PSYCHOSOCIAL RISKS: WORK-RELATED STRESS RISK ASSESSMENT IN ISTAT AS A GOAL FOR THE WORKERS' WELL-BEING[1]

Michele Camisasca, Eva Pietrantonio, Rosario Magro, Alessandro Arborea, Anna Fabiani, Claudio Giordano, Marcella Pietrantonio, Giacomo Guerriero, Adeodato Sparano

1. Introduction

Psychosocial risks represent an emerging challenge in the field of health and safety at work, as they have significant repercussions on the health of individuals, companies and national economies. (Iavicoli *et al.*, 2009). Technological evolution, digitization, increased competitiveness and economic instability are some of the factors that contribute to a stressful work environment[2]. It is essential to face these factors to ensure the mental health and well-being of workers, as well as to promote greater productivity and organizational sustainability. The psychosocial risk factors, and in particular the work-related stress, are issues that impact transversally in all organizations and are part of those aspects that every organization that want to operate in a sustainable way have to monitor carefully. Work-related stress and psychosocial risks, in fact, are linked to at least two of the objectives[3] of the Agenda ONU 2030 that the Italian Alliance for Sustainable Development carries forward in Italy. In particular, Goal 3 related to the themes of "*Good Health and Well-Being*" and Goal 8 related to "*Decent Work and Economic Growth*" with the sub-objective of creating healthy and safe work environments in all contexts. Work-related stress is defined by the European Agency for Safety and Health at Work[4] as "*the perception of imbalance felt by the worker when the demands of the work environment exceed individual capacities to cope with them*". The risks assessment for the health and safety of workers is carried out in accordance with the requirements of current legislation, in particular of art. 28 of Legislative Decree 81/2008 and subsequent amendments[5]. For the work-related stress risk assessment, the European Framework Agreement contents and the technical indications approved by the Permanent

[1] This article is the result of the common contribution of all and, therefore, the individual contribution is considered equal and equivalent to that of the other co-authors.
[2] European Agency for Safety and Health at Work, 2000.
[3] 17 Goals to Transform Our World, https://www.un.org/sustainabledevelopment/
[4] European Agency for Safety and Health at Work, 2002.
[5] ITALIAN LEGISLATIVE DECREE n. 81, 2008 April 9.

Consultative Commission for Occupational Health and Safety must be taken into consideration. The National Institute of Statistics - Istat, public administrations, research institutes and, more generally, companies pay great attention to the matter of organizational well-being. In compliance with the current legislation, these subjects are required to carry out an assessment of work-related stress risk in order to ensure the full psychophysical and relational (social) well-being of all workers who are part of the organization, as well as any other risk for health and safety at work (Camisasca *et al.*, 2023).

The purpose of the paper is not only to deal with the work-related stress risk assessment in ISTAT workplaces and to identify prevention and protection measures, but also to analyse and identify improvement measures for the entire organization and the individual structures to create healthy, safe and sustainable work environments, even in low-risk conditions, through a bottom-up process that strongly involves the workers in an original and innovative way.

2. Materials and methods

The Department of Medicine, Epidemiology, Occupational and Environmental Hygiene developed and published in May 2011 on a specific INAIL online platform, a Methodology for the assessment and management of work-related stress risk (Di Tecco *et al.*, 2018). This Methodology was modified and further developed after testing it on an extended sample. Companies can use it to carry out their risk assessment in compliance with the Legislative Decree 81/2008 and subsequent amendments. The method offers validated tools and specific resources that companies can use following a sustainable and integrated approach, articulated in phases, which involves the prevention figures and the workers. The "objective" INAIL methodology adopted to carry out the preliminary assessment is a scientifically validated methodology that has been widely used for several years in Istat, with an analytical and structured methodological process. The approach to the objective preliminary assessment is implemented by using "checklists", and consists essentially of two moments:

a) the analysis of "sentinel events" ("e.g. work-related injuries, sick leave absences, turnover, legal actions / disciplinary sanctions, reports from the Occupational Physician, specific and frequent formal complaints from workers");
b) the more specific analysis of content indicators ("e.g. work environment and work equipment; work load and work pace; working hours and shifts; correspondence between workers' skills and required professional requirements") and of context indicators ("e.g. role within the organization;

decision-making and work control; interpersonal conflicts at work; career path; communication (e.g. uncertainty about required performance)"). The Employer has the obligation to "hear" and therefore involve the workers and/or the Workers' Safety Representatives choosing procedures subject to "the adopted evaluation methodology".

