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# Integrating health promotion into occupational health surveillance: The Italian approach and beyond

**Nicola MAGNAVITA[1*], Igor MERAGLIA[2]**

*[1]Post-graduate School of Occupational Health, Department of Life Sciences and Public Health, Università Cattolica del Sacro Cuore, Roma, Italy. E-mail: nicolamagnavita@gmail.com.* ***ORCID:*** *0000-0002-0988-7344.*
*[2]Post-graduate School of Occupational Health, Department of Life Sciences and Public Health, Università Cattolica del Sacro Cuore, Roma, E-mail: meraglia.igor93@gmail.com*

**Corresponding Author*

**Abstract**

Health surveillance in the workplace increasingly integrates health promotion activities alongside traditional occupational risk prevention. The Italian National Prevention Plan (PNP) encourages companies and occupational physicians to adopt health promotion strategies, inspired by the "Total Worker Health" (TWH) model developed by NIOSH in the United States. However, this study highlights the limitations of directly applying the TWH model in Italy without significant adaptations, due to differences in healthcare systems, company structures, and economic contexts. Over the past 15 years, Italian occupational physicians have developed and implemented health promotion models that are integrated into routine surveillance activities, addressing various aspects of workplace health and well-being. These programs, which go beyond the US TWH model, can be executed at no cost to companies and with minimal additional effort from occupational physicians. University researchers play a central role in designing these initiatives, analyzing data, and disseminating results, making these resources freely accessible to interested professionals.

**Key words:** Epidemiology; occupational physicians; occupational medicine.

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## INTRODUCTION

### *Health promotion and risk prevention*

Health surveillance is established with the aim of early detection of signs and symptoms in workers or changes in biometabolic indicators or organ or system meiopragia which could herald the onset of occupational diseases. In addition to protecting health by preventing the effects of occupational risk factors, health surveillance aims to support and increase the ability to work and to promote the adaptation of the working environment to the capabilities of workers, taking into account their state of health. These goals are best achieved by promoting an appropriate lifestyle and

work style that counteracts the natural aging process. The aging workforce is a growing problem. As workers age, their physical, physiological, and psychosocial abilities change. Maintaining the health and productivity of older workers is a key objective of European labor policy and health promotion is the key to achieving this goal.

Italian legislation on health and safety at work provides for the implementation of health promotion in Article 25 of Legislative Decree 81/08. The Ministry of Health, as part of the National Prevention Plan (PNP) for the five years 2020-2025, explicitly referred to the Total Worker Health (TWH) approach in Central Support Line no. 3, "Activation of technical tables for strengthening the global health of the worker according to the Total Worker Health approach". On June 15, 2022, the Italian Society of Occupational Medicine (SIML) approved the creation of a health promotion working group to support occupational physicians in the creation of workplace health promotion initiatives in line with the TWH approach and to establish a link between general practitioners (GPs) and occupational physicians (OPs).

In Italy, more than ten million medical visits are made to workers every year. The availability of such a large number of workers who make regular visits and carry out the necessary examinations for risk prevention is an opportunity that should not be missed to carry out health promotion activities.

Given the significant potential for health promotion initiatives in the workplace, this commentary aims to explore the application of the Total Worker Health approach, critically assess its relevance and adaptability within the Italian context and propose strategies to enhance the well-being and productivity of workers, particularly older employees, through more integrated and effective health promotion programs.

**DISCUSSION**

If we consider a particular aspect of great relevance, the promotion of health for older workers, we observe that, despite the importance of this issue, few studies are looking at health promotion activities for older workers and these are generally of poor quality. To date, there is no definitive evidence that workplace programs improve work ability, productivity, or job retention of older workers [1]. There is also limited evidence that health promotion programs improve lifestyle and help maintain the health and well-being of older workers [2]. Health promotion programs need to be well designed so that the effectiveness and cost-effectiveness of workplace interventions can be adequately studied. When we consider the broader aspect of all health promotion programs, scientific evidence on the effectiveness of health promotion policies and practices in the workplace is scarce and inconsistent [3].

Even projects aimed at all workers are often not implemented optimally. A review of projects conducted in the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) showed that health promotion projects focused primarily on disease prevention rather than the promotion of positive health interventions [4]. Furthermore, most studies did not attempt to change the workplace but used the workplace as an enabling environment to get people to change their lifestyle and disease-prevention behaviors. Participatory and non-participatory approaches to promote well-being and other positive health interventions have been used poorly.

In this study, we aim to shed light on the topic of health promotion and the TWH model and propose to occupational health practitioners a strategy that has proven successful in improving workers' health for over 15 years.

