

LETTER TO THE EDITOR

Enhancing the role of occupational health services in the battle against Corona Virus Disease 2019

Key words: COVID-19, occupational health services, occupational physician, risk assessment, SARS-CoV-2, vaccination

Abstract

Occupational risk assessment is the core of any practice in occupational health and safety at the workplace. In Italy, the implementation of the preventive measures required by law (DPCM of April 26, 2020 and subsequent modifications and integrations) can exempt the employers from legal disputes in case of COVID-19 infection among employees. However, these laws have made meaningless the risk assessment process, which is the ideal setting where the preventive and protective measures must be identified and enhanced by individual employers, in collaboration with health and safety managers and occupational physicians, in the true exposure conditions. In this commentary, the authors stressed the role of workplace risk assessment and occupational health services for the valuable contribution that they may give to the battle against COVID-19, in terms of prevention, contact-tracing activity and COVID-19 rates of vaccinal coverage.

Sir:

Prevention and control measures implemented by employers for tackling the Corona Virus Disease 2019 (COVID 2019) pandemic in the workplaces are arguably effective for protecting workers from exposure to, and infection with, SARS-CoV-2, and may produce a beneficial effect within the community as well (1). However, after more than a year since a temporary mysterious pneumonia broke out in Wuhan, China, on December 2020, and immediately invaded the whole world, and amidst an ongoing 2021 mass vaccination campaign against COVID-19, the pressure of public opinion in high-income countries like Italy to lift lockdown restrictions is increasing. Workplace lockdowns are considered as an effective but costly prevention measure (2). Therefore, after a long period of forced “working from home” (i.e., teleworking, in Italy the so-called “lavoro agile”), characterized by psychosocial and ergonomic issues, some employers are likely to allow employees to get back to working on-site.

Even though COVID-19 vaccines are highly effective in preventing severe cases of disease and deaths, they are, however, less effective in preventing the SARS-CoV-2 chain of infection, and much criticism about the achievement of the herd immunity has promptly emerged (3). Therefore, organizational, environmental and personal measures, including social distancing, personal protective equipments, personal hygiene precautions and other measures should be adopted by all the employers as the main containment strategy to address the COVID-19 spread inside the workplace.

Such efforts are in agreement with the European Center for Disease Control’s (ECDC’s) recommendations (4) (2020) about occupational health and safety measures needed for COVID-19 infection control at workplace, “workplace risk assessments need to be revised in accordance with occupational safety and health legislation and occupational health and safety measures adapted to take account of all types of risks”, including, for example, the additional physical load when permanently wearing personal protective equipment.

In the European Union, all preventive and protective measures - including occupational health surveillance - have to be permitted by law (in Italy, the Legislative Decree 9 April 2008 no. 81). Therefore, the preventive measures needed to address SARS-CoV-2, which is an occupational biohazard, should be framed into the risk assessment process (5) that all the employers have the obligation to carry out (articles 28 and 29 Legislative Decree 81/2008). During the risk assessment process, the employer has to: 1) identify all of the hazards and risk factors that have the potential to cause harm ("hazard identification") for workers and third parties (e.g., clients, service users, etc.) in the actual job site working conditions; 2) analyse and evaluate the negative effects associated with those hazards ("risk analysis and evaluation"); and 3) determine appropriate preventive measures to eliminate hazards or control them when they cannot be eliminated ("risk control"). The risk assessment process is the "core" of any occupational health and safety practice (5).

During the COVID-19 emergency, however, SARS-CoV-2 has heavily impacted on public health systems, putting tremendous strain on the healthcare systems worldwide. For this reason, in Italy, infection and control measures to tackle the transmission of the virus at workplace, as well as within the community, were established by Protocols agreed between the Government and the Social Parts, enacted by specific Decrees released for urgent reasons by the Italian President of the Council of Ministers (DPCM of April 26, 2020 and subsequent modifications and integrations), namely the Head of the Government of the Italian Republic (6).

