

Review

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Review

The Management Approach to Health and Safety at Work in Prevention Intervention Planning

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Abstract: This work deals with a systematic review of literature data concerning the theme of the integrated approach to occupational health and safety management, with particular reference to the programming of assistance plans, which guide the company's organizational choices also by aiming at the principles of the Total Worker Health. In the current regulatory framework on this issue, the UNI ISO 45001: 2018 standard assumes particular relevance, which defines the dynamic approach to occupational health and safety management systems, paying particular attention to external contextual factors that may influence corporate organizational decisions. The adoption of these systems is not mandatory, but allows companies to fulfill their duties in terms of health and safety at work, through an organizational approach aimed at awareness, involvement and participation of all subjects of the company prevention system, overcoming the phase of the mere technological and prescriptive approach, towards a holistic vision of prevention, which places the person at the center of preventive actions. In this context, the role of institutional networks and socio-economic partnerships assumes particular importance, in the activation of territorial assistance interventions to support companies for the improvement of risk management levels. To this end, the importance of verifying the effectiveness of assistance interventions emerges from the scientific debate, through the use of indicators such as quantitative ones for measuring the performance of all phases of the intervention with particular attention to the effects in terms of improved solutions developed.

Keywords: organizative models; prevention intervention; efficacy evaluation; (worker) participation

1. Introduction

The approval of the UN Agenda 2030 represented an evolution towards a combined approach, in which all objectives take into account economic, social and environmental aspects and aim to put an end to poverty, restore dignity to people and, at the same time, to preserve nature and the environment. The Ostrava Declaration highlights the need to strengthen commitment at international and national levels to improve environmental protection strategies and prevent the adverse effects, costs and inequalities of conditions that impact on the environment and health.

The European Commission, through the "Strategic Framework on Health and Safety at Work 2021–2027" published on 28 June 2022, has defined the priorities and key actions to improve the health and safety of workers, following the rapid changes in economy, demographic evolution, and work models.

The new strategy focuses attention on three transversal objectives, highlighting, in the introduction, how the protection of workers' health and safety is above all a right, but also represents a solution to respond to the new challenges posed by the transformations of the world of work, from digitalization and demographic changes.

Among the objectives is that of improving the prevention of accidents and occupational diseases, introducing, in the European panorama, the concept of improvement already launched in previous strategies and implemented by the Italian legislation on the subject, Legislative Decree 81 of 2008.

On the Italian front, the Ministry of Health with the National Prevention Plan (PNP) 2020-2025, adopted with the State-Regions Agreement of 6 August 2020 in the state-regions conference, intends to strengthen a vision that considers health as the result of development harmonious and sustainable human being, nature and the environment (One Health) which, recognizing the interconnection between the health of people, animals and ecosystems, promotes the application of a multidisciplinary and coordinated approach to address risks potential or already existing that originate from the interface between environment-animals-ecosystems.

Accidents and occupational diseases fall within one of the six macro-objectives of the Plan, for which an evaluation system is envisaged for monitoring the essential levels of assistance (LEA) paying attention to social and environmental determinants.

In this framework, the value of health as a strategic and sustainability tool in the places of life and work is increasingly developed and the importance of the preventive function in managing change and strengthening individual and business resilience is emphasised.

The innovation element of the National Prevention Plan (PNP) 2020-2025, in Italy, lies in the choice to support a Health Promotion approach, thus making the development of empowerment and capacity building strategies transversal to all the Macro Objectives, recommended by international literature and by the WHO.

The current framework of changes in the world of work requires the adoption of more integrated intervention models, as also suggested by the "Global plan of action-WHO" which, among other things, recalls the need to address all aspects of health of workers through the Healthy Workplace Model, also referred to by the National Institute for Occupational Safety and Health (NIOSH) which proposed the Total Worker Health (TWH) program.

This program is defined by the set of policies, programs and practices that integrate the prevention of health and safety risks in the workplace, with its promotion in favor of broader worker well-being.

To achieve the objectives of the TWH, it is a priority to increase awareness of «feeling good at work» and promote dedicated educational interventions. In essence, it is necessary to plan integrated interventions, aimed at achieving safe and healthy working conditions, in which all company figures in the prevention system must be involved at the same time: employer, responsible of the Prevention and Protection Service (RSPP), Occupational physician, Workers' Representative for Safety (RLS) and the workers themselves.

In this context, on the corporate front, workplace health and safety management systems (SGSL) prove to be particularly effective tools for managing processes. The introduction of the SGSL is mainly due to the cultural change that has affected the legislation on the topic, in which over time we have moved from a 'Command and control' type approach to a more managerial/organizational approach.