The INAIL methodology provides for the risk calculation a weighted score on the different work areas with different characteristics, from which we can obtain the individual contributions of the three areas by adding the three areas of Sentinel Events, Work Content and Context Areas. The results obtained refer to the risk level shown in Figure 1, which has been updated and reweighted by INAIL over the years, revalued and standardized on the basis of the experience of thousands of companies of the INAIL sample.

Figure 1 – *The scores obtained in the 3 Areas are added together (left) to make a total risk score, which is then used to verify the positioning of the Homogeneous Group in the Table of Risk Levels (right).*

Final checklist score	Risk bands					
	Irrelevant		Medium		High	
	FROM	TO	FROM	TO	FROM	TO
Sentinel Events Area Score	0		6		16	
Content Area Score	0	23	24	43	44	100
Context Area Score	0	37	38	53	54	100
Final Score	0	58	59	90	91	216

FROM	TO	RISK LEVEL	NOTES
0	58	IRRELEVANT	The analysis of the indicators **does not highlight** particular organizational conditions that can determine **the presence of work-related stress**. The result is reported in the Risk Assessment Document and the periodic monitoring plan is carried out.
59	90	MEDIUM RISK	The analysis of the indicators **highlights** organizational conditions that can determine **the presence of work-related stress**; Corrective action must be taken and **the effectiveness of the intervention must then be verified**.
91	216	HIGH RISK	The analysis of the indicators **shows a HIGH level of work-related stress risk**, such as to require the use of **immediate corrective actions**.

Source: INAIL, (Di Tecco et al., 2018).

2.1. Application of the "objective" INAIL methodology to the ISTAT case study

The preliminary "objective" methodology proposed by INAIL was used in ISTAT to carry out the survey, which began in March 2022 and continued until after September 2022 with the aim of updating the work-related stress risk assessment. The preliminary assessment included the adoption of a work plan divided into progressive phases:

1. Definition of the organizational partition
2. Definition of the survey plan
3. Definition of sentinel events
4. Compilation of checklist

The phases of the work plan involved the Evaluation Group, established by the Employer and made up of the Prevention and Protection Service, the Occupational

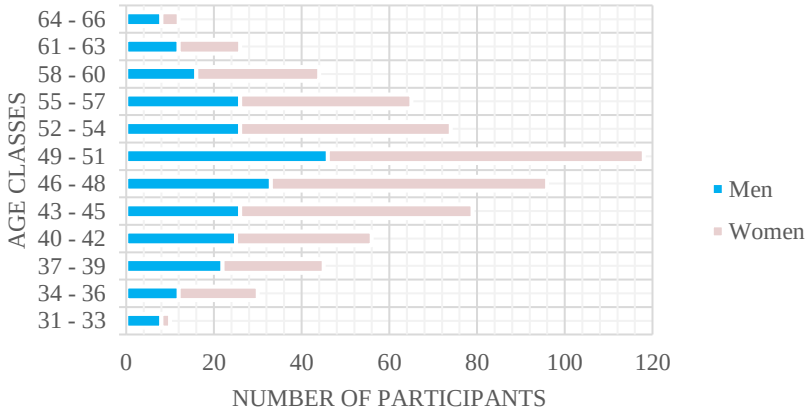
Physician, the Workers' Safety Representatives and the personnel of the Human Resources Directorate, with the aim of realizing all the activities of the work-related stress risk assessment. The Evaluation Group operated according to the work plan, including a design phase and an operational phase, in which the entire organization was divided into homogeneous organizational partitions characterized by the same organizational parameters that, in Istat, are services and staff structures. After the definition of the survey plan, the actual survey phase was carried out and all the indicators provided by the INAIL checklist were acquired objectively. Some of the indicators are objectively described in the official documentation of the Institute, others indicators, relating to sentinel events, derive from Human Resources Directorate and finally, the most important part relating to work context and content indicators derives directly from workers and Workers' Safety Representatives, through numerous collective interviews conducted on site with the compilation of checklists for each of the identified organizational partitions with strong confrontation between workers. The entire process of the work-related stress risk assessment was accompanied by moments of communication and information / training of personnel to encourage their involvement through official communications and information actions published on the news Intranet page, and specific mail addressed to individual structures (Directorates).

