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CONTENT

STRESS MANAGEMENT IN SMALL AND MEDIUM-SIZED ENTERPRISES

Abstract: The consequences of work-related stress (WRS) impact not only the individual but also the workplace, the economy, and society. WRS deals with the stigmatization of topics where stress is perceived as a by-product of responsible work. Stress management interventions should be implemented in enterprises on the organizational and individual levels. The main aim of this study is to summarize the current knowledge about the implementation of stress management in small and medium-sized enterprises and propose desirable recommendations for enterprises that want to incorporate stress management into their internal processes. The research was conducted in 194 small and medium-sized manufacturing enterprises in 2022 by an electronic structured questionnaire. Knowledge and implementation of stress management, interventions, evaluation processes, work-related stressors, and evidence of work-related stress were subject to investigation. The results show that 86.6% of enterprises implemented at least one stress-management intervention in the past three years. Significantly exceeded interventions at the organizational-level. Enterprises that implement stress management interventions evaluate them in 43.5% of cases. Only 8.2% of them confirmed performing an analysis of the costs of work-related stress.

Keywords: Workplace, Work-related stress, Stress management, Stress management interventions, Small and Medium-Sized Enterprises

JEL Classification: D21, M14, M54

1 INTRODUCTION

Stress management is examined in current studies primarily from the point of view of the consequences of work-related stress on the individual and society, but little attention is paid to the actual implementation in the business environment, especially in small and medium-sized enterprises (SMEs) (Molek-Winiarska, 2016; Pavlista et al., 2021). SMEs generally lack the financial resources, knowledge, and access to information to have developed internal professional HR functions and interventions to improve employee health at work (Kelloway and Cooper, 2011).

Workplaces are constantly evolving under the influence of changes in economic and social conditions. The negative effect of adverse working conditions and work-related stress on the health and performance of a worker has been proven in previous research (e.g., Tarafdar et al., 2010; Steptoe, Kivimäki, 2013; Sari et al., 2021). Adverse impacts on the performance and efficiency of organizations include decreased productivity, absenteeism, presenteeism, increased sick leave, turnover, degraded quality of products and services, poorer external relationship and conflict, lousy publicity, accidents, etc. (Ongori, Agolla, 2008; Baheshtifar, Nazarian, 2013; Valenti et al., 2021). Measures to be taken include stress management interventions on the organizational and individual levels (Riva, Chinyio, 2018). Organizational-level interventions include systematic changes to administrative processes aimed at the entire organization. Individual-level interventions target helping the employee gain knowledge and skills to recognize, manage and reduce work-related stress (Holman et al., 2018).

The reason for conducting this research is a limited amount of research examines stress from a business perspective and analyzes the implementation of stress management in a business environment, especially in the Czech environment. Furthermore, it is necessary to raise awareness of work-related stress and its management in practice and remove the stigmatization of the topic, where stress is perceived as a by-product of responsible work.

The subsequent questions guided research:

1) Do enterprises implement the principle of stress management? Which type of intervention is more often used?

2) Whether/how do enterprises evaluate the used stress management interventions?

3) Are there distinctive characteristics of enterprises that implement the principles of stress management?

2 RESEARCH BACKGROUND

2.1 Work-related stress

2.1.1 Theories and models of work-related stress

There are various definitions of work-related stress (also known as occupational stress or job stress) in the scientific literature. Finding a unitary definition of work-related stress is challenging due to the complex concept (Akanji, 2013; Al Thawadi, 2013). Molek-Winiarska (2020) defines it as employees' reaction to undue demands that exceed their knowledge, skills, or abilities at the workplace. Yan and Xie (2016) describe this term as a series of physiological and behavioral responses due to the continuing effects of one or more sources of stress on individuals in the workplace. Authors Lloyd and Campion (2017) and Harshana (2018) describe work-related stress as employees' unwanted reactions to severe pressures or demands. Leka et al. (2003) add that work-related stress calls into question the ability of employees to manage the perceptions of external demands on their work performance. Based on existing theories for defining work-related stress, it can be considered the product of the relationship between individuals and their work environment (Cox et al., 2000). It negatively affects an employee's physical and psychological well-being, job satisfaction, motivation, organizational commitment, and private and family life (Jacobs et al., 2018). As Molek-Winiarska (2016) states, "*regardless of various concepts that describe work-related stress as a relationship between employees' subjective perceptions and their immediate environment, the analysis of causes of stress and its short- and long-term effects must also be acknowledged*."

The foundations of the investigation of work-related stress were laid by the authors Kahn et al. (1964), who examined work conditions conducive to satisfaction and the nature and prevalence of pressures arising from perceptions of external demands (Mucci et al., 2015). Among the authors who have made a significant contribution to cognition of research on work-related stress are Cooper and Payne (1978). These pioneers introduced the original overviews for understanding work-related stress by attending to both blue-collar and white-collar stressors as a cause of stress (Quick, Henderson, 2016). The significant authors who continued their research and contributed extensively to the study of work-related stress were Beehr and Newman (1978), French et al. (1974), and Cooper (1998), who claimed that workers could not cope with their job requirements, which quickly led to work-related stress. The influence of rapid changes in modern technologies on the emergence of work-related stress

was mainly investigated by the authors Griffiths et al. (2006), and later Tarafdar et al. (2010), Harshana (2018), Malik et al. (2021), etc.

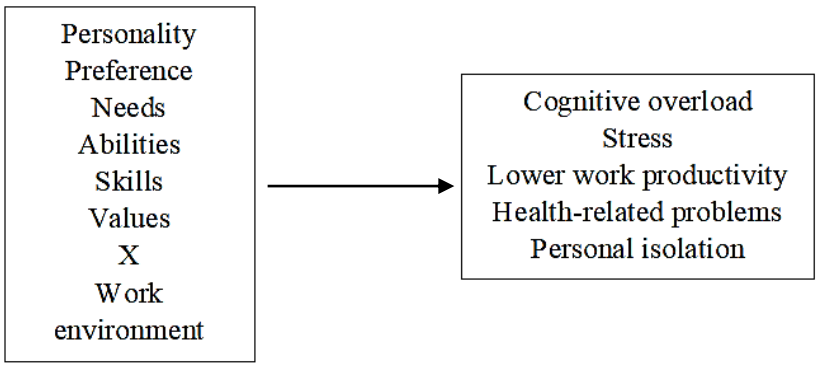
According to Schmidt et al. (2019) and Li (2020), various models of work-related stress have been developed due to the inconsistent interpretation of issues in the literature and research. Four significant models explain work-related stress:

- Person-Environment Fit Model;
- Job-Demand-Control Model;
- Effort-Reward-Imbalance Model;
- Transactional Model.

Person-Environment Fit Model

The Person-Environment Fit Model (also known as the P-E fit model) has recently become commonly accepted in stress management research (Edwards, Copper, 2013). According to this model, as defined by French et al. (1982), work-related stress arises as the discrepancy between the characteristics of the employee (e.g., aptitude, skills, abilities, values, resources) and the necessities of their work environment (Edwards, Copper, 2013; Li, 2020). This lack of correspondence led to lower work productivity, health-related problems, personal isolation, etc. (French et al., 1982; Li, 2020). As mentioned by Edwards and Copper (2013), this concept forms the core of many current theories of work-related stress.

Fig. 1 Person-Environment Fit Model



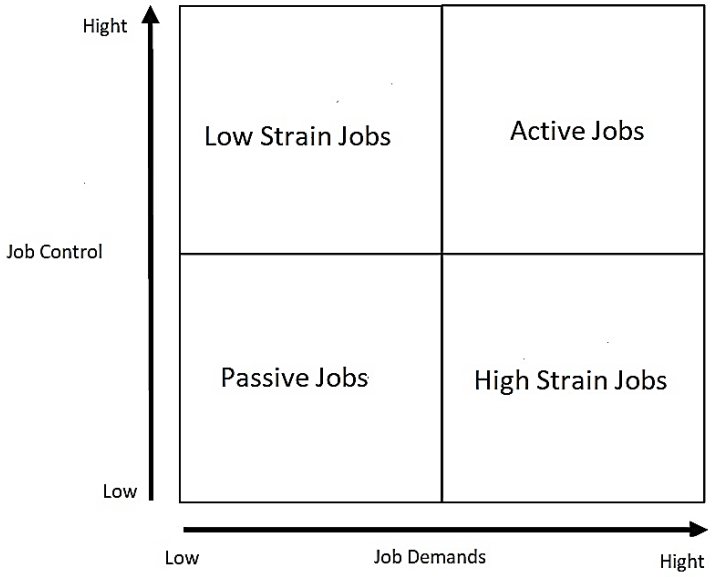
Source: Adapted from Lee et al. (2008); Misra et al. (2020).

Job-Demand-Control Model

The Job-Demand-Control model (also known as the JDC model or Demand Control Support model) is a well-known theory widely used as a guideline for work-related stress issues (Ganster, Rosen, 2013). This model, as defined by Karasek in 1979, explains how work

characteristics and demands (e.g., heavy workload, role ambiguity, and job-related strain) influence employees' psychological well-being and lead to stress. According to this model, employees' autonomy, control, time management, and decision latitude can manage work-related stress (Karasek, Theorell, 1990).

Fig. 2 JDC Model

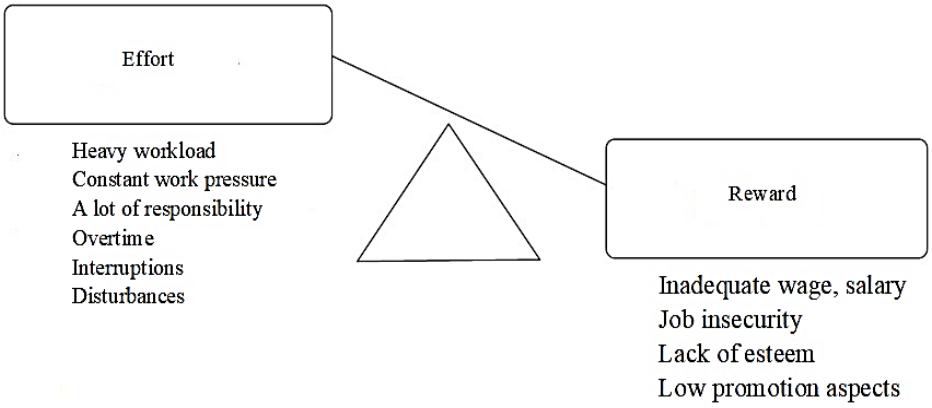


Source: Adapted from Larsson et al. (2019).

Effort-Reward-Imbalance Model

The Effort-Reward-Imbalance Model explains the emergence of stress as the failed balance between employees' high efforts at the workplace and unfair rewards (e.g., salary, promotion prospects, job security, esteem, recognition) (Siegrist, 2017). In this model, there are describe two basic types of employees' efforts - intrinsic and extrinsic efforts. The intrinsic effort includes the employee's motivation level and his need for control. It is sometimes also referred to as over-commitment. Extrinsic effort deals with job demands (Sohail, Rehman, 2015). Gilbert-Ouimet et al. (2011) mentioned that "*workers are in a state of detrimental imbalance when high extrinsic efforts are accompanied by low rewards and are thus more susceptible to health problems.*"

Fig. 3 Effort-Reward-Imbalance Model

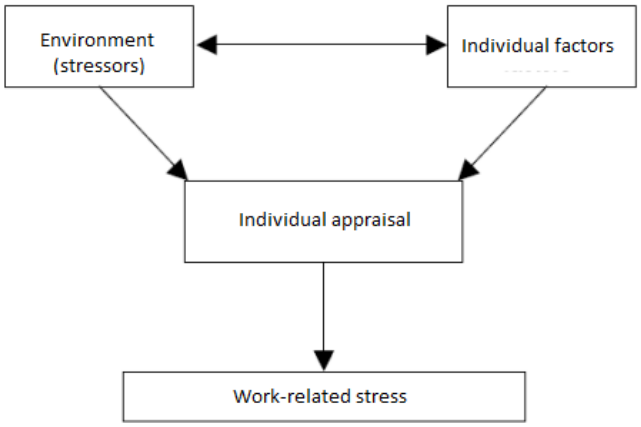


Source: Adapted from Söderberg (2014).