The origin of SGSLs must be sought in quality management systems as well as in environmental management systems. A quality management system is the set of all connected and interdependent activities that influence the quality of a product or service. Similarly, the adoption of an SGSL ensures that health and safety protection becomes an integral part of the more overall management of a company, merging health and safety objectives and policies into the design and management of work systems and production of goods or services.

It is based on an organizational culture that looks at health and safety not only as regulatory compliance, but as an integral part of work processes and a strategic lever for the overall improvement of company performance.

The foundation of the structure of an SGSL is the systemic vision in which the approach is identified for processes that interact with each other and are integrated in the management organisation. Through the SGSL, the policy, strategies, health and safety objectives and ways to achieve them are defined, as well as the processes and a method for monitoring and measuring the results.

In addition to the implicit advantages inherent to the adoption of an SGSL (reduction of accidents and related costs, risk mitigation, better monitoring of dangers, etc.), if a company

demonstrates that it has effectively adopted and applied an SGSL, it is relieved from criminal liability in the event of a fatal or serious injury.

An SGSL, as a tool for optimizing resources, preventing and managing risks, can represent a guide capable of promoting an organizational context that best enhances professionalism, intervening on the participatory spirit and therefore on the general organizational context.

The effectiveness of the SGSL is conditioned by its ability to permeate all levels of the organization, to allow all subjects involved to achieve and maintain high standards of care: organizational structures and processes, risk assessment and monitoring mechanisms, performance and quality assistance, continuous training and professional evaluation.

In this context, the ISO 45001: 2018 standard is rapidly spreading, the first certifiable international standard on workplace health and safety management systems.

The standard directs companies to broaden the perspective of risk management through their assessment in relation to the analysis of the context (and consequently through the analysis of the interactions between the external and internal environment of the company), the meaning of the process of risk assessment as an opportunity, the importance of involving the various subjects involved, including workers and stakeholders.

The importance of active participation is also highlighted, in particular in relation to the reporting of near-accidents: the objective of the company organization is to develop awareness of its role. The UNI ISO 45001 standard refers to this when it "talks about worker leadership".

The sense of responsibility is cultivated with good training, active participation and constant positive feedback from the company towards its workers. To this end, communication and information processes play a fundamental role not only for workers and citizens, but for all decision-making and managerial figures involved in risk management, which overall constitute that fundamental element of the management approach represented by participation of all parties involved.

We are witnessing the creation of a new cultural path to frame the risks present in the company within a broader framework that takes into account environmental, social and economic factors in the approach to managing them, placing the human factor at the center of policies and prevention actions in an organic vision that supports institutions and companies in balancing these risks.

To this end, communication and information processes play a fundamental role not only for workers and citizens, but for all decision-making and managerial figures involved in risk management, which overall constitute that fundamental element of the management approach represented by participation of all parties involved.

2. Relevant Sections

The UNI ISO 45001 standard introduces, in continuity with what has already been mentioned in the national social legislation, an approach that guarantees the efficiency and continuous improvement of the management system, to respond to the evolution of the context in which a business organization operates.

In the field of safety and health at work, only in recent years has it been possible to consider the external factors that can influence companies' choices and the proposal of interpretative models [1-3].

The growing interest of researchers and OSH prevention operators in the areas in which companies carry out their production or service activities is directly linked to methodological insights. In fact, as observed by various authors [4,5], context analysis represents an important phase not only for the correct planning and implementation of interventions but also for understanding the reasons for their preventive effectiveness.

The Context-Mechanisms-Outcome (CMO) model, applicable to verifying the effectiveness of prevention interventions [6,7] defines the context as the set of characteristics and conditions of criticality or opportunity in which a specific intervention is carried out to achieve the set objectives.

Other authors [8] highlight how the analysis of the context can provide useful elements to identify the factors that favor the drive for improvement in the companies involved. Among the

mechanisms considered by companies to be most effective for stimulating changes at work are legislative compliance, economic incentives and information/training on technical standards, guidelines and good procedural, technical and organizational practices. These considerations open a reflection on the models that can be adopted for the implementation of prevention interventions. Among the models proposed in the literature, the Driving Force-Pressure-State-Exposure-Effect-Action (DPSEEA) proposed by Hambling et al. [9] was used in Italy for the analysis of the effectiveness of accident prevention plans in the construction sector [10].

The actions in the model fall within, among others, the following strategic objectives outlined in Italy in the current National Prevention Plan 2020–2025:

- development of surveillance systems for accidents and occupational diseases;
- strengthening, improving coordination and standardization of supervisory activities
- promotion of health surveillance;
- strengthening of communication and assistance processes for companies;
- development of relationships with bilateral bodies, social and professional partners;
- dissemination of good practices, promotion and training activities in schools.

Within this framework, and the indications that emerge from the analysis of international literature, the opportunity is identified to stimulate motivation for OSH management improvement in companies by encouraging the active participation of the Institutions-Social Partners network in the implementation of targeted improvement plans. prevention, to assist companies in the process of improving the assessment and management of accident and health risk factors.