For this reason, SARS-CoV-2 has been defined by some Italian policymakers as "generic" (in so far as it is ubiquitous) biohazard. With this premise, the prevention measures at workplace were not tailored to concrete working conditions, but were requested without distinction in all the workplaces. In Italy (Law no.27 of the 24th April, 2020), the implementation of the measures indicated in the so-called "Protocollo di sicurezza" is capable to exempt employers from legal liability in case of occupational COVID-19 infection. The decision to entrust a Protocol for the SARS-CoV-2 risk management, which in Italy has raised much criticism among experts, may be partly justified by the rapid spreading of SARS-CoV-2 infection in the workplaces. However, as stated by the World Health Organization (WHO), in some sectors (e.g., services and sales workers, cleaning and domestic workers, educational workers, meat-processing workers, hospitality workers, drivers and transportation workers, public safety workers, construction workers, and people employed in social service occupations), epidemiological trends have shown an increased risk of transmission (7). In Italy, SARS-CoV-2 infection rates were particularly high in certain professions like healthcare workers (before the start of vaccination, up to 91,711 affected individuals by December 30, 2020 (8),) so that the Italian National Institute for Insurance against Accidents at Work (INAIL) introduced in April, 2020, the notation of COVID-19 work-related infection as a "biological injury" (9). This notation (Circular by INAIL no.13 of 3 April, 2020) has been meant not only for healthcare professionals, but also for all types of workers in contact with the public (e.g., social workers, every type of worker employed by hospitals, plus cashiers, grocery staff, etc.), as well as for frontline workers (9).

This difference in terms of infection rates marks the work as a major determinant of COVID-19 infection. The risk assessment strategy for evaluating SARS-CoV-2 infection, developed by INAIL for supporting the decision-making process by public health authorities, consists of a risk matrix based on a combination of three important factors, namely the exposure to potential source of infection during the work, the physical proximity (or "social distancing") to others during work activities, and the social aggregation connected to the job ("contacts with people other than workmates"). Based on these three variables, INAIL has classified working activities in four risk levels, namely low, medium-low, medium-high and high (10). This strategy is useful for policymakers to develop public health strategies and allows a quick risk assessment by employers on the basis of the working sector for which the assessment is made. However, this strategy does not take into account some important variables, which refer to the concrete conditions of exposure, which employers must take into account, for enforcing the infection control measures. These factors are, for example, the duration of exposure, the environmental conditions (e.g., inadequate ventilation; time spent in indoor work), the degree of protection provided by the prevention measures, the individual "frailty" of the workers, all variables that may affect the concrete risk level of contracting the infection as well as the consequences of the infection (7).

Employers have the obligation - under the European Health and Safety Regulations - to carry on the risk assessment to prevent from SARS-CoV-2 infection on the basis of the concrete conditions of exposure of the workers to biohazards like SARS-CoV-2, with the aim of determining the level of risk, as well as of establishing the best available measures to implement, in collaboration with health and safety managers and occupational physicians appointed by the company. For instance, in healthcare setting like hospitals, disposable surgical masks might be sufficient for the visitors, whereas FFP2 (KN95) or FFP3 (KN99) filter masks would be more indicated for healthcare workers according to the type of medical activity (e.g., FFP3 in case of aerosol-generating procedures) (5). In Italian schools, pupils aged more than 6 years as well as teachers and administrative school workers are all obliged to wear a disposable surgical mask by a government Decree. However, it is obvious that teachers working in particular conditions, i.e., at contact with young kids or children with disabilities, or affected by certain health conditions that are associated with higher rates of COVID-19

related mortality (the so-called “vulnerable” workers), they should wear FFP2 to be more protected (11).

The European Agency for Safety and Health at Work (12) and the WHO (13) released guidance for organisations to implement measures to prevent SARS-CoV-2 infections and the OIRA risk assessment tool developed by EU-OSHA provides a list of measures to address physical and psychosocial issues for managing COVID-19 in the workplace (12).

However, these methods were considered insufficient (14): Khunti et al proposed a framework for the SARS-CoV-2 risk assessment strategy, considering three important aspects, namely *workplace*, *workforce*, and *individual*. In their framework, individual risk assessment should take into account age, sex, chronic health conditions, ethnicity, and pregnancy, and vaccination status of the individual (14).