Transactional Model

The transactional model (defined by Lazarus in 1966) represents one of the most famous models of work-related stress (Li, 2020). The model's central tenet is stress exists neither in the person nor the work environment but rather in the interaction between them (Ganster, Rosen, 2013). As noted by Raghavan et al. (2001), the model describes assessing work-related stress factors by employees as stressful when the job demands exceed the coping resources. There are two basic appraisal processes (primary and secondary), whereby employees cognitively process information about potential work-related stressors and coping them (Ganster, Rosen, 2013).

Fig. 4 Transactional Model



Source: Adapted from Li (2020).

2.1.2 Causes of work-related stress

Michie (2002) mentioned that the workplace represents the source of demands and pressures that may result in work-related stress and structural and social resources to manage. Within the framework of work-related stress research, attention is paid to the issue of sources of stress in the workplace (Li, 2020). Pioneers in stress management research, Lazarus and Cohen (1977), describe stressors as environmental factors that upset the balance, thus affecting physical and psychological well-being, and requiring action to restore balance. According to Panigrahi et al. (2016), causes of work-related stress can be divided into two categories based upon the source of the cause:

- Internal causes - originated from within the employee and his perception (e.g., mindset, way of thinking, negative self-talk, unrealistic expectations, etc.).
- External causes - external factors in the workplace (e.g., managerial styles, overload, job insecurity, etc.).

Table 1 shows an overview of the main work-related stressors according to individual authors.

Table 1 Overview of stressors in the workplace

Authors	Findings	Example of stressors
Burman and Goswami (2018)	Reveal significant work stressors according to a systematic literature review of work stress from 1993 to 2017.	Fewer opportunities for career growth, lack of resources and opportunities to improve job skills, job insecurity, long working hours, low income, inadequate resources to complete the allotted task, workload, role conflict, role ambiguity, job dissatisfaction, poor individual values, and role ambiguity.
Bamber (2011)	Three main areas of the source of stress: individual factors (genetic/inherited factors, acquired/learned factors, personality/trait factors), factors in the work environment (job demands, physical working conditions, control, support, relationships, role, change, pay and career prospects), home-work interface.	Interpersonal conflict within differences in intellectual ability, temperaments and sex differences, time pressures, excessive responsibility, unachievable targets or deadlines, home conflict, and work-life imbalance.
Leka et al. (2003)	Divided the work-related stressors into two categories: factors related to work context (career development, role in the	Content: lack of variety, aversive tasks, time pressure, inflexible working

Authors	Findings	Example of stressors
	organization, interpersonal relationship, organizational culture, home-work interface) and factors related to work content (job content, workload, work pace, working hours, participation and control).	schedules, lack of participation in decision making, lack of control. Context: job insecurity, piece rate of payments schemes, role conflict, unsupportive supervision, bullying, harassment, violence, poor leadership, conflicting demands.
Cartwright and Cooper (1997)	Divided the work-related stressors into six main categories: stressors intrinsic to the job itself, roles in the organization, social relationships in the workplace, career development, organizational factors, and the work-home interface.	Work environment, workload, technologies, risks or hazards, role ambiguity, role conflict, role responsibilities, role overload, relationships in the workplace, job insecurity, organizational policies, lack of effective participation in decision-making processes, and work-life imbalance.
Kahn et al. (1964)	First comprehensive research on work-related stressors.	Role conflict, role ambiguity, and role overload.

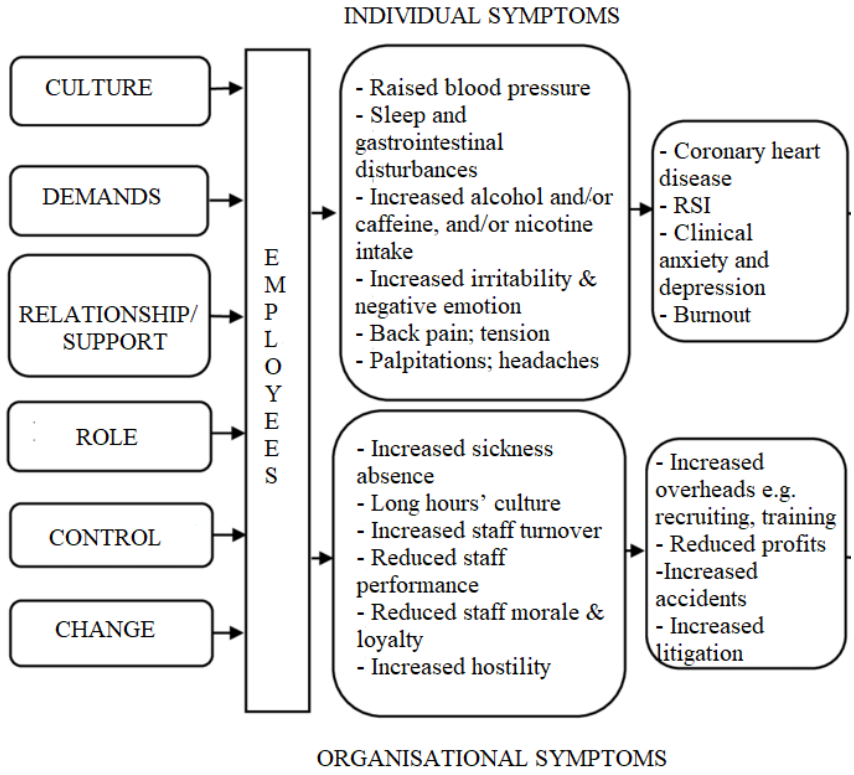
Source: Author, based on the literature.

As mentioned by Richardson and Rothstein (2008), the negative effects of these stressors may attempt stress management at the organizational level.

2.1.3 Effects of work-related stress on organizations

As Ongori and Agolla (2008), and Molek-Winiarska (2016) point out, managers in various organizations are concerned about the impact of work-related stress and thinking about what interventions need to be implemented to minimize the costs of work-related stress (in more detail in chapter 2.1.4). Work-related stress can adversely affect an employee's physical and psychological well-being and relationship with the organization, manifesting as job satisfaction, motivation to work, or organizational commitment (Jacobs et al., 2018). In practice, one can come across the opinion that work-related stress is healthy and motivates employees to perform better. But there is a difference between pressure and stress. As mentioned by Jacobs et al. (2018), pressure can be a motivating factor for better performance and is often essential in a workplace. But when this pressure is excessive, work-related stress occurs with all its negative consequences for both employees and employers. The relationship between these main stress-related hazards in the workplace and employee highlights the model of work stress by Palmer (2001).

Fig. 5 Model of work stress by Palmer



Source: Adapted from Palmer et al. (2003).

Author Baheshtifar and Nazarian (2013) divide the consequences of work-related stress on the organization level into two major subgroups:

- Organizational symptoms: decrease in productivity and performance, absenteeism, presenteeism, degraded quality of products and services, poorer external relationship and conflict (e.g., with clients, suppliers, partners, authorities, customers), lousy publicity, poorer corporate image, disruption to production, high accident and mistakes rates, high turnover, sick leave, accidents, etc. (Ongori, Agolla, 2008; Baheshtifar, Nazarian, 2013; Valenti et al., 2021).
- Organizational costs – detailed in chapter 2.1.4.

Jacobs (2019) mentioned that if the organization is to be successful and competitive, the company's management must solve the occupational stress issue at the organizational level. Newton and Theo (2014) add, "*it is imperative that organizational leaders and managers understand the occupational stress process and integrate this knowledge into their strategic and operational decision making.*" Authors Baheshtifar and Nazarian (2013) even state that implementation of stress management is management's responsibility through the following measures: a) organize stress management focuses on the different employees at all hierarchical

levels, b) redesign jobs, which are taxing to employees' sources, c) eliminate the role ambiguity due to role clarification, and d) support effective interpersonal communication to deal with work-related stress.

2.1.4 Costs of work-related stress

Work-related stress is recognized as a problem that has a negative economic effect on organizations and society in general (Brun, Lamarche, 2006; Newton, Theo, 2014). The financial consequences of work-related stress are a growing field of interest (Hassard et al., 2018). Still, no comprehensive tool exists that would allow organizations to address the issue of work stress costs (Brun, Lamarche, 2006).

Various authors have substantial differences in data and calculations of costs of work-related stress (Molek-Winiarska, 2016). Table 2 shows an overview of the respected authors who deal with quantifying the costs of work-related stress.

Table 2 Overview of work-related stress costs findings

Authors	Findings
Russo et al. (2021)	Proposed cost-estimation model for work-related stress based on absence and psychosocial risk exposure (e.g., absenteeism, psychosocial risk, loss of productivity on the basis of salary costs).
Hassard et al. (2018)	Exact nominal examining the costs of work-related stress is difficult due to diversity across studies in terms of their conceptual and methodological approaches. But even just estimates of the costs of work-related stress represent an essential catalyst for stimulating discussion about the importance of this topic.
EU-OSHA (2014)	Costs of work-related stress can manifest and be quantified in various forms (e.g., health care costs, productivity loss, absenteeism, presenteeism, accidents, injuries, etc.). It is necessary to support the development of simple methodologies and approaches to help employers estimate work-related stress.
Brun and Lamarche (2006)	Given that there is no uniform tool for measuring the cost of work stress, a proposed self-assessment tool to assess the costs of work-related stress consolidates three cost categories (baseline data, absenteeism costs, and presenteeism costs). The weakness of the proposed model is that not all indicators of the organization are registered.
Tangri (2003)	Developed a calculation method for measuring work-related stress in an organization. Cost indicators included in the technique are absenteeism, employee turnover, the employee assistance program, short- and long-term inability to work, psychotherapeutic medication, workplace accidents, worker compensation claims, and legal proceedings. The critical shortcoming of the model is the absence of presenteeism in the calculation.

Source: Author, based on the literature.

According to Russo et al. (2021), for evaluating and calculating costs work-related stress exists two major approaches:

- The deductive approach - calculating the total cost of illness and estimating the percentage of work-related cases linked to the working activity.
- The inductive approach - identifying different types of costs of work-related stress before calculating them and summing them to obtain the total cost (EU OSHA, 2014; Hassard et al., 2018).

The deductive approach is often used for its simplicity, but the assumption that the average cost of work-related stress is identical to the average cost of work-related illness appears problematic (EU OSHA, 2014; Hassard et al., 2018).

A list of costs of work-related stress by the organization level most often includes:

- loss-of-productivity costs;
- costs of absenteeism and presenteeism;
- costs associated with accidents and injuries;
- cost of stress-related staff turnover;
- worker compensation claims;
- early retirement;
- costs of absenteeism related to family-work life balance;
- loss of reputation for the company (Brun, Lamarche, 2006; Russo et al.,2021; Hassard et al.,2018).

