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COVID-19 Marked a Change in the Scope of Occupational Medicine from Occupational to Work-Related Diseases and Total Worker Health®

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Summary
The COVID-19 pandemic challenged Occupational Medicine, while its focus had already shifted from occupational diseases to work-related illnesses. Such a broader scope allowed the inclusion of transmissible diseases among the causes for concern in working settings. COVID-19 has had a profound impact globally, resulting in millions of infections, often lethal. From its appearance, COVID-19 was found to affect specific groups of workers at higher risk of contracting the virus due to their occupation or workplace conditions, which accounts for its consideration as a potential work-related disease. This overview examines various aspects of COVID-19 based on articles published in our journal. Specifically, the epidemiology of COVID-19 is discussed, including mortality rates and groups at higher risk. The diagnosis, measures to prevent contagion, vaccination efforts, long-term effects, and psychosocial factors are also summarized. The emerging picture is that COVID-19 has been a trigger accelerating the change of paradigm of occupational medicine, which is more and more concerned with prevention. Occupational Health contributes to health promotion and Total Worker Health®.

1. Introduction

Occupational Health has witnessed a significant change in paradigm over the years, shifting from a focus on occupational medicine to a comprehensive approach known as Total Worker Health® (TWH). This transition has been driven by recognizing that work-related diseases gradually replaced occupational diseases in the discipline's scope. This has led to the unprecedented inclusion of COVID-19 as a significant concern for occupational health [1].

Amid a new and potentially lethal infectious disease affecting all strata of the general population, and the first report covering the 1st semester of 2020 reporting an 11.1% excess mortality in Italy and an almost 50% excess in Lombardy, the most affected region, we decided to publish a series of papers monitoring mortality because of its relevant implications for controlling the time-course of the COVID-19 pandemic [2]. Social distancing, facial masks, and other measures that aimed at preventing COVID-19 also prevented the usual influenza epidemics in 2021; nevertheless, a 7.9% excess mortality was observed; of these deaths, 3,667 occurred among individuals of working age (25-64 years) [3]. In the 2020-2022 triennium, 225,965 deaths exceeded expected rates, and 16,017 of these occurred in working age [4-7]. Data on total mortality for the first half of 2023 suggested a rebound due to harvesting in previous years, 6,947 and 1,879 lower

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than expected in the general population and working age, respectively [8]. Increased mortality during the COVID-19 pandemic period could be due to delayed or missing access to treatment of highly prevalent chronic diseases, such as cardiovascular diseases, cancer, and diabetes, as well as to other factors such as fear of facing contact with other people and attending crowded places, and social anxiety [9].

2. Groups at Higher Risk

Occupational Medicine is critical in identifying vulnerable workers during pandemics, as it actually did during Sars-CoV-2 pandemics. A series of articles have highlighted specific occupational groups that face an increased risk of infection due to their proximity to infected individuals or their involvement in essential services. Individuals working in crowded and confined environments, such as taxi and bus drivers, have shown to be more susceptible to exposure. Healthcare workers, first responders, and frontline workers have also been identified as groups at higher risk, which justifies labeling COVID-19 as a work-related disease [10-12].

3. Diagnosis

The accurate and timely diagnosis of COVID-19 is paramount for effective disease management and prevention of further transmission. Various diagnostic methods, such as PCR antigen and antibody testing for diagnosing COVID-19 cases, have been discussed to improve their use and to choose the best one among available technologies, depending on the application context, to help occupational health professionals safeguard workers' health [13-17].

4. Measures to Prevent Contagion

Preventing the spread of COVID-19 within workplaces is crucial to protect workers and maintain business continuity. Efforts to implement preventive measures such as personal protective equipment (PPE), social distancing, improved ventilation systems, and sanitization protocols emphasized the importance of comprehensive infection control strategies within occupational settings. [18-20] Understanding the modality of transmission and ruling out seemingly obvious pathways has been essential to focus prevention measures [21].

As the pandemic evolves, new variants of SARS-CoV-2 keep emerging, with potentially different levels of virulence and lethality. Articles published in this journal have addressed these variations within the pandemic scenario, providing insights into their impact on workers' health. Occupational medicine must promptly adapt to evolving strains to ensure adequate risk assessment and management strategies.