2.2. Sample composition

The workers involved in the sample of the work-related stress survey, randomly extracted, were 655 (~ 45%) out of a total of about 1470 workers of the Roman offices and distributed among 57 homogeneous organizational partitions. In order to be considered more significant for the purposes of the survey, it was chosen that the organizational partition should be identified by homogeneous groups with more than 4 workers. Below, we will provide an accurate analysis of the sample of workers who participated in the work-related stress survey. As shown in the diagram on the left, the sample consisted of 40% of Men and the remaining 60% of Women with well-represented organizational partitions and in line with the overall distribution of employees where the female population exceeds the male one. The diagram on the right, instead, shows the distribution of the sample that participated in the survey. The adherence was very high, 75% of those summoned participated spontaneously (without further reminders), massively and actively aware of the importance of the survey. Figure 2 shows the distribution of the participants divided by gender and age classes. It can be seen that in almost all age classes there is a female prevalence except for the two small classes of distribution at the extremes of the diagram, 31-33 and 64-66 (each 2%), where there is a less significant male prevalence on a small

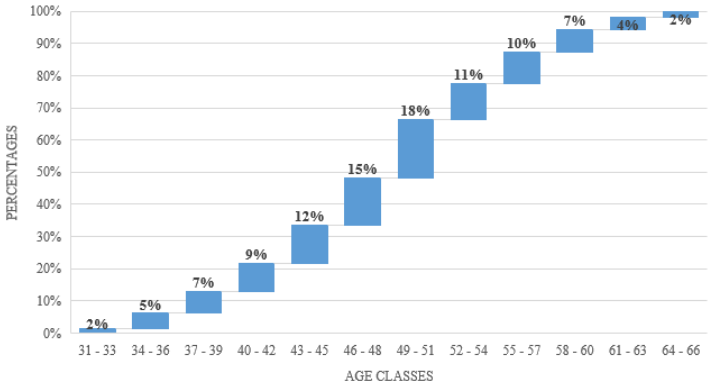
sample. The intermediate age class is still prevalent for both genders as can be seen in Figure 3, the prevalent age group is 49-51 (18%), followed by age classes 46-48 (15%) and 43-45 (12%) and so on.

Figure 2 – *Distribution of the participating sample by gender and age classes (Absolute Values).*



Source: Data processing of the sample conducted by the Istat, 2022.

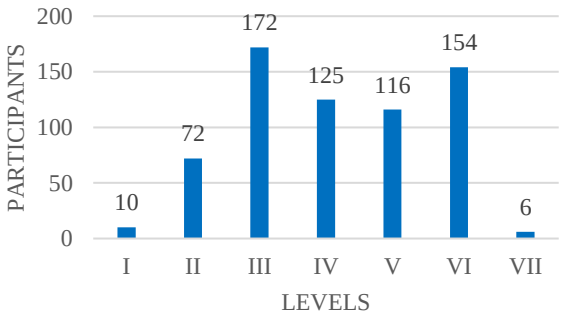
Figure 3 – *Distribution of Work-Related Stress survey participants by age classe (Values %).*



Source: Data processing of the sample conducted by the Istat, 2022.

Figure 4 shows, in absolute values, the distribution of participants in the Work-related Stress survey divided by professional level; while Figure 5 shows the distribution of percentage values of participants per level on the total of the sample.