As add Hassard et al. (2018), "*while the search for the true cost of work-related stress remains an ongoing question, the methodological aspects and considerations of this quest for the holy grail is of value in the dialogue it stimulates.*"

2.1.5 Legislative requirements for work-related stress

As mentioned by Zoni and Lucchini (2012), the first systematic approach toward work-related stress was specified in the document named *Introduction of Measures to Encourage Improvements in the Safety and Health of Workers at Work* (89/391/EEC of June 12, 1989) by the European Commission Council Framework Directive. According to this directive, all employers have a legal obligation to protect workers' occupational safety and health due to the prevention of occupational risks and provision of information and training (European

Council, 1989). As Leka and Kortum (2008) pointed out, this directive stimulated the influence of new culture for psychosocial risk and prevention in Europe, effectively combining legislation, and social dialogue, promoting best practices, CSR, and building partnerships. Authors Florea and Florea (2016) note that all members of the EU have implemented that directive into their legislation.

In 2000, an essential document in this context *was the European Commission's Guidance on work-related stress* aimed at Member States of the EU, workers' and employers' organizations. The document defined stress, an overview of the leading causes of stress, organizational improvements in the stress management area, and crucial work-related stress prevention steps (Leka, Kortum, 2008; Zoni, Lucchini 2012).

The European Framework Agreement on Work-Related Stress was signed in 2004. The document aimed to provide employers and employees with a framework to identify, prevent, and manage problems of work-related stress in two main ways: a) increasing awareness and understanding of work-related stress for employers, employees, and its representatives; b) providing frameworks which allow identifying, preventing, and solving work-related stress and its consequences to employers and employees (Molek-Winiarska, 2016). The implementation period of this document was three years (Zoni, Lucchini, 2012). As pointed out Molek-Winiarska (2016), this agreement had a substantial impact on the majority of EU countries and is reflected in many member states' labor legislation, mainly amending existing legislation to take into account the European framework agreement[1] (Zoni, Lucchini, 2012).

The European Union is actively promoting the topic of stress management at the organizational level. EU-OSHA provided the campaign titled "Healthy workplaces manage stress" within the European program "Healthy Workplaces 2014-2015" framework. Within the campaign was stress management promoted by conferences, seminaries, workshops, scientific articles, or presentations all over the EU member state (Molek-Winiarska, 2016).

2.1.6 Work-related stress in the context of the current situations

In this chapter, the influence of Industry 4.0 (significant change in the work environment - e.g., Sumer, 2018; Leso et al., 2018; Hitpass, Astudillo, 2019) and the COVID-19 pandemic (the current crisis with a crucial impact on the health of workers and the job performance

[1] Still not in the Czech Republic (author's note).

- e.g., Giorgi et al., 2020; Gomez et al., 2020; Oksanen et al., 2021) on work-related stress will be discussed in particular.

Industry 4.0 and work-related stress

Industry 4.0, characterized by greater automation and computerization, will inevitably affect the work organization (Leso et al., 2018). Work organizations will become more flexible in terms of time and space. Work processes will still be more digitized, decentralized, transparent, and less hierarchical - the more it will be routine work, the more likely it will be digitized and automated (Buhr, 2015). These changes will have consequences on the work environment and, in turn, work-related stress, too (Berglund et al., 2021). As Leso et al. (2018) mentioned, "*the path of Industry 4.0 towards creating a more sustainable industrial value should therefore take into account economic, social and environmental sustainability, and occupational health aspects concerning the workforce.*"

New safety risks are emerging with the explanation of Industry 4.0. Digitalization may lead to reduced interpersonal contact in the workplace and induce loneliness related to stress and anxiety. Robotization may lead to higher work performance pressure, worker involvement, and peer support (Liversedge, 2019). In manufacturing, the change will be most visible because employees must work at an increased tempo, cooperate with artificial intelligence, learn new work procedures and monitor multiple processes simultaneously (Berglund et al., 2021). The increasing use of information and communication technologies (ICT) has resulted in the efficiency of organizations. Still, it has increased employees' workload due to the constant need to adapt to new technologies and excessive dependence on them. This results in the emergence of so-called technostress (inability to handle organizational demands of ICT usage due to new applications, multitasking, information overload, job insecurities, technical problems, etc.) (Tarafdar et al., 2010; Malik et al., 2021).

The impacts of adoption of technological changes in organizations are work overload, job insecurity, job complexity, invasion in personal life, uncertainty, role ambiguity, and digital overdependence (Malik et al., 2021).

Covid-19 and work-related stress

The global crisis caused by the COVID-19 pandemic (early 2020) has changed working conditions and the organization of work due to social distancing policies, mandatory lockdowns, remote work, the anxiety of getting sick, loss of income, and using new

technologies at work as primary as a mode of communication and cooperation (Giorgi et al., 2020; Oksanen et al., 2021). Gomez et al. (2020) mentioned that anxiety and stress levels are rising due to especially social isolation caused by the COVID-19 outbreak. Authors Giorgi et al. (2020) see the most severe stressors associated with the high pandemic level of job strain, job insecurity, isolation, work rights exploitations, fear of infection, and is a vector of the disease towards the family. Authors Adisa et al. (2017) see blurred boundaries between home and workplace as another primary stressor resulting from the pandemic. The increase in the use of technology as a means of communication and cooperation leads to the emergence of the so-called technostress (Tarafdar et al., 2020). In today's highly globalized world, the consequences of the pandemic are interconnected for all the world's economies and affect the labor market. According to the worst scenario of the International Labor Organization (2020), 24.7 million jobs dropped, and the world unemployment rate would rise from 4.9% to 5.6% (ILO, 2020).

As Gomez et al. (2020) pointed out, companies must create preventive adaptation strategies for workers in the context of COVID-19 for competitiveness and employee care. But according to the survey *Health and wellbeing at work* (CIPD, 2022) provided in 804 organizations in the UK, employers' efforts to COVID-19 as a stressor in the workplace is not what they could be. However, there was a decrease in employers' concern about the pandemic's effects on employees' mental health (from 82% to 66%, compared to 2021). Furthermore, according to the survey results, there was a decrease in activities aimed at solving stress in the workplace. Fewer organizations are also taking steps to raise awareness of mental health issues.

According to Gomez et al. (2020), with the arrival of pandemic COVID-19, new challenges arose for managers of companies, particularly human resources management. As Giorgi et al. (2020) mentioned, the workplace represents an essential target towards which efforts should be directed to manage mental health issues related to the COVID-19 pandemic. Therefore, a workplace should aim to manage the stress resulting from the situation by adapting clear anti-contagion measures, monitoring employees' mental health, implementing resilience training programs and coaching psychology, improving the infrastructures of the workplace, and developing reliable preventive approaches.

2.2 Stress management and stress management interventions

As Armstrong and Taylor (2015) state, there are many reasons why companies should be aware of work-related stress. It is a social responsibility to ensure a good quality of working life, then the connection with excessive stress and related illness and the effect of pressure

on the employee's work performance. The prevention and management of work-related stress require organizational-level interventions (Michie, 2002; Holman et al., 2018). Stress management is the set of organized interventions to eliminate or reduce work-related stress (Molek-Winiarska, 2016).

The basic model of stress management interventions (SMIs) by Ivancevich et al. (1990) developed a conceptual framework for the design, implementation, and evaluation of stress management interventions. The focus of stress management can classify stress management interventions (SMIs) as primary, secondary, or tertiary (Holman et al., 2018). By the level at which the intervention takes place to the individual (individual - level interventions – ILI) and organizational interventions (organizational - level interventions – OLI) (Riva, Chinyio, 2018). Individual-level interventions target helping the employee gain knowledge and skills to recognize, manage and reduce work-related stress. Organizational-level interventions include systematic changes to administrative processes aimed at the entire organization (Holman et al., 2018). An overview of stress management interventions is provided in Table 3.

Table 3 Overview of SMIs

Type of intervention	Goal	Description	Focus	Examples
Primary	Preventive, proactive	Modifying and reducing potential stressors before employees experience stress-related symptoms reducing potential risk factors, changing an organization's work conditions, task characteristics, systems, or structures	All employees in the organization	- Job redesign - Work-load reduction - Improved ergonomic designs - Conflict-management training - Improved communication - Organization of work - Creating goal-setting programs - Reduced time pressures - Career development

Type of intervention	Goal	Description	Focus	Examples
				- Restructuring organizational units - Management training, e.g., mentoring
Secondary	Preventive-reactive, Ameliorative	Equipping employees with the knowledge, appropriate stress management techniques, skills, and resources to cope with stressful situations	Employees at risk	- Wellness programs - Stress management - Team building -Communication and information sharing - programs - Peer support groups - Meditation training - Physical fitness programs
Tertiary	Reactive	Psychological or medical help employees to cope with the consequences of work-related stress	Employees in need of assistance	- Meditation training - Physical fitness programs - Counseling - Medical care - Meditation practices - Occupational therapy - Medical intervention stress

Source: Adapted from LaMontagne et al., (2007); Holman et al., (2018); Li (2020).

As Molek-Winiarska (2016) states, the first goal is achieved through organizational-level interventions (OLIs), and secondary and tertiary goals are achieved through individual-level interventions (ILIs). As Nielson et al. (2010) state, stress management can be effective only when it should focus on both individual and organizational levels taking into account the needs of both employees and the company. Stress management at the organizational level is less used in organizations because its implementation requires structural changes demanding in terms of resources (e.g., financial, time or personnel) (Kinnunen-Amoroso, Liira, 2014; Martin et al., 2016).

A model SMIs according to de Frank and Cooper (1987), expands the distribution levels OLIs and ILIs by an individual/organizational interface level. Classification structure SMIs targeted at:

- The organizational level - altering the company's organizational system (e.g., job design, working time and schedules, management commitment and training, interpersonal communication, conflict management systems, and mentoring).
- The individual level - helping employees to cope with work-related stress (e.g., relaxation, meditation, rehabilitation after sick leave, individual psychotherapy, stress management, time management, disability management, and cognitive behavioral interventions).
- The individual/organizational interface level - improving the fit between the employees and the company (e.g., job demand monitoring, participation, autonomy, career planning, and peer support groups).

However, as mentioned by Holman et al. (2018), the distinction between organizational-level interventions and individual-level interventions is not always clear cut, and it is appropriate using use the more parsimonious categorization of ILIs and OLIs.

An integral part of the implementation of SMIs is the evaluation of their effectiveness by organizations. However, as stated by Nielsen and Randall (2015), there is no universal set of factors for assessing of SMI effectiveness in many studies targeting on implementation SMIs. The elements used in the SMIs assessment are:

- Intervention design and process - initiation, screening of problem areas, action planning, implementation of planned activities, effect evaluation (changes in attitudes, values, and knowledge; development of personal resources; changes in working procedures

and conditions; changes in employee health and well-being; changes in organizational health; changes in occupational safety; and health management).

- Organizational actors - play an essential role in determining the outcomes of an intervention (employees, senior management, middle managers).
- Mental models of those actors - indirectly influence intervention outcomes through how the models influence the actors' behaviors (readiness for change and the perception of intervention activities).
- The context of the intervention - mediating effect on the link between an intervention and its outcomes (Molek-Winiarska, 2016; Nielsen, Abildgaard, 2013; Nielsen, Randall, 2015).

Several studies have investigated the effectiveness of stress management interventions in the workplace. As mentioned by Leger et al. (2022), their study *Effects of a Workplace Intervention on Daily Stressor Reactivity* showed that the intervention significantly reduced employees' negative affect reactivity to work stressors, as well as negative affect and physical symptom reactivity to non-interpersonal stressors.

Panigrahi et al. (2016) disclosed recommendations to organizations for combat stress:

- reducing long working hours,
- teaching employees to do work-life balance,
- use of technology,
- communication,
- security fears,
- introduction of retirement plans,
- job stability and fear of downsizing,
- workplace diversity.