***Total Worker Health©, an American brand***

In 2011, the U.S. National Institute for Occupational Health NIOSH named the public health strategy that integrates health promotion and disease prevention Total Worker Health© (TWH). This strategy is new to the United States, and NIOSH has reserved the label for it. It is defined as a set of "policies, programs, and practices that integrate protection from work-related safety and health risks with the promotion of injury and illness prevention efforts to improve worker well-being.".

The TWH approach to occupational health provides a comprehensive framework for useful measures to improve the well-being, health, and safety of workers. This initiative has generated

interest in several countries, including Italy. As it is an American experience, we must ask ourselves whether it can be transferred to our society in this way or whether adaptations and changes are needed.

In TWH, the overall well-being of employees is improved through an integrated approach that focuses on safety while addressing other workplace initiatives such as healthy work design, employee training, and development, accidents and illnesses, etc.

The TWH principles, summarized in a handbook published by NIOSH in 2016, provide an updated prevention strategy that is compatible with traditional occupational safety and health prevention practices but also recognizes the potential importance of work-related issues to the health of workers, their families, and their communities.

A few years after the initiative was launched, the topic has generated some criticism alongside the enthusiasm that has led to the creation of numerous applications. The US authors noted that there is no agreement on what defines an intervention as "TWH" and what components a health promotion program must have to carry the "TWH" label. Furthermore, there is a lack of definition of some important aspects, e.g. what attention is paid to the organizational contexts of work in a TWH project. Additionally, there is no agreement on which organizational or individual outcomes are most important when evaluating the impact of a program. In the absence of a clearly defined outcome, it is not possible to evaluate the benefits of a program and assess the cost-benefit ratio; moreover, it is not possible to compare programs with different objectives.

A further and more serious criticism of the TWH model is that it is a distraction strategy that diverts attention from analyzing and solving the collective critical issues of work and focuses attention on individual responsibility. In a neoliberal climate, the new model emphasizes the individual responsibility of the worker for the occurrence of pathologies and thus avoids committing the company to improving work, its organization, and the working climate.

A consensus is emerging among researchers that a TWH intervention must include three essential elements: 1) cross-sectoral coordination and interaction of workplace programs with an assessment of work-related and non-work-related exposures; 2) strong emphasis on environmental interventions, which are always necessary to make the workplace more health-promoting; 3) worker participation in setting priorities and planning actions to promote self-efficacy. In other words, an intervention can be defined as a TWH if it is integrated, environmental, and participatory (Table 1).

**Table 1.** Essential characteristics of a workplace intervention program that qualify it as a "Total Worker Health"

| Characteristic | Detail |
|---|---|
| **Integrated** | Coordination and interaction of workplace programs across sectors. Evaluation of occupational and non-occupational risk factors |
| **Environmental** | Environmental interventions to make the workplace more conducive to health |
| **Participatory** | Worker participation in setting priorities and planning interventions to foster self-efficacy is essential. |

From the above, we can derive the essential elements to assess whether an intervention is an attempt to integrate health improvement measures into the ongoing activities of a corporate service, or something else.

We must not forget that there is still little evidence in the international literature on what barriers and facilitating factors influence the acceptance, implementation, and long-term maintenance of TWH initiatives. The sustainability of interventions is a key element to consider before launching a program and every time you want to evaluate its effectiveness. The current literature seems to

indicate that workplace health promotion programs can have positive effects, but the strength of the evidence is modest, partly because programs often vary widely, and this prevents a neutral observer from evaluating them consistently. Evaluations of effectiveness are always conducted by the authors of the projects, which prevents the exclusion of systematic errors related to the observer. For example, methods such as ROI (Return On Investment), which are often proposed to evaluate the effectiveness of programs, could be modified by the choice of elements introduced in the calculation. Finally, most of the interventions to date have been implemented in large companies. There is a lack of in-depth studies on the effectiveness of TWH interventions in small companies that need external help to expand or improve workplace health and safety initiatives.

***Health promotion in Italy***

When proposing, as the Italian Ministry of Health does, to introduce in our country strategies similar to those in the USA, it is necessary to take into account the remarkable socio-economic and health differences between the two countries.

The first difference has to do with the healthcare system and the system of accident prevention. In the United States, the healthcare system is predominantly private. Companies provide funds for the health and accident prevention of their employees through insurance. They therefore have an interest in reducing the number of illnesses among their employees to lower insurance premiums. In contrast, in Italy, the National Health Service (NHS) guarantees free and universal healthcare. Furthermore, in Italy, employee insurance against accidents and occupational illnesses is mandatory. Companies pay tax to the SSN and the National Institute of Social Security (INPS) and pay compulsory insurance to the National Institute for Insurance against Accidents and Professional Illnesses (INAIL). Therefore, Italian companies have no economic return from the reduction of injuries and illnesses. If we in Italy want companies to finance health promotion in the workplace, we need to think about economic or fiscal incentives to allow the recovery of the funds invested and thus the sustainability of the initiative. Considering that health promotion tasks are not only carried out by companies but also by GPs and the various NHS bodies, we must ensure that there is no overlap or conflict between the different health promotion actors and therefore provide for some form of coordination.