Knowledge of the context and the expectations of the interested parties allows the definition (or modification) of a strategy for the development and consolidation of health and safety, as also proposed by Masi et al. [11] and by Schwartz et al. [12].

Another new aspect is given by the emphasis placed on ‘Leadership and commitment’ of the company’s top management [13]. Top management must establish the OSH policy, objectives and directions, as well as the necessary resources.

The assistance of institutions and social partners can help support company leadership in overcoming, or at least reducing, the various critical issues that hinder the application and successful outcome of prevention interventions, as discussed by Masi et al. [14] and Hasle et al. [15].

The theme of coordination and integration between institutions and social partners in the implementation of prevention assistance programs has stimulated in recent years a growing interest in the scientific debate on the need to verify the effectiveness of assistance interventions, through the application of experimental protocols which take into account on the one hand the necessary scientific rigor and on the other the business contexts on which interventions are carried out which entail critical issues in the standardization of protocols especially for small-sized companies. The use of indicators for measuring the performance of all phases of the intervention is referred to by numerous authors as a tool for recording qualitative and quantitative data in the planning, monitoring, training and impact stages in terms of improved solutions developed.

Building local networks by linking different organizations together is essential to achieving sustainable OSH improvements [16]. To this end, a fundamental element will be the involvement of homogeneous groups of companies (supply chain, cluster, district, etc.) through the collaboration in the territory of local organizations and associations representing employers and workers.

The effectiveness of a management approach is, without a doubt, conditioned by its ability to permeate all levels of the organization, to allow all those involved to achieve and maintain high standards of care.

The PNP 2020–2025, in the macro-objective 5.4 ‘Injuries and accidents at work, professional diseases’, identifies the territorial intervention model (Targeted Prevention Plan—PMP), as an operational tool for organizing support actions for the evaluation process of risks and organization of prevention and protection activities to improve company OSH performance.

The national and regional policy documents (guideline, vademecum, check-list) drawn up, starting from a specific need for protection, can allow us to extrapolate specific organisational, technological and structural solutions that are concretely implementable and transferable, for the

improvement of the state of health and safety of workers in the company. Taking into account a combined evaluation of evidence such as: the trend of accidents (including fatalities), the trend of notifications of occupational diseases, the evidence of non-compliance detected in the context of previous control activities, and the social characteristics-economic aspects of the regional production fabric, it is possible for each Region to identify some specific 'areas' in which to intervene (with a PMP) according to a proactive approach of the Local Health Authority Services responsible for protecting the health and safety of the worker, i.e., oriented towards assistance to businesses (i.e., employers) and workers for support, self-assessment and risk management, highlighting the opportunity and need for specific protections (solutions) not fully understood and applied by businesses.

The Targeted Prevention Plan represents an innovative control tool, based on the conduct of prevention processes aimed at improving general protection measures and not just verifying the application of the rule. The action of the Services for the protection of the health and safety of local health workers is oriented, in fact, towards support/assistance in the world of work, facilitating companies' access to knowledge, or rather to the evaluation and correct management of risks, in order to reach above all small and medium-sized enterprises, which make up a large part of the Italian productive fabric.

One of the most debated topics among prevention operators concerns the ability to propose effective assistance models aimed at SMEs. A recent report promoted by EU-OSHA (SESAME Project-EUOSHA, 2018) indicates the need to develop more experimental experiences on the application of assistance models to companies that include the verification of the effectiveness of the results achieved in terms of improvements in company performance, with special attention to the analysis of near miss as sentinel indicators of critical issues in the company.

National experiences relating to the implementation of targeted prevention plans have made it possible to evaluate the effectiveness, on the organizational side, of the synergies between institutions and companies and, on the technical side, in improving risk analysis, evaluation and management capabilities working. [17,18]. It is therefore essential to strengthen the support action for SMEs, to improve decision-making and application capabilities on preventive actions with particular attention to the process of reporting and analyzing near miss.

The improvement of regulatory applicability in small businesses can in fact be favored, in addition to simplifying legal documentary obligations, stimulating motivation to improve health and safety levels and the skills of employers and company RSPP by making self-analysis methodologies and tools available and evaluation, which provide the Employer with data and information useful for undertaking preventive actions, also from a cost-benefit perspective on company management choices.

In applying a management approach, in fact, the organization will have to provide the technical, economic and human resources necessary to ensure that the SGSL is established, implemented, maintained and continuously improved, in a dynamic cycle. It is therefore essential that it determines the skills of workers and ensures that they are able, based on the level of education and specific training acquired, to identify dangerous situations.

In such an articulated and complex context, it is essential to have tools that can be inserted naturally within one or more phases of an SGSL. Tools which, beyond specific needs, must allow for a methodology for the assessment and management of risks, allowing the critical issues to be quickly identified and the appropriate corrective measures to be developed.