The document *European Commission's Guidance on work-related stress* outlines some stress management recommendations for the organization: a) allowing adequate time for work performance, b) providing a clear job description, c) providing an adequate reward, d) providing seriously and swiftly reactions to employee's complaints, e) clarifying of employee's responsibility and authority, f) clarifying organization's goals and values and adapting them to the employee's own goals and values, g) promoting tolerance, security, justice in the workplace, h) eliminating harmful physical exposures, i) promoting the employee's pride in work (European Commission, 2002).

2.2.1 Trends in stress management

In recent years, new technologies such as web-based and mobile-based work-related interventions have started to be used for stress management (Heber et al., 2016). The main advantages include:

- availability 24 hours a day, seven days a week,
- low costs,
- low access threshold,
- anonymously participating,
- adaptability to job or life situations,
- non-existence of waiting times or limitation of resource distribution,
- fostering participants' self-efficacy (Griffiths et al., 2006; Heber et al., 2016).

Smartphone-based stress interventions

Mobile technologies are one of the fastest growing and used innovations even in developing countries (Poushter, 2016). Because of high-speed Internet and the possibility of downloading applications, the mobile phone can become a means of adequate mental health service (Aboujaoude et al., 2015).

Howe et al. (2022) list the leading health applications (mHealth), divided according to their targeting:

- Self-guided meditation or symptom management:
    - application Headspace,
    - application Calm,
    - application Noon.
- Peer-support:
    - application Talklife,
    - application Supportiv.
- Counseling:
    - application Talkspace,
    - application Sanvello.

Web-based stress interventions

As mentioned by Nixon et al. (2021), web-based stress management interventions might lower workplace stress levels. As pointed Wind et al. (2020), the implementation of digital

interventions is now essential due to COVID-19. Interventions are not one-sided, but the key is using personal guidance through interaction, e.g., email, SMS reminders, online therapist, coach, and discussion support groups (Baumeister, 2014).

Two delivery timing conditions of web-based interventions state authors Howe et al.:

- Pre-scheduled: adapting to the user's time options.
- Just-in-time: predictive ability to identify appropriate moments for intervention to minimize disruptions and optimize efficiency.

Howe et al. (2022) suggested, according to the results of their study *Design of Digital Workplace Stress-Reduction Intervention Systems: Effects of Intervention Type and Timing*, essential design for workplace stress-reduction intervention systems:

- Integrate digital micro-interventions into the workplace: short-term interventions that can be applied in a workplace (e.g., 1-minute meditation).
- Provide a personalized balance between automation and agency: intervention should offer users multiple levels of time and content control.
- Promote self-experimentation on intervention content that compares effectiveness and effort: feedback and the opportunity to reflect on intervention content by employees' past experiences of stress reduction.
- Solicit user feedback to adapt intervention timing and content - assessment and integration of employees' preferences into sensing and intervention delivery systems.

As Paganin and Simbula (2021) pointed out, organizational support is a crucial assumption for implementing digital stress management interventions in the workplace. However, employees may be reluctant to work with new technologies when implementing digital interventions. It is, therefore, necessary to examine the usefulness and difficulties of using interventions before introducing them.

3 METHODS

3.1 Research objectives

The topic, basic research questions, and objectives were determined at the beginning of the research. The main aim of this study is to summarize the current knowledge about the implementation of stress management in small and medium-sized enterprises and propose desirable recommendations for enterprises that want to incorporate stress management into their internal processes.

The following partial steps led to the achievement of the main aim:

- Creation of the theoretical framework and methods in research.
- Conducting quantitative research among small and medium-sized enterprises.
- Analysis of the current state of stress management in small and medium-sized enterprises due to quantitative research and statistical evaluation.
- Creation of desirable recommendations for organizations to prevent, eliminate or minimize the effect of work-related stress in the workplace.

To fulfill these steps, there are necessary to carry out an analysis of the current state of knowledge in the field of work-related stress and stress management in enterprises. It represents the starting point for the formulation of research hypotheses. The empirical research then serves to verify these hypotheses and obtain information about the situation in Czech small and medium-sized enterprises needed to design business recommendations.

3.2 Research questions and hypotheses

Research questions (RQ) were formulated to accomplish the article's objective. The main research questions are the following:

1) Do enterprises implement the principle of stress management? Which type of intervention is more often used?

2) Whether/how do enterprises evaluate the used stress management interventions?

3) Are there distinctive characteristics of enterprises that implement the principles of stress management?

A deductive approach by Bryman and Bell (2007) was respected during the processing of the work. First, the topic was defined on a theoretical level. Hypotheses were formulated based on theoretical knowledge, which was then empirically verified. Based on the research results, the hypotheses were confirmed or rejected and, if necessary, corrected theory.

Corresponding research hypotheses are developed according to the research questions:

H1: Individual-level interventions (ILIs) are more often implemented by enterprises than organizational-level interventions (OLIs).

Hypothesis derivation: organizational-level interventions (OLIs) are implemented less often than individual-level interventions (ILIs) due to their time-consuming character and relatively high costs for enterprises (Giga et al., 2003; Kim et al., 2014; Kinnunen-Amoroso, Liira, 2014; Martin et al., 2016; Molek-Winiarska, 2016 - in more detail in chapter 2.2).

H2: Enterprises that implement stress management interventions also evaluate their effectiveness.

Hypothesis derivation: the evaluation of the effectiveness of interventions should be an integral part of the process of implementing stress management (de Frank, Cooper, 1987; Molek-Winiarska, 2016; Engels et al., 2022 - in more detail in chapter 2.2)

H3: *Common characteristics can be found in enterprises implementing stress management*.

Hypothesis derivation: stress management implementation depends, for example, on the size of the enterprises, enterprise-level management, different business processes, profit focus, priorities, and the available resources (e.g., financial, personnel) (Kinnunen-Amoroso, Liira, 2014; Bhui et al., 2016; Jain et al., 2021- in more detail in chapter 2.2)

This research is significant because it contributes to the limited number of studies on this topic. Work-related stress and its management are usually examined from the employee's perspective, subjective perception, or analysis of workplace stressors. A limited amount of research examines stress from a business perspective and analyzes the implementation of stress management in a business environment, especially in the Czech environment. Table 4 presents the conducted research on the investigated issue.

Table 4 Overview of previous research on stress management in the workplace

Authors	Year	Research	Findings
Molek-Winiarska	2020	Research of the implementation of stress management in Polish companies. Instrument: a questionnaire survey.	Only about 30% of investigation enterprises (n=408) implemented stress management interventions at both organizational and individual level. Only one-third of enterprises assess SMIs' effectiveness. Sectors and company size were not considered.

Authors	Year	Research	Findings
Bonafede et al.	2016	Research of perception and awareness of employers about occupational health services (OHS) issues in Italian companies. Instrument: computer-assisted-telephone-interview (CATI).	About 56% of investigation enterprises (n=1010) found the levels of OHS increased after the enforcement of legislative requirements in this area. Microenterprises are less persuaded of the usefulness of occupational risk assessment and management activities. They more often perceived OHS as a law duty than an added value, too.
Jenny et al.	2015	Evaluation of an organizational-level stress management intervention in Switzerland Instrument: field study.	Stress management interventions had a positive impact on the participants' job demands and resources in investigation companies (n=8)
Kinnunen-Amoroso and Liira	2014	Research examining stress management by Finnish enterprises. Instrument: a questionnaire survey.	The issue of work-related stress was well known by all participants (n=40). Especially SMEs transfer responsibility of stress management to occupational health services (OHS). The recommendation would be a collaboration between OHS and workplaces within stress management in the workplace.
Barbier et al.	2007	Survey of success and failure factors for stress management interventions in Belgian companies. Instrument: a questionnaire survey.	In Belgian companies (n=210), intervention assessments are less implemented in small companies; interventions are rarely systematically evaluated; most interventions target the work environment.
Kompier et al.	2000	Research on stress management in transport companies.	A combination of adequate interventions and proper implementation of stress management may benefit employees and the company.

Source: Author, based on literature.

3.3 Research design

The research was conducted in small and medium-sized manufacturing enterprises in the South Bohemian Region of the Czech Republic in 2022. The study participants were owners[2], assuming they are usually the primary decision-makers in SMEs with the responsibility for employment relations in the establishment.

The study included small and medium-sized manufacturing enterprises whose economic activity falls into group *C (10-33): Manufacturing* according to the European code classification scheme NACE. Manufacturing enterprises were selected because they represent an area with a high potential stress level due to increased work demands, low work control, monotonous work in factories and warehouses, difficult shifts, excessive workload, ergonomics of the work environment, and job insecurity (e.g. Sari et al., 2021; Soelton et al., 2020). Another reason for the selection was the assumption that production is a key segment of Industry 4.0 (Deloitte, 2017), and the emergence of new stressors in the workplace is related to this. These facts will require increased stress management at the organizational level (e.g., Leso et al., 2018, Malik et al., 2021 - in more detail in chapter 2.1.6).

Company size was also included as a selection criterion, given that SMEs often generally lack the financial resources, knowledge, and access to information to have developed internal professional HR functions and interventions to improve employee health at work (Kelloway and Cooper, 2011). As Garavan et al. (2016) mentioned, due to the limited staff in SMEs, jobs have multiple roles with broad tasks. Employees may thus be more exposed to work-related stress (e.g., work overload and job insecurity, limited union presence, and informal negotiation and dispute resolution mechanisms (Burgess, 1992). On the other hand, SMEs may have the advantage of a more satisfying work environment, closer relationships, a better understanding of employees' needs, flat organizational structures, collective workload, or higher flexibility (Michie, 2000; Tansel, Gazioglu, 2012; Lai et al., 2015). In this paper, enterprises are classified as SMEs if they meet the European Union's criteria (employ no more than 250 people, and net turnover does not exceed €50 million (European Commission, 2015).

Data were collected using an electronic structured questionnaire constructed based on findings from the theoretical background, benchmarking of the main surveys on the investigated issue, and research questions (or expressed hypotheses). The research design and its empirical phase took place in 2021-2022. A pilot study was conducted to check its

[2] Eventually, HR managers or specialists.

reliability and validity of it. The final questionnaire consisted of 17 questions addressing the knowledge and implementation of stress management, stress management interventions, evaluation processes, the existence of work-related stressors, and evidence of work-related stress costs. It also included questions about the organization's profile. The questionnaire was covered by an accompanying letter with a notification that the result would be analyzed anonymously. Platform Survio.com was applied to gather the responses online to ensure the maximum possible return rate even with regard to the COVID-19 pandemic. After removing invalid questionnaires (incomplete information), 194 enterprises were obtained and could be included in the research. The characteristic of the final sample is presented in Table 5.

Table 5 The characteristic of the research sample

The basic characteristic of the research sample		Small enterprises (<50 employees)		Medium enterprises(50–249 employees)		Total	
		Frequency	Relative frequency	Frequency	Relative frequency	Frequency	Relative frequency
Total		142	100,0%	52	100,0%	194	100,0%
HR's presence in the workplace	Yes	63	44,4%	38	73,1%	101	52,0%
	No	79	55,6%	14	26,9%	93	48,0%
Multinational enterprises	Yes	18	12,7%	10	19,2%	28	14,4%
	No	124	87,3%	42	80,8%	166	85,6%
Operating Results	Profit	121	85,2%	41	78,8%	162	83,5%
	Loss	21	14,8%	11	21,2%	32	16,5%
Turnover rate	<2%	95	66,9%	24	46,2%	119	61,3%
	2%-10%	42	29,6%	23	44,2%	65	33,5%
	>10%	5	3,5%	5	9,6%	10	5,2%

Source: Author, own research.

