

Viewpoint in Occupational and Public Health

Integrating mandatory occupational health practice and workplace health promotion programs to reduce the high burden of work-related diseases

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Abstract

Cardiovascular diseases (CVDs) remain a leading cause of illness and death globally, imposing a significant burden on healthcare systems. The COVID-19 pandemic has exacerbated healthcare inequalities, potentially amplifying the burden of CVDs in certain populations. Sedentary occupations and metabolic syndrome (MetS) are associated with an increased risk of type 2 diabetes mellitus (T2DM) and coronary heart disease, contributing to elevated mortality rates from CVDs. Occupational risk assessment and management are crucial for developing tailored plans to control and mitigate workplace hazards that lead to occupational and work-related diseases. Long working hours have been linked to an increased risk of ischemic heart disease and stroke. Chronic diseases such as diabetes and cardiovascular disease diminish individuals' quality of life and have negative employment consequences. Workplace health promotion programs (WHPs) focusing on healthy lifestyle behaviors have shown positive effects in reducing the incidence of T2DM, CVDs, and mental and musculoskeletal health issues. Aging, sedentary lifestyles, prolonged working hours, physical inactivity, poor diets, and high occupational stress contribute to MetS and subsequent CVDs, emphasizing the need for attention from occupational stakeholders. Implementing interventions such as promoting physical activity, stress management techniques, and flexible work arrangements can help reduce occupational stress levels and combat sedentary work environments. Embedding workplace health promotion within medical surveillance (WHPEMS) offers an economical, sustainable, and effective approach to improving health outcomes. Involving workers in health promotion interventions during regular medical check-ups provides an opportunity for targeted interventions. Occupational health programs, mandatory in the European Union, can be utilized to educate workers on healthier lifestyles and develop tailored WHPs. The Total Worker Health approach, involving cooperation between occupational and public health stakeholders, plays a vital role in achieving comprehensive workplace health promotion.

Take-home message: Implementing workplace health promotion programs, tailored to address sedentary lifestyles, metabolic syndrome, and cardiovascular disease risks, can effectively improve

employee health outcomes. Collaboration between occupational and public health stakeholders is crucial for the successful implementation of comprehensive workplace health strategies.

Key words: Occupational health surveillance; occupational diseases; workplace health promotion; total worker health; One Health.

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Despite substantial advancements in medical research, cardiovascular diseases (CVDs) persist as the primary factors responsible for illness and death, encompassing both developed and developing nations and imposing a financial burden on healthcare systems [1,2].

The COVID-19 pandemic has exacerbated existing inequalities in healthcare provision for diverse populations. In combination, the direct and indirect health effects of COVID-19 may have resulted in an amplified burden of cardiovascular diseases (CVDs) at the population level in certain areas [2].

Extensive studies have consistently demonstrated that individuals diagnosed with Metabolic Syndrome (MetS) or engaged in sedentary occupations face an increased susceptibility to Type 2 Diabetes Mellitus (T2DM) and coronary heart disease, leading to an elevated mortality risk attributed to cardiovascular diseases (CVDs) [3,4]. MetS is highly correlated with overweight and obesity, hypertension, and type 2 diabetes mellitus (T2DM), leading risk factors for CVDs [4]. Therefore, many scholars have recognized an association between a sedentary occupation and the risk of Metabolic Syndrome (MetS) or cardiovascular diseases (CVDs) [4-6].

Workplace risk assessment and management are mandatory for all employers. There are diverse approaches to assessing health risks arising from exposure to different levels of occupational hazards. Identifying and evaluating all occupational hazards constitutes the crucial phase in devising customized plans to eliminate, control, and mitigate such risks. The risk assessment process is aimed at developing primary and secondary measures which are needed to reduce the impact of occupational hazards and prevent the onset of work-related and occupational diseases [7,8].

Occupational diseases encompass various illnesses caused by chemical, physical, and biological agents. These include respiratory and skin diseases, musculoskeletal disorders, and occupational cancer. According to the International Labour Organization (ILO), an occupational disease is characterized by a clear cause-and-effect relationship with a specific agent, exposure, or work process. The disease occurs within a particular work environment and specific occupations and manifests more frequently among workers exposed to occupational hazards than the general population. On the contrary, work-related diseases can arise from various causes, with the work environment factors potentially interacting with other risk factors to contribute to developing these diseases [9,10].

According to the WHO/ILO's estimate of the work-related burden of diseases, long working hours are worldwide associated with an increased risk of ischemic heart disease and stroke [11]. The exclusion of work-related illnesses from the occupational disease lists has become a significant societal issue, resulting in growing financial burdens for EU member states and European employers [12].