According to the European Union regulations, the classification of biohazards is the starting point for the risk assessment process carried out by employers for biological agents at workplace. Recently, SARS-CoV-2 has been included by the European Directive 2000/54/CE in the third group of occupational biohazard, as a pathogen that “can cause severe human disease and present a serious hazard to workers; it may present a risk of spreading to the community, but there is usually effective prophylaxis or treatment available” (5). According to the traditional quantitative risk assessment model, the risk is function of two components, namely the magnitude (or severity) of the potential adverse event, and the probability that the event will occur. The severity of the impact depends not only on the classification of SARS-CoV-2, but also on the individual susceptibility of the exposed workers. This factor could be estimated with the collaboration of occupational physicians (OPs), as occupational health surveillance may give a significant contribution to the risk assessment strategy (15-17). For this reason, risk management should be the next step requiring the application of hierarchy of control measures, with priority of intervention on the individuals who are at greatest risk of adverse outcomes (14).

In Italy, as well as in other countries (e.g., France and the UK), COVID-19 vaccine is compulsory by law for staff working in healthcare setting and is one of the main requisites to receive the Green Pass, which is a passport recently introduced in Italy by law for the clients and workers of certain at high-risk activities, including school and university teachers. For these categories, as well as for the general public, vaccination is managed by the Ministry of Health through the Regions and the Local Health Authorities. This centralized policy has been adopted to tackle the high rate of vaccine hesitancy in Italian population. However, compulsory vaccination of healthcare workers has been labelled as “unnecessary and inappropriate” in the UK (18), and in Italy this strategy does not take into account certain individual conditions, such as the immune status of individuals, which reliable serological tests would be able to identify. Another related criticism is that vaccination is disengaged by the contribution of OPs appointed by the companies. Vaccination at the workplace is a well-established primary measure required by the European directives on safety and health at work for the protection of the workers exposed to biological agents at work. According to the Legislative Decree No.81 of the 9th April 2008 (art. 279) OPs appointed by employers must inform the workers about the cost-effectiveness of the available vaccines and, in the event of refusal, the susceptible worker may be temporarily exempted from the exposure to the biological agent through the fitness for work examination. This may be needed for the safety of the worker and, in case of infected workers, that of third parties (clients, customers, etc.). To date, the current Italian scenario has created an overlapping of administrative and health measures carried out by the Local Health Authorities and the OPs of the company. Point of care rapid antigen testing should be performed by OPs for workers having high exposure risk (5, 7). In Italy, OPs have the task to collaborate with Local Health Authorities for contact tracing activity and have to visit fragile workers and workers affected by severe COVID-19 infection (those requiring hospitalization) before returning to work for early diagnosis of post-COVID syndrome and evaluation of fitness for work.

At the beginning of the COVID-19 mass vaccination campaign, high vaccination coverage rates have been easily achieved in high-income countries like Italy, due to high rates of vaccination confidence. Enhancing public trust by improving education and acceptance of COVID-19 vaccines is surely needed to ensure the effectiveness of any policy requiring compulsory vaccination. For this reason, COVID-19 vaccination included in health protocols by OPs for certain categories of high-risk workers could be beneficial, because workers should be informed by OPs about their occupational risk level and the cost-effectiveness of COVID-19 vaccines, so that they would be more confident and willing to get vaccinated by the Local Health Authorities. OPs should formulate tailored fitness for work evaluations, by taking into account not only the risk exposure level, but also the individual susceptibility of each worker, measured in terms of individual susceptibility deriving from frailty conditions, as well as immune and health status. Vaccination is a preventive measure based on the risk assessment process and OPs are the most important actors involved in this process. Therefore, enhancing the role of health and safety services to address SARS-CoV-2 infection at workplace is important, may contribute to address some critical issues around COVID-19 and give a valuable contribution alongside the public health measures in the battle against SARS-CoV-2.

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F. Chirico^{1,2}, A. Sacco³

¹ Post-graduate School of Occupational Health, Università Cattolica del Sacro Cuore, Rome, Italy

² Health Service Department, Italian State Police, Ministry of Interior, Italy

³ Local Sanitary Unit Roma 4, Civitavecchia, Italy

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Corresponding Author: Dr Francesco Chirico, Università Cattolica del Sacro Cuore, Largo A. Gemelli 2, 00100 Rome, Italy

e-mail: francesco.chirico@unicatt.it
medlavchirico@gmail.com.