Kolmogorov-Smirnov test, Shapiro-Wilk test, histograms, and Normal Q-Q Plot were used to determine whether sample data has been drawn from a normally distributed. These tests indicated that data were non–normally distributed. Due to this fact, the Chi-squared test, Kruskal–Wallis test, Mann–Whitney U test, and Cramér's V were used for data analysis

4 RESULTS

The introductory part of the research concerned the outline of the current state of work-related stress and stress management in the investigated enterprises. Research participants (hereinafter referred to as "surveyed enterprises") were asked to express their attitude to the following claims regarding work-related stress and stress management (using a scale or dichotomous questions according to the appropriateness of the answers).

Table 6 Claims regarding work-related stress/stress management

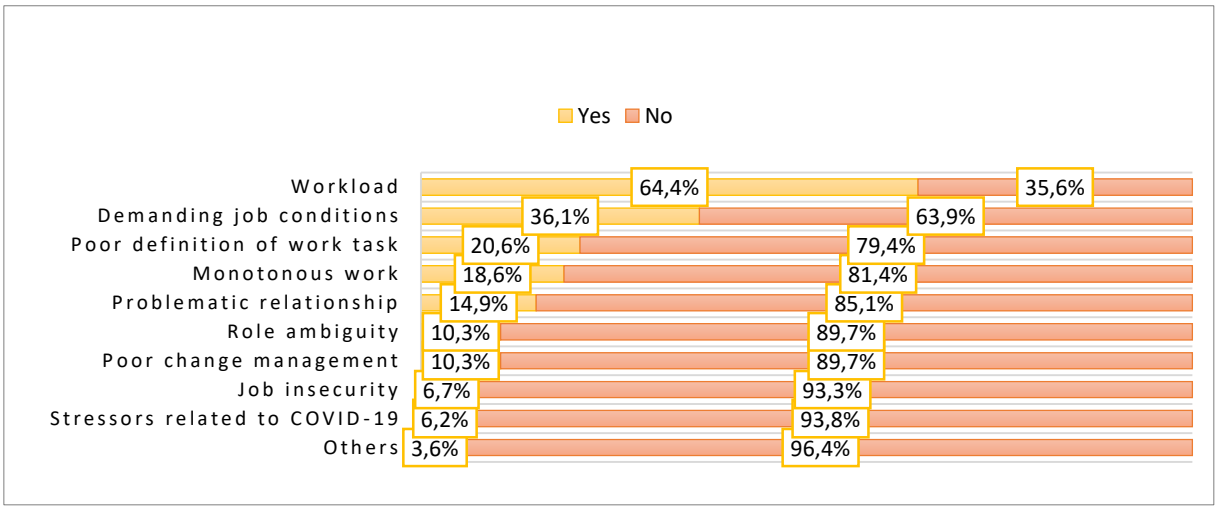
Claims to the enterprises		Frequency	Relative frequency
Our enterprise actively tries to prevent stress in the workplace.	Yes	51	26.3%
	Rather yes	90	46.4%
	Rather no	32	16.5%
	No	21	10.8%
The company management supports the implementation of work-related interventions.	Yes	45	23.2%
	Rather yes	70	36.1%
	Rather no	49	25.3%
	No	30	15.5%
An action plan for managing work-related stress is developed in the enterprise.	Yes	16	8.2%
	No	178	91.8%
A person capable of resisting and developing stress management programs exists in the enterprise.	Yes	54	27.8%
	No	140	72.2%
Funds are allocated for support programs for the prevention of work-related stress.	Yes	24	12.4%
	No	170	87.6%
Training for managing work-related stress is implemented for company management.	Yes	24	12.4%
	No	170	87.6%
Training for managing work-related stress is implemented for employees.	Yes	16	8.2%
	No	178	91.8%
Industry 4.0 represents a significant stressor for our employees (for example, the fear of job loss due to robotization).	Yes	4	2.1%
	Rather yes	21	10.8%

Claims to the enterprises		Frequency	Relative frequency
	Rather no	76	39.2%
	No	93	47.9%
In connection with the Covid-19 pandemic, the pressure to support the resolution of stressful situations among employees has increased.	Yes	12	6.2%
	Rather yes	27	13.9%
	Rather no	94	48.5%
	No	61	31.4%

Source: Author, own research.

Surveyed enterprises were further invited to indicate the most significant stressors in their workplaces. Fig. 6 shows these stressors ranked by highest frequency.

Fig. 6 Stressors in the surveyed workplace

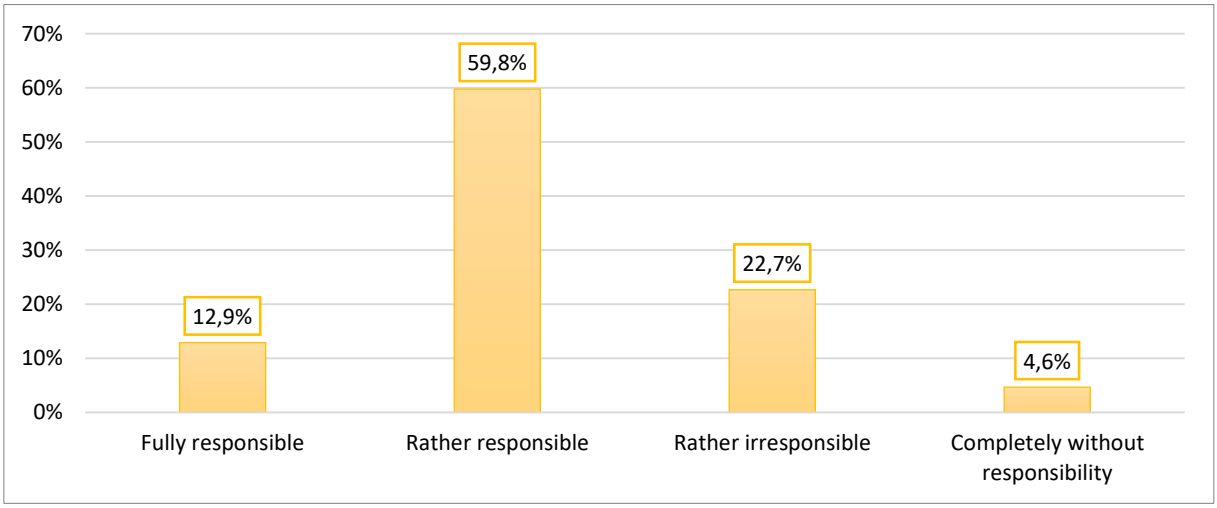


Source: Author, own research.

Participants listed sudden workload, communication with problematic customers, and night shifts as other options.

Further, respondents were asked an ethical question regarding the organization's responsibility for solving work-related stress to clarify the situation in enterprises. The degree of responsibility of the enterprise for solving work-related stress shows in Fig.7.

Fig. 7 The enterprise's attitude towards responsibility for solving work-related stress



Source: Author, own research.

The first part of the stress management research regarded basic topic knowledge. Respondents were asked if they knew the term stress management intervention and its principles and goals. The theoretical state of knowledge is illustrated in Table 7. Subsequently, the respondents answered whether they had implemented at least one such intervention in the enterprises in the past three years (Fig. 8) and which type of interventions (Table 8) (to clarify the first research question).

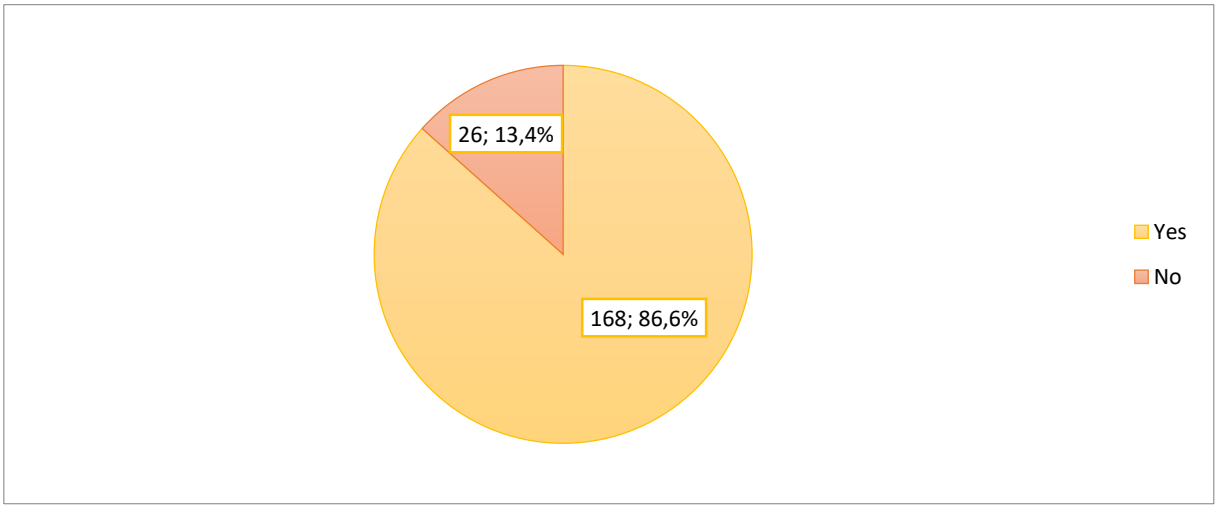
A list of interventions was given from which the respondents could choose. The list contained both interventions at the organizational level and the individual level.

Table 7 The awareness of the stress management interventions

Level of knowledge	Frequency	Relative frequency
Yes, I know the concept and understand its essence and goals.	67	34.5%
Yes, I know the concept, but I cannot to explain it.	55	28.4%
No.	72	37.1 %

Source: Author, own research

Fig. 8 Number of companies that implemented SMIs



Source: Author, own research.

Enterprises note the following as the most common reasons for non-implementation of stress management interventions: lack of time and employees (37.6%), the disinterest of employees (36.5%), lack of information about this issue (20%), limited financial resources (12.9%), lack of awareness from the company management (10.6%), a lack of methods and tools for implementation (9.4%), lack of experts collaborating on the implementation process in enterprises (8.2%).

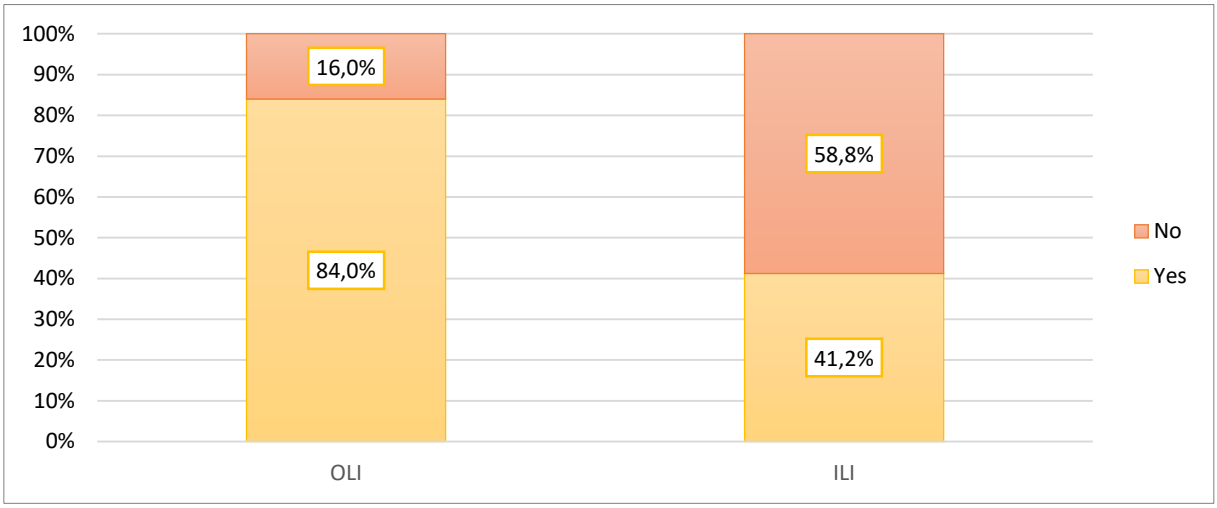
The specification of the number and types of OLI and ILI in the research enterprises are shown in table 8. Enterprises implemented an average of 1.8 organizational-level interventions (OLI) and 0.6 individual-level interventions (ILI) in the workplace.