Finally, it should be borne in mind that the production situation in Italy differs significantly from that in the US. In Italy, over 92% of active companies are small or very small and employ 82% of the workforce. Small companies in the US generally do not do TWH. In Italy, it seems unrealistic for a small business to have the skills, health structure, and economic resources necessary to organize any of the TWH programs that are conducted in the United States.

However, there are significantly more occupational health professionals in Italy than in the United States (5500 versus less than 3000). Although the number of workers in this country is six times higher than in Italy, health checks of the occupationally exposed population are more widespread in Italy. This explains why Italy has a tradition of combining health promotion and prevention, with numerous health promotion interventions even in small companies [5]. For example, a literature review revealed that more than 100 projects on health promotion for older people alone had been carried out in Italy before NIOSH published the handbook on TWH [6].

***What characteristics should an intervention to promote health in the workplace have?***

Every doctor promotes health as part of his or her work when he or she advises his or her patients of the need to correct habits or lifestyles that could cause illnesses to occur or worsen over time. This clinical approach to health promotion is the most common, but also the least productive. People do not particularly like having prohibitions imposed on them. Therefore, campaigns to stop smoking or alcohol and drug use are generally not very successful. Far more effective are measures that offer an advantage, an improvement that the participant can strive for along a certain path. Motivation plays a key role in the decision to take part in a health promotion program. It is important to arouse the interest of those who want to take part and to convey to them the importance of the project and the benefits it can bring.

In the workplace, the incentive must come from monitoring people and the working environment, i.e. the needs of the working population. The involvement of workers and their participation must be sought right from the planning phase of the intervention. To encourage this participation, it is good if the project focuses on a positive and common goal.

In each program, the first "baseline" phase involves the measurement of the parameters of interest, which will be verified at the end of the project during the "follow-up" phase. Epidemiological work is always required to process the data. Furthermore, it is useful for this work to be carried out during the development of the initiative and for the preliminary data to be available as soon as possible so that it is possible to correct points in the project if necessary and also to share the data with interested parties as they develop. Participants should be informed about the development of the program at regular intervals, either through meetings or information by email. Sharing preliminary data can be useful to increase participant motivation by communicating project results and trends as they develop.

If the interventions include treatment, it is best if it is personalized so that each participant can find their benefit and track progress through the program. In this case, it is not only useful to record and communicate individual progress to the prospect but also to compare it to overall trends or the project's ultimate goals. It would also be useful to symbolically reward those who have achieved the expected results, showing their interest in what they have achieved. If such recognitions are public, this contributes to healthy emulation among participants.

An important feature in program design is the availability of resources needed to create, process, and disseminate data. The School of Specialization in Occupational Medicine at the Catholic University of the Sacred Heart has made health promotion programs available to interested physicians that can be implemented without cost or loss of production to the organization and without the physician having to commit to planning the study, reviewing the effectiveness of the measurement tools, processing the data collected, and producing and disseminating the project results. Participation in the projects is free of charge, the doctor only has to commit to carrying out the promotional activity submitting the data and receiving the results in return.

***The promotion project***

The principle on which health promotion is based is the assessment and prevention of occupational risk.

Each doctor has his or her assessment strategy. Our school has developed the ASIA method (Assessment, Surveillance, Information, Audit) for risk management in the working environment. The method comprises an orderly sequence of measures for risk assessment, surveillance, information, training and verification actions. It makes sense for the different phases of risk assessment to be closely linked and shared by all prevention actors. The identification of critical aspects in the development of evaluation activities must lead to investigations or audits aimed at proposing interventions to improve the working environment. The essential condition for the implementation of successful initiatives in the workplace is the complete management of professional risks. This condition is necessary to achieve employee participation.

From a participatory perspective, all health promotion interventions are implemented based on a proposal based on the indications previously provided by the workers. The OP collects this information during visits to the workplace, where he or she asks workers to describe their work cycle, identify critical points, and to formulate proposals for improving the workplace in participatory ergonomics groups (GEP©). Once the topic on which a support intervention is to be implemented has been identified and the workers have expressed their interest in this topic, the doctor has the task of designing the study and defining the measurement tools and the measures to be implemented.