5. Vaccination Efforts

The COVID-19 pandemic has posed an unprecedented challenge to global health, economies, and societies. However, amidst the chaos, the rapid development and deployment of effective vaccines have emerged as a game-changer strategy in our fight against the virus. Vaccines have been pivotal in mitigating the impact of the pandemic, promoting population's immunity, and favoring the diffusion of more contagious but less lethal variants of SARS-CoV-2 [22]. Occupational health practitioners played a relevant role in promoting vaccination acceptance and implementation among workers. This contributed to minimizing workplace transmission risks, owing to vaccine efficacy, safety, and effective distribution strategies [23-27].

6. Psychosocial Factors

While the initial focus has been on acute infection and mortality rates, understanding the long-term effects of COVID-19 is essential for managing occupational health. Persistent symptoms experienced by individuals who have recovered from the acute phase emphasize the need for long-term monitoring of affected workers, especially during the back-to-work phase [28-30].

Psychosocial factors associated with COVID-19 at the workplace or distance working can significantly impact employees' well-being and mental health. The sudden shift to remote work or changes in responsibilities and procedures due to the pandemic often led to increased workload and job

demands. This has been able to cause stress (including technostress), burnout, and decreased job satisfaction [31, 32].

Balancing work responsibilities with personal life has often been challenging during the pandemic, especially when working from home. The boundaries between work and personal life has sometimes become blurred, leading to increased stress and difficulty in disconnecting from work. Remote work can result in social isolation and reduced opportunities for social interaction with colleagues. Lack of social support and limited communication can impact mental well-being and increase feelings of loneliness. Remote work may present challenges in effective communication, collaboration, and teamwork. Miscommunication or difficulties in getting timely responses from supervisors or colleagues can hinder productivity and create frustration among employees [33, 34]. Dependence on technology for remote work can lead to technical difficulties, connectivity issues, or inadequate infrastructure support, including issues related to the environment in which work occurs, originally not designed for that purpose. These challenges, particularly difficult to manage by occupational physicians, could add further strain on employees' mental well-being [34].

COVID-19 has completed the transition of the scope of Occupational Medicine from primarily addressing occupational diseases to encompassing a much wider veriety of work-related illnesses. Articles published in our journal provided valuable insights into various aspects of this challenging disease. From epidemiological studies to high-risk groups identification, effective diagnostic methods, preventive measures, vaccination efforts, long-term effects monitoring, and considerations regarding changes in virulence and lethality, but above all the duration of SARS-CoV-2 shedding and infectivity in working populations [35], these articles underscore the critical role that occupational medicine plays during a global pandemic like COVID-19.

Where applied, the traditional principles of public or occupational health already applied to protect workers from air pollution in several working settings, e.g., in mines, metallurgies, chemical industries – otherwise flawed and often overlooked – proved to be effective in controlling infection spreading [36, 37]. Therefore, it is important implementing these principles to ensure clean air in workplaces and other settings, leaving facial masks as a last resort to protect against infections.

7. Conclusions

The rapid development of effective COVID-19 vaccines is a testament to human resilience, scientific advancements, and global collaboration. It has provided us with a powerful tool to combat the struggles imposed by this deadly virus. Through accelerated vaccine development processes, stringent clinical trials, global collaboration efforts, and successful vaccination campaigns, we are now on the path toward recovery. However, it is essential to continue addressing vaccine hesitancy, ensuring equitable distribution worldwide, monitoring virus variants vigilantly, and adapting vaccination strategies accordingly. Occupational physicians are playing a new Public Health role. The paradigm shifts from occupational diseases to TWH® – embracing work-related disorders as an intermediate step to broaden the scope of Occupational Medicine – and this is a crucial milestone for Occupational Health [38]. The inclusion of COVID-19 as a work-related disease has also highlighted the need for a comprehensive approach that addresses not only physical health but also mental and social well-being. By embracing health promotion in the framework of TWH®, occupational health professionals can create safer and healthier workplaces, ultimately benefiting employees and organizations.

Declaration of Interest: The Authors declare no conflict of interest.

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