Table 8 Number and types of OLI and ILI in the research sample

Implemented type of stress management interventions	Frequency	Relative frequency
Only OLI	88	45.4%
Only ILI	5	2.6%
Both types	75	38.7%

Source: Author, own research.

Fig. 9 Implementation of types of SMIs



Source: Author, own research.

Among the most frequently introduced organizational-level interventions (OLI) were flexible work time (57.7 %), the correct definition of job role (47.6%), improving ergonomics (39.9%), and promoting healthy organizing culture (21.4%). At the individual level, the most interventions were employees' physical activity and relaxation support (55%), training soft skills[3] (41.3%), and counseling (31.3%).

According to data, we verified hypothesis *H1: Individual-level interventions (ILIs) are more often implemented by enterprises than organizational-level interventions (OLIs).* We found that 45.4% of enterprises implemented only organizational-level interventions (OLI), and 38.7% of enterprises implemented both types (OLI and ILI). Only 2.6% of enterprises implemented individual-level interventions (ILI). Simplified representation is also shown in Fig. 9. Overall, 84.0% of enterprises implemented OLI, and only 41.2% implemented ILI. Based on the data, we did not confirm our assumption. **Individual-level interventions (ILIs) are not more often implemented by enterprises than organizational-level interventions (OLIs).**

The mutual relationship between the size of the enterprise and the number of implemented interventions is shown in Table 9. A graphical representation of the relationships is offered in Fig. 10. Small enterprises use an average of 2.2 interventions (1.7 OLI and 0.5 ILI). For medium-sized enterprises, the average number of all interventions is 2.9 interventions (2.1 OLI and 0.8 ILI).

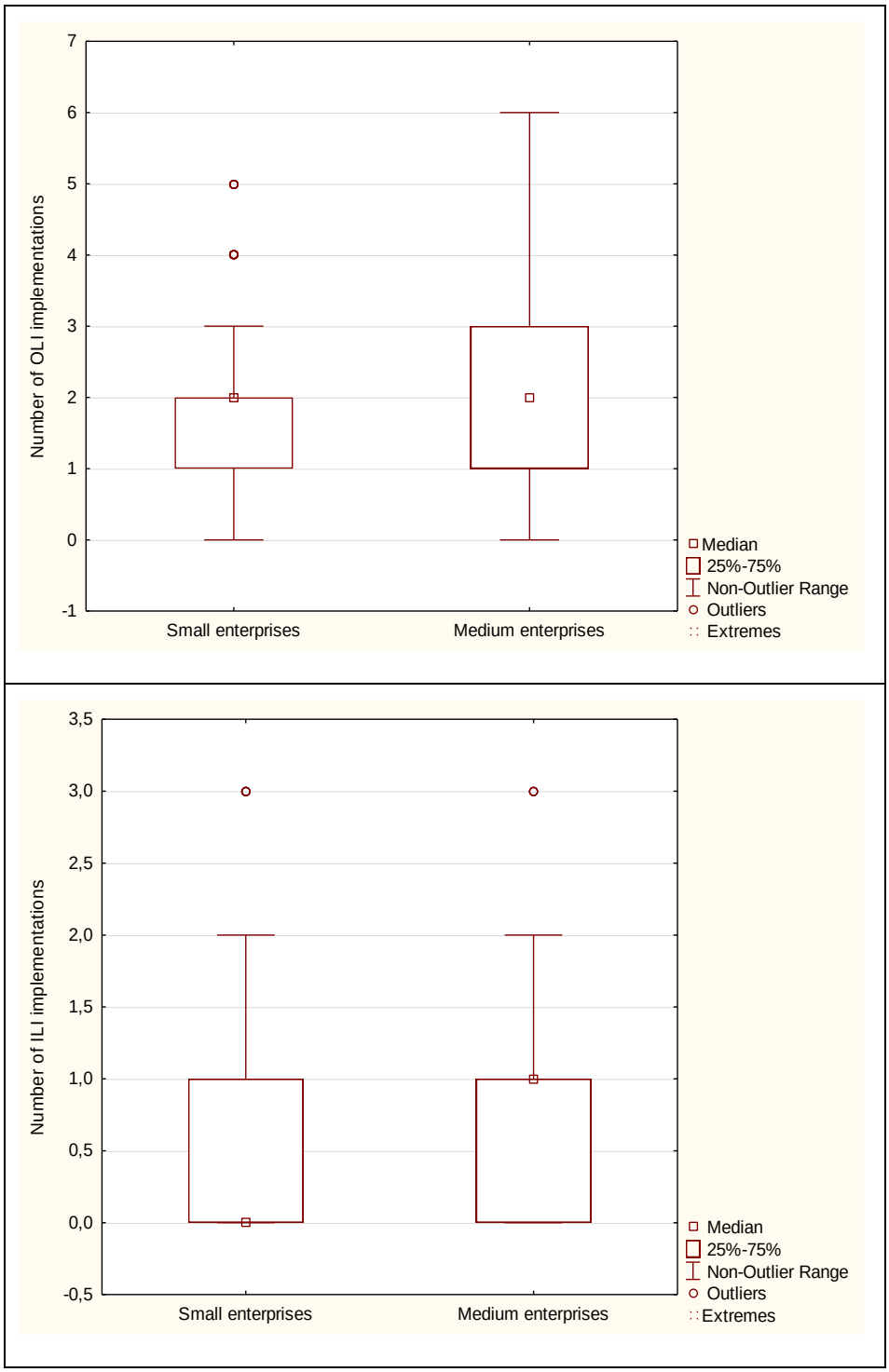
[3] e.g., interpersonal skills, communication skills, listening skills, time management, stress management, and empathy.

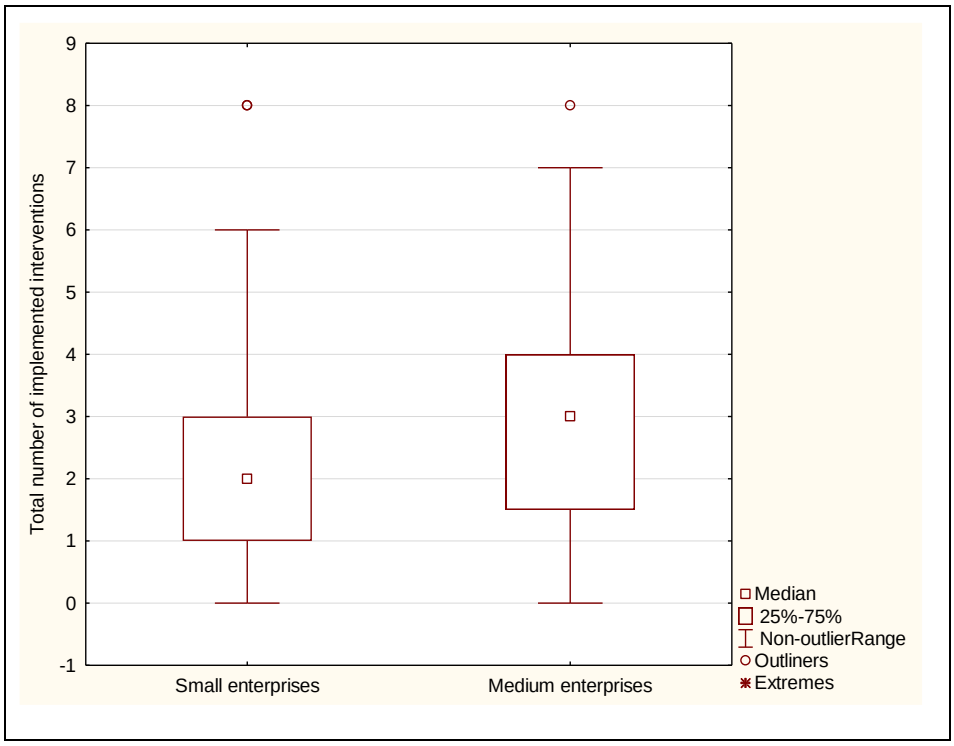
Table 9 Total numbers of SMIs to the size of the enterprise

Size of the company		Number of OLI implementations	Number of ILI implementations	Total number of interventions
Small enterprises (<50 employees)	Frequency	142	142	142
	Mean	1,7	0,5	2,2
	Median	2,0	0,0	2,0
	Min	0,0	0,0	0,0
	Maximum	5,0	3,0	8,0
	Standard deviation	1,3	0,7	1,6
	Standard error of the mean	0,1	0,1	0,1
Medium enterprises (50–249 employees)	Frequency	52	52	52
	Mean	2,1	0,8	2,9
	Median	2,0	1,0	3,0
	Minimum	0,0	0,0	0,0
	Max	6,0	3,0	8,0
	Standard deviation	1,4	0,9	1,8
	Standard error of the mean	0,2	0,1	0,3

Source: Author, own research.

Fig 10 Implemented intervention to the size of enterprise (Box Plot)





Source: Author, own research

The Mann-Whitney test was used to determine whether the number of organizational-level interventions, individual-level interventions, or both types of interventions depends on the size of the enterprise.

Table 10 Implementation of types of SMIs in relation to the size of the enterprise (Mann-Whitney test)

The Mann-Whitney test	Number of OLI implementation	Number of ILI implementation	Total number of implemented interventions
Test statistics	3083,000	2880,000	2861,500
p-value	0,070	0,008*	0,015*

Note(s): *p < 0.05

Source: Author, own research.

Based on the conducted Mann-Whitney test, we reject the tested hypothesis, H_0: *The number of OLI/ILI or the total number of interventions does not depend on the size of the enterprise*, at the 5% significance level in the case of the number of ILIs and the total number of interventions. In both cases, larger enterprises have a statistically significantly higher number of interventions. In the case of the OLI, there are no statistically significant differences between enterprises.

The relations between particular types of intervention were verified with the Chi-squared test (χ^2) result and Cramer's V value[4].

Table 11 Correlations of OLI implementation

Correlations of organizational-level interventions		Improving ergonomics	The correct definition of job role	Stress management training for company management	Cooperation with occupational health services	Participative management	Flexible work time	Promoting healthy organizing culture
Improving ergonomics	Cramer's V	x	0,096	0,065	0,086	0,048	0,033	0,040
	p-value	x	0,180	0,362	0,230	0,504	0,651	0,578
The correct definition of job role	Cramer's V	0,096	x	**0,152**	0,136	0,097	0,126	0,085
	p-value	0,180	x	**0,034***	0,059	0,178	0,080	0,237
Stress management training for company management	Cramer's V	0,065	0,152	x	0,048	**0,164**	0,103	0,031
	p-value	0,362	0,034 *	x	0,508	**0,022***	0,151	0,664
Cooperation with occupational health services	Cramer's V	0,086	0,136	0,048	x	**0,191**	0,028	0,038
	p-value	0,230	0,059	0,508	x	**0,008***	0,699	0,597
Participative management	Cramer's V	0,048	0,097	0,164	0,191	x	0,033	0,080
	p-value	0,504	0,178	0,022*	0,008*	x	0,651	0,264
Flexible work time	Cramer's V	0,033	0,126	0,103	0,028	0,033	x	0,053
	p-value	0,651	0,080	0,151	0,699	0,651	x	0,460
Promoting healthy organizing culture	Cramer's V	0,040	0,085	0,031	0,038	0,080	0,053	x
	p-value	0,578	0,237	0,664	0,597	0,264	0,460	x

Note(s): *p < 0.05

Source: Author, own research.