In the management approach indicated by UNI ISO 45001:2018, the critical issues found in the process audits, integrated with the analysis of data relating to the causal risk factors of near miss and accidents (lagging indicators), allow the application of the improvement program in order to verify the process indicators (leading indicators) chosen in planning the objectives.

For the purposes of this document, process indicators are proactive measures that provide information on the effective performance of safety and health activities. They measure activities that may contribute to injuries, illnesses and other incidents and reveal potential problems in your safety and health program. In contrast, outcome indicators measure the occurrence and frequency of events

that have already occurred, such as the number or rate of injuries, illnesses and deaths. While outcome indicators can alert you to a critical issue in an area of your safety and health program or the existence of a hazard, process indicators allow you to take preventative action to address that critical element before it turns into an incident. A good management program uses process indicators to direct improvement actions and outcome indicators to measure their effectiveness. The evaluation of effectiveness through the monitoring process and performance measurement determines whether an institutional support intervention on health and safety has achieved the set objectives. The applied approach is oriented towards a pre-post evaluation of effectiveness, and is designed with the aim of collecting, through a set of qualitative-quantitative indicators, the data and information detectable during the carrying out of the various phases of the individual PMP and through result indicators the improvement actions implemented by the support system network and participating companies [18].

The detailed information that emerges from the detection of individual risk factors (pre and post event) aims to detect both the proximate causes (for example problems with equipment, incorrect operating methods, inadequately prepared work environments, etc.) and the root ones of the events in order to activate the consequent flows in the company processes for the management and containment of the risks that have emerged.

Starting from the knowledge provided by the Informo national surveillance systems and Mal Prof, developed in collaboration by Regions and Inail Dimeila, various tools have been created useful to companies for the in-depth analysis of the risk factors present in the workplace and for the management of the reporting procedure and analysis of near miss [19], in order to assist companies in managing health and safety and identify effective models of participatory prevention interventions implemented by institutions and social partners.

3. Discussion

The most effective orientation in dealing with risks in working environments is the management one, explained at different levels in the studies highlighted in this review, which integrates and systematises all the elements that contribute not only to the health and safety of workers, but also to well-being of the person at the center of the work activity.

The management approach to health and safety in the workplace and the broad vision referred to the corporate Total Work Health mentioned above can be related to the concept of “syndemic” according to Singer, understood by the author as a new approach to prevention policies based on the consideration of the elements of the social and economic context that can contribute to health emergencies relating to the employment context [20].

The interactions between accidents, occupational pathologies and economic, social and environmental factors can, in fact, also be described through a “syndemic approach”, which examines the health consequences of the aforementioned interactions in specific contexts.

Understanding the mechanisms of mutual influence of these factors is important for prevention, solutions and policies and requires an effort towards developing a general awareness of diseases and injuries, their groupings and synergies in biological, ecological and social contexts towards broad-based public health policy initiatives with prevention objectives.

To achieve this ambitious objective, an approach to health and safety is necessary that goes beyond the mere regulatory prescription and that contemplates the organizational and technical context in which each working reality is immersed, in a holistic approach that integrates the different aspects of health and well-being of each individual.

For this purpose, the commitment of the institutions and social partners is necessary who can, by working in a network, support companies in a process of continuous improvement of health and safety conditions in the workplace, in which the various entities involved collaborate through an exchange reciprocal.

4. Conclusions and Future Direction

Given the qualifying elements of the management approach analyzed in this review, some critical elements still remain, which at the same time also represent an opportunity for in-depth analysis and greater knowledge.

As regards the institutional level, for example, some fundamental questions remain open: more effective coordination of the bodies involved to avoid an overlap of roles, functions and activities; the integration of information into complex systems and therefore the consolidation of surveillance systems as a source of information on accidents and occupational diseases; the development of tools and methods for the assessment and management of risks tailored to specific company situations; the planning of interventions in relation to the subsequent evaluation of effectiveness also through monitoring campaigns.

At company level, some focal points can further evolve, in terms of: greater sensitivity of the leadership for defining the most appropriate organizational choices; clear awareness of workers regarding the risks and measures to combat them; real participation of all company subjects, including in the reporting of near miss, for the purpose of more effective and timely prevention.

The hope is to see ever greater integration between the aforementioned institutional and corporate levels, to aspire to continuous improvement in health and safety conditions and to aim for the complete well-being of the worker.

To plan prevention policies and interventions, the recent TWH approach allows us to adequately consider the synergy between risks related to work, the environment, lifestyles and personal health conditions.

The purpose of the TWH is, in fact, to pursue a working environment free from risks and dangers that could compromise the safety of workers, and, at the same time, to develop policies, programs and practices for the total well-being of workers [21].

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