



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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

ISI > 7; clinical insomnia: 12.8 %, ISI > 14) were found. When fatigue was present at T1, this problem was persistent after one year in 28.4 %. However, significantly more women suffered from fatigue symptoms.

The insomnia problem was persistent after one year in 64 %. However, at T2 significantly more women suffered from insomnia symptoms (53.3% women vs. 39.3% men;  $p = .003$ ).

Fatigue was associated with many clinical and psychological parameters, especially with insomnia ( $r = 0.5$ ); even Insomnia was associated with many clinical and psychological parameters, especially with fatigue ( $r = 0.5$ ).

In all participants, levels of distress, depression, and anxiety decreased from T1 to T2 ( $p$ 's < 0.016).

**Discussion:** Cancer-related Fatigue (CrF) and Insomnia is a common in cancer patients. Although medical and psychological parameters improved during the 12-month course of cancer treatment. The results show that fatigue is highly persistent, especially in women. This indicates that adequate support for those affected is needed.

### SLEEP DISORDERS AND MENTAL HEALTH IN HOSPITAL WORKERS DURING THE COVID-19 PANDEMIC: A CROSS-SECTIONAL MULTICENTER STUDY IN NORTHERN ITALY

P. Proserpio<sup>1</sup>, E. Zambrelli<sup>2</sup>, A. Lanza<sup>1</sup>, A. Dominese<sup>3</sup>, R. Di Giacomo<sup>3</sup>, R. Quintas<sup>3</sup>, I. Tramacere<sup>4</sup>, A. Rubino<sup>1</sup>, K. Turner<sup>2</sup>, C. Colosio<sup>5</sup>, F. Cattaneo<sup>1</sup>, M.P. Canevini<sup>2,6</sup>, A. D'Agostino<sup>7,6</sup>, E.C. Agostoni<sup>1</sup>, G. Didato<sup>3</sup>. <sup>1</sup>Sleep Medicine Center, ASST Grande Ospedale Metropolitano Niguarda, Department of Neuroscience, Milan, Italy; <sup>2</sup>Epilepsy Centre, Sleep Medicine Centre, Childhood and Adolescence Neuropsychiatry Unit, ASST Santi Paolo e Carlo, San Paolo Hospital, Milan, Italy; <sup>3</sup>Epilepsy Unit, Sleep Disorders Unit, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy; <sup>4</sup>Department of Research and Clinical Development, Scientific Directorate, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy; <sup>5</sup>Occupational Health Unit, ASST Santi Paolo e Carlo, San Paolo Hospital, Milan, Italy; <sup>6</sup>Department of Health Sciences, Università degli Studi, Milan, Italy; <sup>7</sup>Department of Mental Health and Addiction, ASST Santi Paolo e Carlo, Milan, Italy

**Introduction:** From the beginning of the COVID-19 pandemic, healthcare workers had to face unprecedented emergency needs associated with an extraordinary amount of psychological distress. In this cross-sectional multicenter study, we investigated sleep disturbances, and the level of anxiety and depression among the healthcare and nonhealthcare staff of three hospitals in Milan (Italy) during the COVID-19 outbreak. Moreover, we explored potential predisposing factors for affective symptoms and poor sleep.

**Materials and Methods:** Between June and July 2020, we administered an online questionnaire to evaluate the presence of sleep disorders (Pittsburgh Sleep Quality Index), insomnia (Sleep Condition Indicator), anxiety (State Trait Anxiety Inventory) and depression (Beck Depression Inventory-II). We used univariate and multivariate analysis to evaluate the association between the personal conditions and sleep and affective disorders.

**Results:** The 964 participants reported high rates of sleep disorders (80.3%) - mainly insomnia (30.5%) - anxiety (69.7%) and depression (32.8%). The multivariate analysis showed a strong association of sleep disorders, especially insomnia, with female gender ( $p=0.004$ ), divorced marital status ( $p=0.015$ ), self-isolation ( $p=0.037$ ), and chronic diseases ( $p=0.003$ ). Anxiety was significantly associated with teleworking ( $p=0.001$ ), while depressive symptoms were associated with self-isolation ( $p=0.028$ ), modified work schedules ( $p=0.03$ ) and chronic diseases ( $p=0.027$ ).

**Conclusions:** In hospital workers, the high prevalence of sleep and psychiatric symptoms during the COVID-19 outbreak appears to be determined mainly by modifications of personal or work habits. Teleworking was associated with increased anxiety. An accurate planning of hospital activities and a psychological support are needed to prevent and manage sleep and mental disorders.