Each new project requires the development of a questionnaire, which always consists of three sections: the first, relating to the subject of the project; the last, relating to the outcome; the middle one, relating to the confounding factors. The chosen topic can be a pathological condition that has a particular impact on the work and that you want to eliminate, but preferably it is a “positive” topic. An example of the first type is the adoption of inappropriate eating behavior that we want to screen

for. An example of the second type is adherence to the Mediterranean diet. We implemented these workplace interventions consecutively in 2022 and 2023. In both cases, the outcome was metabolic health. Confounders include factors that could affect the relationship between the subject of the intervention and the outcome, especially if they are present in the workplace. In the various projects, occupational stress, night work, workplace violence, psychological distress, and other factors that could interfere with the relationship under investigation or hinder the intervention may be considered.

The questionnaires are filled out immediately before the medical examination and then examined by the doctor. Employees are immediately advised on how to improve their lifestyle. If necessary, the doctor will provide information about the NHS structures to contact for any diagnostic tests or necessary treatment. The costs of designing the campaigns, information material for employees, and data processing are borne by the University. There are no costs for the workers or companies.

Once the data contained in the questionnaires has been processed, the OP sends the results in a collective and anonymous form to the employer, the person in charge of the protection service, and the workers' safety representatives, so that any support measures can be decided collectively. Over the past 15 years, the annual campaigns have covered the following topics: Mediterranean diet; post-COVID syndrome; Eating disorders; Hand skin disorders; Syncope and presyncope; Headache; Musculoskeletal disorders; Work commitment; Sleep health; Aging; Violence at work; Work organization; Indoor air quality; Teleworking; Working capacity. More than 30,000 workers from 38 companies participated [7,8] (Table 2).

**Table 2.** Health promotion programs implemented in recent years.

| Year | Subject |
|---|---|
| **2024** | Skin health |
| **2023** | Mediterranean diet |
| **2022** | Eating disorders |
| **2021** | Post-COVID syndrome |
| **2020** | Syncope, pre -syncope and lipothymia |
| **2019** | Headaches and work |
| **2018** | Musculoskeletal disorders |
| **2017** | Work Engagement |
| **2016** | Sleep health |
| **2015** | Aging and working capacity |
| **2014** | Work boredom |
| **2013** | Organizational justice |
| **2012** | Work organization and health |
| **2011** | Violence at work |
| **2010** | Air quality |

Although participation in the programs was not mandatory, more than 85% of workers chose to participate. In cases where the screening revealed an illness, the medical visits immediately after completing the questionnaire were used to expand on the worker's medical history, investigate comorbidities, and assess any changes. Workers were asked to start or continue the diagnostic-therapeutic pathway in the NHS. In these cases, the OP in charge took the opportunity to contact the worker's GP, to whom he sent a letter via the worker, indicating the data resulting from the visit and any needs of the patient. The worker was asked to provide information on the evolution of his pathology, which should in any case be further reviewed at the worker's next routine visit. In most cases where only bad habits or risky behaviors were found, the contact of the OP in charge with the

worker was used to reinforce the salutogenetic approach and highlight the benefits of a correct lifestyle.

The data collected through the questionnaires is processed electronically. The results of each survey were communicated to the companies, the company's prevention service, and the workers' safety representatives to help improve the work culture. In addition to advising workers and providing useful information to companies, the activities of the PIP have enabled researchers to produce several scientific publications. By repeating the surveys on the same cohorts of workers each year, it has also been possible to carry out longitudinal studies to clarify the causal relationship between risk exposure and health damage.

The project is open. All OPs who wish to participate in the initiative will receive the material for the project free of charge. At the end of the project, everyone will receive the results of the study.

In summary, it can be said that promoting the health of employees is an essential health surveillance measure to maintain the performance of the workforce. Experience shows that the use of promotion integrated into prevention (PIP) significantly improves the quality of health surveillance. The projects' participatory nature, simplicity, cost-effectiveness, and integration of occupational health and primary care show that PIP projects are economical, sustainable, and effective. Creating a network of OPs involved in PIP projects respects corporate and professional autonomy and improves workers' work culture, health, and safety.

In conclusion, workplace health promotion should more often include positive health measures and interventions to improve the environment. Sustainable production depends on the health of workers. Therefore, workplace health promotion should be supported by trade unions and employers.

## CONCLUSION

In conclusion, workplace health promotion, particularly within the framework of the Total Worker Health approach, represents a valuable opportunity to improve worker well-being, especially in aging populations. However, the adaptation of such models to different socio-economic contexts, like Italy, requires careful consideration of local healthcare systems, company size, and existing preventive practices [9]. While evidence supporting the efficacy of these interventions remains limited, the integration of health promotion into routine occupational health surveillance offers a practical and sustainable pathway for enhancing worker health and productivity. Future efforts should focus on refining these programs, ensuring participatory approaches, and fostering collaboration between occupational health professionals and general practitioners to maximize impact and sustainability.

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