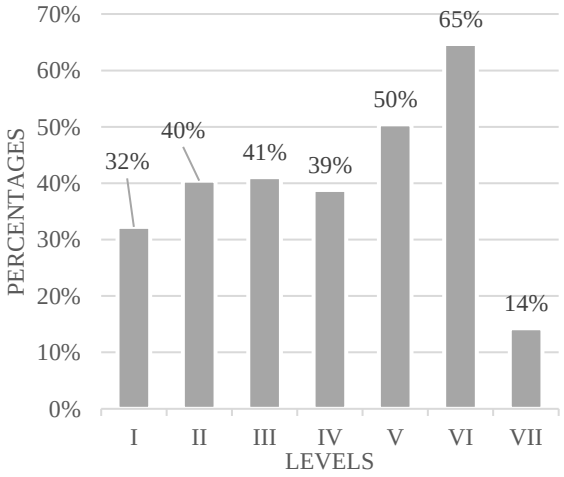
Figure 4 – *Distribution of the participating sample by gender and age groups (Absolute Values).*



Source: Data processing of the sample conducted by the Istat, 2022

The most represented levels in absolute value are III followed by VI and IV and so on. For almost all levels, in percentage terms, participation is above 40%, with the exception of those (levels I and VII) where the total number of workers is very small. The percentage values of the sample of workers on the total per level are homogeneous for the different levels of workers summoned as shown in Figure 5. The sample ensured a good representativeness at all levels and a high participation in the survey.

Figure 5 – *Distribution of Work-Related Stress survey participants by age class (Percentage Values).*

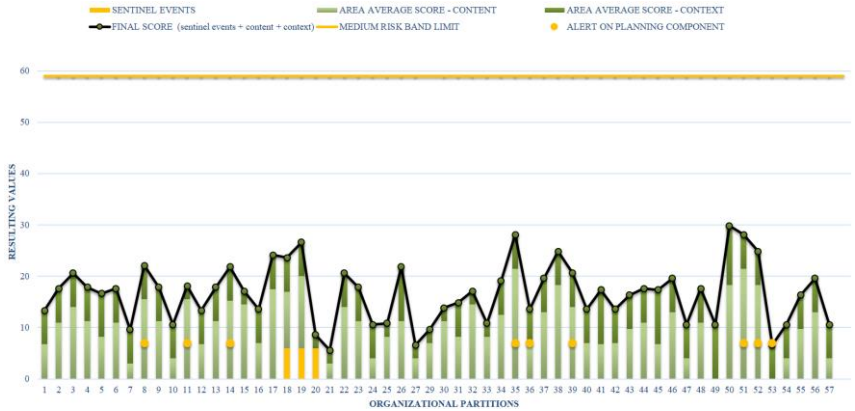


Source: Data processing of the sample conducted by the Istat, 2022.

3. Results

Through the objective INAIL methodology, it was possible to assess indicators derived from sentinel events, from work content and context factors of the INAIL methodology on 655 workers and 57 homogeneous organizational partitions. Consequently, for each organizational partition shown on the x-axis in Figure 6, the risk level was calculated by summing the scores of the three areas.

Figure 6 – *Representation of overall scores of the work-related stress assessment in Istat.*



Source: Data processing of the sample conducted by the Istat, 2022.

The resulting values show the weight of the distribution of the work content, work context, and sentinel events areas. The evaluation results show an overall irrelevant risk level for all the Institute partitions, in line with the previous surveys well below the critical threshold (set at 58 - the Medium risk band limit). For higher values, with a Medium Risk result, the Legislation would have required corrective actions and the adoption of mandatory focused measures. However, a detailed analysis of Figure 6 provides useful and interesting insights, as indicated by the Yellow dots, which highlight the presence of alerts that contribute to a greater risk factor, such as in the example within the work content area. In many cases, in fact, the significant "subsections" of interest may have provided indicators that carried greater weight respect to the risk, as in the case of Task Planning. The Sentinel Events carried significant weight only in three partition (18, 19, and 20), however the overall value of the assessment remained at an irrelevant risk level. Even in the worst cases, within organizational partitions with higher levels, the values remained well below the threshold of Medium risk. It is noteworthy that, on average, the work content area is usually higher than the work context area. Furthermore, the frequency analysis

(Table 1) is an additional evaluation parameter adopted by ISTAT completely original and innovative because it is not present in the INAIL reference methodology.