### SLEEP DISTURBANCE AND AGGRESSION INCIDENTS IN SECURE MENTAL HEALTH SETTINGS

I. Hartescu<sup>1</sup>, P.M. Gardiner<sup>1</sup>, A. Girardi<sup>2</sup>, K.C. Breen<sup>2</sup>, A. Roychowdhury<sup>2</sup>, P.M. Wallang<sup>2</sup>, K. Morgan<sup>1</sup>. <sup>1</sup>Loughborough University, School of Sport, Exercise and Health Sciences, Loughborough, United Kingdom; <sup>2</sup>St Andrews Healthcare, Research & Innovation, Northampton, United Kingdom

**Introduction:** Insomnia symptoms are a prevalent transdiagnostic feature of psychiatric disorders. Within secure (forensic) psychiatric settings, insomnia symptoms have also been associated with the occurrence of aggressive incidents, with disinhibitory fatigue proposed as a causal mechanism. Research on sleep-related patient incidents is limited by small sample sizes, low reliability of incident recording, and the under-representation of women. The present study assessed relationships between sleep disturbance and electronically recorded adverse incidents in a large sample male and female patients in a UK secure psychiatric setting.

**Materials and Methods:** 756 patients (361 female, 395 male) participated. At baseline and follow-up (at least 30 days after baseline) those who: a) responded "Often" or "All of the time" to the ReQoL-20 item "Over the last week, I had problems with my sleep"; and b) consumed hypnotic drugs on at least 3 nights over the same 1-week period, were defined as 'seriously sleep disturbed'. Frequency and severity of adverse incidents (involving aggression, self-harm, or hospital security) was extracted from patient records. Risk was assessed in binary logistic regression models with the occurrence of at least one adverse incident during the 1-week baseline or 30-day follow-up period as dependent. Covariates were: serious sleep disturbance; gender; quintile age-group (18 to 47+); anxiolytic use; neuroleptic use; antidepressant use; and two interaction terms for age or gender by serious sleep disturbance. Prospective associations with adverse incidents among new cases of sleep disturbance (reporting sleep disturbance only at follow-up) and 'good sleepers' (reporting no sleep disturbance at either assessment) were analysed using chi-squared.

**Results:** At baseline, 42% of patients (179 female and 137 male) were categorised as 'seriously sleep disturbed'; 19% of patients were involved in adverse incidents. Sleep disturbance and female gender were independently associated with a significantly elevated risk of adverse incidents in the baseline models ( $X^2 = 10.0$ ,  $df = 1$ ,  $p < 0.01$ , and  $X^2 = 37.9$ ,  $df = 1$ ,  $p < 0.001$ , respectively). In the follow-up models, sleep disturbance and gender significantly interacted to elevate incident risk ( $OR = 0.23$ ; 95%  $CI = 0.07-0.83$ ;  $p < 0.0$ ). At follow-up, new cases of sleep disturbance showed the highest level of participation in adverse incidents ( $X^2 = 10.0$ ,  $df = 3$ ,  $p < 0.05$ ), while 'good sleepers' (no sleep disturbance at baseline or follow-up) showed both the lowest participation in, and the lowest impact scores resulting from adverse incidents ( $X^2 = 8.45$ ,  $df = 3$ ,  $p < 0.05$ ).

**Conclusions:** Risk of adverse incidents is significantly increased by disturbed sleep. This risk is amplified in female patients, and, longitudinally, in those patients acquiring new disturbed sleep symptoms. Both the prevention of new sleep disturbance incidents, and the appropriate treatment of existing sleeping problems could help reduce adverse incidents among inpatients in secure psychiatric environments.

### SLEEP QUALITY AND MORTALITY IN COMORBID INSOMNIA AND SLEEP APNEA: A 10-YEAR FOLLOW UP COMPARATIVE STUDY ON THE POLYSOMNOGRAPHIC FEATURES

S. Abd ElHafeez<sup>1</sup>, J. Mekki<sup>2</sup>, I. Rocha<sup>3</sup>, C. Salles<sup>4</sup>, M. Meira e Cruz<sup>5,6,4</sup>. <sup>1</sup>High Institute of Public Health, Alexandria University, Epidemiology Department, Alexandria, Egypt; <sup>2</sup>Faculty of Medicine, Alexandria University, Neuropsychiatry Department, Alexandria, Egypt; <sup>3</sup>Centro Cardiovascular da Universidade de Lisboa, Cardiovascular Autonomic Function Lab 1649-028, Portugal; <sup>4</sup>International Center of Clinical Sleep Medicine and Research, Bahiana School of Medicine and Public Health, Salvador, Brazil; <sup>5</sup>Centro Cardiovascular da Universidade de Lisboa, Lisbon School of Medicine, Sleep Unit, Lisbon, Portugal; <sup>6</sup>European Sleep Center, Lisbon, Portugal

**Introduction:** Co-morbid insomnia and sleep apnea (COMISA) is a prevalent disorder, which results in additive impairments to patients' sleep,