group (n = 31) Participants living in the earthquake area without any physical injury **Age:** 20–67 years **Controls:** waitlist-group **Study design:** non-randomized community intervention with pre- and post-intervention measurement **Tools:** Perceived Stress Scale (PSS-10), Posttraumatic Stress Diagnostic Scale (PDS), Beck Depression Inventory Second Edition (BDI-II), Beck Anxiety Inventory (BAI), Icelandic Quality of Life scale (IQL) **Assessment timeline**: Baseline, six weeks	**Sessions:** twice per week, **Duration:** 60 min (35 min gentle Yoga posture+15 Min instructed deep relaxations in lying positions). **Integrated hatha Yoga program** **Components:** • Physical activities of mild to moderate intensity • Seated, standing and lying (supine) Yoga postures • Breathing awareness and relaxation into postures	No significant improvement between the two groups (participants and waitlist controls)	Small sample size, lack of statistical power and non-randomized Issued certificate: To improve attendance and compliance,
Descilo et al. (2010)	Tsunami (2004), India	n = 183 (Male : 23, female : 160) Participants: PCL-17 score of more than 50 **Age:** 18–65 years **Study design:** Non-randomized trial Residential setting **Tools :** Post-traumatic Checklist-17 (PCL-17), Beck Depression Inventory (BDI-21) General Health Questionnaire (GHQ-12) **Assessment Timeline:** Baseline, at 6, 12 and 24 weeks	**Three groups**: A.) Yoga breath intervention (2 h) (n = 28) B.) Yoga breath intervention followed by 3–8 h of trauma reduction exposure technique (3–8 h): Three to five-session (1–3 h each (n = 32) C.) 6-week waitlist	Group A, Group B: Decrease in PCL-17 Score (at least 60%) and BDI (at least 90%) by 6 weeks and maintained at 24 weeks follow up Attrition rate: 23 %.	No monitoring Non-adherence to study protocols
Telles et al. (2010)	Flood, India	n = 22, Flood survivor, **Age**: 31.5 ± 7.5 years **Study design:** Randomized control trial, **Assessment:** Screening Questionnaire for Disaster Mental Health (SQD), Autonomic and respiratory variables (Using polygraph): heart rate variability and breath rate, Emotional responses using visual analog scales (VAS) **Timeline:** Baseline and eight-day	**Two groups:** A.) Yoga group (n = 11): Yoga for an hour daily for seven days B.) Control group (n = 11) : routine activity **Yoga components:** • Postures (asanas), • Breathing exercises (pranayama), • Joint loosening with breath synchronization	**Flood survivors:** a significant decrease in self-rated sadness Controls: an increase in self-rated anxiety. Neither group showed changes in heart rate variability or breath rate	Small sample size, Small effect size, Short duration of follow up, All male participants

(*continued on next page*)

Table 1 (*continued*)

Author, Year	Disaster, Country	Sample size, Participants, Study design, Assessment tools	Brief description of Intervention	Outcome	Limitations, Additional points
Telles et al. (2007)	Tsunami, India	n = 47, **Age range:** 28–50 years **Study design:** Pre-post study design, Interventional **Assessment:** Screening Questionnaire for Disaster Mental Health (SQD), Autonomic and respiratory variables (Using polygraph): heart rate variability and breath rate, Emotional responses using visual analog scales (VAS) **Timeline:** Baseline and eight-day	**Intervention:** Duration:60 min, Daily Single group study **Yoga components:** loosening exercises (10 min), physical postures (20 min), voluntarily regulated breathing (15 min), and Yoga-based guided relaxation (15 min)	Decreased Self-rated indicators of distress (namely fear, anxiety, sadness, and disturbed sleep)	Small Convenience sample, lack of control groups

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Ramdas Ransing*
Department of Psychiatry, BKL Walawalkar Rural Medical College, Ratnagiri, 415606, Maharashtra, India

Mariana Pinto da Costa[a,b,c]
[a] *Unit for Social and Community Psychiatry, WHO Collaborating Centre for Mental Health Services Development, Queen Mary University of London, London, E138SP, UK*
[b] *Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal*
[c] *Hospital de Magalhães Lemos, Porto, Portugal*
E-mail address: mariana.pintodacosta@gmail.com.

Frances Adiukwu
Department of Neuropsychiatry, University of Port Harcourt Teaching Hospital. East-West Road, Alakahia, PMB 6173, Port Harcourt, Nigeria
E-mail address: Francesadiukwu@gmail.com.

Paolo Grandinetti
Addictions Services (SerD), Department of Territorial Assistance, ASL Teramo, Teramo, Italy
E-mail address: grandinetti.paolo@gmail.com.

Andre Luiz Schuh Teixeira
Department of Childhood and Adolescent Psychiatry, Universidade Federal do Rio Grande do Sul, Porto Alegre 2350, Brazil
E-mail address: andreschuht@gmail.com.

Ozge Kilic
Department of Psychiatry, Koç University Hospital, Davutpasa Cad. No:4, 34010, Topkapi, Istanbul, Turkey
E-mail address: drozgekilic@gmail.com.

Joan Soler-Vidal[a,b,c]
[a] *Fidmag Research Foundation, Hermanas Hospitalarias, Barcelona, 08830, Spain*
[b] *Hospital Benito Menni CASM, Hermanas Hospitalarias, Sant Boi de Llobregat, Barcelona, 08035, Spain*
[c] *Medicine and Translational Research Doctorate Programme, University of Barcelona, Barcelona, Spain*
E-mail address: joan.soler.vidal@gmail.com.

Rodrigo Ramalho
Department of Social and Community Health, School of Population Health, University of Auckland, Auckland, New Zealand
E-mail address: r.ramalho@auckland.ac.nz.

* Corresponding author.
E-mail address: ramdas_ransing123@yahoo.co.in (R. Ransing).