[4] Strength of association between two nominal variables (0 = no relationship, 0.2 or less = weak relationship, from 0.21 to 0.3 = moderate relationship, and above 0.3 = strong relationship).

A statistically significant relationship at the 5% level of significance is between the pairs: "The correct definition of job role" and "Stress management training for company management" (p-value = 0.034), "Participative management" and " Stress management training for company management" (p-value = 0.022) and "Participative management" with "Cooperation with occupational health services " (p-value = 0.008).

Table 12 Correlations of ILI implementation

Correlations of individual-level interventions		Employees' physical activity and relaxation support	Therapy, coaching	Counseling	Soft skills training
Employees' physical activity and relaxation support	Cramer's V	x	0,039	**0,159**	**0,148**
	p-value	x	0,589	**0,027***	**0,039***
Therapy, coaching	Cramer's V	0,039	x	0,008	**0,207**
	p-value	0,589	x	0,910	**0,004***
Counseling	Cramer's V	0,159	0,008	x	**0,153**
	p-value	0,027*	0,910	x	**0,033***
Soft skills training	Cramer's V	0,148	0,207	0,153	x
	p-value	0,039*	0,004*	0,033*	x

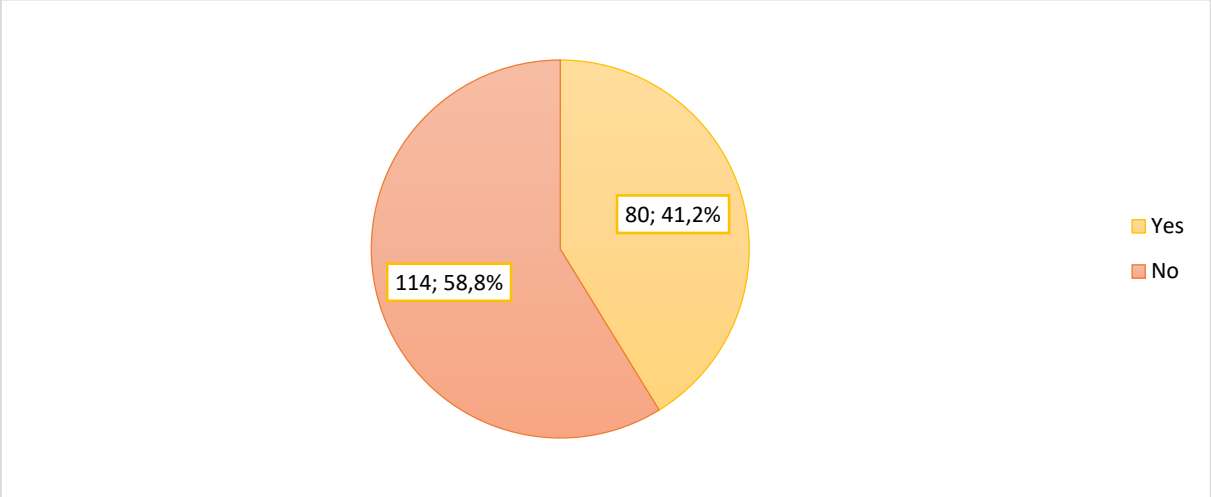
Note(s): *p < 0.05

Author, own research.

In the case of ILIs, it is evident from the data that all measures are interdependent, except for the pair " Employees' physical activity and relaxation support " and " Therapy, coaching " and then the pair " Therapy, coaching " and " Counseling."

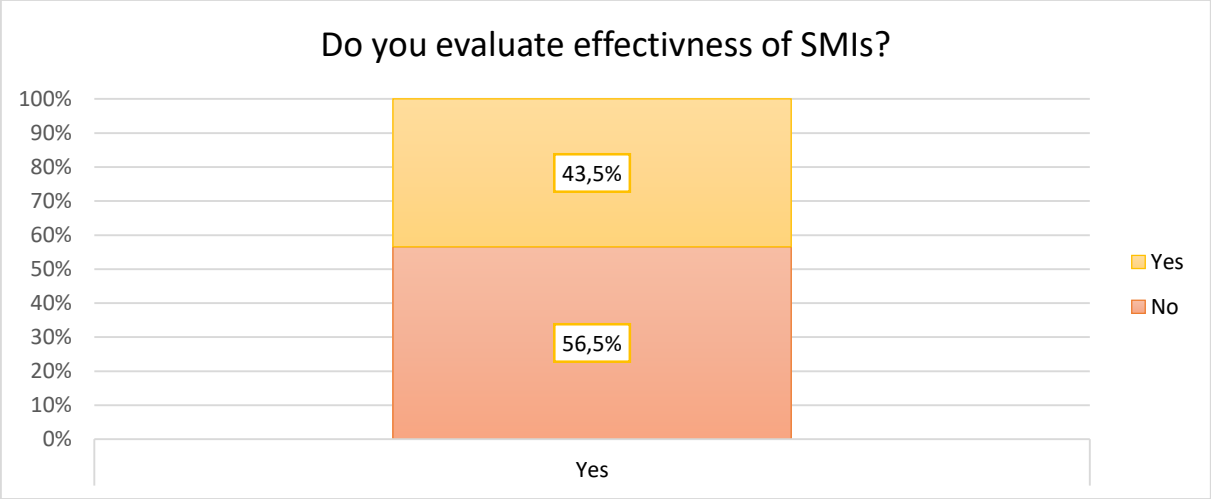
In connection with answering the second research question, the evaluation process of implemented interventions by enterprises was investigated. In total, 80 companies perform the evaluation (see Fig. 11), most often through special interviews with employees (68.8 %), questionnaire survey with employees (23.8%), or interviews conducted by a specialist (outsourced) (15%). The relationship between implementation and subsequent evaluation is shown in Fig. 12. Enterprises that implement stress management interventions evaluate them in 43.5% of cases, in 56.5% do not evaluate this measure.

Fig. 11 The evaluation of the effectiveness of implemented SMIs in the workplace



Source: Author, own research.

Fig. 12 Relationship between implementation and evaluation of SMIs



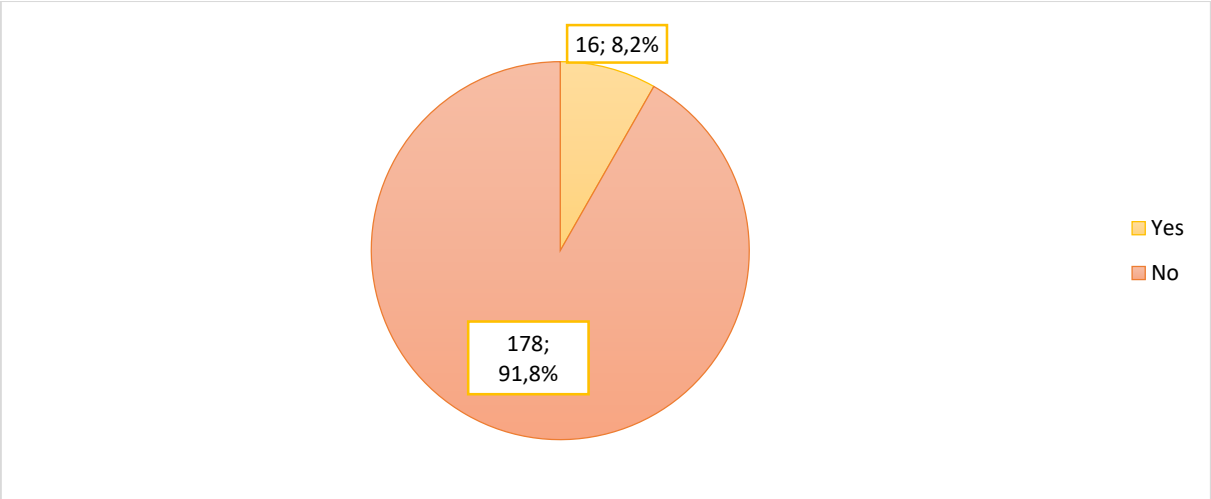
Source: Author, own research.

The second hypothesis, *H2: Enterprises that implement stress management interventions also evaluate their effectiveness*, was verified using the *Chi-squared test.* Based on this test (p-value=0.006), we rejected the tested hypothesis (H_0: *There is no statistically significant relationship between implementation and subsequent evaluation*) at the 5% significance level. So, there is a statistically significant relationship between implementation and follow-up evaluation. **Enterprises that implement stress management interventions also subsequently evaluate their effectiveness.**

An analysis of the costs of work-related stress should also be part of the evaluation in the enterprise. However, only 8.2% of the participants confirmed performing an analysis of the

costs of work-related stress. Among the monitored items were the most frequently mentioned: decrease in productivity (19.6%), absenteeism (14.4%), turnover rate (9.3%), costs associated with accidents and injuries (9.3%), and prevention costs (6.7%).

Fig. 13 Calculating the costs of work-related stress



Source: Author, own research.

The next step was to investigate whether there are distinctive characteristics of enterprises that implement the principles of stress management. An overview of the characteristic features and their frequency in the sample is shown in Table 13. Basic descriptive characteristics of the enterprise and questions regarding specific stress management measures in the business environment (mainly according to the European Commission's Guidance on work-related stress) were included.

These features were further investigated to see if they can be identified as characteristics of companies that implement stress management interventions (to clarify the third research question).

Table 13 Overview of characteristic features for enterprises implementing stress management

Features		Have you implemented at least 1 SMI in the past three years?			
		No		Yes	
		Frequency	Relative frequency	Frequency	Relative frequency
Size of enterprise	Small enterprises (<50 employees)	23	88,5 %	119	70,8 %

	Medium enterprises (50 – 249 employees)	3	11,5 %	49	29,2 %
Multinational enterprises	Yes	3	11,5 %	25	14,9 %
	No	23	88,5 %	143	85,1 %
HR's presence in the workplace	Yes	10	38,5 %	91	54,2 %
	No	16	61,5 %	77	45,8 %
Operating Results	Profit	21	80,8 %	141	83,9 %
	Loss	5	19,2 %	27	16,1 %
Turnover rate	<2%	20	76,9 %	99	58,9 %
	2%-10%	6	23,1 %	59	35,1 %
	>10%	0	0,0 %	10	6,0 %
Support of the company's management for the implementation of work-related interventions.	Yes	7	26,9 %	38	22,6 %
	Rather yes	5	19,2 %	65	38,7 %
	Rather no	9	34,6 %	40	23,8 %
	No	5	19,2 %	25	14,9 %
The existence of an action plan for managing work-related stress.	Yes	1	3,8 %	15	8,9 %
	No	25	96,2 %	153	91,1 %
Existence of the person capable of resisting and developing stress management programs exists in the enterprise.	Yes	4	15,4 %	50	29,8 %
	No	22	84,6 %	118	70,2 %
Existence of funds allocated for the support programs for the prevention of work-related stress.	Yes	1	3,8 %	23	13,7 %
	No	25	96,2 %	145	86,3 %
Training for managing work-related stress are implemented for company management.	Yes	0	0,0 %	24	14,3 %
	No	26	100,0 %	144	85,7 %
Training for managing work-related stress are implemented for employees.	Yes	0	0,0 %	16	9,5 %
	No	26	100,0 %	152	90,5 %

Source: Author, own research

To verify the relationships, we will use the Chi-Square Test. Although there are some differences between the groups, statistically significant differences are only for the feature

"Training for managing work-related stress are implemented for company management" (p-value = 0.040).