Table 1 – *The checklist indicators and the corresponding frequencies from which it is possible to identify transversal improvement actions to be adopted for the entire Institute.*

Question No.	Indicator	Absolute Value	Percentage
53	Systems to evaluate managers/heads in relation to the management of their staff	57	100%
19	Adequacy of the human resources necessary for the performance of the tasks	49	86%
55	Work depends on tasks previously performed by others	47	82%
17	Performing the task requires performing multiple tasks at the same time	26	46%
29	Regular working time of more than 8 hours	24	42%
21	Frequent and unpredictable variations in the amount of work	24	42%
14	Work is frequently interrupted	11	19%
30	Overtime is routinely done	9	16%
34	Shift work	8	14%
18	Clear definition of tasks	4	7%
58	Tools are set up for the decisive participation of workers in company choices	4	7%
43	Meetings between managers and workers	1	2%
15	Adequacy of the instrumental resources necessary to carry out the tasks	1	2%
50	Overlap of different roles among the same people (shift manager/supervisor/quality manager...)	1	2%

Source: Data processing of the sample conducted by the Istat, 2022. Data on a representative sample of 57 total homogeneous partitions of the survey.

This new parameter involves an analysis of the indicators that are most represented in terms of frequency. The purpose of this analysis was to identify improvement measures applicable to the entire organization. From the analysis of the transverse improvement actions frequency, we can highlight that the evaluation of managers is a comprehensive theme, while the resource adequacy is a critical issue. The lack of resources emerged prominently in the assessment and has become more intense; for this reason, a strong recruitment activity is currently underway, in line with the rest of the Public Administration. Additionally, the theme of work dependence on others requires a strong synergy and coordination of activities because, understandably, processes that rely on upstream and downstream operators pose a significant challenge. The analysis of the indicators frequency has allowed

the identification of improvement proposals not foreseen in the INAIL methodology, focusing on issues related to planning, resources, and professional growth. The improvement actions, shown in Table 2, stem directly from the frequency analysis and are very interesting because they represent beneficial actions for the entire organization, aimed at a cross-functional improvement and a continuous pursuit of organizational well-being for all Istat workers.

Table 2 – *Checklist indicators and corresponding transverse improvement actions to be adopted for the entire Institute.*

Indicators	Improvement actions
Adequacy of the human resources necessary for the performance of the tasks	▪ Empower human resources.
Work depends on tasks previously performed by others	▪ Respect and improve planning and timing; ▪ Ensure continuity and punctuality in the delivery of data.
Performing the task requires performing multiple tasks at the same time	▪ Improve the planning of secretarial activities; ▪ Prioritize tasks and increase resources.
Regular working time of more than 8 hours	▪ Enhance the number of resources and the efficiency of work processes.
Frequent and unpredictable variations in the amount of work	▪ Strengthen organizational meetings on important issues.
Work is frequently interrupted	▪ Make available hours for help desk activities.
Overtime is routinely done	▪ Strengthen the resources of the secretariat.
Clear definition of tasks	▪ Explain the tasks in the structure.
Shift work	▪ Empower human resources.
Meetings between managers and workers	▪ Increase structured and regular meetings at apical level.
Tools are set up for the decisive participation of workers in company choices	▪ Promote preparatory meetings with the group to which you belong.
Criteria for career advancement are defined	▪ Enhancement of the criteria of merit and career progression; ▪ standardization of procedures and criteria that are transparent and stable over time; ▪ Expand the number of open competitions and reduce their completion time.
The presence of a training plan for the professional growth of workers	▪ Enhance the offer.