Chronic diseases, including diabetes, cardiovascular disease, chronic respiratory disease, and cancer, are highly prevalent in adults and contribute significantly to the overall global disease burden. These conditions, which collectively represent about half of the disease burden worldwide, not only diminish individuals' quality of life but also impose challenges on employers due to negative employment consequences, such as increased absenteeism and reduced work ability index.

Employers and occupational health stakeholders cannot effectively address many occupational hazards, such as night and shift work, driving, fatigue, and other critical tasks, if workers do not improve their sleeping habits, diet, and alcohol use [13].

Workplace health promotion programs (WHPs) may be beneficial for reducing the risk of chronic diseases as they focus on fostering healthy lifestyle behaviors. A systematic review of reviews on the effectiveness of WHPs found strong evidence for the positive effects of such workplace initiatives on weight-related outcomes, mental health, and musculoskeletal health [14]. Workplace health promotion interventions are therefore helpful in reducing the incidence of type 2 diabetes mellitus (T2DM), cardiovascular diseases (CVD), as well as mental and musculoskeletal health outcomes [14].

Today, there is an increasing older population. Aging, a sedentary lifestyle, prolonged working hours, physical inactivity, a Western diet, and high occupational stress are risk factors for Metabolic Syndrome (MetS) [4]. Therefore, occupational stress, aging, and sedentary settings in the workplace are key risk factors that demand attention from occupational stakeholders due to their significant impact on the development of metabolic Syndrome and subsequent cardiovascular and cerebrovascular diseases, which may be considered work-related diseases.

Recognizing these risks, occupational stakeholders play a crucial role in addressing and mitigating these factors. Implementing interventions that promote physical activity, encourage active breaks, and provide workplace movement opportunities can help combat the sedentary nature of specific jobs. Promoting stress management techniques, fostering a supportive work environment, and implementing flexible work arrangements can also help reduce occupational stress levels. By prioritizing the well-being of workers and addressing these risk factors, occupational stakeholders can contribute to the prevention and management of metabolic Syndrome and ultimately reduce the burden of cardiovascular diseases in the workforce.

The recognition that health resources are limited necessitates their responsible allocation. The significant reduction in workplace pollutants calls for a reorientation of interventions, which are mandatory in Europe and major countries worldwide. In addition to ensuring the ongoing absence of effects caused by occupational hazards, mandatory visits, and inspections should prioritize the promotion of improved health levels. Health promotion can leverage the availability of workplace health services and contribute to substantial health improvements. Embedding workplace health promotion within medical surveillance (WHPEMS) can be cost-effective, sustainable, and efficient [15].

The key to this proposal is to involve workers in health promotion interventions during regular medical check-ups, which over 10 million workers undergo annually in Italy. The focus of the promotional action changes every year, based on the workers' needs identified during health surveillance and verified through interviews conducted by competent physicians during integrated walk-throughs with participatory ergonomics groups. The proposing entity, the university, is responsible for designing the promotion action, developing and testing data collection tools, and standardizing response modules. Workers are invited to complete a questionnaire consisting of three sections: the first pertains to the topic to be promoted, the last contains the outcomes, and the middle section addresses potential confounding factors or moderators of the relationship between risk factors and outcomes.

The physicians responsible for workers' health surveillance who wish to participate in the project receive the necessary materials free of charge and, ultimately, obtain the analysis of the results conducted by university epidemiologists. Occupational physicians provide workers with guidance to improve their health. In cases where pathology is suspected, workers are referred to their general practitioners or specialists within the national health service for further diagnostic tests or treatments. Although company contributions are welcome, they are not obligatory to invest in the project; companies still benefit from improved knowledge of the workforce and health promotion. The university supports the modest costs, which fund the projects through its research activities. Therefore, it is a "win-win-win" situation where all parties receive benefits. Due to their flexibility,

these programs can be easily implemented even in small companies. Furthermore, they do not alter the timing and methods of health surveillance and can be embraced by any occupational physician.

Over the past 12 years, the Occupational Medicine Service at the Catholic University of the Sacred Heart in Rome has conducted health promotion campaigns addressing various topics, including the Mediterranean diet, eating behavior disorders, post-Covid Syndrome, syncope, and presyncope, headache, musculoskeletal disorders, work engagement and workaholism, sleep health, aging and workability, workplace violence, work organization, and indoor air quality. Over thirty thousand workers have been examined, and as a result of these visits, approximately 1,500 general practitioners have been contacted to continue the intervention.

Workplace health surveillance is mandatory in the European Union and other countries. It may be used to educate workers on healthier lifestyles and collect health data for developing tailored WHPs [16-20]. Workplace health promotion embedded in medical surveillance (WHPEMS) may be economical, sustainable, and effective. Strict cooperation between occupational and public health stakeholders in the workplace is the Italian way of the Total Worker Health[®] / One Health approach [15].

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