Table 14 Characteristic features for enterprises implementing stress management - test results

Features	Test statistics	Degrees of freedom	p-value
Size of enterprise	3,566	1	0,059
Multinational enterprises	0,204	1	0,652
HR's presence in the workplace	2,225	1	0,136
Operating Results	0,163	1	0,686
Turnover rate	3,711	2	0,156
Support of the company's management for the implementation of work-related interventions.	3,859	3	0,277
The existence of an action plan for managing work-related stress	0,769	1	0,381
Existence of the person capable of resisting and developing stress management programs exists in the enterprise.	2,317	1	0,128
Existence of funds allocated for the support programs for the prevention of work-related stress.	2,013	1	0,156
Training for managing work-related stress are implemented for company management.	4,239	1	0,040*
Training for managing work-related stress are implemented for employees.	2,699	1	0,100

Note(s): *p < 0.05

Source: Author, own research.

5 DISCUSSION

Totally[5], 72.7% of the surveyed enterprises try to actively prevent stress in the workplace. But only 8.2% of enterprises have developed an action plan for managing work-related stress. The low result corresponds to the Second European Survey of Enterprises on New and Emerging Risks[6] (EU-OSHA, 2015), where the Czech Republic had the lowest percentage (8%) of established action plans for stress management in the workplace. For comparison, the highest proportions are found in the United Kingdom (57%). The surveyed enterprises also do not have dedicated personnel resources (72.2%) or financial resources (87.6%) for stress management in the workplace. Stress management training is not organized, neither at the level of employees (91.8%) nor at the management level (87. 6%). However, the positive result is that 59.3% of the investigated enterprises stated that the management of the enterprise supports stress management in workplaces, and 72.7% of the respondents perceive it as their responsibility. It can be concluded that there is a paradigm shift where stress was previously considered a by-product of responsible work. Many workers have been criticized for being unable to "deal with stress," putting pressure back on individuals and abdicating responsibility in the workplace.

Among EU countries, the most important source of stress in manufacturing enterprises is the risk of injury (77%) and monotonous work (58%) (EU-OSHA, 2015). Czech surveyed manufacturing enterprises stated workload (64.4%), demanding job conditions (36.1%), and poor definition of work tasks (20.6%) as the most important sources of stress. Only 12.9% of participants consider Industry 4.0 as a significant stressor for their employees (for example, fear of job loss due to robotization). The results essentially correspond to the results of the survey by *Behavio Labs* company in Czech enterprises in 2019, where only 12% of respondents reported fear of job loss due to robotization (Hrabica, 2019). According to research, Czech employees see the implementation of Industry 4.0 as a chance to get rid of heavy and monotonous work (a significant source of stress in manufacturing enterprises).

Following the first research question, 86.6% of companies implemented at least one intervention in the past three years. Significantly exceeded interventions at the organizational-level (45.4%), mainly offering flexible work (57.7%), clarification of job role (47.6%), and improvement of ergonomics (39.9%). Enterprises implemented an average of 1.8

[5] Answer "Yes" or "Rather yes."
[6] Wide survey examining how European workplaces manage safety and health risks in practice (n= 49320 enterprises).

organizational-level interventions (OLI) and 0.6 individual-level interventions (ILI) in the workplace. Small enterprises use an average of 2.2 interventions (1.7 OLI and 0.5 ILI), in a maximum number of 5 organizational-level interventions and 3 individual level interventions. Medium-sized enterprises use an average of 2.9 interventions (2.1 OLI and 0.8 ILI), in a maximum number of 6 organizational-level interventions and 3 individual-level interventions. Based on the statistical analysis, it was found that larger enterprises have a statistically significantly higher number of individual-level interventions. However, in the case of OLI, there are no statistically significant differences between companies. Both types of interventions are implemented in their workplaces by 38.7% of companies, which also represents the most effective method of stress management (Cox et al., 2000). Research on stress management, or the implementation of SMIs in Czech enterprises, is rare. For the time being, the most extensive survey *Workplace stress – prevention opportunities,* was carried out in 2009 by the Occupational Safety Research Institute in reaction to the obligations stemming from the Czech Presidency of the European Union Council in 2009. However, the project again drifted towards research into individual stress among public administration workers. In 2016, the Czech government wanted to incorporate stress management as an integral part of OHS based on the pan-European trend. The novel has not yet been adopted, which means that the EU requirement (implementation of the Framework Agreement) has not yet been fulfilled (see chapter 2.1.5).

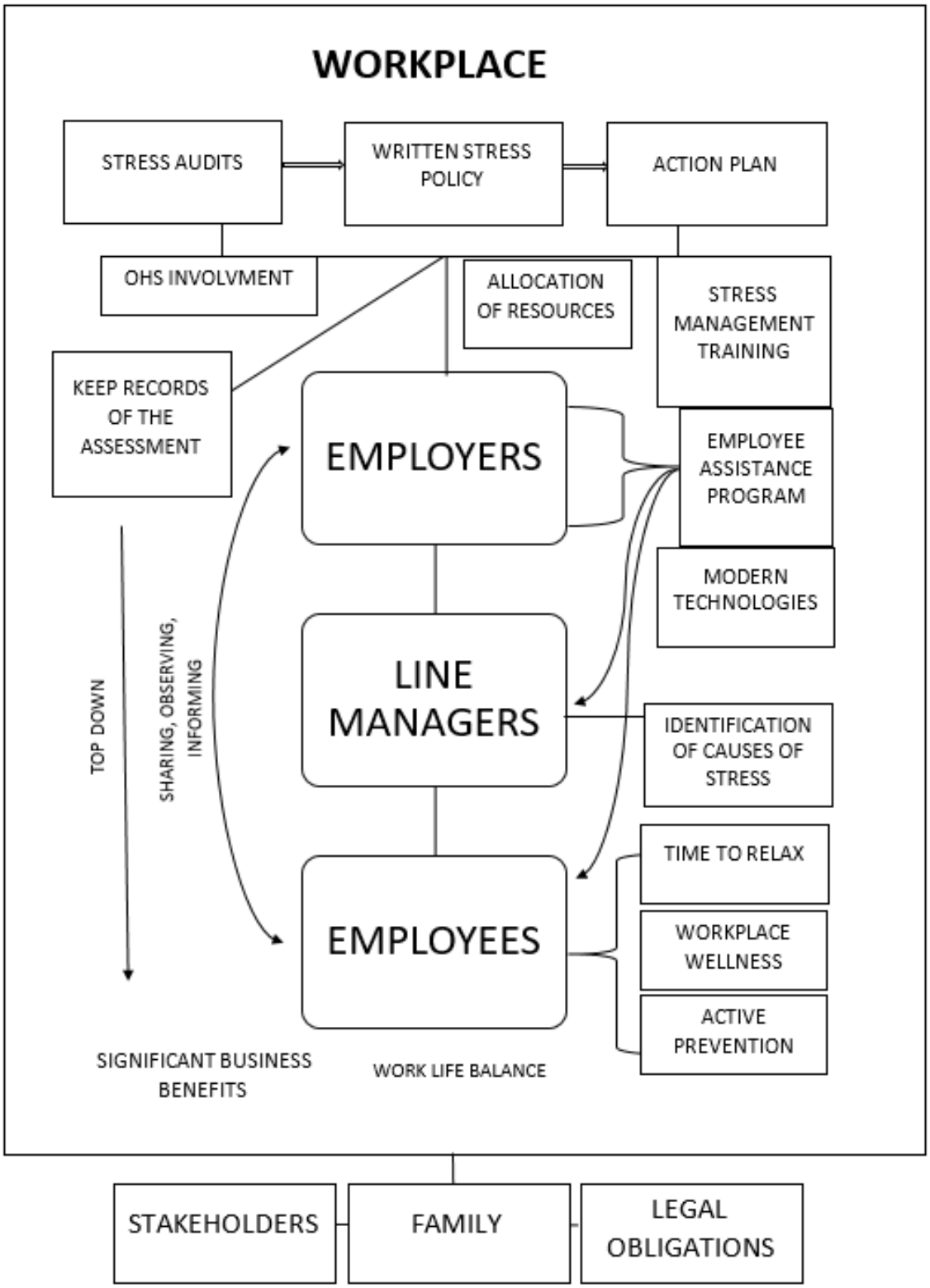
As part of the second research question, the evaluation process of established interventions was subjected to investigation. Enterprises that implement stress management interventions evaluate them in 43.5% of cases. Based on the analysis results, enterprises that implement stress management interventions also subsequently evaluate their effectiveness. However, only 8.2% of them confirmed performing an analysis of the costs of work-related stress. Compared with study *Stress management intervention research assessment – field study results* by Dorota Molek-Winiarska (2016), Polish companies analyze financial costs in only 2.4%. The low rate of calculating the costs of work stress is mainly due to the fact that there is currently no uniform, easily applicable tool for measuring the costs of work stress (see chapter 2.1.4).

Training for managing work-related stress at company management level was identified as a characteristic feature for enterprises implementing SMIs. Based on the above, it can be concluded that the key factor is the manager's personality and top-down approach in the field of stress management, as in all other areas of business management. A study by researchers of leadership training company *VitalSmarts* in 2018 found that 30% of managers do not handle

high-risk situations in workplace. And their inability to communicate and manage these situations affects the team's performance, which determines the performance of the team as a whole (Moran, 2018).

Fig. 14 illustrates proposed recommendations for implementing stress management in enterprises created by the author. A written action plan to implement stress management in the company is essential. This plan should be drawn up based on a stress audit and updated, if necessary, according to regular monitoring. Keeping records of assessments is desirable. The action plan should be presented to employees at all levels. During implementation, the employer uses information and cooperation with external experts (OHS specialists, workplace preventive care experts, professional associations, guild health insurances, or organizations providing stress management training.) The relevant information base is the materials and e-guide created by EU-OSHA and other advisory institutions. Some of these documents are intended for small and medium-sized enterprises and represent a practical tool to better understand and manage stress in the workplace. Resources for stress management are allocated, clearly defined in the action plan, and demonstrated in the enterprise. The basis of success is effective communication between the employer and employees, line managers, and HR departments if they exist in the enterprises. A corporate environment is created where employees can express their comments or concerns about the implementation and evaluate it themselves. As part of the implementation of SMIs, the employer implements measures: a) technical (the use of new technologies of SMIs based on the Internet or smartphones is recommended), b) personnel (employee assistance program is a significant benefit), and c) preventive (e.g., stress management training). Line managers regularly identify potential causes of stress in their teams and effectively manage workloads. They regularly inform the employer about the findings. The enterprises create conditions for employees to manage psychosocial risks. Individual- interventions are appropriate (e.g., wellness program, time to relax, sports incentives, etc.). Achieving a work-life balance is essential. Adequate stress management will be reflected not only in the workplace, but will become a significant benefit when presenting the enterprise to the outside.

Fig. 14 Proposed recommendations for implementing stress management



Source: Author, own research.

6 CONCLUSION

Although the relatively high level of theoretical knowledge of stress management among the surveyed enterprises, the actual implementation of stress management interventions is at a low level. A significant problem is the lack of research into the implementation of stress management interventions in the Czech environment, which leads to the need for cooperation between academia and business practice. Businesses, especially small and medium-sized enterprises, should access to information on how to implement and evaluate interventions and how they can benefit them. Due to the stigmatization of work-related stress and its management, employers of small and medium-sized enterprises should be motivated to implement by understandable information, effective communication, and cooperation during implementation processes in the company.

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