Source: Data processing of the sample conducted by the Istat, 2022.

The improvement measures suggested by the workers themselves can be implemented by all organizational partitions regardless of having obtained irrelevant levels of risk. Among the improvement actions identified as applicable to the entire structure, we find: the establishment of objective criteria for career development, the strengthening of human resources, the enhancement of specific training, the improvement of task planning with adherence to timelines, the definition and simplification of procedures and avoiding unnecessary overtime. Other specific improvement actions have emerged in individual organizational units or among homogeneous groups of workers, and each individual Department / Directorate / Service can voluntarily adopt them. These actions are aimed at researching continuously the physical, mental, and social well-being of all workers within the organization. The identified improvement actions have become the primary goals for the Institute's Management, they have been discussed and shared through focused meetings between the Management and the Employer, and they are included in the three-year improvement plan for 2023-2025.

4. Final considerations and conclusions

The final considerations resulting from the evaluation of work-related stress risk have highlighted an irrelevant risk level for all partitions of the Institute. This indicates that the prevention and protection measures implemented have been effective in ensuring a healthy and safe work environment for employees, in line with previous surveys. However, the analysis of indicators has allowed the identification of additional improvement proposals, particularly regarding the activity planning, the resources allocation and the professional growth opportunities. These suggestions can further optimize organizational policies and practices in order to promote employees' well-being and foster a sustainable company culture.

In conclusion, the evaluation of work-related stress risk and the adoption of preventive measures are fundamental to ensure a healthy, safe and sustainable work environment. The bottom-up approach used in this study, based on the INAIL methodology, has allowed an accurate assessment of risk factors present in different Istat organizational partitions and the identification of specific improvement proposals. All the process has highlighted the importance of an active worker involvement in managing psychosocial risks and in creating sustainable organizations.

References

IAVICOLI S, NATALI E, GHELLI M, CAFIERO V, MIRABILE M, PERSECHINO B, 2009. European experiences on psychosocial factor risks. *G Ital Med Lav Ergon*, Vol.31, No.3, pp. 265-99.

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2000. Report - Research on work-related stress. Luxembourg. *EU-OSHA.*

EUROPEAN AGENCY FOR SAFETY AND HEALTH AT WORK, 2002. Factsheet 22 - Work-related stress, Factsheet 22 - Work-related stress — Safety and Health at Work - *EU-OSHA*, Belgium, http://agency.osha.eu.int.

ITALIAN LEGISLATIVE DECREE of 9 April 2008 n. 81. Text coordinated concerning the protection of health and safety in the workplace.

CAMISASCA M, PIETRANTONIO E, MAGRO R, ARBOREA A, FABIANI A, GIORDANO C, PIETRANTONIO M, SPARANO A, 2023. A pandemic health risk management model for the protection of workers: the ISTAT experience. *The Italian Journal of Economic, Demographic and Statistical Studies. RIEDS.* Vol. LXXVII, No.1, pp. 53-64.

DI TECCO C, GHELLI M, IAVICOLI S, PERSECHINO B, RONCHETTI M, 2018. The methodology for the assessment and management of Work-Related Stress risk. Handbook for companies in compliance with Legislative Decree 81/08 and subsequent integrations and modifications. *Department of occupational and environmental medicine, epidemiology and hygiene, INAIL* https://www.inail.it/cs/internet/docs/alg-the-methodology-for-the-assessment.pdf

---

Michele CAMISASCA, D.G. Istat, michele.camisasca@istat.it
Eva PIETRANTONIO, Istat, epietrantonio@istat.it
Rosario MAGRO, Istat, rosario.magro@istat.it
Alessandro ARBOREA, Istat, arborea@istat.it
Anna FABIANI, Istat, anfabian@istat.it
Claudio GIORDANO, Istat, claudio.giordano@istat.it
Marcella PIETRANTONIO, Istat, pietrantonio@istat.it
Giacomo GUERRIERO, Istat, spp@istat.it
Adeodato SPARANO, Istat, spp@istat.it.